INTERCHANGE JUSTIFICATION REPORT

I-82/Yakima Avenue/Terrace Heights Drive Interchange
MP 31.40 to MP 34.77

Appendices

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INTERCHANGE JUSTIFICATION REPORT

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Appendix A

Methods & Assumptions Document

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I-82 / Yakima Avenue Interchange Justification Report

Methods & Assumptions Document

Revisions

The Methods & Assumptions Document for the I-82 / Yakima Avenue Interchange Justification Report (IJR) was originally developed and signed in June 2012. Since that time the project has evolved through the several stages of review and modifications. During these stages several assumptions, and analysis methods have been revised to address changes in project requirements, as well as the overall direction of the project. As a result, the information and guidelines discussed in the original Methods & Assumptions Document has also changed, as and discussed with the Stakeholders' Technical Group. The following is a summary of these revisions:

- The IJR Stakeholders have adopted the "Practical Solutions" approach for decision making and development of alternatives. Based on this approach the Stakeholders have selected the various baseline and contextual performance categories for evaluating the alternatives. These performance categories include:
    - Baseline
        - Mobility
        - Safety
        - Economic Vitality
        - Preservation
        - Environment
        - Stewardship/Maintenance
    - Contextual
        - Regional Connectivity
        - Constructability
        - Community Support
- During the development of alternatives for this IJR, it was determined that future capacity improvements to I-82 can be accommodated by either providing six through lanes or adding a collector/distributor system with auxiliary lanes between Nob Hill Boulevard and US 12.
- The need for the proposed actions has been revised to 'As East-West traffic in the greater Yakima area continues to grow, trips accessing I-82 are funneled into two interchanges: Yakima Avenue (serving local/intra-regional trips) and Nob Hill Boulevard (serving inter-regional and intra-state trips). These demands are creating safety and operational issues during peak periods at the Yakima Avenue Interchange. As growth in the area continues, I-82 and Yakima Avenue are expected to be over capacity within the design horizon year, creating a near term growth

management concurrency issue impacting economic development opportunities for Yakima County and the City of Yakima.

- The development of the IJR will follow the guidelines as outlined in the July 2016 WSDOT Design Manual Chapter 550, including the crash analysis using the ISATe model to predict future year crashes.

Methods and Assumptions

1. Stakeholder Acceptance

"The undersigned parties, including all members of the team from WSDOT, FHWA and the Local Agencies, concur with the Interchange Justification Report Methods and Assumptions for the I-82 Yakima Avenue/H Street Interchange Justification Report as presented in this document."

STAKEHOLDER ACCEPTANCE

WSDOT – Access and Hearings

Signature

Dev. Svcs & Access Mgr
Title

4/24/2012
Date

City of Yakima

Signature

Interim City Manager
Title

1/11/12
Date

WSDOT - South Central Region

Signature

Assistant Region Administrator for Development
Title

3/27/12
Date

Yakima County

Signature

County Engineer
Title

1/11/12
Date

WSDOT – HQ Project Development

Signature

Asst. State Design Engineer
Title

4/3/12
Date

Yakima Valley Conference of Governments

Signature

Executive Director
Title

1/11/12
Date

FHWA

Signature

Safety / Geometric Design Engr.
Title

6/20/2012
Date

(1) Participation on the Stakeholders Committee and/or signing of this document does not constitute approval of the I-82 Yakima Avenue/H Street Interchange Justification Report.

(2) All members of the Stakeholder Committee will accept this document as a guide and reference as the study progresses through the various stages of project development. If there are any agreed upon changes to the assumptions in this document a revision will be created, endorsed and signed by all the stakeholders

- Construction of a separate bicycle/pedestrian trail linking the Yakima Greenway to the downtown area.
- Update the existing ramp design to meet current design standards.

Before the next stage improvements are implemented, the City and County requests a further investigation of these improvements to determine if they are still appropriate or if a different configuration is appropriate.

Purpose of the Project

The purpose of this project is to review the recommendations from the early 1990s I-82/Yakima Avenue Interchange to see if they are still applicable and to recommended modifications to the I-82/Yakima Avenue Interchange to improve interstate operations and safety, support the proposed land use, and increase economic development in the Yakima area as a regional activity center.

The purpose of this study is to complete the Interchange Justification Report (IJR) and determine the preferred solution to congestion issues at the Yakima Avenue area and support the economic development of the area in cooperation with FHWA, WSDOT, YVCOG, Yakima County and the City of Yakima.

The results of the Interchange Justification Report (IJR) will enable the project stakeholders to assess options and opportunities to improve the transportation system within the study area.

Project Leads and Proponents

- Yakima County
- City of Yakima
- Federal Highway Administration
- Washington State Department of Transportation
- Yakima Valley Conference of Governments

Environmental Document Type

At this point in time, we are envisioning a Documented Categorical Exclusion for any improvements.

Level of Documentation

The proposed improvement options may include substantial revisions to the existing interchange configuration. Eight specific points will be addressed in the IJR, as required by WSDOT and FHWA. These points are:

(1) Policy Point 1: Need for the Access Point Revision - What are the current and projected needs? Why are the existing access points and the existing or improved local system unable to meet the proposal needs? The following data will be presented:

- Freeway operation levels of service and densities for existing, opening year and design year.
- Using the Base Conditions operation analyses for existing, opening year and design year, discuss the intersection and interstate deficiencies in access to the Interstate at the Yakima Avenue Interchange.
- Using the results from Local Improvement Option, discuss that local improvements alone cannot provide acceptable levels of service throughout the study area to meet future demands
- Using the collision analysis discuss the existing safety issues at the Yakima Avenue Interchange and what it may look like in the future if changes do not occur.

(2) Policy Point 2: Reasonable Alternatives - Describe the reasonable alternatives that have been evaluated.

- Using the results from previous studies and work conducted as part of this IJR, described each of the alternatives considered and explain how these alternatives met or did not meet the purpose of the improvement.
- Discuss why the selected alternative(s) were beneficial.

(3) Policy Point 3: Operational and Collision Analyses - How will the proposal affect safety and traffic operations at year of opening and design year?

- Discuss the results of the intersection and interstate operational analysis for the opening year and design year for the improvements recommended for this IJR (Build Condition) and compare them to the Base Condition results, including the Yakima Avenue Interchange modifications and its affect on the I-82 mainline operations and adjacent interchanges at Nob Hill Boulevard and US 12 Interchanges.
- Discuss the collision analysis results for the Build Condition as compared to the Base Condition for the opening and design years.

(4) Policy Point 4: Access Connections and Design - Will the proposal provide fully directional interchanges connected to public streets or roads, spaced appropriately, and designed to full design level geometric control criteria?

- Discuss the geometric designs of the proposed improvements and show that all movements are included in the design.
- Show conceptual horizontal and vertical alignments for I-82 mainline, proposed ramps, and existing cross roads for the selected alternative.
- Discuss design criteria.

(5) Policy Point 5: Land Use and Transportation Plans - Is the proposed access point revision compatible with all land use and transportation plans for the area?

- Briefly summarize how current land use assumptions were included in the travel demand model.
- Briefly discuss that the improvement are consistent with local, regional, and statewide transportation plans.

(6) Policy Point 6: Future Interchanges - Is the proposed access point revision compatible with a comprehensive network plan? Is the proposal compatible with other known new access points and known revisions to existing points?

- Briefly discuss that the improvements are consistent with other planned interstate improvements included in the State wide Highway System Plan and refer to a future interstate master plan.

(7) Policy Point 7: Coordination - Are all coordinating projects and actions programmed and funded?

- Briefly discuss that the local agency schedule and plan to providing the local improvements to support the interstate modifications.

(8) Policy Point 8: Environmental Processes - What is the status of the proposal's environmental processes? This section should be something more than just a status report of the environmental process; it should be a brief summary of the environmental process.

- Briefly discuss the environmental overview, what process should be undertaken to support the interchange modifications, and what permits may be needed to implement the improvements.

3. Analysis Years/Periods

Operational analysis will include both AM and PM peak hours for the following years:

- Existing Base Year – 2010/2011
- Assumed Opening Year – 2015
- Horizon/Design Year – 2035

Freeway operations on the preferred alternative will be analyzed with a 2 hour peak period.

4. Project and Study Areas

The project area for this IJR will extend along I-82 to include the Yakima Avenue Interchange and the I-82/US 12 Interchange.

The study area is generally a half mile east and west of the interstate and includes the following major streets and is illustrated on the attached Figure A.

- Nob Hill Boulevard
- Fair Avenue
- Yakima Avenue/Terrace Heights Way
- Martin Luther King Jr. Boulevard
- Lincoln Avenue
- 1st Street
- US 12
- 6th Street
- 8th Street
- H Street
- I-82/Nob Hill Boulevard (SR 24) Interchange
- I-82/Yakima Avenue/Terrace Heights Way Interchange
- I-82/US 12 Interchange

The overall study area for traffic forecasting purposes will include the urbanized areas of Yakima County, as defined by the Yakima Valley Conference of Governments travel demand model.

5. Improvement Alternatives

Local Improvements: A workshop with the IJR Group will be conducted to identify what local improvements are reasonable for consideration during the opening year and design year analysis.

Build Improvements: A second workshop with the IJR Group will be conducted to identify what Build alternatives improvements are reasonable for consideration during the opening year and design year analysis.

6. Traffic Operations Analysis

For interstate highway operations, *2000 Highway Capacity* software (HCS) will be used to analyze merge/diverge connections. Average vehicle speed and density will be used as performance measures for the HCS analysis.

For ramp terminal/surface street operations, intersections will be analyzed as follows:

- Synchro 7.0 software will be used to analyze the operations of signalized intersections.
- Synchro 7.0 software or HCS will be used to analyze unsignalized intersections.
- SIDRA software package will be used to analyze roundabout controlled intersections.
- SimTraffic will be used for queuing and turn lane spillover analysis.

Both AM and PM peak hour analysis will be used for the three analysis years.

For the recommended alternative, a simulation model capable of analyzing freeway and geometry between intersections, including weaving sections and multiple vehicle classes. HCS

will be used to analyze weave sections. VISSIM was selected for the simulation of the preferred alternative because it meets these needs while also providing animation graphics.

Operational modeling of the freeway corridor for the preferred alternative will be conducted over a two -hour peak period using the VISSIM software. The existing peak one-hour volumes generally fall into the 7:00 - 8:00 AM and 4:30 - 5:30 PM time periods. Peak periods will be extended to include the volumes from 6:30 – 8:30 AM and 4:00 – 6:00 PM. All traffic analysis will be reported for the AM and PM single peak periods only.

For this IJR, the operational analysis area will include the I-82 corridor between Nob Hill Boulevard and US 12 and all ramp terminals.

The following intersection will be analyzed as part of this IJR:

- I-82 EB ramps/Nob Hill Boulevard
- I-82 WB ramps/Nob Hill Boulevard
- I-82 EB ramps/Yakima Avenue
- I-82 WB ramps/Yakima Avenue
- I-82 WB on-ramp/Fair Avenue
- Yakima Avenue/Fair Connector
- Fair Connector/Fair Avenue
- I-82 WB off-ramp/Fair Avenue
- Yakima Avenue/9th Street
- Proposed WB ramp terminal/H Street
- Proposed EB ramp terminals/H Street

7. Travel Forecast

For this IJR analysis, the YVCOG travel demand model as modified by WSDOT in 2009 will be review and updated to provide a consistent basis for the above analysis years and periods.

Travel demand in 2015 will include the highway improvements in the City and County TIPs and other local improvements as approved by the IRJ Group. For 2035, the travel demand will include a 6-lane I-82 as indicated in the WSDOT Highway System Plan plus the TIP improvements. The resulting models will be used to generate 2015 and 2035 baseline traffic volumes. It is anticipated that model "post-processing" will be utilized to account for localized discrepancies between existing "ground counts" and model-generated volumes. The recommended method will be to add the "model growth increment" (the difference between the 2010 and the future year model volumes) to the existing ground count traffic volumes.

The following seven model runs are assumed for both the AM and PM peak hours:

- Base Conditions
  - 2010 Base Year
  - 2015 with current 6-yr TIP with 2015 Land Use
  - 2035 with 2035 Land Use
- 2015 Build Conditions

- 2015 Base with modified Yakima Avenue Ramps, as approved by the Stakeholders.
- 2015 Base with Other Improvements recommended by Stakeholders Committee.

- 2035 Build Conditions
  - 2035 Base with modified Yakima Avenue Ramps, as approved by the Stakeholders and 6-lanes on I-82.
  - 2035 Base with Other Improvements recommended by Stakeholders Committee and 6-lanes on I-82.

8. Safety Issues

This IJR will use the current Collision Analysis Location/Collision Analysis Corridor (CAL/CAC) criteria and the Intersection Analysis Location (IALL) criteria for state highways within the project area. In addition, the collision rates along local streets will be estimated using available local collision data. Types on accidents and contributing factors to collisions will also be summarized by location. The most recent five years of available collision data will be used for this analysis. This corridor specific information as well as statewide system collision statistics will be used in a predictive collision analysis effort to estimate any change in the level of safety for the interstate and connecting roadways.

9. Selection of Measures of Effectiveness (MOE)

The metrics to be used to demonstrate how the proposal will accomplish the stated objectives include:

1. Travel Time and Travel Speed on the Interstate through the project area from Nob Hill Boulevard Interchange to the US 12 Interchange (minutes and MPH).
2. LOS and density along I-82 and LOS at merge and diverge locations
3. Average Delay times at all ramp terminals (seconds) with an LOS table.
4. Maximum Queue Length on ramps and arterials (95% queue lengths).
5. Travel Time on Network (vehicle-hours) for the peak hour(s).
6. Vehicle miles of travel on interstate links with a v/c ratio of 0.9 or greater.
7. Vehicle miles of travel on arterial links with a v/c ratio of 0.9 or greater.
8. Safety Analysis Results (Accident Potential/Risk Reduction).
9. Deviations needed to implement improvements.

10. Deviations/Justifications

At this point in the process, there are no deviations identified. Deviations may be indentified through the various study results, and will be documented as they arise.

11. Conclusion

Improve access to the Interstate system without degrading the I-82 mainline or ramp operations and safety. While degradation of the Interstate system is not an acceptable outcome, there may be localized areas where degradation may occur due to system tradeoffs. Engineering judgment will be applied to arrive at the best overall set of improvements practical within the project area.

Figure A STUDY and PROJECT AREA

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Appendix B

Summary of November 14-15, 2016 IJR Workshop

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JACOBS

Meeting Minutes

I-82/Yakima Ave. IJR Design Workshop, Monday, November 14, 2016

Attendees: Brad Cooper (BC), Newel Jensen (NJ), Faith Ortiz, Bob Munchinski, Gary Ekstedt (GE), Steve Lewis, Barb Deste.Croix, Liana Liu, Joan Davenport, LisaRene Schilperoort, James Todd Daley, Troy Suing, Brian White, Kent McHenry, Brett Sheffield

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1. Introductions – BC

A workshop was held on Monday November 14th, 2016, and Tuesday November 15th, 2016, with the attendees listed above. The goal of this workshop is to determine cost-saving concepts to enable I-82 Yakima Avenue Terrace Heights Interchange project to be delivered within programmed budget. As well as having all agencies agree upon a preferred alternative to advance the IJR to WSDOT Headquarters review and FHWA review for Engineering and Operations Approval.

All attendees went around the table and gave their names and affiliations. Brad Cooper introduced Newel Jensen from Jacobs, and stated that he will be this meeting's Facilitator. The options reviewed were Alternative 2C- C/D (Collector Distributor) system or Alternative 3A - Roundabout Alternative (a.k.a. "dog-bone", see Attach A).

2. Logistics – NJ

Newell reviewed how this meeting will be implemented, meeting ground rules and reviewed agenda topics. Newell emphasized that Practical Solutions need to be addressed regarding the IJR and East/West Corridor. Brad Cooper described the logistics of the facility and surrounding area for lunch options.

3. History and Overview of Project – GE

Gary gave a brief history of the I-82 Yakima Avenue Interchange development and studies performed over the past two decades, including describing issues for alternative routes, lanes and possible solutions. Some of the topics reviewed were the following:

- Identifying project needs.
- County issues.
- Implications of the Boise Cascade Plant.
- City inclusion to revitalize and redevelop property in the vicinity, which started East/West Corridor Project.
- DOT involvement regarding Yakima Avenue, Phase I and Phase II regarding interchange.
- Yakima Conference of Governments involvement
- Access issues to/from the Mill site relative to access from within the city roadway network and access from the interstate.
- Current IJR effort beginning in 2010, and several alternatives including:
    - Variations on Yakima Avenue revisions/improvements.
    - Auxiliary improvements on Yakima Avenue.
    - Funding of Project – Budget of 64M total from WSDOT for interstate work.

- Local agency (County) developing IJR.
- Mobility for all agencies.

4. Purpose and Goals of Workshop – NJ

   Newel Jensen offered his advice on goals for the workshop, and then asked the attendees to comment/revise the goals he offered or add additional goals. The purpose/goals of the workshop were determined to be:

   - Determine the preferred alternative to advance through the remaining IJR process.
   - Reduce costs for preferred alternative by identifying items/costs to consider, prioritize the identified items/costs, and/or eliminate un-necessary costs.
   - Discuss and agree upon completing the interstate portion of the project at $64M without going over budget.
   - If necessary as the workshop progresses, identify a possible alternative proposed plan.

5. Project Challenges – NJ

   Newel asked the attendees to state project challenges from their perspective. Note that some attendees may not have had the opportunity to review the September 2016 IJR prior to this workshop. Some of these challenges may have been addressed in the September 2016 IJR.

   - "Dog-bone" project may not meet East/West mobility challenge for redevelopment and others.
   - Balancing regional mobility without compromising.
   - Improving Yakima Ave. interchange access with current configuration/access on and off the interstate.
   - Environmental sensitivity.
   - Merge/diverge points – Interstate and C/D and dog-bone.
   - Desire to maintain exit 33A (existing off-ramp to Fair Avenue).
   - Ability to include future 6-lane section of I-82 with Alternative 2C.
   - How far out do we look? The IJR Design Year is 2035, which is only 10 years after the final phase begins construction. Do we need to look to 2045 or beyond 2050?
   - Design exceptions will be required at specific locations to provide a 6-lane section on I-82 at the Yakima Ave interchange.
   - There's a gap between the FHWA E&O approval and when the NEPA process will start. Seeking FHWA E&O approval in early 2017, while NEPA will not start until 2021 when funding becomes available.
   - Seems to be some confusion on the configuration of Alt. 3A. Is there a consensus? □ □ □ □ □ □ □

   - Executive Committee recommended the C/D Alternative, yet the IJR reviewers have not reached the same conclusion at this time.
   - Revisit criteria from practical solution matrix.
   - Both alternatives are estimated to cost more than the project budget (see Attachment C).

6. Goals to Achieve – NJ

   Newel asked the attendees to provide their goals for the addition of the East/West Corridor and interaction with I-82.

   In Attachment D, the goals are grouped by the entity that stated them. Also included are the ratings of each goal (+,o,-) based on comparing that goal to the existing, or No-Build, condition. For a couple goals, the ratings were based on comparing the alternatives to each other to communicate the appropriate intent of those particular goals.

7. Yakima Avenue – Access Connections and Design – KM/NJ

   - Proposed inside shoulder width of I-82 for 6-laning discussed (reduced shoulder width).
   - (- Discussion regarding reserving space for 3rd lane. (see Attachment B)
   - What is the costs impact for future lanes?
   - Do we need to extend them sooner than later? 20 years? 50 years?
   - What would the footprint look like?
   - What are the design exceptions?
   - Who would make the final decision?

8. Decisions Made or To Be Made – NJ

   Newel developed a running list of decisions that need to be made as discussions occurred.

   - To be verified: Is Alt. 2C forward-compatible for 3 lanes?
   - Decision made: The attendees agreed on the preferred alternative as the C/D option.
   - Decision made: Update traffic, update new numbers, planning Horizon during NEPA (current analysis in IJR, will move forward as an amendment).
   - Decision made: Keep opening year as 2015 for this version of IJR. The re-evaluation of the IJR that will occur when NEPA starts will require a new look at the opening year.
   - Decision made: State in Executive Summary that all policy points will be updated in NEPA and design (if too long in time elapsed between).
   - Will the center line stay in same location or will it shift? Yes, there will be a shift and where is unclear at this time. If you will still have 3 lanes, the line will shift location.
   - To be verified: When will NEPA be done? Probably 2021 due to funding date.
   - How do you coordinate this project going further?

9. IJR Comments – NJ

   Newel developed a running list of comments that need to be addressed for the current IJR. These comments, along with individual comments received through 11/22 from individual reviewers, will be compiled and sent to the County for revision to the current IJR. The revised IJR will be sent to the Executive Committee and to the WSDOT South Central Region and Headquarters. WSDOT SCR and

HQ will perform a concurrent review of the revised IJR. WSDOT HQ will submit the IJR to FHWA for Engineering & Operational review/approval.

- Revise typical section layout to minimize length of design exception (exceptions are anticipated only at existing structures).
- Call out potential design exceptions – include practical solutions matrix in document.
- Traffic accident comparison to 6-lane section of I-82 instead of 4-lane section.
- Document cost savings opportunities and description of funding (i.e. sources, timing, amount, etc.).
- Edit traffic model redistributing slip ramp traffic to EB off-ramp to East/West Corridor.
- Proposed interchange improvements for an eventual widening of I-82 to a six-lane facility.
- Decision made: List potential deviations in IJR.

10. Information Needed – NJ

- Back up for Cost Estimate (see Attachment C).
- Safety issue between C/D alternative and dog-bone alternative.

11. Cost Savings – NJ

Newel facilitated a discussion with all attendees around a roll plot of the project area with proposed Alt. 2C improvements. The discussion was to determine cost-saving ideas to get the cost estimate of Alt. 2C below the project budget, or at least reduce much of portion over-budget and have high confidence that future refined design effort will get the cost below project budget.

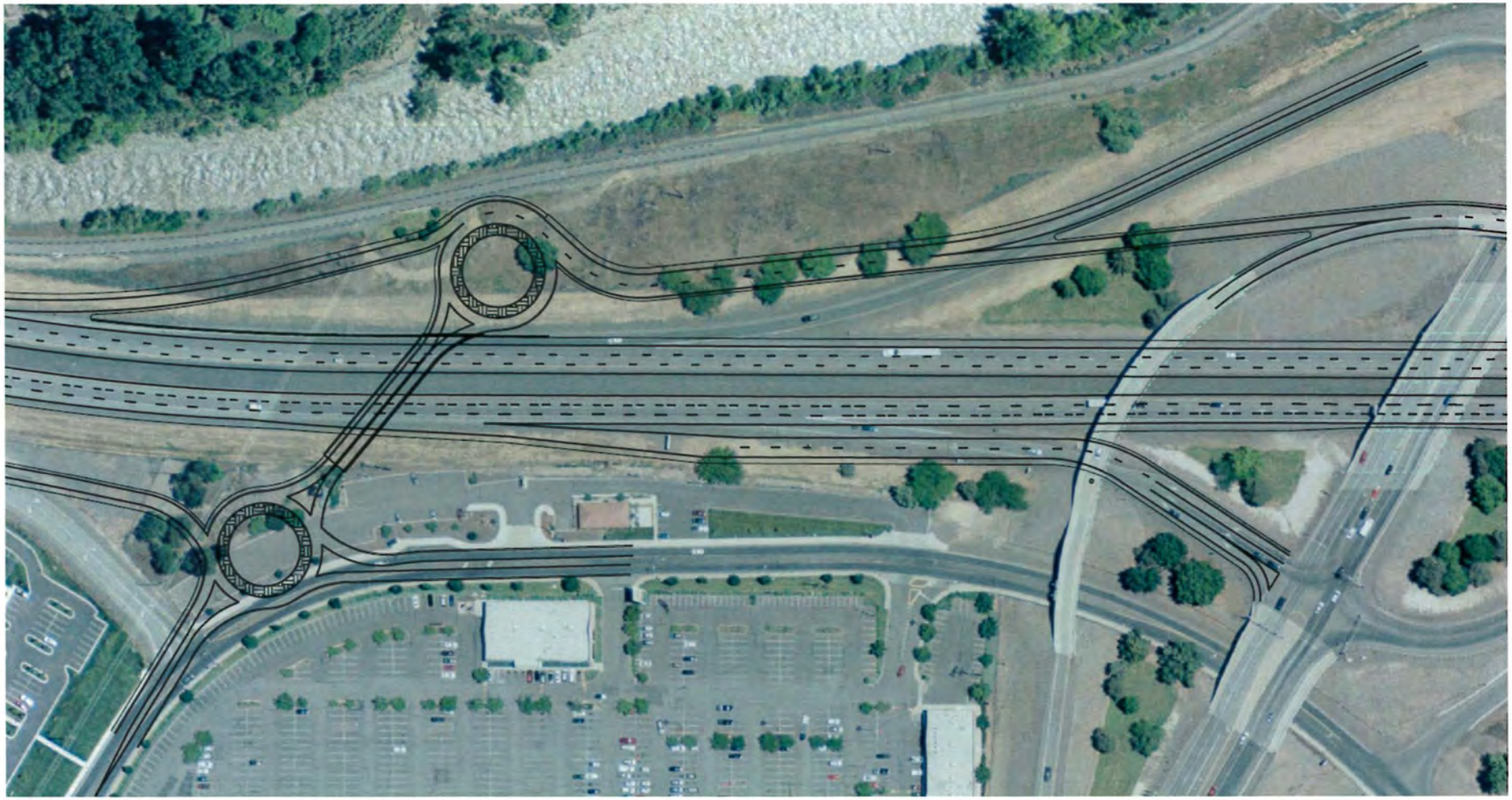
- Identify C/D alternative within program budget of $64M as opposed to 82.5M (estimated total):
    - Group discussion - approximate group tally: $64M (State), $5M (County), $5M (City) for a total of $74M available to pay for interstate improvements. Current cost estimate is $82.5M.
    - Could likely save $3 - $6M by eliminating the braided ramp.
    - May save money by design/constructing an urban freeway section through project limits.
    - May be able to optimize structures over the waterway north of the East/West Corridor.
    - Establish a list of prioritized items.
    - Phasing items for future.
    - North of C/D is there savings available?
- Discussion as to Phasing for C/D and dog-bone alternative. The dog-bone alternative was discussed in less detail than the C/D alternative for cost-saving ideas, because the attendees had identified Alt. 2C as the preferred alternative.

- Discussion on roundabout in regards to the dog-bone near levy. Could this be designed around that? Is this really feasible for permits? Feared to be a groundwater issue being so close to the levee/river.
- Group trying to make an informed decision on C/D (putting funding aside) what alternative could be made to accommodate the City and County needs? How could there be cut backs on the budget? Suggestions:
  - Ramp Alternatives.
  - Contingency Funds.
  - Work with design when actually designed (Budgeted for 64M, not know until design is completed).

12. IJR Review – NJ

- Who will review final IJR document? WSDOT and FHWA have remaining review efforts. WSDOT Region and WSDOT Headquarters to review at same time, then HQ will submit to FHWA for review.
- Does this agreement include constructability concerns? Yes, all parties in question have concerns. FHWA has asked to make sure that when the project is started, that it is completed and not left unfinished.
- Deviations and justifications – design exceptions same as deviations.
- Roundabout diameter is 150' – and some members in the group feel that that is too large. Nonetheless, this alternative is not being advanced in the IJR.
- Integrate redefined metrics into IJR from previous discussion comparing "no build vs. C/D alternative".
- Dates for review regarding IJR:
  - Send December review comments to BC by 11/22/16.
  - BC to compile, have discussion (including changes to the IJR), send to County and Lochner by 12/1/16.
  - Send revised IJR to Region, WSDOT, and Executive Committee on 01/02/17, for a concurrent review.
  - Documents, traffic information, revision tracking /comment resolutions (2 week review – comments to BC by 1/16/17.)
  - Executive Committee meeting to be held on or about 2nd – 3rd week in January 2017.
  - Send revised IJR to FHWA by 2/1/17 (approximate 3 weeks for their review),
  - Final date for signature of IJR – 2/22/17.

ATTACHMENT A

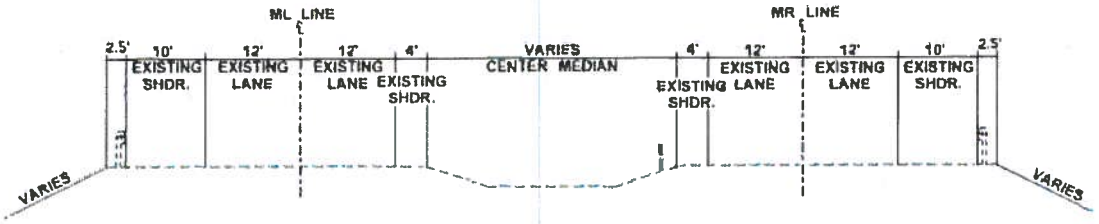


Roundabout Concept

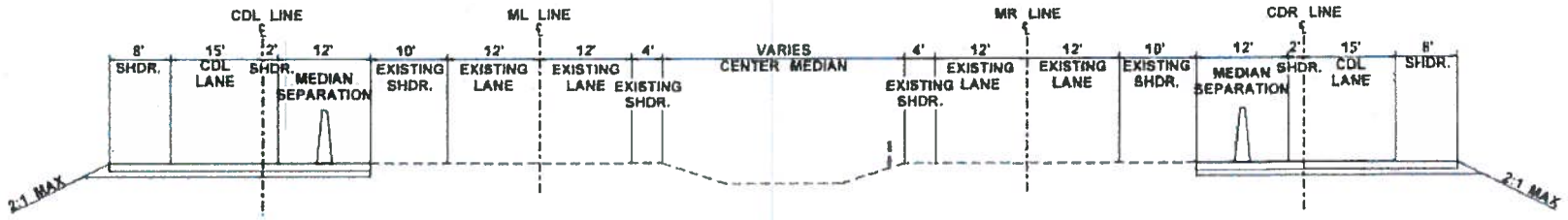
LOCHNER

ATTACHMENT B

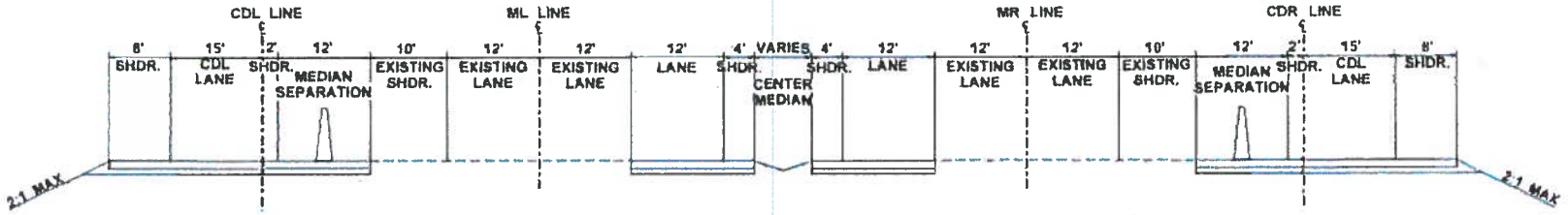
FIGURE PP4-3: Typical Cross Section between East-West Corridor Structure and Yakima Avenue Structure



Existing I-82 Cross Section with 4 Travel Lanes



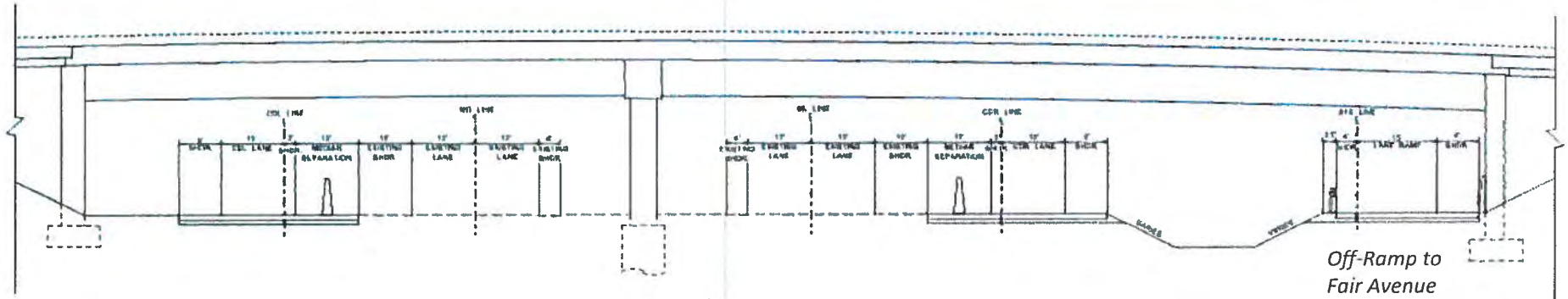
Proposed I-82 Cross Section with C/D Lanes and 4 Travel Lanes



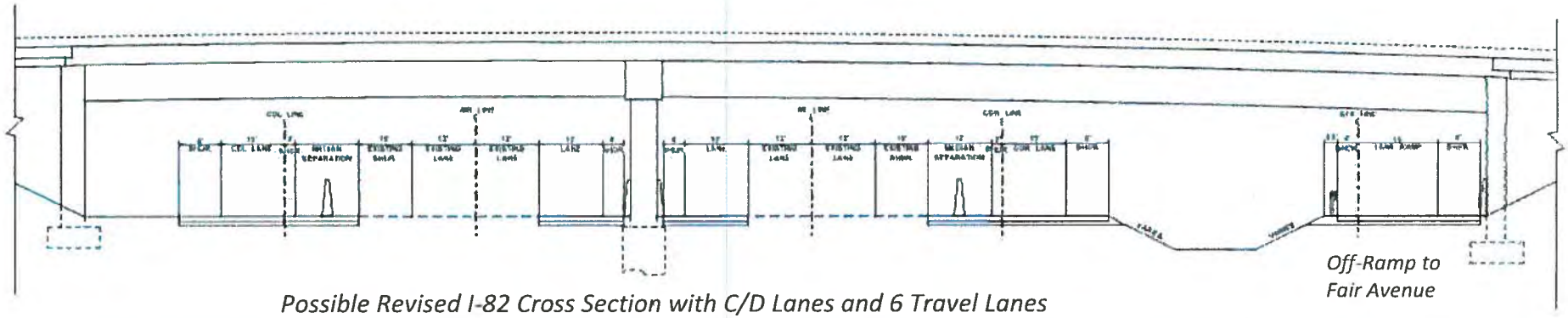
Possible Revised I-82 Cross Section with C/D Lanes and 6 Travel Lanes

FIGURE PP4-4: Typical Cross Section at East-West Corridor Structure

Existing I-82 Cross Section with 4 Travel Lanes

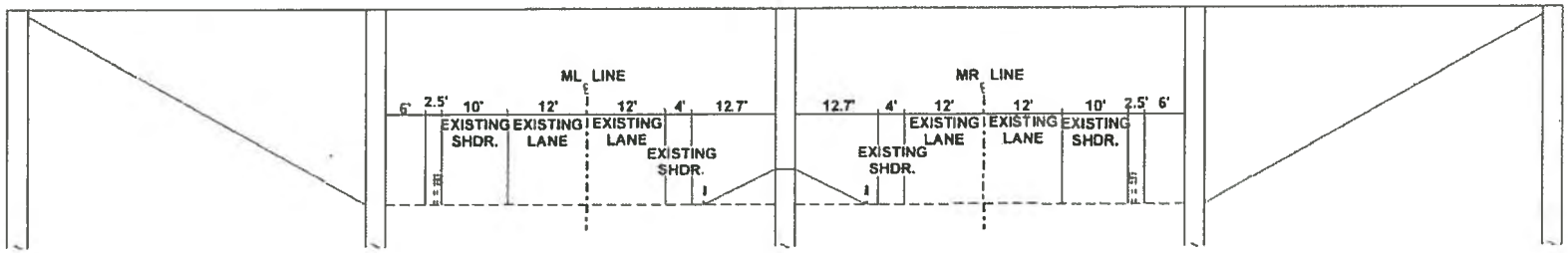


Proposed I-82 Cross Section with C/D Lanes and 4 Travel Lanes

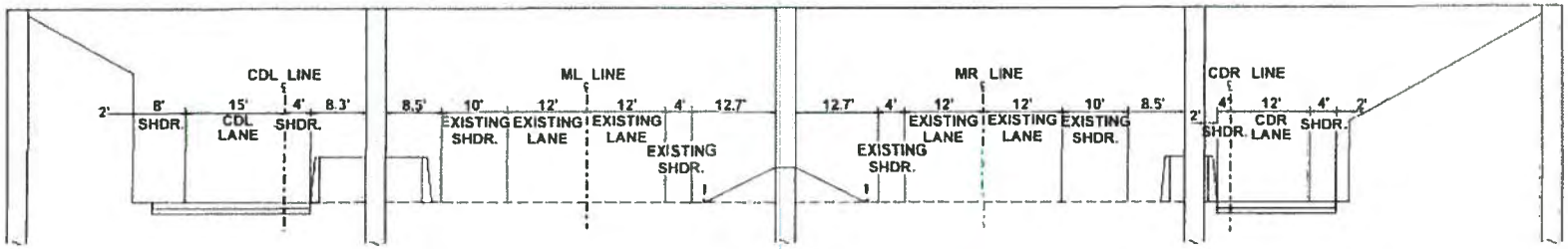


Possible Revised I-82 Cross Section with C/D Lanes and 6 Travel Lanes

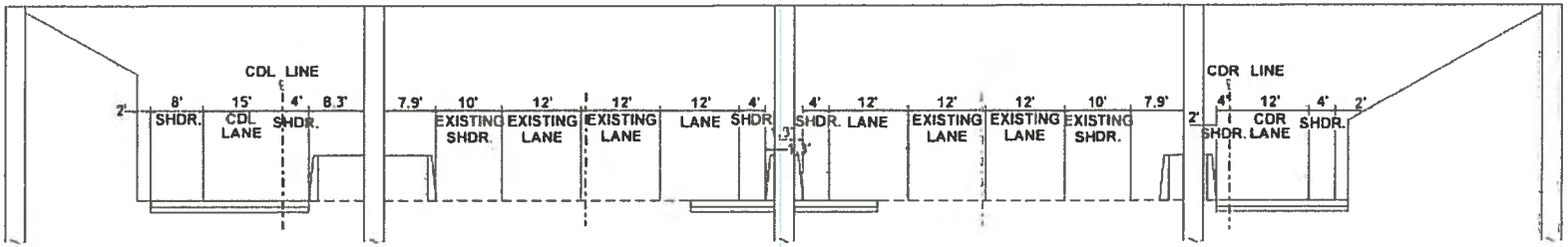
FIGURE PP4-5: Typical Cross Section at Yakima Avenue Structure



