Traffic Operations and Safety Analysis

I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements

Pueblo, Colorado

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Prepared By:
Short Elliott Hendrickson, Inc.
2000 South Colorado Boulevard, Suite 6000
Colorado Center Tower One
Denver, CO 80222
Phil Weisbach, PE, Project Manager
Will Johnson, PE, PTOE Traffic Engineer

Prepared for:
City of Pueblo.
211 E. D Street
Pueblo, CO 81003

In Cooperation With:
Colorado Department of Transportation
Region 2
905 Erie Avenue
Pueblo, CO 81002

Federal Highway Administration
Colorado Division
12300 W. Dakota Avenue Suite 180
Lakewood, CO 80228

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Traffic Operations and Safety Analysis

I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements

Executive Summary

This traffic operations and safety analysis summarizes the effects of a proposed project to modify the existing I-25/Eden diamond interchange to a split diamond, with the north half at Eden and the south half at a new location where Dillon Drive will cross I-25. Figure 1 shows the location of the project in relation to the City of Pueblo. Figure 2 illustrates the project Study Area. Figure 3 illustrates the Proposed Action/Recommended Alternative. This is not a new access point to I-25. It is simply a modification of the existing access.

This proposed modification to the access to I-25 would require construction of a new bridge over I-25 at Dillon Drive and new on- and off-ramps to I-25 south of that bridge. These new ramps at Dillon Drive would replace the existing south ramps at I-25/Eden interchange which would be removed. The existing I-25 frontage road along the west side of I-25 will maintain the existing two-way connection between the south half of this interchange at Dillon Drive with the north half at Platteville Boulevard. In addition, a new northbound one-way ramp on the east side of I-25 from Dillon Drive to Platteville will be built to provide additional regional connectivity.

The purpose of the project is to provide regional connectivity to I-25 to accommodate existing and planned growth along Dillon Drive and Platteville Boulevard west of I-25. This regional connectivity is envisioned by the Pueblo Area Council of Governments (PACOG) in the 2035 Long Range Transportation Plan. The need for more efficient and direct access to/from I-25 has been recognized by local agencies for many years. Several plans and previous studies have identified the need to enhance connectivity between Pueblo West and I-25.

To address the requirements of the Federal Highways Administration (FHWA) Interstate Access Request (IAR) and the Colorado Department of Transportation (CDOT) Procedural Directive 1601 requirements for a System Level Study (SLS), this traffic operations analysis must evaluate if the Proposed Action to modify the existing full interchange at Platteville Boulevard to a split diamond interchange at Eden-Platteville Boulevard and Dillon Drive, can be accomplished in a manner that "… does not have a significant adverse impact on the safety and operation of the Interstate facility based on an analysis of current and future traffic."

Per guidance in the IAR and the SLS, the future traffic scenarios to be evaluated are:

- the implementation year – in this case, 2017 as directed by FHWA and CDOT – and
- the design year, 2035, which is the long range planning horizon for PACOG.

In order to assess the effect of the proposed split diamond interchange on the future traffic operations within the study area, the following five separate traffic operations scenarios were analyzed. These five scenarios are as follows:

- **Existing Conditions (Year 2008)** – Current day peak hour morning and evening traffic volumes and roadway network.
- **No-Action - Implementation Year (2017)** - Projected Year 2017 peak hour morning and evening traffic volumes and existing (Year 2008) roadway network.
- **Proposed Action - Implementation Year (2017)** - Projected Year 2017 peak hour morning and evening traffic volumes and an updated PACOG approved roadway network with the proposed split diamond interchange.
- **No-Action - Design Year (2035)** - Projected Year 2035 peak hour morning and evening traffic volumes and PACOG approved roadway network.
- **Proposed Action - Design Year (2035)** - Projected Year 2035 peak hour morning and evening traffic volumes and updated PACOG approved roadway network with the proposed split diamond interchange.

The traffic operations for the five above scenarios were analyzed with the Highway Capacity Software computer program (HCS 2000 version 4.1f) which utilizes the methodologies contained in the Highway Capacity Manual. The Level of Service (LOS) was calculated for mainline I-25, I-25 ramp merge/diverge areas, and intersections within the study area in order to provide a point of comparison between the No-Action and Proposed Action scenarios.

Traffic projections utilized for the traffic operations analysis for the No-Action – Implementation Year (2017), Proposed Action – Implementation Year (2017), No-Action – Design Year (2035) and Proposed Action – Design Year (2035) analyses were developed utilizing the Pueblo Area Council of Governments (PACOG) approved travel demand model. Modifications were made to the roadway network within the travel demand model in order to take into account development that is anticipated to occur within the study area by Year 2017 and Year 2035. The PACOG concurs with the methodology and results of these traffic projections.

Existing Conditions (Year 2008)

The results of the Existing Conditions (Year 2008) traffic operations analysis indicate that all freeway segments, ramp merge/diverge areas and intersections are operating well at LOS B or better with the exception of the unsignalized intersection of Eagleridge Boulevard / Dillon Drive during the evening peak period which operates at LOS D. Based on the results, the current roadway network within the study area has sufficient capacity to accommodate the existing volume of traffic during the morning and evening peak periods.

No-Action – Implementation Year (2017)

The results of the traffic operations analysis of the No-Action Implementation Year (2017) condition indicate that all freeway segments, ramp merge/diverge areas and intersections operate well at LOS C or better. Based on the results, the current roadway network within the study area has sufficient capacity to accommodate the No-Action - Implementation Year (2017) volume of traffic during the morning and evening peak periods.

Proposed Action – Implementation Year (2017)

The results of the Proposed Action - Implementation Year (2017) analysis indicate an overall improvement in freeway and intersection operations when compared to the No-Action (Year 2017) scenario. All I-25 freeway segments, ramp merge/diverge areas, and the local street intersections all operate at LOS C or better during the morning and evening peak periods.

No-Action – Design Year (2035)

The results of the No-Action (Year 2035) traffic operations analysis indicate that the volume of traffic on southbound I-25 within the study area begins to exceed the capacity of the interstate during the morning peak period resulting in merge/diverge points for southbound I-25 at Eagleridge Boulevard, and southbound I-25 south of Eagleridge Boulevard operating poorly at LOS F. Southbound I-25 between Platteville/Eden and Eagleridge Boulevard operates at LOS E. The morning peak period capacity issue is also experienced on the local street network at the intersection of Eagleridge Boulevard / Elizabeth Street, which is anticipated to operate poorly at LOS E. The remainder of the freeway segments, ramp merge/diverge areas and intersections in the study area are anticipated to operate well at LOS D or better during both the morning and evening peak periods.

The results indicate that additional capacity is required on southbound I-25 and at the intersection of Eagleridge Boulevard / Elizabeth Street to accommodate the volume of traffic anticipated in Year 2035. However, the remainder of the roadway network within the study area is anticipated to have sufficient capacity to accommodate the volume of traffic anticipated in Year 2035.

Proposed Action – Design Year (2035)

The results of the Proposed Action – Design Year (2035) traffic operations analysis indicate that the volume of traffic on southbound I-25 within the study area begins to exceed the capacity of the interstate during the morning peak period resulting in merge/diverge points for southbound I-25 at Eagleridge Boulevard, and southbound I-25 south of Eagleridge Boulevard operating poorly at LOS F. Southbound I-25 between Dillon Drive and Eagleridge Boulevard operates at LOS E. The remainder of the freeway segments, ramp merge/diverge areas and intersections in the study area are anticipated to operate well at LOS D or better during both the morning and evening peak periods.

The results of the Proposed Action – Design Year (2035) traffic operations analysis shows improvement in both the local street network and two I-25 ramps compared to the No-Action – Design Year (2035) scenario. Overall, when compared to the No-Action – Design Year (2035) scenario the Proposed Action – Design Year (2035) LOS either stays the same or improves by one letter grade.

Conclusions

- There is adequate network capacity for both the No-Action and Proposed Action alternatives in the 2017 scenario. All freeway segments, ramp merge/diverge, and intersections within the study area operate at LOC C or better for both the No-Action and Proposed Action scenarios.

- The 2017 Proposed Action alternative resulted in better traffic operations on one freeway segment, one ramp merge point, and at one location on the local roadway network compared to the No-Action alternative. In no instance is the

LOS worse with the Proposed Action than with the No-Action alternative. In all other instances, the LOS remains the same.

- The 2035 Proposed Action alternative resulted in better traffic operations at one ramp diverge point and for five intersection instances compared to the No-Action alternative. In no instance is the LOS worse with the Proposed Action than with the No-Action alternative. In all other instances, the LOS remains the same.

- There is less than adequate network capacity for both the 2035 No-Action and Proposed Action scenarios. Both scenarios demonstrate LOS E or F in multiple locations. Five locations are LOS E or worse for the 2035 No-Action scenario. Four locations are LOS E or worse in the 2035 Proposed Action scenario. All LOS problems are found in the morning peak period. The traffic analysis indicates that the primary cause of these LOS failures is lack of southbound capacity on I-25 in the morning peak.

Therefore, it is concluded that constructing the Proposed Action will result in improved study area operations in multiple instances and no degradation of operations in any instance compared to the No-Action alternative in both the Implementation Year of 2017 and the Design Year of 2035.

The Case for Improved Connectivity

The Purpose and Need describes the need to provide regional connectivity to I-25 to accommodate existing and planned growth along Dillon Drive and Platteville Boulevard west of I-25. The number of route choices and directness of routes to/from I-25 and the northwest and west in the 2017 and 2035 No Action scenario were compared with the number of route choices and directness of routes to/from I-25 with the 2017 and 2035 Proposed Action scenario. It is concluded that the Proposed Action provides more and more direct travel routes to/from I-25 and areas to the northwest and west. Traffic volume changes that result from the Proposed Action were compared to traffic volume changes that should be expected if the regional connectivity were increased. The traffic volume changes with the Proposed Action were in alignment with those that should be expected. As a result of this analysis, it is concluded that the Proposed Action provides the improved regional connectivity that is desired to accommodate existing and planned growth along Dillon Drive and Platteville Boulevard west of I-25, and thus satisfies the Purpose and Need.

Overall Conclusion

Given this information, it is concluded that the Proposed Action satisfies the FHWA and CDOT requirements in the IAR and SLS (respectively) because the Proposed Action to modify the existing full interchange at Platteville Boulevard to a split diamond interchange at Platteville Boulevard and Dillon Drive can be accomplished in a manner that "… does not have a significant adverse impact on the safety and operation of the Interstate facility based on an analysis of current and future traffic." And, based on the connectivity analysis, it is further concluded that the Proposed Action satisfies the Purpose and Need for improved regional connectivity desired to accommodate existing and planned growth along Dillon Drive and Platteville Boulevard west of I-25.

1.0 Introduction

This traffic operations and safety analysis summarizes the effects of a proposed project to modify the existing I-25/Eden diamond interchange to a split diamond, with the north half at Eden and the south half at a new location where Dillon Drive will cross I-25. Figure 1 shows the location of the project in relation to the City of Pueblo. Figure 2 illustrates the project Study Area. Figure 3 illustrates the Proposed Action/Recommended Alternative. This is not a new access point to I-25. It is simply a modification of the existing access.

Naming convention for this report: Currently, Platteville Boulevard becomes Dillon Drive at the Elizabeth Street/Dillon Drive/Platteville Boulevard intersection. West of Elizabeth, the road is Platteville. East of Elizabeth, it is Dillon Drive. In the future, however, Platteville will be realigned further north, and will align with the existing crossroad at the I-25/Eden interchange (although no map shows "Eden" being the street that is the crossroad under I-25). A new segment of Platteville Boulevard is currently being constructed just west of the west I-25 frontage road as an extension of the crossroad at the I-25/Eden interchange. To avoid the confusion caused by Platteville Boulevard currently existing at two different locations, and Eden not really being a named street:

- The existing full diamond interchange at the I-25/Eden exit, and the future north half of the split diamond will both be called "I-25/Eden-Platteville Boulevard"
- The proposed south half of the split diamond will be called "I-25/Dillon Drive."

Description: This proposed modification to the access to I-25 would require construction of a new bridge over I-25 at Dillon Drive and new on- and off-ramps to I-25 south of that bridge. These new ramps would replace the existing ramps at the south half of the I-25/Eden-Platteville Interchange. This split diamond configuration provides all of the movements of a typical diamond interchange, but the freeway connections are split between two adjacent crossroads. In this case, the connection would be from Dillon Drive (south half of the diamond) and Eden-Platteville Boulevard (north half of the diamond). The existing I-25 frontage road along the west side of I-25 will continue to provide a two-way connection between the south half of this interchange at Dillon Drive and the north half at Eden-Platteville Boulevard. In addition, a new one-way northbound ramp on the east side of I-25 from Dillon Drive to Platteville would be built to provide additional regional connectivity.

CDOT and FHWA Requirements: To address the requirements of the Federal Highways Administration (FHWA) Interstate Access Request (IAR) and the Colorado Department of Transportation (CDOT) Procedural Directive 1601 requirements for a System Level

Study (SLS), the traffic operations analysis must evaluate if the Proposed Action to modify the existing full interchange at Platteville Boulevard to a split diamond interchange at Platteville Boulevard and Dillon Drive can be accomplished in a manner that "… does not have a significant adverse impact on the safety and operation of the Interstate facility based on an analysis of current and future traffic."

Per guidance in the IAR and the SLS, the future traffic scenarios to be evaluated are:

- the implementation year – in this case, 2017 as directed by FHWA and CDOT – and
- the design year, 2035, which is the long range planning horizon for PACOG.

The basic question that this traffic operations and safety analysis must address is thus: Can the Purpose and Need for the Proposed Action bet met in a manner that "… does not have a significant adverse impact on the safety and operation of the Interstate facility based on an analysis of current and future traffic?"

1.1 Purpose and Need

The purpose of the project is to provide regional connectivity to I-25 to accommodate existing and planned growth along Dillon Drive and Platteville Boulevard west of I-25. The existing and planned roadway system is envisioned by the Pueblo Area Council of Governments (PACOG) in the 2035 Long Range Transportation Plan.

A connection of Dillon Drive to I-25 is needed to distribute traffic from this rapidly developing area of the City of Pueblo, Pueblo West, and Pueblo County to destinations along I-25. Dillon Drive near I-25 serves existing commercial development, including several "big-box" stores, as well as industrial business and a few small residential neighborhoods farther to the west. This land use pattern of mixed development is expected to continue in the future as reflected in the City of Pueblo Comprehensive Plan. Currently, traffic to and from this busy area must use either the Eagleridge Interchange at I-25 or the Eden Interchange approximately two miles north of it. Both interchanges result in out-of-direction travel as traffic is forced onto local streets to access area businesses. As the area continues to grow, a direct connection to I-25 is needed to provide a more efficient flow of traffic.

Pueblo West is one of the fastest growing unincorporated areas in Pueblo County. The existing population of Pueblo West is approximately 33,000 and is projected by PACOG to increase to approximately 45,000 at build-out. Currently there are only three regional routes to I-25 for the large area of Pueblo West: Eagleridge Boulevard, Dillon Drive/Platteville Boulevard and Purcell Boulevard, as shown in Figure 1 (Eagleridge Boulevard and Purcell Boulevard have direct interstate access, while regional traffic on Dillon Drive/Platteville Boulevard is forced onto the local street network to

access I-25. As the area continues to grow and the transportation network west of I-25 expands to serve that growth, traffic on Dillon Drive is expected by PACOG to increase from 2,000 vehicles per day to 7,600 vehicles per day. This increase in traffic will require a more efficient and logical connection to I-25 than either the existing Eden or Eagleridge Interchanges.

The need for more efficient and direct access to I-25 has been recognized by local agencies for many years. Several plans and previous studies have identified the need to enhance connectivity between Pueblo West and I-25. In order to provide the currently needed and future planned connectivity to the west in a manner that also does not preclude efficient and cost-effective future planned connectivity which conforms to the Pueblo Area Council of Governments (PACOG) 2035 Long Range Transportation Plan, a different configuration of local access and access to/from I-25 is necessary. The ability to not preclude future planned connectivity to the east consistent with the PACOG Long Range Transportation Plan at the existing I-25/Eden-Platteville Boulevard interchange is severely restricted by the proximity to the Union Pacific railroad and Fountain Creek just east of the existing interchange. As a result, modified access to I-25 is necessary.

The following chapter describes the alternatives considered that led to the selection of a proposed action.

2.0 Traffic Operations Methodology

In order to assess the effect of the proposed split diamond interchange on the future traffic operations within the study area, the following five separate traffic operations scenarios were analyzed;

- **Existing Conditions (Year 2008)** – Current day peak hour morning and evening traffic volumes and roadway network.
- **No-Action – Implementation Year (2017)** - Projected Year 2017 peak hour morning and evening traffic volumes and existing (Year 2008) roadway network.
- **Proposed Action – Implementation Year (2017)** - Projected Year 2017 peak hour morning and evening traffic volumes and an updated PACOG approved roadway network with the proposed split diamond interchange.
- **No-Action – Design Year (2035)** - Projected Year 2035 peak hour morning and evening traffic volumes and PACOG approved roadway network.
- **Proposed Action – Design Year (2035)** - Projected Year 2035 peak hour morning and evening traffic volumes and updated PACOG approved roadway network with the proposed split diamond interchange.

Based on guidance in the FHWA IAR, it is normally required to evaluate the two adjacent interchanges in both directions of a proposed new interchange or interchange modification. The nearest existing full interchange to the north of I-25/Eden-Platteville Boulevard is Purcell Boulevard and I-25, approximately 4.1 miles to the north. However, since the north half of the proposed split diamond (the north ramps of I-25/Eden) interchange is not being modified as part of the Proposed Action, and that since the distance between I-25/Eden and I-25/Purcell is so great that any effects of the proposed improvements would be negligible, by joint concurrence of FHWA and CDOT the traffic operations analysis is not required to evaluate the effects on the I-25/Purcell Boulevard interchange.

Multiple alternatives to provide the desired enhanced connectivity and access to I-25 were developed during the alternatives evaluation phase of the Environmental Assessment (EA) process.

2.1 Environmental Assessment Evaluation Criteria

Key considerations in developing the alternatives were:

- Accommodates existing and planned growth along Dillon/Platteville Blvd;
- Provides logical system connectivity;
- Improves residential and commercial accessibility to and from I-25;
- Maintains existing access to local businesses;
- Meets interstate access requirements;
- Is fiscally prudent;
- Can be expanded to accommodate future improvements to I-25 and local streets;
- Can environmental impacts be avoided or mitigated; and
- Is consistent with local plans (ie, PACOG 2035 Long Range Transportation Plan).

Alternatives Evaluated:

Four “build” alternatives and the “No-Action” alternative were identified as the reasonable range of alternatives to be evaluated, and subjected to the Alternatives Screening process, and evaluated against the criteria above.

The alternatives were:

- Full diamond at Dillon Drive;
- Full diamond at Eden-Platteville Boulevard;
- Split diamond at Dillon Drive and Eden-Platteville Boulevard with a two-way frontage road (west side of I-25);
- Split diamond at Dillon Drive and Eden-Platteville Boulevard with one-way pairs; and
- No-Action.

Figure 4 is a graphic showing the basic layout of each of the alternatives evaluated.

The alternatives screening summary is shown on Figure 5.

Each alternative was assumed to be designed to accommodate existing or planned transportation system management type improvements (ramp metering, mass transit, HOV).

Alternatives Screening Results:

Through the screening process, the "Split Diamond With a Two-Way Frontage Road" alternative was identified as the Preferred Alternative. It was the only alternative that satisfied all of the evaluation criteria identified.

The "Split Diamond With a Two-Way Frontage Road" alternative will thus be evaluated as the "Proposed Action" in this traffic operations analysis.

2.2 Highway Capacity Software Assumptions and Defaults

The traffic operations for the five above scenarios were analyzed with the Highway Capacity Software (HCS) computer program (HCS 2000 version 4.1f) which utilizes the methodologies contained in the Highway Capacity Manual (HCM)[1]. The Level of Service (LOS) was calculated for mainline I-25, I-25 ramp merge/diverge areas, and intersections within the study area in order to provide a point of comparison between the No-Action and Proposed Action. The HCS software program has many inputs that can affect the calculation of the LOS, density, and delay. For ease of review, the traffic operations analysis, the following inputs and rationale for their use are provided below:

MAINLINE			
Category	Default Value	Actual Value	Reason for Variation
Free-flow speed and Type	70 MPH	70 MPH	
Lane Width	12 ft	12 ft	
Right Shoulder Lateral Clearance	6 ft.	6ft.	
Interchange Density	0.5	1.0	Based upon field measurement
Number of Lanes	Varies	2	
Peak Hour Factor	0.9	Varies	Based upon actual peak hour counts
Terrain Type	Level	Level	
Percent Trucks & Buses - Freeway	0%	7%	Based upon CDOT data
Trucks & Buses (Passenger Car Equivalents)	1.5	1.5	
Percent Recreational Vehicles	0%	0%	
Recreational Vehicles (Passenger Car Equivalents)	1.2	1.2	
Driver Population Adjustment Factor	1.0	1.0	

[1] Highway Capacity Manual - Special Report 209. Transportation Research Board. National Research Council. 2000.

RAMP MERGE and DIVERGE			
Category	Default Value	Actual Value	Reason for Variation
Free-flow speed on freeway	55 MPH	65 MPH	Actual Speed Limit on I-25
Side of Freeway	Right	Right	
Number of lanes	1	1	
Free-flow speed on ramp	35 MPH	45 MPH	Actual Speed limit of Ramp
Length of first deceleration lane	500	Varies	Based upon actual measured values
Peak Hour Factor	0.9	Varies	Based upon actual peak hour counts
Terrain Type	Level	Level	
Percent Trucks & Buses - Freeway	0%	7%	Based upon CDOT data
Percent Trucks & Buses - Eden Ramps	0%	1%	Estimated using simliar data for Pueblo [1]
Percent Trucks & Buses - Eagleridge Ramps	0%	2%	Estimated using simliar data for Pueblo [2]
Trucks & Buses (Passenger Car Equivalents)	1.5	1.5	
Percent Recreational Vehicles	0%	0%	
Recreational Vehicles (Passenger Car Equivalents)	1.2	1.2	
Driver Population Adjustment Factor	1.0	1.0	

1. The actual value for the Percent Trucks & Buses category utilized for the analysis of the merge/diverge LOS for the Eden Interchange was estimated using an average of truck and bus volume data from other similar CDOT facilities within the City of Pueblo.

2. The actual value for the Percent Trucks & Buses category utilized for the analysis of the merge/diverge LOS for Eagleridge Boulevard was estimated using an average of truck and bus volume data from other similar CDOT facilities within the City of Pueblo.

INTERSECTION			
Category	Default Value	Actual Value	Reason for Variation
Peak Hour Factor - Year 2008	0.92	Varies	Based upon actual peak hour counts
Peak Hour Factor - Year 2035	0.92	0.92	
Ideal Saturation Flow Rate	1900	1900	
Percent Heavy Vehicle	0%	2%	Estimated using similar data for Pueblo [3]

3. The actual value for the Percent Heavy Vehicle category utilized for the analysis of the intersection LOS was estimated using an average of truck and bus volume data from other similar CDOT facilities within the City of Pueblo.

2.3 Travel Demand Model Projections

Traffic projections that were utilized for the traffic operations analysis for the No-Action (Year 2035) and Proposed Action (Year 2035) analyses were developed from the Pueblo Area Council of Governments (PACOG) approved travel demand model. Modifications were made to the roadway network within the travel demand model in order to take into account development that is anticipated to occur within the study area by Year 2035. While the roadway network was modified to accommodate future development, the socioeconomic data was held constant to be consistent with the fiscally constrained conditions. A summary of the actual changes and additions made to the travel demand model roadway network for the traffic operations analysis can be found in Appendix A of this document.

Modeling assumptions and output from the PACOG travel demand model utilized for the traffic operations analysis was reviewed and approved by PACOG. The concurrence letter from the PACOG MPO Administrator is included in Appendix A of this document.

2.4 Travel Demand Model Output Review

A review of the traffic volume output from the PACOG model was reviewed prior to the traffic operations analysis to determine if there were any irregularities or anomalies. After review, there was concern that Year 2035 southbound I-25 volumes in the project area were noticeably higher than the Year 2035 northbound I-25 volumes. A closer review of the northbound and southbound traffic volumes along I-25 within the PACOG modeling area revealed that from the El Paso County line to well past our project area that the southbound peak hour traffic volumes were much higher than the northbound peak hour traffic volumes. In addition, the review indicated that a similar trend exists for the traffic volumes south of the downtown Pueblo area. The south end of I-25 experienced a similar directional split as the north side with the primary movements being inbound in the AM and outbound in the PM.

This review reinforces the evidence that travel patterns in Pueblo by Year 2035 will be experiencing a typical regional commuter flow of traffic entering downtown Pueblo in the AM and exiting downtown Pueblo in the PM. Furthermore, it is clear that the Year 2035 model assumes that the downtown Pueblo area has higher employment than in Year 2008, and that the majority of the residential growth occurs outside of the downtown area resulting in traffic coming into the downtown area in the morning and leaving in the evening. With regard to this project, the results show higher peak hour volumes heading southbound on I-25 from north Pueblo in the morning toward downtown and the central areas of Pueblo, and higher peak hour volumes returning northbound from downtown on I-25 in the evening.

2.5 Traffic Operations Analysis

The traffic operations for all five scenarios (Existing Conditions, No-Action for Implementation Year 2017 and Design Year 2035, and Proposed Action for Implementation Year 2017 and Design Year 2035) were analyzed utilizing the Highway Capacity Software package. Level of Service (LOS) was utilized for comparison between the five scenarios.

LOS is a measure used to describe operational conditions on a freeway, ramp merge or diverge areas and at an intersection. LOS categories ranging from A to F are assigned based on the predicted density or delay. LOS A indicates very good operations, and LOS F indicates poor, congested operations. For freeway mainline and ramp merge and diverge operations analysis, density is the measure of effectiveness that defines the letter LOS which indicates the quality of operations. For intersection operations analysis, delay is the measure of effectiveness that defines the letter LOS that indicates the quality of intersection operations.

Freeway Level of Service

Freeway LOS is measured in terms of the relative level of density for the freeway segment. Density is a measure of the amount of congestion that is anticipated to occur along a freeway segment and in our case is represented as the number of passenger cars per mile per lane (pc/mi/ln). The LOS criteria utilized for the freeway sections are shown in the table below.

LOS Criteria for Multilane Highways						
Free-Flow Speed	Criteria	LOS				
		A	B	C	D	E
60 mi/h or greater	Maximum Density (pc/mi/ln)	11	18	26	35	40
	Average Speed (mi/h)	60.0	60.0	59.4	56.7	55.0
55 mi/h	Maximum Density (pc/mi/ln)	11	18	26	35	41
	Average Speed (mi/h)	55.0	55.0	54.9	52.9	51.2
50 mi/h	Maximum Density (pc/mi/ln)	11	18	26	35	43
	Average Speed (mi/h)	50.0	50.0	50.0	48.9	47.5
45 mi/h	Maximum Density (pc/mi/ln)	11	18	26	35	45
	Average Speed (mi/h)	45.0	45.0	45.0	44.4	42.2

Ramp Merge/Diverge Level of Service

Ramp merge/diverge area LOS is also measured in terms of the relative level of density for the merge/diverge area. Density is a measure of the amount of congestion that is anticipated to occur within the ramp merge/diverge areas and is represented as the number of passenger cars per mile per lane (pc/mi/ln). The LOS criteria utilized for the merge/diverge sections are shown in the table below.

LOS Criteria for Ramp Merge and Diverge Areas	
LOS	Density (pc/mi/ln)
A	≤ 10
B	> 10-20
C	> 20-28
D	> 28-35
E	> 35
F	Demand exceed capacity

Intersection Level of Service

Intersection LOS is measured in terms of the average amount of stopped delay that is experienced waiting at an intersection. In this instance the delay is represented as seconds per vehicle (sec/veh). The LOS criteria utilized for the both signalized and unsignalized intersections are shown in the table below.

LOS Criteria for Intersections		
LOS	Signalized Control Delay (sec/veh)	Unsignalized Control Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

The LOS was calculated for all five scenarios and presented in detail below.

Weave Analysis

Weave analysis is often required when the merge/diverge points between successive on- and off- ramps are in close proximity. However, weave sections were not formally analyzed for LOS for any of the scenarios that follow. This is because HCS methodology does not require evaluation of weave operations when the distance between the merge/diverge points of successive ramps are greater than 2500 feet, which is assumed to be outside the radius of influence. The distance between the existing I-25/Eagleridge Boulevard and the I-25/Eden-Platteville Boulevard interchanges (for the Existing Conditions analysis) is approximately 1.6 miles. The distance between the existing I-25/Eagleridge Boulevard and the Proposed Action I-25/Dillon Drive south half-diamond is approximately 1.2 miles. Thus, the distances between the merge/diverge points of either and I-25/Eagleridge is considerably greater than 2500 feet.

Level of Service Threshold Defined

The LOS threshold for this type of traffic operations analysis is LOS D for an urban area and LOS C for a rural area. The project area is by definition "urbanized" since it is within a Metropolitan Planning Organization (PACOG) area of greater than 50,000 residents. Thus, LOS D was used as the threshold to distinguish between acceptable (LOS A, B, C or D) or unacceptable (LOS E or F) levels of service. For freeway segments, merge/diverge points, or study area intersections.

2.5.1 Existing Conditions (Year 2008) Operations Analysis

The Existing (Year 2008) traffic operations analysis utilized traffic volumes collected in October 2008 along I-25 and the surrounding roadways and intersections within the study area. The traffic count data is provided in Appendix B of this document. Figures 6, 7 and 8 present the Existing (Year 2008) Study Area Average Daily Traffic Volumes, Existing (Year 2008) Study Area Laneage, Existing (Year 2008) Study Area Peak Hour Mainline I-25 Volume and Arterial Turning Movements, respectively.

The existing conditions (Year 2008) traffic operations analysis for the Platteville/Dillon and I-25 Roadway Improvements project entailed the analysis of freeway, ramp and intersection level of service (LOS) for I-25, Platteville Boulevard, Eagleridge Boulevard and the surrounding roadway network.

Freeway Level of Service

The freeway LOS for the six identified locations along I-25 that were analyzed operate at LOS B or better during the morning and evening

peak periods. The results of the morning and evening peak hour freeway mainline calculations are summarized in Tables 1 and 2.

Ramp Merge/Diverge Level of Service

The ramp LOS for the eight identified ramp locations along I-25 that were analyzed is LOS B or better during the morning and evening peak periods. The results of the morning and evening peak hour ramp merge/diverge calculations are summarized in Tables 1 and 2.

Intersection Level of Service

The intersection LOS for all eight of the intersections analyzed is LOS D or better during the morning peak periods. The results of the morning and evening peak hour intersection calculations are summarized in Tables 1 and 2.

Summary of Results

Figure 9 presents the Existing (Year 2008) Study Area Mainline I-25, Ramp and Intersection Level of Service. The LOS worksheets for the freeway, merge/diverge areas and intersections are included in Appendix C of this document.

Findings and Conclusion

The results of the traffic operations analysis of the existing Year 2008 condition show that all freeway segments, ramp merge/diverge areas and intersections operate well at LOS B or better with the exception of the unsignalized intersection of Eagleridge Boulevard / Dillon Drive during the evening peak period which operates at LOS D. Based on the results, the current roadway network within the study area has sufficient capacity to accommodate the existing volume of traffic during the morning and evening peak periods.

2.5.2 No-Action – Implementation Year (2017) Operations Analysis

The No-Action - Implementation Year (2017) traffic operations analysis utilized projected traffic volumes derived from the PACOG No-Action travel demand model. Figures 10, 11 and 12 present the No-Action - Implementation Year (2017) Study Area Average Daily Traffic Volumes, No-Action - Implementation Year (2017) Study Area Laneage, No-Action - Implementation Year (2017) Study Area Peak Hour Mainline I-25 Volume and Arterial Turning Movements, respectively.

Compared to the Existing Conditions (2008) roadway network, the No-Action - Implementation Year (2017) roadway network assumes the frontage road on the west side of I-25, north of Platteville/Eden has been closed/eliminated.

Freeway Level of Service

The freeway LOS for the six identified locations along I-25 that were analyzed are anticipated to operate at LOS C or better during the morning and evening peak periods. The results of the morning and

evening peak hour freeway mainline calculations are summarized in Tables 1 and 2.

Ramp Merge/Diverge Level of Service

The LOS for the eight identified I-25 ramp merge/diverge areas analyzed along I-25 is anticipated to be LOS C or better during both the morning and evening peak period. The results of the morning and evening peak hour ramp merge/diverge calculations are summarized in Tables 1 and 2.

Intersection Level of Service

The intersection LOS for all eight of the intersections analyzed is anticipated to be LOS B or better during the morning and evening peak periods. The results of the morning and evening peak hour intersection calculations are summarized in Tables 1 and 2.

Summary of Results

Figure 13 presents the No-Action - Implementation Year (2017) Study Area Mainline I-25, Ramp and Intersection LOS. The LOS worksheets for the freeway, merge/diverge areas and intersections are included in Appendix C of this document.

Findings and Conclusion

The results of the traffic operations analysis of the No-Action - Implementation Year (2017) condition show that all freeway segments, ramp merge/diverge areas and intersections are expected to operate well at LOS C or better. Based on the results, the current roadway network within the study area has sufficient capacity to accommodate the No-Action – Implementation Year (2017) volume of traffic during the morning and evening peak periods.

2.5.3 Proposed Action – Implementation Year (2017) Operations Analysis

The Proposed Action – Implementation Year (2017) traffic operations analysis utilized traffic volumes derived from the PACOG Proposed Action travel demand model with modifications that include the proposed action. Figures 14, 15, and 16 present the Proposed Action – Implementation Year (2017), Proposed Action – Implementation Year (2017) Study Area Average Daily Traffic Volumes, Proposed Action – Implementation Year (2017) Study Area Laneage, Proposed Action – Implementation Year (2017) Study Area Peak Hour Mainline I-25 Volume and Arterial Turning Movements, respectively.

Compared to the Existing Conditions (2008) roadway network, the Proposed Action (2017) roadway network assumes:

- the frontage road on the west side of I-25, north of Platteville/Eden has been closed/eliminated.
- the south ramps at the I-25/Platteville/Eden interchange have been eliminated and removed, and

- the new south half diamond at I-25/Dillon has been constructed and is in service.

Freeway Level of Service

The LOS for the six identified locations analyzed along I-25, is anticipated to be LOS C or better during the morning and evening peak periods. The results of the morning and evening peak hour freeway mainline calculations are summarized in Tables 1 and 2.

Comparison to No-Action: The Proposed Action – Implementation Year (2017) freeway segments all operate as well, and in one case, better, than the No-Action – Implementation Year (2017) scenario.

- The northbound I-25 freeway segment, north of I-25/Platteville Boulevard/Eden operates at LOS A in the morning peak in the Proposed Action – Implementation Year (2017) scenario, while the same segment operates at LOS B in the morning peak in the No-Action – Implementation Year (2017) scenario.

Ramp Merge/Diverge Level of Service

The LOS for the eight identified I-25 ramp merge/diverge areas analyzed along I-25 is anticipated to be LOS C or better during the morning and evening peak periods. The results of the morning and evening peak hour ramp merge/diverge calculations are summarized in Tables 1 and 2.

Comparison to No-Action: The ramp merge/diverge LOS for each of the eight I-25 ramp merge/diverge locations in the Proposed Action – Implementation Year (2017) scenario is the same as the No-Action – Implementation Year (2017) scenario, except for one ramp merge point, which operates better in the Proposed Action – Implementation Year (2017) scenario. The new southbound on-ramp at I-25/Dillon Drive in the Proposed Action – Implementation Year (2017) scenario operates at LOS A in the evening peak, compared to LOS B in the No-Action – Implementation Year (2017) scenario.

Intersection Level of Service

The intersection LOS for all ten of the intersections analyzed is anticipated to be LOS B or better during the morning and evening peak periods.

Comparison to No-Action: The Proposed Action – Implementation Year (2017) intersection LOS for each of the ten intersections in the Proposed Action – Implementation Year (2017) scenario are the same as the No Action – Implementation Year (2017) scenario, except for one intersection, which operates better in the Proposed Action – Implementation Year (2017) scenario. The east ramp terminal intersection at the I-25/Eagleridge interchange operates at LOS A during the evening peak in the Proposed Action – Implementation Year (2017) scenario, compared to LOS B during the evening peak in the No-Action – Implementation Year (2017) scenario.

Summary of Results

The results of the morning and evening peak hour intersection calculations are summarized in Tables 1 and 2. Figure 17 presents the Proposed Action – Implementation Year (2017) Study Area Mainline I-25, Ramp and Intersection LOS. The LOS worksheets for the freeway, merge/diverge areas and intersections are included in Appendix C of this document.

Findings and Conclusion

Based on the results, the 2017 roadway network within the study area has sufficient capacity to accommodate the Proposed Action – Implementation Year (2017) volume of traffic during the morning and evening peak periods at a LOS C or better. There is an overall improvement in freeway and intersection operations with the Proposed Action Implementation Year (2017) alternative compared to the No-Action Implementation Year (2017) alternative.

2.5.4 No-Action - Design Year (2035) Operations Analysis

The No-Action - Design Year (2035) traffic operations analysis utilized projected traffic volumes from the PACOG No-Action (Year 2035) travel demand model. Figures 18, 19, and 20 present the No-Action Design Year (2035) Study Area Average Daily Traffic Volumes, No-Action - Design Year (2035) Study Area Laneage, No- Action - Design Year (2035) Study Area Peak Hour Mainline I-25 Volume and Arterial Turning Movements, respectively.

Freeway Level of Service

The LOS for the six identified locations analyzed along I-25 ranged from LOS B to LOS F during the morning and evening peak periods. One freeway location (southbound I-25 between Eden/Platteville and Eagleridge Boulevard) is anticipated to operate at LOS E, and another (southbound I-25 south of Eagleridge Boulevard) is anticipated to operate at LOS F in morning peak hour. The other four locations are anticipated to operate at LOS D or better. The results of the morning and evening peak hour freeway mainline calculations are summarized in Tables 1 and 2.

Ramp Merge/Diverge Level of Service

The LOS for the eight I-25 ramp merge/diverge areas analyzed along I-25 ranged from LOS B to LOS F during the morning and evening peak period. The southbound I-25 at Eagleridge off- and on- ramps merge/diverge points both operate at LOS F in the morning peak hour. The other six ramp merge/diverge locations operated at LOS D or better. The results of the morning and evening peak hour ramp merge/diverge calculations are summarized in Tables 1 and 2.

Intersection Level of Service

The intersection LOS for all eight of the intersections analyzed is anticipated to be LOS C or better during the morning and evening peak periods with the exception of the intersection of Eagleridge Boulevard / Elizabeth Street which is anticipated to operate at LOS E during the morning peak period. The results of the morning and

evening peak hour intersection calculations are summarized in Tables 1 and 2.

Summary of Results

Figure 21 presents the No-Action – Design Year (2035) Study Area Mainline I-25, ramp and Intersection LOS. The LOS worksheets for the freeway, merge/diverge areas and intersections are included in Appendix C of this document.

Findings and Conclusion

The results of the traffic operations analysis of the No-Action – Design Year (2035) condition indicates that the volume of traffic on southbound I-25 within the study area begins to exceed the capacity of the roadway network at five locations (southbound I-25 between Platteville Boulevard and Eagleridge Boulevard; southbound I-25 south of Eagleridge Boulevard; the southbound off- and on- ramp diverge/merge points at Eagleridge Boulevard; and the Eagleridge/Elizabeth intersection) during the morning peak period.

Except as pointed out above, the remainder of the freeway segments, ramp merge/diverge areas and intersections in the study area are anticipated to operate well at LOS D or better during both the morning and evening peak periods.

The results indicate that more capacity is required on southbound I-25 and at the intersection of Eagleridge Boulevard / Elizabeth Street to accommodate the volume of traffic anticipated in Year 2035; however the remainder of the roadway network within the study area is anticipated to have sufficient capacity to accommodate the volume of traffic anticipated in Year 2035.

2.5.5 Proposed Action - Design Year (2035) Operations Analysis

The Proposed Action - Design Year (2035) traffic operations analysis utilized traffic volumes from the PACOG Proposed Action (Year 2035) travel demand model with modifications that include the proposed action. Figures 22, 23, and 24 present the Proposed Action - Design Year (2035) Study Area Average Daily Traffic Volumes, Proposed Action - Design Year (2035) Study Area Laneage, Proposed Action - Design Year (2035) Study Area Peak Hour Mainline I-25 Volume and Arterial Turning Movements, respectively.

Freeway Level of Service

The LOS for the six identified locations analyzed along I-25 is anticipated to range from LOS B to LOS F during the morning and evening peak periods. One freeway location (I-25 between Eden/Platteville and Eagleridge) is anticipated to operate at LOS E, and another (I-25 south of Eagleridge) is anticipated to operate at LOS F in morning peak hour. The other four freeway locations are anticipated to operate at LOS D or better. The results of the morning and evening peak hour freeway mainline calculations are summarized in Tables 1 and 2.

Comparison to No-Action: The Proposed Action - Design Year (2035) freeway segments all operate as well as the freeway segments in No-Action - Design Year (2035) scenario. No freeway segments operate worse, and none operate better as a result of the Proposed Action.

Ramp Merge/Diverge Level of Service

The LOS for the eight I-25 ramp merge/diverge areas analyzed along I-25 ranged from LOS B to LOS F during the morning and evening peak period. The southbound I-25 at Eagleridge off- and on- ramps diverge/merge points both are anticipated to operate at LOS F in the morning peak hour. The other six ramp merge/diverge locations are anticipated to operate at LOS D or better in both the morning and evening peak hours. The results of the morning and evening peak hour ramp merge/diverge calculations are summarized in Tables 1 and 2.

Comparison to No-Action: The ramp merge/diverge LOS for each of the eight I-25 ramp merge/diverge locations in the Proposed Action - Design Year (2035)scenario is the same as the No-Action - Design Year (2035) scenario, except for one ramp merge point, which operates better in the Proposed Action - Design Year (2035) scenario. The new northbound on-ramp at I-25/Dillon Drive in the Proposed Action – Design Year (2035) scenario operates at LOS B in the morning peak, compared to LOS C in the No-Action – Design Year (2035) scenario.

Intersection Level of Service

The intersection LOS for all ten of the intersections analyzed is anticipated to be LOS D or better during the morning peak period. During the evening peak period the intersection LOS at all ten of the intersections analyzed is anticipated to be LOS C or better. The results of the morning and evening peak hour intersection calculations are summarized in Tables 1 and 2.

Comparison to No-Action: The Proposed Action – Design Year (2035) intersections all operate as well, and in five cases, better than the No-Action – Design Year (2035) intersections. The intersections with improved LOS are:

- The Eagleridge/Elizabeth intersection LOS improves from LOS E in the morning peak hour in the No-Action - Design Year (2035) scenario to LOS D in the Proposed Action – Design Year (2035) scenario.
- The southbound I-25 ramps / Eagleridge Boulevard intersection LOS improves from LOS B in the evening peak hour in the No-Action - Design Year (2035) scenario to LOS A in the Proposed Action – Design Year (2035) scenario.
- The Eagleridge Boulevard/Dillon Drive intersection LOS improves from LOS C in the morning peak hour in the No-

Action - Design Year (2035) scenario to LOS B in the Proposed Action - Design Year (2035) scenario.

- The northbound I-25/ Platteville/Eden ramp terminal intersection improves from LOS B in both the morning and evening peak hours in the No-Action - Design Year (2035) scenario to LOS A in the Proposed Action – Design Year (2035) scenario.

Summary of Results

Figure 25 presents the Proposed Action – Design Year (2035) Study Area Mainline I-25, Ramp and Intersection Level of Service. The LOS worksheets for the freeway segments, merge/diverge areas and intersections are included in Appendix C of this document.

Findings and Conclusion

The results of the traffic operations analysis of the Proposed Action Design Year (2035) condition indicates that the volume of traffic on southbound I-25 within the study area begins to exceed the capacity of the roadway network at three locations (southbound I-25 between Dillon Drive and Eagleridge Boulevard; southbound I-25 south of Eagleridge Boulevard; and the southbound off- and on- ramp diverge/merge points at Eagleridge Boulevard) during the morning peak period.

Except as pointed out above, the remainder of the freeway segments, ramp merge/diverge areas and intersections in the study area are anticipated to operate well at LOS D or better during both the morning and evening peak periods.

The results indicate that more capacity is required on southbound I-25 to accommodate the volume of traffic anticipated in Year 2035; however the remainder of the roadway network within the study area is anticipated to have sufficient capacity to accommodate the volume of traffic anticipated in Year 2035.

Compared to the No-Action Design Year (2035) scenario, the Proposed Action – Design Year (2035) results show that:

- In no instance is the LOS of any freeway segment, ramp merge/diverge point, or intersection worse in the Proposed Action (2035) scenario compared to the No-Action (2035) scenario.

- In one instance the ramp merge/diverge LOS is improved in the Proposed Action - Design Year (2035) scenario compared to the No-Action – Design Year (2035) scenario.

- In five instances, the intersection LOS is improved in the Proposed Action – Design Year (2035) scenario compared to the No-Action – Design Year (2035) scenario.

2.6 Sensitivity Analysis

Because the traffic operations analysis and results are sensitive to the HCS and PACOG model inputs and assumptions, it was felt prudent to answer the question:

"To what extent might variations in the HCS model inputs and assumptions, or how much must the PACOG model results vary, before the traffic operations results that the fundamental conclusions rest upon are compromised?"

To that end, a sensitivity analysis of the results of the Proposed Action (Year 2035) traffic operations analysis was performed to determine how sensitive the LOS values might be to changes in inputs or assumptions. Two separate sensitivity analyses were performed to determine the sensitivity of the traffic operations results and the validity of the conclusions. The two tests were varying the HCS inputs and varying the input volumes within the HCS software. Given the results of the traffic operations analysis, the sensitivity analyses were only performed on those locations where the LOS was D or worse.

2.6.1 HCS Input Sensitivity Analysis

As discussed previously in Section 2.4, a few inputs in the HCS were varied from their default values to utilize actual measured data. These inputs were the Free Slow Speed (FFS) and the percent of trucks or buses for the ramp merge/diverge area analysis

For the ramp merge/diverge area analysis there were two FFS inputs, freeway FFS, and ramp FFS. The default freeway and ramp FFS values are 55 MPH and 35 MPH, respectively; however the actual values utilized for the analysis were 65 MPH and 45 MPH, respectively. For the sensitivity analysis the FFS was changed back to the default values for each category and evaluated independently, and then both values were changed to defaults and evaluated. In all three scenarios, utilizing the default values for the FFS did not change the LOS or densities for any of the evaluated ramp merge/diverge locations.

For the mainline and ramp merge/diverge area LOS analyses of all three evaluated scenarios the percent of trucks and buses was increased from 0%, the default value, to a maximum of 2%, an estimated value. For the sensitivity analysis the percent of trucks and buses was both increased to 7%, to reflect the percent truck and buses on the freeway, as well as reduced to 0%, the default value. Based upon the results of the analysis, when the percent of trucks and buses percentage was decreased to 0%, one mainline location, southbound I-25 south of Eagleridge Boulevard, experienced a LOS change (LOS F to LOS E).

Based upon the results of the sensitivity analysis, it is concluded that while actual field data was utilized in several location rather than default HCS inputs, in this instance there was not enough variability

between the two data sets to change the MOE's sufficiently to change the results or conclusions of the analysis.

2.6.2 Variability of PACOG Travel Demand Model Volumes

The other sensitivity analysis that was performed was to determine the sensitivity of the volumes utilized for the traffic operations analysis by increasing or decreasing the volumes from the PACOG travel demand model sufficient to change the current LOS. For this sensitivity analysis, the freeway mainline volume thresholds for LOS C, D, and E were determined and then compared against the Proposed Action mainline volumes to determine the percent volume increase required to meet those LOS thresholds. These volume thresholds are:

- LOS C - ≥ 2,686
- LOS D - ≥ 3,389
- LOS E - ≥ 3,827

Based upon these thresholds, the previously identified locations along I-25 were evaluated to determine the percent increase required to meet the above LOS thresholds. In order for the LOS to change to LOS C, the PACOG freeway volumes would need to vary by -17% to +57%. In order for the LOS to change to LOS D, the PACOG freeway volumes would need to increase by 7% to 66%. In order for the LOS to change to LOS E, the PACOG freeway volumes would need to increase by 21% to 70%. The actual percent change for each location is shown below.

Mainline Segment	Current Volume		LOS C		LOS D		LOS E	
	AM	PM	AM % diff.	PM % diff.	AM % diff.	PM % diff.	AM % diff.	PM % diff.
SB I-25 North of Platteville Blvd	3040	1360	-13%	49%	10%	60%	21%	64%
SB I-25 Dillon Dr to Eagleridge Blvd	3050	1360	-14%	49%	10%	60%	20%	64%
SB I-25 South of Eagleridge Blvd	3150	1500	-17%	44%	7%	56%	18%	61%
NB I-25 South of Eagleridge Blvd	1390	2070	48%	23%	59%	39%	64%	46%
NB I-25 Eagleridge Blvd to Dillon Dr	1390	2140	48%	20%	59%	37%	64%	44%
NB I-25 North of Platteville Blvd	1160	1980	57%	26%	66%	42%	70%	48%

Based upon this sensitivity analysis, there is capacity within the projected I-25 mainline volumes to increase significantly, by 21% to 70%, without the LOS degrading below the accepted LOS threshold, LOS D. Furthermore these results indicate that the actual analysis and conclusions drawn from the No-Action – Design Year (Year 2035) and Proposed Action - Design Year (Year 2035) analyses are valid.

3.0 Crash and Safety Analysis

A safety analysis was performed for the freeway mainline, ramp merge diverge points and interchange intersections to determine if there were any unusual existing safety problems within the study area. Crash data was obtained from CDOT for I-25 from mile post 104.4 to mile post 101.84, or roughly from the Eden Interchange to the Eagleridge Boulevard interchange, CDOT characterizes this segment as an urban highway. Crash data was analyzed from 2001 through 2005, the most recent crash data available from CDOT.

Over the five year period the crash records indicated the following:

Year	ADT	Number of Accidents	Length (Miles)	Crash Rate (MVM)*
2001	30,648	38	2.6	1.33
2002	30,209	28	2.6	0.99
2003	29,305	29	2.6	1.06
2004	29,870	36	2.6	1.29
2005	29,954	31	2.6	1.11
	Total	162	**Average**	1.16

* Crash Rate is shown per Million Vehicle Miles of Travel (MVM)

Over the five year period this 2.6 mile stretch of I-25 exhibited an average of 32 crashes per year, or less than 3 crashes per month. Factoring in ADT and length, this translates into an average crash rate of 1.16 MVM. Based on discussions with CDOT staff traffic, the benchmark crash rate for urban highways is 2.00 MVM. With a crash rate of 1.16, this segment of highway meets the CDOT performance measure for safety. Therefore, it is concluded that there is not a safety issue within the study area.

The crash records were classified by crash type and severity. A summary of the crash history by crash type and severity is shown below.

Crash Severity	
PDO	130
INJ	31
FAT	1
Total	162

Crash Type	
Rear-End	46
Sideswipe	20
Overturning	14
Broadside	10
Approach Turn	3
Other	69
Total	162

As can be seen above, the vast majority of the crashes that occurred within the study area were PDO, or property damage only, with the highest reported crash type being rear end crashes.

Results of the Safety Analysis:

The safety analysis does not indicate any unusual existing safety problems that should be addressed with the Proposed Action.

The Proposed Action will be designed in accordance with current interstate design criteria. Thus, there is no reason to believe that construction of the Proposed Action will result in worsened safety conditions.

The biggest potential for safety concerns within the study area – regardless of whether the proposed improvements are constructed or

not – is if southbound I-25 reaches saturation during the morning peak period in the future. If this happens, backups on the interstate or congestion at the southbound Eagleridge on- and off-ramp merge/diverge points might occur, and crash problems might result.

4.0 The Case for Connectivity

The Purpose and Need describes the need to provide regional connectivity to I-25 to accommodate existing and planned growth along Dillon Drive and Platteville Boulevard west of I-25. This will be evaluated by:

- Comparing the number of travel choices and directness of connection to I-25 of the No Action to the Proposed Action, and
- Comparing the travel volume changes in the Proposed Action to the changes in travel volumes that would be expected if the Proposed Action were to result in improved connectivity.

The Figures (A – H) and Table A referenced in this section 4.0 are found in Appendix D.

4.1 Travel Choices and Directness of Travel

As one can see when looking at the travel choices available for travelers from Pueblo West and areas to the northwest (red arrows), and to the west (green arrows) wanting access to/from I-25, as shown on Figures E - H for the Proposed Action compared to Figures A – D for the No Action, it is clear that:

- The Proposed Action provides more travel choices (Platteville to Frontage Road to I-25 ramps at Dillon [orange route] or Elizabeth to Dillon to I-25 ramps at Dillon [blue route]) for these travelers from Pueblo West and areas to the north and west (red arrows) for those travelers who choose not to use the Elizabeth to Eagleridge to I-25 ramps at Eagleridge (fuscia) route compared to the No Action. With the No Action 2035 and 2017 scenarios, those travelers have just one choice (Dillon to Frontage Road to I-25 ramps at Eden).
- The PA provides more direct connections to I-25. The out-of-direction travel in the NA scenarios to the north (From Dillon along the Frontage Road to the I-25 ramps at Eden in the AM – or south in the PM – shown on Figures A – D required for both the travelers from Pueblo West and areas to the northwest (red arrows) AND the travelers from the west (green arrows) is eliminated with the PA 2017 and 2035 scenarios.

Results of Travel Choices/Directness Analysis:

Comparing the number of route choices that are available to those travelers in Pueblo West and areas west (red arrows) and areas to the west (green arrows) with the Proposed Action scenarios to those available in the No Action scenarios, and comparing the directness of the Proposed Action routes compared to the No Action routes, it is

easily concluded that connectivity is increased with the Proposed Action scenarios based on the route choices available and the directness of access to I-25.

4.2 Travel Volume Changes Experienced vs. Those Expected

If connectivity is indeed increased with the Proposed Action compared to the No Action, several changes in average daily traffic volumes would be expected:

- The southbound on-ramp traffic at Dillon I-25 would increase with the Proposed Action, as more traffic would use this if it were a more direct connection;
- The northbound off-ramp traffic at Dillon/I-25 would increase with the Proposed Action, as more traffic would use this if it were a more direct connection;
- The traffic on the Frontage Road between Platteville/Eden and Dillon would decrease, since all traffic choosing not to use the Elizabeth-Eagleridge (fuscia) route is now not forced to use the Frontage Road to access I-25;
- The total combined traffic volumes of Dillon (between Elizabeth and the Frontage Road) and Platteville (between Elizabeth and the Frontage Road) would increase;
- The total traffic volumes on Elizabeth would decrease, as traffic that used to use Elizabeth to Eagleridge (fuscia) route is drawn to the more direct I-25 south ramps at Dillon via the orange or blue routes;
- The traffic on Eagleridge between Elizabeth and I-25 would decrease, as traffic from the northwest and west that used to use the Elizabeth to Eagleridge (fuscia) route is drawn to the more direct I-25 south ramps at Dillon via the orange or blue routes;
- The southbound on-ramp traffic at Eagleridge/I-25 would decrease, as traffic from the northwest and west that used to use Elizabeth to Eagleridge (fuscia) route is drawn to the more direct I-25 south ramps at Dillon via the orange or blue routes;
- The northbound on-ramp traffic at Eagleridge/I-25 would decrease, as traffic from the northwest and west that used to use the Elizabeth to Eagleridge (fuscia) route is drawn to the more direct I-25 south ramps at Dillon via the orange or blue routes.

Of the above, the clearest indicators as to whether the Proposed Action scenarios increase connectivity or not compared to the No Action scenarios are the first two: Did the south ramp volumes at I-25/Dillon increase with the Proposed Action scenarios compared to the ramp volumes at I-25/Eden in the No Action scenarios? If they do, that means that travelers are naturally drawn to this configuration of the interchange (split diamond with Dillon/I-25 being the south half) moreso than to the current full diamond at Eden/I-25 because of the

increased connectivity, directness of travel, and travel options available with the Proposed Action roadway network.

The other indicators above also provide insight. But, there are many variables having to do with the travel demand model, the assumptions that went into it, and how it operates that make those indicators less reliable, but still useful to quantify and compare.

The 2017 No Action and Proposed Action volumes used for comparison purposes above are found on Figures A thru D. Figures E and F show the average daily traffic volumes which were used to compare the 2035 No Action and Proposed Action volumes.

The result of this analysis is shown on Table A. Most of the indicators, including the primary ramp volume change indicators, are consistent with what would be expected if connectivity were increased with the Proposed Action compared to the No Action. The few indicators that did not change as expected were likely a result of rounding done by the model, or because of the lack of inaccuracy inherent in a regional model. In those cases, the differences in traffic volumes shown compared to those expected were very small (100 vpd or less) at those locations.

Results of Travel Volume Changes vs. Those Expected Analysis:

The traffic volume changes found by comparing the Proposed Action to the No Action are generally and primarily consistent with what would be expected if the reconfiguration of the interchange made by constructing the Proposed Action resulted in better connectivity to/from I-25 and Pueblo West and the areas to the northwest and west. This data supports the conclusion that the connectivity to Pueblo West, the northwest, and west to/from I-25 will be improved if the Proposed Action is constructed.

5.0 Conclusions

5.1 Summary of Traffic Analysis Findings

5.1.1 Proposed Action – Implementation Year (2017)

The results of the traffic operations analysis of the Proposed Action – Implementation Year (2017) condition indicates that the roadway network within the study area has sufficient capacity to accommodate the Proposed Action – Implementation Year (2017) volume of traffic during the morning and evening peak periods at a LOS C or better. In fact, there is an overall improvement in freeway mainline, ramp/merge diverge and intersection operations with the Proposed Action Implementation Year (2017) alternative compared to the No-Action Implementation Year (2017) alternative.

Compared to the No-Action Implementation Year (2017) scenario, the Proposed Action – Implementation Year (2017) results show that:

- In no instance is the LOS of any freeway segment, ramp merge/diverge point, or intersection worse in the Proposed Action (2017) scenario compared to the No-Action (2017) scenario.
- In one instance the freeway mainline LOS is improved in the Proposed Action – Implementation Year (2017) scenario compared to the No-Action Implementation Year (2017) scenario.
- In one instance the ramp merge/diverge LOS is improved in the Proposed Action – Implementation Year (2017) scenario compared to the No-Action Implementation Year (2017) scenario.
- In one instance, the intersection LOS is improved in the Proposed Action – Implementation Year (2017) scenario compared to the No-Action Implementation Year (2017) scenario.
- In all other instances, the LOS remains the same.

5.1.2 Proposed Action – Design Year (2035)

The results of the traffic operations analysis of the Proposed Action Design Year (2035) condition indicates that the volume of traffic on southbound I-25 within the study area begins to exceed the capacity of the roadway network at three locations (southbound I-25 between Dillon Drive and Eagleridge Boulevard; southbound I-25 south of Eagleridge Boulevard; and the southbound off- and on- ramp diverge/merge points at Eagleridge Boulevard) during the morning peak period.

Except as pointed out above, the remainder of the freeway segments, ramp merge/diverge areas and intersections in the study area are anticipated to operate acceptably at LOS D or better during both the morning and evening peak periods. The results indicate that more capacity is required on southbound I-25. The intersection of Eagleridge Boulevard / Elizabeth Street needs improvement to accommodate the volume of traffic anticipated in No-Action – Design Year (2035) scenario. This intersection improvement is accomplished with the Proposed Action – Design Year (2035) alternative. The remainder of the roadway network within the study area is anticipated to have sufficient capacity to accommodate the volume of traffic anticipated in Year 2035.

Compared to the No-Action Design Year (2035) scenario, the Proposed Action – Design Year (2035) results show that:

- In no instance is the LOS of any freeway segment, ramp merge/diverge point, or intersection worse in the Proposed Action (2035) scenario compared to the No-Action (2035) scenario.

- In one instance the ramp merge/diverge LOS is improved in the Proposed Action – Design Year (2035) scenario compared to the No-Action Design Year (2035) scenario.
- In five instances, the intersection LOS is improved in the Proposed Action – Design Year (2035) scenario compared to the No-Action – Design Year (2035) scenario.
- In all other instances, the LOS remains the same.

5.2 Summary of Connectivity Findings

The number of route choices and directness of routes to/from I-25 and the northwest and west in the 2017 and 2035 No Action scenario were compared with the number of route choices and directness of routes to/from I-25 with the 2017 and 2035 Proposed Action scenario. It was concluded that the Proposed Action provides more, and more direct, travel routes to/from I-25 and areas to the northwest and west.

Traffic volume changes that result from the Proposed Action were compared to traffic volume changes that would be expected if the regional connectivity were increased. The traffic volume changes with the Proposed Action were in alignment with those that should be expected. As a result of this analysis, it is concluded that the Proposed Action provides the improved regional connectivity desired to accommodate existing and planned growth along Dillon Drive and Platteville Boulevard west of I-25, and thus satisfies the Purpose and Need.

5.3 Overall Conclusion

Therefore, it is concluded that constructing the Proposed Action will result in improved freeway, ramp merge/diverge and intersection operations compared to the No-Action - Implementation Year (2017) alternative and improved ramp merge/diverge and intersection operations compared to the No Action - Design Year (2035) alternative.

It is also concluded that constructing the Proposed Action will result in better regional connectivity and more direct connections between I-25 and Pueblo West and areas to the west.

Given this information, it is concluded that the Proposed Action satisfies the FHWA and CDOT requirements in the IAR and SLS (respectively) because the Proposed Action to modify the existing full interchange at Platteville Boulevard to a split diamond interchange at Platteville Boulevard and Dillon Drive can be accomplished in a manner that "… does not have a significant adverse impact on the safety and operation of the Interstate facility based on an analysis of current and future traffic."

And, based on the connectivity analysis, it is further concluded that the Proposed Action satisfies the Purpose and Need for improved

regional connectivity that is desired to accommodate existing and planned growth along Dillon Drive and Platteville Boulevard west of I-25.

Tables

Table 1 – AM Peak Hour Mainline, Ramp and Intersection Level of Service

Table 2 – PM Peak Hour Mainline, Ramp and Intersection Level of Service

Table 1. I-25 AM Peak Hour Mainline, Ramp and Intersection Level of Service

		Year 2008	Year 2017			Year 2035		
		Existing	No-Action	Proposed Action	Change from No-Action to Proposed Action	No-Action	Proposed Action	Change from No-Action to Proposed Action
Mainline Segment								
SB I-25 North of Platteville Blvd		A	B	B		D	D	
NB I-25 North of Platteville Blvd		A	B	A	+	B	B	
SB I-25 Platteville Blvd to Eagleridge Blvd		A	B	-		E	-	
NB I-25 Eagleridge Blvd to Platteville Blvd		A	A	-		B	-	
SB I-25 Dillon Dr to Eagleridge Blvd		-	-	B		-	E	
NB I-25 Eagleridge Blvd to Dillon Dr		-	-	A		-	B	
SB I-25 South of Eagleridge Blvd		B	C	C		F	F	
NB I-25 South of Eagleridge Blvd		A	B	B		C	C	
Ramp Merge/Diverge								
SB Platteville Blvd Off Ramp		A	B	B		D	D	
NB Platteville Blvd On Ramp		B	B	B		B	B	
SB Platteville Blvd On Ramp		B	B	-		D	-	
NB Platteville Blvd Off Ramp		B	B	-		C	-	
SB Dillon Dr On Ramp		-	-	B		-	D	
NB Dillon Dr Off Ramp		-	-	B		-	B	+
SB Eagleridge Blvd Off Ramp		B	B	B		F	F	
NB Eagleridge Blvd On Ramp		B	B	B		B	B	
SB Eagleridge Blvd On Ramp		B	C	C		F	F	
NB Eagleridge Blvd Off Ramp		B	B	B		C	C	
Intersection								
Eagleridge Blvd	N Elizabeth St	B	B	B		E	D	+
	Southbound Ramps	A	A	A		B	B	
	Northbound Ramps	B	A	A		C	C	
	Dillon Dr*	A	B	B		C	B	+
Platteville Blvd (Existing Eden)	Frontage Road	A	A	A		A	A	
	Southbound Ramps	A	A	A		A	A	
	Northbound Ramps	A	A	A		B	A	+
Dillon Dr	N Elizabeth St*	A	B	B		C	C	
	Southbound On Ramp	-	-	A		-	B	
	Northbound Off Ramp	-	-	A		-	A	

Note: * Dillon Drive/Eagleridge Boulevard and N Elizabeth Street/Dillon Drive are signalized intersection in all scenarios expect existing.