Existing I-82 Cross Section with 4 Travel Lanes



Proposed I-82 Cross Section with C/D Lanes and 4 Travel Lanes



Possible Revised I-82 Cross Section with C/D Lanes and 6 Travel Lanes

ATTACHMENT C

I-82 / Yakima Ave Interchange Improvements
CD-Auxiliary Lanes Alternative

ESTIMATE OF PROBABLE CONSTRUCTION COST					TOTAL	
No.	**Standard Item**	**Standard Item No.**	**Unit**	**Unit Price**	**Quantity**	**Cost**
Section 1: Preparation						
1	MOBILIZATION	0001	LS	$ 4,887,204	1	$ 4,887,204
2	CLEARING AND GRUBBING	0025	ACRE	$ 25,000	8.9	$ 222,546
3	REMOVAL OF STRUCTURES & OBSTRUCTIONS	0050	LS	$ 150,000	1	$ 150,000
4	REMOVING ASPHALT CONC. PAVEMENT	0120	SY	$ 9.00	17,303	$ 155,728
	Section Total					**$ 5,415,478**
Section 2: Grading						
5	ROADWAY EXCAVATION INCL. HAUL	0310	CY	$ 15.00	115,731	$ 1,735,968
6	SELECT BORROW INCL. HAUL	0408	TON	$ 8.00	1,434,558	$ 11,476,461
	Section Total					**$ 13,212,429**
Section 4: Drainage						
7	QUARRY SPALLS	1086	TON	$ 32.00	-	$ -
8	SCHEDULE A CULV. PIPE ____IN DIAM.	1182	LF	$ 35.00	-	$ -
	Section Total					**$ -**
Section 5: Storm Sewer						
9	CATCH BASIN TYPE 1	3091	EA	$ 1,500	8	$ 12,000
10	SCHEDULE A STORM SEWER PIPE ____IN DIAM.	3541	LF	$ 32.00	800	$ 25,600
	Section Total					**$ 37,600**
Section 8: Structure						
11	CDL/EWN Bridge Over Railroad Option 1-1	SP	LS	$ 2,269,268	1	$ 2,269,268
12	CDR/SFX Bridge Over Railroad: Option 2-1	SP	LS	$ 1,255,530	1	$ 1,255,530
13	SEW Bridge Over Railroad: Option 3-1	SP	LS	$ 1,923,393	1	$ 1,923,393
14	Widening - MR 1026+84	SP	LS	$ 707,214	1	$ 707,214
15	Widening - MR 1123+33	SP	LS	$ 181,793	1	$ 181,793
16	Widening - ML 1027+15	SP	LS	$ 772,875	1	$ 772,875
17	Widening - ML 1124+28	SP	LS	$ 684,206	1	$ 684,206
18	RETAINING WALL	SP	SF	$ 150	37,421	$ 5,613,169
19	Tunnel	SP	LS	$ 2,500,000	1	$ 2,500,000
	Section Total					**$ 13,407,447**
Section 9: Surfacing						
20	CRUSHED SURFACING BASE COURSE	5100	TON	$ 15.00	141,531	$ 2,122,966
	Section Total					**$ 2,122,966**
Section 14: Hot Mix Asphalt						
21	PLANING BITUMINOUS PAVEMENT	5711	SY	$ 10.00	88,058	$ 880,579
22	HMA CL. 1/2 IN PG 64-22	5767	TON	$ 95.00	37,630	$ 3,574,890
	Section Total					**$ 4,455,470**
Section 17: Erosion Control and Roadside Planting						
23	SEEDING, FERTILIZING, AND MULCHING	6414	ACRE	$ 15,000	9	$ 133,528
24	EROSION/WATER POLLUTION CONTROL	6490	EST	$ 750,000	1	$ 750,000
25	PLANT SELECTION	6550	EACH	$ 2.00	775,530	$ 1,551,060
	Section Total					**$ 2,434,588**
Section 18: Traffic						
26	CEMENT CONC. TRAFFIC CURB AND GUTTER	6700	LF	$ 23.00	1,600	$ 36,800
27	CEMENT CONC. TRAFFIC CURB	6701	LF	$ 22.00	-	$ -
28	MOUNTABLE CEMENT CONC. TRAFFIC CURB	6702	LF	$ 24.00	-	$ -
29	PLASTIC LINE	6870	LS	$ 250,000	1	$ 250,000
30	PERMANENT SIGNING	6890	LS	$ 500,000	1	$ 500,000
31	ILLUMINATION SYSTEM, COMPLETE	6904	LS	$ 750,000	1	$ 750,000
32	PROJECT TEMOPORARY TRAFFIC CONTROL	6971	LS	$ 10,300,000	1	$ 10,300,000
	Section Total					**$ 11,836,800**
Section 19: Other Items						
33	STRUCTURE EX CLASS B INCL. HAUL	7006	CY	$ 28.00	267	$ 7,467
34	ROADWAY SURVEY	7038	LS	$ 150,000	1	$ 150,000
35	CEMENT CONC. SIDEWALK	7055	LF	$ 75.00	-	$ -
36	CEMENT CONC. CURB RAMP TYPE ____	7058	EA	$ 1,500	-	$ -
37	CEMENT CONC. DRIVEWAY ENTRANCE, TYPE ____	7059	SY	$ 150.00	-	$ -
38	ADJUST UTILITY	SP	LS	$ 64,000	1	$ 64,000
39	MINOR CHANGE	7728	EST	$ 100,000	1	$ 100,000
40	RECORD DRAWINGS	2500	LS	$ 15,000	1	$ 15,000
41	UTILITY PERMITS & RELOCATION	SP	EST	$ 500,000	1	$ 500,000
	Section Total					**$ 836,467**
	SECTION SUBTOTAL					$ 48,872,041
	CONTINGENCY			25%		$ 12,218,010
	CONSTRUCTION SUBTOTAL					**$ 65,977,255**
	CONSTRUCTION ENGINEERING			10%		**$ 6,597,725.47**
	CONSTRUCTION TOTAL					**$ 72,574,980**
	DESIGN ENGINEERING			10%		**$ 7,257,498**
	RIGHT OF WAY COSTS			EST		**$ 2,665,505**
	PROJECT TOTAL					**$ 82,497,983**

I-82 / Yakima Ave Interchange Improvements
Alternative 3A

ESTIMATE OF PROBABLE CONSTRUCTION COST					Flyover to RAB		Ramp to ML		Yakima Ramp to RAB		Mainline Left		Mainline Right		Dog-Bone Roundabouts		Yakima Off-Ramp		TOTAL	
No.	Standard Item	Standard Item No.	Unit	Unit Price	Quantity	Subtotal	Quantity	Subtotal	Quantity	Subtotal	Quantity	Subtotal	Quantity	Subtotal	Quantity	Subtotal	Quantity	Subtotal	Quantity	Cost
Section 1: Prepartion																				
1	MOBILIZATION	0001	LS	$ 5,961,264	0.1	$ 662,363	0.1	$ 662,363	0.1	$ 662,363	0.2	$ 1,324,726	0.2	$ 1,324,726	0.1	$ 662,363	0.1	$ 662,363	1	$ 5,961,265
2	CLEARING AND GRUBBING	0025	ACRE	$ 25,000	0.06	$ 1,607	0.10	$ 2,551	0.13	$ 3,316	1.82	$ 45,499	1.91	$ 47,827	0.49	$ 12,276	0.08	$ 2,009	4.6	$ 115,084
3	REMOVAL OF STRUCTURES & OBSTRUCTIONS	0050	LS	$ 500,000	0.1	$ 55,556	0.1	$ 55,556	0.1	$ 55,556	0.2	$ 111,111	0.2	$ 111,111	0.1	$ 55,556	0.1	$ 55,556	1	$ 500,000
4	REMOVING ASPHALT CONC. PAVEMENT	0120	SY	$ 9.00	133	$ 1,200	-	$ -	222	$ 2,000	79,278	$ 713,500	83,333	$ 750,000	1,333	$ 12,000	667	$ 6,000	164,967	$ 1,484,700
	Section Total					**$ 779,088**		**$ 778,576**		**$ 784,106**		**$ 3,064,946**		**$ 3,142,602**		**$ 822,025**		**$ 789,491**		**$ 10,160,834**
Section 2: Grading																				
5	ROADWAY EXCAVATION INCL. HAUL	0310	CY	$ 15.00	913	$ 13,691	1,272	$ 19,075	49	$ 741	6,246	$ 93,686	2,804	$ 42,054	3,769	$ 56,541	25	$ 373	15,077	$ 226,161
6	SELECT BORROW INCL. HAUL	0408	TON	$ 8.00	56,488	$ 451,901	11,570	$ 92,558	20,423	$ 163,385	146,400	$ 1,171,198	181,722	$ 1,453,776	4,789	$ 38,312	35,275	$ 282,197	456,666	$ 3,653,327
	Section Total					**$ 465,591**		**$ 111,633**		**$ 164,126**		**$ 1,264,884**		**$ 1,495,830**		**$ 94,853**		**$ 282,570**		**$ 3,879,488**
Section 4: Drainage																				
7	QUARRY SPALLS	1086	TON	$ 32.00	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	2,222	$ 71,111	-	$ -	2,222	$ 71,111
8	SCHEDULE A CULV. PIPE ____IN DIAM.	1182	LF	$ 35.00	50	$ 1,750	50	$ 1,750	50	$ 1,750	500	$ 17,500	500	$ 17,500	100	$ 3,500	50	$ 1,750	1,300	$ 45,500
	Section Total					**$ 1,750**		**$ 1,750**		**$ 1,750**		**$ 17,500**		**$ 17,500**		**$ 74,611**		**$ 1,750**		**$ 116,611**
Section 5: Storm Sewer																				
9	CATCH BASIN TYPE 1	3091	EA	$ 1,500	3	$ 4,500	6	$ 9,000	4	$ 6,000	-	$ -	-	$ -	14	$ 21,000	3	$ 4,500	30	$ 45,000
10	SCHEDULE A STORM SEWER PIPE____IN DIAM.	3541	LF	$ 32.00	420	$ 13,440	800	$ 25,600	650	$ 20,800	-	$ -	-	$ -	1,400	$ 44,800	1,050	$ 33,600	4,320	$ 138,240
	Section Total					**$ 17,940**		**$ 34,600**		**$ 26,800**		**$ -**		**$ -**		**$ 65,800**		**$ 38,100**		**$ 183,240**
Section 8: Structure																				
11	TUNNEL UNDER I-82	SP	LS	$ 2,866,556	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	1	$ 2,866,556	1	$ -	2	$ 2,866,556
12	BRIDGES - 1027+00 ML	SP	LS	$ 2,762,128	-	$ -	-	$ -	-	$ -	1	$ 2,762,128	-	$ -	-	$ -	-	$ -	1	$ 2,762,128
13	BRIDGES - 1027+00 MR	SP	LS	$ 2,817,064	-	$ -	-	$ -	-	$ -	-	$ -	1	$ 2,817,064	-	$ -	-	$ -	1	$ 2,817,064
14	BRIDGES - 1052+00 ML	SP	LS	$ 4,273,849	-	$ -	-	$ -	-	$ -	1	$ 4,273,849	-	$ -	-	$ -	-	$ -	1	$ 4,273,849
15	BRIDGES - 1052+00 MR	SP	LS	$ 4,258,678	-	$ -	-	$ -	-	$ -	-	$ -	1	$ 4,258,678	-	$ -	-	$ -	1	$ 4,258,678
16	BRIDGES - 1024+00 ML	SP	LS	$ 901,481	-	$ -	-	$ -	-	$ -	1	$ 901,481	-	$ -	-	$ -	-	$ -	1	$ 901,481
17	BRIDGES - 1024+00 MR	SP	LS	$ 987,167	-	$ -	-	$ -	-	$ -	-	$ -	1	$ 987,167	-	$ -	-	$ -	1	$ 987,167
18	FLYOVER BRIDGE	SP	LS	$ 2,250,000	1	$ 2,250,000	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	1	$ 2,250,000
19	RETAINING WALL	SP	SF	$ 150	-	$ -	-	$ -	-	$ -	-	$ -	7,871	$ 1,180,666	800	$ 120,000	-	$ -	8,671	$ 1,300,666
	Section Total					**$ 2,250,000**		**$ -**		**$ -**		**$ 7,937,458**		**$ 9,243,575**		**$ 2,986,556**		**$ -**		**$ 22,417,589**
Section 9: Surfacing																				
20	CRUSHED SURFACING BASE COURSE	5100	TON	$ 15.00	1,036	$ 15,540	2,467	$ 37,000	2,004	$ 30,063	146,664	$ 2,199,958	154,167	$ 2,312,500	4,317	$ 64,750	3,238	$ 48,563	313,892	$ 4,708,373
	Section Total					**$ 15,540**		**$ 37,000**		**$ 30,063**		**$ 2,199,958**		**$ 2,312,500**		**$ 64,750**		**$ 48,563**		**$ 4,708,373**
Section 14: Hot Mix Asphalt																				
21	PLANING BITUMINOUS PAVEMENT	5711	SY	$ 10.00	833	$ 8,333	-	$ -	1,250	$ 12,500	333	$ 3,333	556	$ 5,556	833	$ 8,333	833	$ 8,333	4,639	$ 46,389
22	HMA CL. 1/2 IN PG 64-22	5767	TON	$ 95.00	469	$ 44,555	893	$ 84,867	726	$ 68,954	39,837	$ 3,784,523	41,875	$ 3,978,125	1,954	$ 185,646	1,173	$ 111,388	86,927	$ 8,258,057
	Section Total					**$ 52,888**		**$ 84,867**		**$ 81,454**		**$ 3,787,856**		**$ 3,983,681**		**$ 193,979**		**$ 119,721**		**$ 8,304,446**
Section 17: Erosion Control and Roadside Planting																				
23	SEEDING, FERTILIZING, AND MULCHING	6414	ACRE	$ 15,000	0.1	$ 964	0.1	$ 1,530	0.1	$ 1,990	1.8	$ 27,300	1.9	$ 28,696	0.5	$ 7,365	0.1	$ 1,205	5	$ 69,050
24	EROSION/WATER POLLUTION CONTROL	6490	EST	$ 750,000	0.1	$ 83,333	0.1	$ 83,333	0.1	$ 83,333	0.2	$ 166,667	0.2	$ 166,667	0.1	$ 83,333	0.1	$ 83,333	1	$ 750,000
25	PLANT SELECTION	6550	EACH	$ 2.00	-	$ -	35,556	$ 71,111	46,222	$ 92,444	317,111	$ 634,222	333,333	$ 666,667	28,519	$ 57,037	2,000	$ 4,000	762,741	$ 1,525,481
	Section Total					**$ 84,298**		**$ 155,975**		**$ 177,767**		**$ 828,188**		**$ 862,029**		**$ 147,736**		**$ 88,539**		**$ 2,344,532**
Section 18: Traffic																				
26	CEMENT CONC. TRAFFIC CURB AND GUTTER	6700	LF	$ 23.00	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	3,000	$ 69,000	-	$ -	3,000	$ 69,000
27	CEMENT CONC. TRAFFIC CURB	6701	LF	$ 22.00	200	$ 4,400	-	$ -	-	$ -	-	$ -	-	$ -	800	$ 17,600	-	$ -	1,000	$ 22,000
28	MOUNTABLE CEMENT CONC. TRAFFIC CURB	6702	LF	$ 24.00	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	240	$ 5,760	-	$ -	240	$ 5,760
29	PLASTIC LINE	6870	LS	$ 250,000	0.1	$ 27,778	0.1	$ 27,778	0.1	$ 27,778	0.2	$ 55,556	0.2	$ 55,556	0.1	$ 27,778	0.1	$ 27,778	1	$ 250,000
30	PERMANENT SIGNING	6890	LS	$ 500,000	0.1	$ 55,556	0.1	$ 55,556	0.1	$ 55,556	0.2	$ 111,111	0.2	$ 111,111	0.1	$ 55,556	0.1	$ 55,556	1	$ 500,000
31	ILLUMINATION SYSTEM, COMPLETE	6904	LS	$ 750,000	0.1	$ 83,333	0.1	$ 83,333	0.1	$ 83,333	0.2	$ 166,667	0.2	$ 166,667	0.1	$ 83,333	0.1	$ 83,333	1	$ 750,000
32	PROJECT TEMOPORARY TRAFFIC CONTROL	6971	LS	$ 12,900,000	0.1	$ 1,433,333	0.1	$ 1,433,333	0.1	$ 1,433,333	0.2	$ 2,866,667	0.2	$ 2,866,667	0.1	$ 1,433,333	0.1	$ 1,433,333	1	$ 12,900,000
	Section Total					**$ 1,604,400**		**$ 1,600,000**		**$ 1,600,000**		**$ 3,200,000**		**$ 3,200,000**		**$ 1,692,360**		**$ 1,600,000**		**$ 14,496,760**
Section 19: Other Items																				
33	STRUCTURE EX CLASS B INCL. HAUL	7006	CY	$ 28.00	140	$ 3,920	267	$ 7,467	217	$ 6,067	-	$ -	-	$ -	467	$ 13,067	350	$ 9,800	1,440	$ 40,320
34	ROADWAY SURVEY	7038	LS	$ 150,000	0.1	$ 16,667	0.1	$ 16,667	0.1	$ 16,667	0.2	$ 33,333	0.2	$ 33,333	0.1	$ 16,667	0.1	$ 16,667	1	$ 150,000
35	CEMENT CONC. SIDEWALK	7055	LF	$ 75.00	467	$ 35,000	240	$ 18,000	233	$ 17,500	467	$ 35,000	240	$ 18,000	200	$ 15,000	-	$ -	1,847	$ 138,500
36	CEMENT CONC. CURB RAMP TYPE ____	7058	EA	$ 1,500	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	12	$ 18,000	-	$ -	12	$ 18,000
37	CEMENT CONC. DRIVEWAY ENTRANCE, TYPE ____	7059	SY	$ 150.00	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	240	$ 36,000	-	$ -	240	$ 36,000
38	ADJUST UTILITY	SP	LS	$ 64,000	0.1	$ 7,111	0.1	$ 7,111	0.1	$ 7,111	0.2	$ 14,222	0.2	$ 14,222	0.1	$ 7,111	0.1	$ 7,111	1	$ 64,000
39	MINOR CHANGE	7728	EST	$ 100,000	0.1	$ 11,111	0.1	$ 11,111	0.1	$ 11,111	0.2	$ 22,222	0.2	$ 22,222	0.1	$ 11,111	0.1	$ 11,111	1	$ 100,000
40	RECORD DRAWINGS	2500	LS	$ 15,000	0.1	$ 1,667	0.1	$ 1,667	0.1	$ 1,667	0.2	$ 3,333	0.2	$ 3,333	0.1	$ 1,667	0.1	$ 1,667	1	$ 15,000
41	UTILITY PERMITS & RELOCATION	SP	EST	$ 500,000	0.1	$ 55,556	0.1	$ 55,556	0.1	$ 55,556	0.2	$ 111,111	0.2	$ 111,111	0.1	$ 55,556	0.1	$ 55,556	1	$ 500,000
	Section Total					**$ 131,031**		**$ 117,578**		**$ 115,678**		**$ 219,222**		**$ 202,222**		**$ 174,178**		**$ 101,911**		**$ 1,061,820**
	SECTION SUBTOTAL					$ 4,681,801		$ 2,201,509		$ 2,258,509		$ 20,325,178		$ 22,226,276		$ 5,574,653		$ 2,344,718		$ 59,612,643
	CONTINGENCY			25%		$ 1,170,450		$ 550,377		$ 564,627		$ 5,081,294		$ 5,556,569		$ 1,393,663.35		$ 586,179.39		$ 14,903,161
	CONSTRUCTION SUBTOTAL					$ 6,320,431		$ 2,972,037		$ 3,048,987		$ 27,438,990		$ 30,005,472		$ 7,525,782		$ 3,165,369		**$ 80,477,069**
	CONSTRUCTION ENGINEERING			10%		**$ 632,043.10**		**$ 297,203.71**		**$ 304,898.75**		**$ 2,743,898.99**		**$ 3,000,547.23**		**$ 752,578.21**		**$ 316,536.87**		**$ 8,047,707**
	CONSTRUCTION TOTAL					**$ 6,952,474**		**$ 3,269,241**		**$ 3,353,886**		**$ 30,182,889**		**$ 33,006,020**		**$ 8,278,360**		**$ 3,481,906**		**$ 88,524,776**
	DESIGN ENGINEERING			10%		**$ 695,247.41**		**$ 326,924.08**		**$ 335,388.62**		**$ 3,018,288.89**		**$ 3,300,601.96**		**$ 827,836.03**		**$ 348,190.56**		**$ 8,852,478**
	RIGHT OF WAY COSTS			EST		**$ -**		**$ -**		**$ -**		**$ -**		**$ -**		**$ 742,346**		**$ -**		**$ 742,346**
	PROJECT TOTAL					**$ 7,647,722**		**$ 3,596,165**		**$ 3,689,275**		**$ 33,201,178**		**$ 36,306,622**		**$ 9,848,542**		**$ 3,830,096**		**$ 98,119,599**

ATTACHMENT D

GOALS TO ACHIEVE

(C/D Alternative - Dog bone Alternative)

ORGANIZATION:	GOAL:	C/D	Roundabout (dog-bone)
WSDOT	Preserve 3 lanes each direction	o	o
	Maintain level of service	+	+
	Safety is highest priority	-	-
	Easily maintained	-	-
	Improve safety at merge & diverge locations	-	-
	Best value for investment (good stewards)	?	?
	Constructable *(C/D easier to build than dog-bone)		
	Stay within budget		
City of Yakima	Yakima Avenue capacity	+	+
	Mobility access to mill site	+	o
	Enable redevelopment	+	o
	Mobility to arterial street system	+	+
	Minimize negative impacts to riparian environment	o	-
	Multi-modal components	o	o
FHWA	Not compromise interstate mobility	+	+
	Safety is Highest priority	-	-
	Improvement of local street system (can problem be solved by local street improvements)	+	+
County of Yakima	Terrace Heights Corridor	+	o
	Alternative route (Not dependent on Terrace Heights bridge, existing East/West connections)	+	o
Other Criteria	Yakima Regional Connectivity	+	o
	Community Support w/public	+	+
	System Relief (connection to Fruitville) *C/D alternative performs better than dog-bone	+	+

INTERCHANGE JUSTIFICATION REPORT

I-82/Yakima Avenue/Terrace Heights Drive Interchange
MP 31.40 to MP 34.77

Appendix C

Operation Analysis Summaries

I-82 Freeway Analysis Summary (HCS)

I-82 Merge / Diverge Analysis Summary (HCS)

Key Intersection Analysis Summary (Synchro & Sidra)

Graphical Summaries of I-82 Operations

I-82 Freeway Analysis Summary (HCS)

I-5 - MAINLINE TRAFFIC ANALYSIS SUMMARY -- WESTBOUND -- BUILD ALTERNATIVES

Ramp	Alternative	AM Peak Hour			PM Peak Hour		
		Freeway Volume	LOS	Density (pc/mi/ln)	Freeway Volume	LOS	Density (pc/mi/ln)
I-82 North of US 12	2010 Base *	1,610	B	11.1	2,310	B	17.2
	2015 Base *	1,880	B	12.7	2,540	B	18.4
	2015 C/D Stage 1 *	1,870	B	17.5	2,630	C	23.2
	2015 C/D Stage 2 *	1,860	B	17.6	2,610	C	25.1
	2035 Base with 4 lanes on I-82 *	2,500	B	17.8	3,560	D	28.3
	2035 Local Improvements with 6 lanes	2,370	B	15.0	3,610	C	22.8
	2035 Roundabout with 4 lanes on I-82 *	2,360	B	18.0	3,640	D	32.3
	2035 Roundabout with 6 lanes on I-82 *	2,380	B	18.5	3,640	D	32.4
	2035 C/D with 4 lanes on I-82 *	2,400	B	18.7	3,660	D	32.6
	2035 C/D with 6 lanes on I-82 *	2,420	B	18.8	3,660	D	32.7
I-82 at US 12	2010 Base	960	A	9.4	1,230	B	12.0
	2015 Base	1,160	A	10.9	1,430	B	13.5
	2015 C/D Stage 1	1,160	A	10.9	1,560	B	14.7
	2015 C/D Stage 2	1,150	A	10.9	1,540	B	14.5
	2035 Base with 4 lanes on I-82	1,760	B	16.6	2,070	C	19.5
	2035 Local Improvements with 6 lanes	1,630	A	10.3	2,160	B	13.6
	2035 Roundabout with 4 lanes on I-82	1,620	B	15.3	2,270	C	21.4
	2035 Roundabout with 6 lanes on I-82	1,640	B	15.5	2,270	C	21.4
	2035 C/D with 4 lanes on I-82	1,690	B	15.9	2,270	C	21.4
	2035 C/D with 6 lanes on I-82	1,700	B	16.0	2,270	C	21.4
I-82 South of US 12	2010 Base	1,730	B	16.9	2,240	C	21.8
	2015 Base	2,000	C	18.9	2,490	C	23.5
	2015 C/D Stage 1	1,960	C	18.5	2,670	C	25.2
	2015 C/D Stage 2	1,910	C	18.0+	2,650	C	25.0
	2035 Base with 4 lanes on I-82	2,800	D	26.4	3,300	D	31.5
	2035 Local Improvements with 6 lanes	2,680	B	16.9	3,510	C	22.1
	2035 Roundabout with 4 lanes on I-82	2,580	C	24.3	3,630	E	36.5
	2035 Roundabout with 6 lanes on I-82	2,600	B	16.4	3,650	C	23.0
	2035 C/D with 4 lanes on I-82 *	2,750	C	21.5	3,820	D	32.4
	2035 C/D with 6 lanes on I-82	2,760	B	17.4	3,820	C	24.0
I-82 at Yakima Ave	2010 Base	1,370	B	13.3	1,640	B	16.0
	2015 Base	1,590	B	15.0	1,820	B	17.2
	2015 C/D Stage 1	1,590	B	15.0	1,880	B	17.7
	2015 C/D Stage 2	1,560	B	14.7	1,870	B	17.6
	2035 Base with 4 lanes on I-82	2,250	C	21.2	2,500	C	23.6
	2035 Local Improvements with 6 lanes	2,210	B	13.9	2,660	B	16.7
	2035 Roundabout with 4 lanes on I-82	2,150	C	20.3	2,540	C	24.0
	2035 Roundabout with 6 lanes on I-82	2,170	B	13.6	2,560	B	16.1
	2035 C/D with 4 lanes on I-82	2,190	C	20.6	2,610	C	24.6
	2035 C/D with 6 lanes on I-82	2,200	B	13.8	2,630	B	16.5
I-82 North of Nob Hill	2010 Base	1,900	C	18.5	2,330	C	22.7
	2015 Base	2,230	C	21.0	2,630	C	24.8
	2015 C/D Stage 1	2,280	C	21.5	2,700	C	25.5
	2015 C/D Stage 2 *	2,280	B	14.3	2,700	B	17.0
	2035 Base with 4 lanes on I-82	3,390	D	32.6	3,770	E	38.3
	2035 Local Improvements with 6 lanes	3,470	C	21.8	4,050	C	25.5
	2035 Roundabout with 4 lanes on I-82	3,530	D	35.0	4,010	E	43.7
	2035 Roundabout with 6 lanes on I-82	3,550	C	22.3	4,060	C	25.5
	2035 C/D with 4 lanes on I-82 *	3,610	C	26.8	4,200	D	31.8
	2035 C/D with 6 lanes on I-82	3,640	C	22.9	4,300	D	27.0
I-82 at Nob Hill Boulevard	2010 Base	1,470	B	14.3	1,750	B	17.0
	2015 Base	1,680	B	15.9	1,960	C	18.5
	2015 C/D Stage 1	1,700	B	16.0	2,070	C	19.5
	2015 C/D Stage 2	1,700	B	16.0	2,070	C	19.5
	2035 Base with 4 lanes on I-82	2,560	C	24.1	2,930	D	27.6
	2035 Local Improvements with 6 lanes	2,570	B	16.1	3,050	C	19.2
	2035 Roundabout with 4 lanes on I-82	2,600	C	24.5	3,040	D	28.8
	2035 Roundabout with 6 lanes on I-82	2,620	C	24.7	3,110	D	29.6
	2035 C/D with 4 lanes on I-82	2,640	C	24.9	3,130	D	29.8
	2035 C/D with 6 lanes on I-82	2,670	C	25.2	3,240	D	31.1

I-5 - MAINLINE TRAFFIC ANALYSIS SUMMARY -- WESTBOUND -- BUILD ALTERNATIVES

Ramp	Alternative	AM Peak Hour			PM Peak Hour		
		Freeway Volume	LOS	Density (pc/mi/ln)	Freeway Volume	LOS	Density (pc/mi/ln)
I-82 South of Nob Hill	2010 Base	1,720	B	16.8	2,150	C	20.9
	2015 Base	1,870	B	17.6	2,380	C	22.5
	2015 C/D Stage 1	1,890	B	17.8	2,440	C	23.0
	2015 C/D Stage 2	1,890	B	17.8	2,420	C	22.8
	2035 Base with 4 lanes on I-82	2,870	D	27.1	3,670	E	36.6
	2035 Local Improvements with 6 lanes	2,880	C	18.1	3,710	C	23.3
	2035 Roundabout with 4 lanes on I-82	2,910	D	27.5	3,710	E	37.8
	2035 Roundabout with 6 lanes on I-82	2,930	D	27.7	3,800	E	39.4
	2035 C/D with 4 lanes on I-82	2,940	D	27.7	3,750	E	38.0
	2035 C/D with 6 lanes on I-82	2,980	D	28.1	3,870	E	40.8
US 12 at 1st Street	2010 Base	760	A	7.4	1,060	A	10.3
	2015 Base	820	A	7.7	1,170	B	11.0+
	2015 C/D Stage 1	790	A	7.4	1,180	B	11.1
	2015 C/D Stage 2	760	A	7.2	1,180	B	11.1
	2035 Base with 4 lanes on I-82	1,080	A	10.2	1,690	B	15.9
	2035 Local Improvements with 6 lanes	1,100	A	10.4	1,810	B	17.1
	2035 Roundabout with 4 lanes on I-82	1,040	A	9.8	1,870	B	17.6
	2035 Roundabout with 6 lanes on I-82	1,040	A	9.8	1,870	B	17.6
	2035 C/D with 4 lanes on I-82	1,090	A	10.3	1,900	B	17.9
	2035 C/D with 6 lanes on I-82	1,090	A	10.3	1,910	C	18.0+
US 12 West of 1st (EB)	2010 Base	1,510	B	14.7	1,840	B	17.9
	2015 Base	1,610	B	15.2	2,030	C	19.1
	2015 C/D Stage 1	1,580	B	14.9	2,010	C	19.0
	2015 C/D Stage 2	1,550	B	14.6	2,010	C	19.0
	2035 Base with 4 lanes on I-82	2,040	C	19.2	2,800	D	26.4
	2035 Local Improvements with 6 lanes	2,040	C	19.2	2,900	D	27.4
	2035 Roundabout with 4 lanes on I-82	1,990	C	18.8	2,950	D	27.9
	2035 Roundabout with 6 lanes on I-82	1,980	C	18.7	2,950	D	27.8
	2035 C/D with 4 lanes on I-82	2,020	C	19.0	2,980	D	28.2
	2035 C/D with 6 lanes on I-82	2,030	C	19.1	2,990	D	28.2

Note * HCS weave analysis all others HCS freeway analysis

I-5 - MAINLINE TRAFFIC ANALYSIS SUMMARY -- EASTBOUND -- BUILD ALTERNATIVES

Ramp	Alternative	AM Peak Hour			PM Peak Hour		
		Freeway Volume	LOS	Density (pc/mi/ln)	Freeway Volume	LOS	Density (pc/mi/ln)
I-82 North of US 12	2010 Base *	2,080	B	14.5	2,140	B	14.9
	2015 Base *	2,350	B	16.1	2,430	B	16.6
	2015 C/D Stage 1 *	2,200	C	21.2	2,030	C	21.0
	2015 C/D Stage 2 *	2,410	B	17.4	2,500	C	23.1
	2035 Base with 4 lanes on I-82 *	3,300	C	23.5	3,510	C	25.0
	2035 Local Improvements with 6 lanes	3,210	C	20.8	3,510	C	21.9
	2035 Roundabout with 4 lanes on I-82 *	3,240	C	24.1	3,470	C	27.1
	2035 Roundabout with 6 lanes on I-82 *	3,270	C	26.0	3,490	C	27.0
	2035 C/D with 4 lanes on I-82 *	3,260	C	26.2	3,490	C	27.5
	2035 C/D with 6 lanes on I-82 *	3,296	C	26.0	3,460	C	26.9
I-82 at US 12	2010 Base	1,080	A	10.5	1,020	A	9.9
	2015 Base	1,320	B	12.4	1,230	B	11.6
	2015 C/D Stage 1	1,170	B	11.0+	870	A	8.2
	2015 C/D Stage 2	1,260	B	11.9	1,330	B	12.5
	2035 Base with 4 lanes on I-82	1,930	C	18.2	1,890	B	17.8
	2035 Local Improvements with 6 lanes	1,900	B	11.9	1,960	B	12.3
	2035 Roundabout with 4 lanes on I-82	1,840	B	17.4	1,910	C	18.0
	2035 Roundabout with 6 lanes on I-82	1,910	C	18.0+	1,940	C	18.3
	2035 C/D with 4 lanes on I-82	1,960	B	17.0	1,980	C	18.7
	2035 C/D with 6 lanes on I-82	2,006	C	18.9	1,950	C	18.4
I-82 South of US 12	2010 Base	1,870	C	18.2	2,110	C	20.5
	2015 Base	2,160	C	20.4	2,380	C	22.5
	2015 C/D Stage 1	2,130	C	20.1	1,960	C	18.5
	2015 C/D Stage 2	2,110	C	19.9	2,380	C	22.5
	2035 Base with 4 lanes on I-82	2,890	D	27.3	3,230	D	30.7
	2035 Local Improvements with 6 lanes	2,980	C	18.7	3,500	C	22.0
	2035 Roundabout with 4 lanes on I-82	2,820	D	26.6	3,340	D	32.3
	2035 Roundabout with 6 lanes on I-82	2,950	C	18.5	3,370	C	21.2
	2035 C/D with 4 lanes on I-82 *	3,000	C	22.9	3,390	C	26.4
	2035 C/D with 6 lanes on I-82	3,156	C	19.8	3,360	C	21.1
I-82 South of Fair Ave Off-ramp	2010 Base	1,700	B	16.5	1,930	C	18.8
	2015 Base	1,910	C	18.0+	2,170	C	20.5
	2015 C/D Stage 1	1,450	B	13.7	1,320	B	12.4
	2015 C/D Stage 2	1,460	B	13.8	1,770	B	16.7
	2035 Base with 4 lanes on I-82	2,540	C	24.0	2,980	D	28.1
	2035 Local Improvements with 6 lanes	2,570	B	16.1	3,150	C	19.8
	2035 Roundabout with 4 lanes on I-82	2,450	C	23.1	2,960	D	28.0
	2035 Roundabout with 6 lanes on I-82	2,610	B	16.4	3,000	C	18.9
	2035 C/D with 4 lanes on I-82	2,050	C	19.3	2,350	C	22.2
	2035 C/D with 6 lanes on I-82	2,152	B	13.5	2,330	B	14.6
I-82 atYakima Ave	2010 Base	1,320	B	12.9	1,490	B	14.5
	2015 Base	1,500	B	14.1	1,670	B	15.8
	2015 C/D Stage 1	1,450	B	13.7	1,320	B	12.4
	2015 C/D Stage 2	1,460	B	13.8	1,770	B	16.7
	2035 Base with 4 lanes on I-82	2,080	C	19.6	2,380	C	22.5
	2035 Local Improvements with 6 lanes	2,060	B	12.9	2,590	B	16.3
	2035 Roundabout with 4 lanes on I-82	1,950	C	18.4	2,420	C	22.8
	2035 Roundabout with 6 lanes on I-82	2,120	B	13.3	2,450	B	15.4
	2035 C/D with 4 lanes on I-82	2,050	C	19.3	2,350	C	22.2
	2035 C/D with 6 lanes on I-82	2,152	B	13.5	2,330	B	14.6
I-82 North of Nob Hill	2010 Base	1,770	B	17.2	2,340	C	22.8
	2015 Base	2,000	C	18.9	2,580	C	24.3
	2015 C/D Stage 1	2,050	C	19.3	2,580	C	24.3
	2015 C/D Stage 2	2,060	C	19.4	2,600	C	24.5
	2035 Base with 4 lanes on I-82	2,800	D	26.4	3,570	E	35.0+
	2035 Local Improvements with 6 lanes	2,880	C	18.1	3,780	C	23.8
	2035 Roundabout with 4 lanes on I-82	2,510	C	23.7	3,760	E	38.7
	2035 Roundabout with 6 lanes on I-82	2,900	C	18.2	3,820	C	24.0
	2035 C/D with 4 lanes on I-82 *	2,920	C	21.1	3,930	D	29.6
	2035 C/D with 6 lanes on I-82	2,950	C	18.5	4,000	C	25.1

I-5 - MAINLINE TRAFFIC ANALYSIS SUMMARY -- EASTBOUND -- BUILD ALTERNATIVES

Ramp	Alternative	AM Peak Hour			PM Peak Hour		
		Freeway Volume	LOS	Density (pc/mi/ln)	Freeway Volume	LOS	Density (pc/mi/ln)
I-82 at Nob Hill Boulevard	2010 Base	1,360	B	13.3	1,720	B	16.8
	2015 Base	1,560	B	14.7	1,890	B	17.8
	2015 C/D Stage 1	1,580	B	14.9	1,920	C	18.1
	2015 C/D Stage 2	1,570	B	14.8	1,930	C	18.2
	2035 Base with 4 lanes on I-82	2,340	C	22.1	2,810	D	26.5
	2035 Local Improvements with 6 lanes	2,350	B	14.8	3,010	C	18.9
	2035 Roundabout with 4 lanes on I-82	1,910	C	18.0	2,970	D	28.1
	2035 Roundabout with 6 lanes on I-82	2,370	C	22.4	3,030	D	28.7
	2035 C/D with 4 lanes on I-82	2,370	C	22.4	3,060	D	29.0
	2035 C/D with 6 lanes on I-82	2,400	C	22.6	3,130	D	29.8
I-82 South of Nob Hill	2010 Base	1,720	B	16.8	1,980	C	19.3
	2015 Base	2,000	C	18.9	2,150	C	20.3
	2015 C/D Stage 1	2,020	C	19.0	2,090	C	19.7
	2015 C/D Stage 2	2,020	C	19.0	2,110	C	19.9
	2035 Base with 4 lanes on I-82	3,010	D	28.4	3,290	D	31.4
	2035 Local Improvements with 6 lanes	3,000	C	18.9	3,420	C	21.5
	2035 Roundabout with 4 lanes on I-82	2,420	C	21.3	3,400	D	33.1
	2035 Roundabout with 6 lanes on I-82	3,030	D	28.7	3,510	D	34.7
	2035 C/D with 4 lanes on I-82	3,010	D	28.5	3,450	D	33.8
	2035 C/D with 6 lanes on I-82	3,050	D	28.9	3,570	E	35.6
US 12 at 1st Street	2010 Base	1,300	B	12.7	1,700	B	16.5
	2015 Base	1,430	B	13.5	1,790	B	16.9
	2015 C/D Stage 1	1,470	B	13.9	1,770	B	16.7
	2015 C/D Stage 2	1,450	B	13.7	1,740	B	16.4
	2035 Base with 4 lanes on I-82	1,740	B	16.4	2,160	C	20.4
	2035 Local Improvements with 6 lanes	1,850	B	17.5	2,220	C	20.9
	2035 Roundabout with 4 lanes on I-82	1,750	B	16.5	2,190	C	20.6
	2035 Roundabout with 6 lanes on I-82	1,810	B	17.1	2,200	C	20.8
	2035 C/D with 4 lanes on I-82	1,820	B	17.2	2,140	C	20.2
	2035 C/D with 6 lanes on I-82	1,840	B	17.4	2,150	C	20.3
US 12 West of 1st (WB)	2010 Base	1,500	B	14.6	1,860	C	18.1
	2015 Base	1,680	B	15.9	2,000	C	18.9
	2015 C/D Stage 1	1,690	B	15.9	1,920	C	18.1
	2015 C/D Stage 2	1,680	B	15.9	1,890	B	17.8
	2035 Base with 4 lanes on I-82	2,200	C	20.8	2,570	C	24.2
	2035 Local Improvements with 6 lanes	2,320	C	21.9	2,640	C	24.9
	2035 Roundabout with 4 lanes on I-82	2,350	C	22.2	2,750	D	25.9
	2035 Roundabout with 6 lanes on I-82	2,410	C	22.7	2,760	D	26.0+
	2035 C/D with 4 lanes on I-82	2,390	C	22.5	2,720	C	25.6
	2035 C/D with 6 lanes on I-82	2410	C	22.7	2,730	C	25.8

Note * HCS weave analysis all others HCS freeway analysis

I-82 Merge / Diverge Analysis Summary (HCS)

I-5 - RAMP MERGE / DIVERGE ANALYSIS SUMMARY -- WESTBOUND

Ramp	Alternative	AM Peak Hour				PM Peak Hour			
		Ramp Volume	LOS	Density (pc/mi/ln)	Freeway Volumes	Ramp Volume	LOS	Density (pc/mi/ln)	Freeway Volumes
I-82 / US 12 On-Ramp	2010 Base	-	-	-	-	-	-	-	-
	2015 Base	-	-	-	-	-	-	-	-
	2015 CD Stage 1	-	-	-	-	-	-	-	-
	2015 CD Stage 2	-	-	-	-	-	-	-	-
	2035 Base	-	-	-	-	-	-	-	-
	2035 Local Improvements	740	B	12.3	1,630	1,450	C	21.4	2,160
	2035 Roundabout 4-lanes	-	-	-	-	-	-	-	-
	2035 Roundabout 6-lanes	-	-	-	-	-	-	-	-
	2035 CD with 4-Lanes On I-82	-	-	-	-	-	-	-	-
	2035 CD with 6-Lanes On I-82	-	-	-	-	-	-	-	-
I-82 / US 12 Off-Ramp	2010 Base	770	B	19.4	1,730	1,010	C	24.5	2,240
	2015 Base	840	C	21.5	2,000	1,060	C	26.2	2,490
	2015 CD Stage 1	800	C	21.1	1,960	1,110	C	28.0-	2,670
	2015 CD Stage 2	760	C	21.3	1,910	1,110	D	28.5	2,650
	2035 Base	1,040	D	29.2	2,800	1,230	D	34.1	3,300
	2035 Local Improvements	1,050	C	22.2	2,680	1,350	C	27.6	3,510
	2035 Roundabout 4-lanes	960	C	27.8	2,580	1,360	E	38.0	3,630
	2035 Roundabout 6-lanes	-	-	-	-	-	-	-	-
	2035 CD with 4-Lanes On I-82	DROP LANE				DROP LANE			
	2035 CD with 6-Lanes On I-82	DROP LANE				DROP LANE			
I-82 / C-D On-Ramp	2010 Base	-	-	-	-	-	-	-	-
	2015 Base	-	-	-	-	-	-	-	-
	2015 CD Stage 1	370	B	16.3	1,590	790	C	22.4	1,880
	2015 CD Stage 2	350	B	15.9	1,560	780	C	22.2	1,870
	2035 Base	-	-	-	-	-	-	-	-
	2035 Local Improvements	-	-	-	-	-	-	-	-
	2035 Roundabout 4-lanes	-	-	-	-	-	-	-	-
	2035 Roundabout 6-lanes	-	-	-	-	-	-	-	-
	2035 CD with 4-Lanes On I-82	ADD LANE				ADD LANE			
	2035 CD with 6-Lanes On I-82	560	B	15.6	2,200	1,190	C	23.1	2,630
Yakima Ave Off-Ramp	2010 Base	530	C	22.0	1,900	690	C	26.3	2,330
	2015 Base	640	C	24.6	2,230	810	D	28.5	2,630
	2015 CD Stage 1	690	B	10.5	2,280	820	B	14.3	2,700
	2015 CD Stage 2	-	-	-	-	-	-	-	-
	2035 Base	1,140	E	35.9	3,390	1,270	E	39.6	3,770
	2035 Local Improvements	1,260	D	28.0	3,470	1,390	D	31.3	4,050
	2035 Roundabout 4-lanes	1,380	E	37.3	3,530	1,470	E	41.9	4,010
	2035 Roundabout 6-lanes	1,380	D	28.7	3,550	1,090	D	31.6	4,060
	2035 CD with 4-Lanes On I-82	DROP LANE				DROP LANE			
	2035 CD with 6-Lanes On I-82	1,440	B	11.7	3,640	1,670	B	15.8	4,300
Yakima Ave On-Ramp	2010 Base	360	B	16.3	1,370	600	C	20.8	1,640
	2015 Base	410	B	18.1	1,590	670	C	22.3	1,820
	2015 CD Stage 1	580	B	15.9	1,700	630	B	19.6	2,070
	2015 CD Stage 2	-	-	-	-	-	-	-	-
	2035 Base	550	C	25.1	2,250	800	D	29.4	2,500
	2035 Local Improvements	470	B	16.3	2,210	850	C	21.8	2,660
	2035 Roundabout 4-lanes	430	C	21.6	2,150	1,090	D	30.5	2,540
	2035 Roundabout 6-lanes	430	B	15.8	2,170	1,090	C	23.3	2,560
	2035 CD with 4-Lanes On I-82	Connected to C/D				Connected to C/D			
	2035 CD with 6-Lanes On I-82	Connected to C/D				Connected to C/D			
I-82 / Nob Hill Off-Ramp	2010 Base	250	B	20.0-	1,720	400	C	24.3	2,150
	2015 Base	190	C	20.9	1,870	420	C	25.8	2,380
	2015 CD Stage 1	190	C	21.1	1,890	370	C	26.4	2,440
	2015 CD Stage 2	190	C	21.1	1,890	350	C	26.2	2,420
	2035 Base	310	D	30.6	2,870	740	E	38.4	3,670
	2035 Local Improvements	310	C	22.3	1,880	660	C	27.5	3,710
	2035 Roundabout 4-lanes	310	D	31.0	2,910	670	E	38.8	3,710
	2035 Roundabout 6-lanes	310	D	31.2	2,930	690	E	39.7	3,800
	2035 CD with 4-Lanes On I-82	300	D	31.3	2,940	620	E	39.2	3,750
	2035 CD with 6-Lanes On I-82	310	D	31.7	2,980	630	E	40.3	3,870

I-5 - RAMP MERGE / DIVERGE ANALYSIS SUMMARY -- WESTBOUND

Ramp	Alternative	AM Peak Hour				PM Peak Hour			
		Ramp Volume	LOS	Density (pc/mi/ln)	Freeway Volumes	Ramp Volume	LOS	Density (pc/mi/ln)	Freeway Volumes
I-82 / Nob Hill On-Ramp	2010 Base	430	B	13.2	1,470	580	B	17.0	1,750
	2015 Base	550	B	15.5	1,680	670	B	18.9	1,960
	2015 CD Stage 1	580	B	15.9	1,700	630	B	19.6	2,070
	2015 CD Stage 2	-	-	-	-	-	-	-	-
	2035 Base	830	C	25.6	2,560	840	D	28.9	2,930
	2035 Local Improvements	900	B	17.6	2,570	1,000	C	21.1	3,050
	2035 Roundabout 4-lanes	930	C	26.7	2,600	970	D	31.0	3,040
	2035 Roundabout 6-lanes	ADD LANE				ADD LANE			
	2035 CD with 4-Lanes On I-82	ADD LANE				ADD LANE			
	2035 CD with 6-Lanes On I-82	ADD LANE				ADD LANE			
US 12 / 1st On-Ramp (WB)	2010 Base	750	B	14.4	760	780	B	17.4	1,060
	2015 Base	790	B	14.9	820	860	B	18.6	1,170
	2015 CD Stage 1	790	B	14.6	790	830	B	18.4	1,180
	2015 CD Stage 2	790	B	14.4	760	180	B	18.4	1,180
	2035 Base	960	B	18.6	1,080	1,110	C	25.2	1,690
	2035 Local Improvements	970	B	18.9	1,100	1,140	C	25.8	1,730
	2035 Roundabout 4-lanes	950	B	18.2	1,040	1,080	C	26.6	1,870
	2035 Roundabout 6-lanes	940	B	18.1	1,040	1,080	C	26.6	1,870
	2035 CD with 4-Lanes On I-82	930	B	18.4	1,090	1,080	C	26.8	1,900
	2035 CD with 6-Lanes On I-82	940	B	18.5	1,090	1,080	C	26.9	1,910

I-5 - RAMP MERGE / DIVERGE ANALYSIS SUMMARY -- EASTBOUND

Ramp	Alternative	AM Peak Hour				PM Peak Hour			
		Ramp Volume	**LOS**	**Density** (pc/mi/ln)	Freeway Volumes	**Ramp Volume**	**LOS**	**Density** (pc/mi/ln)	Freeway Volumes
I-82 / US 12 On-Ramp	2010 Base	-	-	-	-	-	-	-	-
	2015 Base	-	-	-	-	-	-	-	-
	2015 CD Stage 1	-	-	-	-	-	-	-	-
	2015 CD Stage 2	-	-	-	-	-	-	-	-
	2035 Base	-	-	-	-	-	-	-	-
	2035 Local Improvements	1,310	A	9.9	3,210	1,550	B	11.7	3,510
	2035 Roundabout 4-lanes	-	-	-	-	-	-	-	-
	2035 Roundabout 6-lanes	-	-	-	-	-	-	-	-
	2035 CD with 4-Lanes On I-82	-	-	-	-	-	-	-	-
	2035 CD with 6-Lanes On I-82	-	-	-	-	-	-	-	-
I-82 / US 12 On-Ramp	2010 Base	790	B	15.8	1,080	1,090	B	17.9	1,020
	2015 Base	840	B	17.8	1,320	1,150	B	19.6	1,230
	2015 CD Stage 1	960	B	17.5	1,170	870	B	15.9	1,090
	2015 CD Stage 2	850	B	14.4	1,260	1,050	B	16.5	1,330
	2035 Base	960	C	24.2	1,930	1,340	C	27.0	1,890
	2035 Local Improvements	1,080	B	18.3	1,900	1,540	C	22.5	1,960
	2035 Roundabout 4-lanes	980	C	23.6	1,840	1,430	C	27.9	1,910
	2035 Roundabout 6-lanes	-	-	-	-	-	-	-	-
	2035 CD with 4-Lanes On I-82	ADD LANE				ADD LANE			
	2035 CD with 6-Lanes On I-82	ADD LANE				ADD LANE			
I-82/ C-D Off-Ramp	2010 Base	-	-	-	-	-	-	-	-
	2015 Base	-	-	-	-	-	-	-	-
	2015 CD Stage 1	680	B	18.7	2,130	640	B	17.0	1,960
	2015 CD Stage 2	650	B	18.5	2,110	610	C	21.1	2,380
	2035 Base	-	-	-	-	-	-	-	-
	2035 Local Improvements	-	-	-	-	-	-	-	-
	2035 Roundabout 4-lanes	-	-	-	-	-	-	-	-
	2035 Roundabout 6-lanes	-	-	-	-	-	-	-	-
	2035 CD with 4-Lanes On I-82	DROP LANE				DROP LANE			
	2035 CD with 6-Lanes On I-82	1,004	C	20.7	3,156	1,030	C	21.8	3,360
Fair Ave Off-Ramp	2010 Base	170	C	20.6	1,870	180	C	23.0	2,110
	2015 Base	250	C	22.8	2,160	210	C	24.9	2,380
	2015 CD Stage 1	-	-	-	-	-	-	-	-
	2015 CD Stage 2	-	-	-	-	-	-	-	-
	2035 Base	350	D	29.9	2,890	250	D	33.2	3,230
	2035 Local Improvements	410	C	22.1	2,980	350	C	24.9	3,500
	2035 Roundabout 4 lanes	370	D	29.2	2,820	380	D	34.3	3,348
	2035 Roundabout 6-lanes	340	C	21.8	2,950	370	C	24.2	3,370
	2035 CD with 4-Lanes On I-82	Connected to C/D				Connected to C/D			
	2035 CD with 6-Lanes On I-82	Connected to C/D				Connected to C/D			
Yakima Ave Off-Ramp	2010 Base	380	B	19.0	1,700	440	C	21.3	1,930
	2015 Base	410	C	20.5	1,910	500	C	23.0	2,170
	2015 CD Stage 1	-	-	-	-	-	-	-	-
	2015 CD Stage 2	-	-	-	-	-	-	-	-
	2035 Base	460	C	26.6	2,540	600	D	30.9	2,980
	2035 Local Improvements	510	C	20.1	2,570	560	C	23.5	3,150
	2035 Roundabout 4-lanes	500	C	25.8	2,450	540	D	30.7	2,960
	2035 Roundabout 6-lanes	490	C	20.3	2,610	550	C	22.7	3,000
	2035 CD with 4-Lanes On I-82	Connected to C/D				Connected to C/D			
	2035 CD with 6-Lanes On I-82	Connected to C/D				Connected to C/D			

I-5 - RAMP MERGE / DIVERGE ANALYSIS SUMMARY -- EASTBOUND

Ramp	Alternative	AM Peak Hour				PM Peak Hour			
		Ramp Volume	**LOS**	**Density** (pc/mi/ln)	Freeway Volumes	**Ramp Volume**	**LOS**	**Density** (pc/mi/ln)	Freeway Volumes
Yakima Ave On-Ramp	2010 Base	450	B	14.9	1,320	850	B	19.9	1,490
	2015 Base	500	B	16.4	1,500	910	C	21.3	1,670
	2015 CD Stage 1	600	B	12.0	1,450	1,260	B	16.3	1,320
	2015 CD Stage 2	600	A	4.5	1,460	830	A	9.2	1,770
	2035 Base	720	C	23.4	2,080	1,190	D	29.9	2,380
	2035 Local Improvements	820	B	16.8	2,060	1,190	C	22.8	2,590
	2035 Roundabout 4 lanes	560	C	20.9	1,950	1,340	D	31.5	2,420
	2035 Roundabout 6-lanes	780	B	16.8	2,120	1,370	C	23.5	2,450
	2035 CD with 4-Lanes On I-82	ADD LANE				ADD LANE			
	2035 CD with 6-Lanes On I-82	798	B	11.7	2,152	1,670	B	19.8	2,330
I-82 / Nob Hill Off-Ramp	2010 Base	410	C	20.3	1,770	620	C	26.1	2,340
	2015 Base	440	C	22.0	2,000	690	C	27.6	2,580
	2015 CD Stage 1	470	C	22.5	2,050	660	C	27.6	2,580
	2015 CD Stage 2	490	C	22.6	2,060	670	C	27.8	2,600
	2035 Base	460	D	29.8	2,800	760	E	37.3	3,570
	2035 Local Improvements	530	C	22.6	2,880	770	C	28.0	3,780
	2035 Roundabout 4-lanes	600	C	27.0	2,510	790	E	39.1	3,760
	2035 Roundabout 6-lanes	DROP LANE				DROP LANE			
	2035 CD with 4-Lanes On I-82	DROP LANE				DROP LANE			
	2035 CD with 6-Lanes On I-82	DROP LANE				DROP LANE			
I-82 / Nob Hill On-Ramp	2010 Base	360	B	11.6	1,360	260	B	14.0	1,720
	2015 Base	440	B	13.5	1,560	260	B	14.9	1,890
	2015 CD Stage 1	440	B	13.7	1,580	170	B	14.4	1,920
	2015 CD Stage 2	450	B	13.7	1,570	180	B	14.6	1,930
	2035 Base	670	C	22.3	2,340	480	C	24.9	2,810
	2035 Local Improvements	650	B	14.3	2,350	410	B	15.9	3,010
	2035 Roundabout 4-lanes	510	B	17.3	1,910	430	C	25.9	2,970
	2035 Roundabout 6-lanes	660	C	22.5	2,370	480	C	26.8	3,030
	2035 CD with 4-Lanes On I-82	640	C	22.3	2,370	390	C	26.3	3,060
	2035 CD with 6-Lanes On I-82	650	C	22.7	2,400	440	C	27.4	3,130
US 12 / 1st Off-Ramp (EB)	2010 Base	200	B	16.9	1,500	160	C	20.5	1,860
	2015 Base	250	B	18.2	1,680	210	C	21.3	2,000
	2015 CD Stage 1	220	B	18.3	1,690	150	C	20.5	1,920
	2015 CD Stage 2	230	B	18.2	1,680	150	C	20.2	1,890
	2035 Base	460	C	23.2	2,200	410	C	26.8	2,570
	2035 Local Improvements	660	C	25.6	2,440	560	D	29.1	2,800
	2035 Roundabout 4-lanes	600	C	24.7	2,350	560	D	28.6	2,750
	2035 Roundabout 6-lanes	600	C	25.3	2,410	560	D	28.7	2,760
	2035 CD with 4-Lanes On I-82	570	C	25.1	2,390	580	D	28.3	2,720
	2035 CD with 6-Lanes On I-82	570	C	25.3	2,410	580	D	28.4	2,730

Key Intersection Analysis Summary (Synchro & Sidra)

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Intersection Analysis Summary 2010 Base Condition

Intersection	Control		Movement	AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
I-82 WB Ramps/ Nob Hill Blvd.	Signal		Overall	1,853	A	5.6		2,811	A	6.0	
		Nob Hill Blvd	EB-L	56	C	20.2	26	171	B	16.9	m 47
		Nob Hill Blvd	EB-T	460	A	0.4	0	1,054	A	0.7	3
		Nob Hill Blvd	WB-T	713	A	6.0	113	777	B	8.4	144
		Nob Hill Blvd	WB-R	374	A	5.8	34	409	A	7.8	39
		I-82 Ramp	NB-L	109	C	23.3	45	134	C	25.8	57
		I-82 Ramp	NB-R	141	A	0.1	0	266	A	0.3	0
I-82 EB Ramps/ Nob Hill Blvd.	Signal		Overall	1,632	B	11.1		2,506	B	12.0	
		Nob Hill Blvd	EB-T	362	B	10.5	81	895	B	13.3	211
		Nob Hill Blvd	EB-R	38	A	0.0	0	80	A	0.1	0
		Nob Hill Blvd	WB-L	322	B	16.6	90	180	B	19.3	64
		Nob Hill Blvd	WB-T	500	A	1.2	17	731	A	1.1	31
		I-82 Ramp	SB-L	154	C	20.9	52	330	C	22.0	103
		I-82 Ramp	SB-R	256	C	20.1	47	290	C	22.4	103
I-82 WB Ramps/ Yakima Avenue	Signal		Overall	2,140	A	1.5		3,184	A	4.5	
		Yakima Ave	EB-L	86	A	6.4	6	154	A	8.2	m 39
		Yakima Ave	EB-T	683	A	0.2	0	1,299	A	0.6	3
		Yakima Ave	WB-T	977	A	2.0	76	995	A	8.1	309
		Yakima Ave	WB-R	274	A	2.0	76	446	A	8.1	20
		I-82 Ramp	NB-L	0				10	D	46.2	20
		I-82 Ramp	NB-R	120	A	0.1	0	280	A	0.3	0
I-82 EB Ramps/ Yakima Avenue	Signal		Overall	1,979	B	12.3		2,761	B	16.3	
		Yakima Ave	EB-T	486	B	12.0	120	1,115	B	16.3	331
		Yakima Ave	EB-R	136	B	10.2	33	201	A	9.8	33
		Yakima Ave	WB-L	244	C	22.4	64	259	C	31.8	110
		Yakima Ave	WB-T	733	A	4.3	95	746	A	1.5	8
		I-82 Ramp	SB-L	283	C	23.1	92	349	D	37.4	156
		I-82 Ramp	SB-R	97	B	19.8	29	91	C	27.3	37
I-82 EB On-Ramp/ Fair Avenue	Stop Control	Fair Ave	NB-T	139	A	0.0		251	A	0.0	
		Fair Ave	NB-R	13	A	0.0		41	A	0.0	
		Fair Ave	SB-L	57	A	7.8	4	349	A	9.4	35
		Fair Ave	SB-T	214	A	0.0		298	A	0.0	
Fair Avenue/ Fair Connector	Stop Control	Fair Conn	EB-L	47	B	11.8	7	74	C	17.4	20
		Fair Conn	EB-R	86	A	10.0	10	139	B	11.1	19
		Fair Ave	NB-L	35	A	7.9	2	81	A	8.3	6
		Fair Ave	NB-T	105	A	0.0		218	A	0.0	
		Fair Ave	SB-T	154	A	0.0		202	A	0.0	
		Fair Ave	SB-R	60	A	0.0		96	A	0.0	
Yakima Avenue/Fair Connector	Stop Control	Yakima Ave	EB-T	542	A	0.0		1,156	A	0.0	
		Yakima Ave	EB-R	15	A	0.0		61	A	0.0	
		Yakima Ave	WB-L	118	A	9.6	12	152	C	16.8	39
		Yakima Ave	WB-T	712	A	0.0		685	A	0.0	
		Fair Conn	NB-L	15	D	31.9	9	17	F	223.6	49
		Fair Conn	NB-R	80	B	11.2	11	160	C	22.1	58
I-82 EB Off-Ramp/Fair Avenue	Signal		Overall	425	A	7.6		763	A	5.3	
		Fair Ave	EB-T	150	B	10.5	35	364	A	4.5	
		Fair Ave	WB-T	105	A	9.7	26	219	A	4.9	56
		I-82 Ramp	SB-L	139	A	3.7	33	146	A	7.8	43
		I-82 Ramp	SB-R	31	A	3.3	7	34	A	6.2	9

 # 95th percentile volume exceeds capacity, queue may be longer
m - volume for 95th percentile queue is metered by upstream signal

Intersection Analysis Summary 2015 Base Condition

Intersection	Control		Movement	AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
I-82 WB Ramps/ Nob Hill Blvd.	Signal		Overall	2,414	A	4.0		3,584	A	5.7	
		Nob Hill Blvd	EB-L	54	C	27.3	28	177	C	23.0	m 60
		Nob Hill Blvd	EB-T	660	A	0.2	0	1,420	A	0.6	1
		Nob Hill Blvd	WB-T	1,014	A	4.5	150	1,074	A	8.2	198
		Nob Hill Blvd	WB-R	496	A	4.4	32	493	A	7.2	36
		I-82 Ramp	NB-L	39	C	29.1	24	94	C	30.8	50
		I-82 Ramp	NB-R	151	A	0.1	0	326	A	0.3	0
I-82 EB Ramps/ Nob Hill Blvd.	Signal		Overall	1,948	B	12.2		2,978	B	14.5	
		Nob Hill Blvd	EB-T	418	B	12.5	104	1,060	B	16.1	267
		Nob Hill Blvd	EB-R	37	A	0.0	0	60	A	0.0	0
		Nob Hill Blvd	WB-L	403	B	19.0	108	200	C	24.1	77
		Nob Hill Blvd	WB-T	650	A	1.6	8	968	A	1.5	25
		I-82 Ramp	SB-L	296	C	23.0	93	537	C	30.8	191
		I-82 Ramp	SB-R	144	C	20.3	36	153	C	21.7	55
I-82 WB Ramps/ Yakima Avenue	Signal		Overall	2,598	A	2.8		3,898	A	5.3	
		Yakima Ave	EB-L	85	C	34.9	9	163	B	15.2	m 56
		Yakima Ave	EB-T	788	A	0.2	0	1,703	A	0.6	0
		Yakima Ave	WB-T	1,260	A	2.7	137	1,185	A	9.6	444
		Yakima Ave	WB-R	325	A	2.7	137	507	A	9.6	444
		I-82 Ramp	NB-L	0				10	E	62.1	25
		I-82 Ramp	NB-R	140	A	0.1	0	330	A	0.4	0
I-82 EB Ramps/ Yakima Avenue	Signal		Overall	2,305	B	12.7		3,268	C	22.8	
		Yakima Ave	EB-T	523	B	13.7	132	1,400	C	21.1	493
		Yakima Ave	EB-R	112	B	11.2	30	173	B	10.5	37
		Yakima Ave	WB-L	298	C	22.0	74	277	D	46.4	m # 146
		Yakima Ave	WB-T	962	A	4.8	134	918	A	2.7	9
		I-82 Ramp	SB-L	374	C	24.0	113	466	E	57.2	# 281
		I-82 Ramp	SB-R	36	B	18.5	4	34	C	32.8	16
I-82 EB On-Ramp/ Fair Avenue	Stop Control	Fair Ave	NB-T	185	A	0.0		334	A	0.0	
		Fair Ave	NB-R	15	A	0.0		66	A	0.0	
		Fair Ave	SB-L	75	A	7.9	5	394	B	10.3	45
		Fair Ave	SB-T	281	A	0.0		480	A	0.0	
Fair Avenue/ Fair Connector	Stop Control	Fair Conn	EB-L	52	B	13.2	9	77	C	23.1	29
		Fair Conn	EB-R	117	B	10.6	14	149	B	12.6	25
		Fair Ave	NB-L	42	A	8.1	3	70	A	8.8	6
		Fair Ave	NB-T	148	A	0.0		323	A	0.0	
		Fair Ave	SB-T	199	A	0.0		283	A	0.0	
		Fair Ave	SB-R	82	A	0.0		197	A	0.0	
Yakima Avenue/ Fair Connector	Stop Control	Yalika Ave	EB-T	525	A	0.0		1,321	A	0.0	
		Yakima Ave	EB-R	25	A	0.0		64	A	0.0	
		Yakima Ave	WB-L	144	A	9.7	15	162	C	19.7	50
		Yakima Ave	WB-T	854	A	0.0		790	A	0.0	
		Fair Conn	NB-L	14	D	31.9	8	15	F	366.7	53
		Fair Conn	NB-R	110	B	11.4	15	252	E	43.4	155
I-82 EB Off-Ramp/Fair Avenue	Signal		Overall	653	A	5.4		1,105	A	5.8	
		Fair Ave	EB-T	258	A	4.6	0	616	A	5.3	52
		Fair Ave	WB-T	145	A	4.8	35	279	A	4.7	77
		I-82 Ramp	SB-L	164	A	7.0	38	158	A	9.1	69
		I-82 Ramp	SB-R	86	A	5.7	12	52	A	7.2	17

 # 95th percentile volume exceeds capacity, queue may be longer
m - volume for 95th percentile queue is metered by upstream signal

Intersection Analysis Summary 2015 Build C/D Alternative - Stage 1

Intersection	Control	Movement		AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
I-82 WB Ramps/ Nob Hill Blvd.	Signal	Overall		2,415	A	4.3		3,725	A	6.7	
		EB-L	Nob Hill Blvd	65	C	30.4	32	163	C	28.5	m49
		EB-T	Nob Hill Blvd	665	A	0.5	0	1,445	A	2.9	115
		WB-T	Nob Hill Blvd	1,006	A	4.7	151	1,084	A	8.3	228
		WB-R	Nob Hill Blvd	496	A	4.6	32	586	A	7.7	47
		NB-L	I-82 Ramp	36	C	29.1	24	85	C	27.5	41
		NB-R	I-82 Ramp	147	A	0.1	0	362	A	0.4	0
I-82 EB Ramps/ Nob Hill Blvd.	Signal	Overall		1,983	B	12.6		2,955	B	15.7	
		EB-T	Nob Hill Blvd	365	B	13.2	95	1,070	B	19.8	#330
		EB-R	Nob Hill Blvd	32	A	0.0	0	67	A	0.1	0
		WB-L	Nob Hill Blvd	365	B	18.4	98	313	C	22.1	#118
		WB-T	Nob Hill Blvd	677	A	2.4	15	856	A	2.8	38
		SB-L	I-82 Ramp	364	C	22.8	110	538	C	26.1	#177
		SB-R	I-82 Ramp	180	B	19.2	39	111	B	17.4	24
I-82 WB Ramps/ Yakima Avenue	Signal	Overall		2,695	B	13.2		3,816	A	8.9	
		EB-L	Yakima Ave	59	C	24.8	49	33	C	30.2	m22
		EB-T	Yakima Ave	763	A	0.7	1	1,617	A	2.1	38
		WB-T	Yakima Ave	1,148	B	19.0	#504	994	B	14.8	#548
		WB-R	Yakima Ave	420	B	19.0	#504	642	B	14.8	#548
		NB-T	I-82 Ramp	141	C	26.4	89	148	D	34.5	123
		NB-R	I-82 Ramp	164	A	0.2	0	382	A	0.5	0
I-82 EB Ramps/ Yakima Avenue	Signal	Overall		2,116	A	9.4		2,777	B	15.8	
		EB-T	Yakima Ave	538	B	12.5	130	1,307	B	17.2	397
		EB-R	Yakima Ave	122	B	10.2	31	119	A	8.6	25
		WB-L	Yakima Ave	291	B	12.1	m38	228	C	26.0	m67
		WB-T	Yakima Ave	857	A	1.4	m5	766	A	1.8	m33
		SB-L	I-82 Ramp	284	C	23.5	91	343	D	37.0	149
		SB-R	I-82 Ramp	24	B	19.9	91	14	C	27.2	0
I-82 EB Off-Ramp/ Fair Avenue	Signal	Overall		447	A	5.6		903	A	8.3	
		EB-T	Fair Ave	218	A	5.8	17	493	A	9.5	157
		WB-T	Fair Ave	69	A	4.7	5	192	A	5.1	53
		SB-L	I-82 Ramp	137	A	5.9	11	171	A	8.6	70
		SB-R	I-82 Ramp	23	A	4.9	0	47	A	7.2	16
Fair Avenue / Martin Luther King Jr. Blvd / Lincoln Avenue / Cascade Mill Blvd	Round-about	Overall		1,558	A	6.0	54	2,448	A	8.5	94
		WB-T	Fair Ave	46	A	5.9	13	179	A	9.2	42
		WB-R	Fair Ave	162	A	5.5	13	356	A	8.4	43
		EB-L	MLK	779	A	7.1	54	797	A	8.9	75
		EB-T	MLK	136	A	7.0	54	161	A	8.7	75
		SB-L	Mills Blvd	218	A	4.1	20	333	A	7.1	48
		SB-R	Mills Blvd	217	A	3.9	20	622	A	8.6	94
C/D WB Ramps/ E-W Corridor	All Way Stop	Overall		308	A	9.5		613	B	11.5	
		EB-L	E-W Corridor	46	A	7.9	0	299	B	10.2	0
		EB-T	E-W Corridor	0				0			
		WB-T	E-W Corridor	0				0			
		WB-R	E-W Corridor	0				0			
		NB-L	C/D Ramp	262	A	9.7	0	314	B	12.8	0
		NB-R	C/D Ramp	0				0			
C/D EB Ramps/ E-W Corridor	Two Way Stop	Overall		482	B	10.4		786	B	10.7	
		EB-T	E-W Corridor	46				290			
		EB-R	E-W Corridor	0				0			
		WB-L	E-W Corridor	0				0			
		WB-T	E-W Corridor	262				314			
		SB-L	C/D Ramp	0				0			
		SB-R	C/D Ramp	174	B	10.4	20	182	B	10.7	23

 # 95th percentile volume exceeds capacity, queue may be longer
m - volume for 95th percentile queue is metered by upstream signal