+ Designates an improvement in LOS in Proposed Action Alternative as compared to No-Action Alternative

- Designates a degradation in LOS in Proposed Action Alternative as compared to No-Action Alternative

Designates no change to the LOS in Proposed Action Alternative as compared to No-Action Alternative

Table 2. I-25 PM Peak Hour Mainline, Ramp and Intersection Level of Service

		Year 2008	Year 2017			Year 2035		
		Existing	No-Action	Proposed Action	Change from No-Action to Proposed Action	No-Action	Proposed Action	Change from No-Action to Proposed Action
Mainline Segment								
SB I-25 North of Platteville Blvd		B	B	B		B	B	
NB I-25 North of Platteville Blvd		B	B	B		C	C	
SB I-25 Platteville Blvd to Eagleridge Blvd		B	B	-		B	-	
NB I-25 Eagleridge Blvd to Platteville Blvd		B	B	-		C	-	
SB I-25 Dillon Dr to Eagleridge Blvd		-	-	B		-	B	
NB I-25 Eagleridge Blvd to Dillon Dr		-	-	B		-	C	
SB I-25 South of Eagleridge Blvd		B	B	B		C	C	
NB I-25 South of Eagleridge Blvd		B	B	B		C	C	
Ramp Merge/Diverge								
SB Platteville Blvd Off Ramp		B	B	B		B	B	
NB Platteville Blvd On Ramp		B	B	B		C	C	
SB Platteville Blvd On Ramp		B	B	-		B	-	
NB Platteville Blvd Off Ramp		B	B	-		C	-	
SB Dillon Dr On Ramp		-	-	A	+	-	B	
NB Dillon Dr Off Ramp		-	-	B		-	C	
SB Eagleridge Blvd Off Ramp		B	B	B		B	B	
NB Eagleridge Blvd On Ramp		B	B	B		C	C	
SB Eagleridge Blvd On Ramp		B	B	B		C	C	
NB Eagleridge Blvd Off Ramp		B	B	B		D	D	
Intersection								
Eagleridge Blvd	N Elizabeth St	B	B	B		C	C	
	Southbound Ramps	A	A	A		B	A	+
	Northbound Ramps	B	B	A	+	B	B	
	Dillon Dr*	D	B	B		C	C	
Platteville Blvd (Existing Eden)	Frontage Road	A	A	A		A	A	
	Southbound Ramps	A	A	A		A	A	
	Northbound Ramps	A	A	A		B	A	+
Dillon Dr	N Elizabeth St*	A	B	B		C	C	
	Southbound On Ramp	-	-	A		-	C	
	Northbound Off Ramp	-	-	A		-	A	

Note: *Dillon Drive/Eagleridge Boulevard and N Elizabeth Street/Dillon Drive are signalized intersection in all scenarios expect existing.

+ Designates an improvement in LOS in Proposed Action Alternative as compared to No-Action Alternative

- Designates a degradation in LOS in Proposed Action Alternative as compared to No-Action Alternative

Designates no change to the LOS in Proposed Action Alternative as compared to No-Action Alternative

Figures

Figure 1 – Vicinity Map

Figure 2 – Study Area

Figure 3 – Proposed Action

Figure 4 – Alternatives Evaluated

Figure 5 – Alternatives Screening

Figure 6 – Existing (Year 2008) Study Area Average Daily Traffic Volumes

Figure 7 – Existing (Year 2008) Study Area Laneage

Figure 8 – Existing (Year 2008) Study Area Peak Hour Mainline I-25 Volume and Arterial Turning Movements

Figure 9 – Existing (Year 2008) Study Area Mainline I-25, Ramp and Intersection Level of Service

Figure 10 – No-Action – Implementation Year (Year 2017) Study Area Average Daily Traffic Volumes

Figure 11 – No-Action – Implementation Year (Year 2017) Study Area Laneage

Figure 12 – No-Action – Implementation Year (Year 2017) Study Area Peak Hour Mainline I-25 Volume and Arterial Turning Movements

Figure 13 – No-Action – Implementation Year (Year 2017) Study Area Mainline I-25, Ramp and Intersection Level of Service

Figure 14 – Proposed Action - Implementation Year (Year 2017) Study Area Average Daily Traffic Volumes

Figure 15 – Proposed Action - Implementation Year (Year 2017) Study Area Laneage

Figure 16 – Proposed Action - Implementation Year (Year 2017) Study Area Peak Hour Mainline I-25 Volume and Arterial Turning Movements

Figure 17 – Proposed Action - Implementation Year (Year 2017) Study Area Mainline I-25, Ramp and Intersection Level of Service

Figure 18 – No-Action – Design Year (Year 2035) Study Area Average Daily Traffic Volumes

Figure 19 – No-Action – Design Year (Year 2035) Study Area Laneage

Figure 20 – No-Action – Design Year (Year 2035) Study Area Peak Hour Mainline I-25 Volume and Arterial Turning Movements

Figure 21 – No-Action – Design Year (Year 2035) Study Area, Mainline I-25, Ramp and Intersection Level of Service

Figure 22 – Proposed Action - Design Year (Year 2035) Study Area Average Daily Traffic Volumes

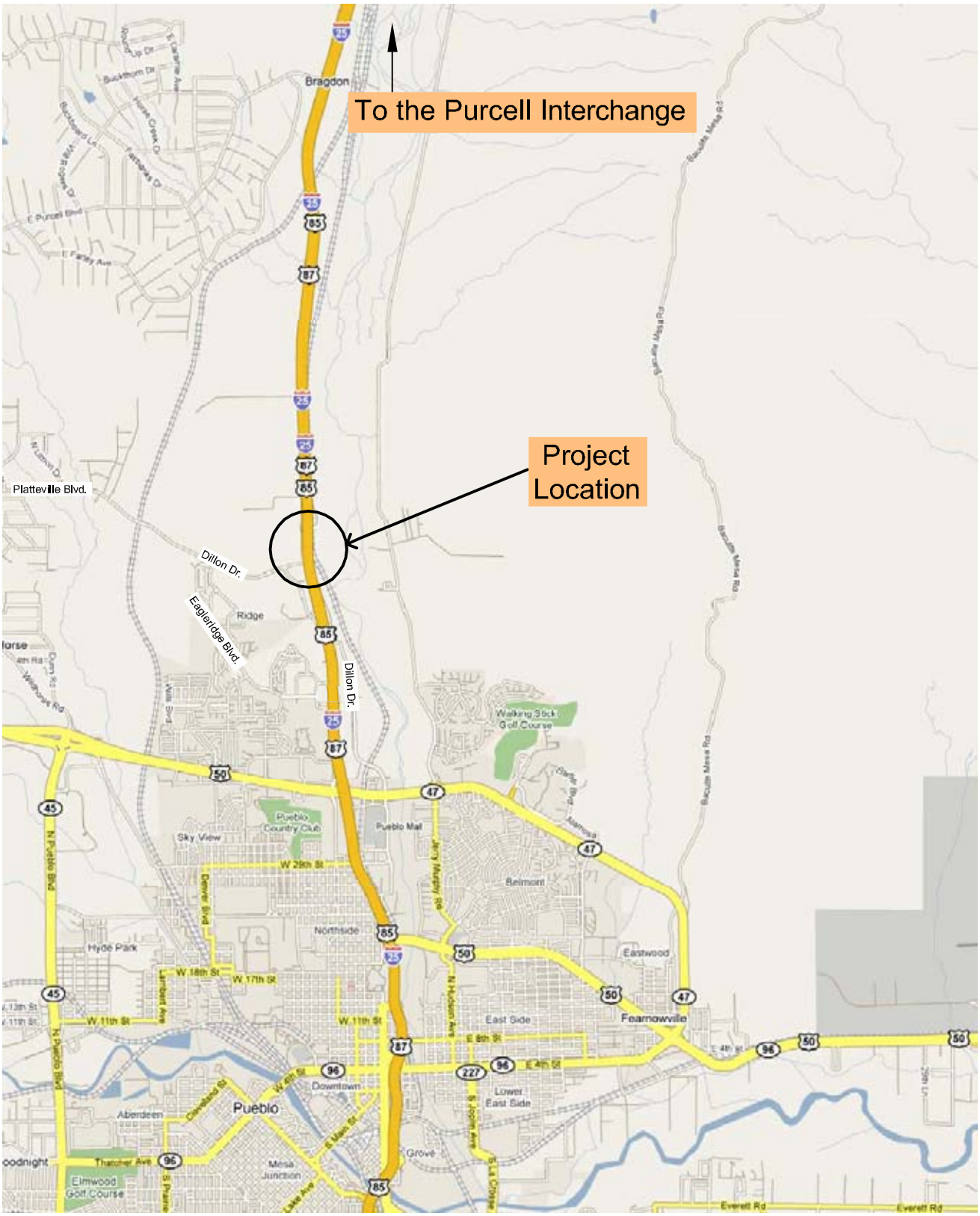
Figure 23 – Proposed Action - Design Year (Year 2035) Study Area Laneage

Figure 24 – Proposed Action - Design Year (Year 2035) Study Area Peak Hour Mainline I-25 Volume and Arterial Turning Movements

Figure 25 – Proposed Action - Design Year (Year 2035) Study Area Mainline I-25, Ramp and Intersection Level of Service

Vicinity Map

LEGEND



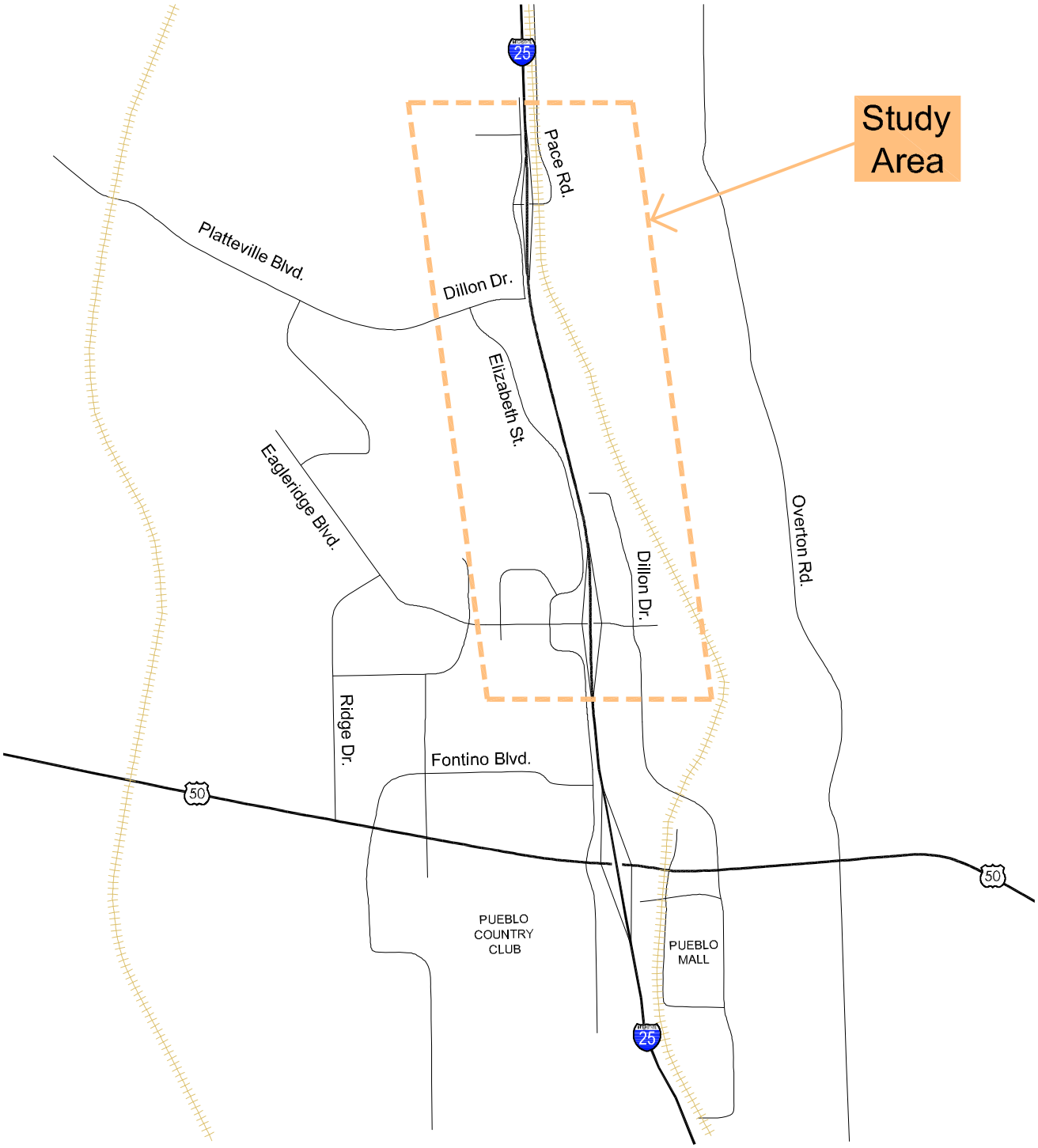
I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

103325-PUEBL
April 5, 2010

FIGURE 1

Study Area

LEGEND



1"=3000'

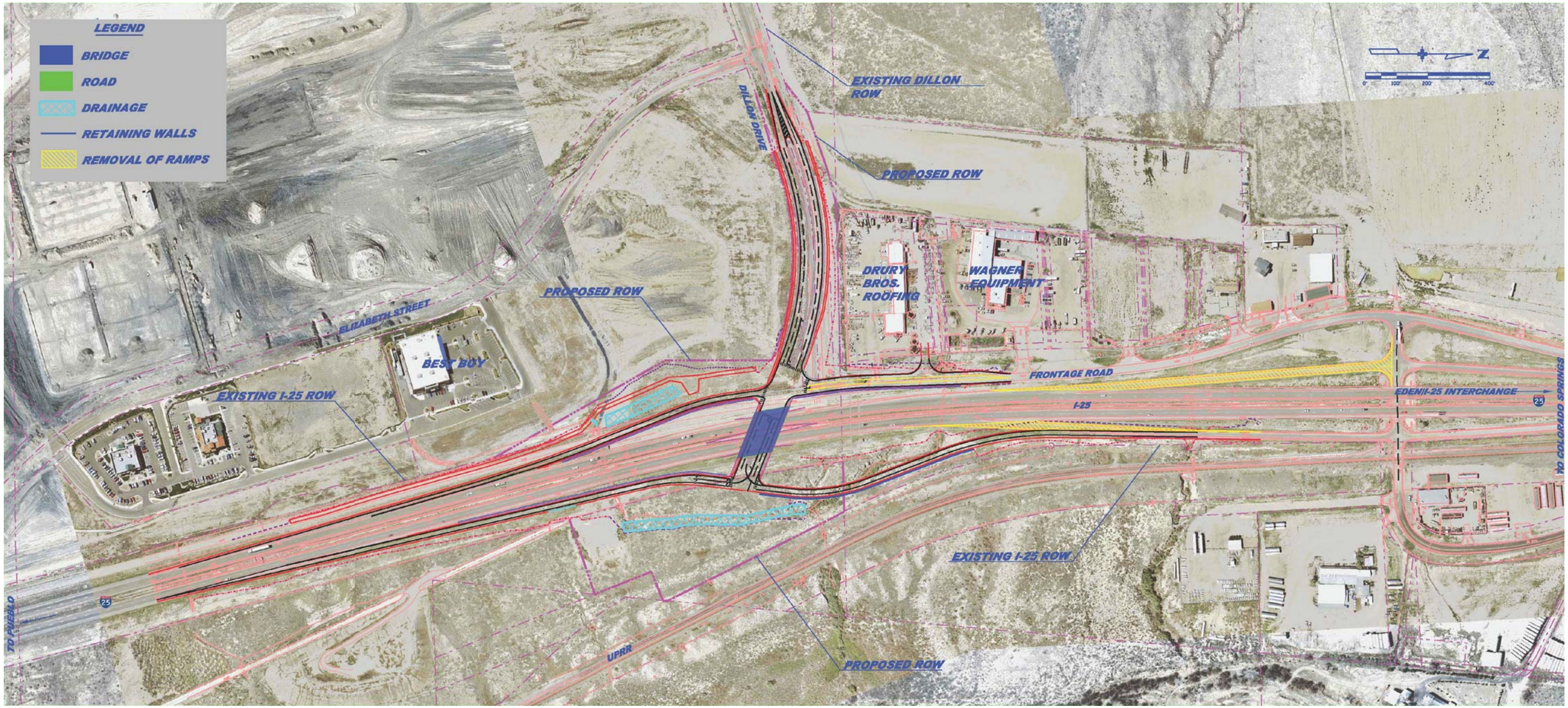
I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

103325-PUEBL
April 5, 2010

FIGURE 2

Proposed Action

LEGEND



NTS

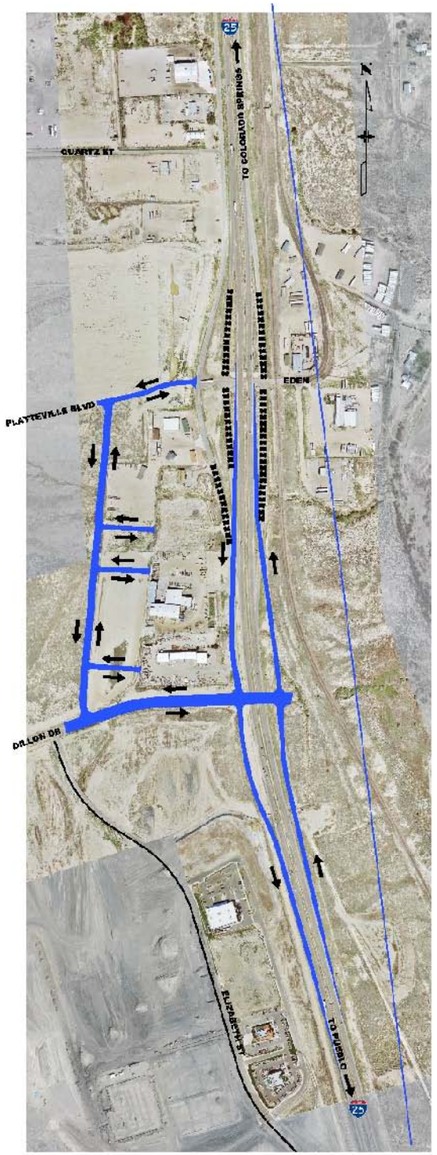
I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

103325-PUEBL
April 5, 2010

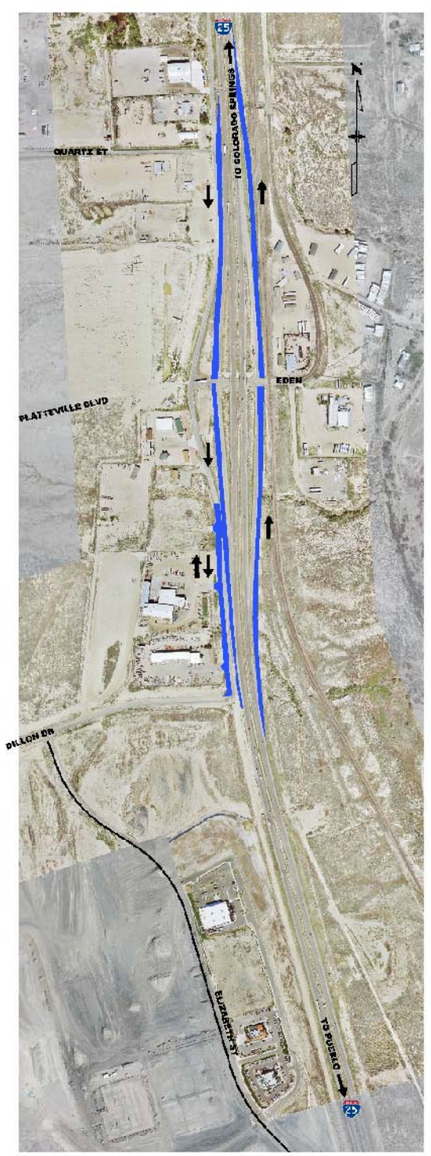
FIGURE 3

Alternatives Evaluated

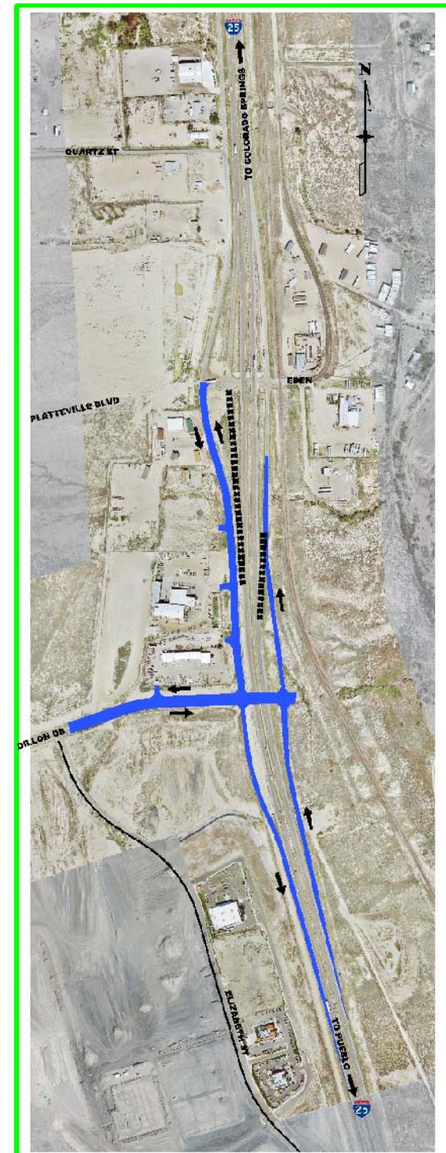
LEGEND



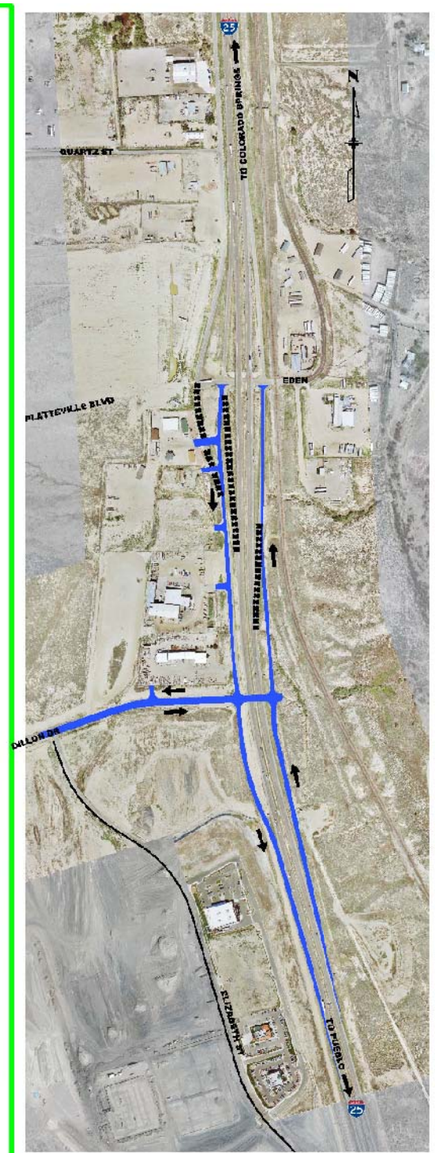
ALTERNATIVE 1
FULL DIAMOND
AT DILLON



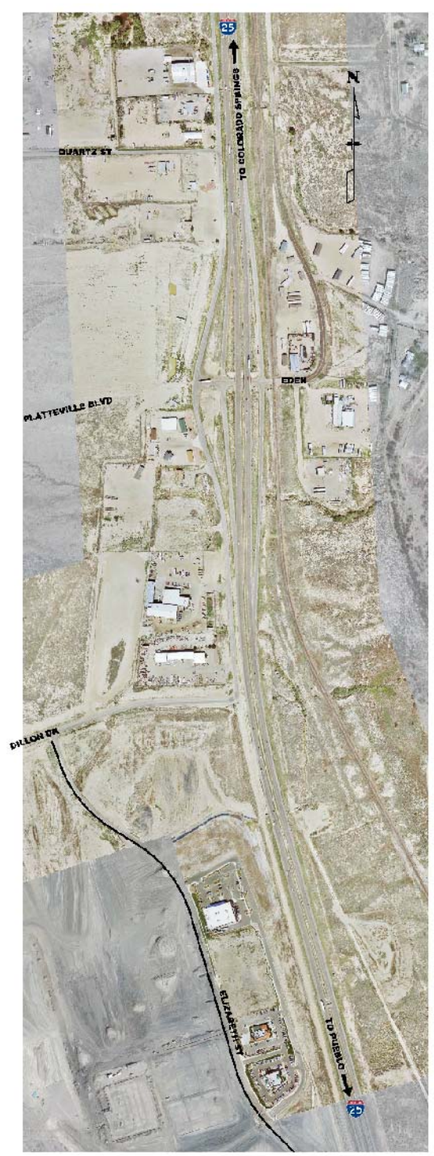
ALTERNATIVE 2
FULL DIAMOND AT
PLATTEVILLE/EDEN



ALTERNATIVE 3
SPLIT DIAMOND WITH
TWO-WAY FRONTAGE ROAD
PROPOSED ACTION



ALTERNATIVE 4
SPLIT DIAMOND WITH
ONE-WAY FRONTAGE ROAD



ALTERNATIVE 5
NO ACTION

NTS

Alternatives Screening

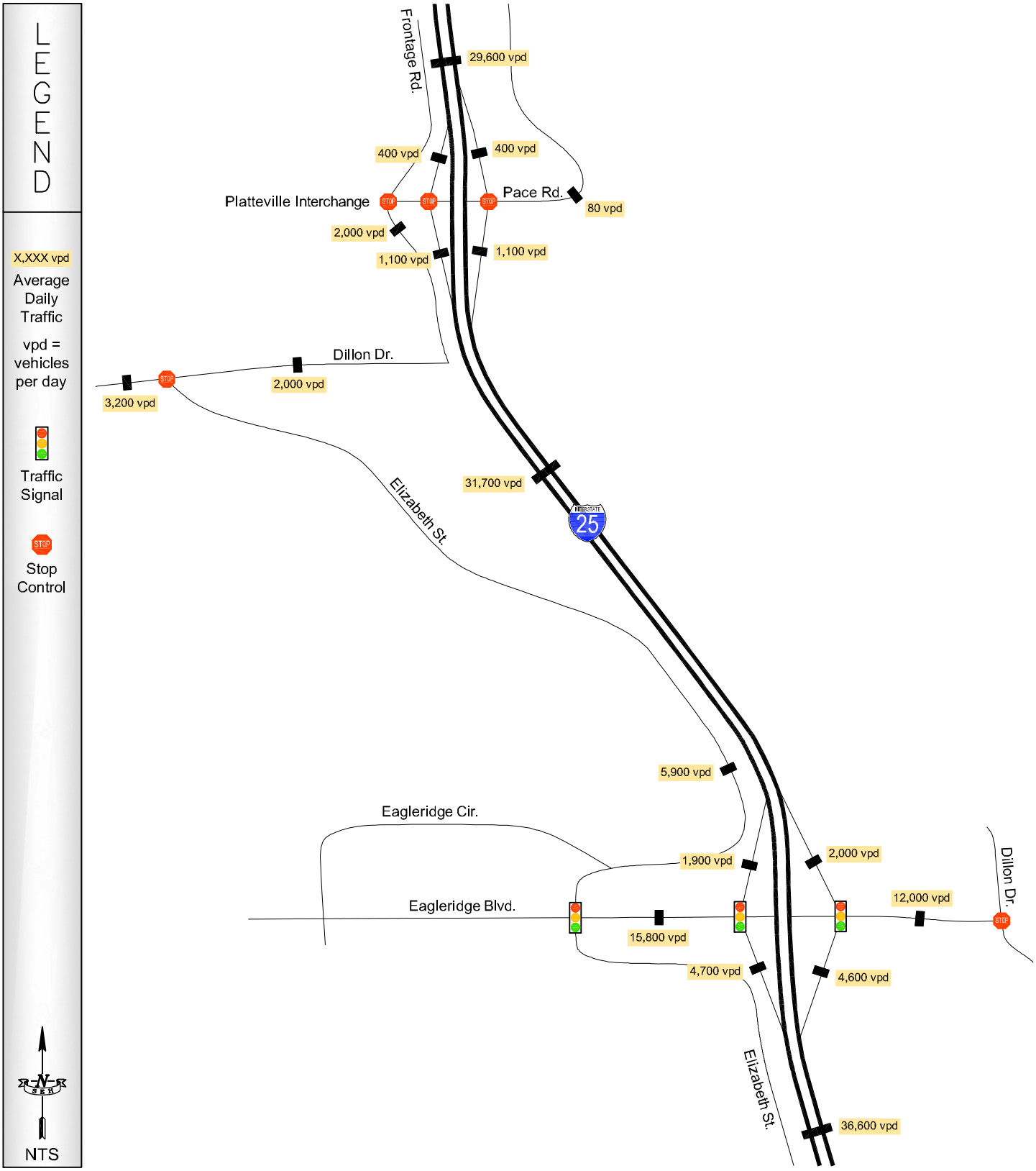
LEGEND

Design Criteria	Alternative 1 Full Diamond at Dillon	Alternative 2 Full Diamond at Eden	Alternative 3 Split Diamond with Two-Way Frontage Road	Alternative 4 Split Diamond with One-Way Pairs	No Build
Mobility					
Does this accommodate existing and planned growth along Dillon/Platteville Blvd?	Yes Provides direct access to I-25.	No Does not improve or provide direct access to I-25.	Yes Provides direct access to I-25.	Yes Provides direct access to I-25.	No Does not improve or provide direct access to I-25.
Does this provide logical system connectivity?	No Removes access to I-25 at Eden.	No Does not eliminate out of direction travel between I-25 and Platteville/Dillon.	Yes Maintains access to I-25 at Eden and provides new access to I-25 at Dillon. Eliminates out of direction travel between I-25 and Platteville/Dillon.	Yes Maintains access to I-25 at Eden and provides new access to I-25 at Dillon. Eliminates out of direction travel between I-25 and Platteville/Dillon.	No Does not eliminate out of direction travel between I-25 and Platteville/Dillon.
Does this improve residential and commercial accessibility to and from I-25?	No Removes access to I-25 at Eden. Provides direct access to I-25 for traffic along Platteville Blvd/Dillon Dr.	No Access remains unchanged.	Yes Requires out of direction travel to access businesses east of I-25. Provides direct access to I-25 for traffic along Platteville Blvd/Dillon Dr	Yes Provides direct access to I-25 for traffic along Platteville Blvd/Dillon Dr	No Access remains unchanged.
Does this maintain existing access to local businesses?	No Shifts access to businesses east of I-25 to the south and requires out of direction travel from south. Relocates access to businesses along frontage road northwest of I-25/Dillon to west side of properties.	Yes Access remains unchanged.	Yes Modifies access to b businesses along frontage rd west of I-25.	No Access to businesses east of Eden remains unchanged. Reduces access to businesses along frontage road to one way access.	Yes Access remains unchanged.
Design and Construction					
Does this meet interstate access requirements?	Yes	Yes	Yes	Yes	Yes
Is this financially prudent?	No Cost would not improve access.	No Cost would not improve access.	Yes Efficient use of funds.	Yes Efficient use of funds.	Yes Requires no funding.
Can this be expanded to accommodate future improvements to I-25 and local streets?	Yes I-25 can be widened to the inside, bridge accommodates future Dillon connection to the east.	No I-25 can be widened to the inside, does not accommodate future Dillon connection to the east.	Yes I-25 can be widened to the inside, bridge accommodates future Dillon connection to the east.	Yes I-25 can be widened to the inside, bridge accommodates future Dillon connection to the east.	Yes Does not preclude future improvements.
Environmental					
Can environmental impacts be avoided or mitigated?	Yes Requires the most property acquisition. Minor impacts to waters of the US.	Yes Requires the least amount of property acquisition among the build alternatives.	Yes Requires the same amount of property acquisition as Alternative 4. Minor impacts to waters of the US.	Yes Requires the same amount of property acquisition as Alternative 3. Minor impacts to waters of the US.	Yes No environmental effects.
Community Values					
Is this consistent with local plans? i.e. 2035 Long Range Transportation Plan (2035 LRTP)	No 2035 LRTP shows access to I-25 at both Eden and Dillon.	No 2035 LRTP shows access to I-25 at both Eden and Dillon.	Yes 2035 LRTP shows access to I-25 at both Eden and Dillon.	Yes 2035 LRTP shows access to I-25 at both Eden and Dillon.	No Local plans identify additional access to I-25.

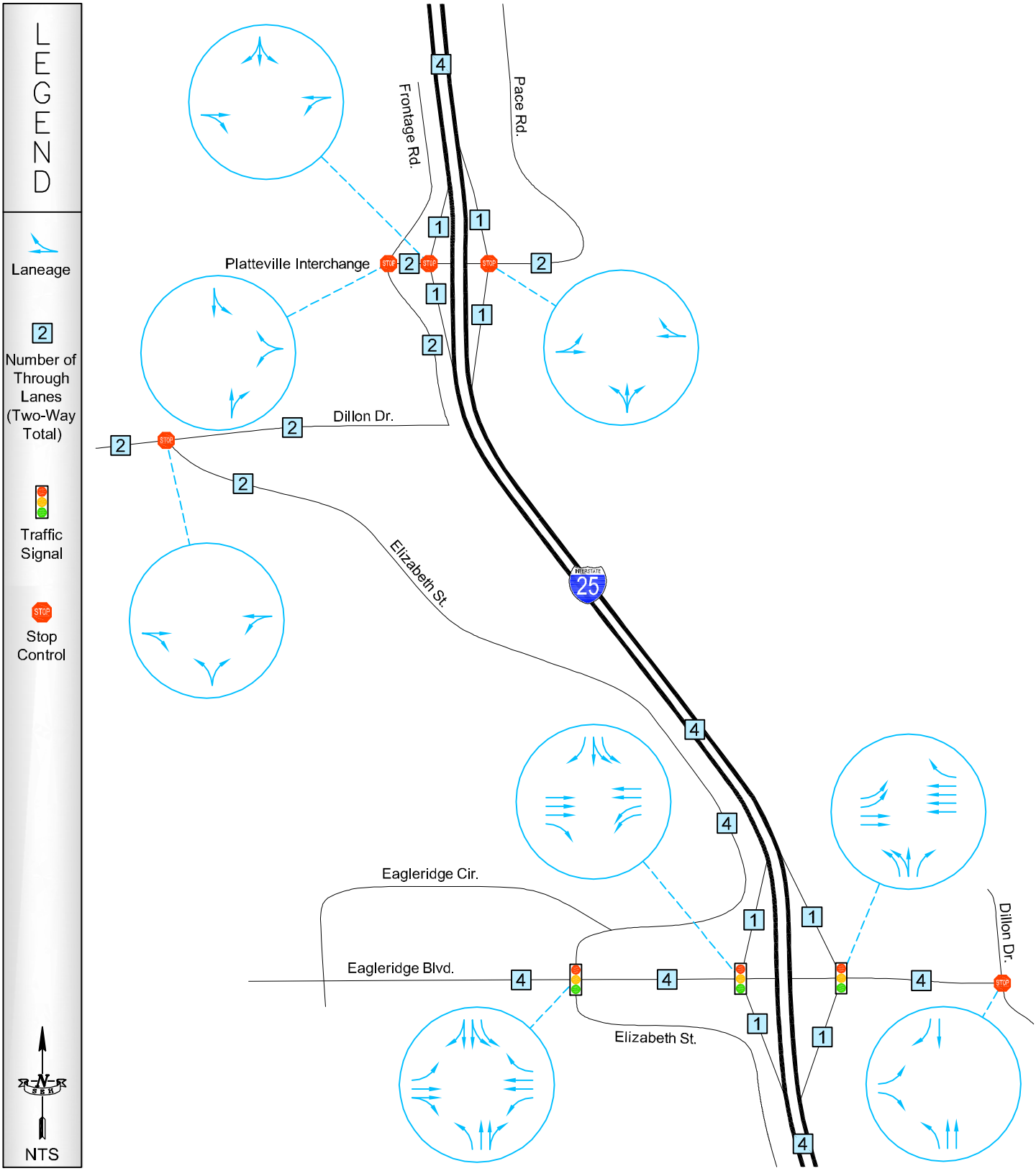
Proposed Action

NTS

Existing (Year 2008)
Study Area
Average Daily Traffic Volumes



Existing (Year 2008) Study Area Laneage

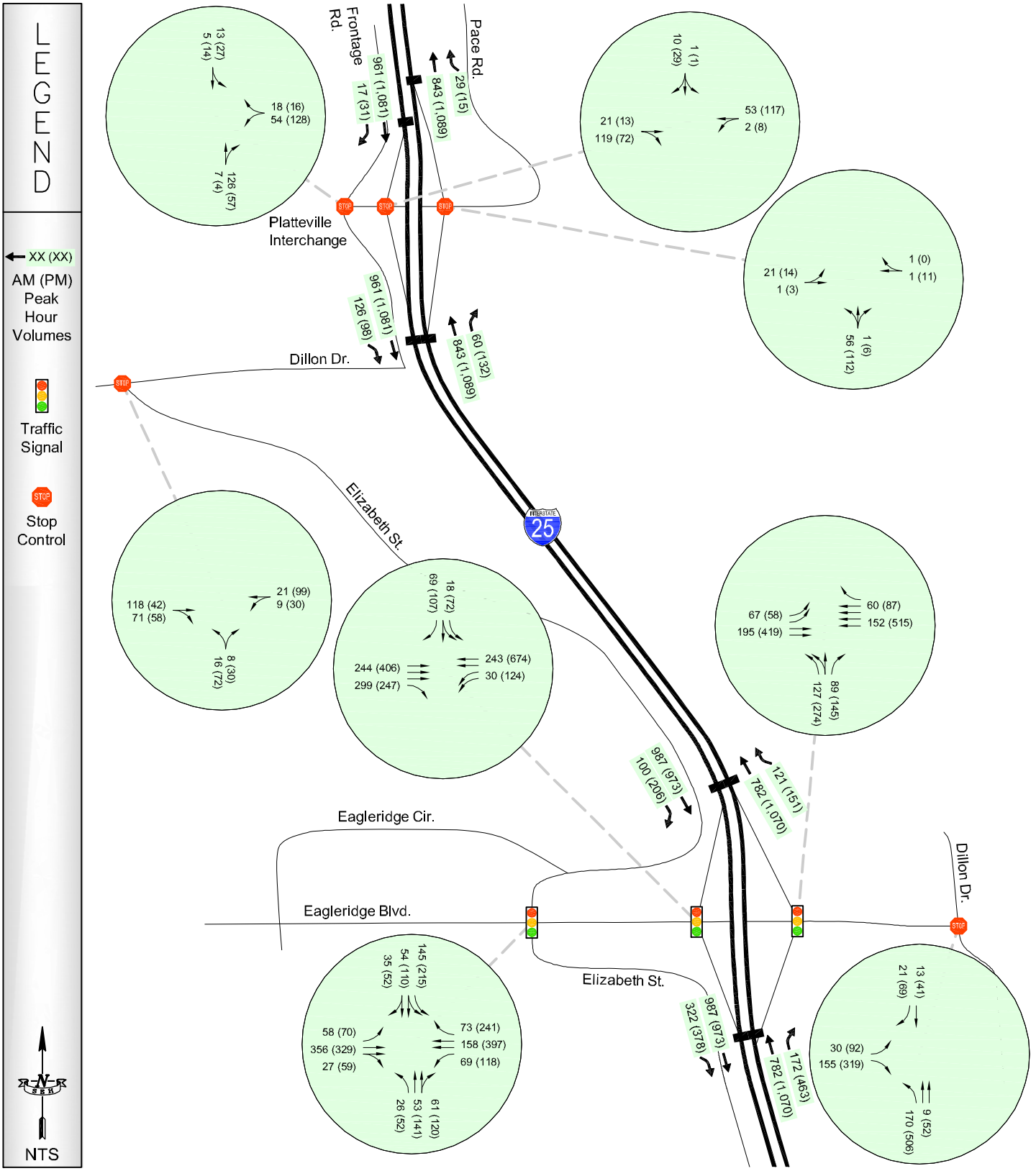


I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

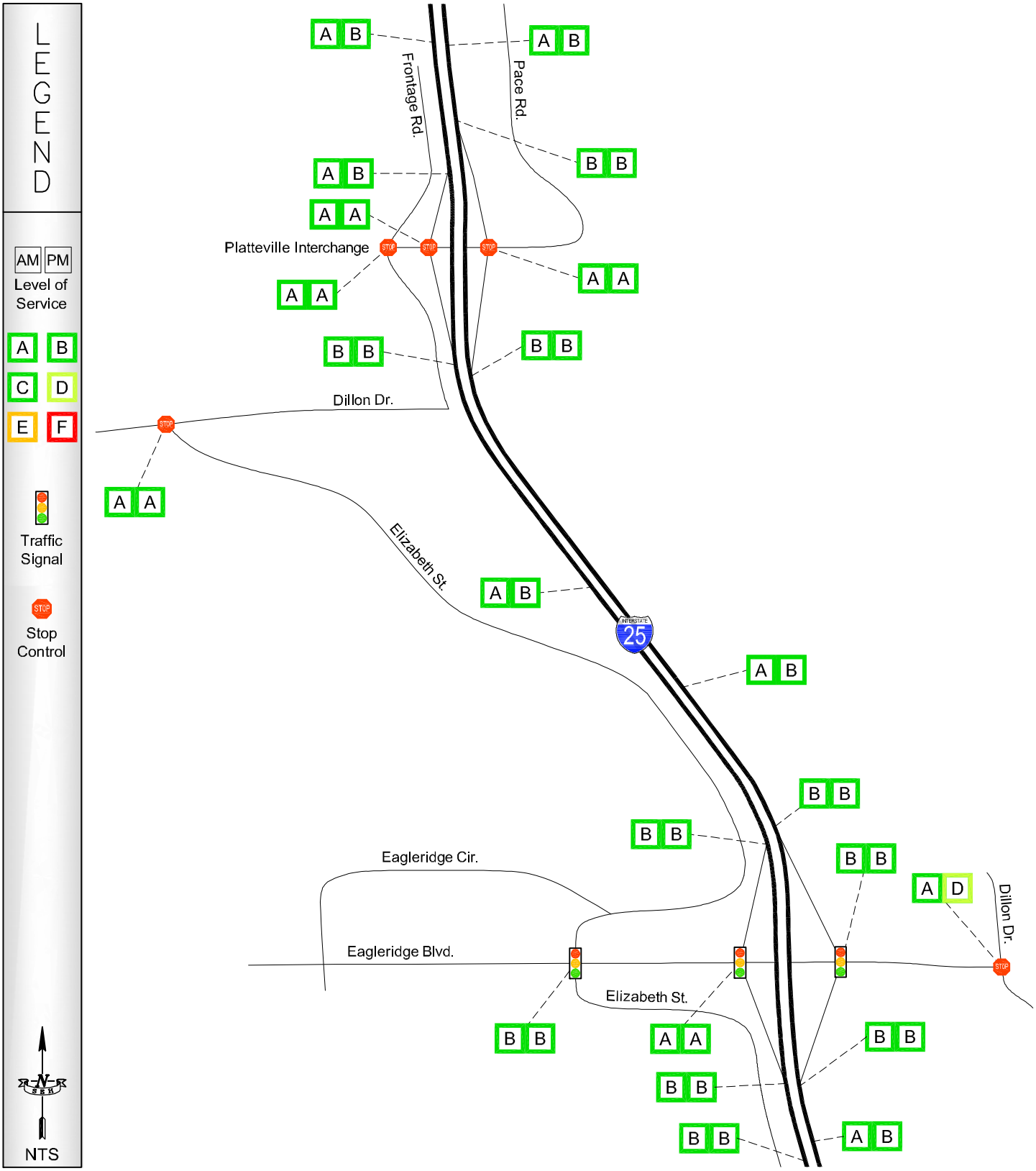
103325-PUEBL
April 5, 2010

FIGURE 7

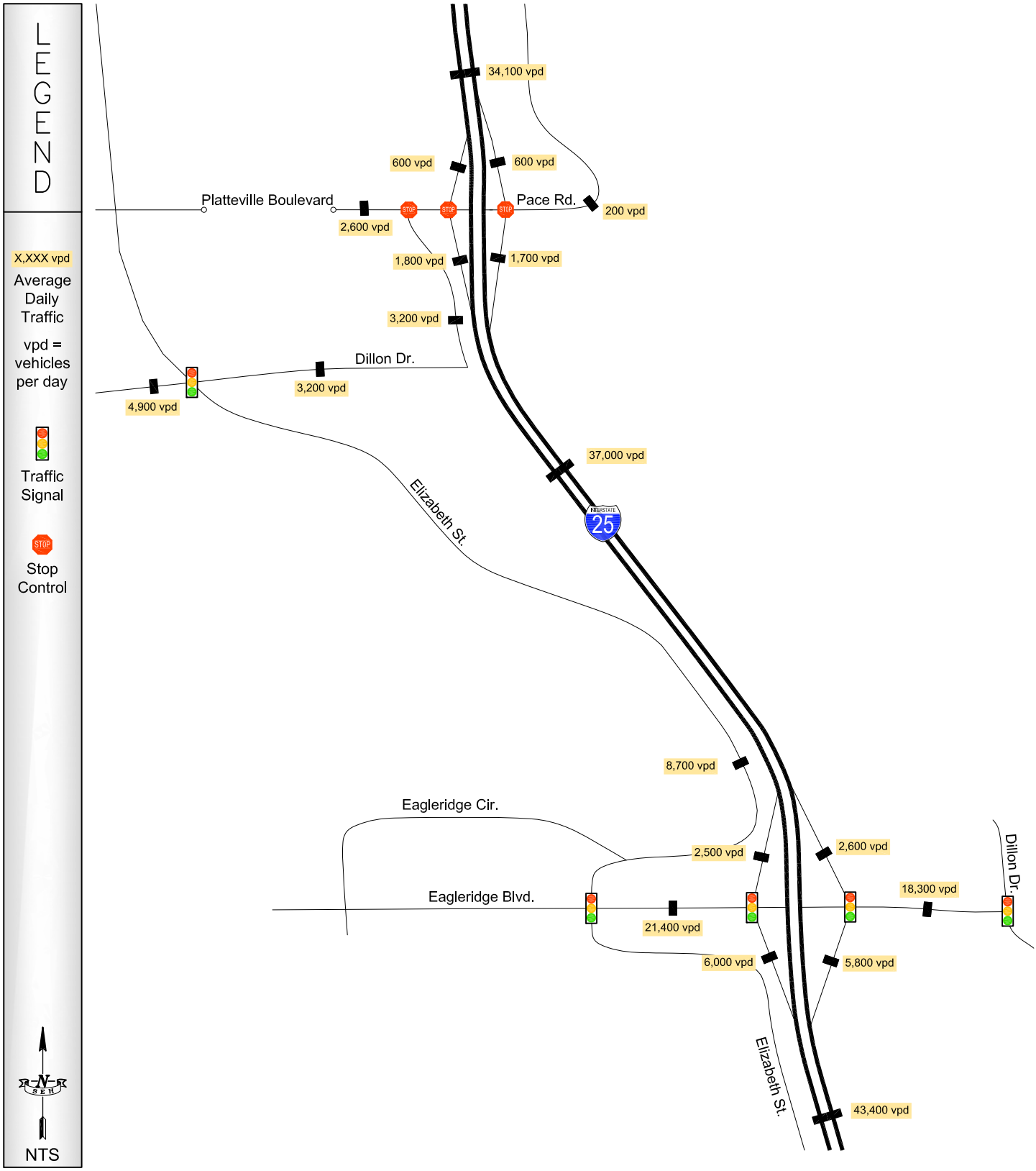
Existing (Year 2008)
Study Area
Peak Hour Mainline I-25 Volume & Arterial Turning Movements



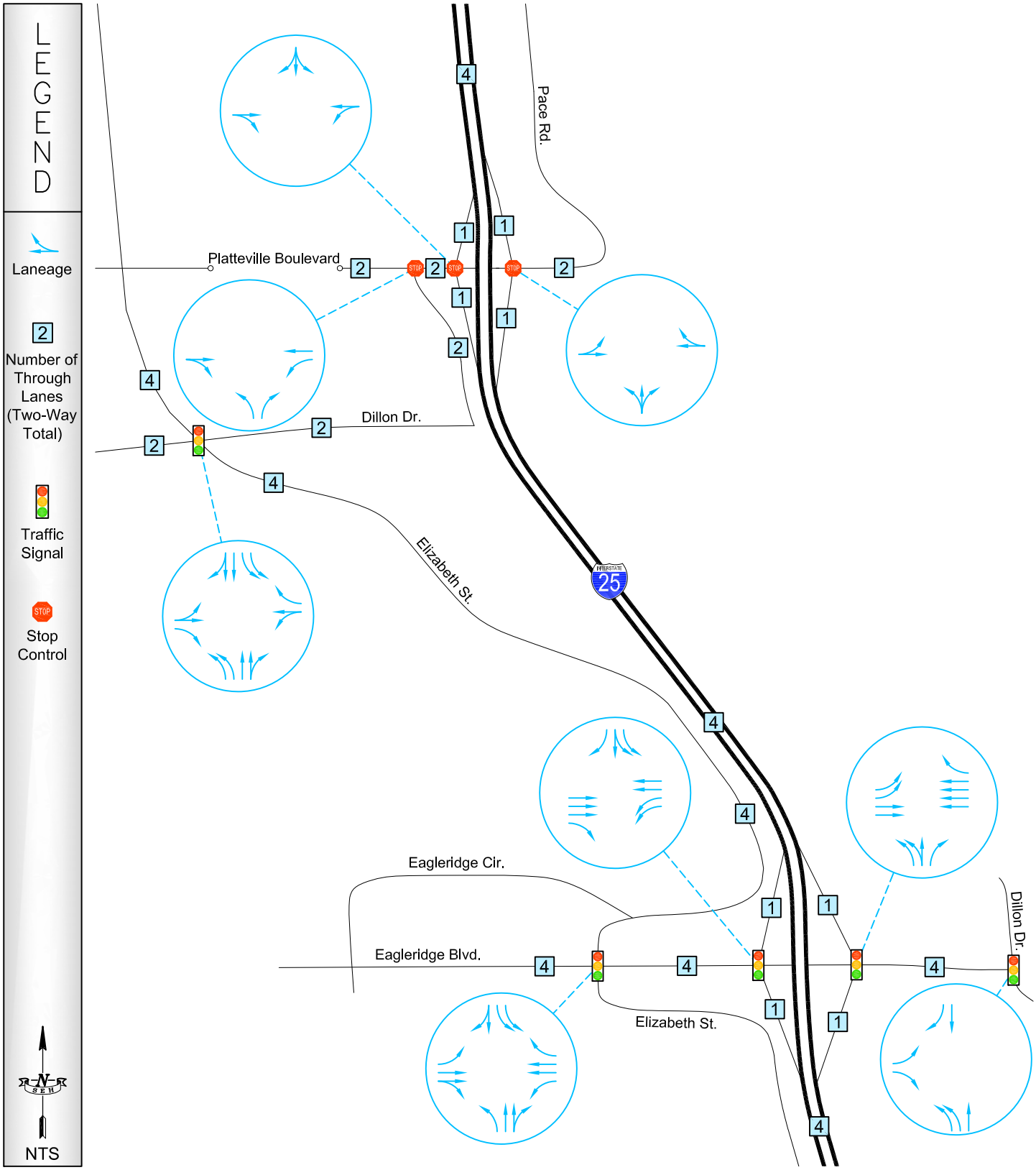
Existing (Year 2008)
Study Area
Mainline I-25, Ramp and Intersection Level of Service



No-Action - Implementation Year (2017)
Study Area
Average Daily Traffic Volumes



No-Action - Implementation Year (2017)
Study Area
Laneage

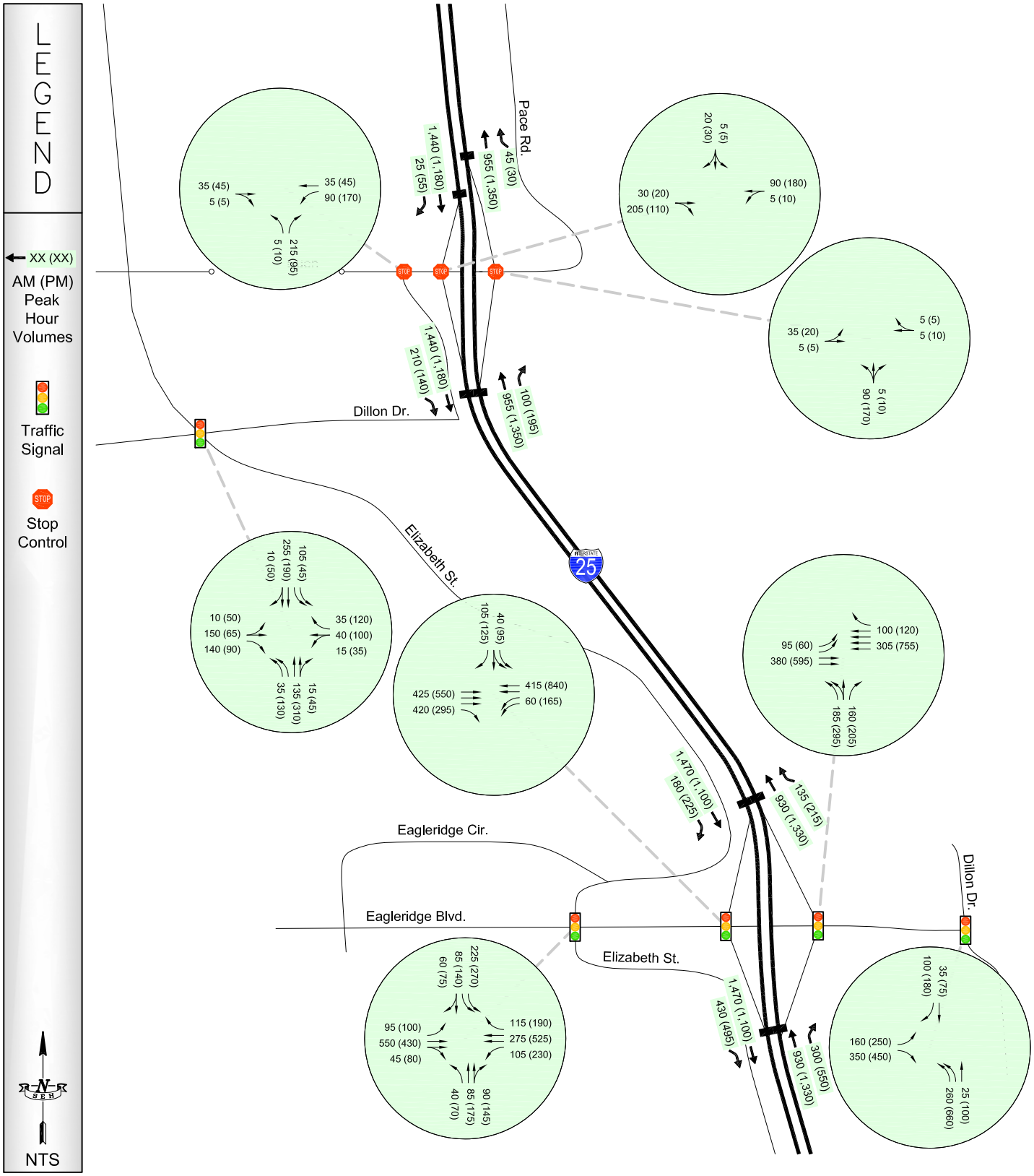


I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

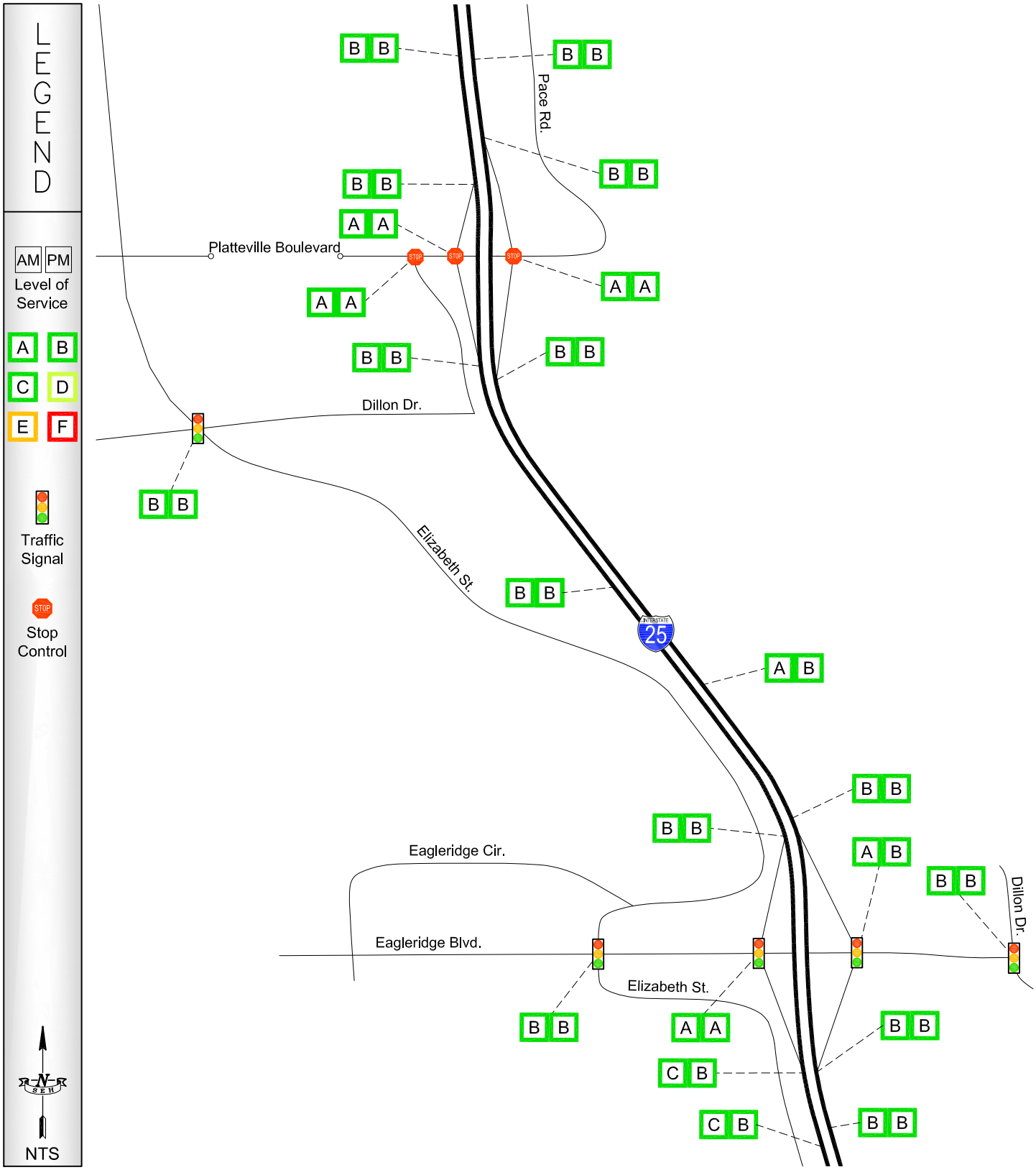
103325-PUEBL
May 14, 2010

FIGURE 11

No-Action - Implementation Year (2017)
Study Area
Peak Hour Mainline I-25 Volume & Arterial Turning Movements



No-Action - Implementation Year (2017)
Study Area
Mainline I-25, Ramp and Intersection Level of Service