Intersection Analysis Summary 2015 Build C/D Alternative - Stage 2

Intersection	Control	Movement		AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
I-82 WB Ramps/ Nob Hill Blvd.	Signal	Overall		2,441	A	4.3		3,643	A	6.3	
		EB-L	Nob Hill Blvd	68	C	29.2	34	137	C	28.3	m46
		EB-T	Nob Hill Blvd	663	A	0.4	0	1,472	A	3.1	129
		WB-T	Nob Hill Blvd	1,008	A	4.7	152	1,096	A	7.8	217
		WB-R	Nob Hill Blvd	512	A	4.6	33	588	A	7.2	44
		NB-L	I-82 Ramp	37	C	29.1	24	59	C	27.3	32
		NB-R	I-82 Ramp	153	A	0.1	0	291	A	0.3	0
I-82 EB Ramps/ Nob Hill Blvd.	Signal	Overall		1,978	B	12.6		2,952	B	13.0	
		EB-T	Nob Hill Blvd	401	B	13.3	102	1,094	B	15.4	#270
		EB-R	Nob Hill Blvd	42	A	0.0	0	33	A	0.0	0
		WB-L	Nob Hill Blvd	408	B	18.9	111	147	C	20.6	47
		WB-T	Nob Hill Blvd	637	A	2.1	14	1,008	A	2.9	26
		SB-L	I-82 Ramp	330	C	22.8	101	515	C	24.5	157
		SB-R	I-82 Ramp	160	B	19.6	37	155	B	18.4	58
I-82 WB Ramps/ Yakima Avenue	Signal	Overall		2,440	A	2.0		3,275	A	3.9	
		EB-L	Yakima Ave	31	D	39.7	21	32	D	37.6	22
		EB-T	Yakima Ave	772	A	0.2	0	1,606	A	2.1	166
		WB-T	Yakima Ave	1,108	A	2.3	114	973	A	5.5	297
		WB-R	Yakima Ave	379	A	2.3	114	618	A	5.5	297
		NB-L	I-82 Ramp	0	N/A	N/A	N/A	10	D	46.2	20
		NB-R	I-82 Ramp	150	A	0.2	0	36	A	0.4	0
I-82 EB Ramps/ Yakima Avenue	Signal	Overall		2,156	B	12.9		2,932	B	17.6	
		EB-T	Yakima Ave	466	B	12.7	102	1,321	**B**	19.5	# 469
		EB-R	Yakima Ave	192	B	11.1	36	288	B	10.1	40
		WB-L	Yakima Ave	318	C	24.0	#117	262	C	33.6	100
		WB-T	Yakima Ave	790	A	5.5	120	721	A	4.3	101
		SB-L	I-82 Ramp	337	C	20.5	91	317	C	33.0	129
		SB-R	I-82 Ramp	53	B	17.0	9	23	C	25.6	0
C/D WB Ramps/ E-W Corridor	Stop	Overall		370	B	12.6		650	B	11.3	
		EB-L	E-W Corridor	70	A	5.4	12	300	A	6.6	41
		EB-T	E-W Corridor	0				0			
		WB-T	E-W Corridor	0				0			
		WB-R	E-W Corridor	0				0			
		NB-L	C/D Ramp	300	B	14.2	100	350	B	15.2	120
		NB-R	C/D Ramp	0				0			
C/D EB Ramps/ E-W Corridor	Stop	Overall		930	A	8.9		1,419	A	6.8	
		EB-T	E-W Corridor	70	A	1.9	5	300	A	2.4	25
		EB-R	E-W Corridor	120	A	2.2	8	300	A	2.9	18
		WB-L	E-W Corridor	0				0			
		WB-T	E-W Corridor	300	A	2.2	18	350	A	2.5	30
		SB-T	C/D Ramp	160				170			
		SB-R	C/D Ramp	280	C	20.7	-	299	C	20.3	-

 # 95th percentile volume exceeds capacity, queue may be longer
m - volume for 95th percentile queue is metered by upstream signal

Intersection Analysis Summary 2035 Base Condition

Intersection	Control	Movement		AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
I-82 WB Ramps/ Nob Hill Blvd.	Signal	Overall		3,733	A	6.7		5,386	A	5.9	
		EB-L	Nob Hill Blvd	44	C	32.6	m 26	122	E	60.0	m 55
		EB-T	Nob Hill Blvd	818	A	0.5	0	2,146	A	1.0	m 0
		WB-T	Nob Hill Blvd	1,775	A	8.7	# 447	1,660	A	8.2	457
		WB-R	Nob Hill Blvd	786	A	6.6	38	718	A	6.9	37
		NB-L	I-82 Ramp	73	C	32.8	43	56	E	56.8	55
		NB-R	I-82 Ramp	237	A	0.2	0	684	A	1.0	0
I-82 EB Ramps/ Nob Hill Blvd.	Signal	Overall		2,873	B	12.6		4,181	C	33.4	
		EB-T	Nob Hill Blvd	510	B	17.0	155	1,610	D	35.2	# 812
		EB-R	Nob Hill Blvd	55	A	0.0	0	95	A	0.1	0
		WB-L	Nob Hill Blvd	615	B	19.4	153	385	E	58.2	# 241
		WB-T	Nob Hill Blvd	1,233	A	2.1	15	1,331	A	5.0	44
		SB-L	I-82 Ramp	352	C	29.4	130	658	E	76.5	# 462
		SB-R	I-82 Ramp	108	C	24.1	49	102	D	37.2	67
I-82 WB Ramps/ Yakima Avenue	Signal	Overall		3,438	A	7.1		4,831	A	10.0	
		EB-L	Yakima Ave	79	E	79.5	# 162	176	E	69.3	m 196
		EB-T	Yakima Ave	925	A	0.2	0	2,273	A	1.0	m 0
		WB-T	Yakima Ave	1,753	A	8.1	474	1,348	B	16.6	889
		WB-R	Yakima Ave	471	A	8.1	474	624	B	16.6	889
		NB-L	I-82 Ramp	0				10	E	78.3	33
		NB-R	I-82 Ramp	210	A	0.2	0	400	A	0.5	0
I-82 EB Ramps/ Yakima Avenue	Signal	Overall		2,995	B	14.1		4,143	D	42.4	
		EB-T	Yakima Ave	579	B	16.4	156	1,893	D	46.9	# 1,194
		EB-R	Yakima Ave	203	B	13.5	42	292	B	13.7	113
		WB-L	Yakima Ave	427	C	22.6	m117	258	E	77.9	m # 174
		WB-T	Yakima Ave	1,326	A	5.9	302	1,100	A	4.3	17
		SB-L	I-82 Ramp	425	C	28.0	144	556	F	101.1	# 502
		SB-R	I-82 Ramp	35	B	19.9	5	44	D	48.6	40
I-82 EB On-Ramp/ Fair Avenue	Stop Control	NB-T	Fair Ave	430	A	0.0		583	A	0.0	
		NB-R	Fair Ave	18	A	0.0		96	A	0.0	
		SB-L	Fair Ave	72	A	8.7	6	548	C	18.1	140
		SB-T	Fair Ave	347	A	0.0		805	A	0.0	
Fair Avenue/ Fair Connector	Stop Control	EB-L	Fair Conn	182	C	24.0	69	197	F	475.4	413
		EB-R	Fair Conn	93	B	10.9	12	84	B	14.5	17
		NB-L	Fair Ave	47	A	8.3	3	142	B	11.0	19
		NB-T	Fair Ave	275	A	0.0		482	A	0.0	
		SB-T	Fair Ave	233	A	0.0		381	A	0.0	
		SB-R	Fair Ave	114	A	0.0		424	A	0.0	
Yakima Avenue/ Fair Connector	Stop Control	EB-T	Yalika Ave	629	A	0.0		1,635	A	0.0	
		EB-R	Yakima Ave	51	A	0.0		71	A	0.0	
		WB-L	Yakima Ave	224	B	11.2	30	210	E	44.1	135
		WB-T	Yakima Ave	1,137	A	0.0		934	A	0.0	
		NB-L	Fair Conn	8	F	62.5	10	16	F	too large	to measure
		NB-R	Fair Conn	153	B	13.0	26	550	F	580.8	1108
I-82 EB Off-Ramp/ Fair Avenue	Signal		Overall	1,015	A	7.0		1,777	B	19.8	
		Fair Ave	EB-T	300	A	5.3		1,021	C	24.0	# 790
		Fair Ave	WB-T	365	A	8.5	108	506	A	4.7	153
		I-82 Ramp	SB-L	191	A	7.4	62	175	D	35.7	# 174
		I-82 Ramp	SB-R	159	A	6.3	23	75	C	26.8	37

 # 95th percentile volume exceeds capacity, queue may be longer
m - volume for 95th percentile queue is metered by upstream signal

Intersection Analysis Summary 2035 Local Improvement

Intersection	Control	Movement		AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
I-82 WB Ramps/ Nob Hill Blvd.	Signal	Overall		3,718	A	6.1		5,311	A	6.0	
		EB-L	Nob Hill Blvd	52	C	32.5	m 30	190	D	36.5	m 71
		EB-T	Nob Hill Blvd	850	A	0.4	0	2,031	A	0.6	m 0
		WB-T	Nob Hill Blvd	1,658	A	7.6	364	1,620	A	8.7	405
		WB-R	Nob Hill Blvd	848	A	7.1	38	810	A	8.6	86
		NB-L	I-82 Ramp	62	C	32.6	37	44	D	48.3	41
		NB-R	I-82 Ramp	248	A	0.2	0	616	A	0.8	0
I-82 EB Ramps/ Nob Hill Blvd.	Signal	Overall		2,847	B	13.5		4,104	C	28.7	
		EB-T	Nob Hill Blvd	546	B	16.9	158	1,594	C	30.7	# 686
		EB-R	Nob Hill Blvd	51	A	0.0	0	76	A	0.1	0
		WB-L	Nob Hill Blvd	589	C	20.6	154	334	D	49.5	# 188
		WB-T	Nob Hill Blvd	1,131	A	2.0	13	1,330	A	4.9	15
		SB-L	I-82 Ramp	356	C	28.8	131	627	E	65.3	# 382
		SB-R	I-82 Ramp	174	C	25.3	83	143	C	32.8	97
I-82 WB Ramps/ Yakima Avenue	Signal	Overall		2,999	A	3.8		4,311	A	6.9	
		EB-L	Yakima Ave	86	C	34.6	m #79	219	D	43.4	m 102
		EB-T	Yakima Ave	937	A	0.2	0	1,781	A	0.5	m 0
		WB-T	Yakima Ave	1,282	A	4.9	166	1,170	B	10.1	526
		WB-R	Yakima Ave	384	A	4.9	166	631	B	10.1	526
		NB-L	I-82 Ramp	0				10	E	68.6	26
		NB-R	I-82 Ramp	310	A	0.4	0	500	A	0.7	0
I-82 EB Ramps/ Yakima Avenue	Signal	Overall		2,600	B	14.0		3,643	C	31.1	
		EB-T	Yakima Ave	570	B	16.1	145	1,486	C	29.1	# 634
		EB-R	Yakima Ave	237	B	13.4	44	417	B	15.6	111
		WB-L	Yakima Ave	403	C	21.7	m115	383	D	54.4	m # 219
		WB-T	Yakima Ave	879	A	3.4	76	797	A	3.6	7
		SB-L	I-82 Ramp	453	C	25.4	138	514	E	74.5	# 356
		SB-R	I-82 Ramp	58	B	17.8	14	46	D	36.0	31
I-82 EB On-Ramp/Fair Avenue/ Fair Connector (J Ramp)	Signal	Overall		755	A	2.0		1,630	A	2.9	
		EB-L	Fair Conn	2	B	15.2	4	2	B	18.6	5
		EB-T	Fair Conn	0				34	C	20.1	37
		EB-R	Fair Conn	29	B	15.0	0	26	C	21.1	37
		NB-L	Fair Ave	91	A	1.5	16	173	A	2.8	53
		NB-T	Fair Ave	203	A	1.4	13	350	A	1.9	30
		NB-R	Fair Ave	24	A	1.4	13	105	A	1.9	30
		SB-L	Fair Ave	96	A	1.5	17	251	A	2.9	74
		SB-T	Fair Ave	283	A	1.4	17	580	A	2.1	53
		SB-R	Fair Ave	27	A	1.4	17	109	A	2.1	53
Yakima Avenue/ Fair Connector	Stop Control Right-in / Right-out	EB-T	Yalika Ave	689	FREE			1,621	FREE		
		EB-R	Yakima Ave	31				62			
		WB-L	Yakima Ave	NA				NA			
		WB-T	Yakima Ave	937	FREE			843	FREE		
		NB-L	Fair Conn	NA				NA			
		NB-R	Fair Conn	118	B	12.7	20	282	F	126.9	311
I-82 EB Off-Ramp/ Fair Avenue	Signal		Overall	1,024	B	10.6		1,443	B	10.6	
		Fair Ave	EB-T	362	B	12.6	122	694	B	11.5	283
		Fair Ave	WB-T	252	B	10.2	81	399	A	6.0	120
		I-82 Ramp	SB-L	204	A	9.7	67	205	B	14.9	124
		I-82 Ramp	SB-R	206	A	8.2	27	145	B	12.4	37

 # 95th percentile volume exceeds capacity, queue may be longer
m - volume for 95th percentile queue is metered by upstream signal

Intersection Analysis Summary -- C/D ALTERNATIVE with 4-lane I-82 -- 2035 Design Year

Intersection	Control	Movement		AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
I-82 WB Ramps/ Nob Hill Blvd.	Signal	Overall		3,752	A	7.1		5,218	A	5.9	
		EB-L	Nob Hill Blvd	71	D	49.1	m43	224	C	33.6	m73
		EB-T	Nob Hill Blvd	851	A	2.7	1	2,054	A	0.7	m0
		WB-T	Nob Hill Blvd	1,654	A	7.3	352	1,474	A	8.0	315
		WB-R	Nob Hill Blvd	884	A	7.6	42	846	A	9.3	92
		NB-L	I-82 Ramp	56	D	37.7	40	44	D	42.9	37
		NB-R	I-82 Ramp	236	A	0.2	0	576	A	0.8	0
I-82 EB Ramps/ Nob Hill Blvd.	Signal	Overall		2,835	B	16.1		4,034	C	32.0	
		EB-T	Nob Hill Blvd	495	B	17.3	162	1,580	D	44.9	#676
		EB-R	Nob Hill Blvd	49	A	0.0	0	73	A	0.1	0
		WB-L	Nob Hill Blvd	571	C	24.3	161	317	D	44.1	#166
		WB-T	Nob Hill Blvd	1,123	A	3.4	43	1,194	A	4.6	26
		SB-L	I-82 Ramp	402	C	34.1	164	696	D	48.2	#354
		SB-R	I-82 Ramp	195	C	29.2	105	174	C	27.3	104
I-82 WB Ramps/ Yakima Avenue	Signal	Overall		2,727	A	2.3		4,527	A	6.4	
		EB-L	Yakima Ave	28	D	48.3	m43	145	D	38.4	m111
		EB-T	Yakima Ave	803	A	0.2	0	1,623	A	0.6	0
		WB-T	Yakima Ave	1,291	A	2.9	0	1,254	B	10.5	481
		WB-R	Yakima Ave	340	A	2.9	200	415	B	10.5	481
		NB-L	I-82 Ramp	0	N/A	N/A	N/A	640	D	54.5	22
		NB-R	I-82 Ramp	265	A	0.3	0	450	A	0.6	0
I-82 EB Ramps/ Yakima Avenue	Signal	Overall		2,314	B	15.0		3,899	C	20.8	
		EB-T	Yakima Ave	512	B	13.4	153	1,462	C	23.7	# 606
		EB-R	Yakima Ave	129	B	11.4	35	162	B	10.2	42
		WB-L	Yakima Ave	395	C	29.9	136	368	D	38.7	m # 189
		WB-T	Yakima Ave	937	A	3.1	66	1,537	A	1.1	68
		SB-L	I-82 Ramp	295	C	34.7	127	345	D	44.8	#193
		SB-R	I-82 Ramp	46	C	27.9	17	25	C	31.5	0
I-82 EB On-Ramp/ Fair Avenue	Stop Control	Overall		571	A	4.2		1,552	A	3.6	
		NB-T	Fair Ave	182	FREE			577	FREE		
		NB-R	Fair Ave	18	FREE			105	FREE		
		SB-L	Fair Ave	90	A	4.2	6	345	B	10.7	58
		SB-T	Fair Ave	281	A	4.2	6	525	B	10.7	58
Fair Avenue/ Fair Avenue Connector	Right-Out-Only	Overall		773	A	9.8		1,268	B	10.8	
		EB-R	Fair Conn	24	A	9.8	3	66	B	10.8	8
		NB-T	Fair Ave	353	FREE			677	FREE		
		SB-T	Fair Ave	396	FREE			525	FREE		
Yakima Avenue/ Fair Avenue	Right-in-Only	EB-T	Yalika Ave	646				686			
		EB-R	Yakima Ave	25				37			
		WB-T	Yakima Ave	857				768			
I-82 EB Off-Ramp/ Fair Avenue	Signal	Overall		775	B	10.6		1,687	B	14.8	
		EB-T	Fair Ave	342	B	12.1	113	723	B	13.7	307
		WB-T	Fair Ave	210	A	9.6	67	657	B	11.8	254
		SB-L	I-82 Ramp	201	A	9.7	65	245	C	25.3	148
		SB-R	I-82 Ramp	22	A	7.3	9	62	B	16.6	24
Fair Avenue / MLK Jr. Blvd / Lincoln Ave / Bravo Company Blvd	Round-about	Overall		1,610	A	6.0		2,568	A	9.4	121
		WB-T	Fair Ave	133	A	6.2	18	329	B	10.7	61
		WB-R	Fair Ave	160	A	5.7	18	366	A	9.6	62
		EB-L	MLK	751	A	6.5	55	784	A	8.2	76
		EB-T	MLK	243	A	6.4	56	283	A	7.9	77
		SB-L	Bravo Co. Blvd	106	A	4.6	12	203	A	8.4	37
		SB-R	Bravo Co. Blvd	217	A	4.4	22	603	B	11.0	121

Intersection Analysis Summary -- C/D ALTERNATIVE with 4-lane I-82 -- 2035 Design Year

Intersection	Control	Movement		AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
C/D WB Ramps/ E-W Corridor	Signal	Overall		2,041	B	12.4		3,344	B	18.2	
		EB-L	E-W Corridor	73	D	38.1	m47	191	C	26.0	m86
		EB-T	E-W Corridor	596	A	3.1	34	1,206	B	11.4	m270
		WB-T	E-W Corridor	732	B	13.5	#159	738	B	19.1	197
		WB-R	E-W Corridor	172	A	9.7	33	589	B	17.5	69
		NB-L	C/D Ramp	318	C	22.4	#161	318	C	31.4	227
		NB-R	C/D Ramp	150	B	13.4	15	302	C	26.0	162
C/D EB Ramps/ E-W Corridor	Signal	Overall		2,221	B	10.8		3,688	C	25.4	
		EB-T	E-W Corridor	399	B	12.2	81	1,231	C	23.6	365
		EB-R	E-W Corridor	126	B	10.6	28	313	B	12.1	58
		WB-L	E-W Corridor	93	B	19.1	m51	137	D	35.0	m# 76
		WB-T	E-W Corridor	956	A	5.2	80	1,010	B	16.6	282
		SB-L	C/D Ramp	271	B	19.3	129	471	D	45.6	#320
		SB-T	C/D Ramp	223	B	16.2	103	307	D	44.4	#327
		SB-R	C/D Ramp	153	B	14.2	44	219	B	19.2	99

** Phasing Adjusted*
 # 95th percentile volume exceeds capacity, queue may be longer
m - volume for 95th percentile queue is metered by upstream signal

Intersection Analysis Summary 2035 Build C/D - I-82 with 6 lanes

Intersection	Control	Movement		AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
I-82 WB Ramps/ Nob Hill Blvd.	Signal	Overall		3,754	A	7.2		5,226	A	6.1	
		EB-L	Nob Hill Blvd	71	D	48.2	43	212	C	31.3	m63
		EB-T	Nob Hill Blvd	853	A	2.5	3	2,039	A	1.4	m0
		WB-T	Nob Hill Blvd	1,654	A	7.3	354	1,497	A	8.5	320
		WB-R	Nob Hill Blvd	884	A	8.0	47	848	A	9.3	77
		NB-L	I-82 Ramp	56	D	37.9	45	47	D	37.6	34
		NB-R	I-82 Ramp	236	A	0.2	0	583	A	0.8	0
I-82 EB Ramps/ Nob Hill Blvd.	Signal	Overall		2,835	B	15.8		4,054	C	33.4	
		EB-T	Nob Hill Blvd	495	B	17.3	161	1,564	D	52.8	#618
		EB-R	Nob Hill Blvd	49	A	0.0	0	104	A	0.1	0
		WB-L	Nob Hill Blvd	571	C	23.9	167	336	D	38.9	#161
		WB-T	Nob Hill Blvd	1,123	A	3.2	40	1,180	A	3.7	35
		SB-L	I-82 Ramp	402	C	33.9	152	696	D	44.7	#327
		SB-R	I-82 Ramp	195	C	29.1	91	174	C	24.3	96
I-82 WB Ramps/ Yakima Avenue	Signal	Overall		2,717	A	0.5		3,887	A	6.1	
		EB-L	Yakima Ave	25	**A**	0.9	M0	142	D	36.6	m99
		EB-T	Yakima Ave	805	A	0.2	0	1,573	A	0.8	0
		WB-T	Yakima Ave	1,332	A	0.7	0	1,252	B	9.8	461
		WB-R	Yakima Ave	305	A	0.7	0	410	B	9.8	461
		NB-L	I-82 Ramp	0	N/A	N/A	N/A	10	D	54.5	22
		NB-R	I-82 Ramp	250	A	0.3	0	500	A	0.7	0
I-82 EB Ramps/ Yakima Avenue	Signal	Overall		2,356	B	17.9		3,252	C	22.3	
		EB-T	Yakima Ave	518	B	13.7	164	1,409	C	25.5	# 582
		EB-R	Yakima Ave	119	B	11.7	34	209	B	11.7	50
		WB-L	Yakima Ave	381	D	37.0	148	401	D	39.6	184
		WB-T	Yakima Ave	958	A	5.0	171	863	A	2.3	3
		SB-L	I-82 Ramp	330	D	40.3	153	345	D	44.8	172
		SB-R	I-82 Ramp	50	C	31.0	25	25	C	31.5	5
I-82 EB On-Ramp/ Fair Avenue	Stop	Overall		571	A	4.2		1,547	B	10.7	
		NB-T	Fair Ave	182	FREE			576	FREE		
		NB-R	Fair Ave	18	FREE			105	FREE		
		SB-L	Fair Ave	90	A	4.2	6	345	B	10.7	58
		SB-T	Fair Ave	281	A	4.2	6	521	B	10.7	58
Fair Avenue/ Fair Avenue Connector	Right-Out-Only	Overall		765	A	9.8		1,261	B	10.8	
		EB-R	Fair Conn	25	A	9.8	3	66	B	10.8	8
		NB-T	Fair Ave	350	FREE			674	FREE		
		SB-T	Fair Ave	390	FREE			521	FREE		
Yakima Avenue/ Fair Avenue Connector	Right-in-Only	EB-T	Yalika Ave	646				1,616			
		EB-R	Yakima Ave	25				66			
		WB-T	Yakima Ave	857				959			
Martin Luther King Jr. Blvd./10th Street/Fair Avenue	Stop Control	EB-L	MLK	6	A	0.1	0	13	A	0.3	1
		EB-T	MLK	976	-	-	-	1,049	-	-	-
		EB-R	MLK	14	-	-	-	16	-	-	-
		NB-T	10th St	7	C	16.3	4	18	C	21.2	13
		NB-R	10th St	9	-	16.3	4	18	-	21.2	13

Intersection Analysis Summary 2035 Build C/D - I-82 with 6 lanes

Intersection	Control	Movement		AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
I-82 EB Off-Ramp/ Fair Avenue	Signal	Overall		774	A	7.0		1,721	B	15.2	
		EB-T	Fair Ave	342	A	7.6	113	723	B	13.1	#334
		WB-T	Fair Ave	208	A	5.9	67	656	B	12.9	268
		SB-L	I-82 Ramp	202	A	7.3	65	283	C	26.0	#173
		SB-R	I-82 Ramp	22	A	5.8	9	59	B	15.8	23
Fair Avenue / Martin Luther King Jr. Blvd / Lincoln Avenue / Cascade Mill Blvd	Round-about	Overall		1,610	A	6.0		2,632	A	9.5	
		WB-T	Fair Ave	133	A	6.2	18	240	B	10.5	59
		WB-R	Fair Ave	160	A	5.7	18	412	A	9.7	60
		EB-L	MLK	751	A	6.5	55	761	B	10.0	93
		EB-T	MLK	243	A	6.4	56	296	A	9.7	94
		SB-L	Mills Blvd	106	A	4.6	12	340	A	7.7	52
		SB-R	Mills Blvd	217	A	4.4	22	583	A	9.1	93
C/D WB Ramps/ E-W Corridor	Signal	Overall		2,040	A	9.7		3,418	B	15.3	
		EB-L	E-W Corridor	73	A	8.2	m46	186	C	25.1	m80
		EB-T	E-W Corridor	596	A	7.2	80	1,210	A	5.2	m77
		WB-T	E-W Corridor	731	A	7.9	118	830	C	20.9	#228
		WB-R	E-W Corridor	172	A	6.1	25	573	B	16.0	61
		NB-L	C/D Ramp	318	B	19.2	138	320	C	27.2	#205
		NB-R	C/D Ramp	150	B	12.6	22	299	C	20.8	#136
C/D EB Ramps/ E-W Corridor	Signal	Overall		2,215	A	9.0		3,439	B	26.7	
		EB-T	E-W Corridor	399	A	5.9	54	1,059	C	22.4	#283
		EB-R	E-W Corridor	121	A	5.4	19	480	B	17.9	#161
		WB-L	E-W Corridor	94	A	4.4	m24	220	C	29.4	m# 58
		WB-T	E-W Corridor	957	A	6.0	83	931	A	1.6	10
		SB-L	C/D Ramp	271	B	18.4	124	337	C	28.7	#220
		SB-T	C/D Ramp	220	B	15.7	99	300	C	21.7	#164
		SB-R	C/D Ramp	153	B	14.3	51	112	B	15.0	32

** Phasing Adjusted*
 # 95th percentile volume exceeds capacity, queue may be longer
m - volume for 95th percentile queue is metered by upstream signal

Intersection Analysis Summary -- RAB Build ALTERNATIVE - 2035 -- I-82 (6-lanes)

Intersection	Control	Movement		AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
I-82 WB Ramps/ Nob Hill Blvd.	Signal	Overall		3,735	A	6.3		5,147	A	5.8	
		EB-L	Nob Hill Blvd	62	C	34.7	m31	123	D	35.0	m44
		EB-T	Nob Hill Blvd	846	A	0.4	0	1,976	A	1.4	m6
		WB-T	Nob Hill Blvd	1,649	A	7.6	364	1,531	A	8.2	331
		WB-R	Nob Hill Blvd	868	A	7.4	39	827	A	8.4	48
		NB-L	I-82 Ramp	67	C	32.7	40	70	D	41.2	51
		NB-R	I-82 Ramp	243	A	0.2	0	620	A	0.9	0
I-82 EB Ramps/ Nob Hill Blvd.	Signal	Overall		2,859	B	14.2		3,980	C	26.5	
		EB-T	Nob Hill Blvd	490	B	18.2	146	1,472	D	35.8	#627
		EB-R	Nob Hill Blvd	52	A	0.0	0	115	A	0.1	0
		WB-L	Nob Hill Blvd	608	C	20.2	148	365	D	40.7	#178
		WB-T	Nob Hill Blvd	1,106	A	2.4	14	1,238	A	4.4	40
		SB-L	I-82 Ramp	446	C	29.6	160	639	D	44.5	#310
		SB-R	I-82 Ramp	157	C	23.4	71	151	C	27.6	91
I-82 WB Ramps/ Yakima Avenue	Signal	Overall		2,937	A	3.7		4,073	A	2.0	
		EB-L	Yakima Ave	0	-	-	-	11	A	0.7	m0
		EB-T	Yakima Ave	889	A	0.6	7	1,763	A	1.0	7
		WB-T	Yakima Ave	1,024	A	4.8	235	1,060	A	3.0	163
		WB-R	Yakima Ave	650	A	4.8	235	759	A	3.0	163
		NB-L	I-82 Ramp	0	-	-	-	10	D	46.2	20
		NB-T	I-82 Ramp	64	C	33.4	60	0	-	-	-
		NB-R	I-82 Ramp	310	A	0.4	0	470	A	0.7	0
I-82 EB Ramps/ Yakima Avenue	Signal	Overall		2,274	B	16.0		3,206	B	18.5	
		EB-T	Yakima Ave	459	B	15.6	135	1,239	B	18.9	#437
		EB-R	Yakima Ave	195	B	13.8	44	330	B	11.2	43
		WB-L	Yakima Ave	405	C	24.3	121	350	B	15.7	#119
		WB-T	Yakima Ave	725	A	3.4	52	737	A	6.5	184
		SB-L	I-82 Ramp	435	C	30.0	151	512	D	41.2	#258
		SB-R	I-82 Ramp	55	C	21.4	17	38	C	24.4	0
I-82 EB On-Ramp/ Fair Avenue	Left turn yield	NB-T	Fair Ave	291	-	-	-	687	-	-	-
		NB-R	Fair Ave	26	-	-	-	416	-	-	-
		SB-L	Fair Ave	154	A	5.3	12	274	C	15.9	77
		SB-T	Fair Ave	394	-	-	-	530	-	-	-
Fair Avenue/ Fair Connector	Right-Out-Only	Overall		758	A	2.1		1,382	B	11.1	
		EB-R	Fair Conn	47	A	9.7	5	75	B	10.9	10
		NB-T	Fair Ave	394	-	-	-	777	-	-	-
		SB-T	Fair Ave	317	-	-	-	530	-	-	-
Yakima Avenue/ Fair Connector	Right-In-Only	EB-T	Yalika Ave	648	-	0.0	0	1,571	-	0.0	0
		EB-R	Yakima Ave	46	-	0.0	0	75	-	0.0	0
		WB-T	Yakima Ave	720	-	0.0	0	756	-	0.0	0
I-82 EB Off-Ramp/ Fair Avenue/ Under Xing	Round-about WITH SLIP LANES	Overall		1,860	A	9.3		2,755	A	8.8	
		EB-T	Fair Ave	34	A	5.1	7	194	A	5.7	35
		EB-R	Fair Ave	300	FREE	FREE	FREE	811	FREE	FREE	FREE
		WB-L	Under Xing	102	B	12.0	259	85	B	14.7	222
		WB-T	Under Xing	886	A	5.1	259	653	A	7.7	222
		NB-L	Fair Ave	113	B	10.5	11	249	B	11.5	35
		NB-R	Fair Ave	85	A	4.6	8	353	A	5.4	47
		SB-L	I-82 Ramp	0	D	42.1	189	0	C	34.9	197
		SB-T	I-82 Ramp	226	D	35.1	189	280	C	27.9	197
		SB-R	I-82 Ramp	114	FREE	FREE	FREE	130	FREE	FREE	FREE

Intersection Analysis Summary -- RAB Build ALTERNATIVE - 2035 -- I-82 (6-lanes)

Intersection	Control	Movement		AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
Fair Avenue / Martin Luther King Jr. Blvd / Lincoln Avenue / Cascade Mill Blvd	Round-about	Overall		2,322	B	11.0		3,067	B	14.4	
		WB-T	Fair Ave	404	B	16.2	130	318	B	19.3	147
		WB-R	Fair Ave	756	B	15.2	133	794	B	18.1	152
		EB-L	MLK	649	A	6.7	49	694	B	14.5	104
		EB-T	MLK	138	A	6.6	50	176	B	13.6	104
		SB-L	Mills Blvd	222	A	5.9	29	810	B	10.5	106
		SB-R	Mills Blvd	153	A	5.7	29	275	B	10.2	106
I-82 On-ramp /Frontage Rd/ Under Xing	Round-about		Overall	1,459	B	10.0		1,847	B	14.6	
		Fair Ave	EB-L	119	B	11.0	0	547	B	11.0	0
		Fair Ave	EB-R	0	N/A	N/A	N/A	0	N/A	N/A	N/A
		I-82 Ramp	NB-L	988	B	11.5	176	735	C	20.0	263
		I-82 Ramp	NB-T	352	A	5.7	39	565	B	11.2	148

 # 95th percentile volume exceeds capacity, queue may be longer

m - volume for 95th percentile queue is metered by upstream signal

Intersection Analysis Summary -- RAB Build ALTERNATIVE - 2035 - I-82 (4-lanes)

Intersection	Control	Movement		AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
I-82 WB Ramps/ Nob Hill Blvd.	Signal	Overall		3,719	A	6.3		5,148	A	5.1	
		EB-L	Nob Hill Blvd	62	D	35.6	35	139	C	31.9	m46
		EB-T	Nob Hill Blvd	845	A	0.8	12	1,978	A	0.7	0
		WB-T	Nob Hill Blvd	1,644	A	7.4	354	1,530	A	7.5	326
		WB-R	Nob Hill Blvd	868	A	7.3	38	831	B	8.1	54
		NB-L	I-82 Ramp	59	C	32.6	36	45	D	42.9	37
		NB-R	I-82 Ramp	241	A	0.2	36	625	A	0.9	0
I-82 EB Ramps/ Nob Hill Blvd.	Signal	Overall		2,490	B	11.8		3,919	C	26.4	
		EB-T	Nob Hill Blvd	458	B	14.6	131	1,484	C	27.8	#580
		EB-R	Nob Hill Blvd	24	A	0.0	0	87	A	0.1	0
		WB-L	Nob Hill Blvd	626	B	19.5	150	343	D	43.5	#174
		WB-T	Nob Hill Blvd	1,072	A	1.6	11	1,215	A	4.0	14
		SB-L	I-82 Ramp	209	C	28.8	87	640	E	59.8	#356
		SB-R	I-82 Ramp	101	C	26.0	37	150	C	29.0	86
I-82 WB Ramps/ Yakima Avenue	Signal	Overall		2,941	A	3.7		4,084	A	2.5	
		EB-L	Yakima Ave	0	-	-	-	11	A	1.1	m0
		EB-T	Yakima Ave	895	A	0.6	7	1,771	A	1.4	7
		WB-T	Yakima Ave	1,021	A	4.8	235	1,063	A	3.7	182
		WB-R	Yakima Ave	650	A	4.8	235	759	A	3.7	182
		NB-L	I-82 Ramp	0	-	-	-	20	D	40.7	31
		NB-T	I-82 Ramp	65	C	33.3	60	0	-	-	-
		NB-R	I-82 Ramp	310	A	0.4	0	460	A	0.6	0
I-82 EB Ramps/ Yakima Avenue	Signal	Overall		2,198	B	15.5		3,196	B	18.3	
		EB-T	Yakima Ave	462	B	15.0	136	1,250	B	19.0	379
		EB-R	Yakima Ave	110	B	12.7	34	312	B	11.0	40
		WB-L	Yakima Ave	350	C	24.4	106	338	B	15.4	82
		WB-T	Yakima Ave	776	A	3.8	63	756	A	6.5	156
		SB-L	I-82 Ramp	444	C	29.4	151	503	D	40.5	#232
		SB-R	I-82 Ramp	56	C	21.1	17	37	C	24.4	11
I-82 EB On-Ramp/ Fair Avenue	Left turn yield	NB-T	Fair Ave	297	-	-	-	681	-	-	-
		NB-R	Fair Ave	17	-	-	-	416	-	-	-
		SB-L	Fair Ave	83	A	3.5	6	274	C	15.7	76
		SB-T	Fair Ave	427	-	-	-	544	-	-	-
Fair Avenue/ Fair Connector	Right-Out-Only	Overall		785	B	10.2		1,277	B	10.9	
		EB-R	Fair Conn	50	B	10.2	6	33	B	10.9	4
		NB-T	Fair Ave	308	-	-	-	641	-	-	-
		SB-T	Fair Ave	427	-	-	-	603	-	-	-
Yakima Avenue/ Fair Connector	Right-In-Only	EB-T	Yalika Ave	0	-	0.0	0	0	-	0.0	0
		EB-R	Yakima Ave	0	-	0.0	0	0	-	0.0	0
		WB-T	Yakima Ave	0	-	0.0	0	0	-	0.0	0
I-82 EB Off-Ramp/ Fair Avenue/ Under Xing	Round-about WITH SLIP LANES	Overall		1,834	A	7.1		2,569	A	6.5	
		EB-T	Fair Ave	35	A	4.0	5	196	A	4.4	31
		EB-R	Fair Ave	235	FREE	FREE	FREE	610	FREE	FREE	FREE
		WB-L	Under Xing	102	B	10.2	265	85	B	12.6	216
		WB-T	Under Xing	892	A	4.3	265	651	A	6.7	216
		NB-L	Fair Ave	112	A	8.7	10	243	A	9.4	30
		NB-R	Fair Ave	85	A	3.1	8	353	A	3.9	47
		SB-L	I-82 Ramp	0	-	-	-	0	-	-	-
		SB-T	I-82 Ramp	248	C	23.3	160	293	B	16.2	143
		SB-R	I-82 Ramp	125	FREE	FREE	FREE	138	FREE	FREE	FREE

Intersection Analysis Summary -- RAB Build ALTERNATIVE - 2035 - I-82 (4-lanes)

Intersection	Control	Movement		AM Peak Hour				PM Peak Hour			
				Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)	Volumes (vph)	LOS	Delay (sec)	95th Queue (ft)
Fair Avenue / Martin Luther King Jr. Blvd / Lincoln Avenue / Cascade Mill Blvd	Round-about	Overall		2,207	A	9.8		3,102	B	15.2	
		WB-T	Fair Ave	324	B	14.3	109	350	C	20.3	155
		WB-R	Fair Ave	771	B	13.5	112	787	B	19.1	161
		EB-L	MLK	646	A	6.3	43	704	B	11.3	119
		EB-T	MLK	89	A	6.1	43	172	B	11.0	119
		SB-L	Mills Blvd	208	A	5.4	26	814	B	14.9	108
		SB-R	Mills Blvd	169	A	5.2	26	275	B	14.1	108
I-82 On-ramp /Frontage Rd/ Under Xing	Round-about		Overall	1,466	A	8.2		1,852	B	12.6	
		Fair Ave	EB-L	119	A	8.5	0	549	A	8.5	0
		Fair Ave	EB-R	0	N/A	N/A	N/A	0	N/A	N/A	N/A
		I-82 Ramp	NB-L	995	A	9.7	179	735	B	18.2	262
		I-82 Ramp	NB-T	352	A	4.0	37	568	A	9.6	150

 # 95th percentile volume exceeds capacity, queue may be longer

m - volume for 95th percentile queue is metered by upstream signal

Graphical Summary of I-82 Operations

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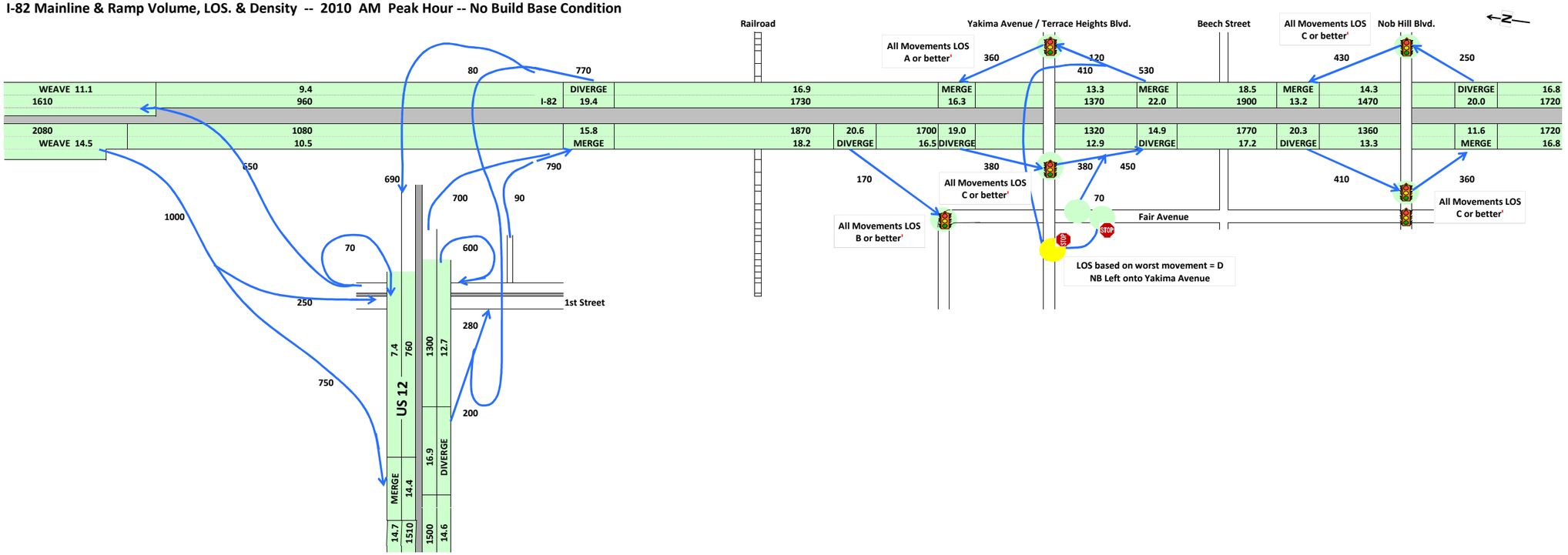
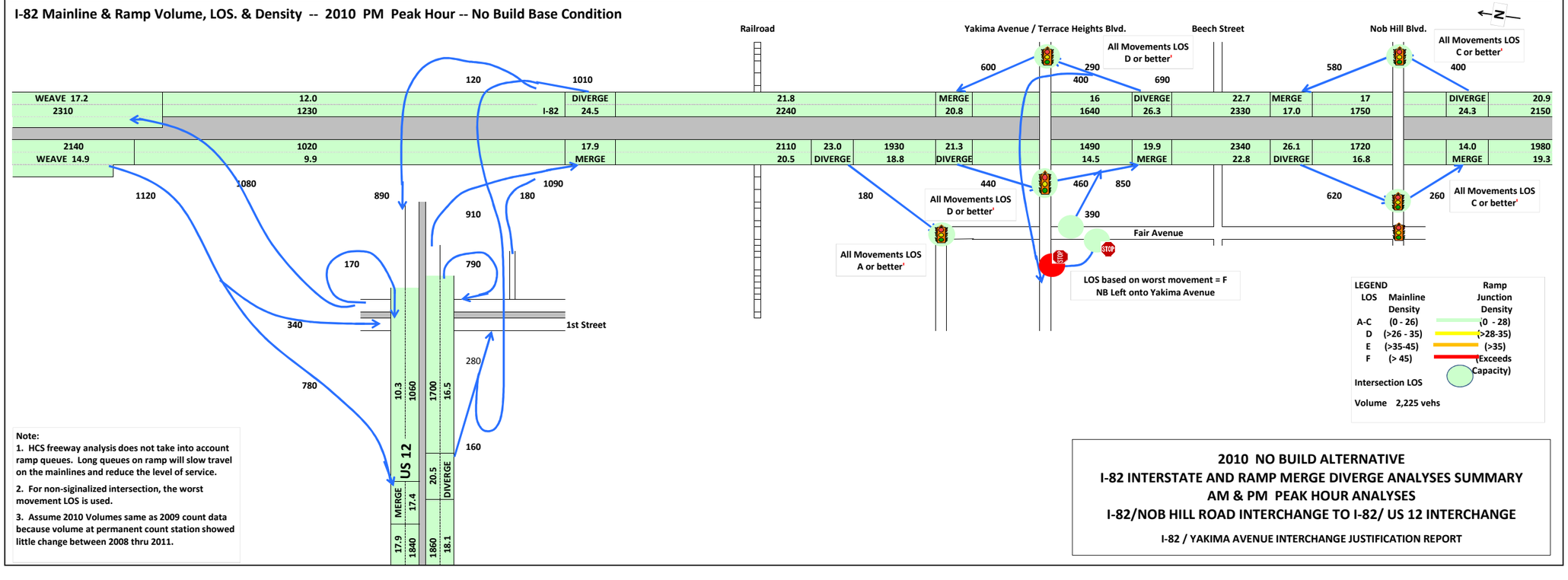
I-82 Mainline & Ramp Volume, LOS. & Density -- 2010 AM Peak Hour -- No Build Base Condition



I-82 Mainline & Ramp Volume, LOS. & Density -- 2010 PM Peak Hour -- No Build Base Condition

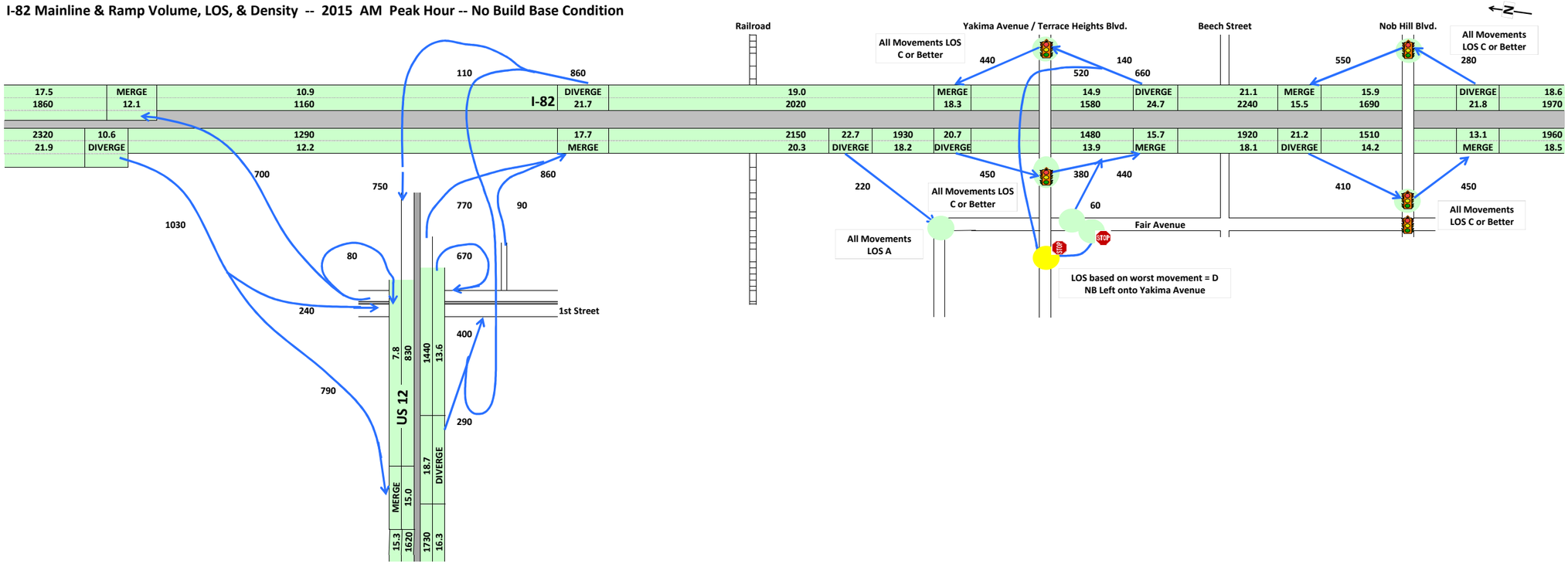


Note:
1. HCS freeway analysis does not take into account ramp queues. Long queues on ramp will slow travel on the mainlines and reduce the level of service.
2. For non-siginalized intersection, the worst movement LOS is used.
3. Assume 2010 Volumes same as 2009 count data because volume at permanent count station showed little change between 2008 thru 2011.

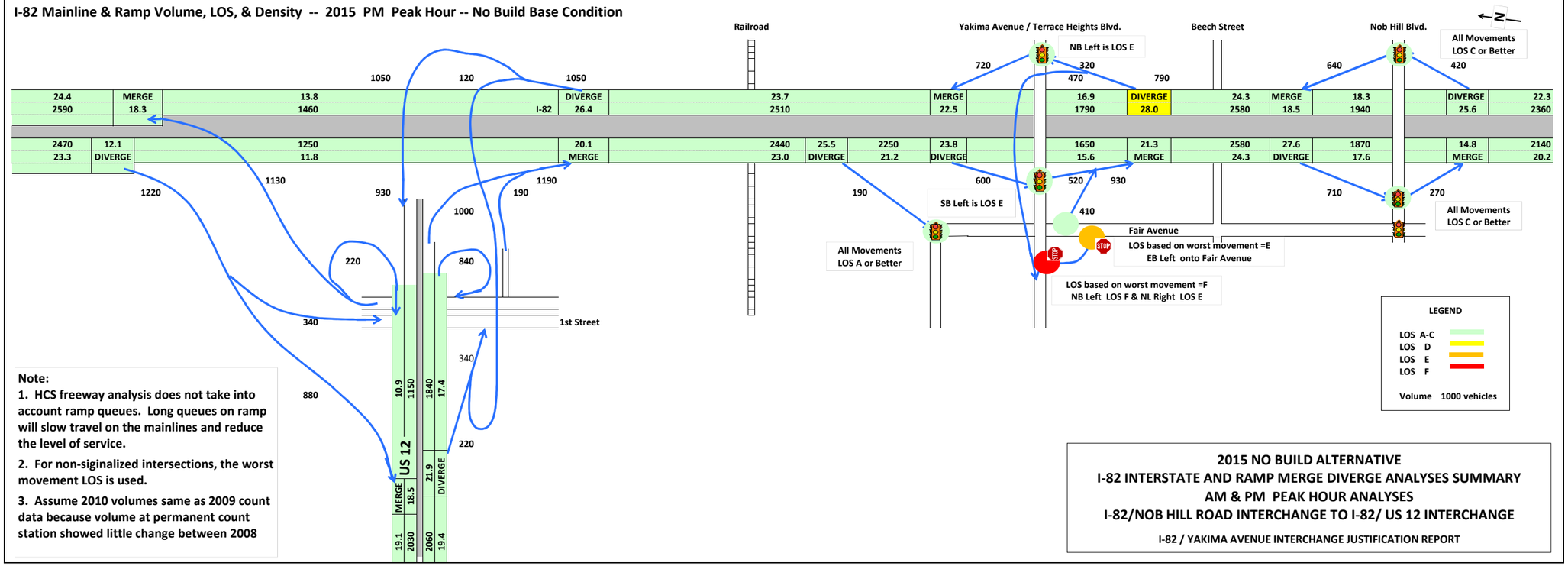
2010 NO BUILD ALTERNATIVE
I-82 INTERSTATE AND RAMP MERGE DIVERGE ANALYSES SUMMARY
AM & PM PEAK HOUR ANALYSES
I-82/NOB HILL ROAD INTERCHANGE TO I-82/ US 12 INTERCHANGE

I-82 / YAKIMA AVENUE INTERCHANGE JUSTIFICATION REPORT

I-82 Mainline & Ramp Volume, LOS, & Density -- 2015 AM Peak Hour -- No Build Base Condition



I-82 Mainline & Ramp Volume, LOS, & Density -- 2015 PM Peak Hour -- No Build Base Condition



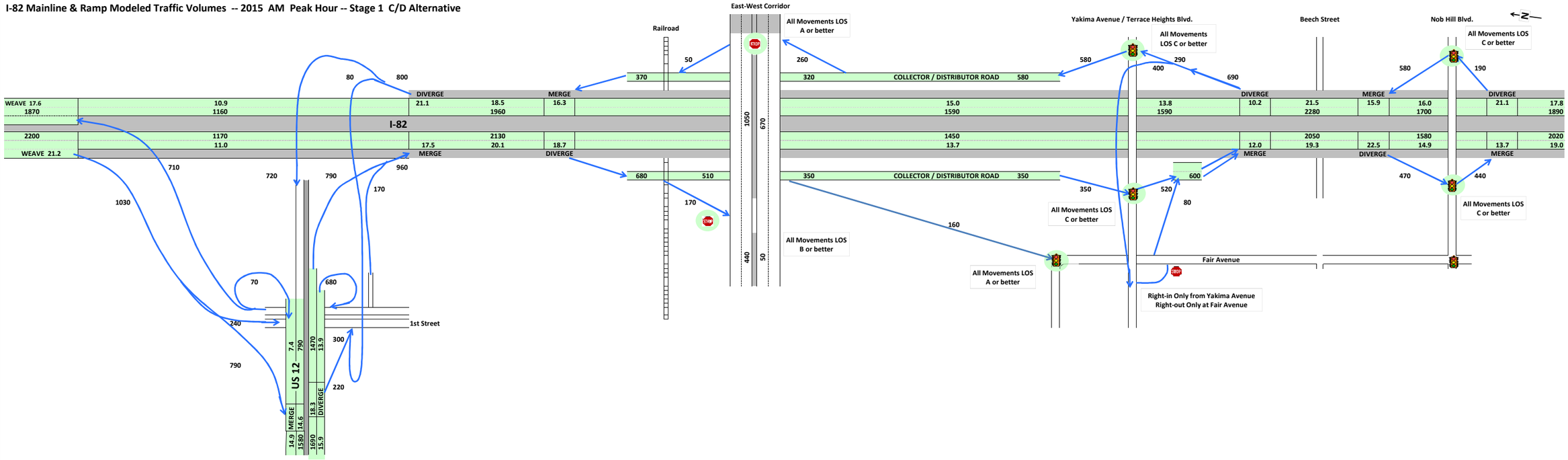
Note:

1. HCS freeway analysis does not take into account ramp queues. Long queues on ramp will slow travel on the mainlines and reduce the level of service.
2. For non-siginalized intersections, the worst movement LOS is used.
3. Assume 2010 volumes same as 2009 count data because volume at permanent count station showed little change between 2008

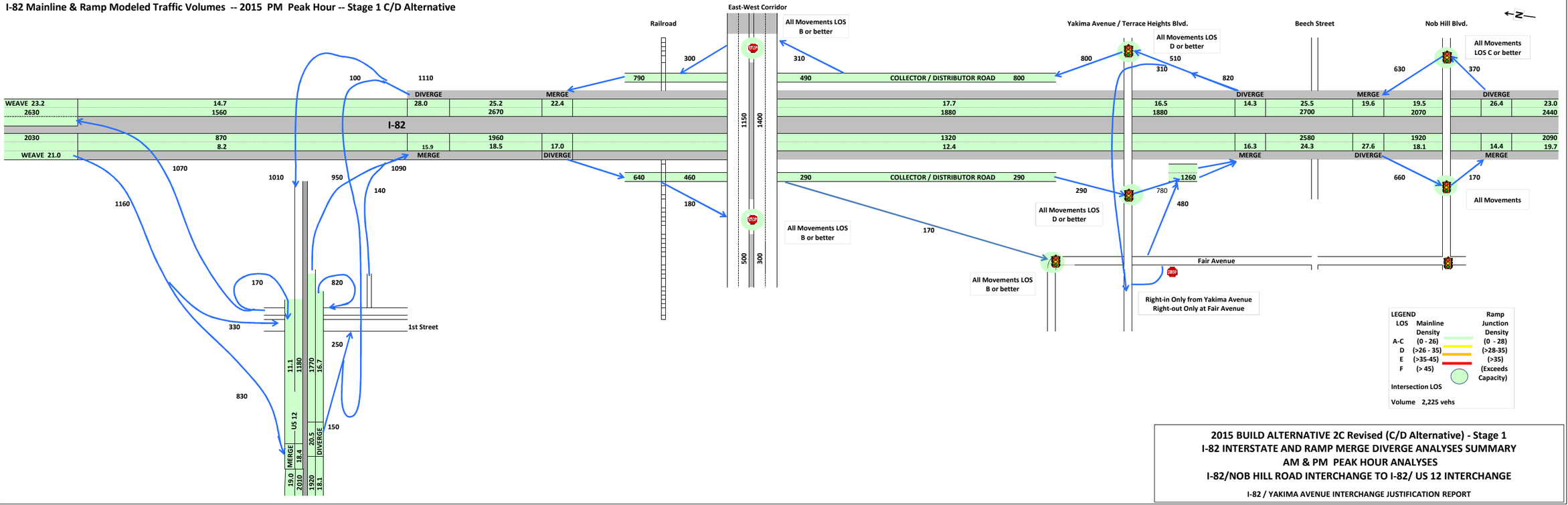
2015 NO BUILD ALTERNATIVE
I-82 INTERSTATE AND RAMP MERGE DIVERGE ANALYSES SUMMARY
AM & PM PEAK HOUR ANALYSES
I-82/NOB HILL ROAD INTERCHANGE TO I-82/ US 12 INTERCHANGE

I-82 / YAKIMA AVENUE INTERCHANGE JUSTIFICATION REPORT

I-82 Mainline & Ramp Modeled Traffic Volumes -- 2015 AM Peak Hour -- Stage 1 C/D Alternative



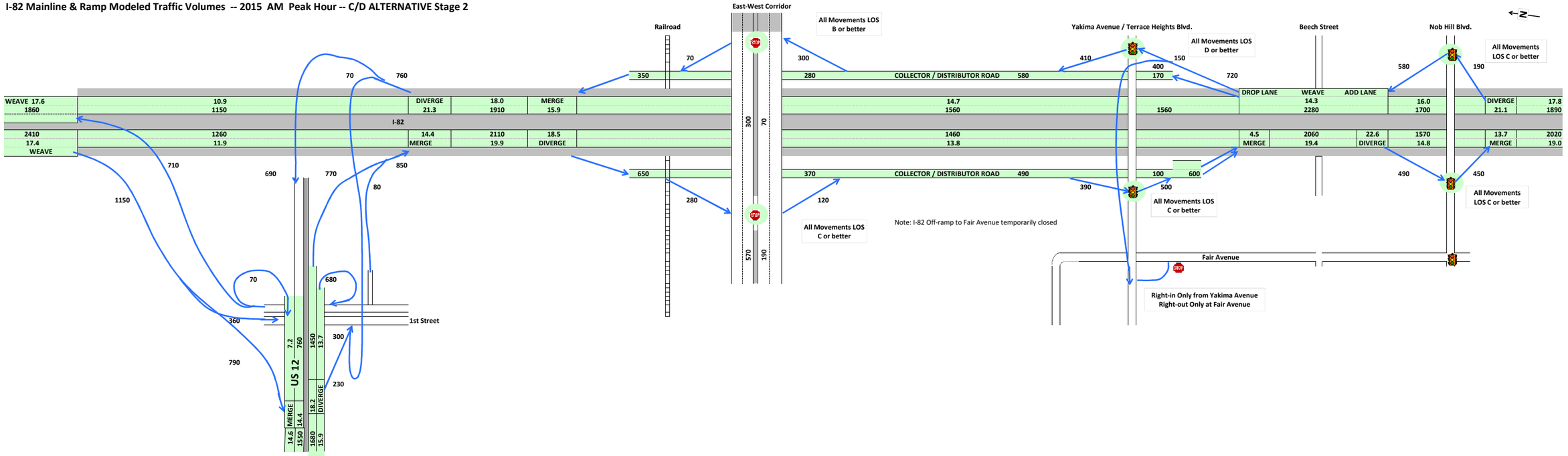
I-82 Mainline & Ramp Modeled Traffic Volumes -- 2015 PM Peak Hour -- Stage 1 C/D Alternative



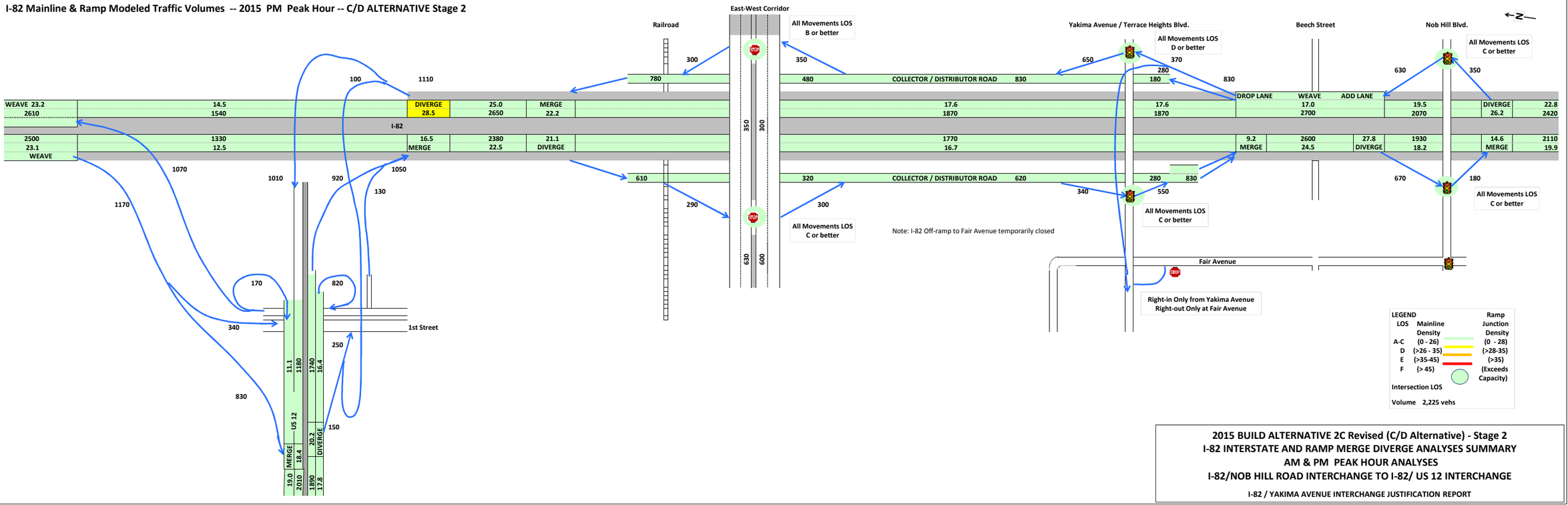
2015 BUILD ALTERNATIVE 2C Revised (C/D Alternative) - Stage 1
I-82 INTERSTATE AND RAMP MERGE DIVERGE ANALYSES SUMMARY
AM & PM PEAK HOUR ANALYSES
I-82/NOB HILL ROAD INTERCHANGE TO I-82/ US 12 INTERCHANGE

I-82 / YAKIMA AVENUE INTERCHANGE JUSTIFICATION REPORT

I-82 Mainline & Ramp Modeled Traffic Volumes -- 2015 AM Peak Hour -- C/D ALTERNATIVE Stage 2



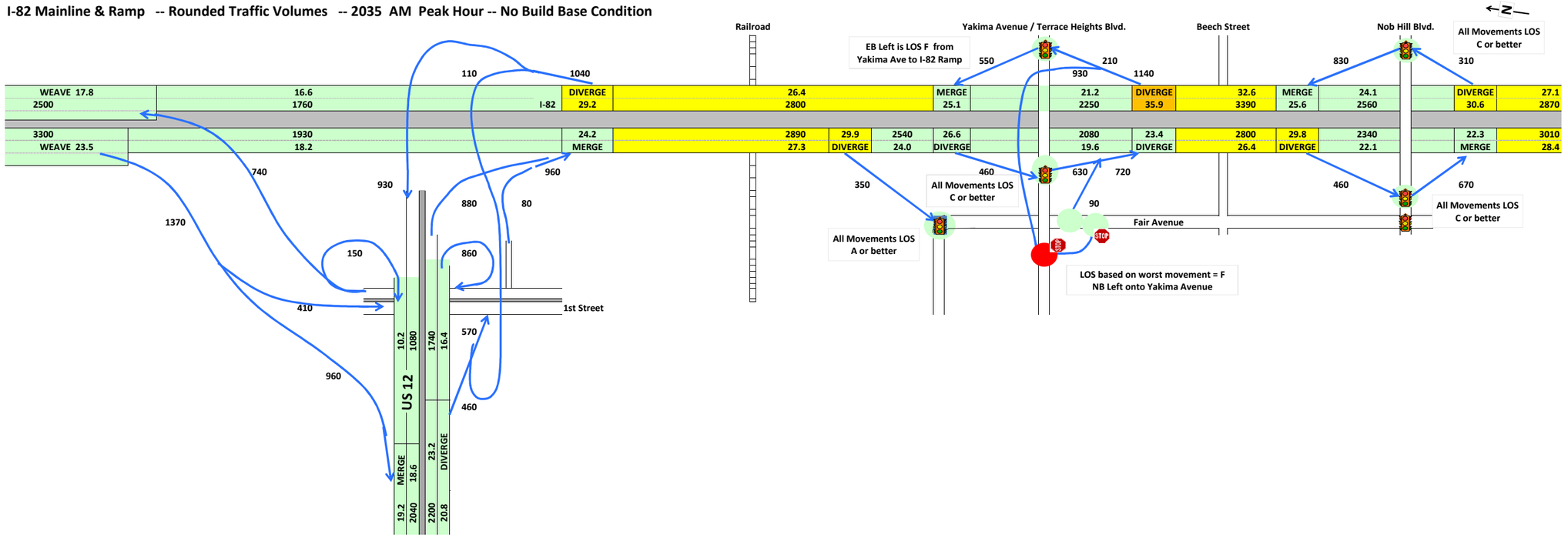
I-82 Mainline & Ramp Modeled Traffic Volumes -- 2015 PM Peak Hour -- C/D ALTERNATIVE Stage 2



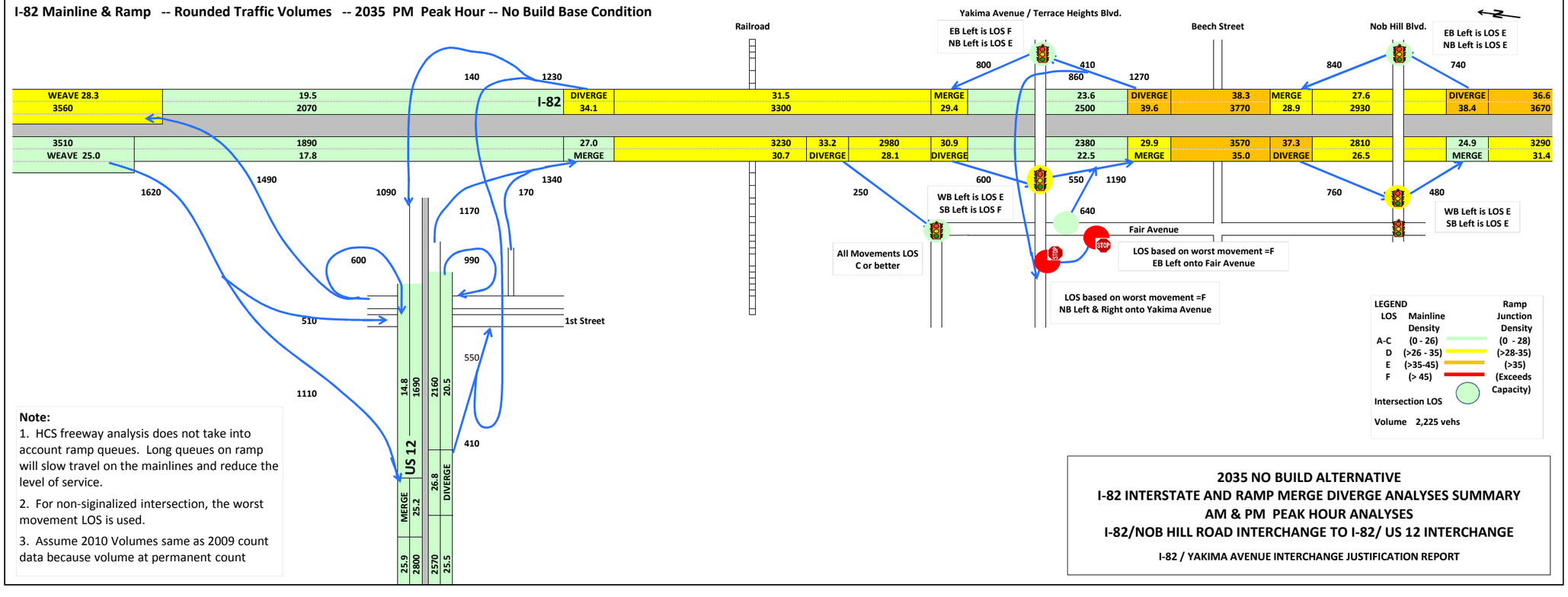
2015 BUILD ALTERNATIVE 2C Revised (C/D Alternative) - Stage 2
I-82 INTERSTATE AND RAMP MERGE DIVERGE ANALYSES SUMMARY
AM & PM PEAK HOUR ANALYSES
I-82/NOB HILL ROAD INTERCHANGE TO I-82/ US 12 INTERCHANGE

I-82 / YAKIMA AVENUE INTERCHANGE JUSTIFICATION REPORT

I-82 Mainline & Ramp -- Rounded Traffic Volumes -- 2035 AM Peak Hour -- No Build Base Condition



I-82 Mainline & Ramp -- Rounded Traffic Volumes -- 2035 PM Peak Hour -- No Build Base Condition



LEGEND

LOS	Mainline Density	Ramp Junction Density
A-C	(0 - 26)	(0 - 28)
D	(>26 - 35)	(>28-35)
E	(>35-45)	(>35)
F	(> 45)	(Exceeds Capacity)

Intersection LOS

Volume 2,225 vehs

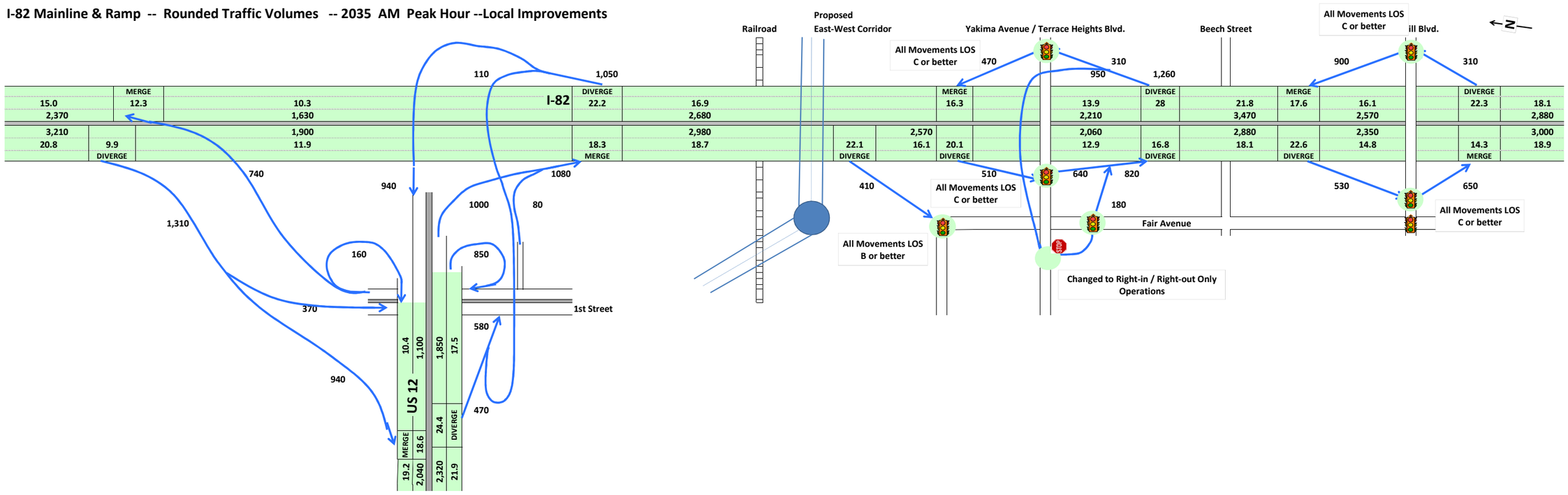
Note:

1. HCS freeway analysis does not take into account ramp queues. Long queues on ramp will slow travel on the mainlines and reduce the level of service.
2. For non-siginalized intersection, the worst movement LOS is used.
3. Assume 2010 Volumes same as 2009 count data because volume at permanent count

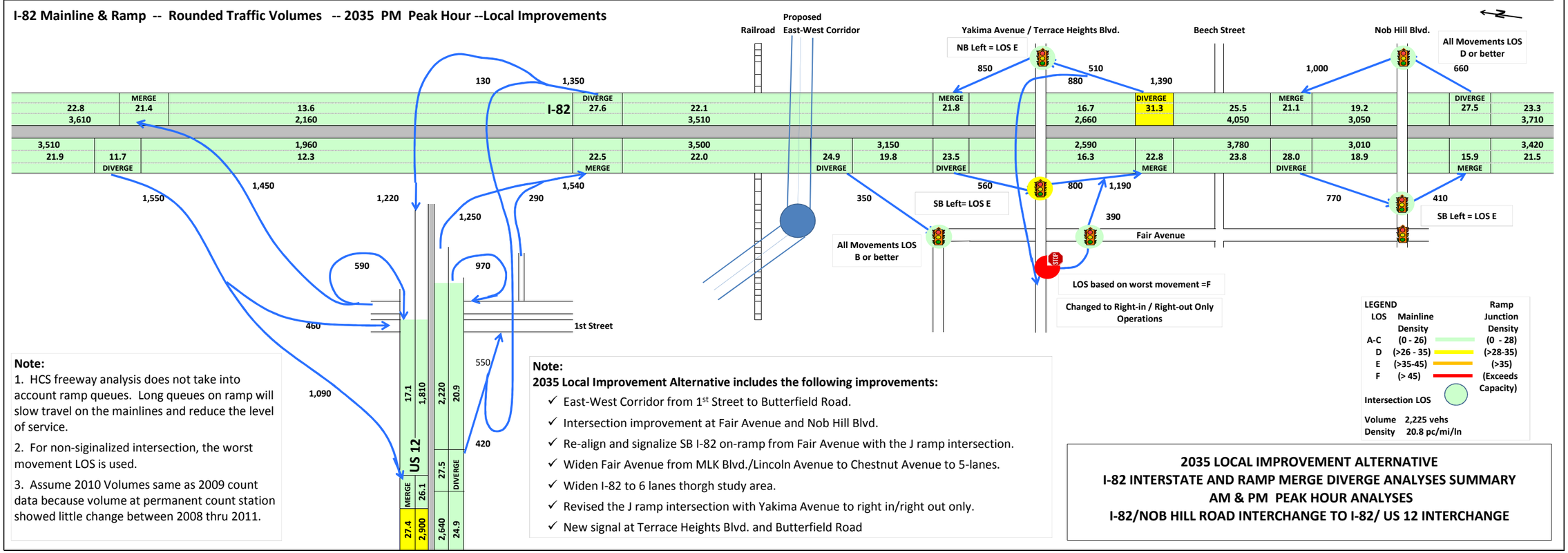
2035 NO BUILD ALTERNATIVE
I-82 INTERSTATE AND RAMP MERGE DIVERGE ANALYSES SUMMARY
AM & PM PEAK HOUR ANALYSES
I-82/NOB HILL ROAD INTERCHANGE TO I-82/ US 12 INTERCHANGE

I-82 / YAKIMA AVENUE INTERCHANGE JUSTIFICATION REPORT

I-82 Mainline & Ramp -- Rounded Traffic Volumes -- 2035 AM Peak Hour --Local Improvements



I-82 Mainline & Ramp -- Rounded Traffic Volumes -- 2035 PM Peak Hour --Local Improvements



Note:

1. HCS freeway analysis does not take into account ramp queues. Long queues on ramp will slow travel on the mainlines and reduce the level of service.
2. For non-signalized intersection, the worst movement LOS is used.
3. Assume 2010 Volumes same as 2009 count data because volume at permanent count station showed little change between 2008 thru 2011.