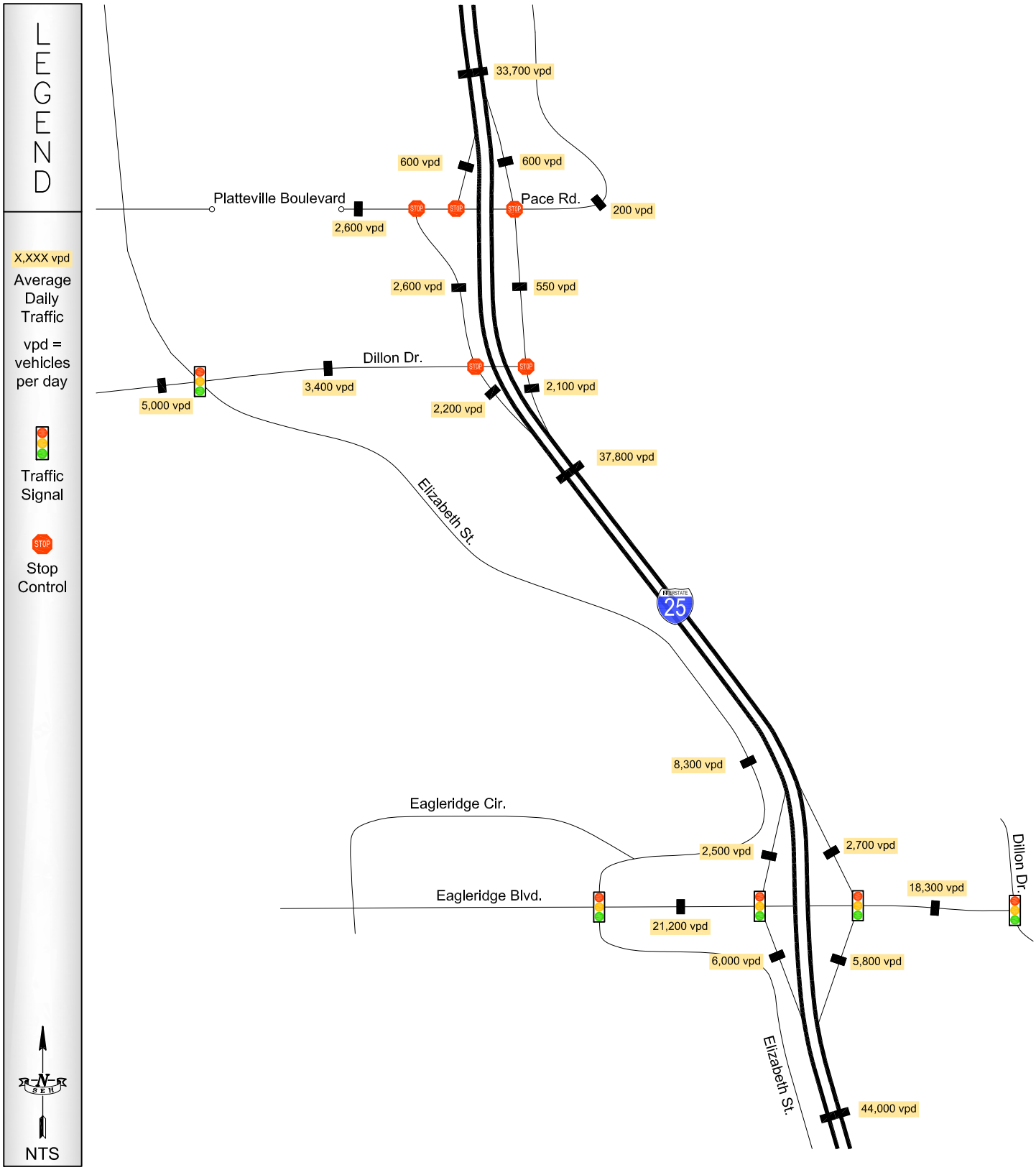


I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

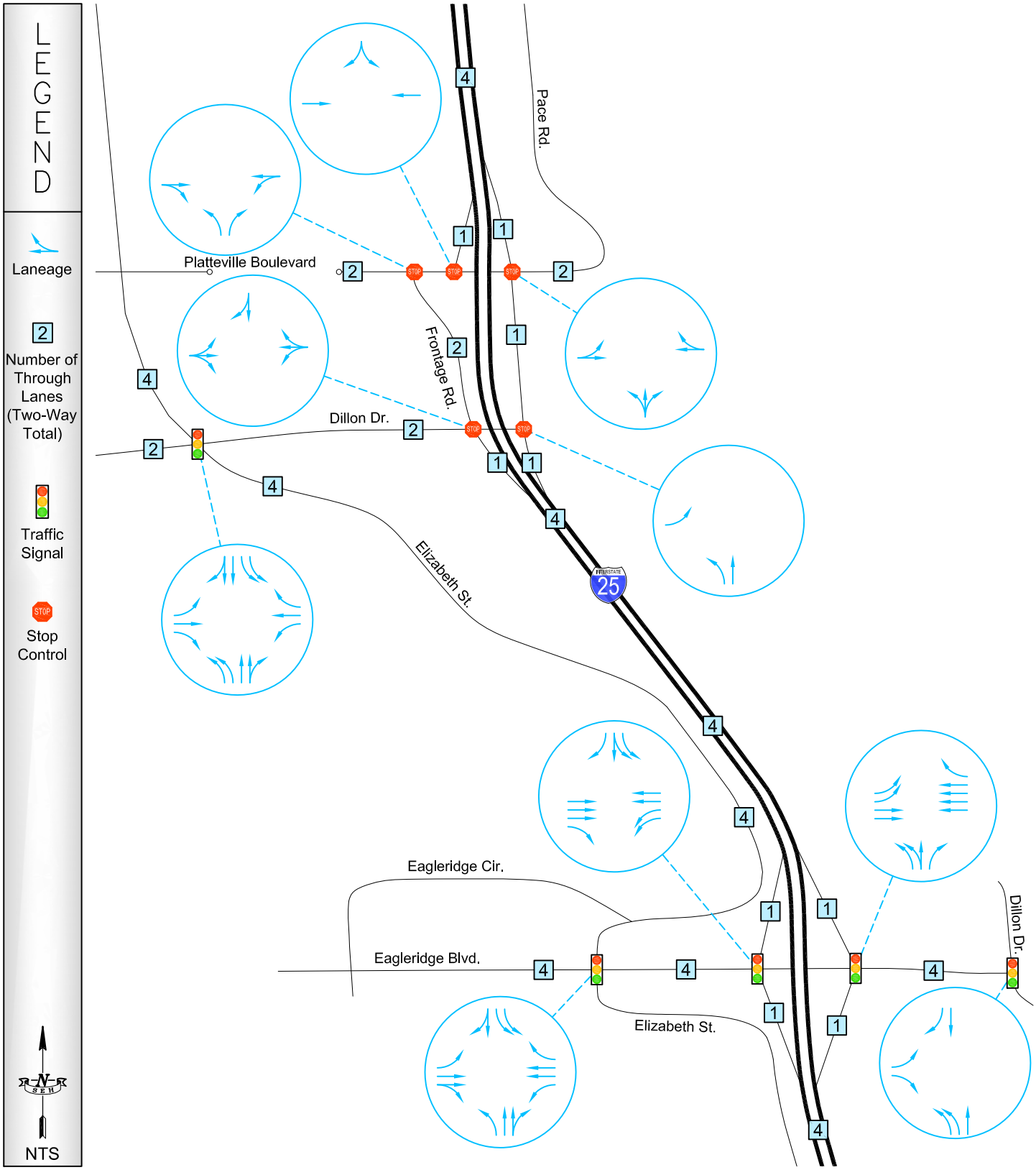
103325-PUEBL
May 14, 2010

FIGURE 13

Proposed Action - Implementation Year (2017)
Study Area
Average Daily Traffic Volumes



Proposed Action - Implementation Year (2017)
Study Area
Laneage

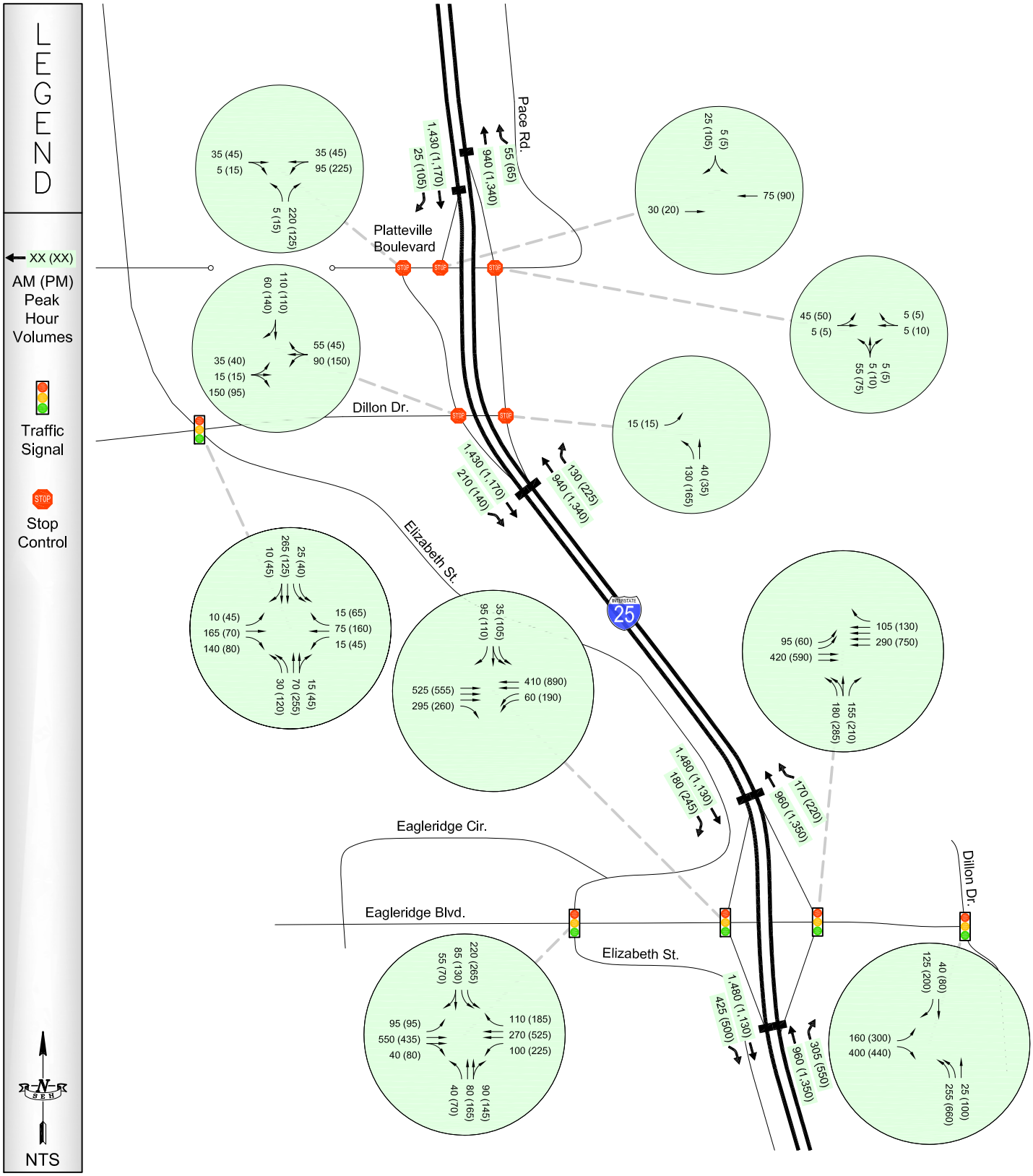


I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

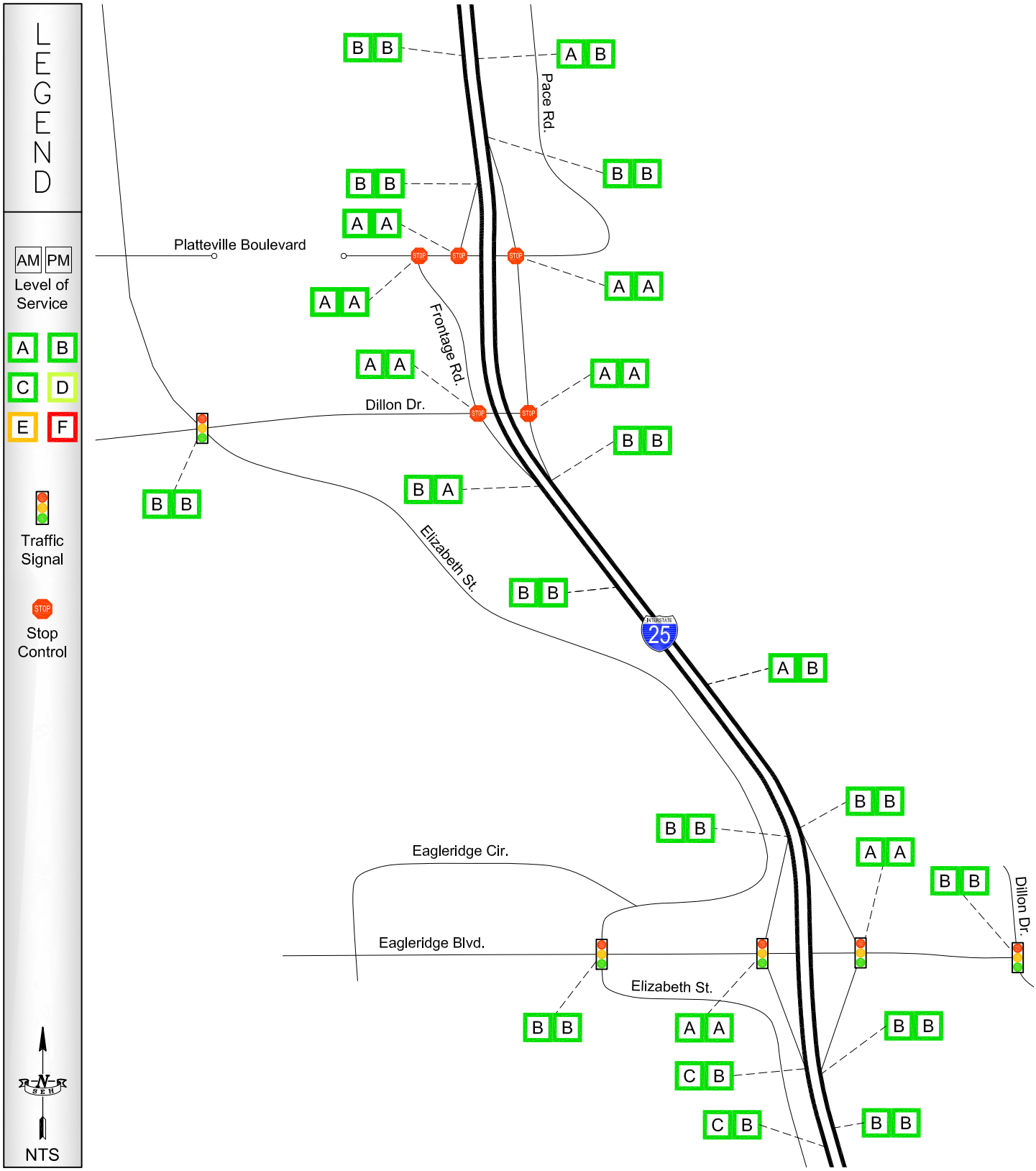
103325-PUEBL
May 21, 2010

FIGURE 15

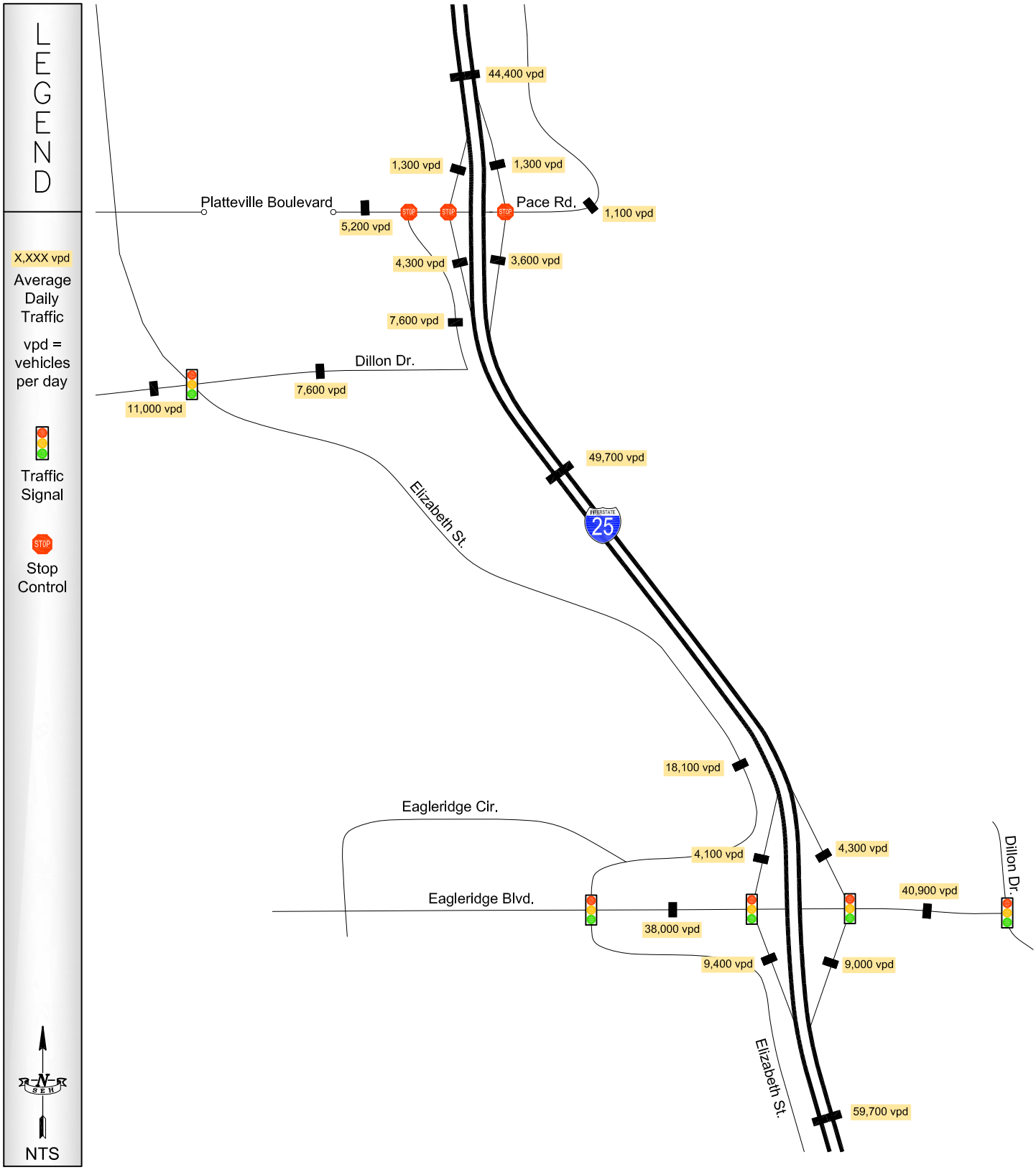
Proposed Action - Implementation Year (2017)
Study Area
Peak Hour Mainline I-25 Volume & Arterial Turning Movements



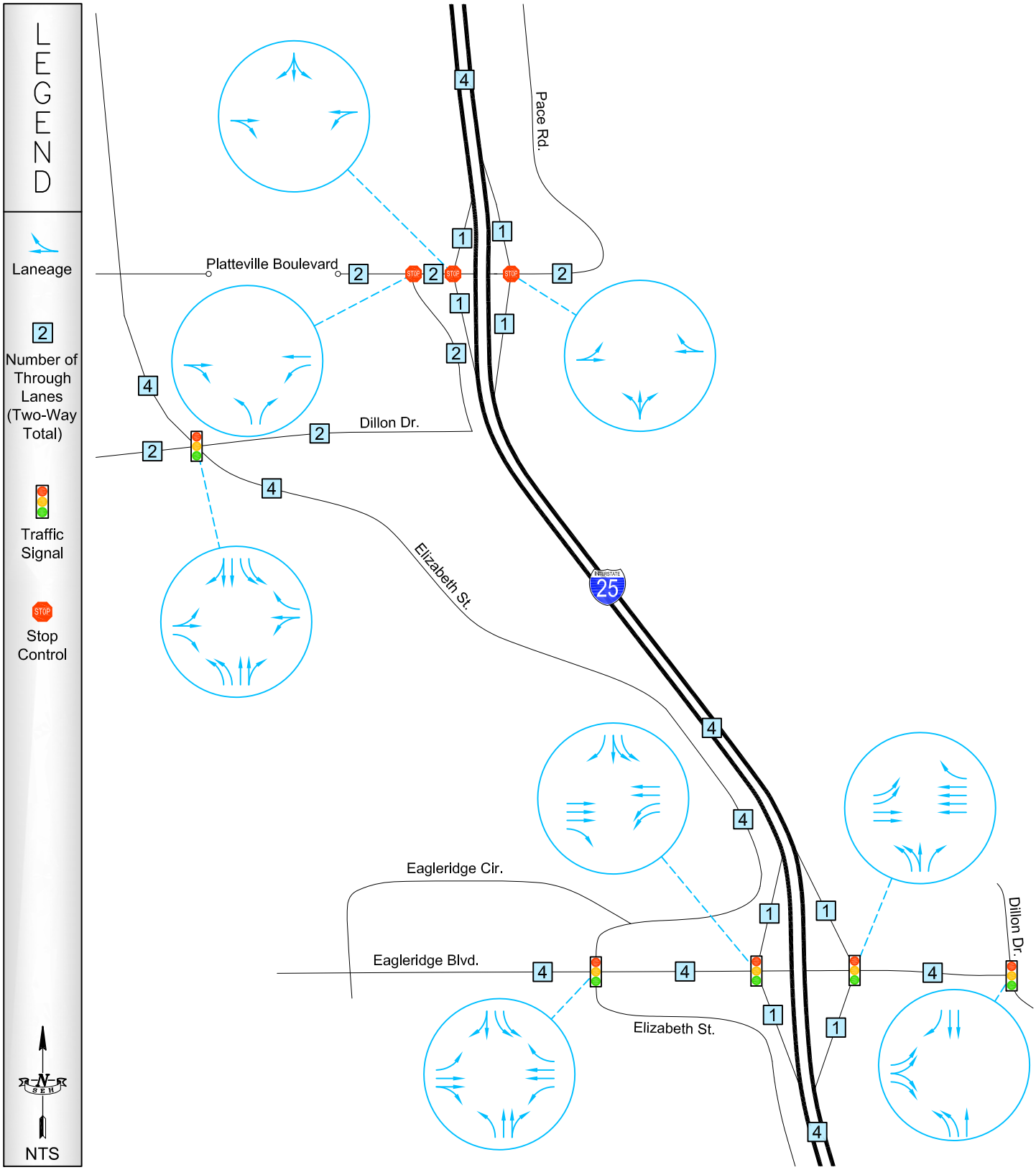
Proposed Action - Implementation Year (2017)
Study Area
Mainline I-25, Ramp and Intersection Level of Service



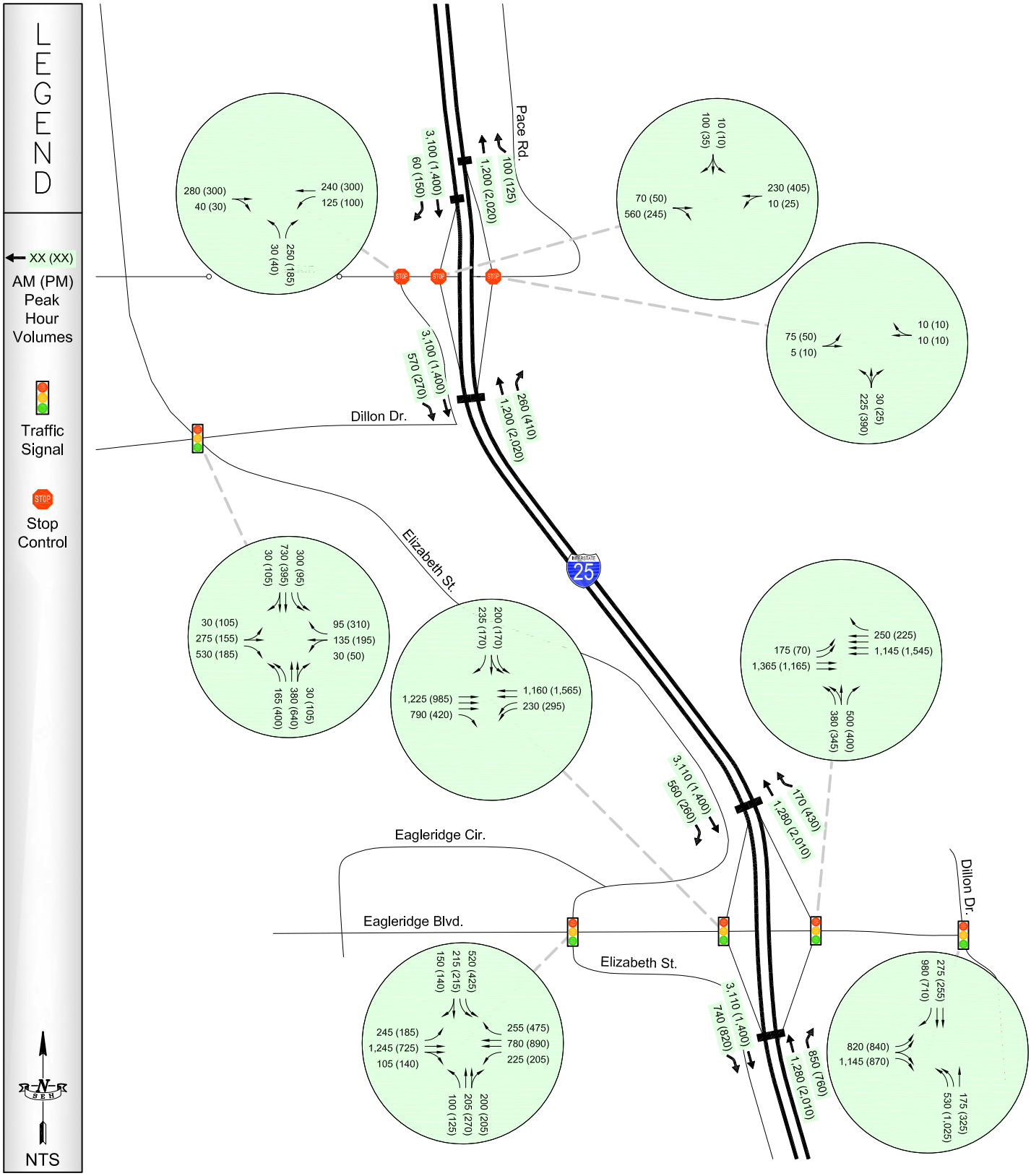
No-Action - Design Year (2035)
Study Area
Average Daily Traffic Volumes



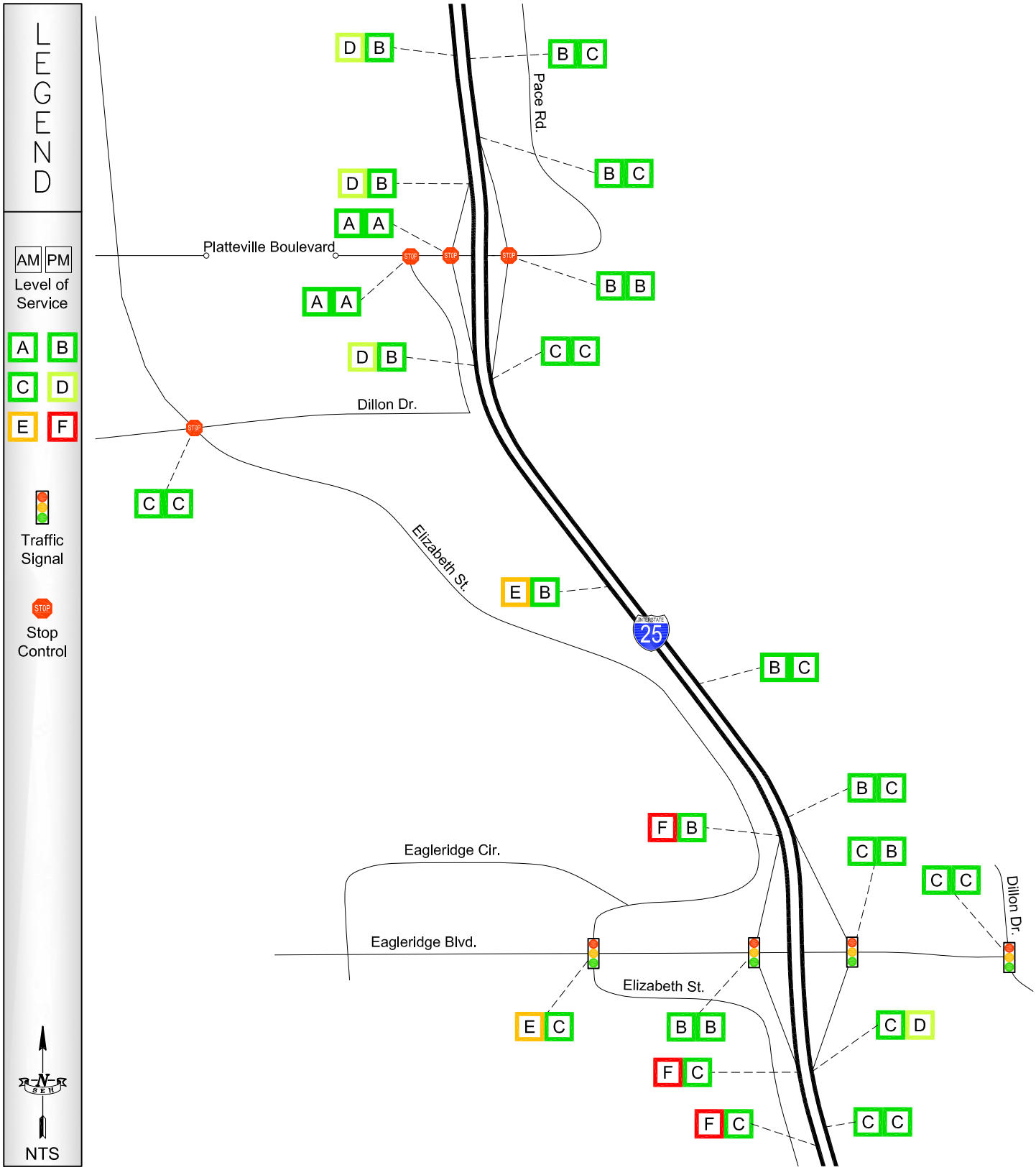
No-Action - Design Year (2035)
Study Area
Laneage



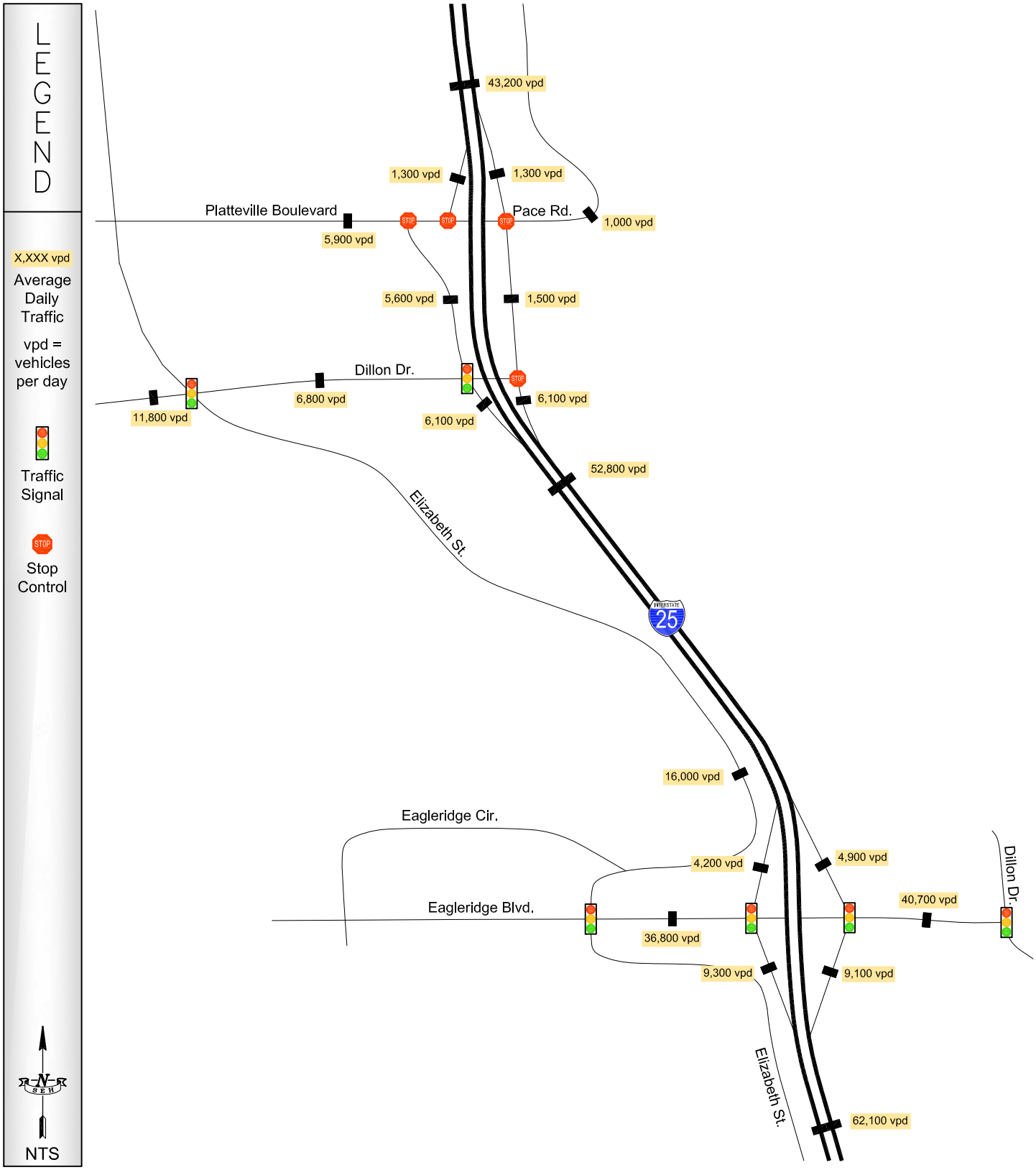
No-Action - Design Year (2035)
Study Area
Peak Hour Mainline I-25 Volume & Arterial Turning Movements



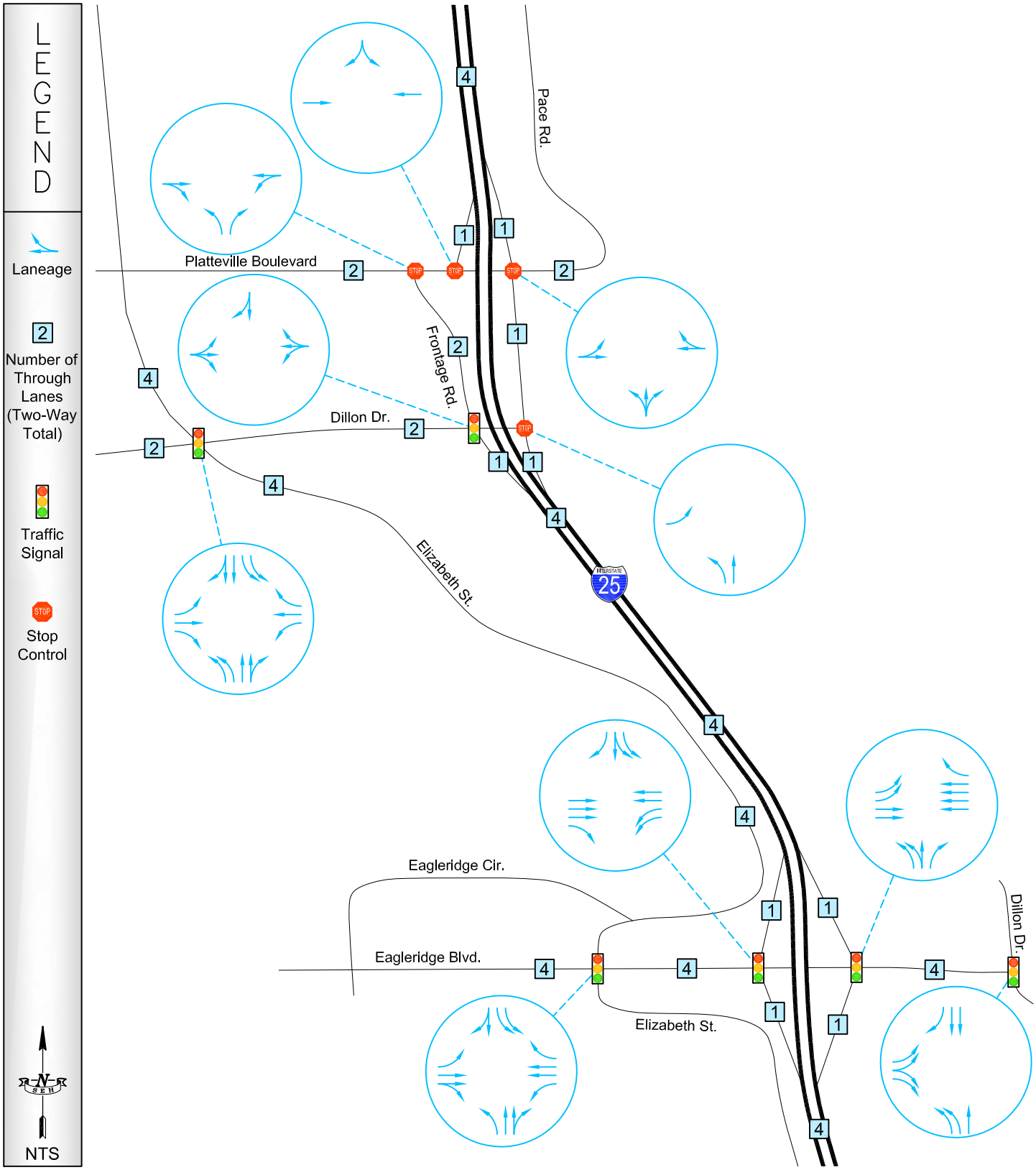
No-Action - Design Year (2035)
Study Area
Mainline I-25, Ramp and Intersection Level of Service



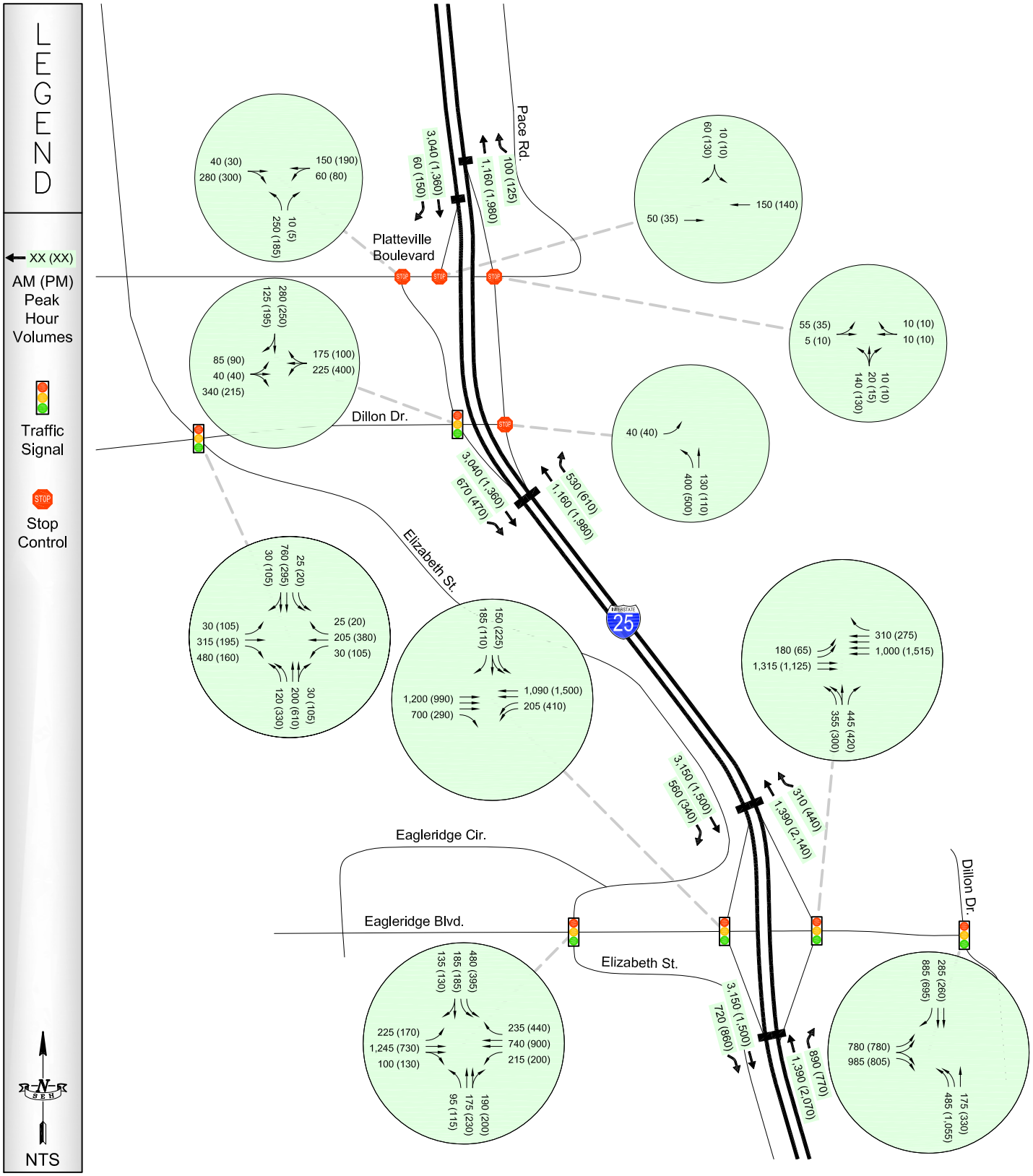
Proposed Action - Design Year (2035)
Study Area
Average Daily Traffic Volumes



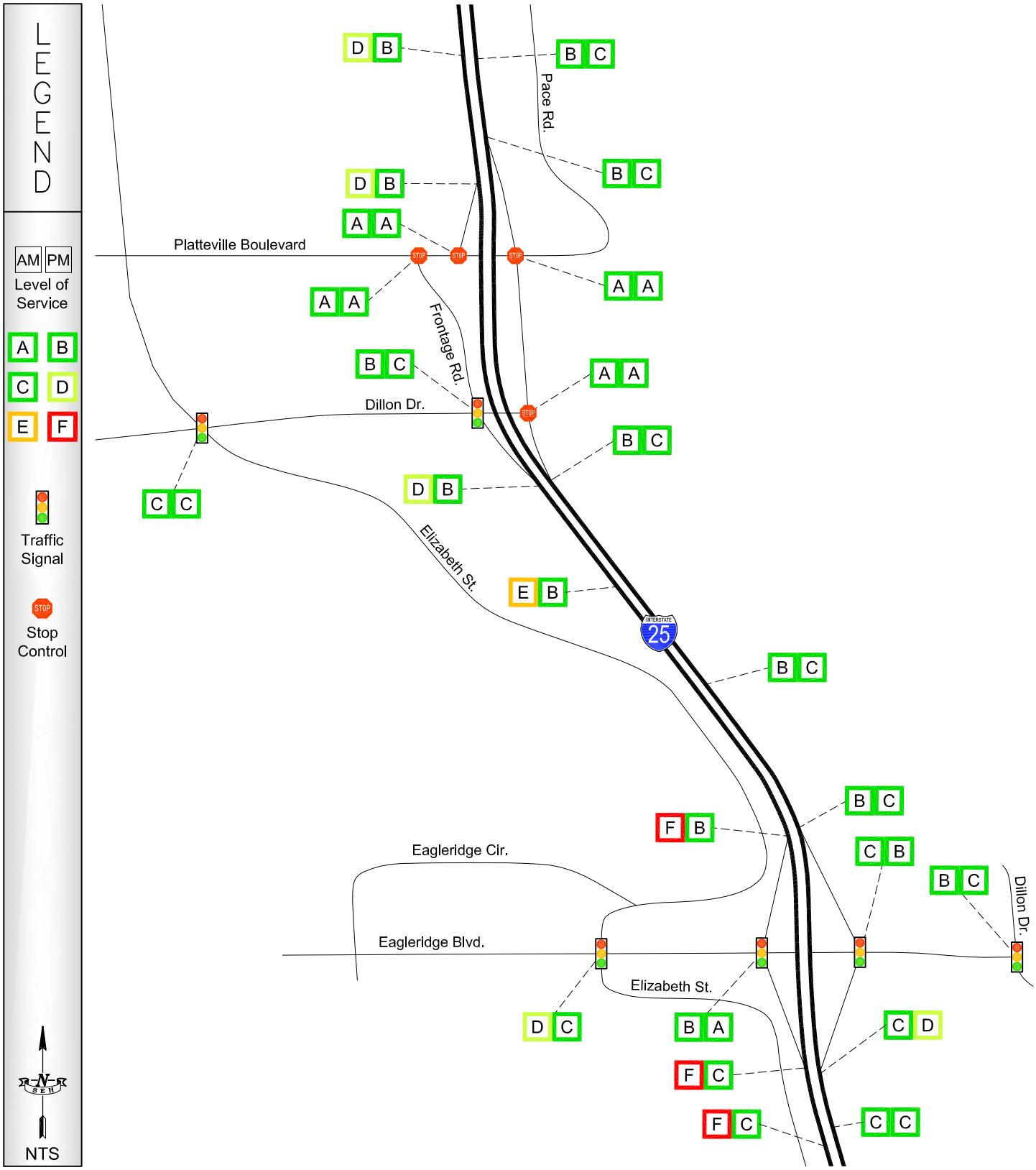
Proposed Action - Design Year (2035)
Study Area
Laneage



Proposed Action - Design Year (2035)
Study Area
Peak Hour Mainline I-25 Volume & Arterial Turning Movements



Proposed Action - Design Year (2035)
Study Area
Mainline I-25, Ramp and Intersection Level of Service



Appendix A

Travel Demand Modeling Assumptions and PACOG Concurrence Letter

SEH

April 3, 2009

Mr. Bill Moore, M.ITE
MPO Administrator
Pueblo Area Council of Governments MPO/TPR
223 N Santa Fe Avenue
Pueblo, CO 81003

Dear Mr. Moore:

We have recently completed our 2035 traffic forecasts for the Dillon Drive Environmental Assessment study utilizing the PACOG MPO/TPR travel demand model. Contracted by the City of Pueblo, the SEH and CH2M HILL team has worked closely with the City, PACOG MPO/TPR, and CDOT staff in the development of these forecasts. The purpose of this letter is to document and request your concurrence on the modeling process, assumptions, and results so that the traffic operational analyses can be conducted.

Modeling Process

The consultant team utilized the approved PACOG MPO/TPR land use estimates and roadway network as a base starting point for development of the future forecasts. While this data had to be refined to reflect a more specific local transportation analysis zone structure in the immediate project area, no deviations from PACOG MPO/TPR assumptions were performed and regional constrained land use control totals were maintained.

Assumptions

Based on discussions with PACOG MPO/TPR, a more refined zone system was implemented to reflect expected network and land use changes in the Serranto, North Vista, and Pueblo Springs Ranch areas which may have the largest influence on future traffic in the Dillon Drive EA study area. The existing Eden interchange at Platteville Road was left unchanged in the no action scenario, but the surrounding roadway system that is supportive of emerging development was included at your direction. The proposed action alternative consists of a split diamond between a new I-25 overcrossing at Dillon Drive and the existing Eden ramps with a two-way connection on the west side between the split diamond intersections rather that two one way pairs on either side of the interstate.

Results

The attached daily traffic maps represent the expected future traffic conditions discussed at our March 5, 2009 meeting and will serve as the basis for our future 2035 traffic operational analysis for the Dillon Drive EA.

If you agree with the results provided and that, for purposes of evaluating expected 2035 future traffic conditions for the Dillon Drive Environmental Assessment, the consultant

APR 1 0 2009

Short Elliott Hendrickson Inc., 4840 Pearl East Circle, Suite 200W | Boulder, CO 80301-2486
SEH is an equal opportunity employer | **www.sehinc.com** | 303.442.3130 | 303.442.3139 fax

team has appropriately utilized the PACOG MPO/TPR travel demand model please pleased indicate your concurrence by signing below.

Sincerely,

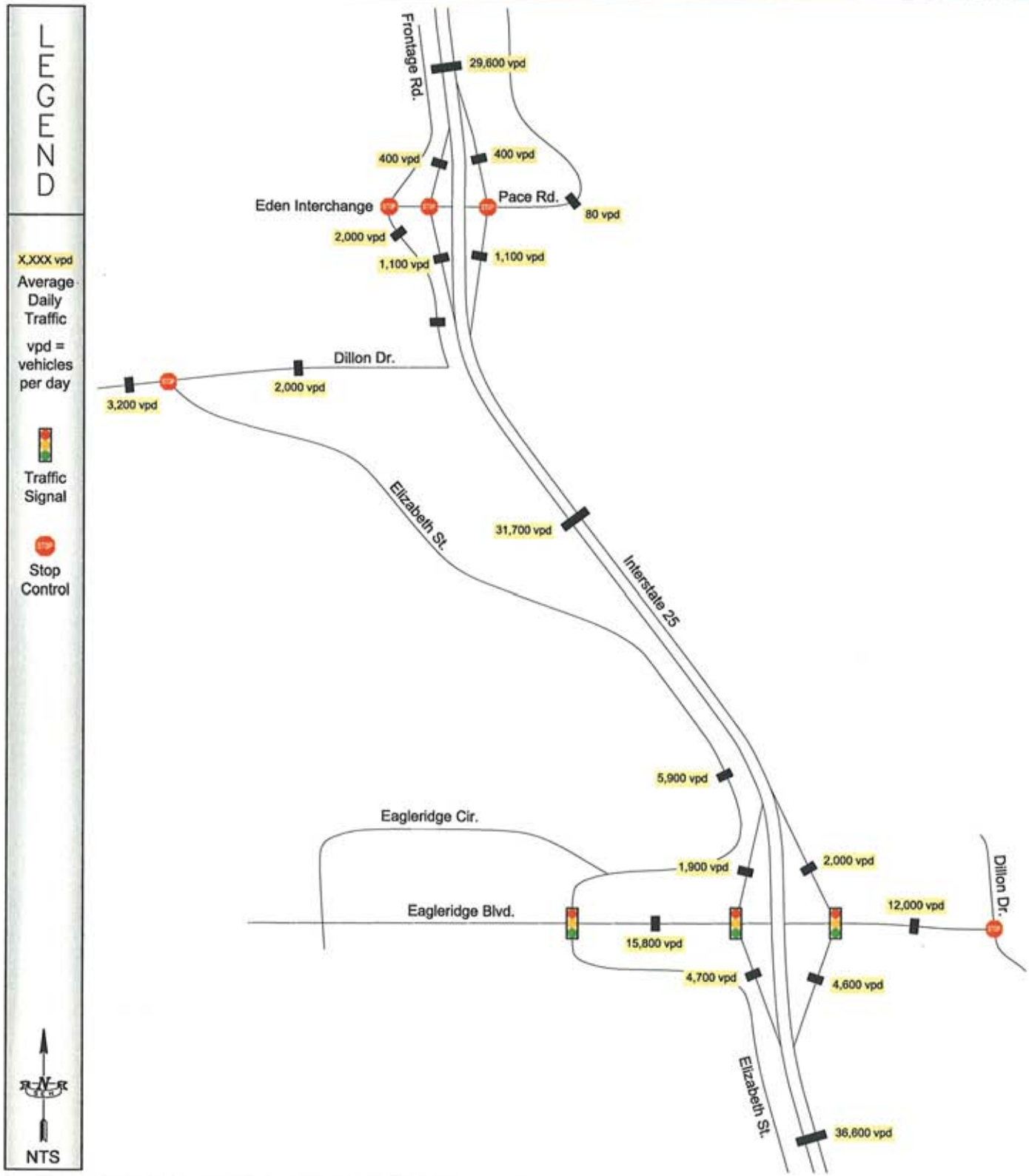
Philip T. Weisbach
Project Manager
SEH, Inc.

PACOG MPO/TPR has reviewed the information provided and concurs with the appropriate use of the travel demand model and results.

Bill Moore, M.ITE
Pueblo Area Council of Governments MPO/TPR

Attachments

Existing (Year 2008) Project Area Average Daily Traffic Volumes

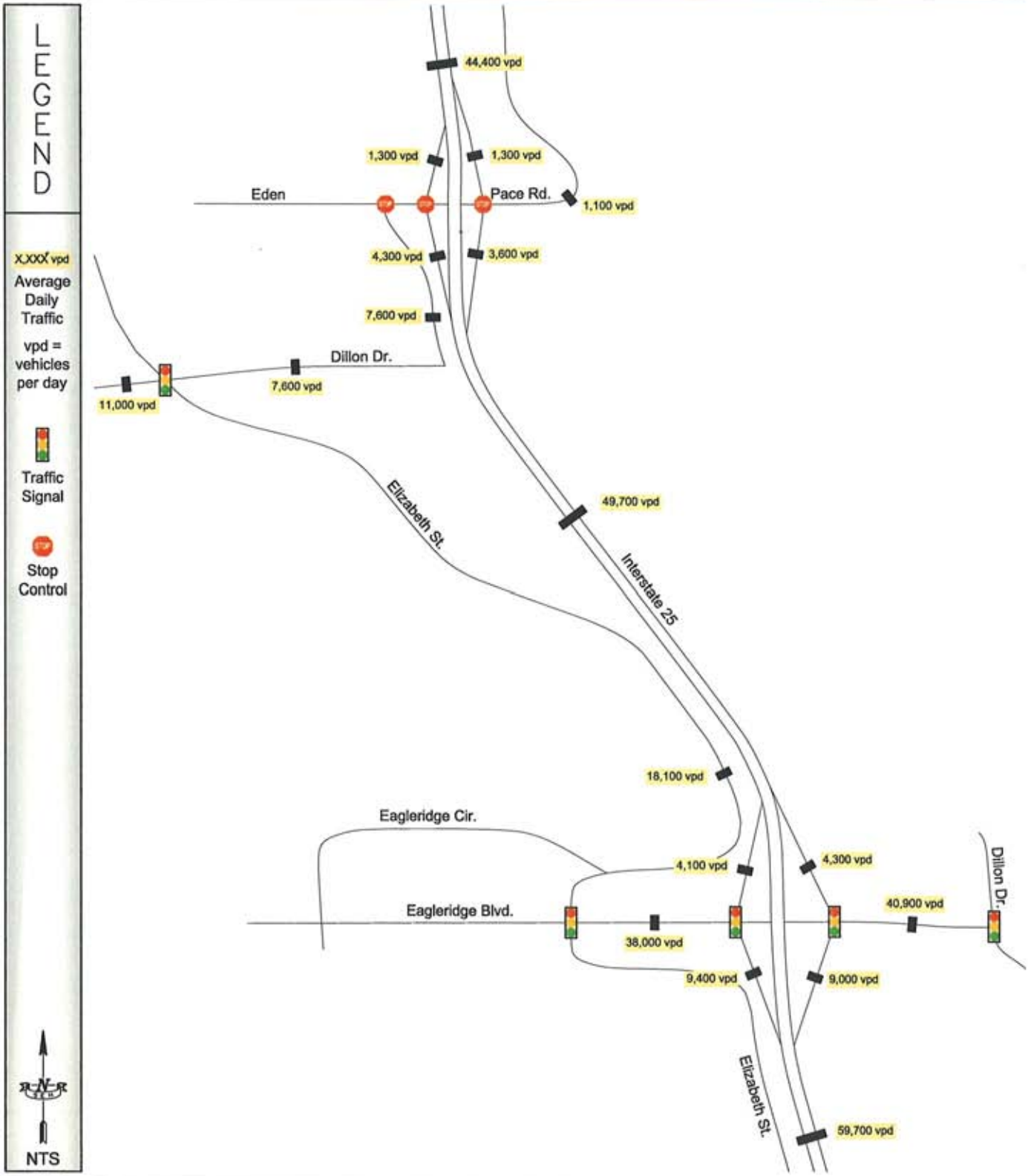


Dillon/Eden and I-25 Interchange Improvements
Pueblo, Colorado

103325-PUEBL
March 31, 2009

FIGURE 1

No-Action (Year 2035) Project Area Average Daily Traffic Volumes

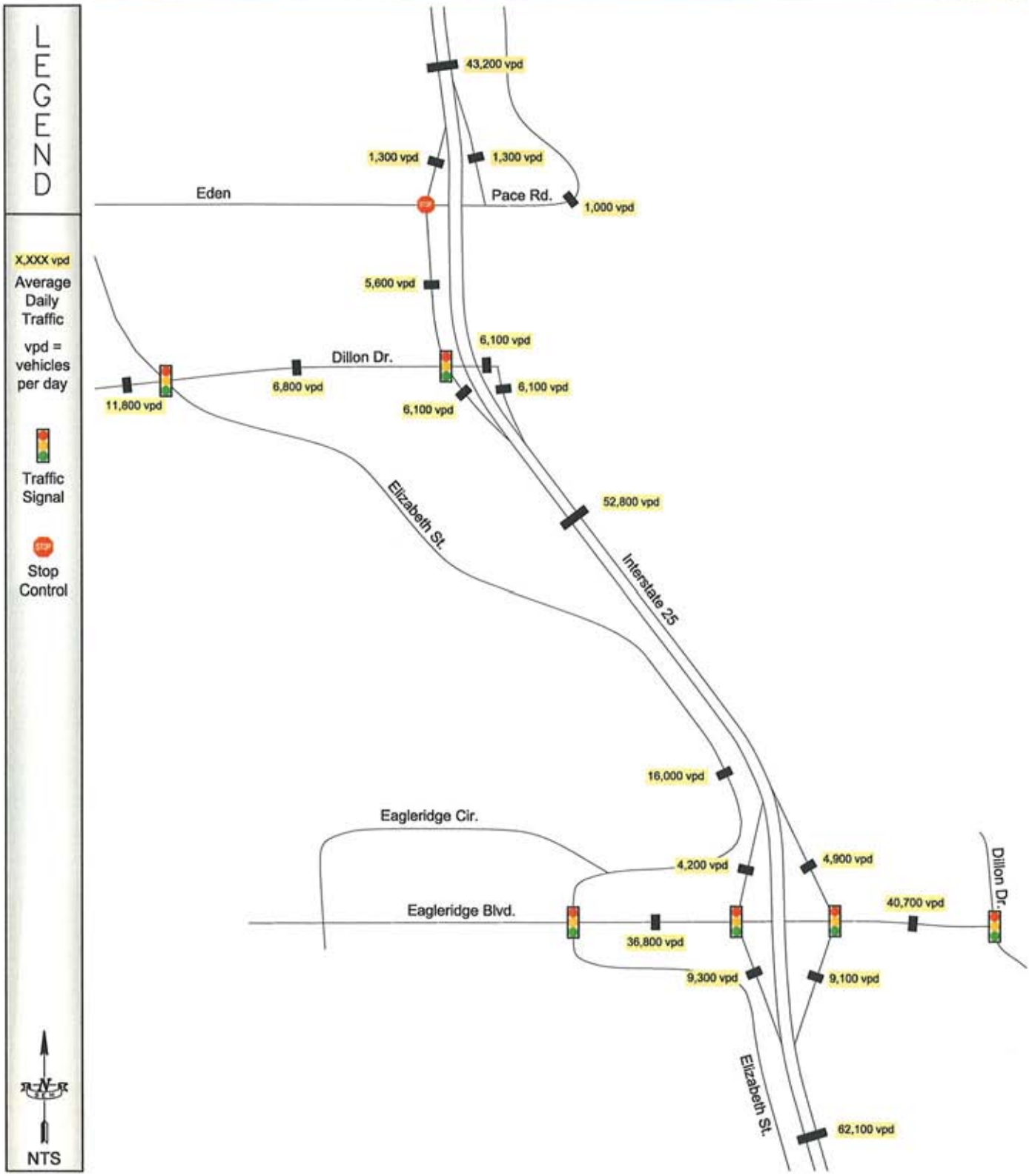


Dillon/Eden and I-25 Interchange Improvements
Pueblo, Colorado

103325-PUEBL
March 31, 2009

FIGURE 2

Proposed Action (Year 2035)
Project Area
Average Daily Traffic Volumes



Dillon/Eden and I-25 Interchange Improvements
Pueblo, Colorado

103325-PUEBL
March 31, 2009

FIGURE 3

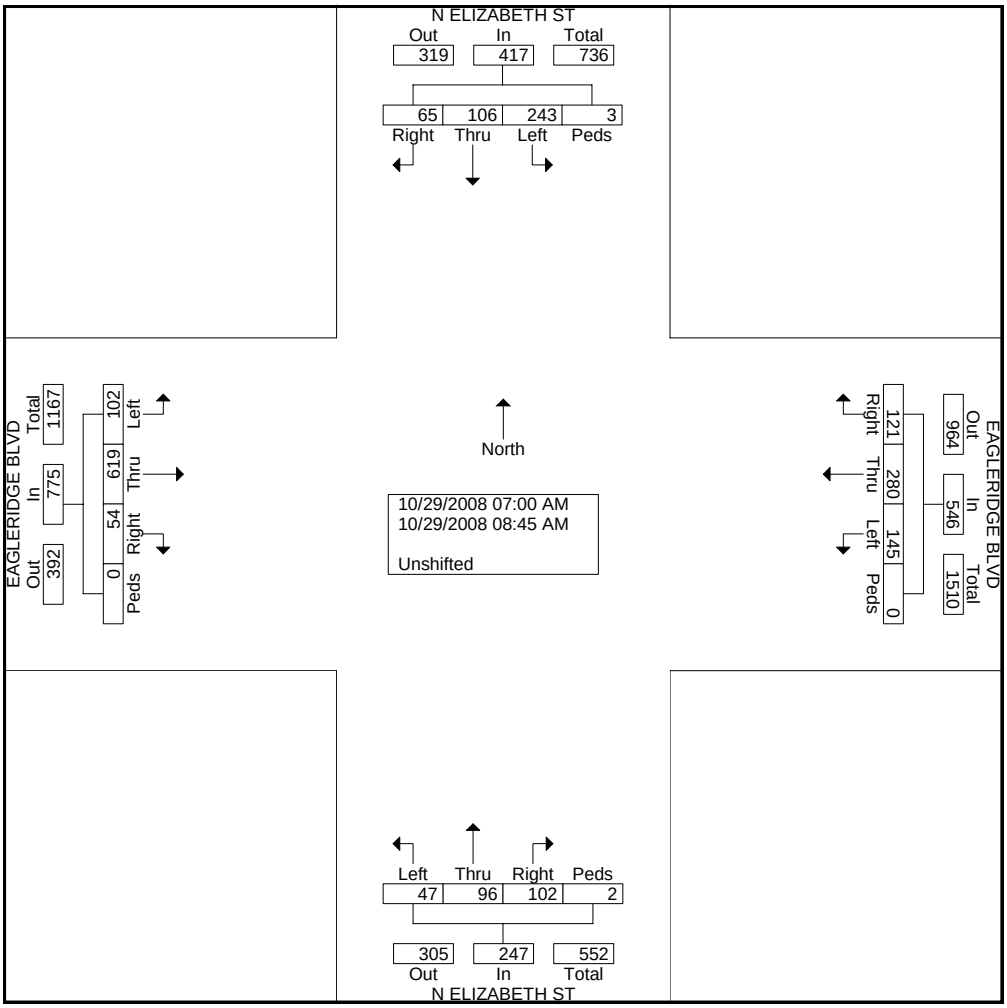
Appendix B

Traffic Count Data

File Name : AM_8519 ELIZABETH&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

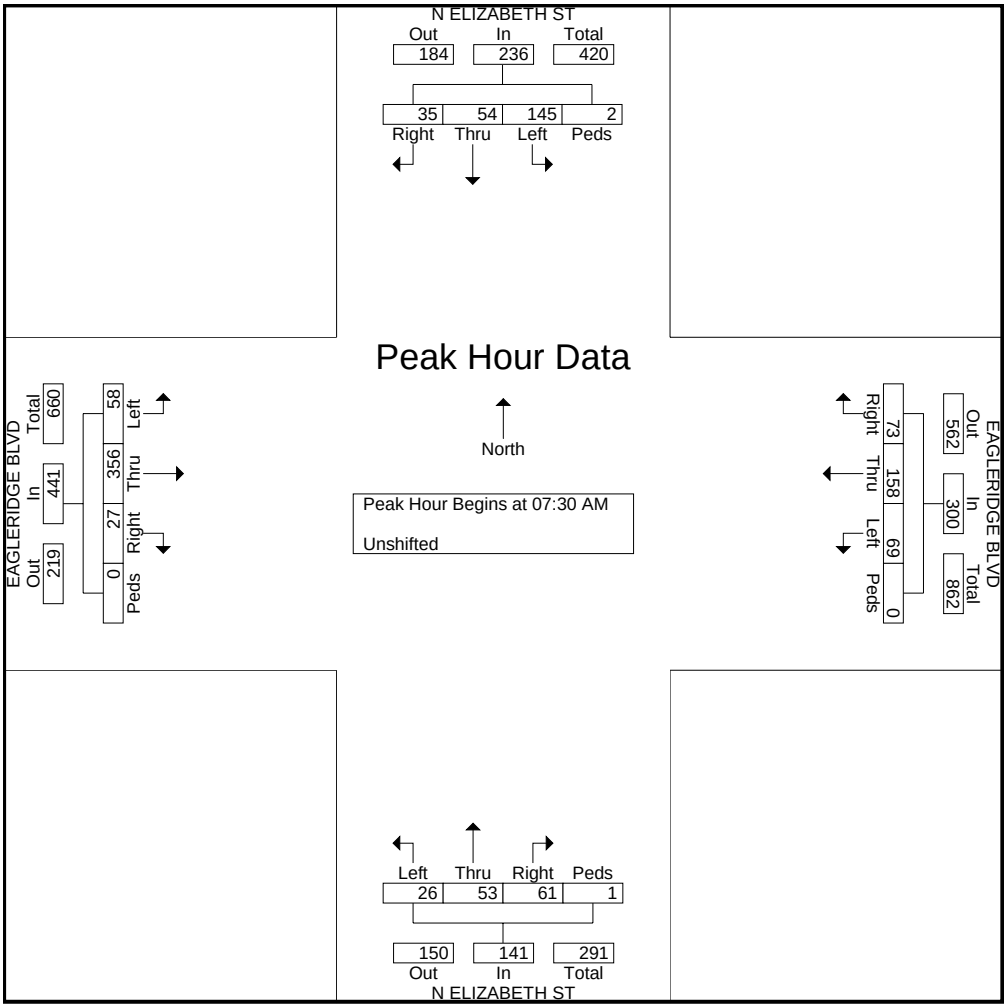
Groups Printed- Unshifted

	N ELIZABETH ST Southbound				EAGLERIDGE BLVD Westbound				N ELIZABETH ST Northbound				EAGLERIDGE BLVD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	6	9	21	0	5	21	17	0	7	11	1	1	2	65	7	0	173
07:15 AM	5	7	18	1	8	25	14	0	14	5	8	0	8	70	10	0	193
07:30 AM	8	16	34	2	15	38	18	0	8	6	3	0	7	93	15	0	263
07:45 AM	11	22	52	0	21	49	19	0	12	15	7	0	5	121	16	0	350
Total	30	54	125	3	49	133	68	0	41	37	19	1	22	349	48	0	979
08:00 AM	7	11	32	0	17	52	20	0	15	14	10	0	8	79	15	0	280
08:15 AM	9	5	27	0	20	19	12	0	26	18	6	1	7	63	12	0	225
08:30 AM	9	14	25	0	20	28	27	0	9	11	5	0	11	65	12	0	236
08:45 AM	10	22	34	0	15	48	18	0	11	16	7	0	6	63	15	0	265
Total	35	52	118	0	72	147	77	0	61	59	28	1	32	270	54	0	1006
Grand Total	65	106	243	3	121	280	145	0	102	96	47	2	54	619	102	0	1985
Apprch %	15.6	25.4	58.3	0.7	22.2	51.3	26.6	0	41.3	38.9	19	0.8	7	79.9	13.2	0	
Total %	3.3	5.3	12.2	0.2	6.1	14.1	7.3	0	5.1	4.8	2.4	0.1	2.7	31.2	5.1	0	



File Name : AM_8519 ELIZABETH&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 2

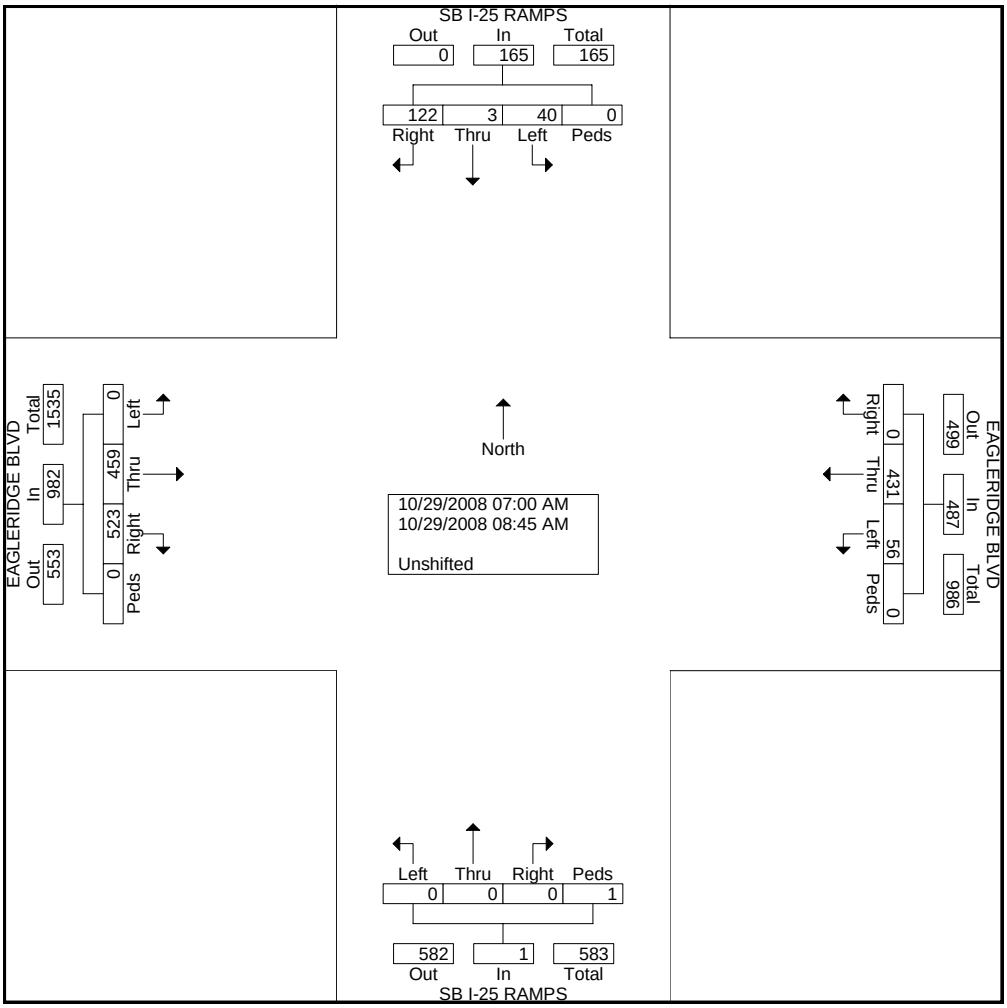
	N ELIZABETH ST Southbound					EAGLERIDGE BLVD Westbound					N ELIZABETH ST Northbound					EAGLERIDGE BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	8	16	34	2	60	15	38	18	0	71	8	6	3	0	17	7	93	15	0	115	263
07:45 AM	11	22	52	0	85	21	49	19	0	89	12	15	7	0	34	5	121	16	0	142	350
08:00 AM	7	11	32	0	50	17	52	20	0	89	15	14	10	0	39	8	79	15	0	102	280
08:15 AM	9	5	27	0	41	20	19	12	0	51	26	18	6	1	51	7	63	12	0	82	225
Total Volume	35	54	145	2	236	73	158	69	0	300	61	53	26	1	141	27	356	58	0	441	1118
% App. Total	14.8	22.9	61.4	0.8		24.3	52.7	23	0		43.3	37.6	18.4	0.7		6.1	80.7	13.2	0		
PHF	.795	.614	.697	.250	.694	.869	.760	.863	.000	.843	.587	.736	.650	.250	.691	.844	.736	.906	.000	.776	.799



File Name : AM_8520 SBI-25RAMPS&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

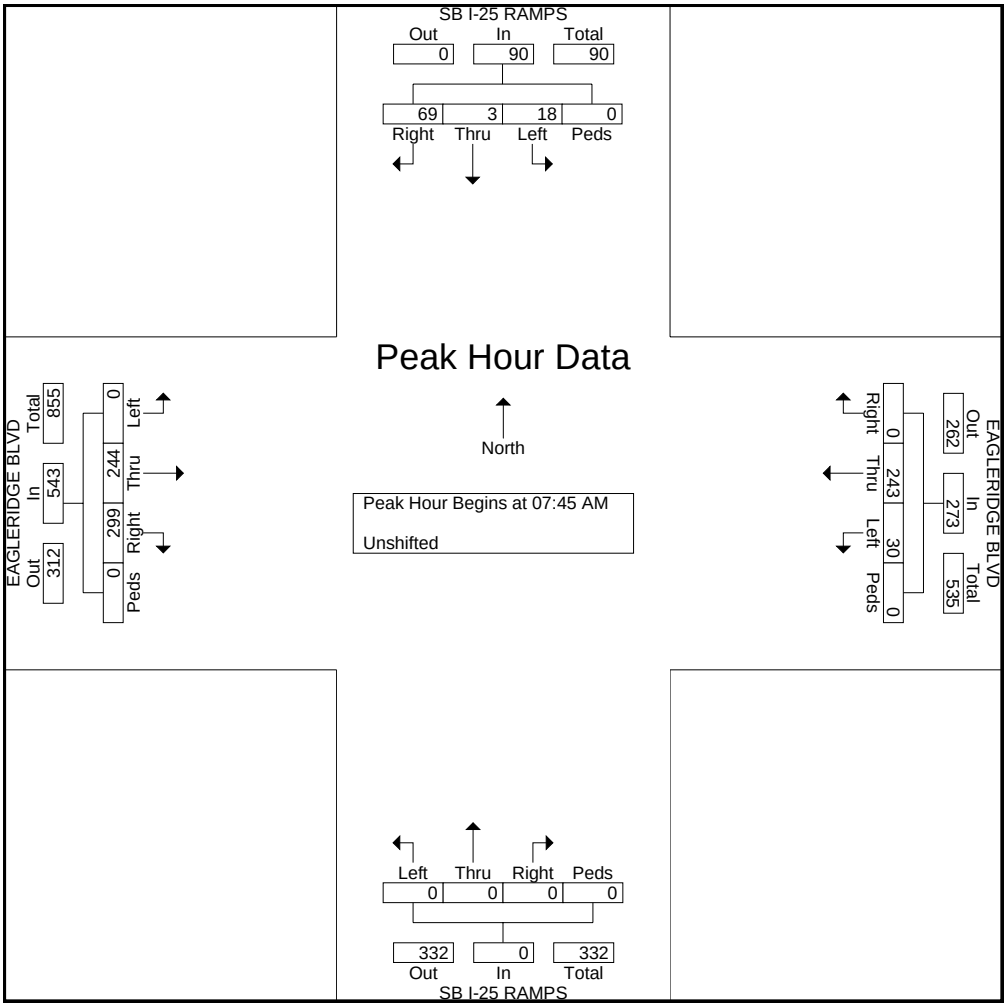
Groups Printed- Unshifted

	SB I-25 RAMPS Southbound				EAGLERIDGE BLVD Westbound				SB I-25 RAMPS Northbound				EAGLERIDGE BLVD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	12	0	5	0	0	40	4	0	0	0	0	0	45	50	0	0	156
07:15 AM	14	0	6	0	0	39	4	0	0	0	0	0	61	62	0	0	186
07:30 AM	16	0	1	0	0	45	8	0	0	0	0	0	68	38	0	0	176
07:45 AM	17	1	5	0	0	69	4	0	0	0	0	0	103	76	0	0	275
Total	59	1	17	0	0	193	20	0	0	0	0	0	277	226	0	0	793
08:00 AM	19	2	3	0	0	72	8	0	0	0	0	0	89	60	0	0	253
08:15 AM	9	0	6	0	0	47	12	0	0	0	0	0	72	53	0	0	199
08:30 AM	24	0	4	0	0	55	6	0	0	0	0	0	35	55	0	0	179
08:45 AM	11	0	10	0	0	64	10	0	0	0	0	1	50	65	0	0	211
Total	63	2	23	0	0	238	36	0	0	0	0	1	246	233	0	0	842
Grand Total	122	3	40	0	0	431	56	0	0	0	0	1	523	459	0	0	1635
Apprch %	73.9	1.8	24.2	0	0	88.5	11.5	0	0	0	0	100	53.3	46.7	0	0	
Total %	7.5	0.2	2.4	0	0	26.4	3.4	0	0	0	0	0.1	32	28.1	0	0	



File Name : AM_8520 SBI-25RAMPS&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 2

	SB I-25 RAMPS Southbound					EAGLERIDGE BLVD Westbound					SB I-25 RAMPS Northbound					EAGLERIDGE BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	17	1	5	0	23	0	69	4	0	73	0	0	0	0	0	103	76	0	0	179	275
08:00 AM	19	2	3	0	24	0	72	8	0	80	0	0	0	0	0	89	60	0	0	149	253
08:15 AM	9	0	6	0	15	0	47	12	0	59	0	0	0	0	0	72	53	0	0	125	199
08:30 AM	24	0	4	0	28	0	55	6	0	61	0	0	0	0	0	35	55	0	0	90	179
Total Volume	69	3	18	0	90	0	243	30	0	273	0	0	0	0	0	299	244	0	0	543	906
% App. Total	76.7	3.3	20	0		0	89	11	0		0	0	0	0		55.1	44.9	0	0		
PHF	.719	.375	.750	.000	.804	.000	.844	.625	.000	.853	.000	.000	.000	.000	.000	.726	.803	.000	.000	.758	.824



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Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

Groups Printed- Unshifted

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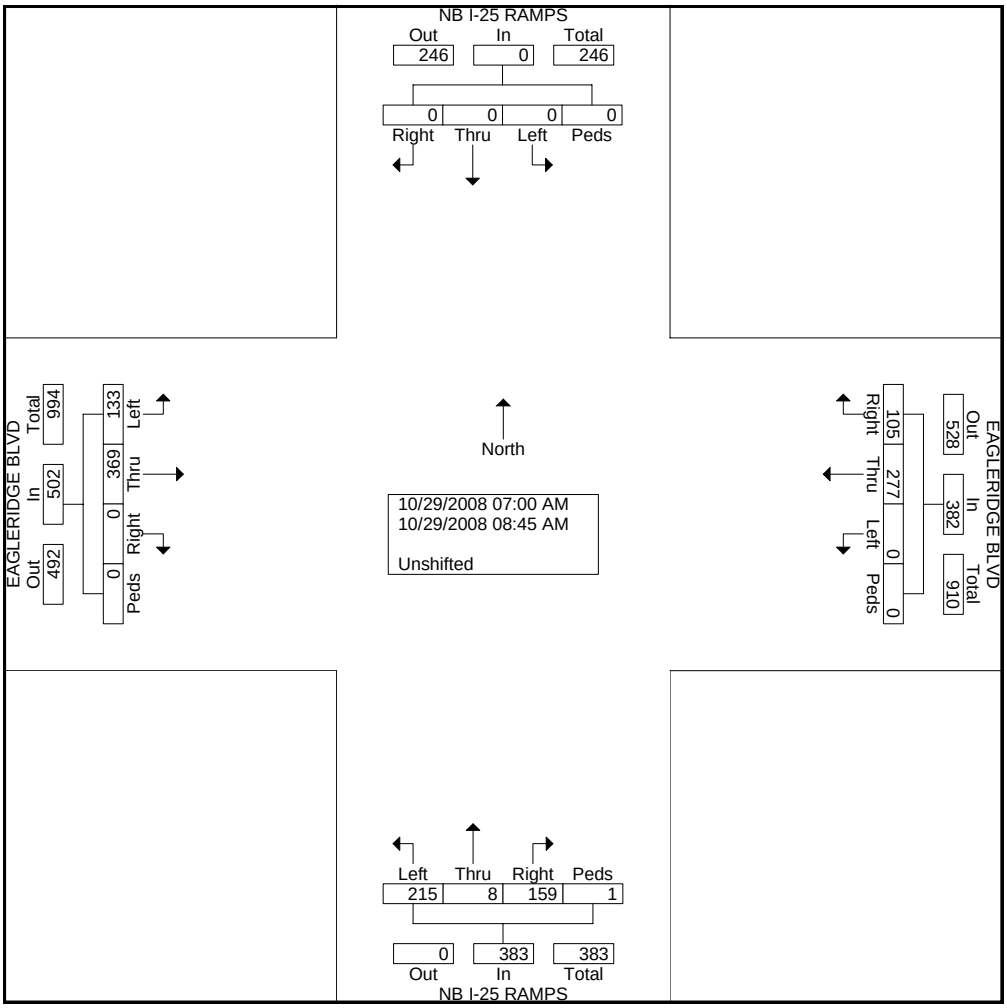
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	14	29	0	0	14	1	15	0	0	37	17	0	127
07:15 AM	0	0	0	0	12	26	0	0	10	2	14	0	0	38	29	0	131
07:30 AM	0	0	0	0	9	31	0	0	14	0	24	0	0	29	10	0	117
07:45 AM	0	0	0	0	10	39	0	0	32	0	35	0	0	70	10	0	196
Total	0	0	0	0	45	125	0	0	70	3	88	0	0	174	66	0	571
08:00 AM	0	0	0	0	16	43	0	0	19	5	35	0	0	44	18	0	180
08:15 AM	0	0	0	0	13	36	0	0	15	0	22	0	0	33	27	0	146
08:30 AM	0	0	0	0	13	32	0	0	26	0	32	0	0	51	11	0	165
08:45 AM	0	0	0	0	18	41	0	0	29	0	38	1	0	67	11	0	205
Total	0	0	0	0	60	152	0	0	89	5	127	1	0	195	67	0	696
Grand Total	0	0	0	0	105	277	0	0	159	8	215	1	0	369	133	0	1267
Apprch %	0	0	0	0	27.5	72.5	0	0	41.5	2.1	56.1	0.3	0	73.5	26.5	0	
Total %	0	0	0	0	8.3	21.9	0	0	12.5	0.6	17	0.1	0	29.1	10.5	0	



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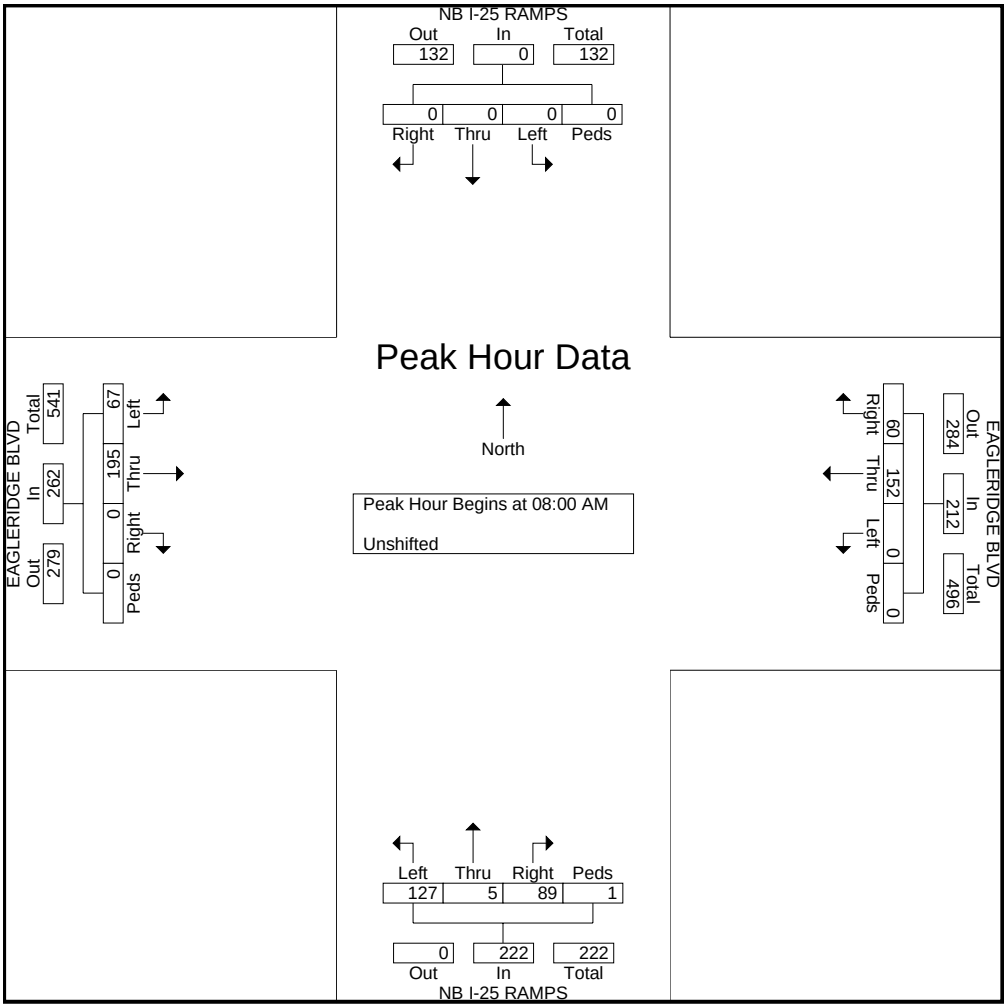
Site Code : 00000000
Start Date : 10/29/2008
Page No : 2

	NB I-25 RAMPS Southbound					EAGLERIDGE BLVD Westbound					NB I-25 RAMPS Northbound					EAGLERIDGE BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	16	43	0	0	59	19	5	35	0	59	0	44	18	0	62	180
08:15 AM	0	0	0	0	0	13	36	0	0	49	15	0	22	0	37	0	33	27	0	60	146
08:30 AM	0	0	0	0	0	13	32	0	0	45	26	0	32	0	58	0	51	11	0	62	165
08:45 AM	0	0	0	0	0	18	41	0	0	59	29	0	38	1	68	0	67	11	0	78	205
Total Volume	0	0	0	0	0	60	152	0	0	212	89	5	127	1	222	0	195	67	0	262	696
% App. Total	0	0	0	0		28.3	71.7	0	0		40.1	2.3	57.2	0.5		0	74.4	25.6	0		
PHF	.000	.000	.000	.000	.000	.833	.884	.000	.000	.898	.767	.250	.836	.250	.816	.000	.728	.620	.000	.840	.849



File Name : AM_8522 DILLON&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

Groups Printed- Unshifted

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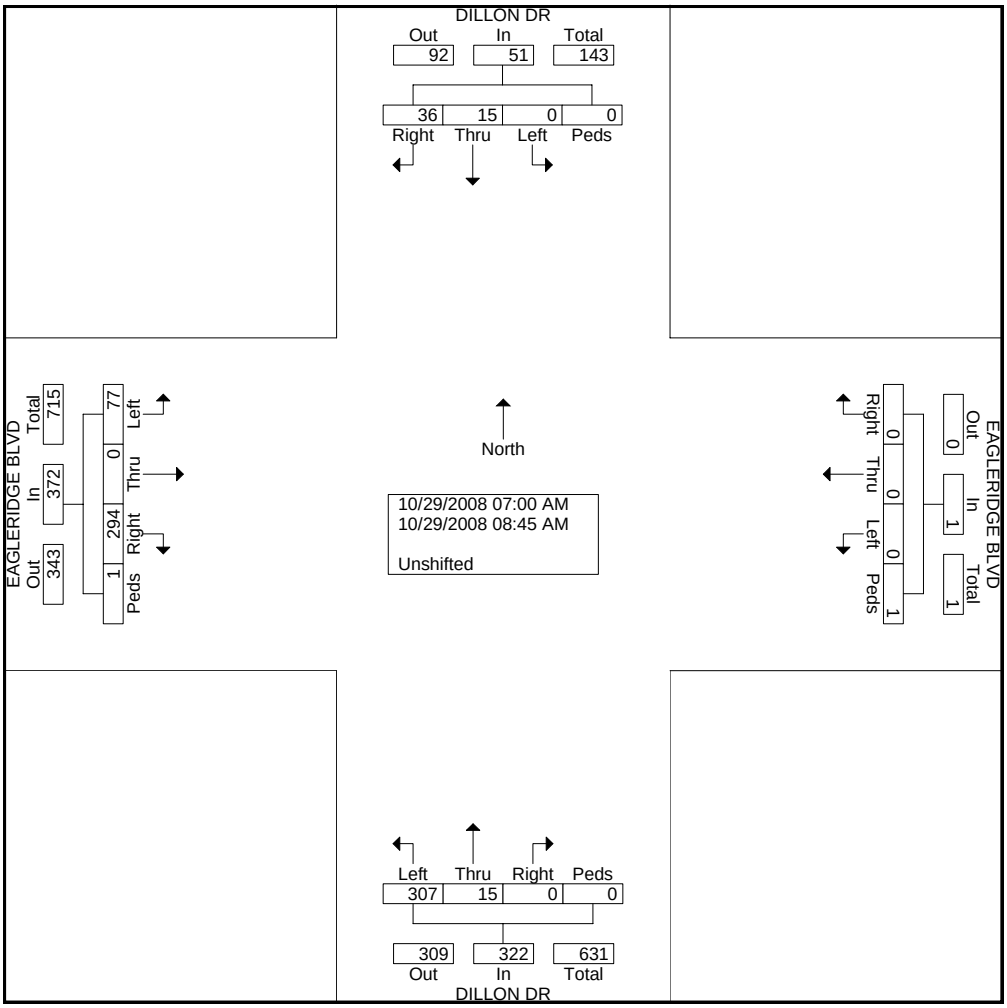
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	1	0	0	0	0	0	0	0	0	0	37	0	30	0	5	0	73
07:15 AM	3	1	0	0	0	0	0	0	0	1	37	0	34	0	3	0	79
07:30 AM	6	1	0	0	0	0	0	1	0	1	27	0	28	0	9	1	74
07:45 AM	5	0	0	0	0	0	0	0	0	4	36	0	47	0	30	0	122
Total	15	2	0	0	0	0	0	1	0	6	137	0	139	0	47	1	348
08:00 AM	5	0	0	0	0	0	0	0	0	4	54	0	37	0	14	0	114
08:15 AM	5	9	0	0	0	0	0	0	0	1	38	0	22	0	4	0	79
08:30 AM	7	3	0	0	0	0	0	0	0	2	31	0	36	0	2	0	81
08:45 AM	4	1	0	0	0	0	0	0	0	2	47	0	60	0	10	0	124
Total	21	13	0	0	0	0	0	0	0	9	170	0	155	0	30	0	398
Grand Total	36	15	0	0	0	0	0	1	0	15	307	0	294	0	77	1	746
Apprch %	70.6	29.4	0	0	0	0	0	100	0	4.7	95.3	0	79	0	20.7	0.3	
Total %	4.8	2	0	0	0	0	0	0.1	0	2	41.2	0	39.4	0	10.3	0.1	



File Name : AM_8522 DILLON&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
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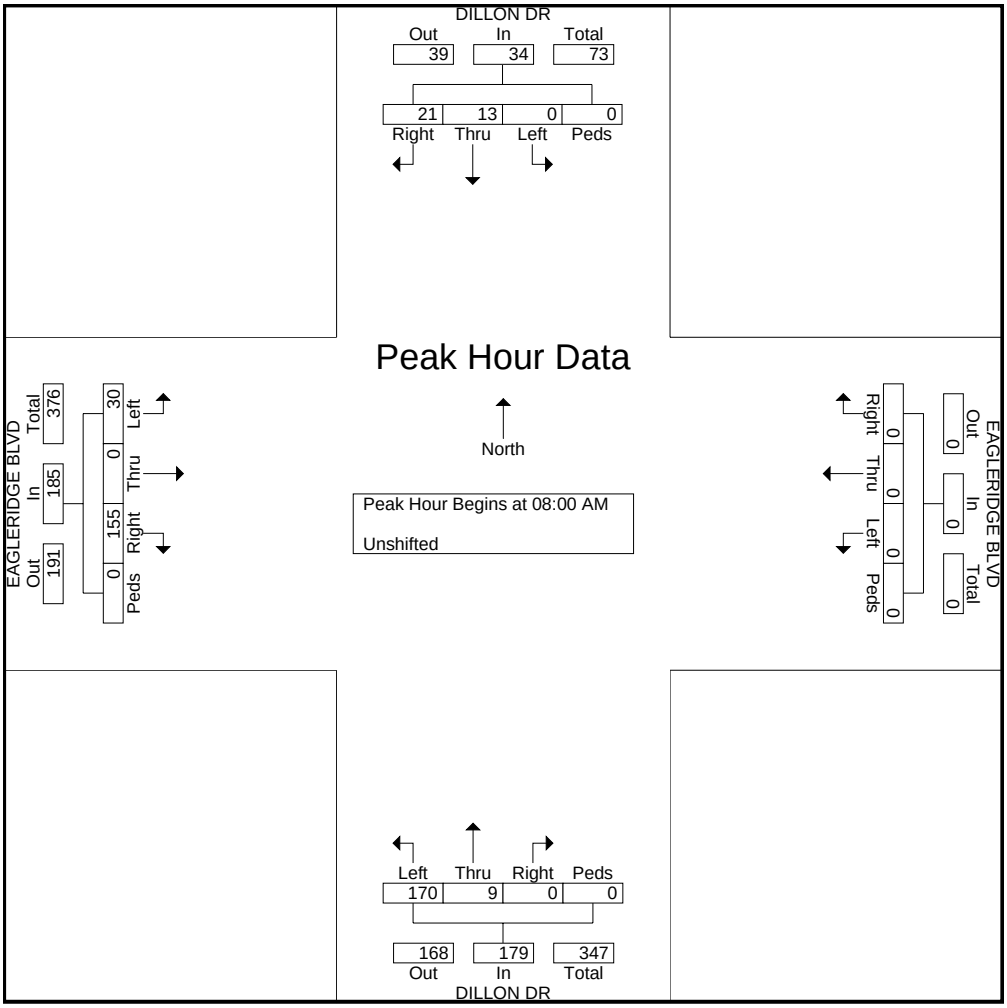
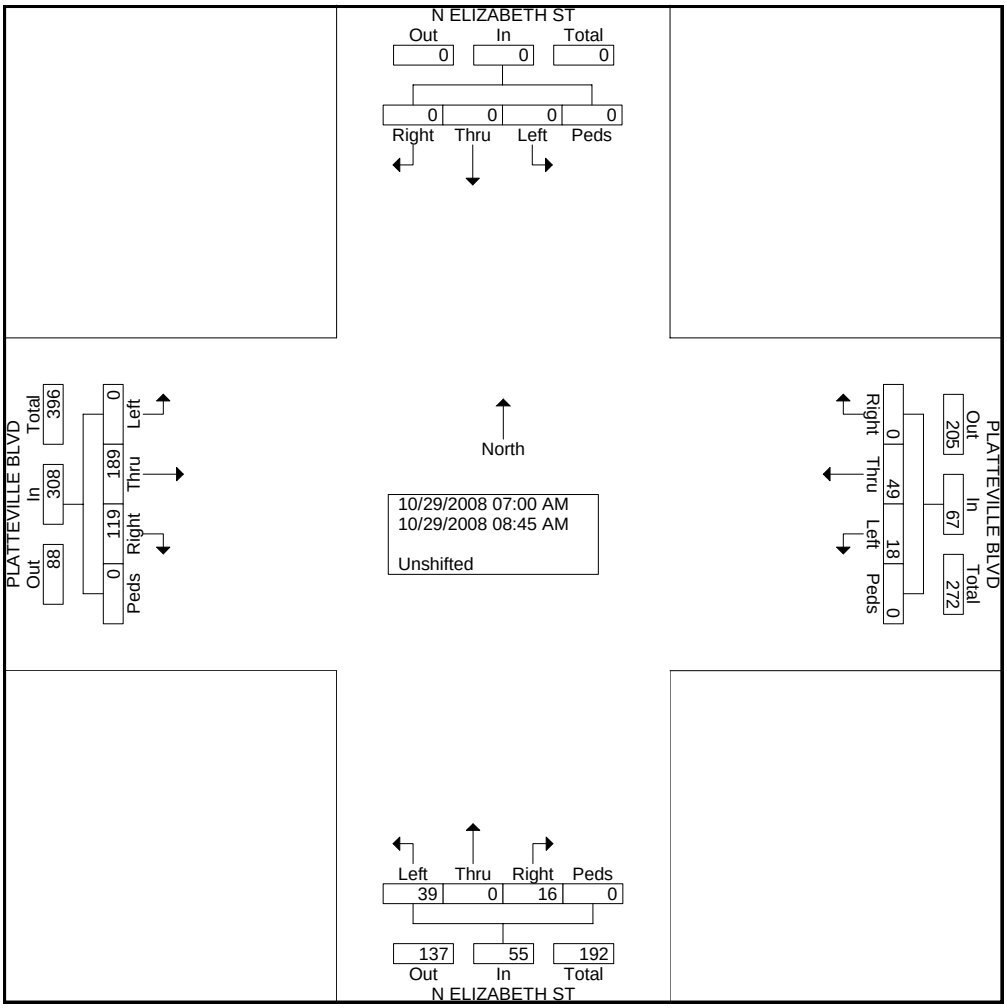
	DILLON DR Southbound					EAGLERIDGE BLVD Westbound					DILLON DR Northbound					EAGLERIDGE BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	5	0	0	0	5	0	0	0	0	0	0	4	54	0	58	37	0	14	0	51	114
08:15 AM	5	9	0	0	14	0	0	0	0	0	0	1	38	0	39	22	0	4	0	26	79
08:30 AM	7	3	0	0	10	0	0	0	0	0	0	2	31	0	33	36	0	2	0	38	81
08:45 AM	4	1	0	0	5	0	0	0	0	0	0	2	47	0	49	60	0	10	0	70	124
Total Volume	21	13	0	0	34	0	0	0	0	0	0	9	170	0	179	155	0	30	0	185	398
% App. Total	61.8	38.2	0	0		0	0	0	0		0	5	95	0		83.8	0	16.2	0		
PHF	.750	.361	.000	.000	.607	.000	.000	.000	.000	.000	.000	.563	.787	.000	.772	.646	.000	.536	.000	.661	.802



File Name : AM_8533 ELIZABETH&PLATTEVILLE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

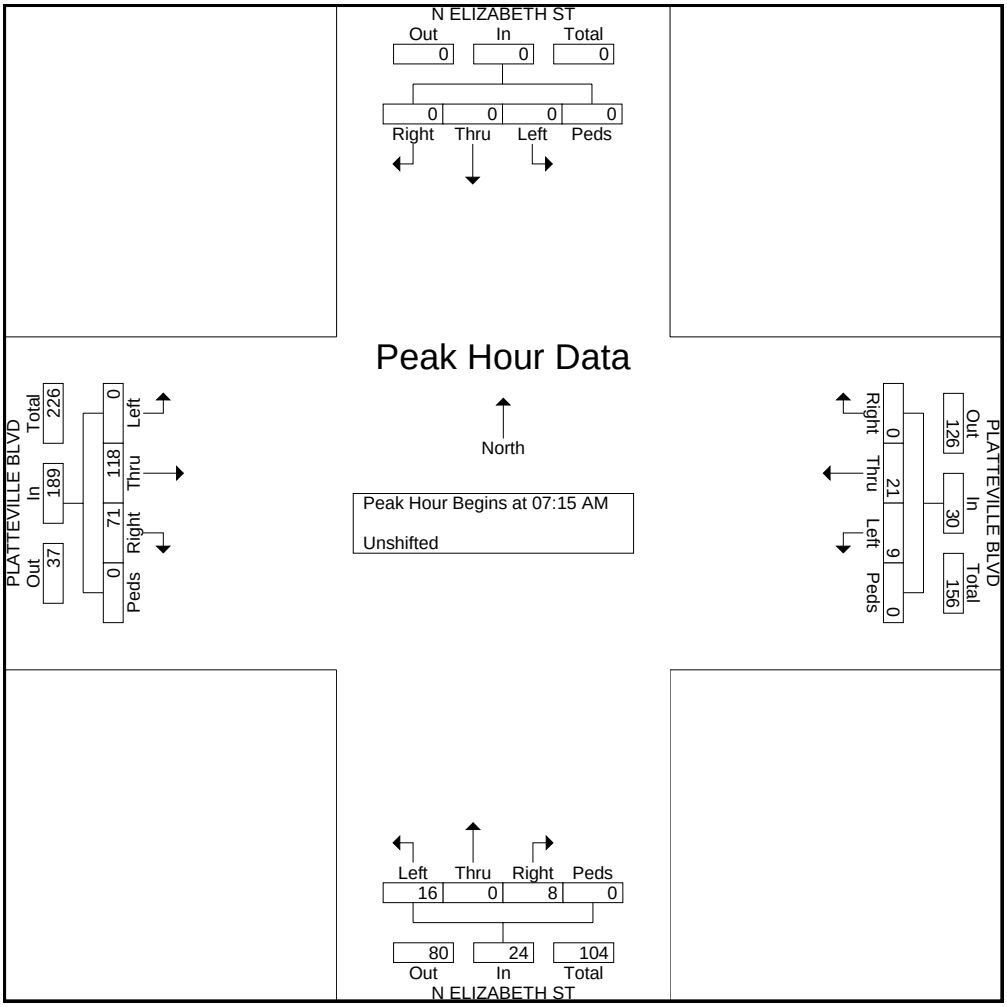
Groups Printed- Unshifted

	N ELIZABETH ST Southbound				PLATTEVILLE BLVD Westbound				N ELIZABETH ST Northbound				PLATTEVILLE BLVD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	9	2	0	0	0	4	0	11	27	0	0	53
07:15 AM	0	0	0	0	0	5	2	0	1	0	5	0	8	33	0	0	54
07:30 AM	0	0	0	0	0	3	0	0	3	0	3	0	17	40	0	0	66
07:45 AM	0	0	0	0	0	7	3	0	1	0	1	0	26	29	0	0	67
Total	0	0	0	0	0	24	7	0	5	0	13	0	62	129	0	0	240
08:00 AM	0	0	0	0	0	6	4	0	3	0	7	0	20	16	0	0	56
08:15 AM	0	0	0	0	0	9	2	0	5	0	6	0	8	22	0	0	52
08:30 AM	0	0	0	0	0	4	4	0	1	0	8	0	14	11	0	0	42
08:45 AM	0	0	0	0	0	6	1	0	2	0	5	0	15	11	0	0	40
Total	0	0	0	0	0	25	11	0	11	0	26	0	57	60	0	0	190
Grand Total	0	0	0	0	0	49	18	0	16	0	39	0	119	189	0	0	430
Apprch %	0	0	0	0	0	73.1	26.9	0	29.1	0	70.9	0	38.6	61.4	0	0	
Total %	0	0	0	0	0	11.4	4.2	0	3.7	0	9.1	0	27.7	44	0	0	



File Name : AM_8533 ELIZABETH&PLATTEVILLE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 2

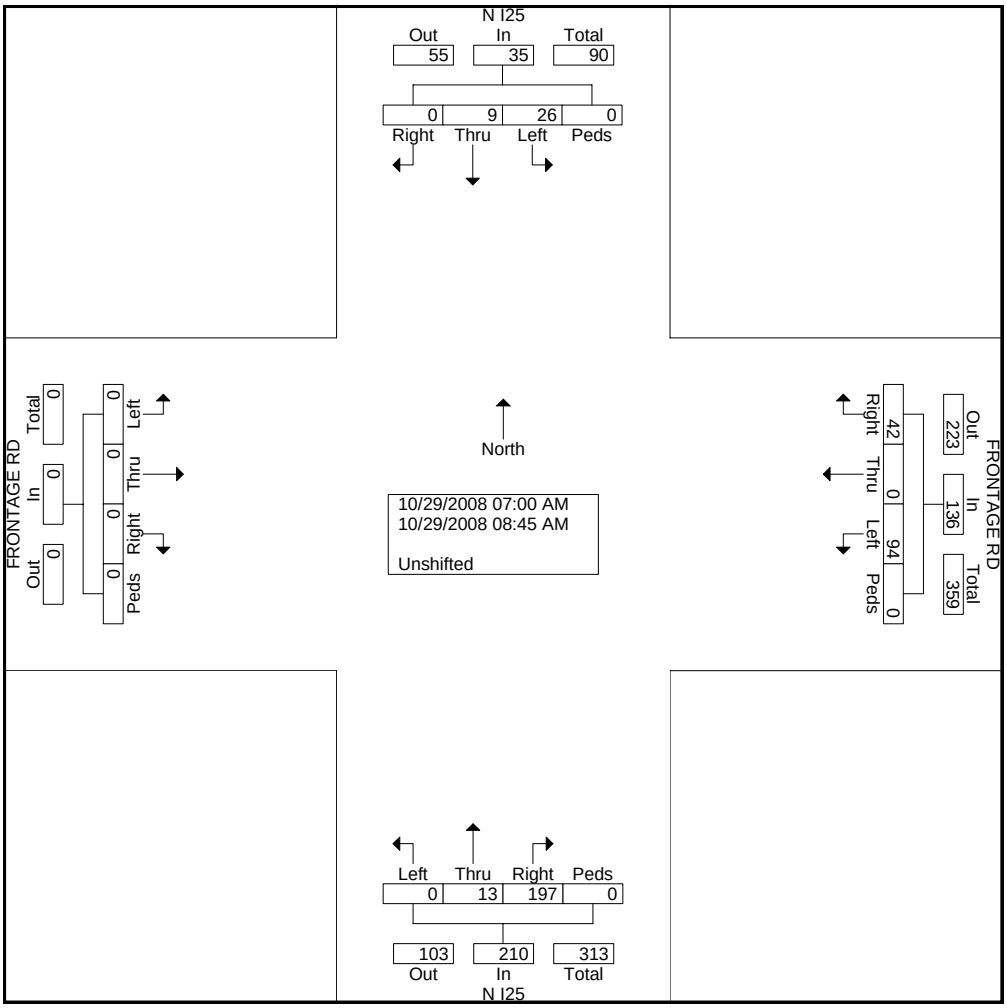
	N ELIZABETH ST Southbound					PLATTEVILLE BLVD Westbound					N ELIZABETH ST Northbound					PLATTEVILLE BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	0	5	2	0	7	1	0	5	0	6	8	33	0	0	41	54
07:30 AM	0	0	0	0	0	0	3	0	0	3	3	0	3	0	6	17	40	0	0	57	66
07:45 AM	0	0	0	0	0	0	7	3	0	10	1	0	1	0	2	26	29	0	0	55	67
08:00 AM	0	0	0	0	0	0	6	4	0	10	3	0	7	0	10	20	16	0	0	36	56
Total Volume	0	0	0	0	0	0	21	9	0	30	8	0	16	0	24	71	118	0	0	189	243
% App. Total	0	0	0	0		0	70	30	0		33.3	0	66.7	0		37.6	62.4	0	0		
PHF	.000	.000	.000	.000	.000	.000	.750	.563	.000	.750	.667	.000	.571	.000	.600	.683	.738	.000	.000	.829	.907



File Name : AM_8538 NI25&FRONTAGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

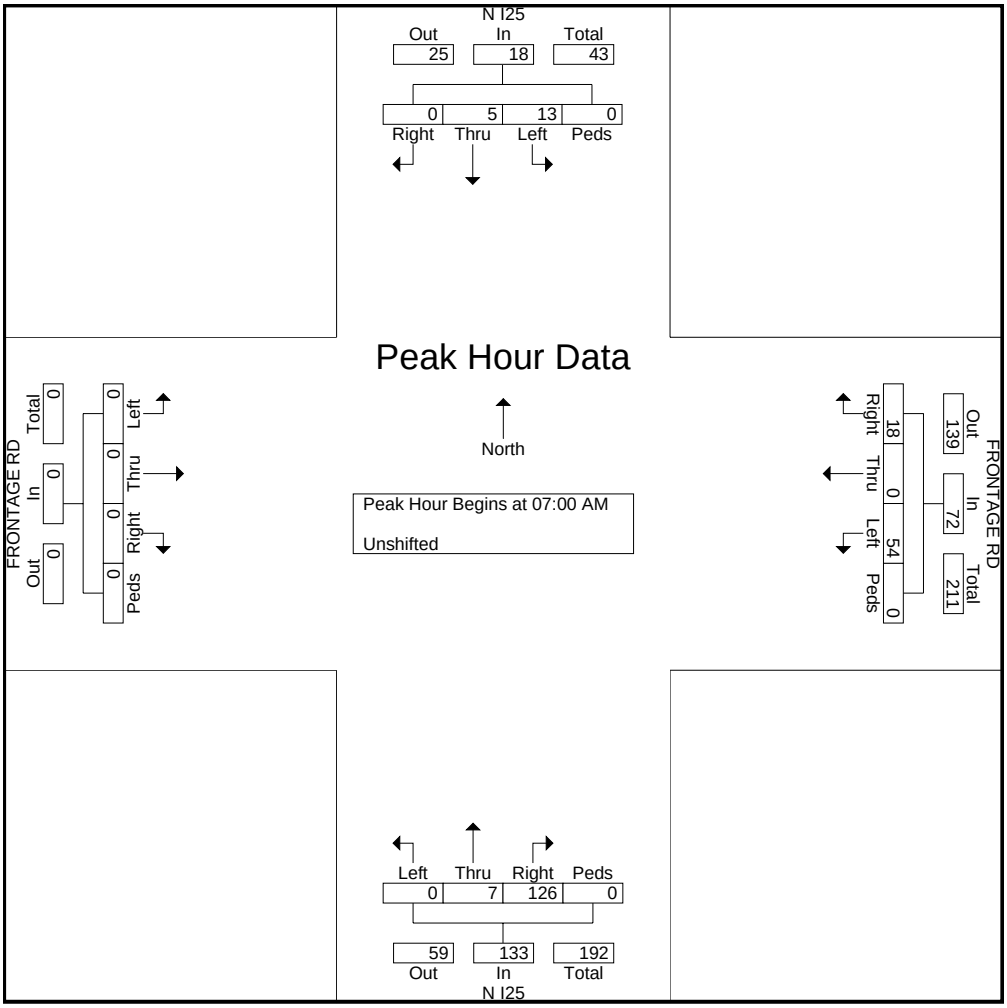
Groups Printed- Unshifted

	N I25 Southbound				FRONTAGE RD Westbound				N I25 Northbound				FRONTAGE RD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	2	0	3	0	20	0	21	3	0	0	0	0	0	0	49
07:15 AM	0	0	4	0	7	0	15	0	37	2	0	0	0	0	0	0	65
07:30 AM	0	4	5	0	6	0	6	0	32	1	0	0	0	0	0	0	54
07:45 AM	0	1	2	0	2	0	13	0	36	1	0	0	0	0	0	0	55
Total	0	5	13	0	18	0	54	0	126	7	0	0	0	0	0	0	223
08:00 AM	0	0	2	0	3	0	10	0	20	1	0	0	0	0	0	0	36
08:15 AM	0	1	1	0	9	0	11	0	19	5	0	0	0	0	0	0	46
08:30 AM	0	2	3	0	5	0	8	0	11	0	0	0	0	0	0	0	29
08:45 AM	0	1	7	0	7	0	11	0	21	0	0	0	0	0	0	0	47
Total	0	4	13	0	24	0	40	0	71	6	0	0	0	0	0	0	158
Grand Total	0	9	26	0	42	0	94	0	197	13	0	0	0	0	0	0	381
Apprch %	0	25.7	74.3	0	30.9	0	69.1	0	93.8	6.2	0	0	0	0	0	0	
Total %	0	2.4	6.8	0	11	0	24.7	0	51.7	3.4	0	0	0	0	0	0	



File Name : AM_8538 NI25&FRONTAGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 2

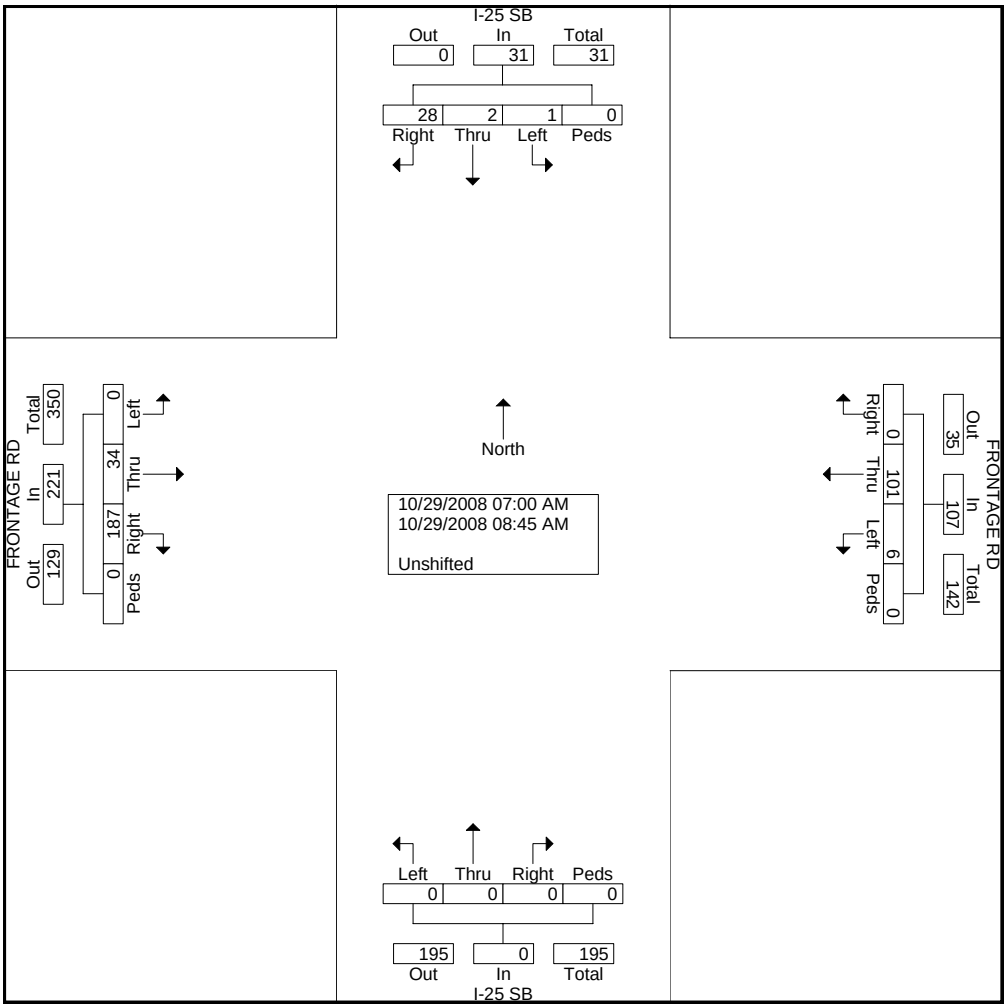
	N I25 Southbound					FRONTAGE RD Westbound					N I25 Northbound					FRONTAGE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	2	0	2	3	0	20	0	23	21	3	0	0	24	0	0	0	0	0	49
07:15 AM	0	0	4	0	4	7	0	15	0	22	37	2	0	0	39	0	0	0	0	0	65
07:30 AM	0	4	5	0	9	6	0	6	0	12	32	1	0	0	33	0	0	0	0	0	54
07:45 AM	0	1	2	0	3	2	0	13	0	15	36	1	0	0	37	0	0	0	0	0	55
Total Volume	0	5	13	0	18	18	0	54	0	72	126	7	0	0	133	0	0	0	0	0	223
% App. Total	0	27.8	72.2	0		25	0	75	0		94.7	5.3	0	0		0	0	0	0		
PHF	.000	.313	.650	.000	.500	.643	.000	.675	.000	.783	.851	.583	.000	.000	.853	.000	.000	.000	.000	.000	.858



File Name : AM_8539 SBI-25RAMPS&FRONTAGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

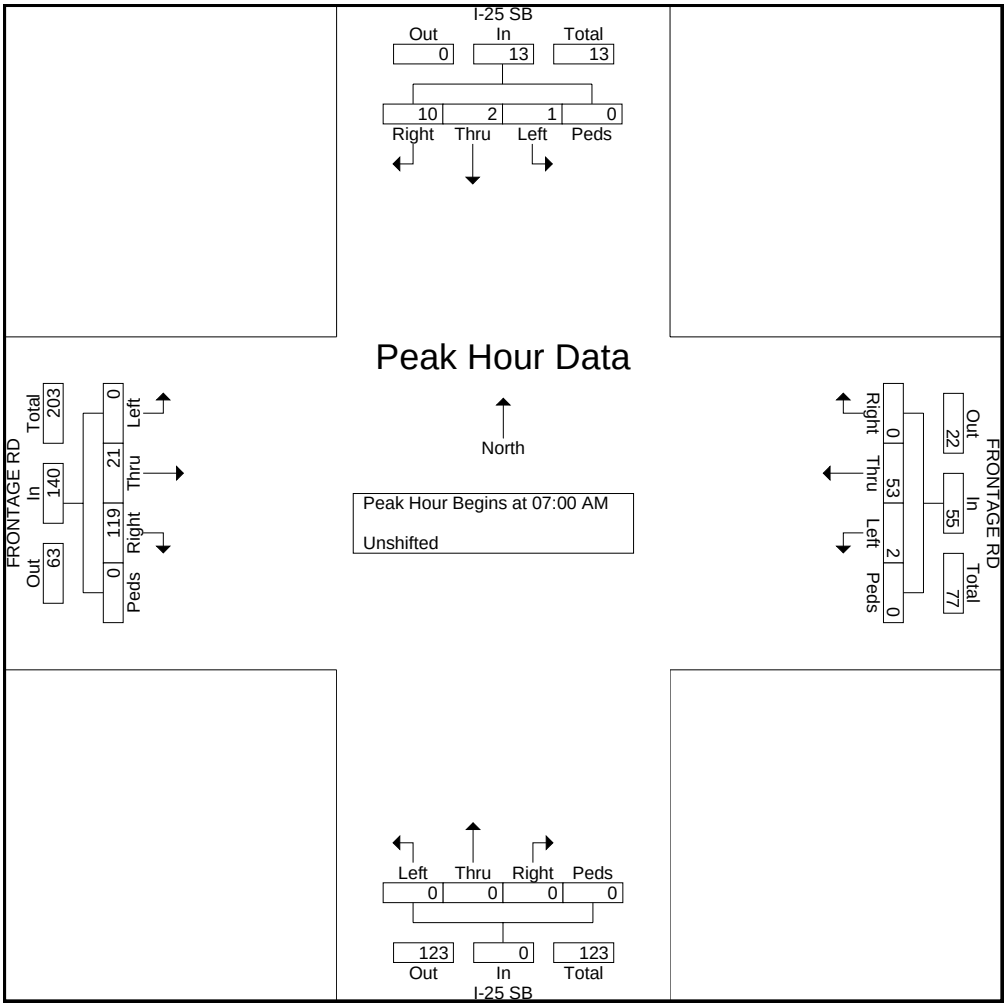
Groups Printed- Unshifted

	I-25 SB Southbound				FRONTAGE RD Westbound				I-25 SB Northbound				FRONTAGE RD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	2	0	0	0	0	19	1	0	0	0	0	0	25	0	0	0	47
07:15 AM	0	0	0	0	0	18	0	0	0	0	0	0	25	9	0	0	52
07:30 AM	5	2	0	0	0	8	0	0	0	0	0	0	37	6	0	0	58
07:45 AM	3	0	1	0	0	8	1	0	0	0	0	0	32	6	0	0	51
Total	10	2	1	0	0	53	2	0	0	0	0	0	119	21	0	0	208
08:00 AM	2	0	0	0	0	11	0	0	0	0	0	0	18	4	0	0	35
08:15 AM	7	0	0	0	0	13	0	0	0	0	0	0	17	4	0	0	41
08:30 AM	3	0	0	0	0	11	1	0	0	0	0	0	14	1	0	0	30
08:45 AM	6	0	0	0	0	13	3	0	0	0	0	0	19	4	0	0	45
Total	18	0	0	0	0	48	4	0	0	0	0	0	68	13	0	0	151
Grand Total	28	2	1	0	0	101	6	0	0	0	0	0	187	34	0	0	359
Apprch %	90.3	6.5	3.2	0	0	94.4	5.6	0	0	0	0	0	84.6	15.4	0	0	
Total %	7.8	0.6	0.3	0	0	28.1	1.7	0	0	0	0	0	52.1	9.5	0	0	



File Name : AM_8539 SBI-25RAMPS&FRONTAGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 2

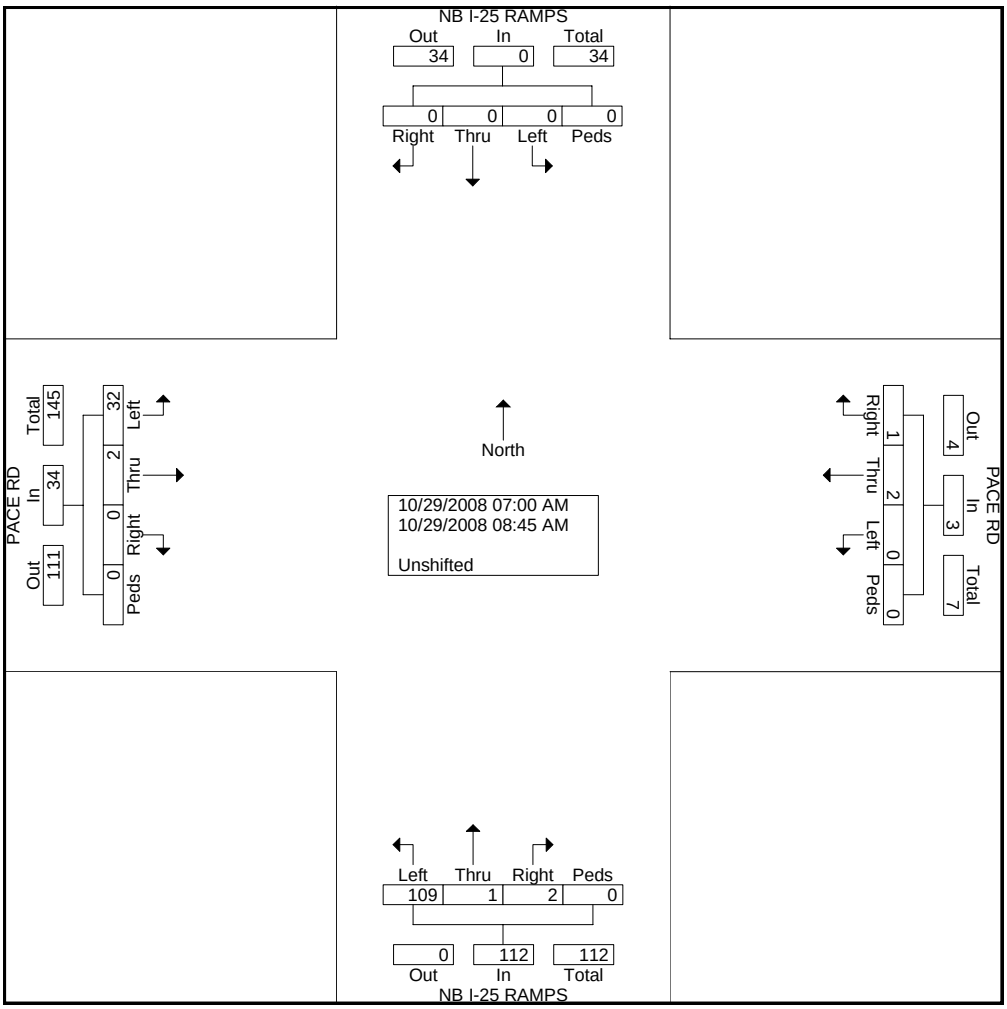
	I-25 SB Southbound					FRONTAGE RD Westbound					I-25 SB Northbound					FRONTAGE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	2	0	0	0	2	0	19	1	0	20	0	0	0	0	0	25	0	0	0	25	47
07:15 AM	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	25	9	0	0	34	52
07:30 AM	5	2	0	0	7	0	8	0	0	8	0	0	0	0	0	37	6	0	0	43	58
07:45 AM	3	0	1	0	4	0	8	1	0	9	0	0	0	0	0	32	6	0	0	38	51
Total Volume	10	2	1	0	13	0	53	2	0	55	0	0	0	0	0	119	21	0	0	140	208
% App. Total	76.9	15.4	7.7	0		0	96.4	3.6	0		0	0	0	0		85	15	0	0		
PHF	.500	.250	.250	.000	.464	.000	.697	.500	.000	.688	.000	.000	.000	.000	.000	.804	.583	.000	.000	.814	.897



File Name : AM_8540 NBI-25RAMPS&PACE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

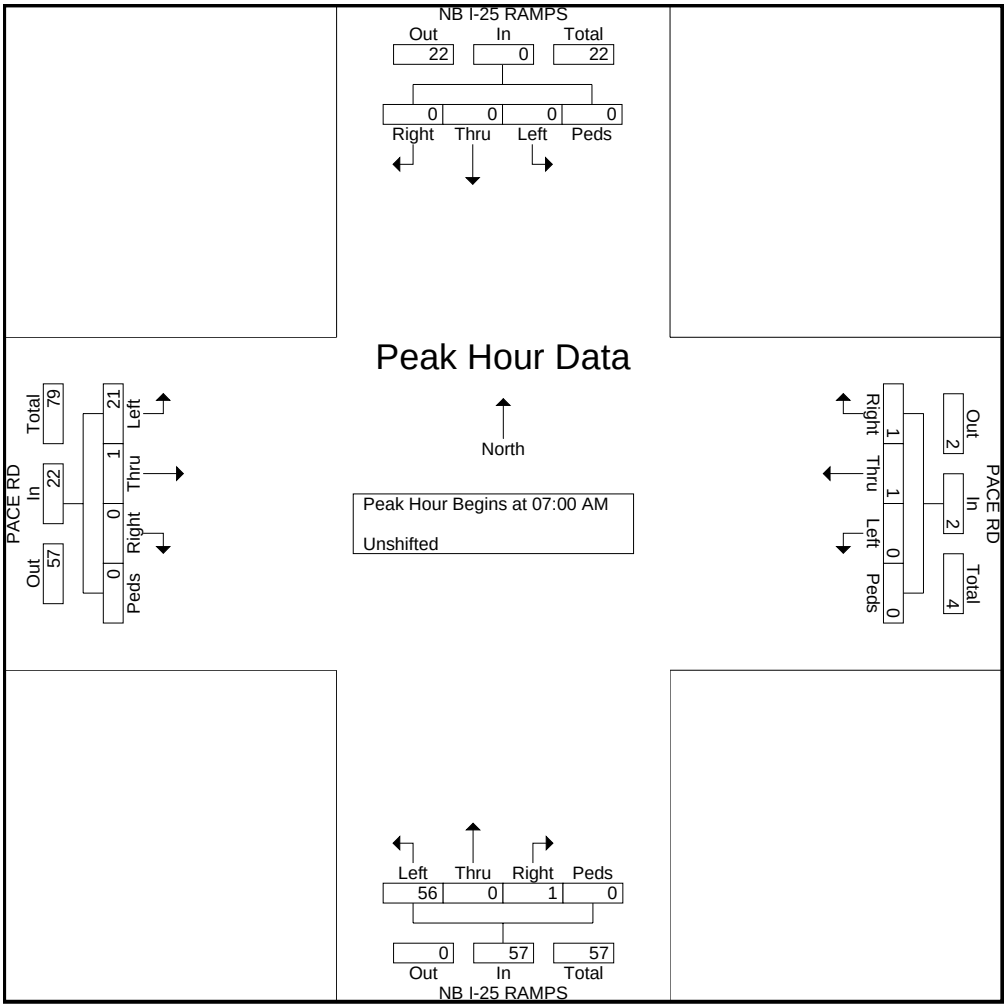
Groups Printed- Unshifted

	NB I-25 RAMPS Southbound				PACE RD Westbound				NB I-25 RAMPS Northbound				PACE RD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	1	0	19	0	0	0	0	0	20
07:15 AM	0	0	0	0	0	0	0	0	0	0	20	0	0	0	9	0	29
07:30 AM	0	0	0	0	1	0	0	0	0	0	8	0	0	0	6	0	15
07:45 AM	0	0	0	0	0	1	0	0	0	0	9	0	0	1	6	0	17
Total	0	0	0	0	1	1	0	0	1	0	56	0	0	1	21	0	81
08:00 AM	0	0	0	0	0	0	0	0	0	1	13	0	0	0	4	0	18
08:15 AM	0	0	0	0	0	0	0	0	1	0	13	0	0	0	3	0	17
08:30 AM	0	0	0	0	0	1	0	0	0	0	11	0	0	0	2	0	14
08:45 AM	0	0	0	0	0	0	0	0	0	0	16	0	0	1	2	0	19
Total	0	0	0	0	0	1	0	0	1	1	53	0	0	1	11	0	68
Grand Total	0	0	0	0	1	2	0	0	2	1	109	0	0	2	32	0	149
Apprch %	0	0	0	0	33.3	66.7	0	0	1.8	0.9	97.3	0	0	5.9	94.1	0	
Total %	0	0	0	0	0.7	1.3	0	0	1.3	0.7	73.2	0	0	1.3	21.5	0	