Note:

2035 Local Improvement Alternative includes the following improvements:

- ✓ East-West Corridor from 1st Street to Butterfield Road.
- ✓ Intersection improvement at Fair Avenue and Nob Hill Blvd.
- ✓ Re-align and signalize SB I-82 on-ramp from Fair Avenue with the J ramp intersection.
- ✓ Widen Fair Avenue from MLK Blvd./Lincoln Avenue to Chestnut Avenue to 5-lanes.
- ✓ Widen I-82 to 6 lanes thorgh study area.
- ✓ Revised the J ramp intersection with Yakima Avenue to right in/right out only.
- ✓ New signal at Terrace Heights Blvd. and Butterfield Road

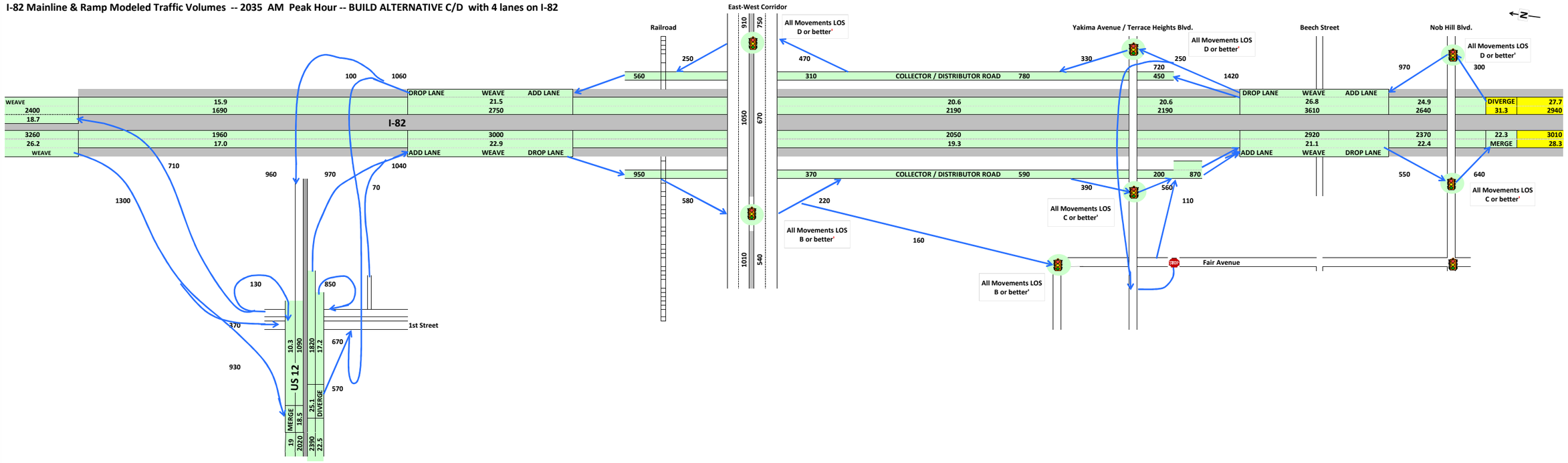
LEGEND LOS	Mainline Density	Ramp Junction Density
A-C	(0 - 26)	(0 - 28)
D	(>26 - 35)	(>28-35)
E	(>35-45)	(>35)
F	(> 45)	(Exceeds Capacity)

Intersection LOS

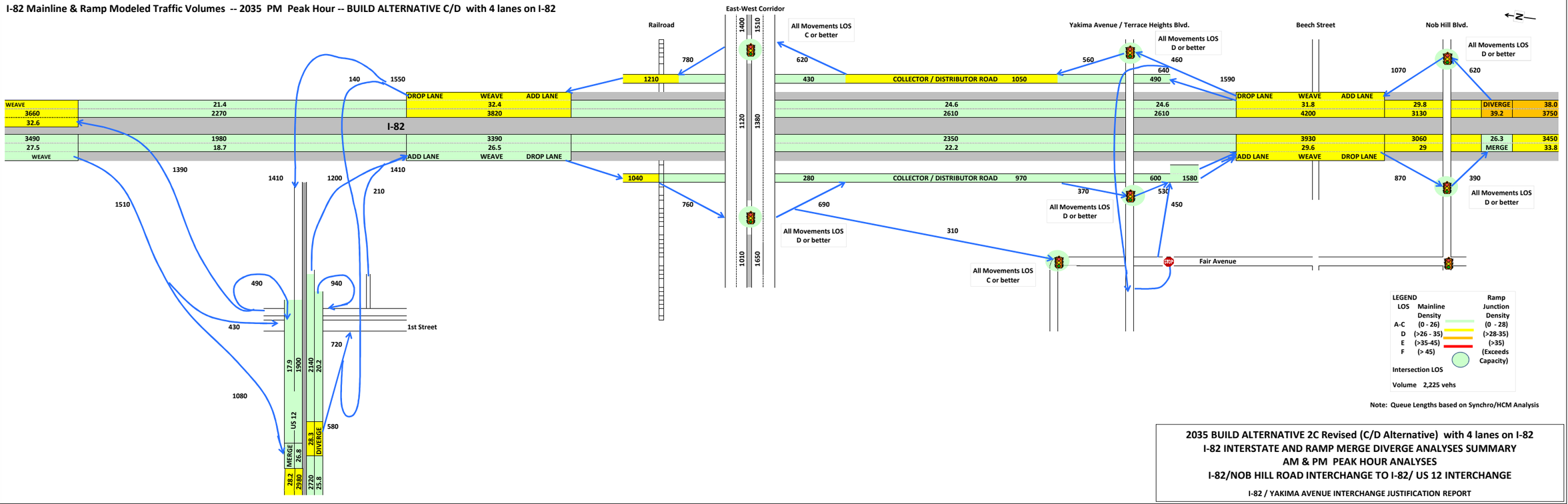
Volume 2,225 vehs
Density 20.8 pc/mi/ln

2035 LOCAL IMPROVEMENT ALTERNATIVE
I-82 INTERSTATE AND RAMP MERGE DIVERGE ANALYSES SUMMARY
AM & PM PEAK HOUR ANALYSES
I-82/NOB HILL ROAD INTERCHANGE TO I-82/ US 12 INTERCHANGE

I-82 Mainline & Ramp Modeled Traffic Volumes -- 2035 AM Peak Hour -- BUILD ALTERNATIVE C/D with 4 lanes on I-82



I-82 Mainline & Ramp Modeled Traffic Volumes -- 2035 PM Peak Hour -- BUILD ALTERNATIVE C/D with 4 lanes on I-82

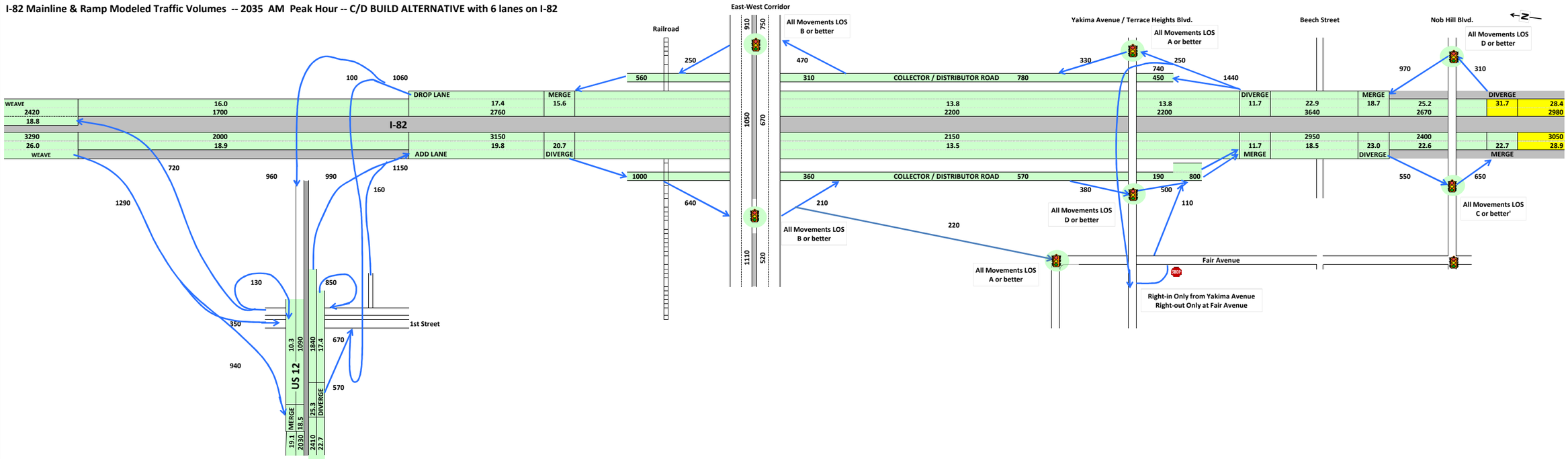


Note: Queue Lengths based on Synchro/HCM Analysis

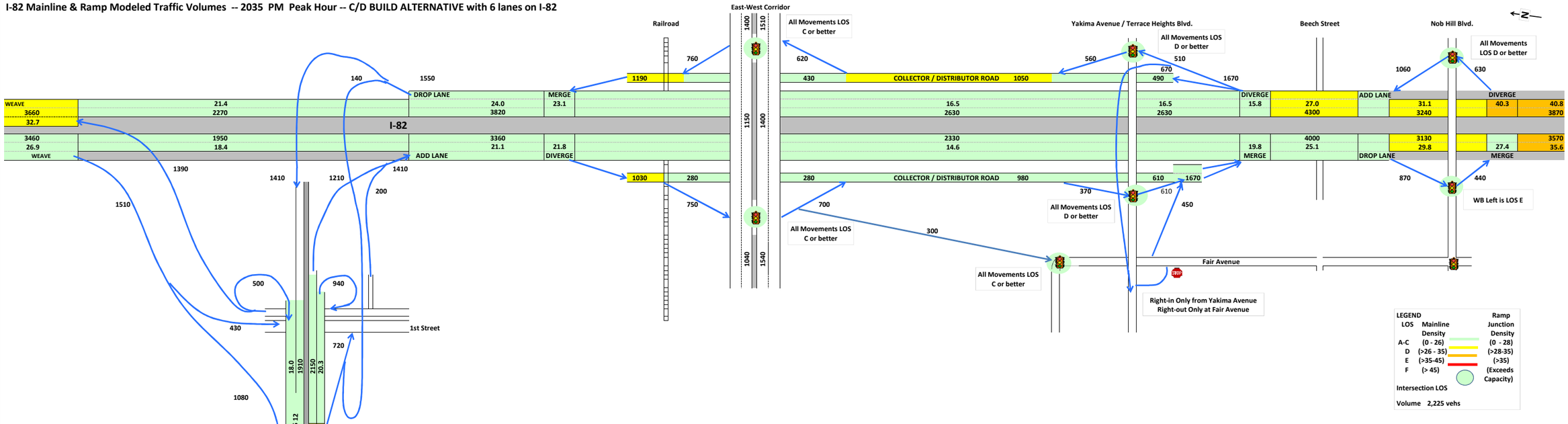
2035 BUILD ALTERNATIVE 2C Revised (C/D Alternative) with 4 lanes on I-82
I-82 INTERSTATE AND RAMP MERGE DIVERGE ANALYSES SUMMARY
AM & PM PEAK HOUR ANALYSES
I-82/NOB HILL ROAD INTERCHANGE TO I-82/ US 12 INTERCHANGE

I-82 / YAKIMA AVENUE INTERCHANGE JUSTIFICATION REPORT

I-82 Mainline & Ramp Modeled Traffic Volumes -- 2035 AM Peak Hour -- C/D BUILD ALTERNATIVE with 6 lanes on I-82



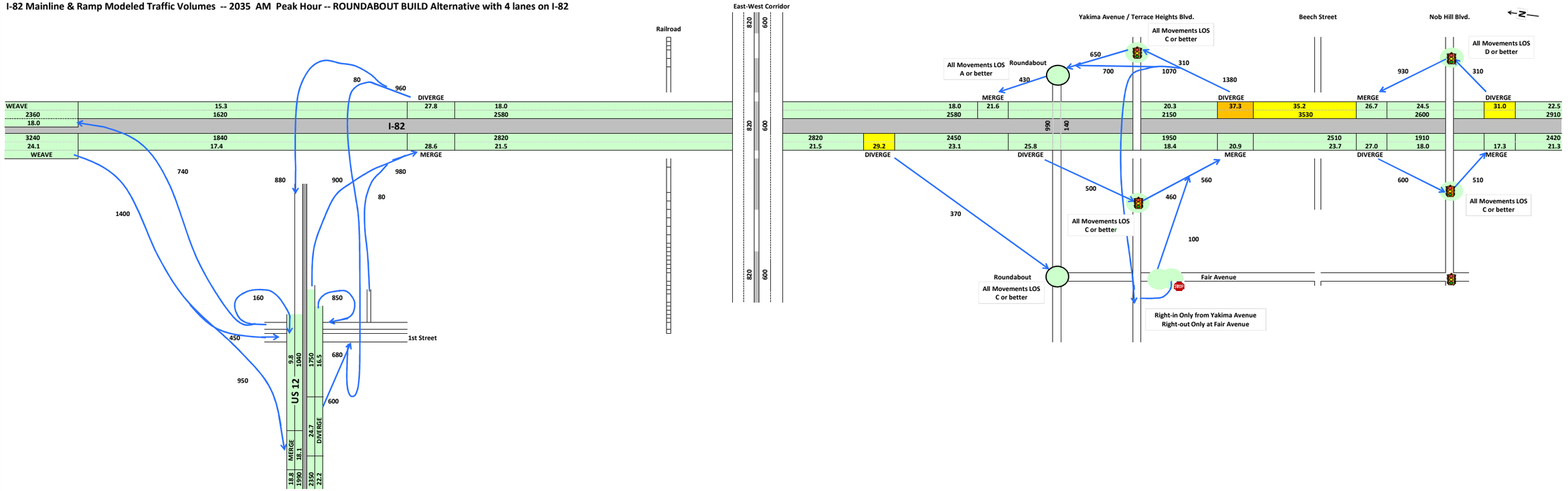
I-82 Mainline & Ramp Modeled Traffic Volumes -- 2035 PM Peak Hour -- C/D BUILD ALTERNATIVE with 6 lanes on I-82



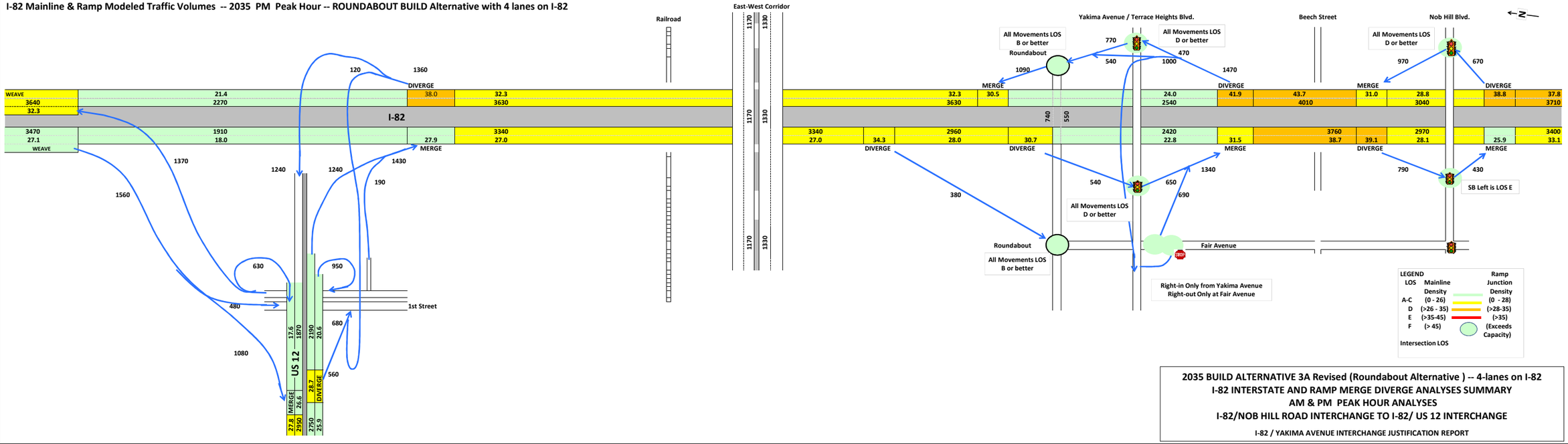
BUILD ALTERNATIVE 2C Revised (C/D Alternative) with 6 lanes on I-82
I-82 INTERSTATE AND RAMP MERGE DIVERGE ANALYSES SUMMARY
2035 AM & PM PEAK HOUR ANALYSES
I-82/NOB HILL ROAD INTERCHANGE TO I-82/ US 12 INTERCHANGE

I-82 / YAKIMA AVENUE INTERCHANGE JUSTIFICATION REPORT

I-82 Mainline & Ramp Modeled Traffic Volumes -- 2035 AM Peak Hour -- ROUNDABOUT BUILD Alternative with 4 lanes on I-82



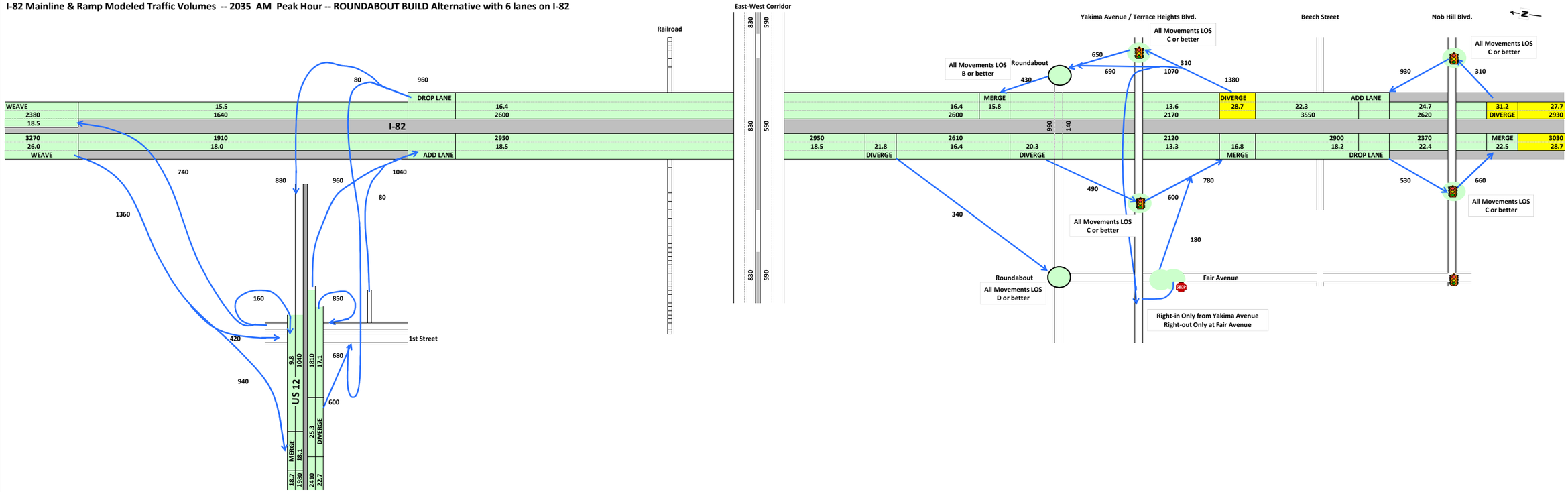
I-82 Mainline & Ramp Modeled Traffic Volumes -- 2035 PM Peak Hour -- ROUNDABOUT BUILD Alternative with 4 lanes on I-82



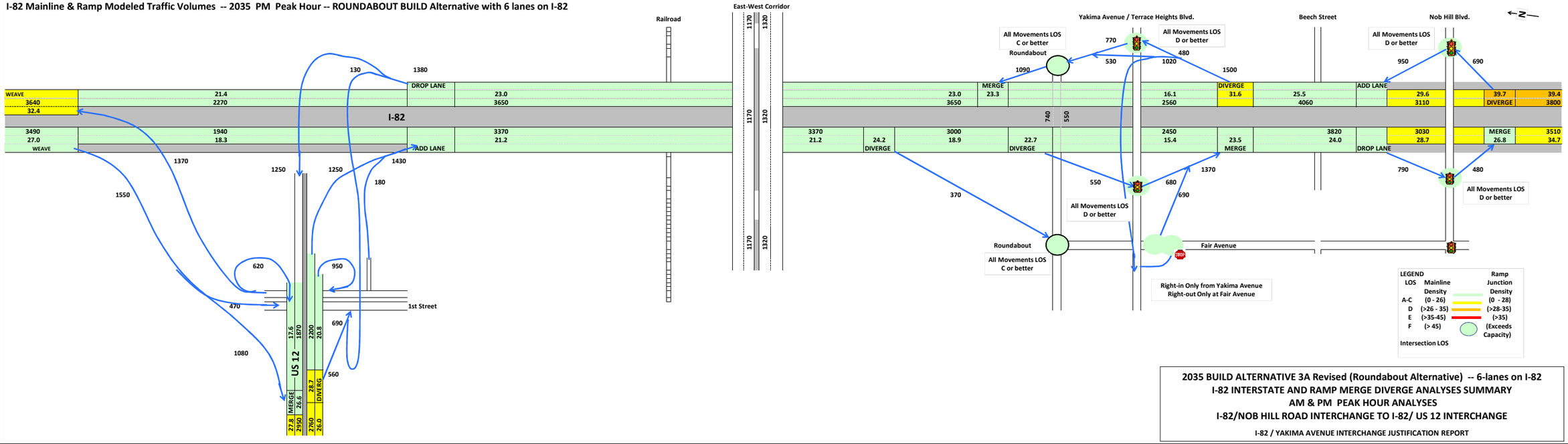
2035 BUILD ALTERNATIVE 3A Revised (Roundabout Alternative) -- 4-lanes on I-82
I-82 INTERSTATE AND RAMP MERGE DIVERGE ANALYSES SUMMARY
AM & PM PEAK HOUR ANALYSES
I-82/NOB HILL ROAD INTERCHANGE TO I-82/ US 12 INTERCHANGE

I-82 / YAKIMA AVENUE INTERCHANGE JUSTIFICATION REPORT

I-82 Mainline & Ramp Modeled Traffic Volumes -- 2035 AM Peak Hour -- ROUNDABOUT BUILD Alternative with 6 lanes on I-82



I-82 Mainline & Ramp Modeled Traffic Volumes -- 2035 PM Peak Hour -- ROUNDABOUT BUILD Alternative with 6 lanes on I-82



2035 BUILD ALTERNATIVE 3A Revised (Roundabout Alternative) -- 6-lanes on I-82
I-82 INTERSTATE AND RAMP MERGE DIVERGE ANALYSES SUMMARY
AM & PM PEAK HOUR ANALYSES
I-82/NOB HILL ROAD INTERCHANGE TO I-82/ US 12 INTERCHANGE

I-82 / YAKIMA AVENUE INTERCHANGE JUSTIFICATION REPORT

INTERCHANGE JUSTIFICATION REPORT

I-82/Yakima Avenue/Terrace Heights Drive Interchange
MP 31.40 to MP 34.77

Appendix D

VISSIM Summary

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WHAT IMPROVEMENTS ARE PROPOSED AT THE I-82/YAKIMA AVENUE INTERCHANGE?

While it is anticipated that the improvements recommended will be staged over time to address increases in traffic, the ultimate build alternative is proposed to include:

- Construction of Collector/Distributor (CD) roadways on both sides of I-82, reducing the current five access points to four;
- Adding auxiliary lanes in both directions of I-82 between the Nob Hill Boulevard ramps and the new CD roadways, as well as between the US 12 ramps and the CD roadways;
- The existing Fair Avenue Loop Connector (J Ramp) is converted to a one-way connector from Yakima Avenue to Fair Avenue with right-in only from Yakima Avenue;
- A section of the existing westbound Yakima Avenue flyover will be reconstructed to provide proper clearance for the eastbound CD roadway and eastbound off-ramp to Yakima Avenue;
- The existing I-82 off-ramps to Fair Avenue and Yakima Avenue are consolidated into a single CD off-ramp; and
- When the bridge over I-82 is constructed, ramps from the CD roadway will be connected to the East-West Corridor.

WHAT WAS THE VISSIM TRAFFIC ANALYSIS FOR THE 2035 NO-BUILD AND THE 2035 PROPOSED IMPROVEMENTS?

The future traffic analyses were completed using *VISSIM* (Version 5.40) micro-simulation modeling software. Analysis was conducted along I-82 from northwest of US 12 to southeast of Nob Hill Road and included ramp terminals along this segment. The recommended alterative was modeled for design year (2035) traffic conditions. Additionally, a no-build alternative based on existing conditions was also modeled for comparison with the recommended alternative.

Each alternative was simulated eleven times for both the AM and PM peak periods using random seed numbers 1 through 11. The AM and PM models simulate traffic conditions from 6:30 AM to 8:30 AM and from 3:30 PM to 5:30 PM, respectively. The Measures of Effectiveness (MOEs) for each alternative were then calculated by averaging the results for the eleven model runs. Segment performance for the controlled access mainline was evaluated using volumes, speeds and densities. Intersection operations were evaluated using volumes, queuing and control delays. For comparative purposes, the intersection control delays were assigned LOS values based on the criteria established in the 2010 Highway Capacity Manual.

Key portions of the analysis for each alternative are discussed below. For fully detailed result summaries, please see **Attachment A**.

Overall Network

On a network wide basis, the 2035 No-Build models have traffic deficiencies which result in a portion of the traffic not being processed in the PM model run. The AM model runs were able to process 100.1% of input volumes. During PM peak period, only 96.1% of vehicle inputs are processed by the model. The improvements in the recommended alternative solve many of the issues present in the 2035 No-Build network.

With the recommended improvements on I-82, the 2035 models are better able to process the demand volumes. The recommended alternative processes 99.6% of the demand during the AM peak period and 99.9% of the demand during the PM peak period.

Analysis Results

As shown in **Table 1**, the recommended alternative provides similar level-of-service during the AM peak hour and improved level-of-service during the PM peak hour.

Table 1. Peak Hour Traffic Analysis Results

Alternative	Intersection		Approach	AM Peak Hour		PM Peak Hour	
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2035 No-Build	Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	22	C	43	D
			WB Arterial	17	B	24	C
			Off-Ramp	55	D	78	E
			Overall Intersection	**25**	**C**	**42**	**D**
		WB Ramps (Signalized)	EB Arterial	8	A	11	A
			WB Arterial	5	A	10	A
			Off-Ramp	2	A	6	A
			Overall Intersection	**6**	**A**	**10**	**A**
2035 Recommended	Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	17	B	19	B
			WB Arterial	13	B	12	B
			Off-Ramp	31	C	34	C
			Overall Intersection	**17**	**B**	**18**	**B**
		WB Ramps (Signalized)	EB Arterial	1	A	3	A
			WB Arterial	2	A	4	A
			Off-Ramp	2	A	3	A
			Overall Intersection	**2**	**A**	**3**	**A**

The recommended build analysis, discussed above, was conducted with I-82 as a 4-lane facility adjacent to the CD system. Analysis was also conducted with this portion of I-82 as a 6-lane facility to ensure that the mainline and CD system would continue to operate acceptably once this portion of I-82 is widened to 6-lanes. Based on the analysis, also included in **Attachment A**, the I-82 corridor will work well under either scenario with I-82 mainline densities averaging between 20 and 30 vehicles per lane per mile (vplpm).

I-82, Yakima Avenue IJR
2035 No-Build AM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

6:30 - 7:00 AM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Left Turn		Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	245	0	245	0	241	0	241	0	-4	0	-4	-	0.3	-	0.3	-	4	-	-	A	-	4	A	5	A	60	-	-	-	-
		WB Arterial	0	298	0	298	0	276	0	276	0	-22	0	-22	-	1.3	-	1.3	-	4	-	-	A	-	4	A			70	-	-	-	-
		Off-Ramp	156	0	130	286	141	0	139	280	-15	0	9	-6	1.2	-	0.8	0.4	8	-	7	A	-	A	8	A			-	500	75	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	473	166	639	0	503	183	686	0	30	17	47	-	1.4	1.3	1.8	-	23	8	-	C	A	19	B	25	C	194	-	-	225	194
		WB Arterial	349	730	0	1079	346	745	0	1091	-3	15	0	12	0.2	0.6	-	0.4	44	5	-	D	A	-	17	B			217	270	217	-	-
		Off-Ramp	347	0	29	376	341	0	44	385	-6	0	15	9	0.3	-	2.5	0.5	62	-	8	E	-	A	56	E			259	Continuous	259	225	0
	WB Ramps (Signalized)	EB Arterial	49	771	0	820	68	772	0	840	19	1	0	20	2.5	0.0	-	0.7	89	1	-	F	A	-	8	A	5	A	118	400	118	-	-
		WB Arterial	0	1079	290	1369	0	1094	257	1351	0	15	-33	-18	-	0.5	2.0	0.5	-	3	3	-	A	A	3	A			98	-	-	-	0
		Off-Ramp	0	0	130	130	0	0	129	129	0	0	-1	-1	-	-	0.1	0.1	-	-	2	-	-	A	2	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	416	45	461	0	411	43	454	0	-5	-2	-7	-	0.2	0.3	0.3	-	17	2	-	B	A	16	B	14	B	107	-	-	375	-
		WB Arterial	502	638	0	1140	500	626	0	1126	-2	-12	0	-14	0.1	0.5	-	0.4	20	3	-	B	A	-	11	B			117	275	117	-	-
		Off-Ramp	287	0	88	375	299	0	79	378	12	0	-9	3	0.7	-	1.0	0.2	25	-	2	C	-	A	20	C			122	Continuous	122	300	-
	WB Ramps (Signalized)	EB Arterial	27	676	0	703	32	676	0	708	5	0	0	5	0.9	-	-	0.2	21	-	-	C	A	-	1	A	3	A	39	275	39	-	-
		WB Arterial	0	1095	485	1580	0	1089	474	1563	0	-6	-11	-17	-	0.2	0.5	0.4	-	4	3	-	A	A	4	A			125	-	-	375	0
		Off-Ramp	45	0	146	191	36	0	148	184	-9	0	2	-7	1.4	-	0.2	0.5	36	-	1	D	-	A	8	A			50	Continuous	50	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

7:00 - 8:00 AM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Left Turn		Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	300	0	300	0	300	0	300	0	0	0	0	-	-	-	-	-	5	-	-	A	-	5	A	6	A	80	-	-	-	-
		WB Arterial	0	365	0	365	0	346	0	346	0	-19	0	-19	-	1.0	-	1.0	-	5	-	-	A	-	5	A			86	-	-	-	-
		Off-Ramp	191	0	159	350	178	0	178	356	-13	0	19	6	1.0	-	1.5	0.3	8	-	7	A	-	A	8	A			-	500	86	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	579	203	782	0	605	209	814	0	26	6	32	-	1.1	0.4	1.1	-	26	9	-	C	A	22	C	25	C	247	-	-	225	247
		WB Arterial	427	1326	0	1753	399	1286	0	1685	-28	-40	0	-68	1.4	1.1	-	1.6	48	8	-	D	A	-	17	B			321	270	321	-	-
		Off-Ramp	425	0	35	460	416	0	53	469	-9	0	18	9	0.4	-	2.7	0.4	60	-	14	E	-	B	55	D			366	Continuous	366	225	16
	WB Ramps (Signalized)	EB Arterial	79	925	0	1004	83	938	0	1021	4	13	0	17	0.4	0.4	-	0.5	87	1	-	F	A	-	8	A	6	A	134	400	134	-	-
		WB Arterial	0	1753	471	2224	0	1692	450	2142	0	-61	-21	-82	-	1.5	1.0	1.8	-	5	5	-	A	A	5	A			164	-	-	-	5
		Off-Ramp	0	0	210	210	0	0	198	198	0	0	-12	-12	-	-	0.8	0.8	-	-	2	-	-	A	2	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	510	55	565	0	517	49	566	0	7	-6	1	-	0.3	0.8	0.0	-	18	2	-	B	A	17	B	13	B	128	-	-	375	-
		WB Arterial	615	1233	0	1848	589	1201	0	1790	-26	-32	0	-58	1.1	0.9	-	1.4	21	4	-	C	A	-	10	A			152	275	152	-	-
		Off-Ramp	352	0	108	460	343	0	109	452	-9	0	1	-8	0.5	-	0.1	0.4	24	-	3	C	-	A	19	B			133	Continuous	133	300	-
	WB Ramps (Signalized)	EB Arterial	44	818	0	862	47	812	0	859	3	-6	0	-3	0.4	0.2	-	0.1	22	-	-	C	A	-	1	A	5	A	45	275	45	-	-
		WB Arterial	0	1775	786	2561	0	1730	748	2478	0	-45	-38	-83	-	1.1	1.4	1.7	-	7	5	-	A	A	6	A			227	-	-	375	5
		Off-Ramp	73	0	237	310	62	0	233	295	-11	0	-4	-15	1.3	-	0.3	0.9	33	-	1	C	-	A	8	A			58	Continuous	58	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

8:00 - 8:30 AM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Left Turn		Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	247	0	247	0	245	0	245	0	-2	0	-2	-	0.1	-	0.1	-	4	-	-	A	-	4	A	5	A	64	-	-	-	-
		WB Arterial	0	300	0	300	0	308	0	308	0	8	0	8	-	0.5	-	0.5	-	4	-	-	A	-	4	A			70	-	-	-	-
		Off-Ramp	157	0	131	288	141	0	155	296	-16	0	24	8	1.3	-	2.0	0.5	7	-	7	A	-	A	7	A			-	500	67	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	477	167	644	0	539	155	694	0	62	-12	50	-	2.8	0.9	1.9	-	25	8	-	C	A	21	C	23	C	223	-	-	225	223
		WB Arterial	352	1237	0	1589	364	1264	0	1628	12	27	0	39	0.6	0.8	-	1.0	46	7	-	D	A	-	16	B			289	270	289	-	-
		Off-Ramp	350	0	29	379	351	0	47	398	1	0	18	19	0.1	-	2.9	1.0	62	-	11	E	-	B	56	E			285	Continuous	285	225	0
	WB Ramps (Signalized)	EB Arterial	72	755	0	827	91	804	0	895	19	49	0	68	2.1	1.8	-	2.3	92	1	-	F	A	-	10	B	6	A	141	400	141	-	-
		WB Arterial	0	1589	427	2016	0	1619	413	2032	0	30	-14	16	-	0.7	0.7	0.4	-	5	5	-	A	A	5	A			132	-	-	-	0
		Off-Ramp	0	0	191	191	0	0	193	193	0	0	2	2	-	-	0.1	0.1	-	-	2	-	-	A	2	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	420	45	465	0	435	32	467	0	15	-13	2	-	0.7	2.1	0.1	-	18	2	-	B	A	17	B	12	B	121	-	-	375	-
		WB Arterial	507	1171	0	1678	527	1171	0	1698	20	0	0	20	0.9	-	-	0.5	20	4	-	B	A	-	9	A			134	275	134	-	-
		Off-Ramp	290	0	89	379	302	0	105	407	12	0	16	28	0.7	-	1.6	1.4	24	-	3	C	-	A	19	B			111	Continuous	111	300	-
	WB Ramps (Signalized)	EB Arterial	40	670	0	710	42	693	0	735	2	23	0	25	0.3	0.9	-	0.9	19	-	-	B	A	-	1	A	5	A	44	275	44	-	-
		WB Arterial	0	1612	714	2326	0	1639	705	2344	0	27	-9	18	-	0.7	0.3	0.4	-	6	4	-	A	A	5	A			212	-	-	375	0
		Off-Ramp	66	0	216	282	60	0	217	277	-6	0	1	-5	0.8	-	0.1	0.3	35	-	1	C	-	A	8	A			57	Continuous	57	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