File Name : AM_8540 NBI-25RAMPS&PACE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 2

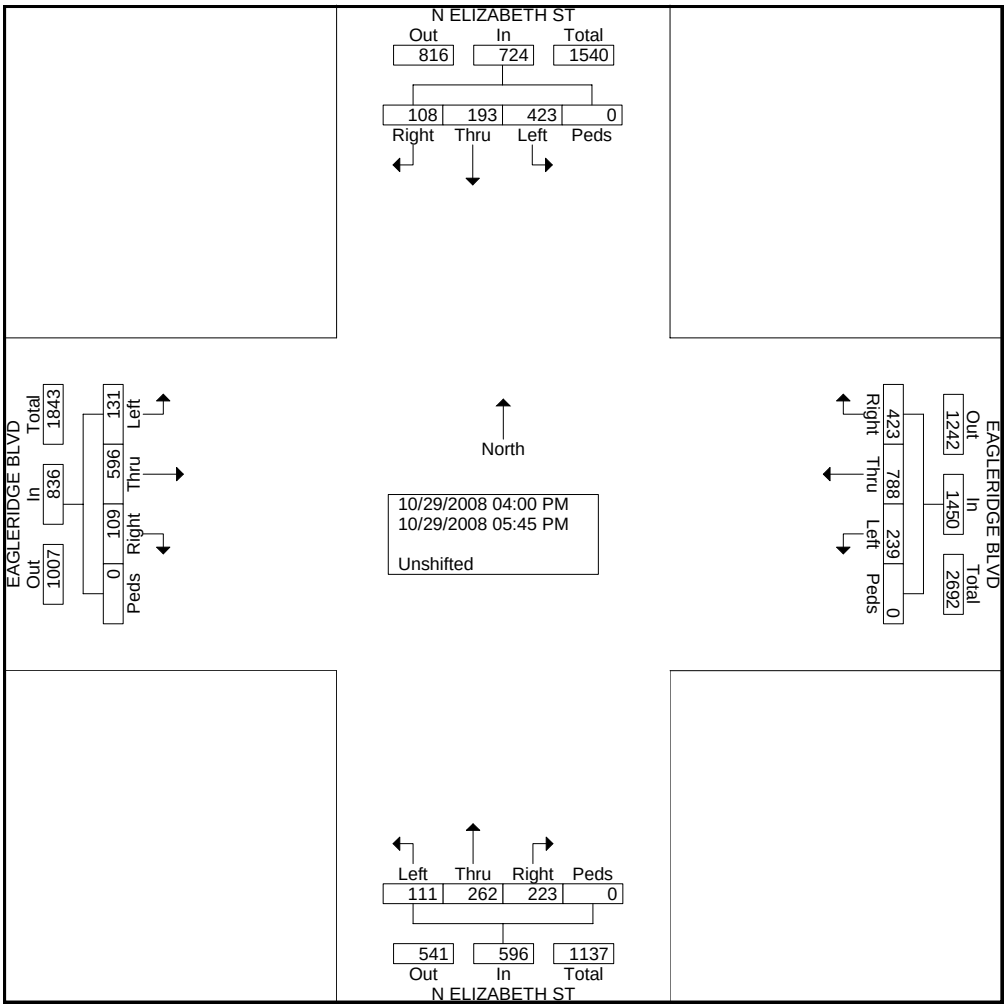
	NB I-25 RAMPS Southbound					PACE RD Westbound					NB I-25 RAMPS Northbound					PACE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	19	0	20	0	0	0	0	0	20
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	20	0	20	0	0	9	0	9	29
07:30 AM	0	0	0	0	0	1	0	0	0	1	0	0	8	0	8	0	0	6	0	6	15
07:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	9	0	9	0	1	6	0	7	17
Total Volume	0	0	0	0	0	1	1	0	0	2	1	0	56	0	57	0	1	21	0	22	81
% App. Total	0	0	0	0		50	50	0	0		1.8	0	98.2	0		0	4.5	95.5	0		
PHF	.000	.000	.000	.000	.000	.250	.250	.000	.000	.500	.250	.000	.700	.000	.713	.000	.250	.583	.000	.611	.698



File Name : PM_8519 ELIZABETH&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

Groups Printed- Unshifted

	N ELIZABETH ST Southbound				EAGLERIDGE BLVD Westbound				N ELIZABETH ST Northbound				EAGLERIDGE BLVD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	11	25	48	0	37	93	37	0	25	23	20	0	15	62	27	0	423
04:15 PM	19	20	57	0	40	107	19	0	27	35	23	0	10	81	13	0	451
04:30 PM	18	18	60	0	47	94	35	0	31	30	9	0	9	60	11	0	422
04:45 PM	13	24	42	0	54	79	30	0	26	35	11	0	12	92	18	0	436
Total	61	87	207	0	178	373	121	0	109	123	63	0	46	295	69	0	1732
05:00 PM	14	38	57	0	57	94	34	0	27	27	9	0	13	79	8	0	457
05:15 PM	15	29	60	0	73	123	20	0	32	40	14	0	15	74	20	0	515
05:30 PM	10	19	56	0	57	101	34	0	35	39	18	0	19	84	24	0	496
05:45 PM	8	20	43	0	58	97	30	0	20	33	7	0	16	64	10	0	406
Total	47	106	216	0	245	415	118	0	114	139	48	0	63	301	62	0	1874
Grand Total	108	193	423	0	423	788	239	0	223	262	111	0	109	596	131	0	3606
Apprch %	14.9	26.7	58.4	0	29.2	54.3	16.5	0	37.4	44	18.6	0	13	71.3	15.7	0	
Total %	3	5.4	11.7	0	11.7	21.9	6.6	0	6.2	7.3	3.1	0	3	16.5	3.6	0	



File Name : PM_8519 ELIZABETH&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
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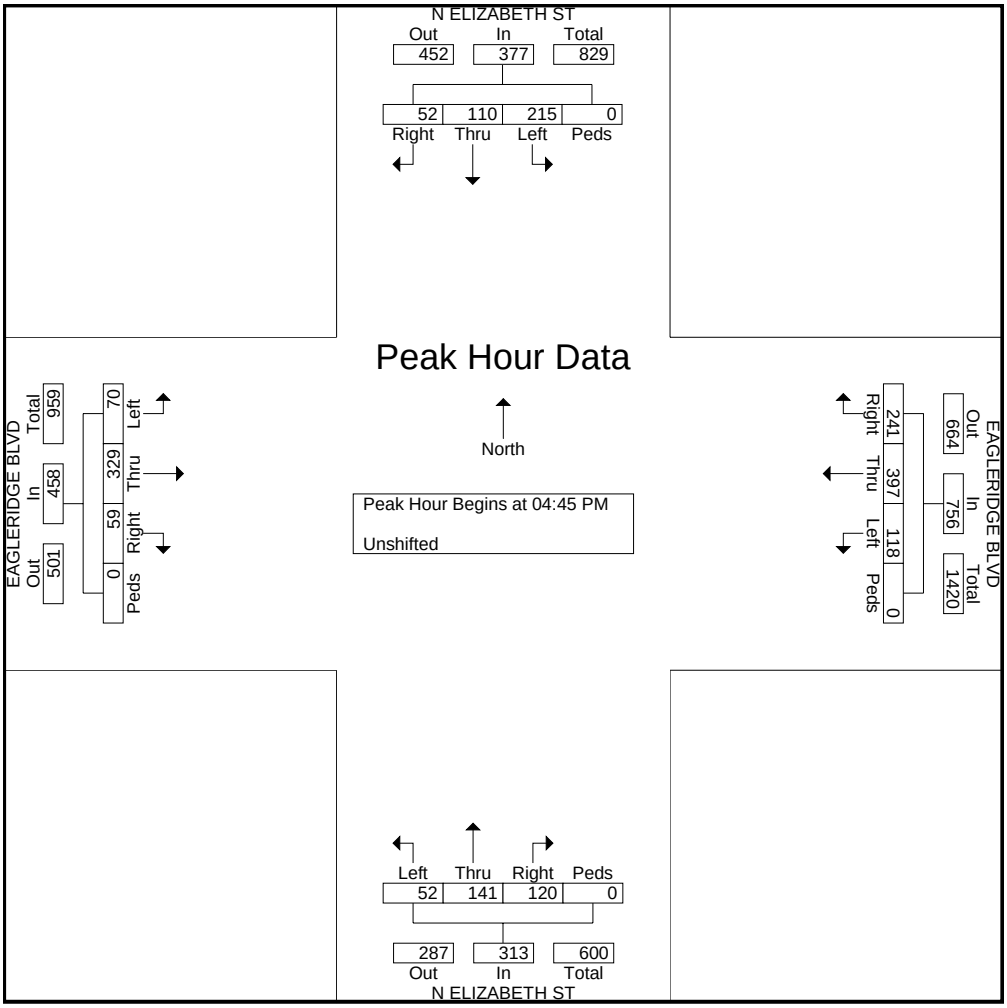
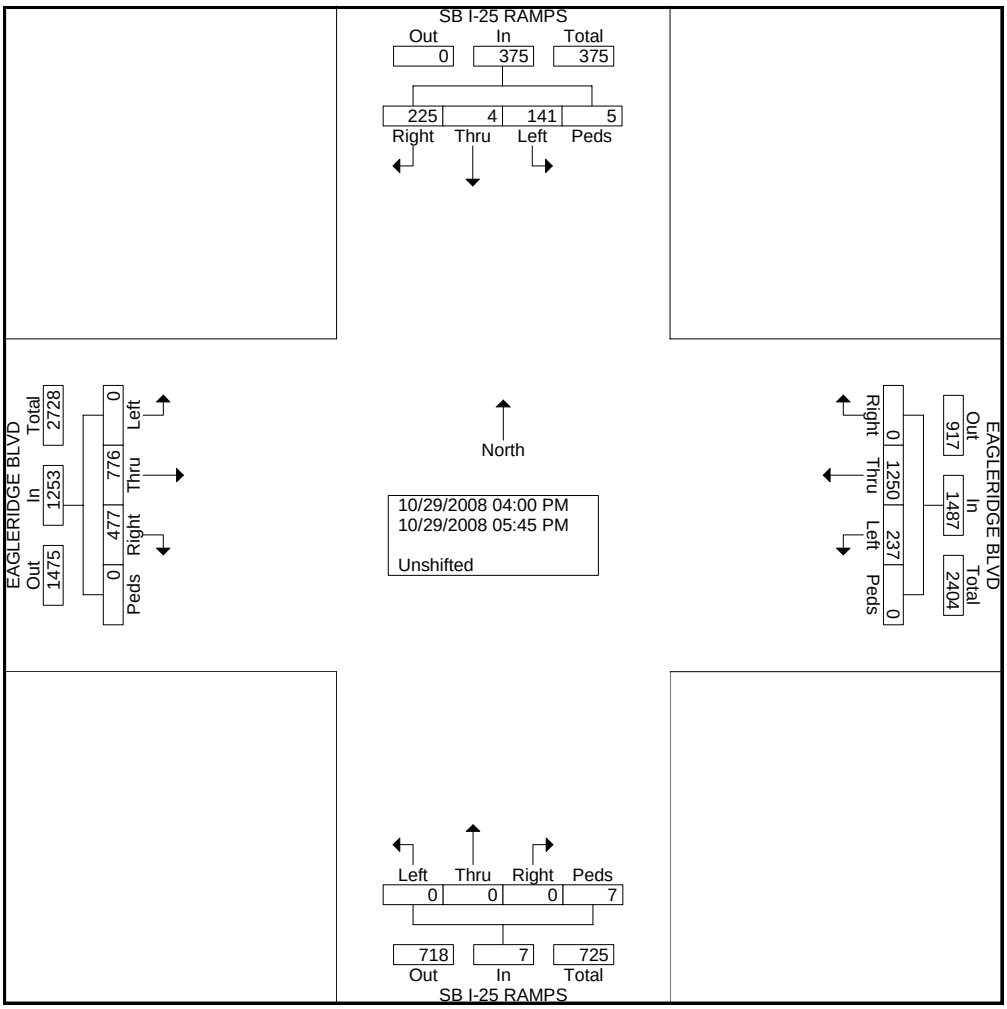
	N ELIZABETH ST Southbound					EAGLERIDGE BLVD Westbound					N ELIZABETH ST Northbound					EAGLERIDGE BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	13	24	42	0	79	54	79	30	0	163	26	35	11	0	72	12	92	18	0	122	436
05:00 PM	14	38	57	0	109	57	94	34	0	185	27	27	9	0	63	13	79	8	0	100	457
05:15 PM	15	29	60	0	104	73	123	20	0	216	32	40	14	0	86	15	74	20	0	109	515
05:30 PM	10	19	56	0	85	57	101	34	0	192	35	39	18	0	92	19	84	24	0	127	496
Total Volume	52	110	215	0	377	241	397	118	0	756	120	141	52	0	313	59	329	70	0	458	1904
% App. Total	13.8	29.2	57	0		31.9	52.5	15.6	0		38.3	45	16.6	0		12.9	71.8	15.3	0		
PHF	.867	.724	.896	.000	.865	.825	.807	.868	.000	.875	.857	.881	.722	.000	.851	.776	.894	.729	.000	.902	.924



File Name : PM_8520 SBI-25RAMPS&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

Groups Printed- Unshifted

	SB I-25 RAMPS Southbound				EAGLERIDGE BLVD Westbound				SB I-25 RAMPS Northbound				EAGLERIDGE BLVD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	28	0	27	3	0	149	28	0	0	0	0	0	46	86	0	0	367
04:15 PM	26	0	12	0	0	133	25	0	0	0	0	0	64	112	0	0	372
04:30 PM	28	0	15	0	0	148	30	0	0	0	0	0	64	97	0	0	382
04:45 PM	23	0	17	1	0	153	28	0	0	0	0	0	58	104	0	0	384
Total	105	0	71	4	0	583	111	0	0	0	0	0	232	399	0	0	1505
05:00 PM	29	0	21	1	0	154	34	0	0	0	0	1	73	80	0	0	393
05:15 PM	24	3	17	0	0	180	34	0	0	0	0	3	53	106	0	0	420
05:30 PM	31	0	17	0	0	187	28	0	0	0	0	2	63	116	0	0	444
05:45 PM	36	1	15	0	0	146	30	0	0	0	0	1	56	75	0	0	360
Total	120	4	70	1	0	667	126	0	0	0	0	7	245	377	0	0	1617
Grand Total	225	4	141	5	0	1250	237	0	0	0	0	7	477	776	0	0	3122
Apprch %	60	1.1	37.6	1.3	0	84.1	15.9	0	0	0	0	100	38.1	61.9	0	0	
Total %	7.2	0.1	4.5	0.2	0	40	7.6	0	0	0	0	0.2	15.3	24.9	0	0	



File Name : PM_8520 SBI-25RAMPS&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
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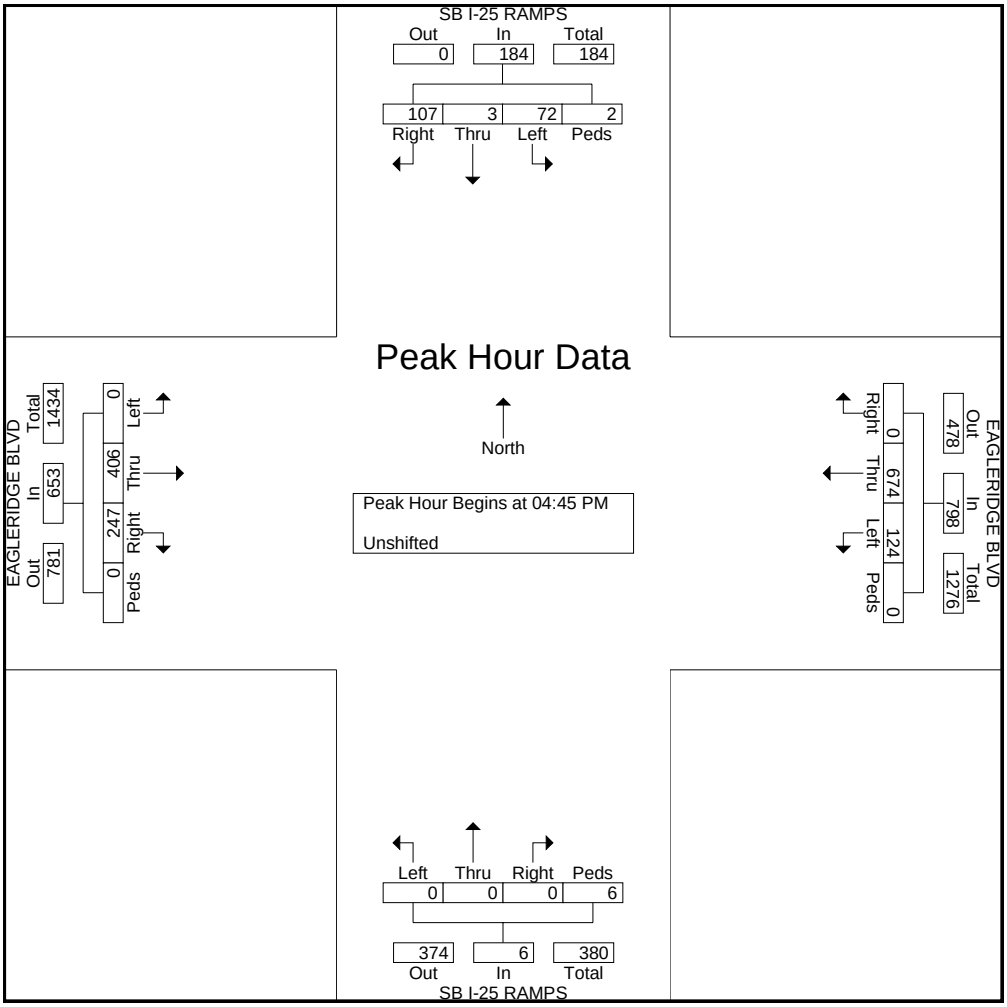
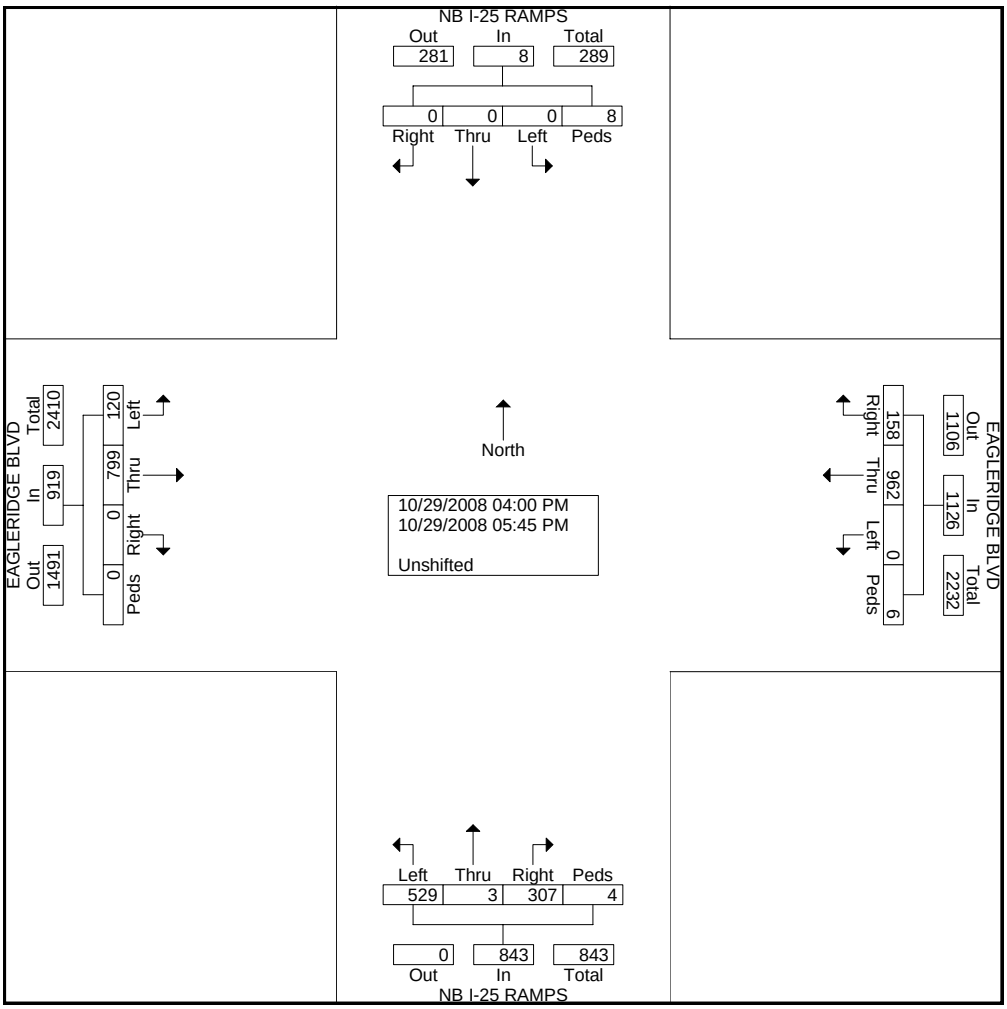
	SB I-25 RAMPS Southbound					EAGLERIDGE BLVD Westbound					SB I-25 RAMPS Northbound					EAGLERIDGE BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	23	0	17	1	41	0	153	28	0	181	0	0	0	0	0	58	104	0	0	162	384
05:00 PM	29	0	21	1	51	0	154	34	0	188	0	0	0	1	1	73	80	0	0	153	393
05:15 PM	24	3	17	0	44	0	180	34	0	214	0	0	0	3	3	53	106	0	0	159	420
05:30 PM	31	0	17	0	48	0	187	28	0	215	0	0	0	2	2	63	116	0	0	179	444
Total Volume	107	3	72	2	184	0	674	124	0	798	0	0	0	6	6	247	406	0	0	653	1641
% App. Total	58.2	1.6	39.1	1.1		0	84.5	15.5	0		0	0	0	100		37.8	62.2	0	0		
PHF	.863	.250	.857	.500	.902	.000	.901	.912	.000	.928	.000	.000	.000	.500	.500	.846	.875	.000	.000	.912	.924



File Name : PM_8521 NBI-25RAMPS&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

Groups Printed- Unshifted

	NB I-25 RAMPS Southbound				EAGLERIDGE BLVD Westbound				NB I-25 RAMPS Northbound				EAGLERIDGE BLVD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	0	0	4	26	115	0	2	31	1	61	0	0	100	13	0	353
04:15 PM	0	0	0	2	14	106	0	3	47	0	62	0	0	104	20	0	358
04:30 PM	0	0	0	0	15	113	0	0	35	0	65	0	0	92	20	0	340
04:45 PM	0	0	0	1	19	117	0	1	40	0	56	0	0	102	18	0	354
Total	0	0	0	7	74	451	0	6	153	1	244	0	0	398	71	0	1405
05:00 PM	0	0	0	1	19	120	0	0	32	0	66	1	0	90	12	0	341
05:15 PM	0	0	0	0	28	139	0	0	36	1	69	1	0	112	11	0	397
05:30 PM	0	0	0	0	21	139	0	0	37	1	83	2	0	115	17	0	415
05:45 PM	0	0	0	0	16	113	0	0	49	0	67	0	0	84	9	0	338
Total	0	0	0	1	84	511	0	0	154	2	285	4	0	401	49	0	1491
Grand Total	0	0	0	8	158	962	0	6	307	3	529	4	0	799	120	0	2896
Apprch %	0	0	0	100	14	85.4	0	0.5	36.4	0.4	62.8	0.5	0	86.9	13.1	0	
Total %	0	0	0	0.3	5.5	33.2	0	0.2	10.6	0.1	18.3	0.1	0	27.6	4.1	0	



File Name : PM_8521 NBI-25RAMPS&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
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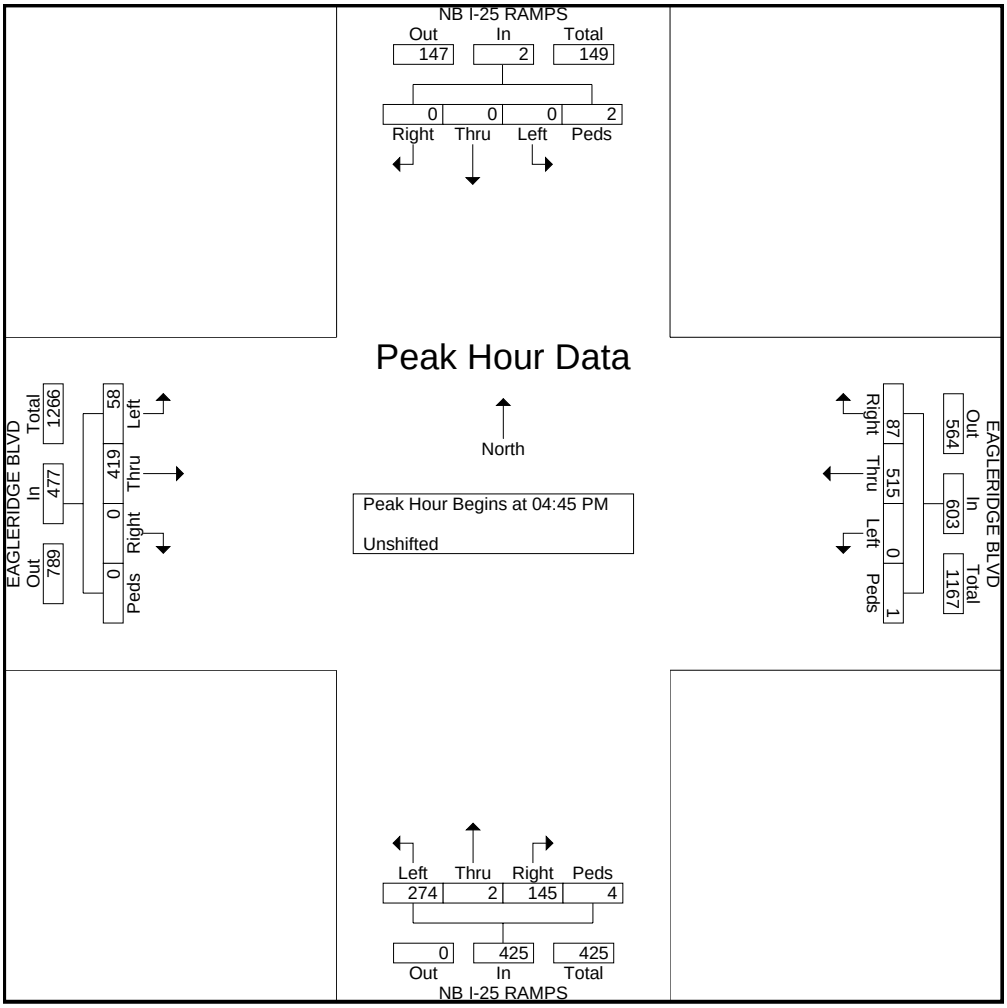
	NB I-25 RAMPS Southbound					EAGLERIDGE BLVD Westbound					NB I-25 RAMPS Northbound					EAGLERIDGE BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	1	1	19	117	0	1	137	40	0	56	0	96	0	102	18	0	120	354
05:00 PM	0	0	0	1	1	19	120	0	0	139	32	0	66	1	99	0	90	12	0	102	341
05:15 PM	0	0	0	0	0	28	139	0	0	167	36	1	69	1	107	0	112	11	0	123	397
05:30 PM	0	0	0	0	0	21	139	0	0	160	37	1	83	2	123	0	115	17	0	132	415
Total Volume	0	0	0	2	2	87	515	0	1	603	145	2	274	4	425	0	419	58	0	477	1507
% App. Total	0	0	0	100		14.4	85.4	0	0.2		34.1	0.5	64.5	0.9		0	87.8	12.2	0		
PHF	.000	.000	.000	.500	.500	.777	.926	.000	.250	.903	.906	.500	.825	.500	.864	.000	.911	.806	.000	.903	.908



File Name : PM_8522 DILLON&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

Groups Printed- Unshifted

	DILLON DR Southbound				EAGLERIDGE BLVD Westbound				DILLON DR Northbound				EAGLERIDGE BLVD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	12	2	0	0	0	0	0	1	0	8	119	6	60	1	20	0	229
04:15 PM	8	5	0	0	0	0	0	0	0	12	99	0	77	0	29	0	230
04:30 PM	22	12	0	0	0	0	0	0	0	8	100	0	75	0	19	0	236
04:45 PM	14	10	0	1	0	0	0	0	0	20	126	0	71	0	27	1	270
Total	56	29	0	1	0	0	0	1	0	48	444	6	283	1	95	1	965
05:00 PM	20	12	0	0	0	0	0	1	0	7	104	0	68	0	18	0	230
05:15 PM	19	11	0	0	0	0	0	0	0	9	142	0	91	0	24	0	296
05:30 PM	16	8	0	0	0	0	0	0	0	16	134	0	89	0	23	0	286
05:45 PM	10	12	0	0	0	0	0	0	0	13	114	0	74	0	13	0	236
Total	65	43	0	0	0	0	0	1	0	45	494	0	322	0	78	0	1048
Grand Total	121	72	0	1	0	0	0	2	0	93	938	6	605	1	173	1	2013
Apprch %	62.4	37.1	0	0.5	0	0	0	100	0	9	90.5	0.6	77.6	0.1	22.2	0.1	
Total %	6	3.6	0	0	0	0	0	0.1	0	4.6	46.6	0.3	30.1	0	8.6	0	

File Name : PM_8522 DILLON&EAGLERIDGE
Site Code : 00000000
Start Date : 10/29/2008
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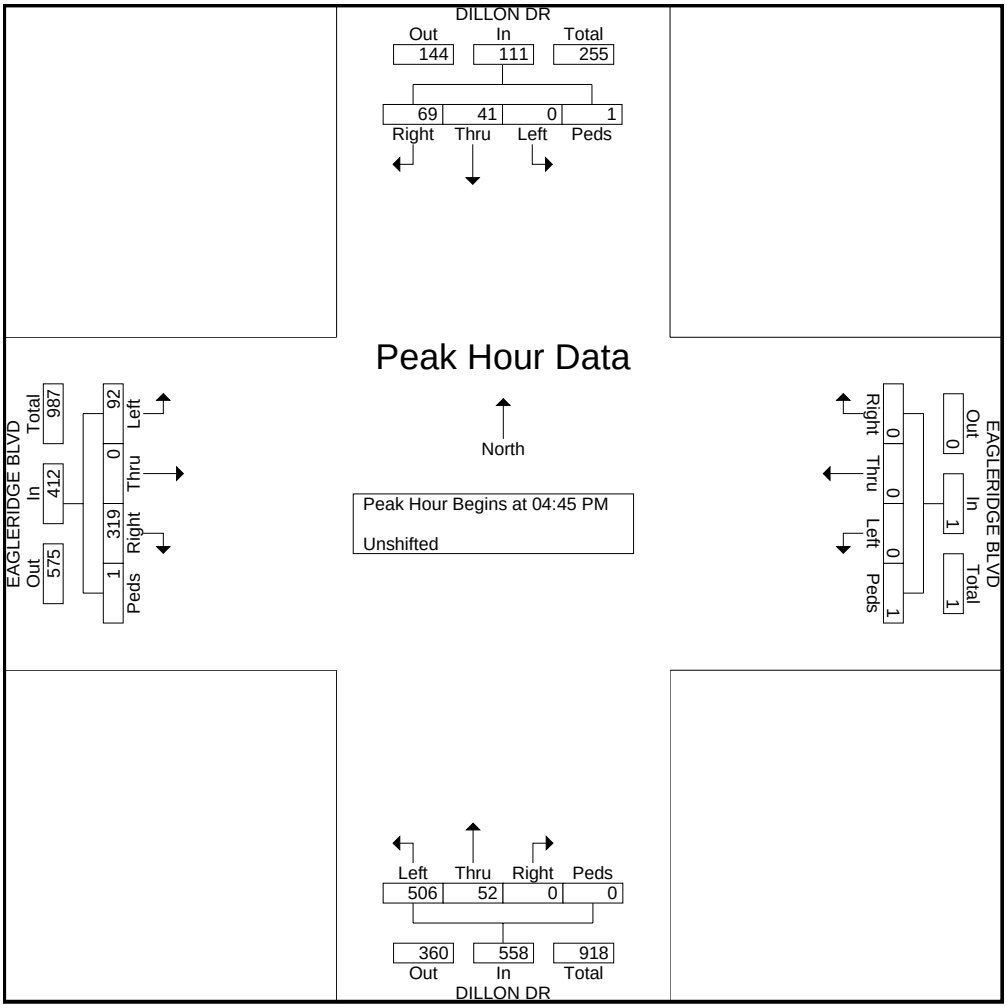
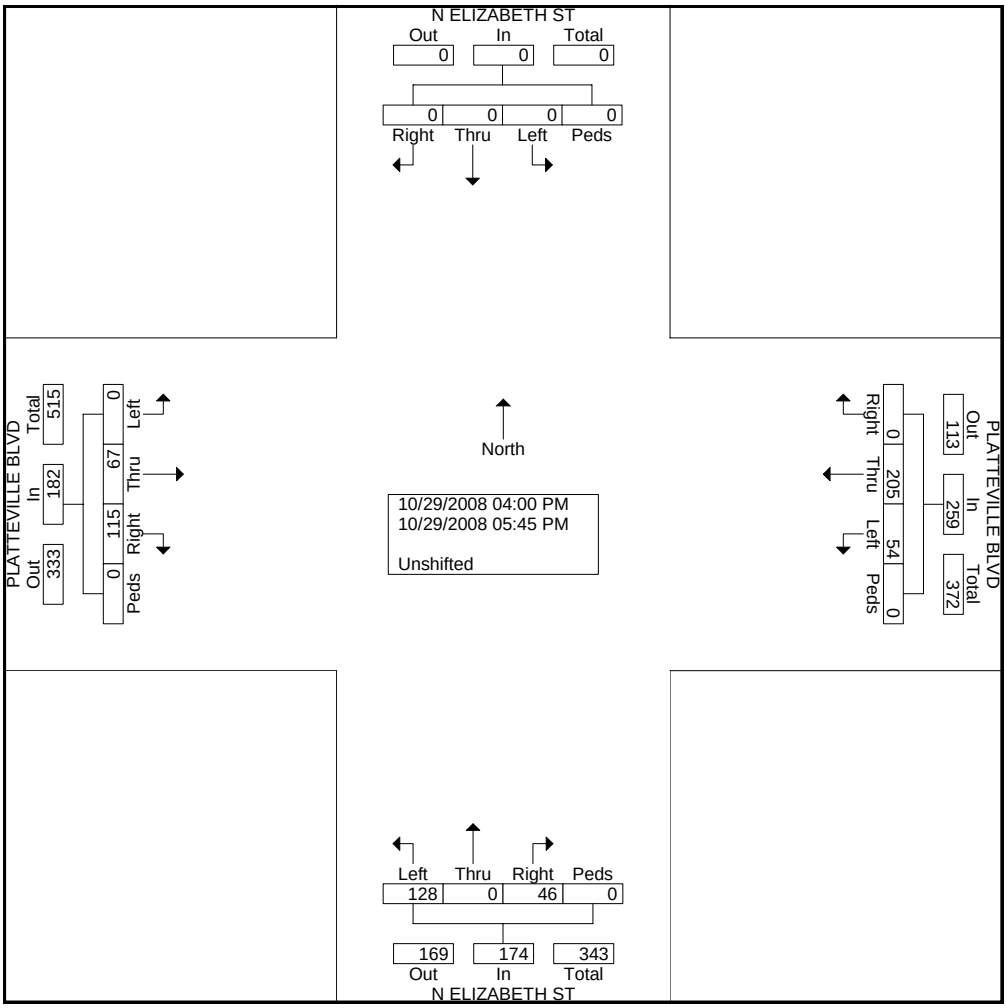
	DILLON DR Southbound					EAGLERIDGE BLVD Westbound					DILLON DR Northbound					EAGLERIDGE BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	14	10	0	1	25	0	0	0	0	0	0	20	126	0	146	71	0	27	1	99	270
05:00 PM	20	12	0	0	32	0	0	0	1	1	0	7	104	0	111	68	0	18	0	86	230
05:15 PM	19	11	0	0	30	0	0	0	0	0	0	9	142	0	151	91	0	24	0	115	296
05:30 PM	16	8	0	0	24	0	0	0	0	0	0	16	134	0	150	89	0	23	0	112	286
Total Volume	69	41	0	1	111	0	0	0	1	1	0	52	506	0	558	319	0	92	1	412	1082
% App. Total	62.2	36.9	0	0.9		0	0	0	100		0	9.3	90.7	0		77.4	0	22.3	0.2		
PHF	.863	.854	.000	.250	.867	.000	.000	.000	.250	.250	.000	.650	.891	.000	.924	.876	.000	.852	.250	.896	.914



File Name : PM_8533 ELIZABETH&PLATTEVILLE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

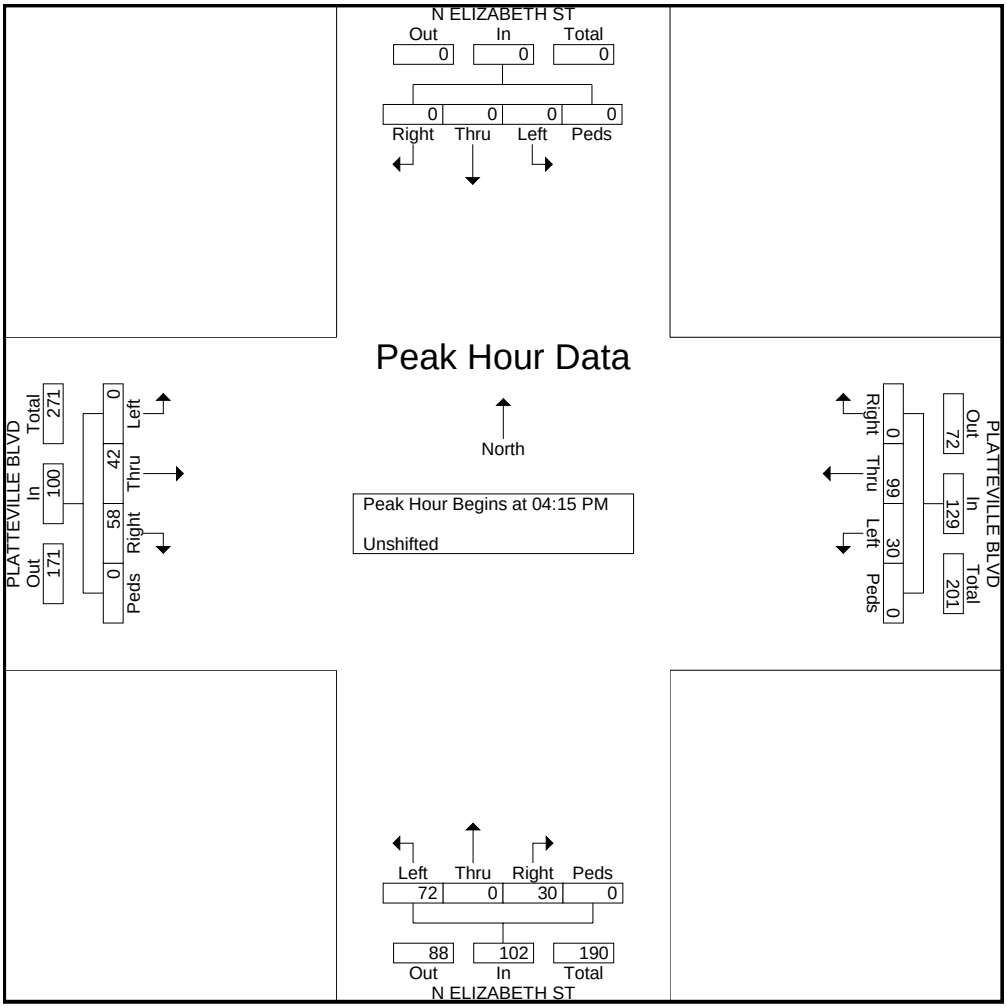
Groups Printed- Unshifted

	N ELIZABETH ST Southbound				PLATTEVILLE BLVD Westbound				N ELIZABETH ST Northbound				PLATTEVILLE BLVD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	0	0	0	0	20	3	0	3	0	15	0	18	5	0	0	64
04:15 PM	0	0	0	0	0	26	7	0	6	0	13	0	10	12	0	0	74
04:30 PM	0	0	0	0	0	18	5	0	9	0	17	0	13	14	0	0	76
04:45 PM	0	0	0	0	0	21	5	0	7	0	20	0	14	9	0	0	76
Total	0	0	0	0	0	85	20	0	25	0	65	0	55	40	0	0	290
05:00 PM	0	0	0	0	0	34	13	0	8	0	22	0	21	7	0	0	105
05:15 PM	0	0	0	0	0	25	4	0	1	0	14	0	18	7	0	0	69
05:30 PM	0	0	0	0	0	32	8	0	7	0	12	0	12	9	0	0	80
05:45 PM	0	0	0	0	0	29	9	0	5	0	15	0	9	4	0	0	71
Total	0	0	0	0	0	120	34	0	21	0	63	0	60	27	0	0	325
Grand Total	0	0	0	0	0	205	54	0	46	0	128	0	115	67	0	0	615
Apprch %	0	0	0	0	0	79.2	20.8	0	26.4	0	73.6	0	63.2	36.8	0	0	
Total %	0	0	0	0	0	33.3	8.8	0	7.5	0	20.8	0	18.7	10.9	0	0	



File Name : PM_8533 ELIZABETH&PLATTEVILLE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 2

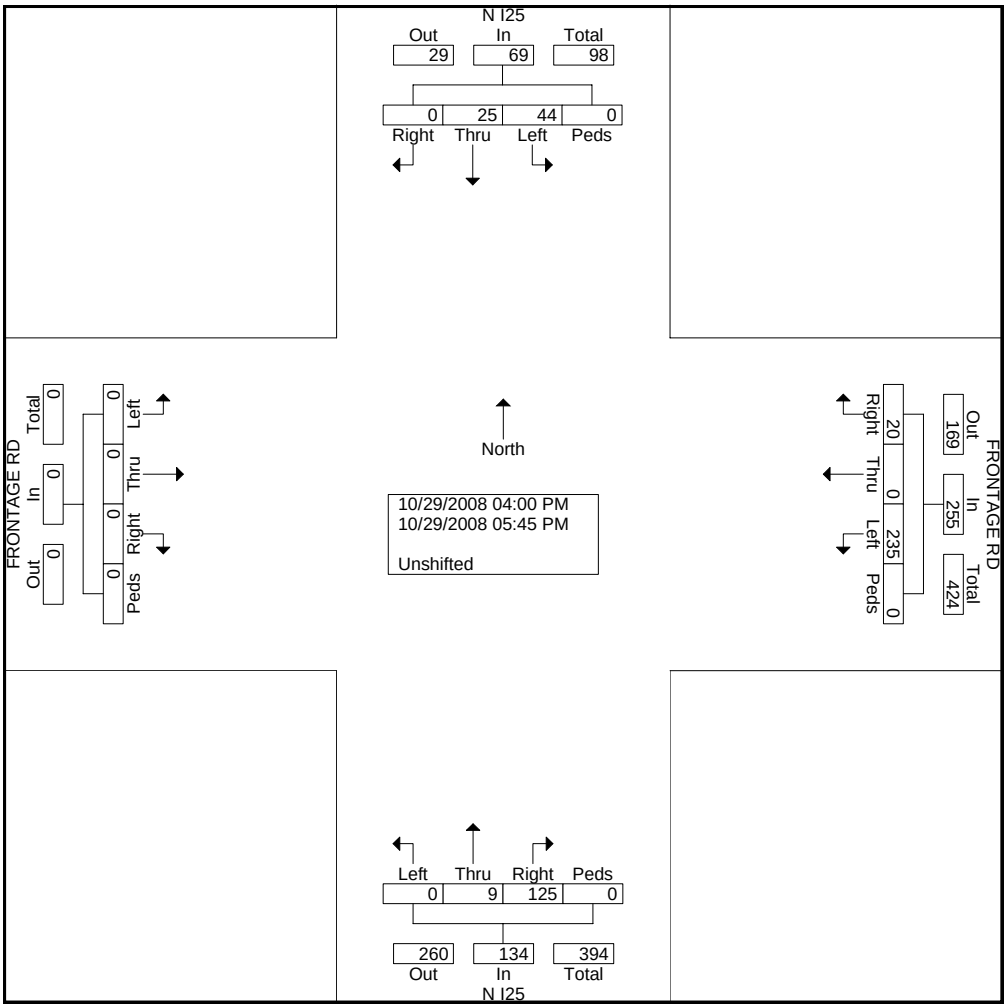
	N ELIZABETH ST Southbound					PLATTEVILLE BLVD Westbound					N ELIZABETH ST Northbound					PLATTEVILLE BLVD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	0	26	7	0	33	6	0	13	0	19	10	12	0	0	22	74
04:30 PM	0	0	0	0	0	0	18	5	0	23	9	0	17	0	26	13	14	0	0	27	76
04:45 PM	0	0	0	0	0	0	21	5	0	26	7	0	20	0	27	14	9	0	0	23	76
05:00 PM	0	0	0	0	0	0	34	13	0	47	8	0	22	0	30	21	7	0	0	28	105
Total Volume	0	0	0	0	0	0	99	30	0	129	30	0	72	0	102	58	42	0	0	100	331
% App. Total	0	0	0	0		0	76.7	23.3	0		29.4	0	70.6	0		58	42	0	0		
PHF	.000	.000	.000	.000	.000	.000	.728	.577	.000	.686	.833	.000	.818	.000	.850	.690	.750	.000	.000	.893	.788



File Name : PM_8538 NI25&FRONTAGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

Groups Printed- Unshifted

	N I25 Southbound				FRONTAGE RD Westbound				N I25 Northbound				FRONTAGE RD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	3	7	0	0	0	29	0	21	1	0	0	0	0	0	0	61
04:15 PM	0	1	5	0	2	0	20	0	18	2	0	0	0	0	0	0	48
04:30 PM	0	1	5	0	3	0	25	0	25	0	0	0	0	0	0	0	59
04:45 PM	0	3	7	0	6	0	25	0	18	1	0	0	0	0	0	0	60
Total	0	8	24	0	11	0	99	0	82	4	0	0	0	0	0	0	228
05:00 PM	0	8	6	0	7	0	42	0	10	2	0	0	0	0	0	0	75
05:15 PM	0	2	9	0	0	0	36	0	4	1	0	0	0	0	0	0	52
05:30 PM	0	5	3	0	1	0	33	0	16	1	0	0	0	0	0	0	59
05:45 PM	0	2	2	0	1	0	25	0	13	1	0	0	0	0	0	0	44
Total	0	17	20	0	9	0	136	0	43	5	0	0	0	0	0	0	230
Grand Total	0	25	44	0	20	0	235	0	125	9	0	0	0	0	0	0	458
Apprch %	0	36.2	63.8	0	7.8	0	92.2	0	93.3	6.7	0	0	0	0	0	0	
Total %	0	5.5	9.6	0	4.4	0	51.3	0	27.3	2	0	0	0	0	0	0	



File Name : PM_8538 NI25&FRONTAGE
Site Code : 00000000
Start Date : 10/29/2008
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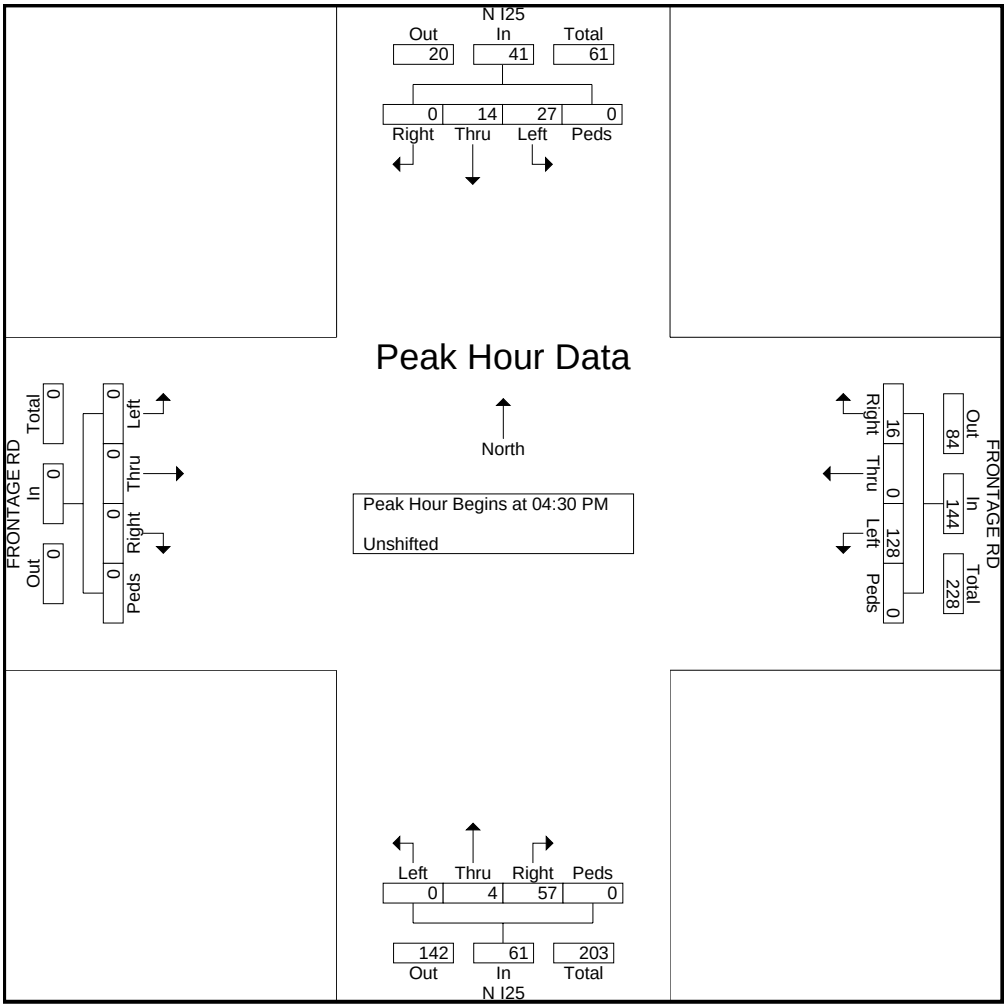
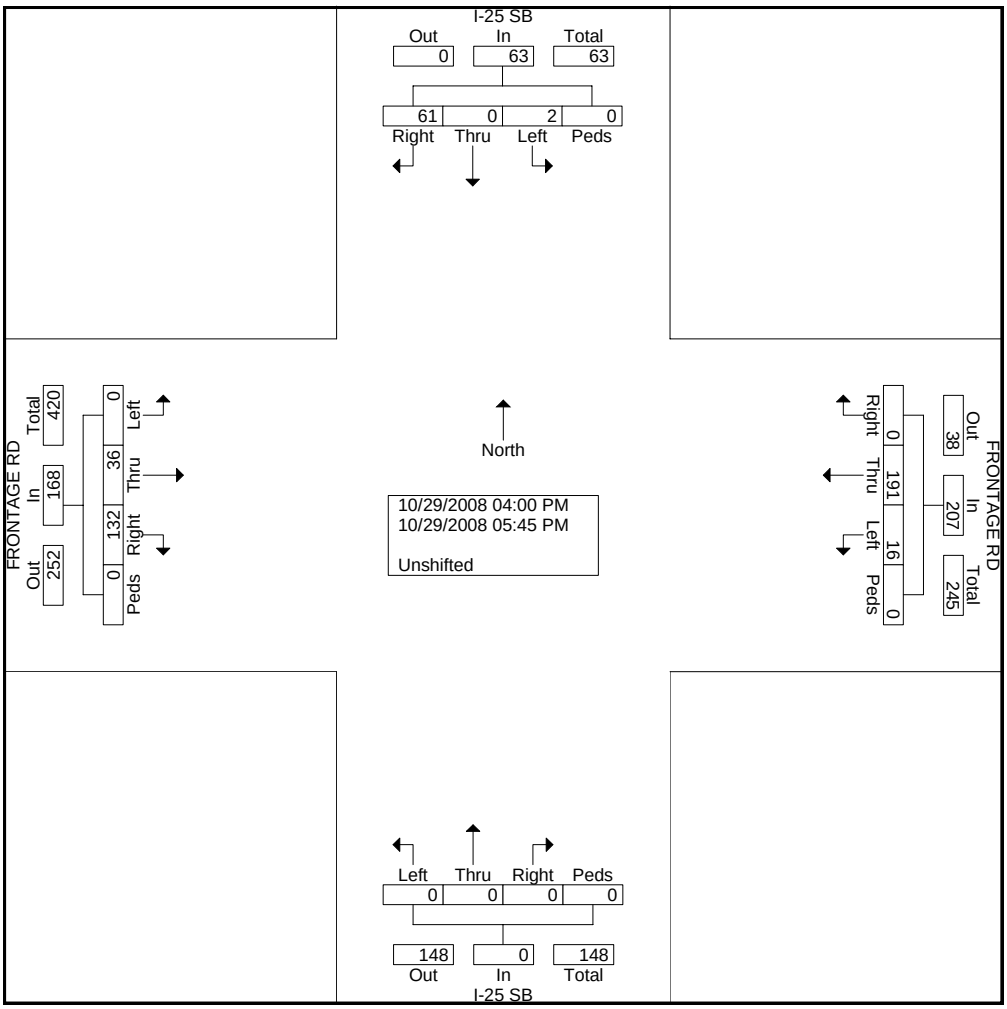
	N I25 Southbound					FRONTAGE RD Westbound					N I25 Northbound					FRONTAGE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	1	5	0	6	3	0	25	0	28	25	0	0	0	25	0	0	0	0	0	59
04:45 PM	0	3	7	0	10	6	0	25	0	31	18	1	0	0	19	0	0	0	0	0	60
05:00 PM	0	8	6	0	14	7	0	42	0	49	10	2	0	0	12	0	0	0	0	0	75
05:15 PM	0	2	9	0	11	0	0	36	0	36	4	1	0	0	5	0	0	0	0	0	52
Total Volume	0	14	27	0	41	16	0	128	0	144	57	4	0	0	61	0	0	0	0	0	246
% App. Total	0	34.1	65.9	0		11.1	0	88.9	0		93.4	6.6	0	0		0	0	0	0		
PHF	.000	.438	.750	.000	.732	.571	.000	.762	.000	.735	.570	.500	.000	.000	.610	.000	.000	.000	.000	.000	.820



File Name : PM_8539 SBI-25RAMPS&FRONTAGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

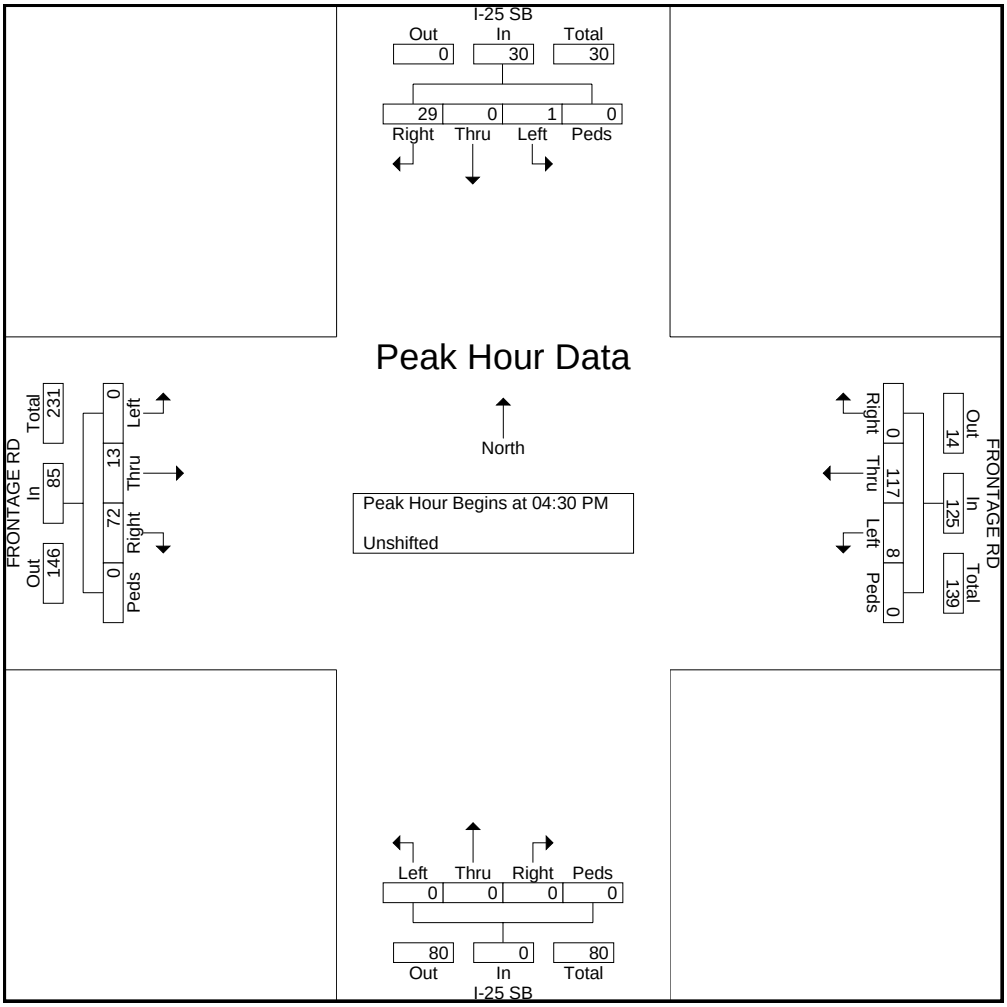
Groups Printed- Unshifted

	I-25 SB Southbound				FRONTAGE RD Westbound				I-25 SB Northbound				FRONTAGE RD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	11	0	1	0	0	17	2	0	0	0	0	0	19	9	0	0	59
04:15 PM	4	0	0	0	0	16	4	0	0	0	0	0	17	5	0	0	46
04:30 PM	6	0	1	0	0	20	4	0	0	0	0	0	22	5	0	0	58
04:45 PM	10	0	0	0	0	20	2	0	0	0	0	0	22	2	0	0	56
Total	31	0	2	0	0	73	12	0	0	0	0	0	80	21	0	0	219
05:00 PM	10	0	0	0	0	43	0	0	0	0	0	0	19	1	0	0	73
05:15 PM	3	0	0	0	0	34	2	0	0	0	0	0	9	5	0	0	53
05:30 PM	10	0	0	0	0	23	2	0	0	0	0	0	12	7	0	0	54
05:45 PM	7	0	0	0	0	18	0	0	0	0	0	0	12	2	0	0	39
Total	30	0	0	0	0	118	4	0	0	0	0	0	52	15	0	0	219
Grand Total	61	0	2	0	0	191	16	0	0	0	0	0	132	36	0	0	438
Apprch %	96.8	0	3.2	0	0	92.3	7.7	0	0	0	0	0	78.6	21.4	0	0	
Total %	13.9	0	0.5	0	0	43.6	3.7	0	0	0	0	0	30.1	8.2	0	0	



File Name : PM_8539 SBI-25RAMPS&FRONTAGE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 2

	I-25 SB Southbound					FRONTAGE RD Westbound					I-25 SB Northbound					FRONTAGE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	6	0	1	0	7	0	20	4	0	24	0	0	0	0	0	22	5	0	0	27	58
04:45 PM	10	0	0	0	10	0	20	2	0	22	0	0	0	0	0	22	2	0	0	24	56
05:00 PM	10	0	0	0	10	0	43	0	0	43	0	0	0	0	0	19	1	0	0	20	73
05:15 PM	3	0	0	0	3	0	34	2	0	36	0	0	0	0	0	9	5	0	0	14	53
Total Volume	29	0	1	0	30	0	117	8	0	125	0	0	0	0	0	72	13	0	0	85	240
% App. Total	96.7	0	3.3	0		0	93.6	6.4	0		0	0	0	0		84.7	15.3	0	0		
PHF	.725	.000	.250	.000	.750	.000	.680	.500	.000	.727	.000	.000	.000	.000	.000	.818	.650	.000	.000	.787	.822



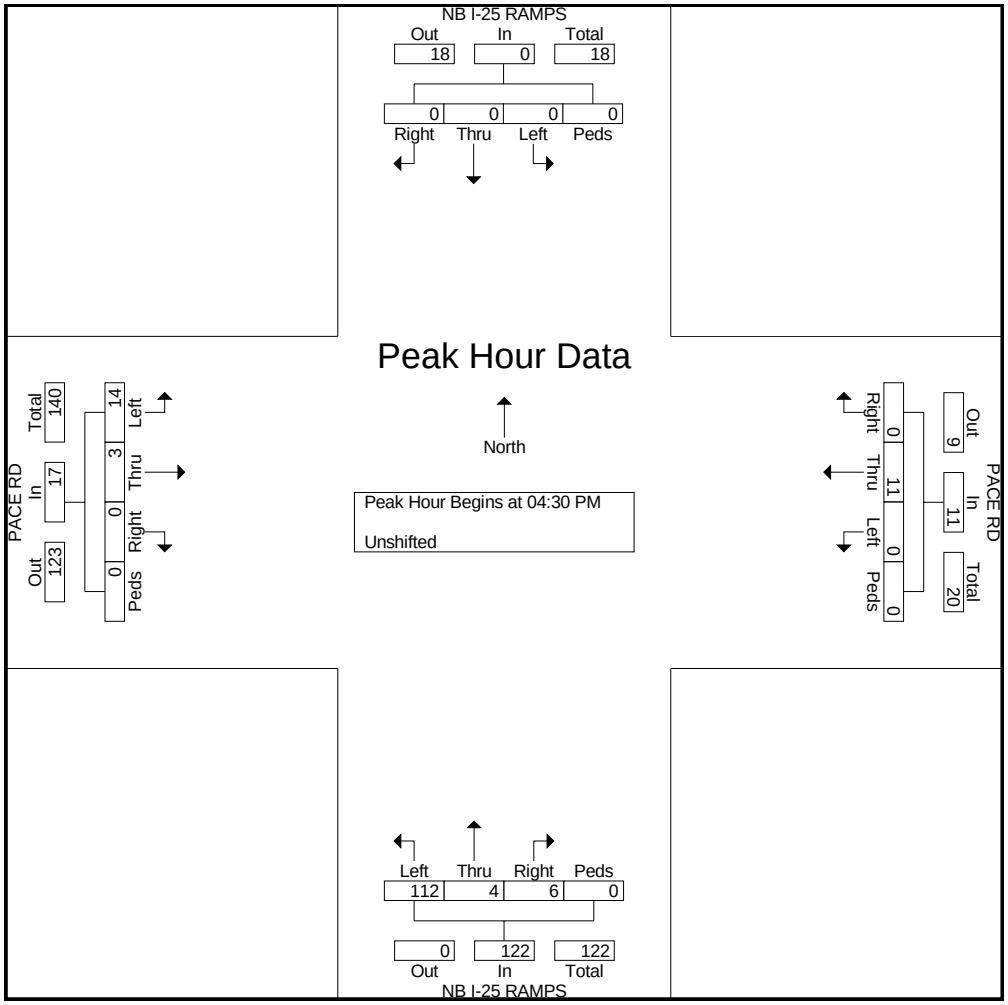
File Name : PM_8540 NBI-25RAMPS&PACE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 1

Groups Printed- Unshifted

	NB I-25 RAMPS Southbound				PACE RD Westbound				NB I-25 RAMPS Northbound				PACE RD Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:00 PM	0	0	0	0	1	1	0	0	1	3	19	0	0	1	10	0	36
04:15 PM	0	0	0	0	0	4	0	0	1	1	16	0	0	0	4	0	26
04:30 PM	0	0	0	0	0	5	0	0	4	1	16	0	0	1	8	0	35
04:45 PM	0	0	0	0	0	2	0	0	1	1	21	0	0	0	1	0	26
Total	0	0	0	0	1	12	0	0	7	6	72	0	0	2	23	0	123
05:00 PM	0	0	0	0	0	3	0	0	0	0	37	0	0	2	1	0	43
05:15 PM	0	0	0	0	0	1	0	0	1	2	38	0	0	0	4	0	46
05:30 PM	0	0	0	0	0	2	0	0	1	1	20	0	0	2	5	0	31
05:45 PM	0	0	0	0	0	1	0	0	2	0	20	0	0	0	1	0	24
Total	0	0	0	0	0	7	0	0	4	3	115	0	0	4	11	0	144
Grand Total	0	0	0	0	1	19	0	0	11	9	187	0	0	6	34	0	267
Apprch %	0	0	0	0	5	95	0	0	5.3	4.3	90.3	0	0	15	85	0	
Total %	0	0	0	0	0.4	7.1	0	0	4.1	3.4	70	0	0	2.2	12.7	0	

File Name : PM_8540 NBI-25RAMPS&PACE
Site Code : 00000000
Start Date : 10/29/2008
Page No : 2

	NB I-25 RAMPS Southbound					PACE RD Westbound					NB I-25 RAMPS Northbound					PACE RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	5	0	0	5	4	1	16	0	21	0	1	8	0	9	35
04:45 PM	0	0	0	0	0	0	2	0	0	2	1	1	21	0	23	0	0	1	0	1	26
05:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	37	0	37	0	2	1	0	3	43
05:15 PM	0	0	0	0	0	0	1	0	0	1	1	2	38	0	41	0	0	4	0	4	46
Total Volume	0	0	0	0	0	0	11	0	0	11	6	4	112	0	122	0	3	14	0	17	150
% App. Total	0	0	0	0		0	100	0	0		4.9	3.3	91.8	0		0	17.6	82.4	0		
PHF	.000	.000	.000	.000	.000	.000	.550	.000	.000	.550	.375	.500	.737	.000	.744	.000	.375	.438	.000	.472	.815



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9660 W 44th Ave
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Site Code: 5
Station ID: 5
DILLON DR N/O EAGLERIDGE BLVD

Start Time	30-Oct-08 Thu	NB	SB	Total
12:00 AM		1	1	2
01:00		1	2	3
02:00		0	1	1
03:00		1	0	1
04:00		1	2	3
05:00		5	2	7
06:00		27	10	37
07:00		55	21	76
08:00		34	39	73
09:00		35	37	72
10:00		49	42	91
11:00		**68**	**51**	**119**
12:00 PM		75	73	148
01:00		71	73	144
02:00		69	60	129
03:00		83	54	137
04:00		**130**	94	224
05:00		126	108	**234**
06:00		99	102	201
07:00		71	**110**	181
08:00		28	62	90
09:00		10	42	52
10:00		7	21	28
11:00		2	11	13
Total		1048	1018	2066
Percent		50.7%	49.3%	
AM Peak		11:00	11:00	11:00
Vol.		68	51	119
PM Peak		16:00	19:00	17:00
Vol.		130	110	234
Grand Total		1048	1018	2066
Percent		50.7%	49.3%	
ADT		Not Calculated		

All Traffic Data Services, Inc
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Site Code: 6
Station ID: 6
N ELIZABETH ST N/O LOCAL ACCESS

Start Time	30-Oct-08 Thu	NB	SB	Total
12:00 AM		6	7	13
01:00		5	6	11
02:00		2	4	6
03:00		3	4	7
04:00		6	4	10
05:00		30	20	50
06:00		40	32	72
07:00		40	86	126
08:00		75	94	169
09:00		98	100	198
10:00		175	144	319
11:00		258	228	486
12:00 PM		278	246	524
01:00		237	266	503
02:00		252	271	523
03:00		220	223	443
04:00		248	224	472
05:00		326	262	588
06:00		249	237	486
07:00		190	172	362
08:00		94	144	238
09:00		48	123	171
10:00		23	61	84
11:00		21	22	43
Total		2924	2980	5904
Percent		49.5%	50.5%	
AM Peak		11:00	11:00	11:00
Vol.		258	228	486
PM Peak		17:00	14:00	17:00
Vol.		326	271	588
Grand Total		2924	2980	5904
Percent		49.5%	50.5%	
ADT		Not Calculated		

All Traffic Data Services, Inc
9660 W 44th Ave
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Site Code: 7
Station ID: 7
EAGLERIDGE BLVD W/O DILLON DR

Start Time	30-Oct-08 Thu	EB	WB	Total
12:00 AM		20	23	43
01:00		22	20	42
02:00		10	22	32
03:00		12	16	28
04:00		14	14	28
05:00		50	60	110
06:00		128	116	244
07:00		236	180	416
08:00		246	230	476
09:00		284	253	537
10:00		319	319	638
11:00		**426**	**410**	**836**
12:00 PM		462	486	948
01:00		509	475	984
02:00		427	536	963
03:00		402	486	888
04:00		452	544	996
05:00		**514**	**621**	**1135**
06:00		371	533	904
07:00		299	405	704
08:00		208	280	488
09:00		134	178	312
10:00		78	87	165
11:00		29	48	77
Total		5652	6342	11994
Percent		47.1%	52.9%	
AM Peak		11:00	11:00	11:00
Vol.		426	410	836
PM Peak		17:00	17:00	17:00
Vol.		514	621	1135
Grand Total		5652	6342	11994
Percent		47.1%	52.9%	
ADT		Not Calculated		

All Traffic Data Services, Inc
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Site Code: 8
Station ID: 8
EAGLERIDGE BLVD E/O N ELIZABETH ST

Start Time	30-Oct-08 Thu	EB	WB	Total
12:00 AM		27	44	71
01:00		30	25	55
02:00		14	20	34
03:00		16	17	33
04:00		42	20	62
05:00		152	58	210
06:00		350	134	484
07:00		520	260	780
08:00		505	318	823
09:00		395	330	725
10:00		460	413	873
11:00		516	492	1008
12:00 PM		581	570	1151
01:00		640	512	1152
02:00		546	525	1071
03:00		557	596	1153
04:00		623	702	1325
05:00		637	811	1448
06:00		484	648	1132
07:00		366	469	835
08:00		275	314	589
09:00		207	212	419
10:00		121	106	227
11:00		50	70	120
Total		8114	7666	15780
Percent		51.4%	48.6%	
AM Peak		07:00	11:00	11:00
Vol.		520	492	1008
PM Peak		13:00	17:00	17:00
Vol.		640	811	1448
Grand Total		8114	7666	15780
Percent		51.4%	48.6%	
ADT		Not Calculated		

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Site Code: 9
Station ID: 9
SB I-25 ON RAMP S/O EAGLERIDGE BLVD

Start Time	30-Oct-08 Thu	SB
12:00 AM		20
01:00		18
02:00		8
03:00		12
04:00		19
05:00		86
06:00		212
07:00		**322**
08:00		270
09:00		228
10:00		232
11:00		283
12:00 PM		317
01:00		337
02:00		345
03:00		320
04:00		363
05:00		**378**
06:00		305
07:00		212
08:00		157
09:00		138
10:00		94
11:00		28
Total		4704
AM Peak		07:00
Vol.		322
PM Peak		17:00
Vol.		378
Grand Total		4704
ADT		Not Calculated

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Site Code: 10
Station ID: 10
SB I-25 OFF RAMP N/O EAGLERIDGE BLVD

Start Time	30-Oct-08 Thu	SB
12:00 AM		14
01:00		12
02:00		6
03:00		4
04:00		6
05:00		26
06:00		54
07:00		100
08:00		96
09:00		107
10:00		112
11:00		**116**
12:00 PM		106
01:00		100
02:00		108
03:00		155
04:00		188
05:00		206
06:00		120
07:00		80
08:00		44
09:00		38
10:00		42
11:00		13
Total		1853
AM Peak		11:00
Vol.		116
PM Peak		17:00
Vol.		206
Grand Total		1853
ADT		Not Calculated

All Traffic Data Services, Inc
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Site Code: 11
Station ID: 11
NB I-25 ON RAMP N/O EAGLERIDGE BLVD

Start Time	30-Oct-08 Thu	NB
12:00 AM		4
01:00		7
02:00		10
03:00		10
04:00		24
05:00		76
06:00		120
07:00		121
08:00		**147**
09:00		114
10:00		110
11:00		134
12:00 PM		126
01:00		138
02:00		140
03:00		130
04:00		140
05:00		**151**
06:00		110
07:00		72
08:00		64
09:00		36
10:00		14
11:00		14
Total		2012
AM Peak		08:00
Vol.		147
PM Peak		17:00
Vol.		151
Grand Total		2012
ADT		Not Calculated

All Traffic Data Services, Inc
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Site Code: 12
Station ID: 12
NB I-25 OFF RAMP S/O EAGLERIDGE BLVD

Start Time	30-Oct-08 Thu	NB
12:00 AM		26
01:00		12
02:00		8
03:00		19
04:00		31
05:00		84
06:00		135
07:00		172
08:00		232
09:00		233
10:00		275
11:00		368
12:00 PM		372
01:00		192
02:00		314
03:00		333
04:00		425
05:00		463
06:00		364
07:00		226
08:00		140
09:00		100
10:00		50
11:00		36
Total		4610
AM Peak		11:00
Vol.		368
PM Peak		17:00
Vol.		463
Grand Total		4610
ADT		Not Calculated

All Traffic Data Services, Inc
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Site Code: 13
Station ID: 13
I-25 N/O EAGLERIDGE BLVD

Start Time	30-Oct-08 Thu	NB	SB	Total
12:00 AM		94	150	244
01:00		68	104	172
02:00		107	110	217
03:00		146	82	228
04:00		208	170	378
05:00		525	432	957
06:00		832	802	1634
07:00		894	1100	1994
08:00		820	1107	1927
09:00		766	984	1750
10:00		850	1056	1906
11:00		914	1016	1930
12:00 PM		864	948	1812
01:00		970	917	1887
02:00		1016	952	1968
03:00		1098	1060	2158
04:00		1172	1240	2412
05:00		1236	1166	2402
06:00		826	740	1566
07:00		533	530	1063
08:00		445	393	838
09:00		343	403	746
10:00		227	262	489
11:00		144	180	324
Total		15098	15904	31002
Percent		48.7%	51.3%	
AM Peak		11:00	08:00	07:00
Vol.		914	1107	1994
PM Peak		17:00	16:00	16:00
Vol.		1236	1240	2412
Grand Total		15098	15904	31002
Percent		48.7%	51.3%	
ADT		Not Calculated		

All Traffic Data Services, Inc
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Site Code: 14
Station ID: 14
I-25 S/O EAGLERIDGE BLVD

Start Time	30-Oct-08 Thu	NB	SB	Total
12:00 AM		117	154	271
01:00		74	109	183
02:00		106	111	217
03:00		157	89	246
04:00		217	181	398
05:00		538	487	1025
06:00		855	950	1805
07:00		954	**1309**	2263
08:00		914	1268	2182
09:00		894	1094	1988
10:00		1025	1164	2189
11:00		**1159**	1171	**2330**
12:00 PM		1099	1171	2270
01:00		1113	1166	2279
02:00		1178	1201	2379
03:00		1288	1237	2525
04:00		1442	**1429**	2871
05:00		**1533**	1351	**2884**
06:00		1069	934	2003
07:00		680	669	1349
08:00		516	511	1027
09:00		403	508	911
10:00		260	317	577
11:00		164	197	361
Total		17755	18778	36533
Percent		48.6%	51.4%	
AM Peak		11:00	07:00	11:00
Vol.		1159	1309	2330
PM Peak		17:00	16:00	17:00
Vol.		1533	1429	2884
Grand Total		17755	18778	36533
Percent		48.6%	51.4%	
ADT		Not Calculated		

All Traffic Data Services, Inc
9660 W 44th Ave
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Site Code: 2
Station ID: 2
PLATTEVILLE BLVD W/O ELIZABETH ST

Start Time	28-Oct-08 Tue	EB	WB	Total
12:00 AM		4	11	15
01:00		5	5	10
02:00		3	6	9
03:00		7	3	10
04:00		20	4	24
05:00		77	30	107
06:00		134	54	188
07:00		**211**	40	**251**
08:00		121	51	172
09:00		90	50	140
10:00		84	53	137
11:00		93	**75**	168
12:00 PM		86	82	168
01:00		82	102	184
02:00		100	99	199
03:00		84	113	197
04:00		100	163	263
05:00		**111**	**236**	**347**
06:00		88	129	217
07:00		41	89	130
08:00		26	65	91
09:00		24	56	80
10:00		12	33	45
11:00		6	17	23
Total		1609	1566	3175
Percent		50.7%	49.3%	
AM Peak		07:00	11:00	07:00
Vol.		211	75	251
PM Peak		17:00	17:00	17:00
Vol.		111	236	347
Grand Total		1609	1566	3175
Percent		50.7%	49.3%	
ADT		Not Calculated		

All Traffic Data Services, Inc
9660 W 44th Ave
Wheat Ridge,CO 80033
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Site Code: 3
Station ID: 3
PLATTEVILLE BLVD E/O N NLIZABETH ST

Start Time	28-Oct-08 Tue	EB	WB	Total
12:00 AM		3	10	13
01:00		4	0	4
02:00		0	2	2
03:00		3	2	5
04:00		15	5	20
05:00		59	24	83
06:00		104	29	133
07:00		**144**	39	**183**
08:00		74	36	110
09:00		47	39	86
10:00		46	48	94
11:00		45	48	93
12:00 PM		64	51	115
01:00		50	49	99
02:00		74	65	139
03:00		56	61	117
04:00		64	107	171
05:00		49	160	209
06:00		37	86	123
07:00		23	34	57
08:00		16	32	48
09:00		13	21	34
10:00		8	20	28
11:00		4	12	16
Total		1002	980	1982
Percent		50.6%	49.4%	
AM Peak		07:00	10:00	07:00
Vol.		144	48	183
PM Peak		14:00	17:00	17:00
Vol.		74	160	209
Grand Total		1002	980	1982
Percent		50.6%	49.4%	
ADT		Not Calculated		

All Traffic Data Services, Inc
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Site Code: 4
Station ID: 4
FRONTAGE RD S/O I-25 INTERCHANGE

Start Time	28-Oct-08 Tue	NB	SB	Total
12:00 AM		6	11	17
01:00		4	0	4
02:00		0	2	2
03:00		4	2	6
04:00		17	2	19
05:00		58	23	81
06:00		104	35	139
07:00		**133**	**53**	**186**
08:00		74	45	119
09:00		54	38	92
10:00		47	47	94
11:00		44	44	88
12:00 PM		70	50	120
01:00		53	58	111
02:00		78	65	143
03:00		51	70	121
04:00		**91**	103	194
05:00		56	**156**	**212**
06:00		36	85	121
07:00		21	35	56
08:00		16	26	42
09:00		16	23	39
10:00		8	20	28
11:00		8	13	21
Total		1049	1006	2055
Percent		51.0%	49.0%	
AM Peak		07:00	07:00	07:00
Vol.		133	53	186
PM Peak		16:00	17:00	17:00
Vol.		91	156	212
Grand Total		1049	1006	2055
Percent		51.0%	49.0%	
ADT		Not Calculated		

All Traffic Data Services, Inc
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

Site Code: 5
Station ID: 5
FRONTAGE RD S/O QUARTZ ST

Start Time	28-Oct-08 Tue	NB	SB	Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		4	3	7
04:00		3	4	7
05:00		4	2	6
06:00		26	2	28
07:00		29	19	48
08:00		**39**	16	55
09:00		26	**27**	53
10:00		38	23	**61**
11:00		23	23	46
12:00 PM		35	34	69
01:00		30	24	54
02:00		**40**	33	**73**
03:00		17	23	40
04:00		23	32	55
05:00		13	**37**	50
06:00		1	3	4
07:00		2	5	7
08:00		0	0	0
09:00		2	1	3
10:00		0	2	2
11:00		0	0	0
Total		355	313	668
Percent		53.1%	46.9%	
AM Peak		08:00	09:00	10:00
Vol.		39	27	61
PM Peak		14:00	17:00	14:00
Vol.		40	37	73
Grand Total		355	313	668
Percent		53.1%	46.9%	
ADT		Not Calculated		

All Traffic Data Services, Inc
9660 W 44th Ave
Wheat Ridge,CO 80033
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Site Code: 9
Station ID: 9
PACE RD E/O I-25

Start Time	28-Oct-08 Tue	EB	WB	Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	2	2
06:00		0	0	0
07:00		1	0	1
08:00		1	0	1
09:00		2	2	4
10:00		2	3	5
11:00		2	5	7
12:00 PM		10	6	16
01:00		3	5	8
02:00		1	3	4
03:00		3	3	6
04:00		4	3	7
05:00		3	2	5
06:00		1	0	1
07:00		2	1	3
08:00		1	0	1
09:00		0	1	1
10:00		1	0	1
11:00		0	0	0
Total		37	36	73
Percent		50.7%	49.3%	
AM Peak		09:00	11:00	11:00
Vol.		2	5	7
PM Peak		12:00	12:00	12:00
Vol.		10	6	16
Grand Total		37	36	73
Percent		50.7%	49.3%	
ADT		Not Calculated		

All Traffic Data Services, Inc
9660 W 44th Ave
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Site Code: 10
Station ID: 10
I-25 SB OFF RAMP N/O FRONTAGE RD

Start Time	28-Oct-08 Tue	SB
12:00 AM		6
01:00		0
02:00		0
03:00		1
04:00		0
05:00		1
06:00		10
07:00		17
08:00		24
09:00		16
10:00		**34**
11:00		30
12:00 PM		18
01:00		24
02:00		29
03:00		27
04:00		**44**
05:00		31
06:00		29
07:00		12
08:00		11
09:00		4
10:00		9
11:00		4
Total		381
AM Peak		10:00
Vol.		34
PM Peak		16:00
Vol.		44
Grand Total		381
ADT		Not Calculated

All Traffic Data Services, Inc
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Site Code: 11
Station ID: 11
I-25 SB ON RAMP S/O FRONTAGE RD

Start Time	28-Oct-08 Tue	SB
12:00 AM		4
01:00		4
02:00		0
03:00		4
04:00		16
05:00		44
06:00		80
07:00		**126**
08:00		78
09:00		68
10:00		58
11:00		80
12:00 PM		83
01:00		56
02:00		86
03:00		66
04:00		**98**
05:00		64
06:00		34
07:00		22
08:00		16
09:00		16
10:00		7
11:00		7
Total		1117
AM Peak		07:00
Vol.		126
PM Peak		16:00
Vol.		98
Grand Total		1117
ADT		Not Calculated

All Traffic Data Services, Inc
9660 W 44th Ave
Wheat Ridge,CO 80033
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Site Code: 12
Station ID: 12
I-25 NB OFF RAMP S/O PACE RD

Start Time	28-Oct-08 Tue	NB
12:00 AM		7
01:00		1
02:00		2
03:00		5
04:00		4
05:00		26
06:00		42
07:00		60
08:00		**61**
09:00		54
10:00		58
11:00		54
12:00 PM		66
01:00		68
02:00		80
03:00		87
04:00		88
05:00		132
06:00		70
07:00		32
08:00		30
09:00		22
10:00		20
11:00		9
Total		1078
AM Peak		08:00
Vol.		61
PM Peak		17:00
Vol.		132
Grand Total		1078
ADT		Not Calculated

All Traffic Data Services, Inc
9660 W 44th Ave
Wheat Ridge,CO 80033
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Site Code: 13
Station ID: 13
I-25 NB ON RAMP N/O PACE RD

Start Time	28-Oct-08 Tue	NB
12:00 AM		8
01:00		1
02:00		0
03:00		8
04:00		8
05:00		24
06:00		26
07:00		**29**
08:00		18
09:00		17
10:00		22
11:00		26
12:00 PM		26
01:00		28
02:00		27
03:00		19
04:00		35
05:00		17
06:00		14
07:00		13
08:00		6
09:00		7
10:00		4
11:00		1
Total		384
AM Peak		07:00
Vol.		29
PM Peak		16:00
Vol.		35
Grand Total		384
ADT		Not Calculated

All Traffic Data Services, Inc
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Site Code: 14
Station ID: 14
I-25 S/O PACE RAMPS

Start Time	28-Oct-08 Tue	NB	SB	Total
12:00 AM		109	154	263
01:00		72	105	177
02:00		109	111	220
03:00		162	76	238
04:00		222	172	394
05:00		576	405	981
06:00		900	820	1720
07:00		**971**	1091	**2062**
08:00		855	**1102**	1957
09:00		816	988	1804
10:00		903	1059	1962
11:00		790	1040	1830
12:00 PM		902	958	1860
01:00		1030	925	1955
02:00		1039	977	2016
03:00		1113	1070	2183
04:00		1234	**1265**	**2499**
05:00		**1266**	1175	2441
06:00		851	777	1628
07:00		559	535	1094
08:00		456	402	858
09:00		363	410	773
10:00		242	263	505
11:00		149	184	333
Total		15689	16064	31753
Percent		49.4%	50.6%	
AM Peak		07:00	08:00	07:00
Vol.		971	1102	2062
PM Peak		17:00	16:00	16:00
Vol.		1266	1265	2499
Grand Total		15689	16064	31753
Percent		49.4%	50.6%	
ADT		Not Calculated		

All Traffic Data Services, Inc
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

Site Code: 15
Station ID: 15
I-25 N/O PACE RAMPS

Start Time	28-Oct-08 Tue	NB	SB	Total
12:00 AM		93	158	251
01:00		69	102	171
02:00		106	112	218
03:00		147	74	221
04:00		208	158	366
05:00		520	366	886
06:00		823	758	1581
07:00		**872**	993	**1865**
08:00		768	**1059**	1827
09:00		737	946	1683
10:00		814	1046	1860
11:00		718	980	1698
12:00 PM		819	884	1703
01:00		944	884	1828
02:00		942	910	1852
03:00		1018	1020	2038
04:00		1123	**1198**	**2321**
05:00		**1130**	1130	2260
06:00		776	764	1540
07:00		520	520	1040
08:00		425	393	818
09:00		330	394	724
10:00		216	262	478
11:00		138	179	317
Total		14256	15290	29546
Percent		48.3%	51.7%	
AM Peak		07:00	08:00	07:00
Vol.		872	1059	1865
PM Peak		17:00	16:00	16:00
Vol.		1130	1198	2321
Grand Total		14256	15290	29546
Percent		48.3%	51.7%	
ADT		Not Calculated		

Appendix C

Highway Capacity Manual Level of Service Worksheets

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	2008

Flow Inputs and Adjustments

Volume, V	978	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	272	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	562	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	562	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	8.9	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	978	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	17	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	126	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	978		17		126		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	272		5		35		v
Trucks and buses	7		1		1		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.995		0.995		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1125		19		141		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1125 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1125	4700	No
v_{12}	1125	4400	No
$v_{FO} = v_F - v_R$	1106	4700	No
v_R	19	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 8.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, D_S = 0.300

Space mean speed in ramp influence area, S_R = 58.1 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.1 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	961	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	126	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	17	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	961	126	17	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	267	35	5	v
Trucks and buses	7	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1105	141	19	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1105 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1246	4700	No
v_{R12}	1246	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 11.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.281

Space mean speed in ramp influence area, S_R = 58.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.5 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	Between Eagleridge-Platteville
Jurisdiction:	
Analysis Year:	2008

Flow Inputs and Adjustments

Volume, V	1087	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	302	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	625	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	625	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	9.9	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1087	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	100	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	270	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1087		100		270		vph
Peak-hour factor, PHF	0.82		0.82		0.82		
Peak 15-min volume, v15	330		30		82		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1365		123		333		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1365 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1365	4700	No
v_{12}	1365	4400	No
$v_{FO} = v_F - v_R$	1242	4700	No
v_R	123	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 13.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.309

Space mean speed in ramp influence area, S_R = 57.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.9 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	987	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	322	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	100	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	987	322	100	vph
Peak-hour factor, PHF	0.82	0.82	0.82	
Peak 15-min volume, v15	301	98	30	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1246	397	123	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1246 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1643	4700	No
v_{R12}	1643	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 17.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.328

Space mean speed in ramp influence area, S_R = 57.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.5 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2008

Flow Inputs and Adjustments

Volume, V	1309	veh/h
Peak-hour factor, PHF	0.82	
Peak 15-min volume, v15	399	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	826	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	826	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	13.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2008

Flow Inputs and Adjustments

Volume, V	954	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	281	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	581	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	581	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	9.2	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	954	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	172	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	147	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	954		172		147		vph
Peak-hour factor, PHF	0.85		0.85		0.85		
Peak 15-min volume, v15	281		51		43		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1162		204		175		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1162 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1162	4700	No
v_{12}	1162	4400	No
$v_{FO} = v_F - v_R$	958	4700	No
v_R	204	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 11.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.316

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	782	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	121	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	232	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	782	121	232	vph
Peak-hour factor, PHF	0.85	0.85	0.85	
Peak 15-min volume, v15	230	36	68	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	952	144	276	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 952 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1096	4700	No
v_{R12}	1096	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 11.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.297

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.2 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	Between Eagleridge-Platteville
Jurisdiction:	
Analysis Year:	2008

Flow Inputs and Adjustments

Volume, V	903	veh/h
Peak-hour factor, PHF	0.70	
Peak 15-min volume, v15	323	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	668	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	668	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	10.6	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	903	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	60	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	29	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2500	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	903		60		29		vph
Peak-hour factor, PHF	0.70		0.70		0.70		
Peak 15-min volume, v15	323		21		10		v
Trucks and buses	7		1		1		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.995		0.995		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1335		86		42		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1335 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1335	4700	No
v_{12}	1335	4400	No
$v_{FO} = v_F - v_R$	1249	4700	No
v_R	86	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 13.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.306

Space mean speed in ramp influence area, S_R = 58.0 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.0 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	843	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	29	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	60	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2500	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	843	29	60	vph
Peak-hour factor, PHF	0.70	0.70	0.70	
Peak 15-min volume, v15	301	10	21	v
Trucks and buses	7	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1246	42	86	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1246 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1288	4700	No
v_{R12}	1288	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 11.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.272

Space mean speed in ramp influence area, S_R = 58.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.7 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	2008

Flow Inputs and Adjustments

Volume, V	872	veh/h
Peak-hour factor, PHF	0.70	
Peak 15-min volume, v15	311	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	645	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	645	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	10.2	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	356	27	69	158	73	26	53	61	145	54	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.91	0.91	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.92		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.98	
Satd. Flow (prot)	1770	3502		1770	3539	1583	1770	3255		1610	3207	
Flt Permitted	0.63	1.00		0.37	1.00	1.00	0.95	1.00		0.95	0.98	
Satd. Flow (perm)	1169	3502		696	3539	1583	1770	3255		1610	3207	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	72	445	34	86	198	91	32	66	76	181	68	44
RTOR Reduction (vph)	0	5	0	0	0	42	0	68	0	0	30	0
Lane Group Flow (vph)	72	474	0	86	198	49	32	74	0	98	165	0
Turn Type	Perm			pm+pt		Perm	Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	26.6	26.6		37.3	37.3	37.3	7.0	7.0		9.7	9.7	
Effective Green, g (s)	26.6	26.6		37.3	37.3	37.3	7.0	7.0		9.7	9.7	
Actuated g/C Ratio	0.39	0.39		0.54	0.54	0.54	0.10	0.10		0.14	0.14	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	451	1350		465	1913	856	180	330		226	451	
v/s Ratio Prot		c0.14		c0.02	0.06		0.02	c0.02		c0.06	0.05	
v/s Ratio Perm	0.06			0.08		0.03						
v/c Ratio	0.16	0.35		0.18	0.10	0.06	0.18	0.22		0.43	0.37	
Uniform Delay, d1	13.9	15.1		8.0	7.7	7.5	28.4	28.5		27.1	26.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.7		0.2	0.1	0.1	0.5	0.3		1.3	0.5	
Delay (s)	14.6	15.8		8.2	7.8	7.6	28.8	28.8		28.5	27.4	
Level of Service	B	B		A	A	A	C	C		C	C	
Approach Delay (s)		15.6			7.9			28.8			27.7	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	244	299	30	243	0	0	0	0	18	3	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1710	1583
Flt Permitted		1.00	1.00	0.52	1.00					0.95	0.97	1.00
Satd. Flow (perm)		5085	1583	1869	3539					1681	1710	1583
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	0	298	365	37	296	0	0	0	0	22	4	84
RTOR Reduction (vph)	0	0	105	0	0	0	0	0	0	0	0	78
Lane Group Flow (vph)	0	298	260	37	296	0	0	0	0	13	13	6
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		56.8	56.8	64.2	64.2					5.5	5.5	5.5
Effective Green, g (s)		56.8	56.8	64.2	64.2					5.5	5.5	5.5
Actuated g/C Ratio		0.71	0.71	0.81	0.81					0.07	0.07	0.07
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3624	1128	1553	2851					116	118	109
v/s Ratio Prot		0.06		0.00	c0.08							
v/s Ratio Perm			c0.16	0.02						c0.01	0.01	0.00
v/c Ratio		0.08	0.23	0.02	0.10					0.11	0.11	0.05
Uniform Delay, d1		3.5	3.9	1.7	1.6					34.8	34.8	34.7
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.0	0.5	0.0	0.1					0.4	0.4	0.2
Delay (s)		3.5	4.4	1.7	1.7					35.2	35.2	34.9
Level of Service		A	A	A	A					D	D	C
Approach Delay (s)		4.0			1.7			0.0			35.0	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	79.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	195	0	0	152	60	127	5	89	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.86	1.00	0.95	0.95	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (prot)	3433	3539			6408	1583	1681	1692	1583			
Flt Permitted	0.56	1.00			1.00	1.00	0.95	0.96	1.00			
Satd. Flow (perm)	2022	3539			6408	1583	1681	1692	1583			
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	79	229	0	0	179	71	149	6	105	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	28	0	0	94	0	0	0
Lane Group Flow (vph)	79	229	0	0	179	43	77	78	11	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	50.9	50.9			41.1	41.1	7.2	7.2	7.2			
Effective Green, g (s)	50.9	50.9			41.1	41.1	7.2	7.2	7.2			
Actuated g/C Ratio	0.75	0.75			0.60	0.60	0.11	0.11	0.11			
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	1611	2645			3867	955	178	179	167			
v/s Ratio Prot	0.00	c0.06			0.03							
v/s Ratio Perm	0.03					0.03	0.05	0.05	0.01			
v/c Ratio	0.05	0.09			0.05	0.04	0.43	0.44	0.07			
Uniform Delay, d1	2.4	2.3			5.5	5.5	28.5	28.5	27.4			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.0	0.1			0.0	0.1	1.7	1.7	0.2			
Delay (s)	2.4	2.4			5.5	5.6	30.2	30.2	27.6			
Level of Service	A	A			A	A	C	C	C			
Approach Delay (s)		2.4			5.5			29.2			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	30	155	170	9	13	21
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	38	194	212	11	16	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)	802					
pX, platoon unblocked						
vC, conflicting volume	0		83	75	269	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		83	75	269	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	98		75	99	97	98
cM capacity (veh/h)	1623		849	797	623	1085

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	38	194	212	6	6	16	26
Volume Left	38	0	212	0	0	0	0
Volume Right	0	194	0	0	0	0	26
cSH	1623	1700	849	797	797	623	1085
Volume to Capacity	0.02	0.11	0.25	0.01	0.01	0.03	0.02
Queue Length 95th (ft)	2	0	25	1	1	2	2
Control Delay (s)	7.3	0.0	10.6	9.6	9.6	10.9	8.4
Lane LOS	A		B	A	A	B	A
Approach Delay (s)	1.2		10.6			9.4	
Approach LOS			B			A	

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	26.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	54	18	7	126	13	5
Sign Control	Free		Stop			Stop
Grade	0%		0%			0%
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	63	21	8	147	15	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0		147	0	287	136
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		147	0	287	136
tC, single (s)	4.1		6.5	6.2	7.1	6.5
tC, 2 stage (s)						
tF (s)	2.2		4.0	3.3	3.5	4.0
p0 queue free %	96		99	86	97	99
cM capacity (veh/h)	1623		716	1085	554	726

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	84	155	21
Volume Left	63	0	15
Volume Right	21	147	0
cSH	1623	1056	593
Volume to Capacity	0.04	0.15	0.04
Queue Length 95th (ft)	3	13	3
Control Delay (s)	5.6	9.0	11.3
Lane LOS	A	A	B
Approach Delay (s)	5.6	9.0	11.3
Approach LOS		A	B

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	21	119	2	53	0	0	0	0	1	2	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	23	132	2	59	0	0	0	0	1	2	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	59			156			165	153	89	153	219	59
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	59			156			165	153	89	153	219	59
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	99
cM capacity (veh/h)	1545			1425			788	738	968	813	678	1007

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	156	61	14
Volume Left	0	2	1
Volume Right	132	0	11
cSH	1700	1425	921
Volume to Capacity	0.09	0.00	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.3	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.3	9.0
Approach LOS			A

Intersection Summary			
Average Delay			0.6
Intersection Capacity Utilization			18.4%
Analysis Period (min)			15

ICU Level of Service A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	1	0	0	1	1	56	0	1	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	30	1	0	0	1	1	80	0	1	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3			1			64	64	1	65	64	2
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3			1			64	64	1	65	64	2
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			91	100	100	100	100	100
cM capacity (veh/h)	1619			1621			918	811	1083	914	812	1082

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	31	3	81
Volume Left	30	0	80
Volume Right	0	1	1
cSH	1619	1700	920
Volume to Capacity	0.02	0.00	0.09
Queue Length 95th (ft)	1	0	7
Control Delay (s)	6.9	0.0	9.3
Lane LOS	A		A
Approach Delay (s)	6.9	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay		8.4	
Intersection Capacity Utilization		17.9%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	118	71	9	21	16	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	130	78	10	23	18	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			208		212	169
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			208		212	169
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	99
cM capacity (veh/h)			1363		771	875

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	208	33	26
Volume Left	0	10	18
Volume Right	78	0	9
cSH	1700	1363	803
Volume to Capacity	0.12	0.01	0.03
Queue Length 95th (ft)	0	1	3
Control Delay (s)	0.0	2.3	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	2.3	9.6
Approach LOS			A

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	2008

Flow Inputs and Adjustments

Volume, V	1112	veh/h
Peak-hour factor, PHF	0.82	
Peak 15-min volume, v15	339	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	702	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	702	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	11.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1112	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	31	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	44	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1112		31		44		vph
Peak-hour factor, PHF	0.82		0.82		0.82		
Peak 15-min volume, v15	339		9		13		v
Trucks and buses	7		1		1		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.995		0.995		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1404		38		54		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1404 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1404	4700	No
v_{12}	1404	4400	No
$v_{FO} = v_F - v_R$	1366	4700	No
v_R	38	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 10.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.301

Space mean speed in ramp influence area, S_R = 58.1 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.1 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1081	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	98	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	44	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1081	98	44	vph
Peak-hour factor, PHF	0.82	0.82	0.82	
Peak 15-min volume, v15	330	30	13	v
Trucks and buses	7	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1364	120	54	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1364 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1484	4700	No
v_{R12}	1484	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.284

Space mean speed in ramp influence area, S_R = 58.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.5 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	Between Eagleridge-Platteville
Jurisdiction:	
Analysis Year:	2008

Flow Inputs and Adjustments

Volume, V	1179	veh/h
Peak-hour factor, PHF	0.82	
Peak 15-min volume, v15	359	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	744	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	744	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	11.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1179	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	206	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	378	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1179		206		378		vph
Peak-hour factor, PHF	0.92		0.92		0.92		
Peak 15-min volume, v15	320		56		103		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1326		226		415		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1326 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1326	4700	No
v_{12}	1326	4400	No
$v_{FO} = v_F - v_R$	1100	4700	No
v_R	226	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 13.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.318

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	973	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	378	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	206	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	973	378	206	vph
Peak-hour factor, PHF	0.92	0.92	0.92	
Peak 15-min volume, v15	264	103	56	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1095	415	226	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1095 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1510	4700	No
v_{R12}	1510	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 16.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.325

Space mean speed in ramp influence area, S_R = 57.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.5 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2008

Flow Inputs and Adjustments

Volume, V	1351	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	367	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	760	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	760	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	12.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2008

Flow Inputs and Adjustments

Volume, V	1533	veh/h
Peak-hour factor, PHF	0.91	
Peak 15-min volume, v15	421	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	872	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	872	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	13.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1533	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	463	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	151	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1533		463		151		vph
Peak-hour factor, PHF	0.91		0.91		0.91		
Peak 15-min volume, v15	421		127		41		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1744		514		168		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1744 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1744	4700	No
v_{12}	1744	4400	No
$v_{FO} = v_F - v_R$	1230	4700	No
v_R	514	2100	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 16.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.344

Space mean speed in ramp influence area, S_R = 57.1 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.1 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1070	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	151	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	206	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1070	151	206	vph
Peak-hour factor, PHF	0.91	0.91	0.91	
Peak 15-min volume, v15	294	41	57	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1217	168	229	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1217 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1385	4700	No
v_{R12}	1385	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.301

Space mean speed in ramp influence area, S_R = 58.1 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.1 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	Between Eagleridge-Platteville
Jurisdiction:	
Analysis Year:	2008

Flow Inputs and Adjustments

Volume, V	1221	veh/h
Peak-hour factor, PHF	0.82	
Peak 15-min volume, v15	372	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	771	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	771	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	12.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1221	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	132	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	35	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2500	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1221		132		35		vph
Peak-hour factor, PHF	0.82		0.82		0.82		
Peak 15-min volume, v15	372		40		11		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1541		163		43		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1541 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1541	4700	No
v_{12}	1541	4400	No
$v_{FO} = v_F - v_R$	1378	4700	No
v_R	163	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 14.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.313

Space mean speed in ramp influence area, S_R = 57.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.8 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2008

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1089	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	15	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	188	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2500	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1089	15	188	vph
Peak-hour factor, PHF	0.82	0.82	0.82	
Peak 15-min volume, v15	332	5	57	v
Trucks and buses	7	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1375	18	230	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1375 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1393	4700	No
v_{R12}	1393	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 11.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.274

Space mean speed in ramp influence area, S_R = 58.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.7 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Existing Conditions Year 2008

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	2008

Flow Inputs and Adjustments

Volume, V	1104	veh/h
Peak-hour factor, PHF	0.82	
Peak 15-min volume, v15	337	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	697	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	697	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	11.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	329	59	118	397	241	52	141	120	215	110	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.91	0.91	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.93		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.98	
Satd. Flow (prot)	1770	3459		1770	3539	1583	1770	3295		1610	3227	
Flt Permitted	0.50	1.00		0.39	1.00	1.00	0.95	1.00		0.95	0.98	
Satd. Flow (perm)	933	3459		735	3539	1583	1770	3295		1610	3227	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	358	64	128	432	262	57	153	130	234	120	57
RTOR Reduction (vph)	0	14	0	0	0	128	0	114	0	0	26	0
Lane Group Flow (vph)	76	408	0	128	432	134	57	169	0	138	247	0
Turn Type	Perm			pm+pt		Perm	Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	25.6	25.6		37.4	37.4	37.4	9.0	9.0		11.9	11.9	
Effective Green, g (s)	25.6	25.6		37.4	37.4	37.4	9.0	9.0		11.9	11.9	
Actuated g/C Ratio	0.35	0.35		0.51	0.51	0.51	0.12	0.12		0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	326	1208		471	1806	808	217	405		261	524	
v/s Ratio Prot		c0.12		0.03	c0.12		0.03	c0.05		c0.09	0.08	
v/s Ratio Perm	0.08			0.11		0.08						
v/c Ratio	0.23	0.34		0.27	0.24	0.17	0.26	0.42		0.53	0.47	
Uniform Delay, d1	16.9	17.6		9.8	10.0	9.6	29.1	29.7		28.1	27.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.8		0.3	0.3	0.4	0.6	0.7		1.9	0.7	
Delay (s)	18.6	18.4		10.1	10.3	10.0	29.8	30.4		30.1	28.5	
Level of Service	B	B		B	B	B	C	C		C	C	
Approach Delay (s)		18.4			10.2			30.3			29.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	406	247	124	674	0	0	0	0	72	3	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1691	1583
Flt Permitted		1.00	1.00	0.44	1.00					0.95	0.96	1.00
Satd. Flow (perm)		5085	1583	1580	3539					1681	1691	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	441	268	135	733	0	0	0	0	78	3	116
RTOR Reduction (vph)	0	0	103	0	0	0	0	0	0	0	0	106
Lane Group Flow (vph)	0	441	165	135	733	0	0	0	0	41	40	10
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		43.8	43.8	54.9	54.9					6.2	6.2	6.2
Effective Green, g (s)		43.8	43.8	54.9	54.9					6.2	6.2	6.2
Actuated g/C Ratio		0.62	0.62	0.77	0.77					0.09	0.09	0.09
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3133	975	1379	2733					147	147	138
v/s Ratio Prot		0.09		0.01	c0.21							
v/s Ratio Perm			0.10	0.07						c0.02	0.02	0.01
v/c Ratio		0.14	0.17	0.10	0.27					0.28	0.27	0.07
Uniform Delay, d1		5.7	5.9	2.1	2.3					30.4	30.3	29.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.4	0.0	0.2					1.0	1.0	0.2
Delay (s)		5.8	6.2	2.1	2.6					31.4	31.3	30.0
Level of Service		A	A	A	A					C	C	C
Approach Delay (s)		6.0			2.5			0.0			30.6	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	419	0	0	515	87	247	2	145	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.86	1.00	0.95	0.95	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	3433	3539			6408	1583	1681	1687	1583			
Flt Permitted	0.37	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	1338	3539			6408	1583	1681	1687	1583			
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	64	460	0	0	566	96	271	2	159	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	40	0	0	134	0	0	0
Lane Group Flow (vph)	64	460	0	0	566	56	135	138	25	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	50.3	50.3			41.7	41.7	11.1	11.1	11.1			
Effective Green, g (s)	50.3	50.3			41.7	41.7	11.1	11.1	11.1			
Actuated g/C Ratio	0.70	0.70			0.58	0.58	0.16	0.16	0.16			
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	1048	2493			3742	925	261	262	246			
v/s Ratio Prot	0.00	c0.13			0.09							
v/s Ratio Perm	0.04					0.04	0.08	0.08	0.02			
v/c Ratio	0.06	0.18			0.15	0.06	0.52	0.53	0.10			
Uniform Delay, d1	3.4	3.6			6.8	6.4	27.7	27.7	25.9			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.0	0.2			0.1	0.1	1.7	1.9	0.2			
Delay (s)	3.4	3.7			6.9	6.5	29.4	29.6	26.0			
Level of Service	A	A			A	A	C	C	C			
Approach Delay (s)		3.7			6.8			28.2			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	92	319	506	52	41	69
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	101	351	556	57	45	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)	802					
pX, platoon unblocked						
vC, conflicting volume	0		225	202	553	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		225	202	553	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	94		6	91	89	93
cM capacity (veh/h)	1623		594	651	414	1085

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	101	351	556	29	29	45	76
Volume Left	101	0	556	0	0	0	0
Volume Right	0	351	0	0	0	0	76
cSH	1623	1700	594	651	651	414	1085
Volume to Capacity	0.06	0.21	0.94	0.04	0.04	0.11	0.07
Queue Length 95th (ft)	5	0	307	3	3	9	6
Control Delay (s)	7.4	0.0	49.2	10.8	10.8	14.8	8.6
Lane LOS	A		E	B	B	B	A
Approach Delay (s)	1.6		45.7			10.9	
Approach LOS			E			B	

Intersection Summary			
Average Delay	25.4		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	128	16	4	57	27	14
Sign Control	Free		Stop			Stop
Grade	0%		0%			0%
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	156	20	5	70	33	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0		332	0	394	322
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		332	0	394	322
tC, single (s)	4.1		6.5	6.2	7.1	6.5
tC, 2 stage (s)						
tF (s)	2.2		4.0	3.3	3.5	4.0
p0 queue free %	90		99	94	93	97
cM capacity (veh/h)	1623		531	1085	487	538

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	176	74	50
Volume Left	156	0	33
Volume Right	20	70	0
cSH	1623	1016	503
Volume to Capacity	0.10	0.07	0.10
Queue Length 95th (ft)	8	6	8
Control Delay (s)	6.7	8.8	12.9
Lane LOS	A	A	B
Approach Delay (s)	6.7	8.8	12.9
Approach LOS		A	B

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	13	72	8	117	0	0	0	0	1	0	29
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	16	88	10	143	0	0	0	0	1	0	35
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	143			104			257	222	60	222	266	143
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	143			104			257	222	60	222	266	143
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	100	100	96
cM capacity (veh/h)	1440			1488			665	672	1006	730	636	905

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	104	152	37
Volume Left	0	10	1
Volume Right	88	0	35
cSH	1700	1488	898
Volume to Capacity	0.06	0.01	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.5	9.2
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	9.2
Approach LOS			A

Intersection Summary			
Average Delay			1.4
Intersection Capacity Utilization			22.7%
Analysis Period (min)			15

ICU Level of Service: A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	3	0	0	11	0	112	4	6	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	17	4	0	0	13	0	137	5	7	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	13			4			51	51	4	61	51	13
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	13			4			51	51	4	61	51	13
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			85	99	99	100	100	100
cM capacity (veh/h)	1605			1618			940	831	1080	916	831	1067

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	21	13	149
Volume Left	17	0	137
Volume Right	0	0	7
cSH	1605	1700	942
Volume to Capacity	0.01	0.01	0.16
Queue Length 95th (ft)	1	0	14
Control Delay (s)	6.0	0.0	9.5
Lane LOS	A		A
Approach Delay (s)	6.0	0.0	9.5
Approach LOS			A

Intersection Summary			
Average Delay		8.4	
Intersection Capacity Utilization		21.0%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	42	58	30	99	72	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	53	73	38	125	91	38
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			127		291	90
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			127		291	90
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		87	96
cM capacity (veh/h)			1460		681	968

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	127	163	129
Volume Left	0	38	91
Volume Right	73	0	38
cSH	1700	1460	746
Volume to Capacity	0.07	0.03	0.17
Queue Length 95th (ft)	0	2	16
Control Delay (s)	0.0	1.9	10.8
Lane LOS		A	B
Approach Delay (s)	0.0	1.9	10.8
Approach LOS			B

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1465	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	407	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	842	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	842	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	13.4	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1465	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	45	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	210	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1465		45		210		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	407		13		58		v
Trucks and buses	7		1		1		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.995		0.995		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1685		50		235		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1685 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1685	4700	No
v_{12}	1685	4400	No
$v_{FO} = v_F - v_R$	1635	4700	No
v_R	50	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 13.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.303

Space mean speed in ramp influence area, S_R = 58.0 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.0 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1440	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	210	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	25	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1440	210	25	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	400	58	7	v
Trucks and buses	7	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1656	235	28	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1656 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1891	4700	No
v_{R12}	1891	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 16.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.293

Space mean speed in ramp influence area, S_R = 58.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.3 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	Between Eagleridge-Platteville
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1650	veh/h
Peak-hour factor, PHF	0.82	
Peak 15-min volume, v15	503	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1041	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1041	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	16.5	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1650	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	180	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	430	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1650		180		430		vph
Peak-hour factor, PHF	0.82		0.82		0.82		
Peak 15-min volume, v15	501		55		131		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	2073		222		530		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2073 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2073	4700	No
v_{12}	2073	4400	No
$v_{FO} = v_F - v_R$	1851	4700	No
v_R	222	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 19.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.318

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1470	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	430	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	180	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1470	430	180	vph
Peak-hour factor, PHF	0.82	0.82	0.82	
Peak 15-min volume, v15	448	131	55	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1855	530	222	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1855 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2385	4700	No
v_{R12}	2385	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.350

Space mean speed in ramp influence area, S_R = 57.0 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.0 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1900	veh/h
Peak-hour factor, PHF	0.82	
Peak 15-min volume, v15	579	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1199	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1199	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	19.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1230	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	362	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	749	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	749	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	11.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1230	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	300	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	135	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1230		300		135		vph
Peak-hour factor, PHF	0.85		0.85		0.85		
Peak 15-min volume, v15	362		88		40		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1498		356		160		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1498 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1498	4700	No
v_{12}	1498	4400	No
$v_{FO} = v_F - v_R$	1142	4700	No
v_R	356	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 14.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.330

Space mean speed in ramp influence area, S_R = 57.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.4 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	930	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	135	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	300	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	930	135	300	vph
Peak-hour factor, PHF	0.85	0.85	0.85	
Peak 15-min volume, v15	274	40	88	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1132	160	356	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1132 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1292	4700	No
v_{R12}	1292	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.299

Space mean speed in ramp influence area, S_R = 58.1 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.1 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	Between Eagleridge-Platteville
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1065	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	313	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	648	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	648	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	10.3	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1055	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	100	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	45	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2500	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1055		100		45		vph
Peak-hour factor, PHF	0.70		0.70		0.70		
Peak 15-min volume, v15	377		36		16		v
Trucks and buses	7		1		1		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.995		0.995		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1560		144		65		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1560 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1560	4700	No
v_{12}	1560	4400	No
$v_{FO} = v_F - v_R$	1416	4700	No
v_R	144	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 15.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.311

Space mean speed in ramp influence area, S_R = 57.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.8 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	955	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	45	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	100	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2500	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	955	45	100	vph
Peak-hour factor, PHF	0.70	0.70	0.70	
Peak 15-min volume, v15	341	16	36	v
Trucks and buses	7	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1412	65	144	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1412 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1477	4700	No
v_{R12}	1477	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 12.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.275

Space mean speed in ramp influence area, S_R = 58.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.7 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) AM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1000	veh/h
Peak-hour factor, PHF	0.70	
Peak 15-min volume, v15	357	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	739	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	739	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	11.7	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	550	45	105	275	115	40	85	90	225	85	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3499		1770	3539	1583	1770	3265		3433	1747	
Flt Permitted	0.57	1.00		0.28	1.00	1.00	0.66	1.00		0.95	1.00	
Satd. Flow (perm)	1060	3499		522	3539	1583	1225	3265		3433	1747	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	598	49	114	299	125	43	92	98	245	92	65
RTOR Reduction (vph)	0	9	0	0	0	63	0	84	0	0	46	0
Lane Group Flow (vph)	103	638	0	114	299	62	43	106	0	245	111	0
Turn Type	Perm			pm+pt		Perm	pm+pt			Prot		
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	19.1	19.1		27.0	27.0	27.0	9.2	7.7		5.4	11.6	
Effective Green, g (s)	19.1	19.1		27.0	27.0	27.0	9.2	7.7		5.4	11.6	
Actuated g/C Ratio	0.35	0.35		0.50	0.50	0.50	0.17	0.14		0.10	0.21	
Clearance Time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	374	1235		350	1766	790	223	465		343	375	
v/s Ratio Prot		c0.18		c0.02	0.08		0.01	0.03		c0.07	c0.06	
v/s Ratio Perm	0.10			0.14		0.04	0.03					
v/c Ratio	0.28	0.52		0.33	0.17	0.08	0.19	0.23		0.71	0.30	
Uniform Delay, d1	12.5	13.8		7.8	7.4	7.1	19.1	20.6		23.6	17.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	1.5		0.5	0.2	0.2	0.4	0.3		6.9	0.4	
Delay (s)	14.4	15.4		8.4	7.6	7.3	19.5	20.8		30.5	18.3	
Level of Service	B	B		A	A	A	B	C		C	B	
Approach Delay (s)		15.3			7.7			20.6			25.7	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	425	420	60	415	0	0	0	0	40	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.41	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	1482	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	462	457	65	451	0	0	0	0	43	0	114
RTOR Reduction (vph)	0	0	195	0	0	0	0	0	0	0	0	102
Lane Group Flow (vph)	0	462	262	65	451	0	0	0	0	21	22	12
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		30.8	30.8	38.3	38.3					5.5	5.5	5.5
Effective Green, g (s)		30.8	30.8	38.3	38.3					5.5	5.5	5.5
Actuated g/C Ratio		0.57	0.57	0.71	0.71					0.10	0.10	0.10
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2911	906	1146	2519					172	172	162
v/s Ratio Prot		0.09		0.00	c0.13							
v/s Ratio Perm			c0.17	0.04						0.01	0.01	0.01
v/c Ratio		0.16	0.29	0.06	0.18					0.12	0.13	0.07
Uniform Delay, d1		5.4	5.9	2.5	2.6					22.0	22.0	21.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.8	0.0	0.2					0.3	0.3	0.2
Delay (s)		5.5	6.7	2.5	2.7					22.3	22.3	22.0
Level of Service		A	A	A	A					C	C	C
Approach Delay (s)		6.1			2.7			0.0			22.1	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	380	0	0	305	100	185	0	160	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.86	1.00	0.95	0.95	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	3433	3539			6408	1583	1681	1681	1583			
Flt Permitted	0.44	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	1585	3539			6408	1583	1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	413	0	0	332	109	201	0	174	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	59	0	0	149	0	0	0
Lane Group Flow (vph)	103	413	0	0	332	50	100	101	25	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	33.0	33.0			23.2	23.2	7.3	7.3	7.3			
Effective Green, g (s)	33.0	33.0			23.2	23.2	7.3	7.3	7.3			
Actuated g/C Ratio	0.66	0.66			0.46	0.46	0.15	0.15	0.15			
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	1216	2322			2956	730	244	244	230			
v/s Ratio Prot	0.01	c0.12			0.05							
v/s Ratio Perm	0.05					0.03	0.06	0.06	0.02			
v/c Ratio	0.08	0.18			0.11	0.07	0.41	0.41	0.11			
Uniform Delay, d1	3.3	3.4			7.7	7.5	19.5	19.6	18.7			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.0	0.2			0.1	0.2	1.1	1.1	0.2			
Delay (s)	3.4	3.5			7.8	7.7	20.7	20.7	18.9			
Level of Service	A	A			A	A	C	C	B			
Approach Delay (s)		3.5			7.8			19.8			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	50.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	160	350	260	25	35	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	380	283	27	38	109
RTOR Reduction (vph)	0	234	0	0	0	0
Lane Group Flow (vph)	174	146	283	27	38	109
Turn Type		Perm	Prot			Free
Protected Phases	4		5	2	6	
Permitted Phases		4				Free
Actuated Green, G (s)	18.0	18.0	8.4	18.9	6.5	46.9
Effective Green, g (s)	18.0	18.0	8.4	18.9	6.5	46.9
Actuated g/C Ratio	0.38	0.38	0.18	0.40	0.14	1.00
Clearance Time (s)	5.0	5.0	4.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	679	608	615	751	258	1583
v/s Ratio Prot	c0.10		c0.08	0.01	c0.02	
v/s Ratio Perm		0.09				0.07
v/c Ratio	0.26	0.24	0.46	0.04	0.15	0.07
Uniform Delay, d1	9.9	9.8	17.2	8.5	17.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.9	0.5	0.0	0.3	0.1
Delay (s)	10.8	10.7	17.8	8.5	18.0	0.1
Level of Service	B	B	B	A	B	A
Approach Delay (s)	10.8			17.0	4.7	
Approach LOS	B			B	A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	46.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	35	5	90	35	10	215
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	5	98	38	11	234
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			43		274	41
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			43		274	41
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		98	77
cM capacity (veh/h)			1565		670	1030

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	43	98	38	11	234
Volume Left	0	98	0	11	0
Volume Right	5	0	0	0	234
cSH	1700	1565	1700	670	1030
Volume to Capacity	0.03	0.06	0.02	0.02	0.23
Queue Length 95th (ft)	0	5	0	1	22
Control Delay (s)	0.0	7.5	0.0	10.5	9.5
Lane LOS		A		B	A
Approach Delay (s)	0.0	5.4		9.6	
Approach LOS				A	

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	30	205	5	90	0	0	0	0	5	0	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	33	223	5	98	0	0	0	0	5	0	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	98			255			274	253	144	253	364	98
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	98			255			274	253	144	253	364	98
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	99	100	98
cM capacity (veh/h)	1495			1310			660	648	903	698	561	958

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	255	103	27
Volume Left	0	5	5
Volume Right	223	0	22
cSH	1700	1310	892
Volume to Capacity	0.15	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.4	9.2
Lane LOS		A	A
Approach Delay (s)	0.0	0.4	9.2
Approach LOS			A

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization		24.2%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	5	0	0	5	5	90	0	5	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	5	0	0	5	5	98	0	5	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	11			5			90	92	5	95	90	8
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	11			5			90	92	5	95	90	8
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			89	100	99	100	100	100
cM capacity (veh/h)	1608			1616			879	779	1078	867	781	1074

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	43	11	103
Volume Left	38	0	98
Volume Right	0	5	5
cSH	1608	1700	888
Volume to Capacity	0.02	0.01	0.12
Queue Length 95th (ft)	2	0	10
Control Delay (s)	6.4	0.0	9.6
Lane LOS	A		A
Approach Delay (s)	6.4	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay		8.0	
Intersection Capacity Utilization		20.8%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	150	140	15	40	35	35	135	15	105	255	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	0.97	0.95		0.97	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		1.00	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1857	1583		1838	1583	3433	3487		3433	3519	
Flt Permitted		0.98	1.00		0.88	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1823	1583		1640	1583	3433	3487		3433	3519	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	163	152	16	43	38	38	147	16	114	277	11
RTOR Reduction (vph)	0	0	124	0	0	31	0	9	0	0	3	0
Lane Group Flow (vph)	0	174	28	0	59	7	38	154	0	114	285	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		10.0	10.0		10.0	10.0	1.9	24.0		5.5	27.6	
Effective Green, g (s)		10.0	10.0		10.0	10.0	1.9	24.0		5.5	27.6	
Actuated g/C Ratio		0.19	0.19		0.19	0.19	0.04	0.45		0.10	0.52	
Clearance Time (s)		5.0	5.0		5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		341	296		307	296	122	1564		353	1815	
v/s Ratio Prot							0.01	0.04		c0.03	c0.08	
v/s Ratio Perm		c0.10	0.02		0.04	0.00						
v/c Ratio		0.51	0.10		0.19	0.02	0.31	0.10		0.32	0.16	
Uniform Delay, d1		19.5	18.0		18.3	17.8	25.2	8.5		22.3	6.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.3	0.1		0.3	0.0	1.5	0.1		0.5	0.2	
Delay (s)		20.8	18.1		18.7	17.8	26.6	8.6		22.8	7.0	
Level of Service		C	B		B	B	C	A		C	A	
Approach Delay (s)		19.6			18.3			12.0			11.5	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	53.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1235	veh/h
Peak-hour factor, PHF	0.82	
Peak 15-min volume, v15	377	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	779	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	779	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	12.4	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1235	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	55	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	140	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1235		55		140		vph
Peak-hour factor, PHF	0.82		0.82		0.82		
Peak 15-min volume, v15	377		17		43		v
Trucks and buses	7		1		1		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.995		0.995		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1559		67		172		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1559 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1559	4700	No
v_{12}	1559	4400	No
$v_{FO} = v_F - v_R$	1492	4700	No
v_R	67	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 12.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.304

Space mean speed in ramp influence area, S_R = 58.0 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.0 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1180	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	140	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	55	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1180	140	55	vph
Peak-hour factor, PHF	0.82	0.82	0.82	
Peak 15-min volume, v15	360	43	17	v
Trucks and buses	7	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1489	172	67	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1489 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1661	4700	No
v_{R12}	1661	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 14.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.288

Space mean speed in ramp influence area, S_R = 58.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.4 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	Between Eagleridge-Platteville
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1320	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	359	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	742	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	742	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	11.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1325	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	225	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	495	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1325		225		495		vph
Peak-hour factor, PHF	0.92		0.92		0.92		
Peak 15-min volume, v15	360		61		135		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1491		247		543		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1491 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1491	4700	No
v_{12}	1491	4400	No
$v_{FO} = v_F - v_R$	1244	4700	No
v_R	247	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 14.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.320

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.6 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1100	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	495	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	225	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1100	495	225	vph
Peak-hour factor, PHF	0.92	0.92	0.92	
Peak 15-min volume, v15	299	135	61	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1237	543	247	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1237 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1780	4700	No
v_{R12}	1780	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.331

Space mean speed in ramp influence area, S_R = 57.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.4 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1595	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	433	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	897	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	897	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	14.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1880	veh/h
Peak-hour factor, PHF	0.91	
Peak 15-min volume, v15	516	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1069	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1069	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	17.0	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	Yera 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1880	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	550	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	215	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1880		550		215		vph
Peak-hour factor, PHF	0.91		0.91		0.91		
Peak 15-min volume, v15	516		151		59		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	2138		610		239		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2138 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2138	4700	No
v_{12}	2138	4400	No
$v_{FO} = v_F - v_R$	1528	4700	No
v_R	610	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 19.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.353

Space mean speed in ramp influence area, S_R = 56.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.9 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1330	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	215	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	550	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1330	215	550	vph
Peak-hour factor, PHF	0.91	0.91	0.91	
Peak 15-min volume, v15	365	59	151	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1513	239	610	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1513 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1752	4700	No
v_{R12}	1752	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 16.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.307

Space mean speed in ramp influence area, S_R = 57.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.9 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	Between Eagleridge-Platteville
Jurisdiction:	
Analysis Year:	Year 20017

Flow Inputs and Adjustments

Volume, V	1545	veh/h
Peak-hour factor, PHF	0.91	
Peak 15-min volume, v15	424	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	879	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	879	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	14.0	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1545	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	195	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	30	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2500	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1545		195		30		vph
Peak-hour factor, PHF	0.82		0.82		0.82		
Peak 15-min volume, v15	471		59		9		v
Trucks and buses	7		1		1		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.995		0.995		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1950		239		37		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1950 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1950	4700	No
v_{12}	1950	4400	No
$v_{FO} = v_F - v_R$	1711	4700	No
v_R	239	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 18.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.320

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1350	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	30	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	195	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2500	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1350	30	195	vph
Peak-hour factor, PHF	0.82	0.82	0.82	
Peak 15-min volume, v15	412	9	59	v
Trucks and buses	7	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1704	37	239	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1704 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1741	4700	No
v_{R12}	1741	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 14.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.280