I-82, Yakima Avenue IJR
2035 No-Build AM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

6:30 - 7:00 AM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	118	0	118	0	122	0	122	0	121	0	121	0	121	0	121	0	121	0	121	0	123	0	123	0	117	0	117
		WB Arterial	0	147	0	147	0	137	0	137	0	132	0	132	0	129	0	129	0	132	0	132	0	144	0	144	0	133	0	133
		Off-Ramp	68	0	68	136	68	0	58	126	82	0	64	146	66	0	57	123	69	0	66	135	83	0	75	158	60	0	69	129
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	243	101	344	0	250	87	337	0	237	106	343	0	262	94	356	0	235	88	323	0	260	86	346	0	244	92	336
		WB Arterial	161	378	0	539	170	361	0	531	172	389	0	561	184	361	0	545	189	355	0	544	187	352	0	539	169	387	0	556
		Off-Ramp	174	0	27	201	184	0	27	211	163	0	15	178	184	0	22	206	162	0	24	186	183	0	14	197	166	0	14	180
	WB Ramps (Signalized)	EB Arterial	32	383	0	415	35	402	0	437	39	358	0	397	31	413	0	444	30	362	0	392	33	406	0	439	38	366	0	404
		WB Arterial	0	546	127	673	0	530	144	674	0	563	115	678	0	547	121	668	0	545	140	685	0	532	135	667	0	564	121	685
		Off-Ramp	0	0	64	64	0	0	54	54	0	0	61	61	0	0	67	67	0	0	77	77	0	0	69	69	0	0	70	70
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	217	16	233	0	202	22	224	0	197	27	224	0	205	19	224	0	210	17	227	0	202	28	230	0	214	18	232
		WB Arterial	234	319	0	553	259	307	0	566	243	314	0	557	255	301	0	556	259	304	0	563	236	325	0	561	259	299	0	558
		Off-Ramp	145	0	43	188	169	0	42	211	151	0	38	189	139	0	39	178	150	0	36	186	153	0	36	189	127	0	48	175
	WB Ramps (Signalized)	EB Arterial	12	351	0	363	19	349	0	368	18	325	0	343	17	328	0	345	19	344	0	363	14	344	0	358	20	322	0	342
		WB Arterial	0	535	235	770	0	554	238	792	0	544	233	777	0	539	234	773	0	539	248	787	0	537	241	778	0	539	240	779
		Off-Ramp	20	0	77	97	15	0	82	97	14	0	91	105	20	0	79	99	19	0	51	70	20	0	77	97	16	0	71	87

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables co

7:00 - 8:00 AM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	301	0	301	0	300	0	300	0	299	0	299	0	296	0	296	0	302	0	302	0	294	0	294	0	303	0	303
		WB Arterial	0	338	0	338	0	350	0	350	0	345	0	345	0	342	0	342	0	328	0	328	0	339	0	339	0	361	0	361
		Off-Ramp	172	0	181	353	177	0	171	348	180	0	161	341	182	0	185	367	182	0	196	378	182	0	175	357	179	0	192	371
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	602	210	812	0	610	200	810	0	597	223	820	0	623	208	831	0	612	199	811	0	600	197	797	0	610	217	827
		WB Arterial	412	1259	0	1671	378	1272	0	1650	386	1270	0	1656	404	1308	0	1712	393	1313	0	1706	377	1289	0	1666	426	1315	0	1741
		Off-Ramp	416	0	55	471	426	0	53	479	432	0	49	481	420	0	57	477	431	0	58	489	404	0	52	456	413	0	49	462
	WB Ramps (Signalized)	EB Arterial	88	935	0	1023	76	956	0	1032	79	946	0	1025	82	961	0	1043	96	952	0	1048	84	923	0	1007	83	939	0	1022
		WB Arterial	0	1674	479	2153	0	1652	478	2130	0	1672	474	2146	0	1716	429	2145	0	1715	445	2160	0	1676	474	2150	0	1741	417	2158
		Off-Ramp	0	0	183	183	0	0	208	208	0	0	191	191	0	0	234	234	0	0	214	214	0	0	199	199	0	0	170	170
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	519	44	563	0	520	46	566	0	522	41	563	0	507	57	564	0	511	58	569	0	507	55	562	0	522	43	565
		WB Arterial	616	1218	0	1834	555	1197	0	1752	559	1220	0	1779	583	1209	0	1792	623	1194	0	1817	634	1175	0	1809	580	1176	0	1756
		Off-Ramp	328	0	110	438	328	0	107	435	352	0	117	469	349	0	106	455	361	0	106	467	341	0	112	453	371	0	105	476
	WB Ramps (Signalized)	EB Arterial	46	796	0	842	50	800	0	850	49	829	0	878	38	816	0	854	54	815	0	869	46	801	0	847	37	852	0	889
		WB Arterial	0	1776	714	2490	0	1700	768	2468	0	1716	760	2476	0	1729	756	2485	0	1762	726	2488	0	1737	731	2468	0	1708	762	2470
		Off-Ramp	63	0	210	273	48	0	237	285	59	0	235	294	61	0	227	288	63	0	250	313	72	0	227	299	49	0	245	294

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables co

8:00 - 8:30 AM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	121	0	121	0	118	0	118	0	124	0	124	0	122	0	122	0	121	0	121	0	126	0	126	0	122	0	122
		WB Arterial	0	141	0	141	0	150	0	150	0	155	0	155	0	154	0	154	0	145	0	145	0	171	0	171	0	156	0	156
		Off-Ramp	61	0	74	135	66	0	93	159	57	0	76	133	71	0	83	154	66	0	66	132	65	0	83	148	76	0	64	140
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	286	79	365	0	262	85	347	0	284	75	359	0	265	65	330	0	264	82	346	0	261	83	344	0	264	77	341
		WB Arterial	193	610	0	803	177	637	0	814	174	642	0	816	172	634	0	806	168	657	0	825	170	650	0	820	202	607	0	809
		Off-Ramp	160	0	24	184	164	0	25	189	175	0	19	194	165	0	17	182	180	0	15	195	157	0	26	183	207	0	23	230
	WB Ramps (Signalized)	EB Arterial	47	398	0	445	44	391	0	435	46	424	0	470	43	388	0	431	40	400	0	440	41	372	0	413	49	435	0	484
		WB Arterial	0	797	228	1025	0	814	226	1040	0	801	199	1000	0	798	199	997	0	817	206	1023	0	820	202	1022	0	813	202	1015
		Off-Ramp	0	0	103	103	0	0	114	114	0	0	103	103	0	0	110	110	0	0	88	88	0	0	90	90	0	0	86	86
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	218	17	235	0	221	11	232	0	220	17	237	0	217	12	229	0	217	16	233	0	226	16	242	0	214	20	234
		WB Arterial	266	572	0	838	274	591	0	865	256	590	0	846	285	565	0	850	255	587	0	842	274	581	0	855	265	598	0	863
		Off-Ramp	130	0	55	185	137	0	58	195	146	0	52	198	147	0	51	198	165	0	55	220	152	0	58	210	161	0	51	212
	WB Ramps (Signalized)	EB Arterial	16	337	0	353	23	332	0	355	15	351	0	366	23	336	0	359	18	359	0	377	25	354	0	379	27	349	0	376
		WB Arterial	0	812	359	1171	0	840	343	1183	0	823	355	1178	0	826	346	1172	0	809	335	1144	0	835	354	1189	0	828	356	1184
		Off-Ramp	23	0	124	147	26	0	112	138	28	0	103	131	30	0	114	144	24	0	109	133	27	0	116	143	41	0	81	122

I-82, Yakima Avenue IJR
2035 No-Build AM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

6:30 - 7:00 AM

Intersection		Approach	Modeled Volumes																	Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11				Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total				
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	121	0	121	0	122	0		122	0	117	0	117	0	121	0	121	120	2.1	1.5	1%
		WB Arterial	0	152	0	152	0	137	0		137	0	144	0	144	0	133	0	133	138	7.4	5.3	4%
		Off-Ramp	77	0	76	153	67	0	73		140	67	0	81	148	67	0	75	142	140	11.1	8.0	6%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	248	99	347	0	273	79		352	0	253	95	348	0	260	82	342	343	8.9	6.3	2%
		WB Arterial	162	394	0	556	182	364	0		546	156	398	0	554	172	359	0	531	546	10.2	7.3	1%
		Off-Ramp	164	0	26	190	167	0	24		191	152	0	20	172	175	0	28	203	192	12.5	8.9	5%
	WB Ramps (Signalized)	EB Arterial	32	379	0	411	29	415	0		444	36	366	0	402	39	397	0	436	420	20.1	14.4	3%
		WB Arterial	0	552	132	684	0	549	122		671	0	554	121	675	0	535	137	672	676	6.5	4.7	1%
		Off-Ramp	0	0	63	63	0	0	57		57	0	0	70	70	0	0	59	59	65	6.7	4.8	7%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	207	24	231	0	208	18		226	0	199	26	225	0	200	24	224	227	3.6	2.5	1%
		WB Arterial	242	328	0	570	269	316	0		585	242	329	0	571	254	299	0	553	563	9.6	6.9	1%
		Off-Ramp	153	0	31	184	152	0	36		188	157	0	47	204	147	0	37	184	189	10.4	7.5	4%
	WB Ramps (Signalized)	EB Arterial	16	345	0	361	5	353	0		358	15	335	0	350	21	322	0	343	354	9.6	6.9	2%
		WB Arterial	0	548	235	783	0	565	224		789	0	550	234	784	0	537	243	780	781	6.7	4.8	1%
		Off-Ramp	21	0	70	91	18	0	76		94	23	0	72	95	13	0	66	79	92	9.9	7.1	8%

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables co

7:00 - 8:00 AM

Intersection		Approach	Modeled Volumes																	Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11				Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total				
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	303	0	303	0	299	0		299	0	301	0	301	0	298	0	298	300	2.8	2.0	1%
		WB Arterial	0	344	0	344	0	349	0		349	0	348	0	348	0	362	0	362	346	9.8	7.0	2%
		Off-Ramp	172	0	174	346	180	0	176		356	183	0	182	365	171	0	167	338	356	12.8	9.1	3%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	587	231	818	0	608	212		820	0	610	198	808	0	599	201	800	814	10.5	7.5	1%
		WB Arterial	406	1237	0	1643	403	1307	0		1710	384	1290	0	1674	420	1290	0	1710	1685	31.7	22.7	1%
		Off-Ramp	423	0	54	477	371	0	47		418	429	0	51	480	410	0	57	467	469	19.3	13.8	3%
	WB Ramps (Signalized)	EB Arterial	91	915	0	1006	79	897	0		976	89	958	0	1047	65	941	0	1006	1021	21.7	15.5	2%
		WB Arterial	0	1660	470	2130	0	1711	420		2131	0	1681	449	2130	0	1714	420	2134	2142	11.9	8.5	0%
		Off-Ramp	0	0	188	188	0	0	197		197	0	0	196	196	0	0	203	203	198	16.8	12.1	6%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	522	50	572	0	524	42		566	0	513	51	564	0	515	53	568	566	3.0	2.2	0%
		WB Arterial	547	1226	0	1773	585	1221	0		1806	608	1185	0	1793	586	1189	0	1775	1790	25.6	18.3	1%
		Off-Ramp	342	0	112	454	349	0	113		462	298	0	98	396	354	0	116	470	452	22.7	16.2	4%
	WB Ramps (Signalized)	EB Arterial	55	806	0	861	47	824	0		871	55	760	0	815	45	828	0	873	859	20.4	14.6	2%
		WB Arterial	0	1710	773	2483	0	1744	724		2468	0	1730	740	2470	0	1720	769	2489	2478	9.3	6.7	0%
		Off-Ramp	66	0	223	289	63	0	257		320	73	0	227	300	60	0	225	285	295	13.3	9.5	3%

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables co

8:00 - 8:30 AM

Intersection		Approach	Modeled Volumes																	Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11				Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total				
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	121	0	121	0	120	0		120	0	125	0	125	0	126	0	126	122	2.6	1.8	2%
		WB Arterial	0	167	0	167	0	162	0		162	0	146	0	146	0	147	0	147	154	9.5	6.8	4%
		Off-Ramp	84	0	82	166	72	0	73		145	83	0	91	174	76	0	70	146	148	13.7	9.8	7%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	290	64	354	0	245	79		324	0	264	82	346	0	279	80	359	347	12.4	8.8	3%
		WB Arterial	200	626	0	826	195	620	0		815	162	641	0	803	187	629	0	816	814	8.0	5.7	1%
		Off-Ramp	163	0	23	186	207	0	29		236	170	0	32	202	183	0	24	207	199	18.7	13.3	7%
	WB Ramps (Signalized)	EB Arterial	47	409	0	456	42	418	0		460	51	374	0	425	52	413	0	465	448	21.4	15.3	3%
		WB Arterial	0	819	192	1011	0	818	207		1025	0	798	214	1012	0	807	199	1006	1016	12.6	9.0	1%
		Off-Ramp	0	0	93	93	0	0	85		85	0	0	103	103	0	0	89	89	97	10.2	7.3	8%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	203	21	224	0	222	14		236	0	216	17	233	0	217	13	230	233	4.7	3.3	1%
		WB Arterial	253	583	0	836	250	610	0		860	250	587	0	837	271	579	0	850	849	10.5	7.5	1%
		Off-Ramp	153	0	50	203	161	0	52		213	148	0	55	203	160	0	39	199	203	9.9	7.1	3%
	WB Ramps (Signalized)	EB Arterial	25	333	0	358	20	367	0		387	28	334	0	362	13	360	0	373	368	11.3	8.0	2%
		WB Arterial	0	795	353	1148	0	834	349		1183	0	792	385	1177	0	818	343	1161	1172	14.9	10.7	1%
		Off-Ramp	34	0	100	134	35	0	116		151	38	0	111	149	24	0	106	130	138	9.2	6.6	5%

I-82, Yakima Avenue IJR
2035 No-Build AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	6:30 - 7:00 AM Summary						7:00 - 8:00 AM Summary					
						Volume				Speed (mph)	Density (vplpm)	Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic			Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Eastbound Mainline	Start		87	1,746	3	2,695	2,692	(3)	0.0	59	15	3,300	3,319	19	0.3	58	19
		US 12 / 1st Street Off-Ramp	169	1,114	3	2,695	2,681	(14)	0.3	58	15	3,300	3,311	11	0.2	57	20
	US 12 / 1st Street Off-Ramp		90	858	2	1,119	1,122	3	0.1	49	11	1,370	1,365	(5)	0.1	49	14
	US 12 / 1st Street Off-Ramp		91	872	2	1,576	1,554	(22)	0.5	58	13	1,930	1,938	8	0.2	58	17
			117	401	2	1,576	1,556	(20)	0.5	58	13	1,930	1,937	7	0.2	58	17
		US 12 / 1st Street On-Ramp	118	1,992	2	1,576	1,556	(20)	0.5	60	13	1,930	1,936	6	0.1	59	16
	US 12 / 1st Street On-Ramp		99	549	2	784	769	(15)	0.5	60	6	960	961	1	0.0	59	8
			10114	218	1	784	784	0	0.0	59	13	960	977	17	0.6	58	17
	US 12 / 1st Street On-Ramp		100	655	2	2,360	2,328	(32)	0.7	60	20	2,890	2,900	10	0.2	59	25
			101	1,623	2	2,360	2,330	(30)	0.6	60	19	2,890	2,909	19	0.4	59	25
			139	1,553	2	2,360	2,328	(32)	0.7	60	19	2,890	2,907	17	0.3	60	24
		Fair Avenue Off-Ramp	140	1,553	2	2,360	2,314	(46)	1.0	60	19	2,890	2,895	5	0.1	60	24
	Fair Avenue Off-Ramp		34	1,547	1	286	282	(4)	0.2	51	6	350	357	7	0.4	51	7
	Fair Avenue Off-Ramp		138	1,289	2	2,074	2,039	(35)	0.8	60	17	2,540	2,546	6	0.1	60	21
		Yakima Avenue Off-Ramp	142	1,290	2	2,074	2,024	(50)	1.1	60	17	2,540	2,526	(14)	0.3	60	21
	Yakima Avenue Off-Ramp		10	652	1	376	386	10	0.5	45	9	460	467	7	0.3	40	12
	Yakima Avenue Off-Ramp		141	1,385	2	1,698	1,652	(46)	1.1	61	14	2,080	2,074	(6)	0.1	60	17
		Yakima Avenue On-Ramp	143	1,511	2	1,698	1,652	(46)	1.1	61	14	2,080	2,070	(10)	0.2	60	17
	Yakima Avenue On-Ramp		16	302	3	588	604	16	0.7	48	4	720	690	(30)	1.1	48	5
			109	502	2	588	607	19	0.8	44	7	720	694	(26)	1.0	43	8
			110	562	1	588	608	20	0.8	49	12	720	694	(26)	1.0	49	14
	Yakima Avenue On-Ramp		111	1,102	2	2,286	2,249	(37)	0.8	60	19	2,800	2,750	(50)	0.9	59	23
			112	1,863	2	2,286	2,260	(26)	0.5	60	19	2,800	2,759	(41)	0.8	59	23
		Nob Hill Boulevard Off-Ramp	145	1,820	2	2,286	2,248	(38)	0.8	60	19	2,800	2,746	(54)	1.0	59	23
	Nob Hill Boulevard Off-Ramp		53	1,017	1	375	377	2	0.1	53	7	460	452	(8)	0.4	53	9
	Nob Hill Boulevard Off-Ramp		144	1,385	2	1,911	1,876	(35)	0.8	61	15	2,340	2,302	(38)	0.8	60	19
		Nob Hill Boulevard On-Ramp	147	1,414	2	1,911	1,879	(32)	0.7	60	16	2,340	2,299	(41)	0.9	60	19
	Nob Hill Boulevard On-Ramp		116	352	1	547	545	(2)	0.1	48	11	670	637	(33)	1.3	47	14
	Nob Hill Boulevard On-Ramp		115	1,070	3	2,458	2,422	(36)	0.7	60	14	3,010	2,932	(78)	1.4	59	17
		End	171	1,072	3	2,458	2,422	(36)	0.7	60	13	3,010	2,932	(78)	1.4	59	17
I-82 Westbound Mainline	Start		164	1,750	2	1,770	1,766	(4)	0.1	59	15	2,870	2,845	(25)	0.5	58	25
			165	1,750	2	1,770	1,765	(5)	0.1	58	15	2,870	2,838	(32)	0.6	58	25
			166	1,750	2	1,770	1,764	(6)	0.1	58	15	2,870	2,831	(39)	0.7	58	25
		Nob Hill Boulevard Off-Ramp	167	1,750	2	1,770	1,755	(15)	0.4	60	15	2,870	2,817	(53)	1.0	59	24
	Nob Hill Boulevard Off-Ramp		47	546	1	191	183	(8)	0.6	54	3	310	295	(15)	0.9	54	5
	Nob Hill Boulevard Off-Ramp		148	1,154	2	1,579	1,575	(4)	0.1	61	13	2,560	2,522	(38)	0.8	60	21
			149	1,230	2	1,579	1,572	(7)	0.2	61	13	2,560	2,516	(44)	0.9	60	21
		Nob Hill Boulevard On-Ramp	114	427	2	1,579	1,568	(11)	0.3	61	13	2,560	2,503	(57)	1.1	60	21
	Nob Hill Boulevard On-Ramp		45	1,641	2	512	485	(27)	1.2	47	5	830	763	(67)	2.4	46	8
	Nob Hill Boulevard On-Ramp		168	741	3	2,091	2,075	(16)	0.4	61	11	3,390	3,302	(88)	1.5	60	18
			150	1,169	3	2,091	2,075	(16)	0.4	60	11	3,390	3,301	(89)	1.5	59	19
			113	1,519	2	2,091	2,070	(21)	0.5	60	17	3,390	3,295	(95)	1.6	59	**28**
		Yakima Avenue Off-Ramp	152	1,473	2	2,091	2,059	(32)	0.7	60	17	3,390	3,281	(109)	1.9	57	**29**
	Yakima Avenue Off-Ramp		106	492	1	703	683	(20)	0.8	57	12	1,140	1,085	(55)	1.6	55	20
	Yakima Avenue Off-Ramp		151	1,294	2	1,388	1,366	(22)	0.6	61	11	2,250	2,186	(64)	1.4	60	18
		Yakima Avenue On-Ramp	153	1,334	2	1,388	1,361	(27)	0.7	61	11	2,250	2,180	(70)	1.5	60	18
	Yakima Avenue On-Ramp		3	1,205	1	339	307	(32)	1.8	44	7	550	502	(48)	2.1	44	11
	Yakima Avenue On-Ramp		104	726	2	1,727	1,679	(48)	1.2	60	14	2,800	2,707	(93)	1.8	59	23
			105	1,663	2	1,727	1,679	(48)	1.2	61	14	2,800	2,709	(91)	1.7	60	23
			154	1,598	2	1,727	1,678	(49)	1.2	61	14	2,800	2,706	(94)	1.8	60	23
			155	1,598	2	1,727	1,674	(53)	1.3	60	14	2,800	2,700	(100)	1.9	60	23
		US 12 / 1st Street Off-Ramp	156	1,601	2	1,727	1,665	(62)	1.5	60	14	2,800	2,679	(121)	2.3	59	23
	US 12 / 1st Street Off-Ramp		102	870	1	641	622	(19)	0.7	55	11	1,040	1,001	(39)	1.2	54	19
	US 12 / 1st Street Off-Ramp		136	1,815	2	1,086	1,050	(36)	1.1	61	9	1,760	1,687	(73)	1.8	60	14
		US 12 / 1st Street On-Ramp	137	1,841	2	1,086	1,048	(38)	1.2	61	9	1,760	1,683	(77)	1.8	61	14
	US 12 / 1st Street On-Ramp		97	1,173	1	456	479	23	1.1	45	11	740	759	19	0.7	44	17
	US 12 / 1st Street On-Ramp	End	98	1,881	3	1,542	1,522	(20)	0.5	60	8	2,500	2,440	(60)	1.2	60	14

I-82, Yakima Avenue IJR
2035 No-Build AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	8:00 - 8:30 AM Summary					
						Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Eastbound Mainline	Start		87	1,746	3	2,719	2,723	4	0.1	59	16
		US 12 / 1st Street Off-Ramp	169	1,114	3	2,719	2,724	5	0.1	58	16
	US 12 / 1st Street Off-Ramp		90	858	2	1,129	1,115	(14)	0.4	50	11
	US 12 / 1st Street Off-Ramp		91	872	2	1,590	1,607	17	0.4	58	14
			117	401	2	1,590	1,608	18	0.5	58	14
		US 12 / 1st Street On-Ramp	118	1,992	2	1,590	1,614	24	0.6	60	14
	US 12 / 1st Street On-Ramp		99	549	2	791	814	23	0.8	60	7
			10114	218	1	791	829	38	1.3	59	14
	US 12 / 1st Street On-Ramp		100	655	2	2,381	2,436	55	1.1	59	20
			101	1,623	2	2,381	2,453	72	1.5	60	20
			139	1,553	2	2,381	2,466	85	1.7	60	20
		Fair Avenue Off-Ramp	140	1,553	2	2,381	2,466	85	1.7	60	21
	Fair Avenue Off-Ramp		34	1,547	1	288	291	3	0.2	51	6
	Fair Avenue Off-Ramp		138	1,289	2	2,093	2,189	96	2.1	60	18
		Yakima Avenue Off-Ramp	142	1,290	2	2,093	2,178	85	1.8	60	18
	Yakima Avenue Off-Ramp		10	652	1	379	396	17	0.9	44	9
	Yakima Avenue Off-Ramp		141	1,385	2	1,714	1,799	85	2.0	60	15
		Yakima Avenue On-Ramp	143	1,511	2	1,714	1,802	88	2.1	61	15
	Yakima Avenue On-Ramp		16	302	3	593	587	(6)	0.2	48	4
			109	502	2	593	592	(1)	0.0	43	7
			110	562	1	593	593	(0)	0.0	49	12
	Yakima Avenue On-Ramp		111	1,102	2	2,307	2,391	84	1.7	60	20
			112	1,863	2	2,307	2,409	102	2.1	60	20
		Nob Hill Boulevard Off-Ramp	145	1,820	2	2,307	2,408	101	2.1	60	20
	Nob Hill Boulevard Off-Ramp		53	1,017	1	379	404	25	1.2	53	8
	Nob Hill Boulevard Off-Ramp		144	1,385	2	1,928	2,018	90	2.0	60	17
		Nob Hill Boulevard On-Ramp	147	1,414	2	1,928	2,022	94	2.1	60	17
	Nob Hill Boulevard On-Ramp		116	352	1	552	559	7	0.3	48	12
	Nob Hill Boulevard On-Ramp		115	1,070	3	2,480	2,583	103	2.0	59	14
		End	171	1,072	3	2,480	2,587	107	2.1	60	14
I-82 Westbound Mainline	Start		164	1,750	2	2,605	2,606	1	0.0	58	22
			165	1,750	2	2,605	2,613	8	0.1	58	23
			166	1,750	2	2,605	2,617	12	0.2	58	23
		Nob Hill Boulevard Off-Ramp	167	1,750	2	2,605	2,616	11	0.2	59	22
	Nob Hill Boulevard Off-Ramp		47	546	1	282	277	(5)	0.3	54	5
	Nob Hill Boulevard Off-Ramp		148	1,154	2	2,323	2,353	30	0.6	60	20
			149	1,230	2	2,323	2,356	33	0.7	60	20
		Nob Hill Boulevard On-Ramp	114	427	2	2,323	2,352	29	0.6	60	20
	Nob Hill Boulevard On-Ramp		45	1,641	2	754	717	(37)	1.4	46	8
	Nob Hill Boulevard On-Ramp		168	741	3	3,077	3,113	36	0.6	60	17
			150	1,169	3	3,077	3,115	38	0.7	59	17
			113	1,519	2	3,077	3,120	43	0.8	59	26
		Yakima Avenue Off-Ramp	152	1,473	2	3,077	3,112	35	0.6	58	27
	Yakima Avenue Off-Ramp		106	492	1	1,035	1,021	(14)	0.4	55	18
	Yakima Avenue Off-Ramp		151	1,294	2	2,042	2,085	43	1.0	60	17
		Yakima Avenue On-Ramp	153	1,334	2	2,042	2,093	51	1.1	60	17
	Yakima Avenue On-Ramp		3	1,205	1	499	476	(23)	1.0	44	11
	Yakima Avenue On-Ramp		104	726	2	2,541	2,594	53	1.0	60	22
			105	1,663	2	2,541	2,595	54	1.1	60	22
			154	1,598	2	2,541	2,594	53	1.0	60	22
			155	1,598	2	2,541	2,598	57	1.1	60	22
		US 12 / 1st Street Off-Ramp	156	1,601	2	2,541	2,589	48	0.9	59	22
	US 12 / 1st Street Off-Ramp		102	870	1	944	976	32	1.0	54	18
	US 12 / 1st Street Off-Ramp		136	1,815	2	1,597	1,623	26	0.7	61	13
		US 12 / 1st Street On-Ramp	137	1,841	2	1,597	1,624	27	0.7	61	13
	US 12 / 1st Street On-Ramp		97	1,173	1	672	702	30	1.2	44	16
	US 12 / 1st Street On-Ramp	End	98	1,881	3	2,269	2,326	57	1.2	60	13

I-82, Yakima Avenue IJR
2035 No-Build AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

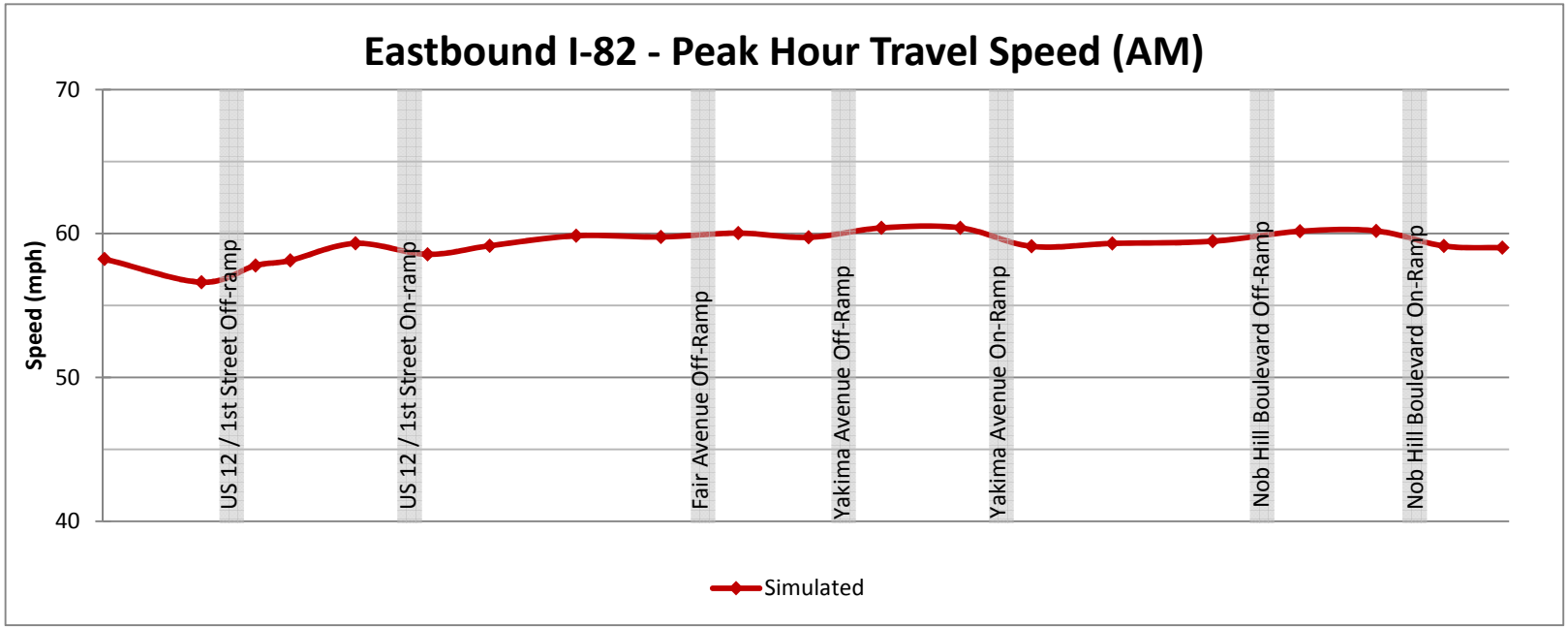
	Location		Link	Length (ft)	Number of Lanes	6:30 - 6:45 Summary			6:45 - 7:00 Summary			7:00 - 7:15 Summary			7:15 - 7:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Eastbound Mainline	Start		87	1,746	3	2,594	59	15	2,791	59	16	3,115	58	18	3,337	58	19
		US 12 / 1st Street Off-Ramp	169	1,114	3	2,580	58	15	2,783	58	16	3,101	57	18	3,329	57	20
	US 12 / 1st Street Off-Ramp		90	858	2	1,065	50	11	1,178	49	12	1,270	49	13	1,375	49	14
	US 12 / 1st Street Off-Ramp		91	872	2	1,510	58	13	1,599	58	14	1,816	58	16	1,945	58	17
			117	401	2	1,512	58	13	1,600	58	14	1,814	58	16	1,944	58	17
		US 12 / 1st Street On-Ramp	118	1,992	2	1,514	60	13	1,598	60	13	1,812	59	15	1,941	59	16
	US 12 / 1st Street On-Ramp		99	549	2	736	60	6	802	60	7	876	59	7	947	59	8
			10114	218	1	749	60	13	820	59	14	888	59	15	963	59	16
	US 12 / 1st Street On-Ramp		100	655	2	2,251	60	19	2,404	59	20	2,684	59	23	2,893	59	25
			101	1,623	2	2,256	60	19	2,404	60	20	2,697	60	23	2,897	59	24
			139	1,553	2	2,252	60	19	2,404	60	20	2,692	60	22	2,898	60	24
		Fair Avenue Off-Ramp	140	1,553	2	2,238	60	19	2,389	60	20	2,681	60	22	2,882	60	24
	Fair Avenue Off-Ramp		34	1,547	1	265	51	5	298	51	6	362	51	7	334	51	7
	Fair Avenue Off-Ramp		138	1,289	2	1,991	60	16	2,087	60	17	2,331	60	19	2,547	60	21
		Yakima Avenue Off-Ramp	142	1,290	2	1,969	60	16	2,079	60	17	2,314	60	19	2,522	60	21
	Yakima Avenue Off-Ramp		10	652	1	391	45	9	380	45	8	430	42	10	453	42	11
	Yakima Avenue Off-Ramp		141	1,385	2	1,596	61	13	1,708	61	14	1,890	60	16	2,087	60	17
		Yakima Avenue On-Ramp	143	1,511	2	1,596	61	13	1,707	61	14	1,880	60	16	2,091	60	17
	Yakima Avenue On-Ramp		16	302	3	589	48	4	619	48	4	624	48	4	675	48	5
			109	502	2	592	45	7	623	44	7	629	45	7	677	44	8
			110	562	1	593	49	12	623	49	13	630	50	13	675	49	14
	Yakima Avenue On-Ramp		111	1,102	2	2,176	60	18	2,322	60	19	2,501	59	21	2,742	59	23
			112	1,863	2	2,192	60	18	2,328	60	19	2,505	60	21	2,738	59	23
		Nob Hill Boulevard Off-Ramp	145	1,820	2	2,191	60	18	2,305	60	19	2,494	60	21	2,704	60	23
	Nob Hill Boulevard Off-Ramp		53	1,017	1	378	53	7	377	53	7	381	53	7	487	53	9
	Nob Hill Boulevard Off-Ramp		144	1,385	2	1,822	61	15	1,930	60	16	2,124	60	18	2,216	60	18
		Nob Hill Boulevard On-Ramp	147	1,414	2	1,824	61	15	1,934	60	16	2,112	60	18	2,220	60	18
	Nob Hill Boulevard On-Ramp		116	352	1	504	48	10	587	48	12	567	48	12	614	48	13
	Nob Hill Boulevard On-Ramp		115	1,070	3	2,326	60	13	2,519	60	14	2,665	59	15	2,837	59	16
		End	171	1,072	3	2,322	60	13	2,521	60	14	2,661	59	15	2,835	59	16
I-82 Westbound Mainline	Start		164	1,750	2	1,627	59	14	1,906	59	16	2,460	58	21	2,782	58	24
			165	1,750	2	1,633	59	14	1,898	58	16	2,448	58	21	2,772	58	24
			166	1,750	2	1,636	58	14	1,893	58	16	2,431	58	21	2,767	58	24
		Nob Hill Boulevard Off-Ramp	167	1,750	2	1,628	60	14	1,882	60	16	2,410	59	20	2,755	59	23
	Nob Hill Boulevard Off-Ramp		47	546	1	170	54	3	196	54	4	262	54	5	292	54	5
	Nob Hill Boulevard Off-Ramp		148	1,154	2	1,461	61	12	1,689	61	14	2,138	60	18	2,468	60	21
			149	1,230	2	1,461	61	12	1,682	61	14	2,132	60	18	2,458	60	20
		Nob Hill Boulevard On-Ramp	114	427	2	1,461	61	12	1,674	61	14	2,119	60	18	2,443	60	20
	Nob Hill Boulevard On-Ramp		45	1,641	2	440	47	5	531	47	6	655	46	7	751	46	8
	Nob Hill Boulevard On-Ramp		168	741	3	1,924	61	11	2,226	61	12	2,802	60	16	3,234	60	18
			150	1,169	3	1,926	61	11	2,224	60	12	2,800	60	16	3,225	59	18
			113	1,519	2	1,920	60	16	2,219	60	18	2,791	59	23	3,215	59	27
		Yakima Avenue Off-Ramp	152	1,473	2	1,904	60	16	2,214	60	19	2,763	58	24	3,201	57	28
	Yakima Avenue Off-Ramp		106	492	1	629	57	11	737	56	13	903	55	16	1,062	55	19
	Yakima Avenue Off-Ramp		151	1,294	2	1,265	61	10	1,468	61	12	1,850	60	15	2,124	60	18
		Yakima Avenue On-Ramp	153	1,334	2	1,260	61	10	1,463	61	12	1,844	60	15	2,114	60	18
	Yakima Avenue On-Ramp		3	1,205	1	282	45	6	332	44	8	428	44	10	483	44	11
	Yakima Avenue On-Ramp		104	726	2	1,554	60	13	1,804	60	15	2,287	60	19	2,618	59	22
			105	1,663	2	1,560	61	13	1,798	60	15	2,283	60	19	2,613	60	22
			154	1,598	2	1,560	61	13	1,795	61	15	2,269	60	19	2,616	60	22
			155	1,598	2	1,558	60	13	1,789	60	15	2,257	60	19	2,608	60	22
		US 12 / 1st Street Off-Ramp	156	1,601	2	1,549	60	13	1,781	60	15	2,225	60	19	2,586	59	22
	US 12 / 1st Street Off-Ramp		102	870	1	579	55	11	665	55	12	826	54	15	958	54	18
	US 12 / 1st Street Off-Ramp		136	1,815	2	979	61	8	1,121	61	9	1,393	61	11	1,632	61	13
		US 12 / 1st Street On-Ramp	137	1,841	2	980	61	8	1,116	61	9	1,381	61	11	1,632	61	13
	US 12 / 1st Street On-Ramp		97	1,173	1	458	45	10	499	45	11	709	44	16	758	44	17
	US 12 / 1st Street On-Ramp	End	98	1,881	3	1,435	60	8	1,609	60	9	2,081	60	12	2,387	60	13