Space mean speed in ramp influence area, S_R = 58.6 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.6 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2017) PM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1380	veh/h
Peak-hour factor, PHF	0.82	
Peak 15-min volume, v15	421	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	871	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	871	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	13.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	430	80	230	525	190	70	175	145	270	140	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.93		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3456		1770	3539	1583	1770	3298		3433	1765	
Flt Permitted	0.44	1.00		0.29	1.00	1.00	0.61	1.00		0.95	1.00	
Satd. Flow (perm)	815	3456		542	3539	1583	1142	3298		3433	1765	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	467	87	250	571	207	76	190	158	293	152	82
RTOR Reduction (vph)	0	25	0	0	0	116	0	127	0	0	32	0
Lane Group Flow (vph)	109	529	0	250	571	91	76	221	0	293	202	0
Turn Type	Perm			pm+pt		Perm	pm+pt			Prot		
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	16.1	16.1		25.1	25.1	25.1	14.0	11.1		7.0	15.2	
Effective Green, g (s)	16.1	16.1		25.1	25.1	25.1	14.0	11.1		7.0	15.2	
Actuated g/C Ratio	0.28	0.28		0.44	0.44	0.44	0.24	0.19		0.12	0.27	
Clearance Time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	229	973		345	1553	695	311	640		420	469	
v/s Ratio Prot		0.15		c0.06	0.16		0.01	0.07		c0.09	c0.11	
v/s Ratio Perm	0.13			c0.25		0.06	0.05					
v/c Ratio	0.48	0.54		0.72	0.37	0.13	0.24	0.34		0.70	0.43	
Uniform Delay, d1	17.1	17.4		11.4	10.7	9.6	17.0	19.9		24.1	17.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.9	2.2		7.4	0.7	0.4	0.4	0.3		5.0	0.6	
Delay (s)	24.0	19.6		18.8	11.4	9.9	17.5	20.2		29.1	18.0	
Level of Service	C	B		B	B	A	B	C		C	B	
Approach Delay (s)		20.3			12.9			19.7			24.2	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	57.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	550	295	165	840	0	0	0	0	95	0	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.35	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	1248	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	598	321	179	913	0	0	0	0	103	0	136
RTOR Reduction (vph)	0	0	160	0	0	0	0	0	0	0	0	78
Lane Group Flow (vph)	0	598	161	179	913	0	0	0	0	51	52	58
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		24.7	24.7	32.9	32.9					6.3	6.3	6.3
Effective Green, g (s)		24.7	24.7	32.9	32.9					6.3	6.3	6.3
Actuated g/C Ratio		0.50	0.50	0.67	0.67					0.13	0.13	0.13
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2553	795	977	2367					215	215	203
v/s Ratio Prot		0.12		0.01	c0.26							
v/s Ratio Perm			0.10	0.11						0.03	0.03	c0.04
v/c Ratio		0.23	0.20	0.18	0.39					0.24	0.24	0.29
Uniform Delay, d1		6.9	6.8	3.1	3.6					19.3	19.3	19.4
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.2	0.6	0.1	0.5					0.6	0.6	0.8
Delay (s)		7.1	7.4	3.2	4.1					19.9	19.9	20.2
Level of Service		A	A	A	A					B	B	C
Approach Delay (s)		7.2			4.0			0.0			20.1	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	49.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	595	0	0	755	120	295	0	205	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.86	1.00	0.95	0.95	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	3433	3539			6408	1583	1681	1681	1583			
Flt Permitted	0.26	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	933	3539			6408	1583	1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	647	0	0	821	130	321	0	223	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	71	0	0	131	0	0	0
Lane Group Flow (vph)	65	647	0	0	821	59	160	161	92	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	30.4	30.4			23.0	23.0	10.3	10.3	10.3			
Effective Green, g (s)	30.4	30.4			23.0	23.0	10.3	10.3	10.3			
Actuated g/C Ratio	0.60	0.60			0.45	0.45	0.20	0.20	0.20			
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	678	2122			2907	718	342	342	322			
v/s Ratio Prot	0.00	c0.18			0.13							
v/s Ratio Perm	0.05					0.04	0.10	0.10	0.06			
v/c Ratio	0.10	0.30			0.28	0.08	0.47	0.47	0.28			
Uniform Delay, d1	4.4	5.0			8.7	7.9	17.8	17.8	17.1			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.1	0.4			0.2	0.2	1.0	1.0	0.5			
Delay (s)	4.5	5.3			8.9	8.1	18.8	18.8	17.6			
Level of Service	A	A			A	A	B	B	B			
Approach Delay (s)		5.3			8.8			18.3			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	50.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	250	450	660	100	75	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	489	717	109	82	196
RTOR Reduction (vph)	0	337	0	0	0	0
Lane Group Flow (vph)	272	152	717	109	82	196
Turn Type		Perm	Prot			Free
Protected Phases	4		5	2	6	
Permitted Phases		4				Free
Actuated Green, G (s)	16.0	16.0	13.7	25.4	7.7	51.4
Effective Green, g (s)	16.0	16.0	13.7	25.4	7.7	51.4
Actuated g/C Ratio	0.31	0.31	0.27	0.49	0.15	1.00
Clearance Time (s)	5.0	5.0	4.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	551	493	915	921	279	1583
v/s Ratio Prot	c0.15		c0.21	0.06	c0.04	
v/s Ratio Perm		0.10				0.12
v/c Ratio	0.49	0.31	0.78	0.12	0.29	0.12
Uniform Delay, d1	14.4	13.5	17.5	7.0	19.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	1.6	4.4	0.1	0.6	0.2
Delay (s)	17.5	15.1	21.9	7.0	20.0	0.2
Level of Service	B	B	C	A	C	A
Approach Delay (s)	16.0			20.0	6.0	
Approach LOS	B			B	A	

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	51.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	45	5	170	45	5	95
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	5	185	49	5	103
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			54		470	52
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			54		470	52
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		99	90
cM capacity (veh/h)			1551		486	1016

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	54	185	49	5	103
Volume Left	0	185	0	5	0
Volume Right	5	0	0	0	103
cSH	1700	1551	1700	486	1016
Volume to Capacity	0.03	0.12	0.03	0.01	0.10
Queue Length 95th (ft)	0	10	0	1	8
Control Delay (s)	0.0	7.6	0.0	12.5	8.9
Lane LOS		A		B	A
Approach Delay (s)	0.0	6.0		9.1	
Approach LOS				A	

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	26.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	20	110	10	180	0	0	0	0	5	0	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	22	120	11	196	0	0	0	0	5	0	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	196			141			332	299	82	299	359	196
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	196			141			332	299	82	299	359	196
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	99	100	96
cM capacity (veh/h)	1377			1442			594	609	978	650	564	846

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	141	207	38
Volume Left	0	11	5
Volume Right	120	0	33
cSH	1700	1442	811
Volume to Capacity	0.08	0.01	0.05
Queue Length 95th (ft)	0	1	4
Control Delay (s)	0.0	0.5	9.7
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	9.7
Approach LOS			A

Intersection Summary			
Average Delay			1.2
Intersection Capacity Utilization			27.6%
Analysis Period (min)			15

ICU Level of Service: A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	5	0	0	10	5	170	0	10	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	5	0	0	11	5	185	0	11	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	16			5			63	65	5	73	63	14
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	16			5			63	65	5	73	63	14
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			80	100	99	100	100	100
cM capacity (veh/h)	1601			1616			923	814	1078	899	817	1066

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	27	16	196
Volume Left	22	0	185
Volume Right	0	5	11
cSH	1601	1700	930
Volume to Capacity	0.01	0.01	0.21
Queue Length 95th (ft)	1	0	20
Control Delay (s)	5.8	0.0	9.9
Lane LOS	A		A
Approach Delay (s)	5.8	0.0	9.9
Approach LOS			A

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	24.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	65	90	35	100	120	130	310	45	45	190	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	0.97	0.95		0.97	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected		0.98	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1823	1583		1839	1583	3433	3472		3433	3429	
Flt Permitted		0.79	1.00		0.87	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1476	1583		1623	1583	3433	3472		3433	3429	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	71	98	38	109	130	141	337	49	49	207	54
RTOR Reduction (vph)	0	0	83	0	0	110	0	13	0	0	28	0
Lane Group Flow (vph)	0	125	15	0	147	20	141	373	0	49	233	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		8.1	8.1		8.1	8.1	5.3	28.7		2.2	25.6	
Effective Green, g (s)		8.1	8.1		8.1	8.1	5.3	28.7		2.2	25.6	
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.10	0.54		0.04	0.48	
Clearance Time (s)		5.0	5.0		5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		226	242		248	242	343	1880		143	1656	
v/s Ratio Prot							c0.04	c0.11		0.01	0.07	
v/s Ratio Perm		0.08	0.01		c0.09	0.01						
v/c Ratio		0.55	0.06		0.59	0.08	0.41	0.20		0.34	0.14	
Uniform Delay, d1		20.8	19.2		20.9	19.3	22.4	6.2		24.7	7.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.9	0.1		3.8	0.1	0.8	0.2		1.4	0.2	
Delay (s)		23.7	19.3		24.7	19.4	23.2	6.5		26.1	7.8	
Level of Service		C	B		C	B	C	A		C	A	
Approach Delay (s)		21.8			22.2			10.9			10.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) AM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1455	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	428	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	886	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	886	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	14.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) AM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1455	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	25	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1455		25			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	404		7			v
Trucks and buses	7		1			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	0.966		0.995			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	1673		28			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1673 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1673	4700	No
v_{12}	1673	4400	No
$v_{FO} = v_F - v_R$	1645	4700	No
v_R	28	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 13.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.301

Space mean speed in ramp influence area, S_R = 58.1 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.1 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) AM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Dillon Dr
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1430	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	210	vph
Length of first accel/decel lane	1400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1430	210		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	397	58		v
Trucks and buses	7	1		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.966	0.995		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	1644	235		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1644 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1879	4700	No
v_{R12}	1879	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 11.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.221

Space mean speed in ramp influence area, S_R = 59.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 59.9 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) AM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	Between Eagleridge-Dillon
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1640	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	482	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	998	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	998	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	15.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) AM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1660	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	180	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	425	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1660		180		425		vph
Peak-hour factor, PHF	0.82		0.82		0.82		
Peak 15-min volume, v15	504		55		130		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	2085		222		523		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2085 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2085	4700	No
v_{12}	2085	4400	No
$v_{FO} = v_F - v_R$	1863	4700	No
v_R	222	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 19.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.318

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) AM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1480	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	425	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	180	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1480	425	180	vph
Peak-hour factor, PHF	0.82	0.82	0.82	
Peak 15-min volume, v15	451	130	55	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1868	523	222	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1868 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2391	4700	No
v_{R12}	2391	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.350

Space mean speed in ramp influence area, S_R = 56.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.9 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) AM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1905	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	560	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1160	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1160	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	18.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) AM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1265	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	372	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	770	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	770	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	12.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) AM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1265	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	305	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	170	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1265		305		170		vph
Peak-hour factor, PHF	0.85		0.85		0.85		
Peak 15-min volume, v15	372		90		50		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1540		362		202		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1540 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1540	4700	No
v_{12}	1540	4400	No
$v_{FO} = v_F - v_R$	1178	4700	No
v_R	362	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 14.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.331

Space mean speed in ramp influence area, S_R = 57.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.4 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) AM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	960	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	170	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	305	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	960	170	305	vph
Peak-hour factor, PHF	0.85	0.85	0.85	
Peak 15-min volume, v15	282	50	90	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1169	202	362	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1169 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1371	4700	No
v_{R12}	1371	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.300

Space mean speed in ramp influence area, S_R = 58.1 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.1 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) AM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	Between Eagleridge-Dillon
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1130	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	332	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	688	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	688	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	10.9	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) AM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Dillon Dr
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1070	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	130	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1070		130			vph
Peak-hour factor, PHF	0.70		0.70			
Peak 15-min volume, v15	382		46			v
Trucks and buses	7		1			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	0.966		0.995			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	1582		187			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1582 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1582	4700	No
v_{12}	1582	4400	No
$v_{FO} = v_F - v_R$	1395	4700	No
v_R	187	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 10.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.315

Space mean speed in ramp influence area, S_R = 57.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.8 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	940	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	45	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	940	45		vph
Peak-hour factor, PHF	0.70	0.70		
Peak 15-min volume, v15	336	16		v
Trucks and buses	7	1		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.966	0.995		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	1390	65		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1390 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1455	4700	No
v_{R12}	1455	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 12.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.275

Space mean speed in ramp influence area, S_R = 58.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.7 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) AM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	985	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	290	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	600	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	600	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	9.5	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	550	40	100	270	110	40	80	90	220	85	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3504		1770	3539	1583	1770	3258		3433	1752	
Flt Permitted	0.57	1.00		0.28	1.00	1.00	0.66	1.00		0.95	1.00	
Satd. Flow (perm)	1067	3504		529	3539	1583	1230	3258		3433	1752	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	598	43	109	293	120	43	87	98	239	92	60
RTOR Reduction (vph)	0	8	0	0	0	60	0	84	0	0	43	0
Lane Group Flow (vph)	103	633	0	109	293	60	43	101	0	239	109	0
Turn Type	Perm			pm+pt		Perm	pm+pt			Prot		
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	19.2	19.2		27.1	27.1	27.1	9.2	7.7		5.4	11.6	
Effective Green, g (s)	19.2	19.2		27.1	27.1	27.1	9.2	7.7		5.4	11.6	
Actuated g/C Ratio	0.35	0.35		0.50	0.50	0.50	0.17	0.14		0.10	0.21	
Clearance Time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	378	1241		354	1770	792	224	463		342	375	
v/s Ratio Prot		c0.18		c0.02	0.08		0.01	0.03		c0.07	c0.06	
v/s Ratio Perm	0.10			0.13		0.04	0.03					
v/c Ratio	0.27	0.51		0.31	0.17	0.08	0.19	0.22		0.70	0.29	
Uniform Delay, d1	12.5	13.8		7.8	7.4	7.0	19.1	20.6		23.6	17.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	1.5		0.5	0.2	0.2	0.4	0.2		6.1	0.4	
Delay (s)	14.3	15.3		8.3	7.6	7.2	19.6	20.8		29.7	18.3	
Level of Service	B	B		A	A	A	B	C		C	B	
Approach Delay (s)		15.2			7.6			20.6			25.3	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	525	295	60	410	0	0	0	0	35	0	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.36	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	1315	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	571	321	65	446	0	0	0	0	38	0	103
RTOR Reduction (vph)	0	0	142	0	0	0	0	0	0	0	0	92
Lane Group Flow (vph)	0	571	179	65	446	0	0	0	0	19	19	11
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		29.0	29.0	36.6	36.6					5.4	5.4	5.4
Effective Green, g (s)		29.0	29.0	36.6	36.6					5.4	5.4	5.4
Actuated g/C Ratio		0.56	0.56	0.70	0.70					0.10	0.10	0.10
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2836	883	1031	2491					175	175	164
v/s Ratio Prot		0.11		0.00	c0.13							
v/s Ratio Perm			c0.11	0.04						c0.01	0.01	0.01
v/c Ratio		0.20	0.20	0.06	0.18					0.11	0.11	0.07
Uniform Delay, d1		5.7	5.7	2.6	2.6					21.1	21.1	21.0
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.2	0.5	0.0	0.2					0.3	0.3	0.2
Delay (s)		5.9	6.3	2.6	2.8					21.4	21.4	21.2
Level of Service		A	A	A	A					C	C	C
Approach Delay (s)		6.0			2.7			0.0			21.2	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	420	0	0	290	105	180	0	155	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.86	1.00	0.95	0.95	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	3433	3539			6408	1583	1681	1681	1583			
Flt Permitted	0.45	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	1614	3539			6408	1583	1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	457	0	0	315	114	196	0	168	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	61	0	0	144	0	0	0
Lane Group Flow (vph)	103	457	0	0	315	53	98	98	24	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	33.0	33.0			23.2	23.2	7.2	7.2	7.2			
Effective Green, g (s)	33.0	33.0			23.2	23.2	7.2	7.2	7.2			
Actuated g/C Ratio	0.66	0.66			0.46	0.46	0.14	0.14	0.14			
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	1235	2326			2961	732	241	241	227			
v/s Ratio Prot	0.01	c0.13			0.05							
v/s Ratio Perm	0.05					0.03	c0.06	0.06	0.02			
v/c Ratio	0.08	0.20			0.11	0.07	0.41	0.41	0.11			
Uniform Delay, d1	3.3	3.4			7.6	7.5	19.6	19.6	18.7			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.0	0.2			0.1	0.2	1.1	1.1	0.2			
Delay (s)	3.3	3.6			7.7	7.7	20.7	20.7	18.9			
Level of Service	A	A			A	A	C	C	B			
Approach Delay (s)		3.5			7.7			19.9			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	50.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	160	400	255	25	40	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	435	277	27	43	136
RTOR Reduction (vph)	0	266	0	0	0	0
Lane Group Flow (vph)	174	169	277	27	43	136
Turn Type		Perm	Prot			Free
Protected Phases	4		5	2	6	
Permitted Phases		4				Free
Actuated Green, G (s)	19.0	19.0	8.4	20.0	6.6	49.0
Effective Green, g (s)	19.0	19.0	8.4	20.0	6.6	49.0
Actuated g/C Ratio	0.39	0.39	0.17	0.41	0.13	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	686	614	589	760	251	1583
v/s Ratio Prot	0.10		c0.08	0.01	c0.02	
v/s Ratio Perm		c0.11				0.09
v/c Ratio	0.25	0.27	0.47	0.04	0.17	0.09
Uniform Delay, d1	10.2	10.3	18.3	8.7	18.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	1.1	0.6	0.0	0.3	0.1
Delay (s)	11.1	11.4	18.9	8.7	19.1	0.1
Level of Service	B	B	B	A	B	A
Approach Delay (s)	11.3			18.0	4.7	
Approach LOS	B			B	A	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	49.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	36.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	35	5	95	35	5	220
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	5	103	38	5	239
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			43		285	41
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			43		285	41
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			93		99	76
cM capacity (veh/h)			1565		658	1016

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	43	141	5	239
Volume Left	0	103	5	0
Volume Right	5	0	0	239
cSH	1700	1565	658	1016
Volume to Capacity	0.03	0.07	0.01	0.24
Queue Length 95th (ft)	0	5	1	23
Control Delay (s)	0.0	5.6	10.5	9.6
Lane LOS		A	B	A
Approach Delay (s)	0.0	5.6	9.6	
Approach LOS			A	

Intersection Summary			
Average Delay	7.3		
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	30	75	0	5	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	33	82	0	5	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	82				114	82
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	82				114	82
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	97
cM capacity (veh/h)	1516				882	978

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	33	82	33
Volume Left	0	0	5
Volume Right	0	0	27
cSH	1700	1700	961
Volume to Capacity	0.02	0.05	0.03
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	8.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.9
Approach LOS			A

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	13.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	5	0	0	5	5	55	5	5	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	5	0	0	5	5	60	5	5	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	11			5			111	114	5	120	111	8
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	11			5			111	114	5	120	111	8
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			93	99	99	100	100	100
cM capacity (veh/h)	1608			1616			846	752	1078	827	755	1074

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	54	11	71
Volume Left	49	0	60
Volume Right	0	5	5
cSH	1608	1700	852
Volume to Capacity	0.03	0.01	0.08
Queue Length 95th (ft)	2	0	7
Control Delay (s)	6.6	0.0	9.6
Lane LOS	A		A
Approach Delay (s)	6.6	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay	7.6		
Intersection Capacity Utilization	19.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	165	140	15	75	15	30	70	15	25	265	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95		0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3447		3433	3520	
Flt Permitted	0.70	1.00	1.00	0.64	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1311	1863	1583	1200	1863	1583	3433	3447		3433	3520	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	179	152	16	82	16	33	76	16	27	288	11
RTOR Reduction (vph)	0	0	122	0	0	13	0	8	0	0	4	0
Lane Group Flow (vph)	11	179	30	16	82	3	33	84	0	27	295	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	10.0	10.0	10.0	10.0	10.0	10.0	1.8	26.6		0.7	25.5	
Effective Green, g (s)	10.0	10.0	10.0	10.0	10.0	10.0	1.8	26.6		0.7	25.5	
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.19	0.04	0.52		0.01	0.50	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	256	363	309	234	363	309	120	1787		47	1750	
v/s Ratio Prot		c0.10			0.04		c0.01	0.02		0.01	c0.08	
v/s Ratio Perm	0.01		0.02	0.01		0.00						
v/c Ratio	0.04	0.49	0.10	0.07	0.23	0.01	0.28	0.05		0.57	0.17	
Uniform Delay, d1	16.8	18.4	16.9	16.8	17.4	16.7	24.1	6.1		25.2	7.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.1	0.1	0.1	0.3	0.0	1.2	0.0		15.9	0.2	
Delay (s)	16.8	19.4	17.1	17.0	17.7	16.7	25.4	6.1		41.0	7.3	
Level of Service	B	B	B	B	B	B	C	A		D	A	
Approach Delay (s)		18.3			17.5			11.2			10.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	51.3	Sum of lost time (s)	14.0
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	15	150	0	90	55	0	0	0	0	110	60
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	16	163	0	98	60	0	0	0	0	120	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1221										
pX, platoon unblocked												
vC, conflicting volume	158			179			427	332	98	302	383	128
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	158			179			427	332	98	302	383	128
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	100	78	93
cM capacity (veh/h)	1422			1396			406	572	958	637	535	922

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	217	158	185
Volume Left	38	0	0
Volume Right	163	60	65
cSH	1422	1396	628
Volume to Capacity	0.03	0.00	0.29
Queue Length 95th (ft)	2	0	31
Control Delay (s)	1.5	0.0	13.1
Lane LOS	A		B
Approach Delay (s)	1.5	0.0	13.1
Approach LOS			B

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	15	0	130	40	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	0	141	43	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	326	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	326	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	91			
cM capacity (veh/h)	610	1085	1623			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	16	141	43
Volume Left	16	141	0
Volume Right	0	0	0
cSH	610	1623	1700
Volume to Capacity	0.03	0.09	0.03
Queue Length 95th (ft)	2	7	0
Control Delay (s)	11.1	7.4	0.0
Lane LOS	B	A	
Approach Delay (s)	11.1	5.7	
Approach LOS	B		

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	17.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1225	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	360	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	746	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	746	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	11.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1225	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	55	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1225		55			vph
Peak-hour factor, PHF	0.82		0.82			
Peak 15-min volume, v15	373		17			v
Trucks and buses	7		1			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	0.966		0.995			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	1546		67			pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1546 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1546	4700	No
v_{12}	1546	4400	No
$v_{FO} = v_F - v_R$	1479	4700	No
v_R	67	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 12.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.304

Space mean speed in ramp influence area, S_R = 58.0 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.0 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Dillon Dr
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1170	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	140	vph
Length of first accel/decel lane	1400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1170	140		vph
Peak-hour factor, PHF	0.82	0.82		
Peak 15-min volume, v15	357	43		v
Trucks and buses	7	1		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.966	0.995		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	1477	172		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1477 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1649	4700	No
v_{R12}	1649	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 9.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, M_S = 0.215

Space mean speed in ramp influence area, S_R = 60.0 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 60.0 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	Between Eagleridge-Dillon
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1310	veh/h
Peak-hour factor, PHF	0.91	
Peak 15-min volume, v15	360	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	745	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	745	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	11.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1375	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	245	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	500	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1375		245		500		vph
Peak-hour factor, PHF	0.92		0.92		0.92		
Peak 15-min volume, v15	374		67		136		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1547		269		549		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1547 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1547	4700	No
v_{12}	1547	4400	No
$v_{FO} = v_F - v_R$	1278	4700	No
v_R	269	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 14.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.322

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.6 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1130	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	500	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	245	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1130	500	245	vph
Peak-hour factor, PHF	0.92	0.92	0.92	
Peak 15-min volume, v15	307	136	67	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1271	549	269	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1271 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1820	4700	No
v_{R12}	1820	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.332

Space mean speed in ramp influence area, S_R = 57.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.4 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1630	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	479	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	992	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	992	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	15.7	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1900	veh/h
Peak-hour factor, PHF	0.91	
Peak 15-min volume, v15	522	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1080	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1080	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1900	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	550	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	220	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1900		550		220		vph
Peak-hour factor, PHF	0.91		0.91		0.91		
Peak 15-min volume, v15	522		151		60		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	2161		610		244		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2161 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2161	4700	No
v_{12}	2161	4400	No
$v_{FO} = v_F - v_R$	1551	4700	No
v_R	610	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 19.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.353

Space mean speed in ramp influence area, S_R = 56.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.9 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1350	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	220	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	550	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1350	220	550	vph
Peak-hour factor, PHF	0.91	0.91	0.91	
Peak 15-min volume, v15	371	60	151	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1535	244	610	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1535 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1779	4700	No
v_{R12}	1779	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 16.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.308

Space mean speed in ramp influence area, S_R = 57.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.9 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	Between Eagleridge-Dillon
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1570	veh/h
Peak-hour factor, PHF	0.91	
Peak 15-min volume, v15	431	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	893	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	893	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	14.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Dillon Dr
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1565	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	225	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1565		225				vph
Peak-hour factor, PHF	0.82		0.82				
Peak 15-min volume, v15	477		69				v
Trucks and buses	7		1				%
Recreational vehicles	0		0				%
Terrain type:	Level		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	1.5		1.5				
Recreational vehicle PCE, ER	1.2		1.2				
Heavy vehicle adjustment, fHV	0.966		0.995				
Driver population factor, fP	1.00		1.00				
Flow rate, vp	1975		276				pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1975 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1975	4700	No
v_{12}	1975	4400	No
$v_{FO} = v_F - v_R$	1699	4700	No
v_R	276	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 14.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.323

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.6 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1340	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	30	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1340	30		vph
Peak-hour factor, PHF	0.82	0.82		
Peak 15-min volume, v15	409	9		v
Trucks and buses	7	1		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.966	0.995		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	1691	37		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1691 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1728	4700	No
v_{R12}	1728	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 14.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.280

Space mean speed in ramp influence area, S_R = 58.6 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.6 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2017) PM Peak

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	Year 2017

Flow Inputs and Adjustments

Volume, V	1370	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	403	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	834	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	834	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	13.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	435	80	225	525	185	70	165	145	265	130	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.93		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3457		1770	3539	1583	1770	3290		3433	1765	
Flt Permitted	0.44	1.00		0.29	1.00	1.00	0.62	1.00		0.95	1.00	
Satd. Flow (perm)	815	3457		541	3539	1583	1160	3290		3433	1765	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	473	87	245	571	201	76	179	158	288	141	76
RTOR Reduction (vph)	0	24	0	0	0	112	0	129	0	0	33	0
Lane Group Flow (vph)	103	536	0	245	571	89	76	208	0	288	184	0
Turn Type	Perm			pm+pt		Perm	pm+pt			Prot		
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	16.1	16.1		25.1	25.1	25.1	12.6	10.3		7.0	15.0	
Effective Green, g (s)	16.1	16.1		25.1	25.1	25.1	12.6	10.3		7.0	15.0	
Actuated g/C Ratio	0.29	0.29		0.45	0.45	0.45	0.22	0.18		0.12	0.27	
Clearance Time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	233	987		350	1575	704	284	601		426	469	
v/s Ratio Prot		0.15		c0.06	0.16		0.01	0.06		c0.08	c0.10	
v/s Ratio Perm	0.13			c0.25		0.06	0.05					
v/c Ratio	0.44	0.54		0.70	0.36	0.13	0.27	0.35		0.68	0.39	
Uniform Delay, d1	16.5	17.0		10.7	10.4	9.2	17.8	20.1		23.6	17.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.0	2.1		6.2	0.6	0.4	0.5	0.3		4.2	0.5	
Delay (s)	22.5	19.2		16.9	11.0	9.6	18.3	20.5		27.8	17.5	
Level of Service	C	B		B	B	A	B	C		C	B	
Approach Delay (s)		19.7			12.1			20.1			23.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	555	260	190	890	0	0	0	0	105	0	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	4.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.35	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	1267	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	603	283	207	967	0	0	0	0	114	0	120
RTOR Reduction (vph)	0	0	153	0	0	0	0	0	0	0	0	73
Lane Group Flow (vph)	0	603	130	207	967	0	0	0	0	57	57	47
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		22.5	22.5	32.9	32.9					6.2	6.2	6.2
Effective Green, g (s)		22.5	22.5	32.9	32.9					6.2	6.2	6.2
Actuated g/C Ratio		0.46	0.46	0.67	0.67					0.13	0.13	0.13
Clearance Time (s)		5.0	5.0	4.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2330	725	1131	2371					212	212	200
v/s Ratio Prot		0.12		0.02	c0.27							
v/s Ratio Perm			0.08	0.10						c0.03	0.03	0.03
v/c Ratio		0.26	0.18	0.18	0.41					0.27	0.27	0.24
Uniform Delay, d1		8.2	7.8	3.0	3.7					19.4	19.4	19.3
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.3	0.5	0.1	0.5					0.7	0.7	0.6
Delay (s)		8.4	8.4	3.1	4.2					20.1	20.1	19.9
Level of Service		A	A	A	A					C	C	B
Approach Delay (s)		8.4			4.0			0.0			20.0	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	49.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	590	0	0	750	130	285	0	210	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.86	1.00	0.95	0.95	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	3433	3539			6408	1583	1681	1681	1583			
Flt Permitted	0.27	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	980	3539			6408	1583	1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	641	0	0	815	141	310	0	228	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	75	0	0	144	0	0	0
Lane Group Flow (vph)	65	641	0	0	815	66	155	155	84	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	31.0	31.0			24.0	24.0	10.2	10.2	10.2			
Effective Green, g (s)	31.0	31.0			24.0	24.0	10.2	10.2	10.2			
Actuated g/C Ratio	0.61	0.61			0.47	0.47	0.20	0.20	0.20			
Clearance Time (s)	4.0	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	737	2143			3004	742	335	335	315			
v/s Ratio Prot	0.01	c0.18			0.13							
v/s Ratio Perm	0.05					0.04	c0.09	0.09	0.05			
v/c Ratio	0.09	0.30			0.27	0.09	0.46	0.46	0.27			
Uniform Delay, d1	4.2	4.9			8.3	7.5	18.1	18.1	17.3			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.1	0.4			0.2	0.2	1.0	1.0	0.5			
Delay (s)	4.3	5.2			8.5	7.8	19.1	19.1	17.8			
Level of Service	A	A			A	A	B	B	B			
Approach Delay (s)		5.1			8.4			18.5			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	300	440	660	100	80	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	478	717	109	87	217
RTOR Reduction (vph)	0	329	0	0	0	0
Lane Group Flow (vph)	326	149	717	109	87	217
Turn Type		Perm	Prot			Free
Protected Phases	4		5	2	6	
Permitted Phases		4				Free
Actuated Green, G (s)	16.0	16.0	13.7	25.5	7.8	51.5
Effective Green, g (s)	16.0	16.0	13.7	25.5	7.8	51.5
Actuated g/C Ratio	0.31	0.31	0.27	0.50	0.15	1.00
Clearance Time (s)	5.0	5.0	4.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	550	492	913	922	282	1583
v/s Ratio Prot	c0.18		c0.21	0.06	c0.05	
v/s Ratio Perm		0.09				0.14
v/c Ratio	0.59	0.30	0.79	0.12	0.31	0.14
Uniform Delay, d1	15.0	13.5	17.5	7.0	19.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	1.6	4.5	0.1	0.6	0.2
Delay (s)	19.6	15.1	22.0	7.0	20.1	0.2
Level of Service	B	B	C	A	C	A
Approach Delay (s)	16.9			20.0	5.9	
Approach LOS	B			C	A	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	45	15	225	45	15	125
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	16	245	49	16	136
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			65		595	57
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			65		595	57
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			84		96	86
cM capacity (veh/h)			1537		393	995

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	65	293	16	136
Volume Left	0	245	16	0
Volume Right	16	0	0	136
cSH	1700	1537	393	995
Volume to Capacity	0.04	0.16	0.04	0.14
Queue Length 95th (ft)	0	14	3	12
Control Delay (s)	0.0	6.7	14.6	9.2
Lane LOS		A	B	A
Approach Delay (s)	0.0	6.7	9.8	
Approach LOS			A	

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	20	90	0	5	105
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	22	98	0	5	114
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	98				120	98
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	98				120	98
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	88
cM capacity (veh/h)	1495				876	958

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	22	98	120
Volume Left	0	0	5
Volume Right	0	0	114
cSH	1700	1700	954
Volume to Capacity	0.01	0.06	0.13
Queue Length 95th (ft)	0	0	11
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	18.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	5	0	0	10	5	75	10	5	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	5	0	0	11	5	82	11	5	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	16			5			128	130	5	139	128	14
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	16			5			128	130	5	139	128	14
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			90	99	99	100	100	100
cM capacity (veh/h)	1601			1616			824	734	1078	797	737	1066

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	60	16	98
Volume Left	54	0	82
Volume Right	0	5	5
cSH	1601	1700	823
Volume to Capacity	0.03	0.01	0.12
Queue Length 95th (ft)	3	0	10
Control Delay (s)	6.7	0.0	10.0
Lane LOS	A		A
Approach Delay (s)	6.7	0.0	10.0
Approach LOS			A

Intersection Summary			
Average Delay	7.9		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	70	80	45	160	65	120	255	45	40	125	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95		0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3459		3433	3399	
Flt Permitted	0.64	1.00	1.00	0.71	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1197	1863	1583	1318	1863	1583	3433	3459		3433	3399	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	76	87	49	174	71	130	277	49	43	136	49
RTOR Reduction (vph)	0	0	74	0	0	60	0	18	0	0	28	0
Lane Group Flow (vph)	49	76	13	49	174	11	130	308	0	43	157	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	10.5	8.4	8.4	10.5	8.4	8.4	3.8	25.8		1.4	23.4	
Effective Green, g (s)	10.5	8.4	8.4	10.5	8.4	8.4	3.8	25.8		1.4	23.4	
Actuated g/C Ratio	0.19	0.15	0.15	0.19	0.15	0.15	0.07	0.46		0.03	0.42	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	247	281	239	265	281	239	234	1602		86	1428	
v/s Ratio Prot	c0.01	0.04		0.01	c0.09		c0.04	c0.09		0.01	0.05	
v/s Ratio Perm	0.03		0.01	0.03		0.01						
v/c Ratio	0.20	0.27	0.05	0.18	0.62	0.04	0.56	0.19		0.50	0.11	
Uniform Delay, d1	18.9	20.9	20.3	18.9	22.2	20.2	25.1	8.8		26.8	9.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.5	0.1	0.3	4.0	0.1	2.8	0.3		4.5	0.2	
Delay (s)	19.3	21.5	20.3	19.2	26.2	20.3	28.0	9.1		31.3	10.0	
Level of Service	B	C	C	B	C	C	C	A		C	A	
Approach Delay (s)		20.5			23.6			14.5			14.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	40	15	95	0	150	45	0	0	0	0	110	140
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	16	103	0	163	49	0	0	0	0	120	152
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1221										
pX, platoon unblocked												
vC, conflicting volume	212			120			554	367	68	342	394	188
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	212			120			554	367	68	342	394	188
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	100	77	82
cM capacity (veh/h)	1358			1468			293	544	995	597	525	855

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	163	212	272
Volume Left	43	0	0
Volume Right	103	49	152
cSH	1358	1468	670
Volume to Capacity	0.03	0.00	0.41
Queue Length 95th (ft)	2	0	49
Control Delay (s)	2.3	0.0	14.0
Lane LOS	A		B
Approach Delay (s)	2.3	0.0	14.0
Approach LOS			B

Intersection Summary			
Average Delay		6.5	
Intersection Capacity Utilization		43.8%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	15	0	165	35	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	0	179	38	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	397	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	397	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	89			
cM capacity (veh/h)	541	1085	1623			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	16	179	38
Volume Left	16	179	0
Volume Right	0	0	0
cSH	541	1623	1700
Volume to Capacity	0.03	0.11	0.02
Queue Length 95th (ft)	2	9	0
Control Delay (s)	11.9	7.5	0.0
Lane LOS	B	A	
Approach Delay (s)	11.9	6.2	
Approach LOS	B		

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	3160	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	878	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1817	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1817	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	62.1	mi/h
Number of lanes, N	2	
Density, D	29.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3160	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	60	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	569	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3160		60		569		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	878		17		158		v
Trucks and buses	7		1		1		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.995		0.995		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	3634		67		635		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3634 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3634	4700	No
v_{12}	3634	4400	No
$v_{FO} = v_F - v_R$	3567	4700	No
v_R	67	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 30.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.304	
Space mean speed in ramp influence area,	S_R = 58.0	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 58.0	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3099	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	569	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	60	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3099	569	60	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	861	158	17	v
Trucks and buses	7	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3564	635	67	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3564 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4199	4700	No
v_{R12}	4199	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 34.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.527

Space mean speed in ramp influence area, S_R = 52.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 52.9 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	Between Eagleridge-Platteville
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	3668	veh/h
Peak-hour factor, PHF	0.82	
Peak 15-min volume, v15	1118	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	2315	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2315	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	52.3	mi/h
Number of lanes, N	2	
Density, D	44.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3668	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	554	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	739	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3668		554		739		vph
Peak-hour factor, PHF	0.82		0.82		0.82		
Peak 15-min volume, v15	1113		169		225		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	4607		682		910		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4607 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4607	4700	No
v_{12}	4607	4400	Yes
$v_{FO} = v_F - v_R$	3925	4700	No
v_R	682	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 41.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.359

Space mean speed in ramp influence area, S_R = 56.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.7 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3114	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	739	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	554	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3114	739	554	vph
Peak-hour factor, PHF	0.82	0.82	0.82	
Peak 15-min volume, v15	949	225	169	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3930	910	682	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3930 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4840	4700	Yes
v_{R12}	4840	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 41.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 0.801

Space mean speed in ramp influence area, S_R = 46.6 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 46.6 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	3853	veh/h
Peak-hour factor, PHF	0.82	
Peak 15-min volume, v15	1175	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	2432	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2432	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	2127	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	626	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1295	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1295	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	20.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2127	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	845	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	172	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2127		845		172		vph
Peak-hour factor, PHF	0.85		0.85		0.85		
Peak 15-min volume, v15	626		249		51		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	2590		1004		204		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2590 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2590	4700	No
v_{12}	2590	4400	No
$v_{FO} = v_F - v_R$	1586	4700	No
v_R	1004	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 23.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.388

Space mean speed in ramp influence area, S_R = 56.1 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.1 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1282	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	172	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	845	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1282	172	845	vph
Peak-hour factor, PHF	0.85	0.85	0.85	
Peak 15-min volume, v15	377	51	249	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1561	204	1004	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1561 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1765	4700	No
v_{R12}	1765	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 16.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.308

Space mean speed in ramp influence area, S_R = 57.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.9 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	Between Eagleridge-Platteville
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	1453	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	427	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	885	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	885	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	14.0	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1453	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	258	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	102	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2500	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1453		258		102		vph
Peak-hour factor, PHF	0.70		0.70		0.70		
Peak 15-min volume, v15	519		92		36		v
Trucks and buses	7		1		1		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.995		0.995		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	2148		370		146		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2148 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2148	4700	No
v_{12}	2148	4400	No
$v_{FO} = v_F - v_R$	1778	4700	No
v_R	370	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 20.0+ pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.331

Space mean speed in ramp influence area, S_R = 57.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.4 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1195	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	102	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	258	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2500	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1195	102	258	vph
Peak-hour factor, PHF	0.70	0.70	0.70	
Peak 15-min volume, v15	427	36	92	v
Trucks and buses	7	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1767	146	370	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1767 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1913	4700	No
v_{R12}	1913	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 15.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.284

Space mean speed in ramp influence area, S_R = 58.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.5 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	1300	veh/h
Peak-hour factor, PHF	0.70	
Peak 15-min volume, v15	464	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	961	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	961	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	15.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	1245	105	225	780	255	100	205	200	520	215	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.93		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3498		1770	3539	1583	1770	3277		3433	1748	
Flt Permitted	0.33	1.00		0.11	1.00	1.00	0.50	1.00		0.95	1.00	
Satd. Flow (perm)	621	3498		201	3539	1583	923	3277		3433	1748	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	1353	114	245	848	277	109	223	217	565	234	163
RTOR Reduction (vph)	0	7	0	0	0	134	0	147	0	0	28	0
Lane Group Flow (vph)	266	1460	0	245	848	143	109	293	0	565	369	0
Turn Type	Perm			pm+pt		Perm	pm+pt			Prot		
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	33.1	33.1		45.1	45.1	45.1	16.6	13.4		15.0	25.2	
Effective Green, g (s)	33.1	33.1		45.1	45.1	45.1	16.6	13.4		15.0	25.2	
Actuated g/C Ratio	0.38	0.38		0.52	0.52	0.52	0.19	0.15		0.17	0.29	
Clearance Time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	235	1323		247	1824	816	206	502		589	503	
v/s Ratio Prot		0.42		c0.09	0.24		0.02	0.09		c0.16	c0.21	
v/s Ratio Perm	c0.43			0.42		0.09	0.08					
v/c Ratio	1.13	1.10		0.99	0.46	0.17	0.53	0.58		0.96	0.73	
Uniform Delay, d1	27.2	27.2		22.9	13.5	11.3	31.0	34.5		35.9	28.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	98.8	58.3		54.8	0.9	0.5	2.4	1.7		26.9	5.5	
Delay (s)	126.0	85.5		77.7	14.4	11.8	33.5	36.2		62.8	33.6	
Level of Service	F	F		E	B	B	C	D		E	C	
Approach Delay (s)		91.7			25.2			35.6			50.7	
Approach LOS		F			C			D			D	

Intersection Summary			
HCM Average Control Delay	56.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	87.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1225	790	230	1160	0	0	0	0	200	0	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.13	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	481	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1332	859	250	1261	0	0	0	0	217	0	255
RTOR Reduction (vph)	0	0	418	0	0	0	0	0	0	0	0	47
Lane Group Flow (vph)	0	1332	441	250	1261	0	0	0	0	108	109	208
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		39.7	39.7	52.2	52.2					15.2	15.2	15.2
Effective Green, g (s)		39.7	39.7	52.2	52.2					15.2	15.2	15.2
Actuated g/C Ratio		0.51	0.51	0.67	0.67					0.20	0.20	0.20
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2608	812	610	2387					330	330	311
v/s Ratio Prot		0.26		0.04	c0.36							
v/s Ratio Perm			0.28	0.24						0.06	0.06	c0.13
v/c Ratio		0.51	0.54	0.41	0.53					0.33	0.33	0.67
Uniform Delay, d1		12.4	12.7	6.4	6.4					26.7	26.7	28.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	2.6	0.5	0.8					0.6	0.6	5.3
Delay (s)		13.2	15.3	6.8	7.2					27.3	27.3	34.1
Level of Service		B	B	A	A					C	C	C
Approach Delay (s)		14.0			7.2			0.0			31.0	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	175	1365	0	0	1145	250	380	0	500	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.86	1.00	0.95	0.95	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	3433	3539			6408	1583	1681	1681	1583			
Flt Permitted	0.12	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	448	3539			6408	1583	1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	1484	0	0	1245	272	413	0	543	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	171	0	0	9	0	0	0
Lane Group Flow (vph)	190	1484	0	0	1245	101	206	207	534	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	42.3	42.3			31.3	31.3	32.4	32.4	32.4			
Effective Green, g (s)	42.3	42.3			31.3	31.3	32.4	32.4	32.4			
Actuated g/C Ratio	0.50	0.50			0.37	0.37	0.38	0.38	0.38			
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	435	1767			2368	585	643	643	606			
v/s Ratio Prot	0.03	c0.42			0.19							
v/s Ratio Perm	0.19					0.06	0.12	0.12	c0.34			
v/c Ratio	0.44	0.84			0.53	0.17	0.32	0.32	0.88			
Uniform Delay, d1	12.7	18.3			20.9	18.0	18.4	18.4	24.4			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.7	5.0			0.8	0.6	0.3	0.3	14.1			
Delay (s)	13.4	23.3			21.7	18.6	18.7	18.7	38.5			
Level of Service	B	C			C	B	B	B	D			
Approach Delay (s)		22.2			21.2			29.9			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	820	1145	530	175	275	980
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	0.97	0.91	0.97	1.00	0.95	1.00
Frt	0.94	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.97	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3303	1441	3433	1863	3539	1583
Flt Permitted	0.97	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3303	1441	3433	1863	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	891	1245	576	190	299	1065
RTOR Reduction (vph)	112	334	0	0	0	0
Lane Group Flow (vph)	1339	351	576	190	299	1065
Turn Type		Perm	Prot			Free
Protected Phases	4		5	2	6	
Permitted Phases		4				Free
Actuated Green, G (s)	40.1	40.1	17.6	33.9	12.3	84.0
Effective Green, g (s)	40.1	40.1	17.6	33.9	12.3	84.0
Actuated g/C Ratio	0.48	0.48	0.21	0.40	0.15	1.00
Clearance Time (s)	5.0	5.0	4.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1577	688	719	752	518	1583
v/s Ratio Prot	c0.41		0.17	0.10	0.08	
v/s Ratio Perm		0.24				c0.67
v/c Ratio	0.85	0.51	0.80	0.25	0.58	0.67
Uniform Delay, d1	19.3	15.2	31.5	16.6	33.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	2.7	6.4	0.2	1.6	2.3
Delay (s)	25.2	17.8	37.9	16.8	35.0	2.3
Level of Service	C	B	D	B	C	A
Approach Delay (s)	22.8			32.7	9.5	
Approach LOS	C			C	A	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	5.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	280	40	125	240	30	250
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	304	43	136	261	33	272
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			348		859	326
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			348		859	326
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			89		89	62
cM capacity (veh/h)			1211		290	715

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	348	136	261	33	272
Volume Left	0	136	0	33	0
Volume Right	43	0	0	0	272
cSH	1700	1211	1700	290	715
Volume to Capacity	0.20	0.11	0.15	0.11	0.38
Queue Length 95th (ft)	0	9	0	9	45
Control Delay (s)	0.0	8.3	0.0	19.0	13.1
Lane LOS		A		C	B
Approach Delay (s)	0.0	2.9		13.7	
Approach LOS				B	

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	70	560	10	230	0	0	0	0	10	0	100
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	76	609	11	250	0	0	0	0	11	0	109
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	250			685			761	652	380	652	957	250
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	250			685			761	652	380	652	957	250
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	97	100	86
cM capacity (veh/h)	1316			909			275	382	667	377	255	789

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	685	261	120
Volume Left	0	11	11
Volume Right	609	0	109
cSH	1700	909	718
Volume to Capacity	0.40	0.01	0.17
Queue Length 95th (ft)	0	1	15
Control Delay (s)	0.0	0.5	11.0
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	11.0
Approach LOS			B

Intersection Summary			
Average Delay		1.4	
Intersection Capacity Utilization		51.7%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	75	5	0	0	10	10	225	0	30	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	5	0	0	11	11	245	0	33	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	22			5			185	190	5	217	185	16
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	22			5			185	190	5	217	185	16
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			67	100	97	100	100	100
cM capacity (veh/h)	1594			1616			746	669	1078	689	673	1063

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	87	22	277
Volume Left	82	0	245
Volume Right	0	11	33
cSH	1594	1700	774
Volume to Capacity	0.05	0.01	0.36
Queue Length 95th (ft)	4	0	41
Control Delay (s)	6.9	0.0	12.2
Lane LOS	A		B
Approach Delay (s)	6.9	0.0	12.2
Approach LOS			B

Intersection Summary			
Average Delay	10.3		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	275	530	30	135	95	165	380	30	300	730	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	0.97	0.95		0.97	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		1.00	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1854	1583		1846	1583	3433	3500		3433	3518	
Flt Permitted		0.96	1.00		0.88	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1780	1583		1639	1583	3433	3500		3433	3518	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	299	576	33	147	103	179	413	33	326	793	33
RTOR Reduction (vph)	0	0	222	0	0	72	0	6	0	0	3	0
Lane Group Flow (vph)	0	332	354	0	180	31	179	440	0	326	823	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		22.3	22.3		22.3	22.3	8.4	26.2		11.7	29.5	
Effective Green, g (s)		22.3	22.3		22.3	22.3	8.4	26.2		11.7	29.5	
Actuated g/C Ratio		0.30	0.30		0.30	0.30	0.11	0.35		0.16	0.40	
Clearance Time (s)		5.0	5.0		5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		535	476		493	476	389	1236		541	1399	
v/s Ratio Prot							0.05	0.13		c0.09	c0.23	
v/s Ratio Perm		0.19	c0.22		0.11	0.02						
v/c Ratio		0.62	0.74		0.37	0.07	0.46	0.36		0.60	0.59	
Uniform Delay, d1		22.3	23.4		20.4	18.5	30.8	17.8		29.1	17.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.2	6.2		0.5	0.1	0.9	0.8		1.9	1.8	
Delay (s)		24.6	29.5		20.8	18.6	31.6	18.6		31.0	19.4	
Level of Service		C	C		C	B	C	B		C	B	
Approach Delay (s)		27.7			20.0			22.3			22.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	74.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	1550	veh/h
Peak-hour factor, PHF	0.82	
Peak 15-min volume, v15	473	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	978	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	978	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	15.5	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1550	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	154	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	266	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1550		154		266		vph
Peak-hour factor, PHF	0.82		0.82		0.82		
Peak 15-min volume, v15	473		47		81		v
Trucks and buses	7		1		1		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.995		0.995		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1956		189		326		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1956 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1956	4700	No
v_{12}	1956	4400	No
$v_{FO} = v_F - v_R$	1767	4700	No
v_R	189	2100	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 15.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.315

Space mean speed in ramp influence area, S_R = 57.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.8 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1389	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	266	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	154	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1389	266	154	vph
Peak-hour factor, PHF	0.82	0.82	0.82	
Peak 15-min volume, v15	423	81	47	v
Trucks and buses	7	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1753	326	189	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1753 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2079	4700	No
v_{R12}	2079	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 17.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.298

Space mean speed in ramp influence area, S_R = 58.1 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.1 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	Between Eagleridge-Platteville
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	1655	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	450	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	931	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	931	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	14.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1655	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	259	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	817	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1655		259		817		vph
Peak-hour factor, PHF	0.92		0.92		0.92		
Peak 15-min volume, v15	450		70		222		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	1862		284		897		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1862 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1862	4700	No
v_{12}	1862	4400	No
$v_{FO} = v_F - v_R$	1578	4700	No
v_R	284	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 17.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.324

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.6 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1396	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	817	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	259	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1396	817	259	vph
Peak-hour factor, PHF	0.92	0.92	0.92	
Peak 15-min volume, v15	379	222	70	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1570	897	284	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1570 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2467	4700	No
v_{R12}	2467	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 23.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.353

Space mean speed in ramp influence area, S_R = 56.9 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.9 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	2213	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	601	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1245	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1245	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	19.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	2767	veh/h
Peak-hour factor, PHF	0.91	
Peak 15-min volume, v15	760	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1574	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1574	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	25.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2767	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	758	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	425	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2767		758		425		vph
Peak-hour factor, PHF	0.91		0.91		0.91		
Peak 15-min volume, v15	760		208		117		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	3147		841		472		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3147 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3147	4700	No
v_{12}	3147	4400	No
$v_{FO} = v_F - v_R$	2306	4700	No
v_R	841	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 28.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.374

Space mean speed in ramp influence area, S_R = 56.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.4 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2009	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	425	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	758	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2009	425	758	vph
Peak-hour factor, PHF	0.91	0.91	0.91	
Peak 15-min volume, v15	552	117	208	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2285	472	841	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2285 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2757	4700	No
v_{R12}	2757	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 24.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.346

Space mean speed in ramp influence area, S_R = 57.0 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.0 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	Between Eagleridge-Platteville
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	2434	veh/h
Peak-hour factor, PHF	0.91	
Peak 15-min volume, v15	669	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1384	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1384	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2434	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	414	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	123	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2500	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2434		414		123		vph
Peak-hour factor, PHF	0.82		0.82		0.82		
Peak 15-min volume, v15	742		126		38		v
Trucks and buses	7		1		1		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.995		0.995		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	3072		507		151		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3072 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3072	4700	No
v_{12}	3072	4400	No
$v_{FO} = v_F - v_R$	2565	4700	No
v_R	507	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 28.0- pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.344	
Space mean speed in ramp influence area,	S_R = 57.1	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.1	mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2020	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	123	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	414	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2500	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2020	123	414	vph
Peak-hour factor, PHF	0.82	0.82	0.82	
Peak 15-min volume, v15	616	38	126	v
Trucks and buses	7	1	1	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.995	0.995	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2550	151	507	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2550 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2701	4700	No
v_{R12}	2701	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.316

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
No Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	2145	veh/h
Peak-hour factor, PHF	0.82	
Peak 15-min volume, v15	654	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1354	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1354	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	21.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	185	725	140	205	890	475	125	270	205	425	215	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.94		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3453		1770	3539	1583	1770	3310		3433	1753	
Flt Permitted	0.28	1.00		0.17	1.00	1.00	0.33	1.00		0.95	1.00	
Satd. Flow (perm)	515	3453		315	3539	1583	621	3310		3433	1753	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	201	788	152	223	967	516	136	293	223	462	234	152
RTOR Reduction (vph)	0	17	0	0	0	236	0	142	0	0	26	0
Lane Group Flow (vph)	201	923	0	223	967	280	136	374	0	462	360	0
Turn Type	Perm			pm+pt		Perm	pm+pt			Prot		
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	37.1	37.1		46.1	46.1	46.1	20.0	14.0		13.8	21.8	
Effective Green, g (s)	37.1	37.1		46.1	46.1	46.1	20.0	14.0		13.8	21.8	
Actuated g/C Ratio	0.42	0.42		0.52	0.52	0.52	0.23	0.16		0.16	0.25	
Clearance Time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	217	1457		248	1856	830	220	527		539	435	
v/s Ratio Prot		0.27		c0.05	0.27		0.04	0.11		c0.13	c0.21	
v/s Ratio Perm	0.39			c0.42		0.18	0.10					
v/c Ratio	0.93	0.63		0.90	0.52	0.34	0.62	0.71		0.86	0.83	
Uniform Delay, d1	24.1	20.0		17.1	13.7	12.1	28.6	35.0		36.1	31.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	44.5	2.1		31.5	1.0	1.1	5.1	4.4		12.7	12.2	
Delay (s)	68.6	22.1		48.6	14.7	13.2	33.7	39.4		48.8	43.4	
Level of Service	E	C		D	B	B	C	D		D	D	
Approach Delay (s)		30.3			18.7			38.2			46.4	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	87.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	985	420	295	1585	0	0	0	0	170	0	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.20	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	712	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1071	457	321	1723	0	0	0	0	185	0	185
RTOR Reduction (vph)	0	0	219	0	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	1071	238	321	1723	0	0	0	0	92	93	169
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		39.4	39.4	52.2	52.2					13.3	13.3	13.3
Effective Green, g (s)		39.4	39.4	52.2	52.2					13.3	13.3	13.3
Actuated g/C Ratio		0.52	0.52	0.69	0.69					0.18	0.18	0.18
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2654	826	773	2447					296	296	279
v/s Ratio Prot		0.21		0.04	c0.49							
v/s Ratio Perm			0.15	0.24						0.05	0.06	c0.11
v/c Ratio		0.40	0.29	0.42	0.70					0.31	0.31	0.61
Uniform Delay, d1		10.9	10.2	5.0	7.0					27.1	27.1	28.7
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.9	0.4	1.7					0.6	0.6	3.7
Delay (s)		11.4	11.0	5.4	8.7					27.7	27.7	32.4
Level of Service		B	B	A	A					C	C	C
Approach Delay (s)		11.3			8.2			0.0			30.1	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	75.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1165	0	0	1545	225	345	0	400	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.86	1.00	0.95	0.95	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	3433	3539			6408	1583	1681	1681	1583			
Flt Permitted	0.10	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	350	3539			6408	1583	1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1266	0	0	1679	245	375	0	435	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	137	0	0	25	0	0	0
Lane Group Flow (vph)	76	1266	0	0	1679	108	187	188	410	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	46.4	46.4			36.3	36.3	25.8	25.8	25.8			
Effective Green, g (s)	46.4	46.4			36.3	36.3	25.8	25.8	25.8			
Actuated g/C Ratio	0.56	0.56			0.44	0.44	0.31	0.31	0.31			
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	389	1998			2830	699	528	528	497			
v/s Ratio Prot	0.01	c0.36			0.26							
v/s Ratio Perm	0.10					0.07	0.11	0.11	c0.26			
v/c Ratio	0.20	0.63			0.59	0.15	0.35	0.36	0.83			
Uniform Delay, d1	10.0	12.1			17.4	13.8	21.8	21.8	26.1			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.2	1.5			0.9	0.5	0.4	0.4	10.7			
Delay (s)	10.3	13.7			18.3	14.2	22.2	22.2	36.9			
Level of Service	B	B			B	B	C	C	D			
Approach Delay (s)		13.5			17.8			30.1			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	82.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	840	870	1025	325	255	710
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	4.0	5.0	5.0	4.0
Lane Util. Factor	0.97	0.91	0.97	1.00	0.95	1.00
Frt	0.96	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.97	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3341	1441	3433	1863	3539	1583
Flt Permitted	0.97	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3341	1441	3433	1863	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	913	946	1114	353	277	772
RTOR Reduction (vph)	43	368	0	0	0	0
Lane Group Flow (vph)	1229	219	1114	353	277	772
Turn Type		Perm	Prot			Free
Protected Phases	4		5	2	6	
Permitted Phases		4				Free
Actuated Green, G (s)	36.0	36.0	33.6	50.3	12.7	96.3
Effective Green, g (s)	36.0	36.0	33.6	50.3	12.7	96.3
Actuated g/C Ratio	0.37	0.37	0.35	0.52	0.13	1.00
Clearance Time (s)	5.0	5.0	4.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1249	539	1198	973	467	1583
v/s Ratio Prot	c0.37		c0.32	0.19	0.08	
v/s Ratio Perm		0.15				c0.49
v/c Ratio	0.98	0.41	0.93	0.36	0.59	0.49
Uniform Delay, d1	29.9	22.3	30.2	13.6	39.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.0	2.3	12.5	0.2	2.0	1.1
Delay (s)	51.9	24.5	42.7	13.8	41.4	1.1
Level of Service	D	C	D	B	D	A
Approach Delay (s)	43.2			35.7	11.7	
Approach LOS	D			D	B	

Intersection Summary			
HCM Average Control Delay	33.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	96.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	300	30	100	300	30	185
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	326	33	109	326	33	201
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			359		886	342
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			359		886	342
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		89	71
cM capacity (veh/h)			1200		287	700

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	359	109	326	33	201
Volume Left	0	109	0	33	0
Volume Right	33	0	0	0	201
cSH	1700	1200	1700	287	700
Volume to Capacity	0.21	0.09	0.19	0.11	0.29
Queue Length 95th (ft)	0	7	0	10	30
Control Delay (s)	0.0	8.3	0.0	19.2	12.2
Lane LOS		A		C	B
Approach Delay (s)	0.0	2.1		13.2	
Approach LOS				B	

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	50	245	25	405	0	0	0	0	10	0	35
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	54	266	27	440	0	0	0	0	11	0	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	440			321			720	682	188	682	815	440
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	440			321			720	682	188	682	815	440
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	97	100	94
cM capacity (veh/h)	1120			1239			317	364	855	358	305	617

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	321	467	49
Volume Left	0	27	11
Volume Right	266	0	38
cSH	1700	1239	531
Volume to Capacity	0.19	0.02	0.09
Queue Length 95th (ft)	0	2	8
Control Delay (s)	0.0	0.7	12.5
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	12.5
Approach LOS			B

Intersection Summary			
Average Delay		1.1	
Intersection Capacity Utilization		51.8%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	10	0	0	10	10	390	0	25	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	11	0	0	11	11	424	0	27	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	22			11			136	141	11	163	136	16
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	22			11			136	141	11	163	136	16
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			48	100	97	100	100	100
cM capacity (veh/h)	1594			1608			814	724	1070	761	729	1063

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	65	22	451
Volume Left	54	0	424
Volume Right	0	11	27
cSH	1594	1700	825
Volume to Capacity	0.03	0.01	0.55
Queue Length 95th (ft)	3	0	84
Control Delay (s)	6.2	0.0	14.5
Lane LOS	A		B
Approach Delay (s)	6.2	0.0	14.5
Approach LOS			B

Intersection Summary			
Average Delay	12.9		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	155	185	50	195	310	400	640	105	95	395	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	0.97	0.95		0.97	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected		0.98	1.00		0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1826	1583		1844	1583	3433	3464		3433	3428	
Flt Permitted		0.60	1.00		0.81	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1126	1583		1512	1583	3433	3464		3433	3428	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	168	201	54	212	337	435	696	114	103	429	114
RTOR Reduction (vph)	0	0	146	0	0	187	0	12	0	0	23	0
Lane Group Flow (vph)	0	282	55	0	266	150	435	798	0	103	520	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)		19.3	19.3		19.3	19.3	13.6	32.0		4.6	23.0	
Effective Green, g (s)		19.3	19.3		19.3	19.3	13.6	32.0		4.6	23.0	
Actuated g/C Ratio		0.28	0.28		0.28	0.28	0.19	0.46		0.07	0.33	
Clearance Time (s)		5.0	5.0		5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		311	437		417	437	668	1586		226	1128	
v/s Ratio Prot							c0.13	c0.23		0.03	0.15	
v/s Ratio Perm		c0.25	0.04		0.18	0.09						
v/c Ratio		0.91	0.13		0.64	0.34	0.65	0.50		0.46	0.46	
Uniform Delay, d1		24.4	19.0		22.2	20.2	26.0	13.4		31.4	18.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		28.3	0.1		3.2	0.5	2.3	1.1		1.5	1.4	
Delay (s)		52.7	19.1		25.4	20.7	28.2	14.5		32.9	19.9	
Level of Service		D	B		C	C	C	B		C	B	
Approach Delay (s)		38.7			22.8			19.3			22.0	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	3100	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	912	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1887	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1887	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	61.5	mi/h
Number of lanes, N	2	
Density, D	30.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3100	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	60	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3100		60			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	861		17			v
Trucks and buses	7		1			%
Recreational vehicles	0		0			%
Terrain type:	Level		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	0.966		0.995			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	3565		67			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3565 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3565	4700	No
v_{12}	3565	4400	No
$v_{FO} = v_F - v_R$	3498	4700	No
v_R	67	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 29.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.304

Space mean speed in ramp influence area, S_R = 58.0 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.0 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Dillon Dr
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3036	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	671	vph
Length of first accel/decel lane	1400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3036	671		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	843	186		v
Trucks and buses	7	1		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.966	0.995		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3491	749		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3491 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4240	4700	No
v_{R12}	4240	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 29.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.466

Space mean speed in ramp influence area, S_R = 54.3 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 54.3 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	Between Eagleridge-Dillon
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	3707	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	1090	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	2257	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2257	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	54.2	mi/h
Number of lanes, N	2	
Density, D	41.6	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3707	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	557	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	716	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3707		557		716		vph
Peak-hour factor, PHF	0.82		0.82		0.82		
Peak 15-min volume, v15	1125		170		218		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	4656		686		882		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4656 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4656	4700	No
v_{12}	4656	4400	Yes
$v_{FO} = v_F - v_R$	3970	4700	No
v_R	686	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 41.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.360

Space mean speed in ramp influence area, S_R = 56.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.7 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3151	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	716	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	557	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3151	716	557	vph
Peak-hour factor, PHF	0.82	0.82	0.82	
Peak 15-min volume, v15	961	218	170	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3977	882	686	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3977 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4859	4700	Yes
v_{R12}	4859	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 42.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 0.810

Space mean speed in ramp influence area, S_R = 46.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 46.4 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	3866	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	1137	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	2354	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2354	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	2275	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	669	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1385	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1385	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2275	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	888	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	309	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2275		888		309		vph
Peak-hour factor, PHF	0.85		0.85		0.85		
Peak 15-min volume, v15	669		261		91		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	2770		1055		367		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2770 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2770	4700	No
v_{12}	2770	4400	No
$v_{FO} = v_F - v_R$	1715	4700	No
v_R	1055	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 24.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.393

Space mean speed in ramp influence area, S_R = 56.0 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.0 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1387	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	309	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	888	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1387	309	888	vph
Peak-hour factor, PHF	0.85	0.85	0.85	
Peak 15-min volume, v15	408	91	261	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1689	367	1055	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1689 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2056	4700	No
v_{R12}	2056	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.315

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	Between Eagleridge-Dillon
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	1696	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	499	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1033	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1033	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	16.4	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Dillon Dr
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1696	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	532	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1696		532				vph
Peak-hour factor, PHF	0.70		0.70				
Peak 15-min volume, v15	606		190				v
Trucks and buses	7		1				%
Recreational vehicles	0		0				%
Terrain type:	Level		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	1.5		1.5				
Recreational vehicle PCE, ER	1.2		1.2				
Heavy vehicle adjustment, fHV	0.966		0.995				
Driver population factor, fP	1.00		1.00				
Flow rate, vp	2508		764				pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2508 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2508	4700	No
v_{12}	2508	4400	No
$v_{FO} = v_F - v_R$	1744	4700	No
v_R	764	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 18.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.367

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	AM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1164	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	102	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1164	102		vph
Peak-hour factor, PHF	0.70	0.70		
Peak 15-min volume, v15	416	36		v
Trucks and buses	7	1		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.966	0.995		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	1721	146		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1721 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1867	4700	No
v_{R12}	1867	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 15.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.283

Space mean speed in ramp influence area, S_R = 58.5 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 58.5 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	AM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	1268	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	373	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	772	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	772	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	12.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	1245	100	215	740	235	95	175	190	480	185	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3500		1770	3539	1583	1770	3262		3433	1745	
Flt Permitted	0.35	1.00		0.10	1.00	1.00	0.54	1.00		0.95	1.00	
Satd. Flow (perm)	648	3500		186	3539	1583	1000	3262		3433	1745	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	245	1353	109	234	804	255	103	190	207	522	201	147
RTOR Reduction (vph)	0	6	0	0	0	119	0	116	0	0	30	0
Lane Group Flow (vph)	245	1456	0	234	804	136	103	281	0	522	318	0
Turn Type	Perm			pm+pt		Perm	pm+pt			Prot		
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	36.1	36.1		46.1	46.1	46.1	16.5	13.3		13.0	23.1	
Effective Green, g (s)	36.1	36.1		46.1	46.1	46.1	16.5	13.3		13.0	23.1	
Actuated g/C Ratio	0.42	0.42		0.53	0.53	0.53	0.19	0.15		0.15	0.27	
Clearance Time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	271	1462		209	1888	845	219	502		517	467	
v/s Ratio Prot		0.42		c0.08	0.23		0.02	0.09		c0.15	c0.18	
v/s Ratio Perm	0.38			c0.52		0.09	0.07					
v/c Ratio	0.90	1.00		1.12	0.43	0.16	0.47	0.56		1.01	0.68	
Uniform Delay, d1	23.5	25.1		21.5	12.2	10.3	30.2	33.8		36.7	28.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	34.7	22.5		98.1	0.7	0.4	1.6	1.4		42.0	4.1	
Delay (s)	58.2	47.6		119.6	12.9	10.7	31.8	35.2		78.7	32.4	
Level of Service	E	D		F	B	B	C	D		E	C	
Approach Delay (s)		49.1			31.8			34.5			60.2	
Approach LOS		D			C			C			E	

Intersection Summary			
HCM Average Control Delay	44.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1200	700	205	1090	0	0	0	0	150	0	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.15	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	526	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1304	761	223	1185	0	0	0	0	163	0	201
RTOR Reduction (vph)	0	0	348	0	0	0	0	0	0	0	0	60
Lane Group Flow (vph)	0	1304	413	223	1185	0	0	0	0	81	82	141
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		40.1	40.1	52.2	52.2					11.7	11.7	11.7
Effective Green, g (s)		40.1	40.1	52.2	52.2					11.7	11.7	11.7
Actuated g/C Ratio		0.54	0.54	0.71	0.71					0.16	0.16	0.16
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2759	859	651	2500					266	266	251
v/s Ratio Prot		0.26		0.03	c0.33							
v/s Ratio Perm			0.26	0.21						0.05	0.05	c0.09
v/c Ratio		0.47	0.48	0.34	0.47					0.30	0.31	0.56
Uniform Delay, d1		10.4	10.5	4.9	4.8					27.5	27.5	28.7
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.6	1.9	0.3	0.6					0.7	0.7	2.9
Delay (s)		11.0	12.4	5.2	5.4					28.2	28.2	31.6
Level of Service		B	B	A	A					C	C	C
Approach Delay (s)		11.5			5.4			0.0			30.1	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	10.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	1315	0	0	1000	310	355	0	445	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.86	1.00	0.95	0.95	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	3433	3539			6408	1583	1681	1681	1583			
Flt Permitted	0.16	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	582	3539			6408	1583	1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	1429	0	0	1087	337	386	0	484	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	213	0	0	12	0	0	0
Lane Group Flow (vph)	196	1429	0	0	1087	124	193	193	472	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	43.4	43.4			30.4	30.4	29.1	29.1	29.1			
Effective Green, g (s)	43.4	43.4			30.4	30.4	29.1	29.1	29.1			
Actuated g/C Ratio	0.53	0.53			0.37	0.37	0.35	0.35	0.35			
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	583	1862			2361	583	593	593	558			
v/s Ratio Prot	0.03	c0.40			0.17							
v/s Ratio Perm	0.14					0.08	0.11	0.11	c0.30			
v/c Ratio	0.34	0.77			0.46	0.21	0.33	0.33	0.85			
Uniform Delay, d1	10.8	15.5			19.8	17.9	19.5	19.5	24.6			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.3	3.1			0.6	0.8	0.3	0.3	11.3			
Delay (s)	11.1	18.6			20.5	18.7	19.8	19.8	35.9			
Level of Service	B	B			C	B	B	B	D			
Approach Delay (s)		17.7			20.0			28.8			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	82.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	780	985	485	175	285	885
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.97	0.91	0.97	1.00	0.95	1.00
Frt	0.95	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.97	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3315	1441	3433	1863	3539	1583
Flt Permitted	0.97	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3315	1441	3433	1863	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	848	1071	527	190	310	962
RTOR Reduction (vph)	80	323	0	0	0	0
Lane Group Flow (vph)	1229	287	527	190	310	962
Turn Type		Perm	Prot			Free
Protected Phases	4		5	2	6	
Permitted Phases		4				Free
Actuated Green, G (s)	39.1	39.1	16.5	34.0	12.5	83.1
Effective Green, g (s)	39.1	39.1	16.5	34.0	12.5	83.1
Actuated g/C Ratio	0.47	0.47	0.20	0.41	0.15	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1560	678	682	762	532	1583
v/s Ratio Prot	c0.37		0.15	0.10	0.09	
v/s Ratio Perm		0.20				c0.61
v/c Ratio	0.79	0.42	0.77	0.25	0.58	0.61
Uniform Delay, d1	18.5	14.5	31.5	16.2	32.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	1.9	5.4	0.2	1.6	1.7
Delay (s)	22.6	16.5	37.0	16.3	34.5	1.7
Level of Service	C	B	D	B	C	A
Approach Delay (s)	20.7			31.5	9.7	
Approach LOS	C			C	A	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	83.1	Sum of lost time (s)	5.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	40	280	60	150	250	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	304	65	163	272	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			348		489	196
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			348		489	196
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			95		47	99
cM capacity (veh/h)			1211		509	833

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	348	228	272	11
Volume Left	0	65	272	0
Volume Right	304	0	0	11
cSH	1700	1211	509	833
Volume to Capacity	0.20	0.05	0.53	0.01
Queue Length 95th (ft)	0	4	78	1
Control Delay (s)	0.0	2.7	19.9	9.4
Lane LOS		A	C	A
Approach Delay (s)	0.0	2.7	19.5	
Approach LOS			C	

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	50	150	0	10	60
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	54	163	0	11	65
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	163				217	163
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	163				217	163
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	93
cM capacity (veh/h)	1416				771	882

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	54	163	76
Volume Left	0	0	11
Volume Right	0	0	65
cSH	1700	1700	864
Volume to Capacity	0.03	0.10	0.09
Queue Length 95th (ft)	0	0	7
Control Delay (s)	0.0	0.0	9.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	55	5	0	0	10	10	140	20	10	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	5	0	0	11	11	152	22	11	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	22			5			141	147	5	163	141	16
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	22			5			141	147	5	163	141	16
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			81	97	99	100	100	100
cM capacity (veh/h)	1594			1616			805	717	1078	753	722	1063

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	65	22	185
Volume Left	60	0	152
Volume Right	0	11	11
cSH	1594	1700	805
Volume to Capacity	0.04	0.01	0.23
Queue Length 95th (ft)	3	0	22
Control Delay (s)	6.8	0.0	10.8
Lane LOS	A		B
Approach Delay (s)	6.8	0.0	10.8
Approach LOS			B

Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	26.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	315	480	30	205	25	120	200	30	25	760	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95		0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3469		3433	3519	
Flt Permitted	0.55	1.00	1.00	0.38	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1029	1863	1583	714	1863	1583	3433	3469		3433	3519	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	342	522	33	223	27	130	217	33	27	826	33
RTOR Reduction (vph)	0	0	112	0	0	18	0	11	0	0	3	0
Lane Group Flow (vph)	33	342	410	33	223	9	130	239	0	27	856	0
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	25.1	25.1	25.1	25.1	25.1	25.1	5.3	39.1		1.4	35.2	
Effective Green, g (s)	25.1	25.1	25.1	25.1	25.1	25.1	5.3	39.1		1.4	35.2	
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.07	0.49		0.02	0.44	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	324	587	499	225	587	499	229	1704		60	1556	
v/s Ratio Prot		0.18			0.12		c0.04	c0.07		0.01	c0.24	
v/s Ratio Perm	0.03		c0.26	0.05		0.01						
v/c Ratio	0.10	0.58	0.82	0.15	0.38	0.02	0.57	0.14		0.45	0.55	
Uniform Delay, d1	19.3	22.9	25.2	19.6	21.2	18.8	36.0	11.1		38.7	16.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.5	10.4	0.3	0.4	0.0	3.2	0.2		5.3	1.4	
Delay (s)	19.4	24.3	35.6	19.9	21.6	18.8	39.2	11.2		44.0	17.8	
Level of Service	B	C	D	B	C	B	D	B		D	B	
Approach Delay (s)		30.7			21.1			20.8			18.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	79.6	Sum of lost time (s)	19.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	40	340	0	225	175	0	0	0	0	280	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0						5.0	
Lane Util. Factor		1.00			1.00						1.00	
Frt		0.90			0.94						0.96	
Flt Protected		0.99			1.00						1.00	
Satd. Flow (prot)		1663			1716						1785	
Flt Permitted		0.85			1.00						1.00	
Satd. Flow (perm)		1431			1716						1785	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	43	370	0	245	190	0	0	0	0	304	136
RTOR Reduction (vph)	0	94	0	0	26	0	0	0	0	0	20	0
Lane Group Flow (vph)	0	411	0	0	409	0	0	0	0	0	420	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	7%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm								
Protected Phases		4			8						6	
Permitted Phases	4			8								
Actuated Green, G (s)		46.3			46.3						23.4	
Effective Green, g (s)		46.3			46.3						23.4	
Actuated g/C Ratio		0.58			0.58						0.29	
Clearance Time (s)		5.0			5.0						5.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		831			997						524	
v/s Ratio Prot					0.24						c0.24	
v/s Ratio Perm		c0.29										
v/c Ratio		0.49			0.41						0.80	
Uniform Delay, d1		9.8			9.2						26.0	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		2.1			1.2						8.6	
Delay (s)		11.9			10.4						34.6	
Level of Service		B			B						C	
Approach Delay (s)		11.9			10.4			0.0			34.6	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	79.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	40	0	400	130	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	0	435	141	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1011	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1011	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	100	73			
cM capacity (veh/h)	194	1085	1623			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	43	435	141
Volume Left	43	435	0
Volume Right	0	0	0
cSH	194	1623	1700
Volume to Capacity	0.22	0.27	0.08
Queue Length 95th (ft)	21	27	0
Control Delay (s)	28.8	8.0	0.0
Lane LOS	D	A	
Approach Delay (s)	28.8	6.1	
Approach LOS	D		

Intersection Summary			
Average Delay	7.7		
Intersection Capacity Utilization	32.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	1510	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	444	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	919	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	919	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	14.6	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	Proposed Action (Year 2035)
Description:	Dillon/Platteville and I-25 Inter

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1510	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	154	vph
Length of first accel/decel lane	600	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1510		154				vph
Peak-hour factor, PHF	0.82		0.82				
Peak 15-min volume, v15	460		47				v
Trucks and buses	7		1				%
Recreational vehicles	0		0				%
Terrain type:	Level		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	1.5		1.5				
Recreational vehicle PCE, ER	1.2		1.2				
Heavy vehicle adjustment, fHV	0.966		0.995				
Driver population factor, fP	1.00		1.00				
Flow rate, vp	1906		189				pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1906 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1906	4700	No
v_{12}	1906	4400	No
$v_{FO} = v_F - v_R$	1717	4700	No
v_R	189	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 15.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.315

Space mean speed in ramp influence area, S_R = 57.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.8 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Dillon Dr
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1363	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	468	vph
Length of first accel/decel lane	1400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1363	468		vph
Peak-hour factor, PHF	0.82	0.82		
Peak 15-min volume, v15	416	143		v
Trucks and buses	7	1		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.966	0.995		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	1720	574		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1720 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2294	4700	No
v_{R12}	2294	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 14.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.234

Space mean speed in ramp influence area, S_R = 59.6 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 59.6 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	Between Eagleridge-Dillon
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	1831	veh/h
Peak-hour factor, PHF	0.91	
Peak 15-min volume, v15	503	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1041	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1041	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	16.5	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1831	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	336	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	855	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1831		336		855		vph
Peak-hour factor, PHF	0.92		0.92		0.92		
Peak 15-min volume, v15	498		91		232		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	2060		369		939		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2060 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2060	4700	No
v_{12}	2060	4400	No
$v_{FO} = v_F - v_R$	1691	4700	No
v_R	369	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 19.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.331

Space mean speed in ramp influence area, S_R = 57.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.4 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Southbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1495	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	855	vph
Length of first accel/decel lane	150	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	336	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1495	855	336	vph
Peak-hour factor, PHF	0.92	0.92	0.92	
Peak 15-min volume, v15	406	232	91	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1682	939	369	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1682 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2621	4700	No
v_{R12}	2621	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 24.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.361

Space mean speed in ramp influence area, S_R = 56.7 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.7 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Southbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	2351	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	691	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1431	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1431	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	22.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	South of Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	2846	veh/h
Peak-hour factor, PHF	0.91	
Peak 15-min volume, v15	782	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1618	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1618	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	2	
Density, D	25.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Eagleridge Boulevard
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2916	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	773	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	440	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2916		773		440		vph
Peak-hour factor, PHF	0.91		0.91		0.91		
Peak 15-min volume, v15	801		212		121		v
Trucks and buses	7		2		2		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		
Heavy vehicle adjustment, fHV	0.966		0.990		0.990		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	3317		858		488		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3317 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3317	4700	No
v_{12}	3317	4400	No
$v_{FO} = v_F - v_R$	2459	4700	No
v_R	858	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 29.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.375
Space mean speed in ramp influence area,	S_R = 56.4 mph
Space mean speed in outer lanes,	S_0 = N/A mph
Space mean speed for all vehicles,	S = 56.4 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Eagleridge Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2143	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	440	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	773	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2143	440	773	vph
Peak-hour factor, PHF	0.91	0.91	0.91	
Peak 15-min volume, v15	589	121	212	v
Trucks and buses	7	2	2	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.966	0.990	0.990	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2437	488	858	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2437 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2925	4700	No
v_{R12}	2925	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 25.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.358

Space mean speed in ramp influence area, S_R = 56.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.8 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	Between Eagleridge-Dillon
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	2583	veh/h
Peak-hour factor, PHF	0.91	
Peak 15-min volume, v15	710	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1469	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1469	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	23.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Diverge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/25/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound off Ramp
Junction:	Dillon Dr
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2583	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	607	vph
Length of first accel/decel lane	800	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2583		607				vph
Peak-hour factor, PHF	0.82		0.82				
Peak 15-min volume, v15	788		185				v
Trucks and buses	7		1				%
Recreational vehicles	0		0				%
Terrain type:	Level		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	1.5		1.5				
Recreational vehicle PCE, ER	1.2		1.2				
Heavy vehicle adjustment, fHV	0.966		0.995				
Driver population factor, fP	1.00		1.00				
Flow rate, vp	3260		744				pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3260 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3260	4700	No
v_{12}	3260	4400	No
$v_{FO} = v_F - v_R$	2516	4700	No
v_R	744	2100	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 25.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.365

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

HCS2000: Ramps and Ramp Junctions Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Merge Analysis

Analyst:	NWS
Agency/Co.:	SEH, Inc.
Date performed:	11/24/2008
Analysis time period:	PM Peak Period
Freeway/Dir of Travel:	I-25 Northbound on Ramp
Junction:	Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1976	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	45.0	mph
Volume on ramp	123	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1976	123		vph
Peak-hour factor, PHF	0.82	0.82		
Peak 15-min volume, v15	602	38		v
Trucks and buses	7	1		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.966	0.995		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	2494	151		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2494 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2645	4700	No
v_{R12}	2645	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.313

Space mean speed in ramp influence area, S_R = 57.8 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 57.8 mph

HCS2000: Basic Freeway Segments Release 4.1f

SEH, Inc.
Description: Dillon/Platteville and I-25 Interchange Improvements
Proposed Action (Year 2035)

Operational Analysis

Analyst:	NWS
Agency or Company:	SEH, Inc.
Date Performed:	11/24/2008
Analysis Time Period:	PM Peak Period
Freeway/Direction:	I - 25 Northbound
From/To:	North of Platteville Blvd
Jurisdiction:	
Analysis Year:	2035

Flow Inputs and Adjustments

Volume, V	2105	veh/h
Peak-hour factor, PHF	0.85	
Peak 15-min volume, v15	619	v
Trucks and buses	7	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.966	
Driver population factor, fp	1.00	
Flow rate, vp	1282	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	63.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1282	pc/h/ln
Free-flow speed, FFS	63.0	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	2	
Density, D	20.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	730	130	200	900	440	115	230	200	395	185	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.93		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3459		1770	3539	1583	1770	3293		3433	1748	
Flt Permitted	0.28	1.00		0.18	1.00	1.00	0.42	1.00		0.95	1.00	
Satd. Flow (perm)	526	3459		343	3539	1583	780	3293		3433	1748	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	793	141	217	978	478	125	250	217	429	201	141
RTOR Reduction (vph)	0	16	0	0	0	206	0	151	0	0	30	0
Lane Group Flow (vph)	185	918	0	217	978	272	125	316	0	429	312	0
Turn Type	Perm			pm+pt		Perm	pm+pt			Prot		
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2					
Actuated Green, G (s)	38.1	38.1		47.1	47.1	47.1	17.3	13.3		11.0	20.3	
Effective Green, g (s)	38.1	38.1		47.1	47.1	47.1	17.3	13.3		11.0	20.3	
Actuated g/C Ratio	0.45	0.45		0.55	0.55	0.55	0.20	0.16		0.13	0.24	
Clearance Time (s)	5.0	5.0		4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	235	1543		273	1952	873	204	513		442	416	
v/s Ratio Prot		0.27		c0.05	0.28		0.03	0.10		c0.12	c0.18	
v/s Ratio Perm	0.35			c0.39		0.17	0.10					
v/c Ratio	0.79	0.60		0.79	0.50	0.31	0.61	0.62		0.97	0.75	
Uniform Delay, d1	20.2	17.8		13.3	11.9	10.4	30.0	33.7		37.0	30.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	22.9	1.7		14.7	0.9	0.9	5.4	2.2		35.1	7.5	
Delay (s)	43.1	19.5		27.9	12.8	11.3	35.4	35.9		72.1	37.7	
Level of Service	D	B		C	B	B	D	D		E	D	
Approach Delay (s)		23.4			14.3			35.8			56.8	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	85.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	990	290	410	1500	0	0	0	0	225	0	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	4.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5085	1583	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.21	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5085	1583	748	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1076	315	446	1630	0	0	0	0	245	0	120
RTOR Reduction (vph)	0	0	140	0	0	0	0	0	0	0	0	26
Lane Group Flow (vph)	0	1076	175	446	1630	0	0	0	0	122	123	94
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		42.3	42.3	55.1	55.1					11.0	11.0	11.0
Effective Green, g (s)		42.3	42.3	55.1	55.1					11.0	11.0	11.0
Actuated g/C Ratio		0.56	0.56	0.72	0.72					0.14	0.14	0.14
Clearance Time (s)		5.0	5.0	4.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2826	880	852	2562					243	243	229
v/s Ratio Prot		0.21		0.06	c0.46							
v/s Ratio Perm			0.11	0.32						0.07	0.07	0.06
v/c Ratio		0.38	0.20	0.52	0.64					0.50	0.51	0.41
Uniform Delay, d1		9.5	8.4	4.3	5.4					30.0	30.0	29.6
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.5	0.6	1.2					1.6	1.7	1.2
Delay (s)		9.9	8.9	4.8	6.6					31.7	31.7	30.8
Level of Service		A	A	A	A					C	C	C
Approach Delay (s)		9.7			6.2			0.0			31.4	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	1125	0	0	1515	275	300	0	420	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.86	1.00	0.95	0.95	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	3433	3539			6408	1583	1681	1681	1583			
Flt Permitted	0.11	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	386	3539			6408	1583	1681	1681	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	1223	0	0	1647	299	326	0	457	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	173	0	0	19	0	0	0
Lane Group Flow (vph)	71	1223	0	0	1647	126	163	163	438	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4					8	2		2			
Actuated Green, G (s)	42.4	42.4			33.4	33.4	26.9	26.9	26.9			
Effective Green, g (s)	42.4	42.4			33.4	33.4	26.9	26.9	26.9			
Actuated g/C Ratio	0.53	0.53			0.42	0.42	0.34	0.34	0.34			
Clearance Time (s)	4.0	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	399	1892			2699	667	570	570	537			
v/s Ratio Prot	0.01	c0.35			0.26							
v/s Ratio Perm	0.08					0.08	0.10	0.10	c0.28			
v/c Ratio	0.18	0.65			0.61	0.19	0.29	0.29	0.82			
Uniform Delay, d1	10.5	13.1			17.9	14.4	19.2	19.2	23.9			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.2	1.7			1.0	0.6	0.3	0.3	9.3			
Delay (s)	10.7	14.8			18.9	15.1	19.5	19.5	33.2			
Level of Service	B	B			B	B	B	B	C			
Approach Delay (s)		14.6			18.3			27.5			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	780	805	1055	330	260	695
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.97	0.91	0.97	1.00	0.95	1.00
Frt	0.96	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.97	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3341	1441	3433	1863	3539	1583
Flt Permitted	0.97	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3341	1441	3433	1863	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	848	875	1147	359	283	755
RTOR Reduction (vph)	47	357	0	0	0	0
Lane Group Flow (vph)	1134	185	1147	359	283	755
Turn Type		Perm	Prot			Free
Protected Phases	4		5	2	6	
Permitted Phases		4				Free
Actuated Green, G (s)	29.0	29.0	29.0	46.0	12.0	85.0
Effective Green, g (s)	29.0	29.0	29.0	46.0	12.0	85.0
Actuated g/C Ratio	0.34	0.34	0.34	0.54	0.14	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1140	492	1171	1008	500	1583
v/s Ratio Prot	c0.34		c0.33	0.19	0.08	
v/s Ratio Perm		0.13				c0.48
v/c Ratio	0.99	0.38	0.98	0.36	0.57	0.48
Uniform Delay, d1	27.9	21.2	27.7	11.1	34.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.5	2.2	21.2	0.2	1.5	1.0
Delay (s)	53.4	23.3	48.9	11.3	35.5	1.0
Level of Service	D	C	D	B	D	A
Approach Delay (s)	43.9			39.9	10.4	
Approach LOS	D			D	B	

Intersection Summary			
HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	30	300	80	190	185	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	326	87	207	201	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			359		576	196
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			359		576	196
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			93		55	99
cM capacity (veh/h)			1200		444	833

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	359	293	201	5
Volume Left	0	87	201	0
Volume Right	326	0	0	5
cSH	1700	1200	444	833
Volume to Capacity	0.21	0.07	0.45	0.01
Queue Length 95th (ft)	0	6	58	0
Control Delay (s)	0.0	2.9	19.6	9.3
Lane LOS		A	C	A
Approach Delay (s)	0.0	2.9	19.4	
Approach LOS			C	

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	35	140	0	10	130
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	38	152	0	11	141
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	152				190	152
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	152				190	152
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	84
cM capacity (veh/h)	1429				799	894

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	38	152	152
Volume Left	0	0	11
Volume Right	0	0	141
cSH	1700	1700	886
Volume to Capacity	0.02	0.09	0.17
Queue Length 95th (ft)	0	0	15
Control Delay (s)	0.0	0.0	9.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.9
Approach LOS			A

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	10	0	0	10	10	130	15	10	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	11	0	0	11	11	141	16	11	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	22			11			103	109	11	122	103	16
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	22			11			103	109	11	122	103	16
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			84	98	99	100	100	100
cM capacity (veh/h)	1594			1608			861	763	1070	815	768	1063

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	49	22	168
Volume Left	38	0	141
Volume Right	0	11	11
cSH	1594	1700	861
Volume to Capacity	0.02	0.01	0.20
Queue Length 95th (ft)	2	0	18
Control Delay (s)	5.7	0.0	10.2
Lane LOS	A		B
Approach Delay (s)	5.7	0.0	10.2
Approach LOS			B

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	24.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	195	160	105	380	20	330	610	105	20	295	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95		0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	3433	3461		3433	3400	
Flt Permitted	0.22	1.00	1.00	0.57	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	411	1863	1583	1059	1863	1583	3433	3461		3433	3400	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	212	174	114	413	22	359	663	114	22	321	114
RTOR Reduction (vph)	0	0	125	0	0	16	0	14	0	0	36	0
Lane Group Flow (vph)	114	212	49	114	413	6	359	763	0	22	399	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	27.3	22.8	22.8	25.9	22.1	22.1	12.7	34.6		1.4	23.3	
Effective Green, g (s)	27.3	22.8	22.8	25.9	22.1	22.1	12.7	34.6		1.4	23.3	
Actuated g/C Ratio	0.34	0.28	0.28	0.32	0.27	0.27	0.16	0.43		0.02	0.29	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	215	527	448	374	511	434	541	1486		60	983	
v/s Ratio Prot	c0.03	0.11		0.01	c0.22		c0.10	c0.22		0.01	0.12	
v/s Ratio Perm	0.15		0.03	0.08		0.00						
v/c Ratio	0.53	0.40	0.11	0.30	0.81	0.01	0.66	0.51		0.37	0.41	
Uniform Delay, d1	20.0	23.4	21.4	19.9	27.3	21.3	31.9	16.8		39.2	23.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.5	0.5	0.1	0.5	9.1	0.0	3.1	1.3		3.8	1.2	
Delay (s)	22.5	23.9	21.5	20.3	36.4	21.3	35.0	18.1		42.9	24.3	
Level of Service	C	C	C	C	D	C	D	B		D	C	
Approach Delay (s)		22.8			32.5			23.4			25.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.6	Sum of lost time (s)	13.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	40	215	0	400	100	0	0	0	0	250	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0						5.0	
Lane Util. Factor		1.00			1.00						1.00	
Frt		0.92			0.97						0.94	
Flt Protected		0.99			1.00						1.00	
Satd. Flow (prot)		1684			1795						1753	
Flt Permitted		0.70			1.00						1.00	
Satd. Flow (perm)		1200			1795						1753	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	43	234	0	435	109	0	0	0	0	272	212
RTOR Reduction (vph)	0	58	0	0	9	0	0	0	0	0	35	0
Lane Group Flow (vph)	0	317	0	0	535	0	0	0	0	0	449	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	7%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm								
Protected Phases		4			8						6	
Permitted Phases	4			8								
Actuated Green, G (s)		45.3			45.3						24.9	
Effective Green, g (s)		45.3			45.3						24.9	
Actuated g/C Ratio		0.56			0.56						0.31	
Clearance Time (s)		5.0			5.0						5.0	
Vehicle Extension (s)		3.0			3.0						3.0	
Lane Grp Cap (vph)		678			1014						544	
v/s Ratio Prot					c0.30						c0.26	
v/s Ratio Perm		0.26										
v/c Ratio		0.47			0.53						0.83	
Uniform Delay, d1		10.3			10.8						25.6	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		2.3			2.0						9.9	
Delay (s)		12.6			12.8						35.5	
Level of Service		B			B						D	
Approach Delay (s)		12.6			12.8			0.0			35.5	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	80.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	40	0	500	110	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	0	543	120	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1207	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1207	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	68	100	67			
cM capacity (veh/h)	135	1085	1623			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	43	543	120
Volume Left	43	543	0
Volume Right	0	0	0
cSH	135	1623	1700
Volume to Capacity	0.32	0.33	0.07
Queue Length 95th (ft)	32	37	0
Control Delay (s)	43.9	8.3	0.0
Lane LOS	E	A	
Approach Delay (s)	43.9	6.8	
Approach LOS	E		

Intersection Summary			
Average Delay	9.1		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix D

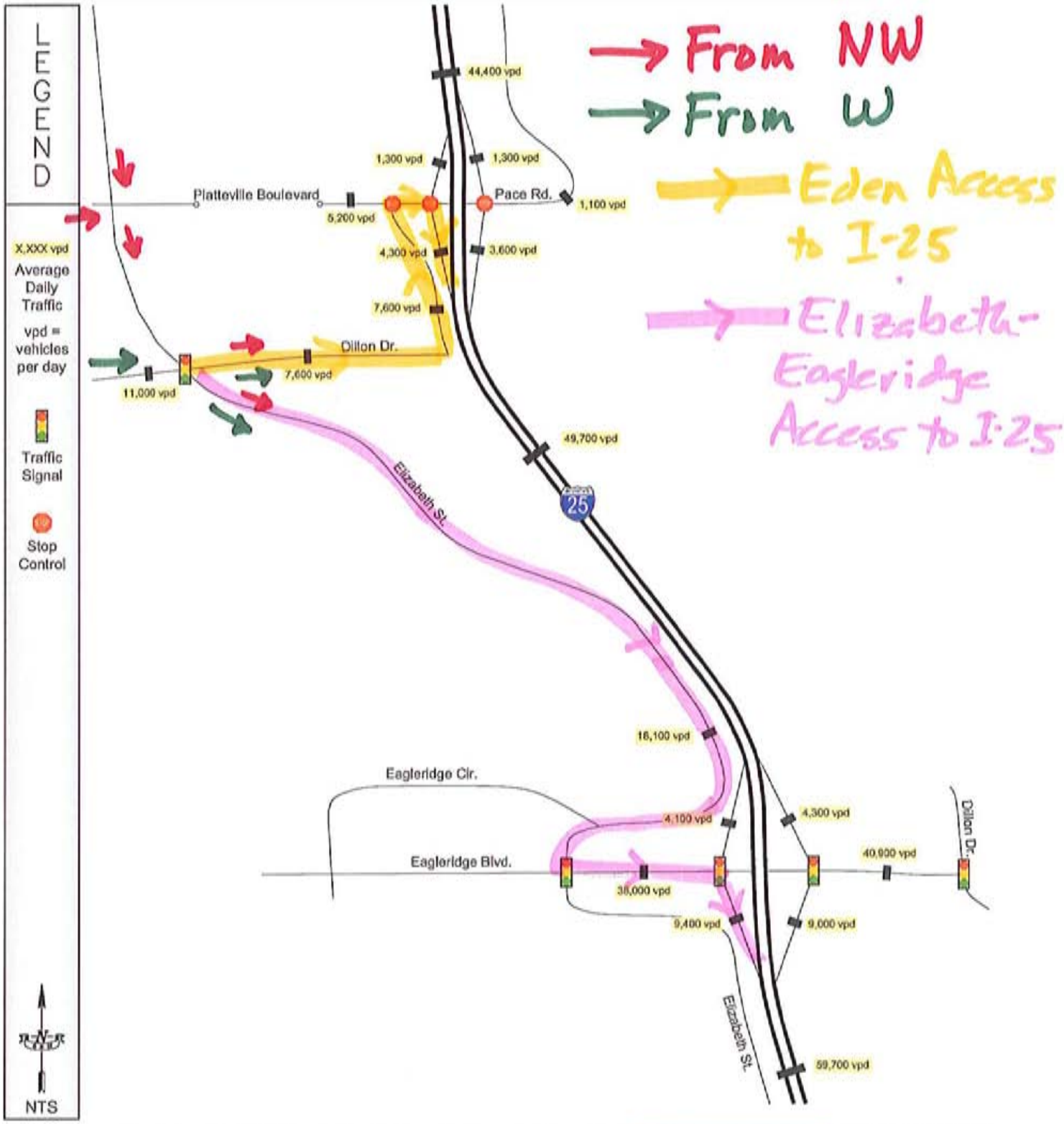
Figures A thru H and Table A

No Action 2035 AM

A Bridge To Pueblo's Future

No-Action - Design Year (2035)
Study Area
Average Daily Traffic Volumes

SEH



I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

City of PUEBLO COLORADO

103325-PUEBL
May 14, 2010

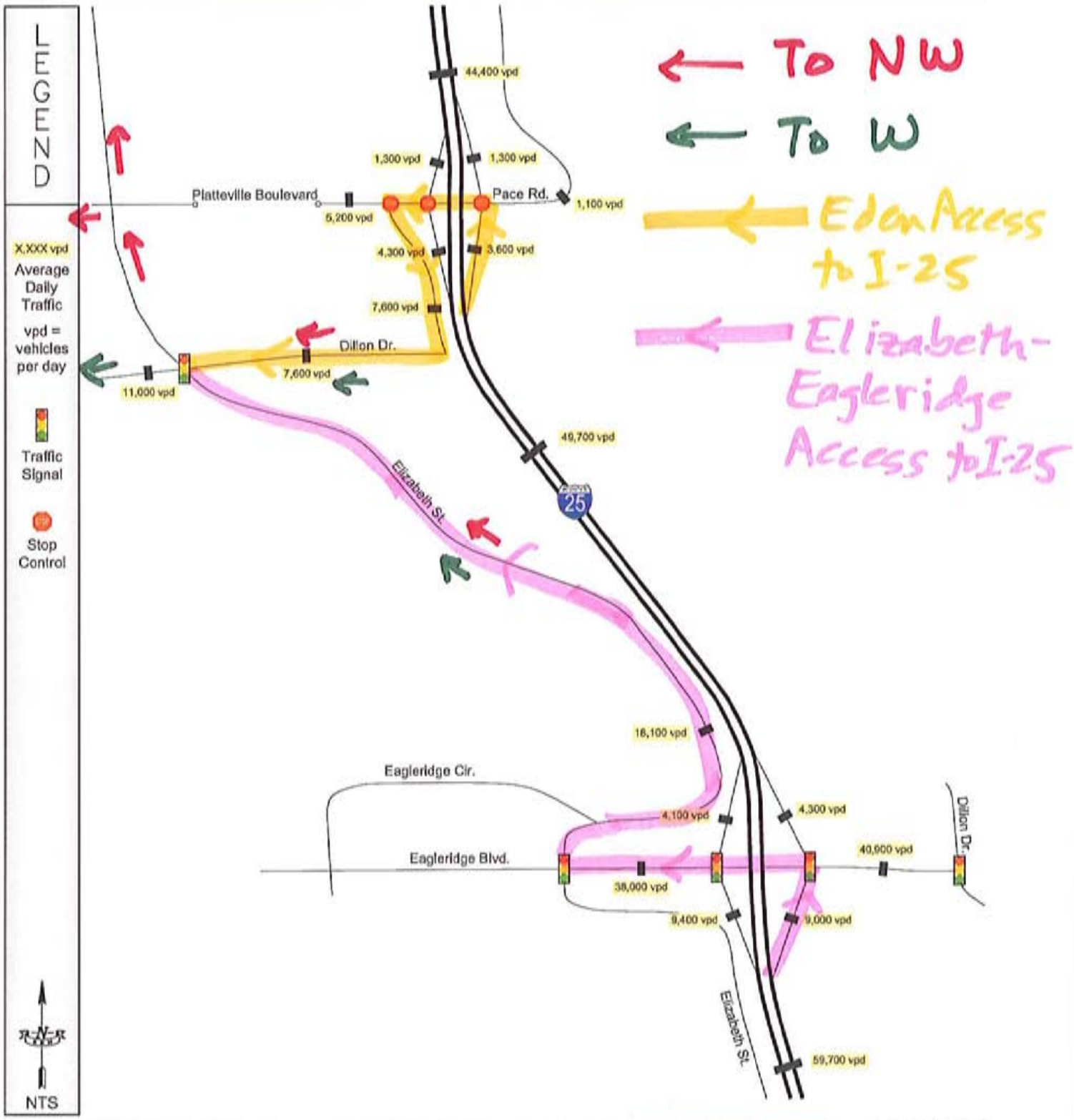
FIGURE 18 A

No Action 2035 PM

A Bridge To Pueblo's Future

No-Action - Design Year (2035)
Study Area
Average Daily Traffic Volumes

SEH



I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

City of PUEBLO

103325-PUEBL
May 14, 2010

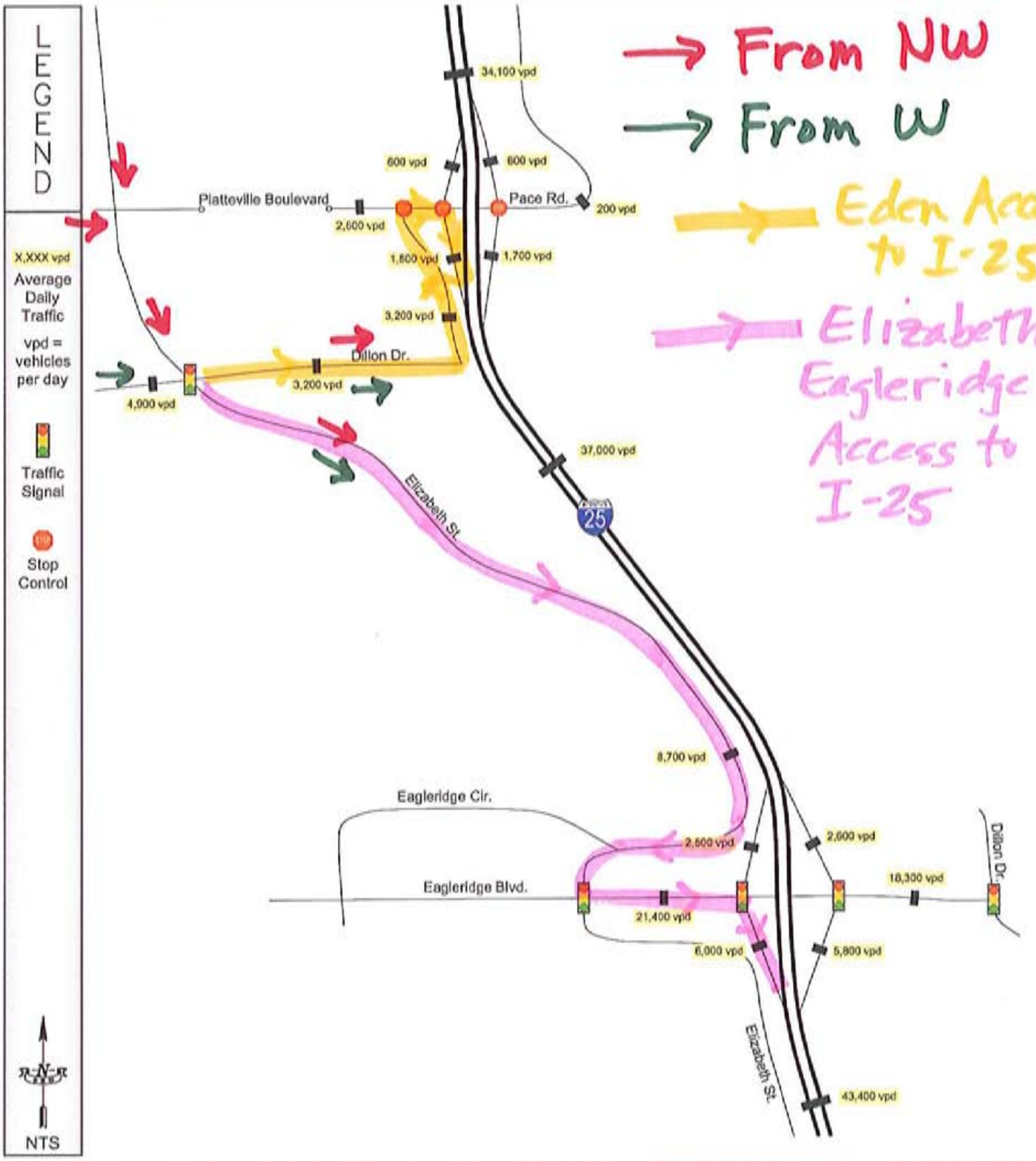
FIGURE 18 B

No Action 2017 AM

A Bridge To Pueblo's Future

No-Action - Implementation Year (2017)
Study Area
Average Daily Traffic Volumes

SEH



I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

City of PUEBLO COLORADO

103325-PUEBL
May 14, 2010

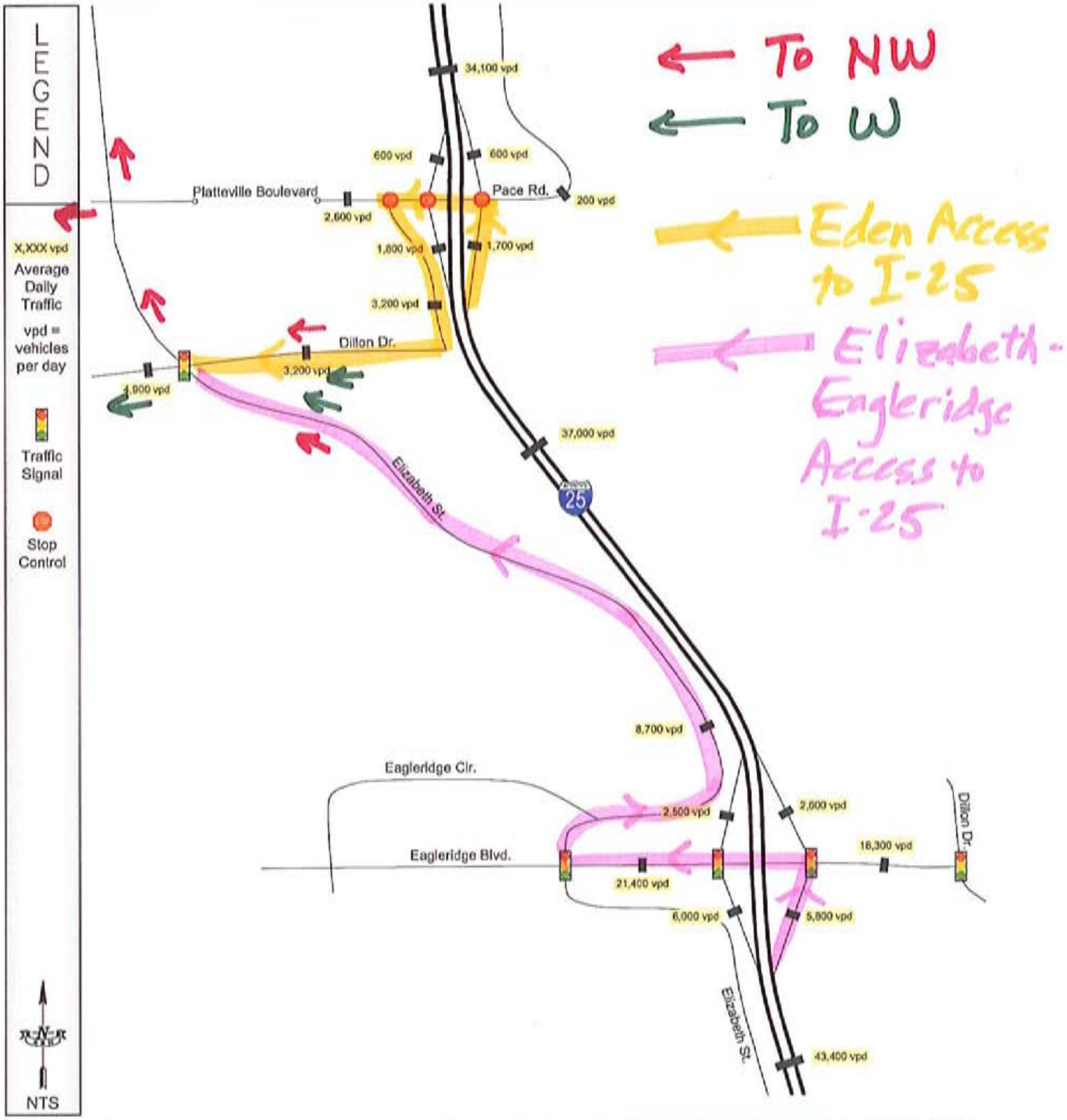
FIGURE 10 C

No Action 2017 PM

A Bridge To Pueblo's Future

No-Action - Implementation Year (2017)
Study Area
Average Daily Traffic Volumes

SEH



I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

103325-PUEBL
May 14, 2010

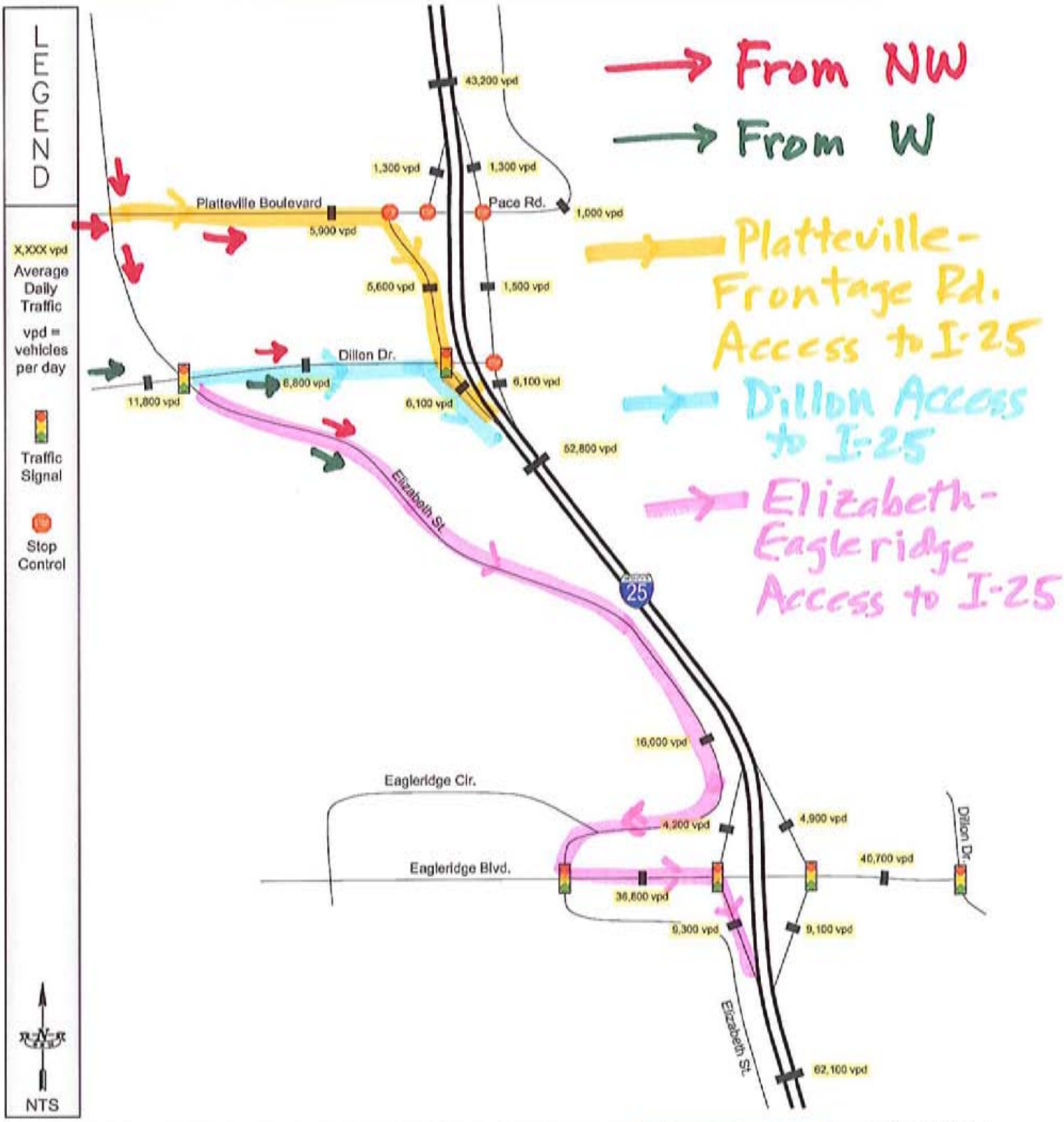
FIGURE 10 D

Proposed Action 2035 AM

A Bridge To Pueblo's Future

Proposed Action - Design Year (2035)
Study Area
Average Daily Traffic Volumes

SEH



I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

103325-PUEBL
May 14, 2010

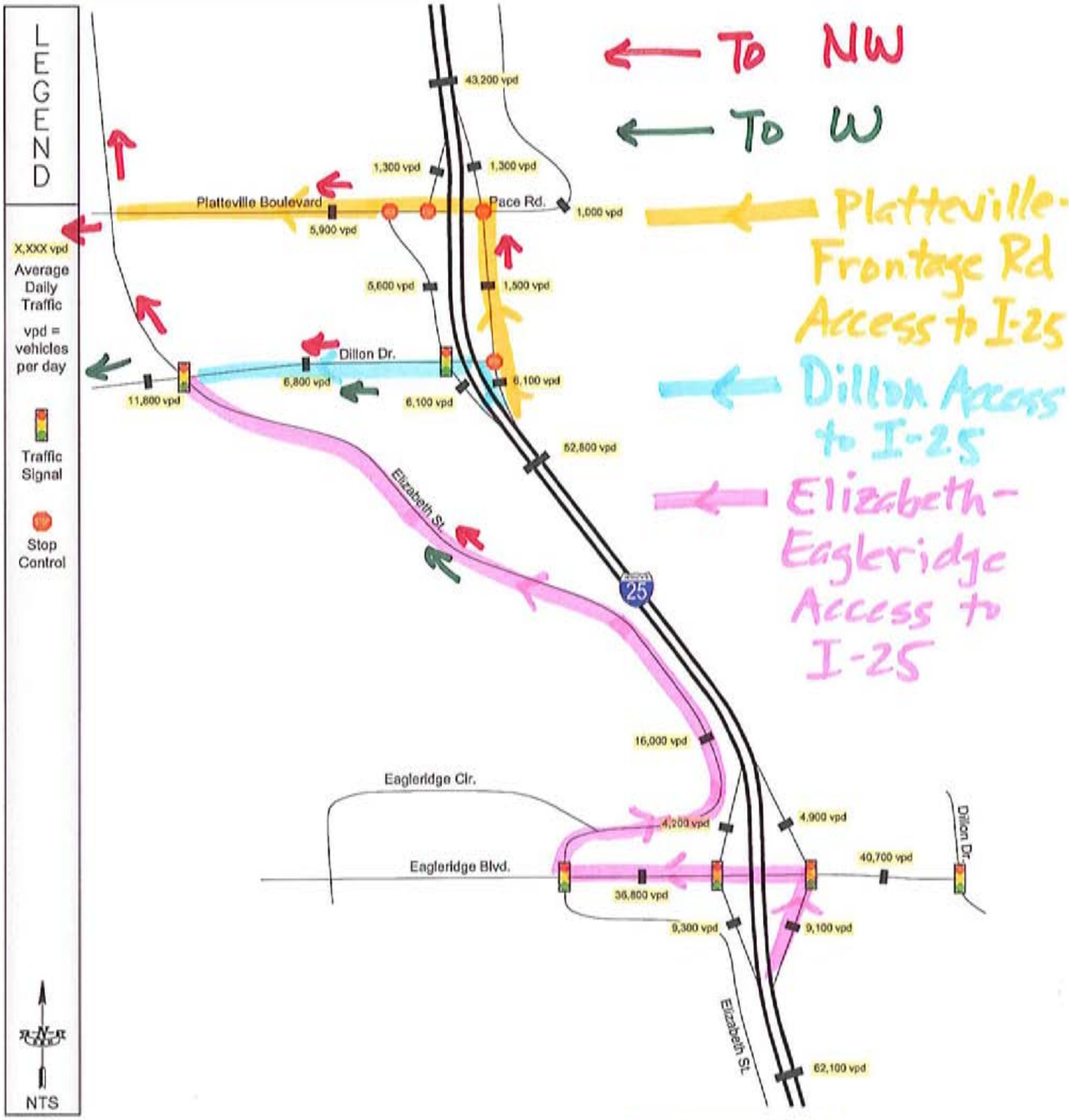
FIGURE 22 E

Proposed Action 2035 PM

A Bridge To Pueblo's Future

Proposed Action - Design Year (2035)
Study Area
Average Daily Traffic Volumes

SEH



I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

103325-PUEBL
May 14, 2010

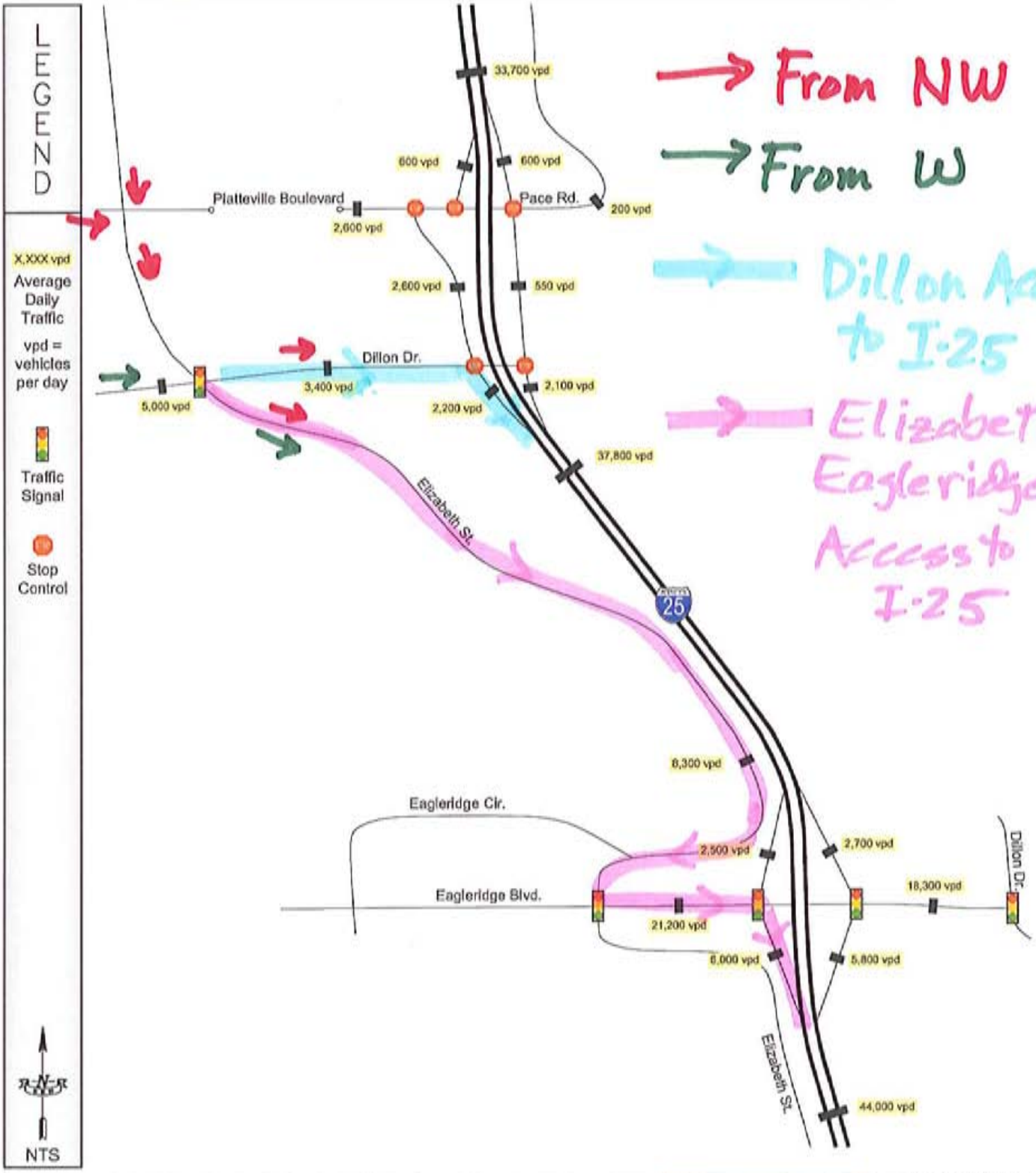
FIGURE 22 F

Proposed Action 2017 AM

A Bridge To Pueblo's Future

Proposed Action - Implementation Year (2017)
Study Area
Average Daily Traffic Volumes

SEH



I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

City of PUEBLO COLORADO

103325-PUEBL
May 21, 2010

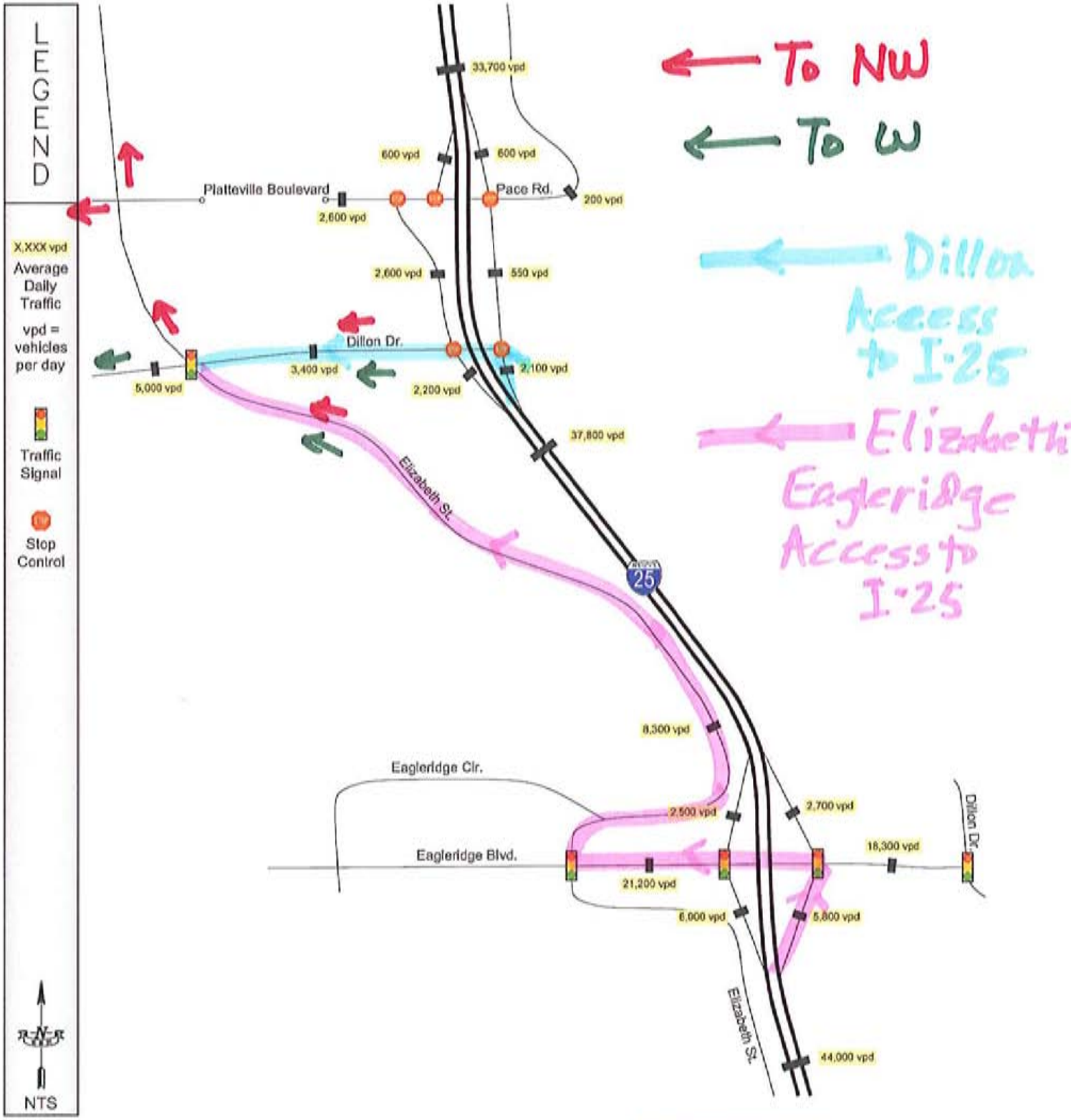
FIGURE 6

Proposed Action 2017 PM

A Bridge To Pueblo's Future

Proposed Action - Implementation Year (2017)
Study Area
Average Daily Traffic Volumes

SEH



I-25 and Dillon Drive/Eden-Platteville Boulevard Interchange Improvements
Traffic Operations Analysis
Pueblo, Colorado

103325-PUEBL
May 21, 2010

FIGURE 14 H

Table A - Test Whether the Proposed Action Provides Increased Connectivity

This color = Primary proofs This color = Secondary proofs		2017 Average Daily Traffic in Vehicles Per Day				2035 Average Daily Traffic in Vehicles Per Day			
Question #	Questions to Test Whether Connectivity is Increased with PA	No Action	Proposed Action	Net increase (+) or Decrease (-)	Point Proven?	No Action	Proposed Action	Net increase (+) or Decrease (-)	Point Proven?
1	Southbound on-ramp traffic at Dillon/I-25 increases?	1800	2200	400	Yes	4300	6100	1800	Yes
2	Northbound off-ramp traffic at I-25/Dillon increases?	1700	2100	400	Yes	3600	6100	2500	Yes
3	Traffic on the Frontage Road decreases?	3200	2600	-600	Yes	7600	5600	-2000	Yes
4	Total traffic on Dillon-Platteville increases?	5800	6000	200	Yes	12,800	12,700	-100	No - slight decrease[2]
5	Traffic on Elizabeth decreases?	8700	8300	-400	Yes	18,100	16,000	-2100	Yes
6	Traffic on Eagleridge (west of I-25) decreases?	21,400	21,200	-200	Yes	38,000	36,800	-1200	Yes
7	Southbound on-ramp traffic at Eagleridge/I-25 decreases?	6000	6000	0	No - is the same[1]	9400	9300	-100	Yes
8	Northbound off-ramp traffic at I-25/Eagleridge decreases?	5800	5800	0	No - is the same[1]	9000	9100	100	No - slight increase[3]

[1] The lack of any change in the volume is likely due to rounding or lack of accuracy inherent in a regional model.

[2] The slight decrease in volume is likely due to rounding or the lack of accuracy inherent in a regional model.

[3] The slight increase in volume is likely due to rounding or the lack of accuracy inherent in a regional model.