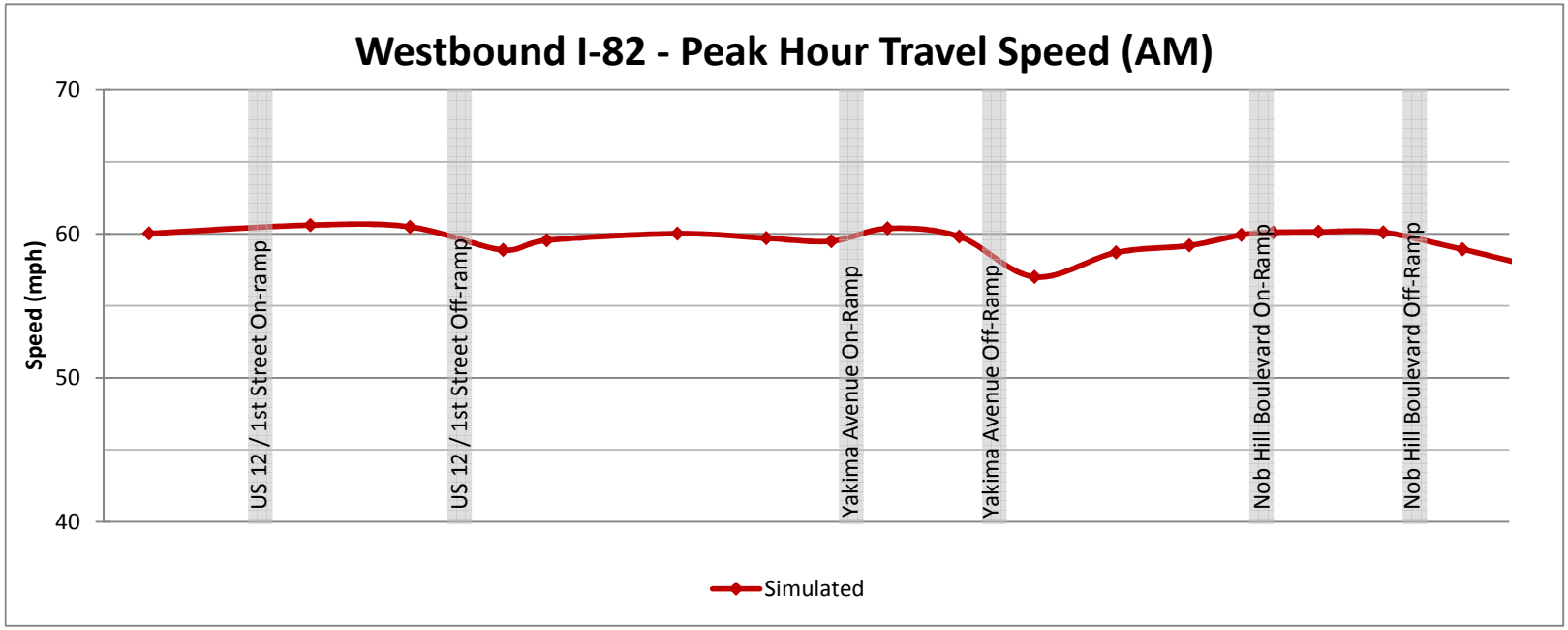
I-82, Yakima Avenue IJR
2035 No-Build AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	7:30 - 7:45 Summary			7:45 - 8:00 Summary			8:00 - 8:15 Summary			8:15 - 8:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Eastbound Mainline	Start		87	1,746	3	3,581	58	21	3,243	58	19	2,897	58	17	2,549	59	15
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,572	56	21	3,240	56	19	2,896	57	17	2,551	58	15
	US 12 / 1st Street Off-Ramp		90	858	2	1,473	49	15	1,341	49	14	1,181	49	12	1,048	50	11
	US 12 / 1st Street Off-Ramp		91	872	2	2,093	57	18	1,897	58	16	1,715	58	15	1,500	58	13
			117	401	2	2,088	58	18	1,902	58	16	1,717	58	15	1,499	59	13
		US 12 / 1st Street On-Ramp	118	1,992	2	2,091	59	18	1,900	59	16	1,724	60	14	1,505	60	13
	US 12 / 1st Street On-Ramp		99	549	2	1,048	58	9	972	59	8	871	60	7	757	60	6
			10114	218	1	1,067	58	18	992	58	17	887	59	15	771	59	13
	US 12 / 1st Street On-Ramp		100	655	2	3,141	58	27	2,881	58	25	2,600	59	22	2,271	60	19
			101	1,623	2	3,147	59	27	2,896	59	25	2,622	60	22	2,284	60	19
			139	1,553	2	3,143	60	26	2,894	60	24	2,640	60	22	2,291	60	19
		Fair Avenue Off-Ramp	140	1,553	2	3,126	60	26	2,891	60	24	2,640	60	22	2,291	60	19
	Fair Avenue Off-Ramp		34	1,547	1	376	51	7	355	51	7	323	51	6	259	51	5
	Fair Avenue Off-Ramp		138	1,289	2	2,753	60	23	2,553	60	21	2,330	60	19	2,048	60	17
		Yakima Avenue Off-Ramp	142	1,290	2	2,727	60	23	2,543	60	21	2,324	60	19	2,032	60	17
	Yakima Avenue Off-Ramp		10	652	1	522	37	14	464	40	12	429	43	10	363	45	8
	Yakima Avenue Off-Ramp		141	1,385	2	2,215	60	18	2,103	60	17	1,919	60	16	1,680	61	14
		Yakima Avenue On-Ramp	143	1,511	2	2,209	60	18	2,101	60	17	1,930	60	16	1,674	61	14
	Yakima Avenue On-Ramp		16	302	3	741	48	5	718	48	5	613	48	4	562	48	4
			109	502	2	746	42	9	723	42	9	619	44	7	565	43	7
			110	562	1	749	48	16	723	48	15	618	49	13	567	49	12
	Yakima Avenue On-Ramp		111	1,102	2	2,943	59	25	2,816	59	24	2,551	60	21	2,230	60	19
			112	1,863	2	2,959	59	25	2,833	59	24	2,568	60	22	2,249	60	19
		Nob Hill Boulevard Off-Ramp	145	1,820	2	2,950	60	25	2,834	59	24	2,567	60	22	2,249	60	19
	Nob Hill Boulevard Off-Ramp		53	1,017	1	498	53	9	442	53	8	442	53	8	365	53	7
	Nob Hill Boulevard Off-Ramp		144	1,385	2	2,464	60	20	2,404	60	20	2,142	60	18	1,894	60	16
		Nob Hill Boulevard On-Ramp	147	1,414	2	2,463	60	20	2,401	60	20	2,154	60	18	1,890	60	16
	Nob Hill Boulevard On-Ramp		116	352	1	696	47	15	668	46	14	597	48	13	522	48	11
	Nob Hill Boulevard On-Ramp		115	1,070	3	3,151	59	18	3,074	59	17	2,749	59	15	2,416	60	14
		End	171	1,072	3	3,149	59	18	3,081	59	17	2,756	59	15	2,417	60	13
I-82 Westbound Mainline	Start		164	1,750	2	3,156	57	28	2,981	58	26	2,711	58	23	2,502	58	22
			165	1,750	2	3,145	58	27	2,986	58	26	2,718	58	23	2,507	58	22
			166	1,750	2	3,135	57	27	2,992	57	26	2,724	58	24	2,510	58	22
		Nob Hill Boulevard Off-Ramp	167	1,750	2	3,114	59	26	2,990	58	26	2,723	59	23	2,508	59	21
	Nob Hill Boulevard Off-Ramp		47	546	1	320	54	6	306	54	6	282	54	5	271	54	5
	Nob Hill Boulevard Off-Ramp		148	1,154	2	2,792	60	23	2,688	60	22	2,456	60	20	2,249	60	19
			149	1,230	2	2,786	60	23	2,686	60	22	2,458	60	20	2,253	60	19
		Nob Hill Boulevard On-Ramp	114	427	2	2,773	60	23	2,677	60	22	2,459	60	20	2,245	60	19
	Nob Hill Boulevard On-Ramp		45	1,641	2	831	46	9	813	46	9	732	46	8	702	46	8
	Nob Hill Boulevard On-Ramp		168	741	3	3,647	60	20	3,524	60	20	3,234	60	18	2,991	60	17
			150	1,169	3	3,649	59	21	3,533	59	20	3,234	59	18	2,996	60	17
			113	1,519	2	3,643	58	**31**	3,532	58	**30**	3,241	58	28	2,999	59	25
		Yakima Avenue Off-Ramp	152	1,473	2	3,625	57	**32**	3,535	56	**32**	3,231	57	**28**	2,993	59	25
	Yakima Avenue Off-Ramp		106	492	1	1,184	55	22	1,192	54	22	1,077	55	20	965	56	17
	Yakima Avenue Off-Ramp		151	1,294	2	2,420	60	20	2,349	60	20	2,144	60	18	2,027	60	17
		Yakima Avenue On-Ramp	153	1,334	2	2,420	60	20	2,343	60	19	2,155	60	18	2,031	61	17
	Yakima Avenue On-Ramp		3	1,205	1	557	44	13	542	44	12	491	44	11	462	44	10
	Yakima Avenue On-Ramp		104	726	2	3,008	59	25	2,916	59	25	2,665	60	22	2,522	60	21
			105	1,663	2	3,008	60	25	2,933	59	25	2,671	60	22	2,520	60	21
			154	1,598	2	3,000	60	25	2,939	60	25	2,671	60	22	2,516	60	21
			155	1,598	2	2,993	59	25	2,940	59	25	2,677	60	22	2,519	60	21
		US 12 / 1st Street Off-Ramp	156	1,601	2	2,964	58	26	2,939	59	25	2,667	59	22	2,510	59	21
	US 12 / 1st Street Off-Ramp		102	870	1	1,126	54	21	1,094	54	20	1,003	54	19	948	54	18
	US 12 / 1st Street Off-Ramp		136	1,815	2	1,843	60	15	1,881	60	16	1,675	61	14	1,572	61	13
		US 12 / 1st Street On-Ramp	137	1,841	2	1,841	61	15	1,879	61	16	1,674	61	14	1,574	61	13
	US 12 / 1st Street On-Ramp		97	1,173	1	811	44	19	759	44	17	734	44	17	671	44	15
	US 12 / 1st Street On-Ramp	End	98	1,881	3	2,644	60	15	2,649	60	15	2,399	60	13	2,253	60	13


Eastbound I-82 - Peak Hour Travel Speed (AM)
Speed (mph)
70
60
50
40
US 12 / 1st Street Off-ramp
US 12 / 1st Street On-ramp
Fair Avenue Off-Ramp
Yakima Avenue Off-Ramp
Yakima Avenue On-Ramp
Nob Hill Boulevard Off-Ramp
Nob Hill Boulevard On-Ramp
Simulated


Westbound I-82 - Peak Hour Travel Speed (AM)
Speed (mph)
70
60
50
40
US 12 / 1st Street On-ramp
US 12 / 1st Street Off-ramp
Yakima Avenue On-Ramp
Yakima Avenue Off-Ramp
Nob Hill Boulevard On-Ramp
Nob Hill Boulevard Off-Ramp
Simulated

I-82, Yakima Avenue IJR
2035 No-Build PM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

3:30 - 4:00 PM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Left Turn		Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	939	0	939	0	864	0	864	0	-75	0	-75	-	2.5	-	2.5	-	36	-	-	D	-	36	D			374	-	-	-	-
		WB Arterial	0	466	0	466	0	161	0	161	0	-305	0	-305	-	**17.2**	-	**17.2**	-	4	-	-	A	-	4	A	29	C	57	-	-	-	-
		Off-Ramp	161	0	69	230	157	0	69	226	-4	0	0	-4	0.3	-	-	0.3	30	-	6	C	-	A	23	C			-	500	91	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1743	269	2012	0	1534	286	1820	0	-209	17	-192	-	**5.2**	1.0	**4.4**	-	47	14	-	D	B	42	D			1637	-	-	225	1637
		WB Arterial	237	980	0	1217	206	986	0	1192	-31	6	0	-25	2.1	0.2	-	0.7	62	10	-	**E**	A	-	19	B	37	D	181	270	181	-	-
		Off-Ramp	512	0	40	552	517	0	39	556	5	0	-1	4	0.2	-	0.2	0.2	66	-	13	**E**	-	B	62	**E**			489	Continuous	489	225	85
	WB Ramps (Signalized)	EB Arterial	158	2097	0	2255	148	1892	0	2040	-10	-205	0	-215	0.8	**4.6**	-	**4.6**	84	4	-	**F**	A	-	10	A			219	400	219	-	-
		WB Arterial	0	1208	559	1767	0	1187	563	1750	0	-21	4	-17	-	0.6	0.2	0.4	-	7	9	-	A	A	8	A	9	A	350	-	-	-	21
		Off-Ramp	9	0	359	368	10	0	410	420	1	0	51	52	0.3	-	2.6	2.6	73	-	5	**E**	-	A	7	A			33	475	33	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1480	87	1567	0	1498	83	1581	0	18	-4	14	-	0.5	0.4	0.4	-	19	3	-	B	A	18	B			449	-	-	375	23
		WB Arterial	355	1184	0	1539	341	1173	0	1514	-14	-11	0	-25	0.8	0.3	-	0.6	45	3	-	D	A	-	12	B	19	B	175	275	175	-	-
		Off-Ramp	605	0	94	699	573	0	88	661	-32	0	-6	-38	1.3	-	0.6	1.5	42	-	4	D	-	A	37	D			271	Continuous	271	300	-
	WB Ramps (Signalized)	EB Arterial	109	1976	0	2085	101	1947	0	2048	-8	-29	0	-37	0.8	0.7	-	0.8	35	1	-	C	A	-	3	A			73	275	73	-	-
		WB Arterial	0	1489	644	2133	0	1485	654	2139	0	-4	10	6	-	0.1	0.4	0.1	-	7	4	-	A	A	6	A	5	A	238	-	-	375	-
		Off-Ramp	50	0	613	663	50	0	592	642	0	0	-21	-21	-	-	0.9	0.8	54	-	1	D	-	A	5	A			57	Continuous	57	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

4:00 - 5:00 PM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Left Turn		Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	1021	0	1021	0	740	0	740	0	-281	0	-281	-	**9.5**	-	**9.5**	-	110	-	-	**F**	-	110	**F**			536	-	-	-	-
		WB Arterial	0	506	0	506	0	163	0	163	0	-343	0	-343	-	**18.8**	-	**18.8**	-	4	-	-	A	-	4	A	82	**F**	56	-	-	-	-
		Off-Ramp	175	0	75	250	179	0	72	251	4	0	-3	1	0.3	-	0.3	0.1	71	-	5	**E**	-	A	52	D			-	500	123	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1893	292	2185	0	1607	323	1930	0	-286	31	-255	-	**6.8**	1.8	**5.6**	-	49	16	-	D	B	43	D			1665	-	-	225	1665
		WB Arterial	258	1100	0	1358	224	1116	0	1340	-34	16	0	-18	2.2	0.5	-	0.5	63	16	-	**E**	B	-	24	C	42	D	196	270	196	-	-
		Off-Ramp	556	0	44	600	572	0	38	610	16	0	-6	10	0.7	-	0.9	0.4	81	-	30	**F**	-	C	78	**E**			698	Continuous	698	225	263
	WB Ramps (Signalized)	EB Arterial	176	2273	0	2449	168	2015	0	2183	-8	-258	0	-266	0.6	**5.6**	-	**5.5**	85	5	-	**F**	A	-	11	B			249	400	249	-	-
		WB Arterial	0	1348	624	1972	0	1334	638	1972	0	-14	14	0	-	0.4	0.6	-	-	9	11	-	A	B	10	A	10	A	495	-	-	-	106
		Off-Ramp	10	0	400	410	10	0	468	478	0	0	68	68	-	-	**3.3**	**3.2**	69	-	5	**E**	-	A	6	A			32	475	32	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1610	95	1705	0	1610	86	1696	0	0	-9	-9	-	-	0.9	0.2	-	21	4	-	C	A	20	C			493	-	-	375	40
		WB Arterial	385	1331	0	1716	383	1333	0	1716	-2	2	0	0	0.1	0.1	-	-	48	3	-	D	A	-	13	B	20	C	211	275	211	-	-
		Off-Ramp	658	0	102	760	633	0	119	752	-25	0	17	-8	1.0	-	1.6	0.3	43	-	5	D	-	A	37	D			310	Continuous	310	300	-
	WB Ramps (Signalized)	EB Arterial	122	2146	0	2268	114	2135	0	2249	-8	-11	0	-19	0.7	0.2	-	0.4	35	1	-	C	A	-	3	A			80	275	80	-	-
		WB Arterial	0	1660	718	2378	0	1655	718	2373	0	-5	0	-5	-	0.1	-	0.1	-	8	5	-	A	A	7	A	5	A	281	-	-	375	-
		Off-Ramp	56	0	684	740	60	0	670	730	4	0	-14	-10	0.5	-	0.5	0.4	56	-	2	**E**	-	A	6	A			67	Continuous	67	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

5:00 - 5:30 PM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Left Turn		Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	1009	0	1009	0	720	0	720	0	-289	0	-289	-	**9.8**	-	**9.8**	-	121	-	-	**F**	-	121	**F**			533	-	-	-	-
		WB Arterial	0	500	0	500	0	155	0	155	0	-345	0	-345	-	**19.1**	-	**19.1**	-	4	-	-	A	-	4	A	91	**F**	55	-	-	-	-
		Off-Ramp	173	0	74	247	185	0	77	262	12	0	3	15	0.9	-	0.3	0.9	82	-	5	**F**	-	A	59	**E**			-	500	149	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1873	288	2161	0	1589	327	1916	0	-284	39	-245	-	**6.8**	2.2	**5.4**	-	50	15	-	D	B	44	D			1671	-	-	225	1671
		WB Arterial	255	1053	0	1308	209	1098	0	1307	-46	45	0	-1	**3.0**	1.4	-	0.0	61	18	-	**E**	B	-	25	C	42	D	208	270	208	-	-
		Off-Ramp	550	0	43	593	548	0	35	583	-2	0	-8	-10	0.1	-	1.3	0.4	80	-	25	**E**	-	C	77	**E**			624	Continuous	624	225	198
	WB Ramps (Signalized)	EB Arterial	169	2254	0	2423	160	1977	0	2137	-9	-277	0	-286	0.7	**6.0**	-	**6.0**	85	4	-	**F**	A	-	10	B			250	400	250	-	-
		WB Arterial	0	1298	601	1899	0	1290	614	1904	0	-8	13	5	-	0.2	0.5	0.1	-	8	9	-	A	A	8	A	9	A	399	-	-	-	32
		Off-Ramp	10	0	385	395	10	0	450	460	0	0	65	65	-	-	**3.2**	**3.1**	90	-	5	**F**	-	A	7	A			36	475	36	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1588	94	1682	0	1641	87	1728	0	53	-7	46	-	1.3	0.7	1.1	-	20	3	-	B	A	19	B			496	-	-	375	39
		WB Arterial	380	1272	0	1652	377	1259	0	1636	-3	-13	0	-16	0.2	0.4	-	0.4	51	4	-	D	A	-	15	B	20	C	209	275	209	-	-
		Off-Ramp	649	0	101	750	565	0	127	692	-84	0	26	-58	**3.4**	-	2.4	2.2	43	-	4	D	-	A	36	D			285	Continuous	285	300	-
	WB Ramps (Signalized)	EB Arterial	117	2120	0	2237	129	2066	0	2195	12	-54	0	-42	1.1	1.2	-	0.9	36	1	-	D	A	-	3	A			89	275	89	-	-
		WB Arterial	0	1598	691	2289	0	1627	679	2306	0	29	-12	17	-	0.7	0.5	0.4	-	6	5	-	A	A	6	A	4	A	220	-	-	375	-
		Off-Ramp	54	0	658	712	14	0	691	705	-40	0	33	-7	**6.9**	-	1.3	0.3	58	-	2	**E**	-	A	3	A			34	Continuous	34	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

I-82, Yakima Avenue IJR
2035 No-Build PM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

3:30 - 4:00 PM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	413	0	413	0	424	0	424	0	409	0	409	0	444	0	444	0	452	0	452	0	466	0	466	0	469	0	469
		WB Arterial	0	83	0	83	0	76	0	76	0	78	0	78	0	85	0	85	0	95	0	95	0	88	0	88	0	75	0	75
		Off-Ramp	76	0	38	114	87	0	36	123	65	0	37	102	79	0	31	110	69	0	43	112	70	0	31	101	85	0	35	120
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	786	138	924	0	765	149	914	0	753	151	904	0	794	138	932	0	767	134	901	0	775	144	919	0	767	143	910
		WB Arterial	103	468	0	571	105	492	0	597	99	504	0	603	97	496	0	593	121	506	0	627	99	492	0	591	105	519	0	624
		Off-Ramp	268	0	10	278	261	0	23	284	264	0	15	279	258	0	28	286	248	0	20	268	273	0	19	292	243	0	23	266
	WB Ramps (Signalized)	EB Arterial	73	960	0	1033	69	952	0	1021	80	951	0	1031	68	981	0	1049	76	923	0	999	87	953	0	1040	75	938	0	1013
		WB Arterial	0	572	288	860	0	590	294	884	0	605	267	872	0	595	273	868	0	609	268	877	0	577	290	867	0	621	276	897
		Off-Ramp	5	0	210	215	3	0	234	237	2	0	178	180	3	0	199	202	7	0	231	238	10	0	185	195	8	0	219	227
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	771	33	804	0	739	40	779	0	750	38	788	0	751	39	790	0	740	48	788	0	747	48	795	0	749	44	793
		WB Arterial	167	581	0	748	169	588	0	757	160	604	0	764	177	592	0	769	183	585	0	768	171	571	0	742	173	589	0	762
		Off-Ramp	262	0	36	298	305	0	47	352	254	0	49	303	287	0	40	327	298	0	47	345	307	0	40	347	282	0	47	329
	WB Ramps (Signalized)	EB Arterial	47	982	0	1029	54	977	0	1031	46	951	0	997	50	977	0	1027	55	971	0	1026	46	998	0	1044	50	963	0	1013
		WB Arterial	0	742	311	1053	0	741	341	1082	0	738	318	1056	0	755	311	1066	0	745	330	1075	0	729	333	1062	0	751	338	1089
		Off-Ramp	20	0	270	290	31	0	286	317	27	0	305	332	26	0	326	352	28	0	307	335	27	0	295	322	25	0	278	303

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables co

4:00 - 5:00 PM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	756	0	756	0	805	0	805	0	786	0	786	0	767	0	767	0	761	0	761	0	675	0	675	0	738	0	738
		WB Arterial	0	194	0	194	0	146	0	146	0	172	0	172	0	151	0	151	0	166	0	166	0	161	0	161	0	171	0	171
		Off-Ramp	174	0	70	244	188	0	65	253	180	0	82	262	184	0	72	256	196	0	67	263	172	0	67	239	167	0	79	246
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1624	315	1939	0	1602	321	1923	0	1642	294	1936	0	1613	312	1925	0	1600	337	1937	0	1583	332	1915	0	1602	328	1930
		WB Arterial	231	1078	0	1309	222	1088	0	1310	207	1127	0	1334	218	1161	0	1379	211	1103	0	1314	211	1133	0	1344	218	1159	0	1377
		Off-Ramp	553	0	33	586	587	0	38	625	554	0	38	592	605	0	43	648	575	0	45	620	583	0	36	619	563	0	42	605
	WB Ramps (Signalized)	EB Arterial	175	2016	0	2191	169	2017	0	2186	172	2022	0	2194	167	2053	0	2220	168	2019	0	2187	168	2006	0	2174	166	1992	0	2158
		WB Arterial	0	1292	684	1976	0	1298	656	1954	0	1334	628	1962	0	1377	603	1980	0	1310	684	1994	0	1341	650	1991	0	1376	602	1978
		Off-Ramp	9	0	496	505	16	0	451	467	6	0	496	502	6	0	462	468	15	0	459	474	9	0	469	478	6	0	468	474
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1595	90	1685	0	1621	74	1695	0	1610	86	1696	0	1594	94	1688	0	1608	93	1701	0	1612	87	1699	0	1606	94	1700
		WB Arterial	405	1367	0	1772	369	1333	0	1702	355	1345	0	1700	375	1319	0	1694	401	1326	0	1727	420	1325	0	1745	382	1321	0	1703
		Off-Ramp	625	0	123	748	675	0	103	778	654	0	125	779	662	0	106	768	655	0	126	781	576	0	120	696	665	0	126	791
	WB Ramps (Signalized)	EB Arterial	130	2089	0	2219	107	2198	0	2305	112	2159	0	2271	102	2159	0	2261	104	2164	0	2268	130	2064	0	2194	118	2161	0	2279
		WB Arterial	0	1697	693	2390	0	1631	732	2363	0	1643	735	2378	0	1636	745	2381	0	1680	698	2378	0	1687	687	2374	0	1645	708	2353
		Off-Ramp	72	0	644	716	66	0	692	758	57	0	641	698	64	0	710	774	46	0	699	745	56	0	671	727	65	0	638	703

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables co

5:00 - 5:30 PM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	401	0	401	0	352	0	352	0	375	0	375	0	419	0	419	0	355	0	355	0	303	0	303	0	366	0	366
		WB Arterial	0	79	0	79	0	72	0	72	0	65	0	65	0	82	0	82	0	72	0	72	0	77	0	77	0	83	0	83
		Off-Ramp	94	0	38	132	96	0	37	133	96	0	36	132	85	0	46	131	92	0	40	132	113	0	43	156	80	0	34	114
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	780	180	960	0	805	171	976	0	802	155	957	0	806	150	956	0	784	171	955	0	780	174	954	0	799	162	961
		WB Arterial	113	527	0	640	100	549	0	649	107	527	0	634	85	559	0	644	99	552	0	651	104	565	0	669	116	561	0	677
		Off-Ramp	254	0	17	271	253	0	18	271	246	0	21	267	276	0	22	298	272	0	13	285	285	0	14	299	274	0	21	295
	WB Ramps (Signalized)	EB Arterial	65	973	0	1038	85	969	0	1054	73	967	0	1040	92	992	0	1084	69	995	0	1064	74	993	0	1067	82	995	0	1077
		WB Arterial	0	646	326	972	0	640	328	968	0	629	308	937	0	638	290	928	0	645	308	953	0	665	287	952	0	661	301	962
		Off-Ramp	3	0	216	219	8	0	254	262	6	0	247	253	3	0	224	227	6	0	234	240	4	0	199	203	3	0	244	247
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	818	50	868	0	817	43	860	0	820	46	866	0	836	39	875	0	820	45	865	0	829	41	870	0	826	33	859
		WB Arterial	193	621	0	814	196	647	0	843	186	623	0	809	211	618	0	829	180	613	0	793	183	625	0	808	190	646	0	836
		Off-Ramp	295	0	56	351	301	0	67	368	290	0	65	355	304	0	61	365	309	0	67	376	242	0	68	310	271	0	64	335
	WB Ramps (Signalized)	EB Arterial	58	1041	0	1099	72	1034	0	1106	71	1031	0	1102	66	1076	0	1142	68	1057	0	1125	48	1029	0	1077	64	1024	0	1088
		WB Arterial	0	807	342	1149	0	852	310	1162	0	804	348	1152	0	819	331	1150	0	786	342	1128	0	806	356	1162	0	818	350	1168
		Off-Ramp	6	0	325	331	4	0	367	371	7	0	351	358	6	0	337	343	5	0	337	342	10	0	351	361	9	0	340	349

I-82, Yakima Avenue IJR
2035 No-Build PM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

3:30 - 4:00 PM

Intersection		Approach	Modeled Volumes																	Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11				Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total				
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	401	0	401	0	411	0		411	0	400	0	400	0	464	0	464	432	27.3	19.6	5%
		WB Arterial	0	50	0	50	0	83	0		83	0	76	0	76	0	97	0	97	81	12.6	9.0	**11%**
		Off-Ramp	77	0	34	111	75	0	28		103	88	0	31	119	90	0	36	126	113	8.6	6.1	5%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	734	161	895	0	761	144		905	0	757	135	892	0	778	136	914	910	12.2	8.7	1%
		WB Arterial	101	479	0	580	110	491	0		601	91	503	0	594	100	473	0	573	596	18.1	12.9	2%
		Off-Ramp	269	0	23	292	248	0	18		266	267	0	19	286	247	0	15	262	278	11.0	7.8	3%
	WB Ramps (Signalized)	EB Arterial	72	928	0	1000	66	941	0		1007	83	929	0	1012	64	949	0	1013	1020	16.4	11.8	1%
		WB Arterial	0	582	290	872	0	606	274		880	0	594	279	873	0	579	295	874	875	9.8	7.0	1%
		Off-Ramp	5	0	195	200	6	0	197		203	4	0	196	200	2	0	213	215	210	18.1	13.0	6%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	749	42	791	0	747	37		784	0	747	44	791	0	751	45	796	791	6.5	4.7	1%
		WB Arterial	161	608	0	769	173	593	0		766	168	598	0	766	174	541	0	715	757	16.5	11.8	2%
		Off-Ramp	299	0	47	346	278	0	39		317	279	0	49	328	303	0	43	346	331	18.5	13.3	4%
	WB Ramps (Signalized)	EB Arterial	59	973	0	1032	42	964	0		1006	61	951	0	1012	43	999	0	1042	1024	14.8	10.6	1%
		WB Arterial	0	745	323	1068	0	756	325		1081	0	760	315	1075	0	703	354	1057	1069	11.9	8.5	1%
		Off-Ramp	26	0	283	309	19	0	314		333	24	0	316	340	21	0	274	295	321	19.8	14.1	4%

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables co

4:00 - 5:00 PM

Intersection		Approach	Modeled Volumes																	Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11				Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total				
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	748	0	748	0	760	0		760	0	653	0	653	0	690	0	690	740	47.5	34.0	5%
		WB Arterial	0	172	0	172	0	128	0		128	0	146	0	146	0	188	0	188	163	19.4	13.9	9%
		Off-Ramp	172	0	71	243	171	0	77		248	182	0	78	260	178	0	64	242	251	8.6	6.2	2%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1601	320	1921	0	1631	310		1941	0	1608	326	1934	0	1568	359	1927	1930	8.3	5.9	0%
		WB Arterial	240	1088	0	1328	251	1116	0		1367	220	1076	0	1296	232	1148	0	1380	1340	31.4	22.5	2%
		Off-Ramp	570	0	42	612	576	0	40		616	575	0	32	607	556	0	32	588	611	18.2	13.0	2%
	WB Ramps (Signalized)	EB Arterial	160	2018	0	2178	168	2038	0		2206	164	2024	0	2188	171	1963	0	2134	2183	22.9	16.4	1%
		WB Arterial	0	1321	648	1969	0	1345	629		1974	0	1316	639	1955	0	1365	593	1958	1972	13.7	9.8	0%
		Off-Ramp	5	0	451	456	15	0	485		500	9	0	438	447	18	0	476	494	479	19.3	13.8	3%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1623	84	1707	0	1624	80		1704	0	1621	68	1689	0	1593	100	1693	1696	6.9	5.0	0%
		WB Arterial	354	1344	0	1698	349	1373	0		1722	393	1301	0	1694	408	1306	0	1714	1716	24.6	17.6	1%
		Off-Ramp	601	0	108	709	649	0	124		773	585	0	126	711	611	0	125	736	752	33.8	24.2	3%
	WB Ramps (Signalized)	EB Arterial	122	2119	0	2241	129	2145	0		2274	99	2120	0	2219	103	2106	0	2209	2249	34.8	24.9	1%
		WB Arterial	0	1639	735	2374	0	1657	707		2364	0	1638	732	2370	0	1657	726	2383	2373	10.5	7.5	0%
		Off-Ramp	61	0	664	725	61	0	690		751	59	0	659	718	56	0	665	721	731	23.6	16.9	2%

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables co

5:00 - 5:30 PM

Intersection		Approach	Modeled Volumes																	Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11				Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total				
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	326	0	326	0	370	0		370	0	376	0	376	0	319	0	319	360	34.6	24.7	7%
		WB Arterial	0	73	0	73	0	77	0		77	0	95	0	95	0	80	0	80	78	7.8	5.6	7%
		Off-Ramp	95	0	41	136	92	0	37		129	85	0	36	121	87	0	34	121	131	10.7	7.7	6%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	815	141	956	0	798	155		953	0	788	171	959	0	782	170	952	958	6.6	4.7	0%
		WB Arterial	119	552	0	671	112	523	0		635	95	583	0	678	102	543	0	645	654	16.7	11.9	2%
		Off-Ramp	289	0	12	301	283	0	18		301	284	0	16	300	296	0	21	317	291	15.8	11.3	4%
	WB Ramps (Signalized)	EB Arterial	100	1008	0	1108	84	996	0		1080	71	996	0	1067	85	991	0	1076	1069	20.1	14.4	1%
		WB Arterial	0	669	282	951	0	625	315		940	0	644	321	965	0	631	310	941	952	14.1	10.1	1%
		Off-Ramp	3	0	207	210	7	0	202		209	6	0	225	231	5	0	221	226	230	19.1	13.7	6%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	803	45	848	0	810	47		857	0	829	40	869	0	816	48	864	864	7.4	5.3	1%
		WB Arterial	171	619	0	790	185	649	0		834	189	622	0	811	188	641	0	829	818	17.6	12.6	2%
		Off-Ramp	274	0	70	344	276	0	60		336	281	0	45	326	267	0	75	342	346	19.5	13.9	4%
	WB Ramps (Signalized)	EB Arterial	63	1000	0	1063	66	1026	0		1092	65	1035	0	1100	70	1008	0	1078	1097	22.2	15.9	1%
		WB Arterial	0	794	347	1141	0	827	336		1163	0	807	345	1152	0	831	328	1159	1153	11.5	8.2	1%
		Off-Ramp	8	0	340	348	10	0	343		353	10	0	364	374	4	0	348	352	353	12.7	9.1	3%

I-82, Yakima Avenue IJR
2035 No-Build PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	3:30 - 4:00 PM Summary						4:00 - 5:00 PM Summary					
						Volume				Speed (mph)	Density (vplpm)	Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic			Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Eastbound Mainline	Start		87	1,746	3	3,232	3,228	(4)	0.1	58	18	3,510	3,554	44	0.7	58	20
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,232	3,215	(17)	0.3	57	19	3,510	3,546	36	0.6	57	21
	US 12 / 1st Street Off-Ramp		90	858	2	1,492	1,484	(8)	0.2	49	15	1,620	1,623	3	0.1	48	17
	US 12 / 1st Street Off-Ramp		91	872	2	1,740	1,724	(16)	0.4	58	15	1,890	1,916	26	0.6	58	17
			117	401	2	1,740	1,723	(17)	0.4	58	15	1,890	1,915	25	0.6	58	16
		US 12 / 1st Street On-Ramp	118	1,992	2	1,740	1,721	(19)	0.5	59	14	1,890	1,916	26	0.6	59	16
	US 12 / 1st Street On-Ramp		99	549	2	1,234	1,193	(41)	1.2	58	10	1,340	1,315	(25)	0.7	56	12
			10114	218	1	1,234	1,212	(22)	0.6	57	21	1,340	1,339	(1)	0.0	56	24
	US 12 / 1st Street On-Ramp		100	655	2	2,974	2,915	(59)	1.1	58	25	3,230	3,235	5	0.1	57	**29**
			101	1,623	2	2,974	2,922	(52)	1.0	59	25	3,230	3,251	21	0.4	58	28
			139	1,553	2	2,974	2,919	(55)	1.0	60	24	3,230	3,252	22	0.4	59	27
		Fair Avenue Off-Ramp	140	1,553	2	2,974	2,912	(62)	1.1	60	24	3,230	3,246	16	0.3	59	27
	Fair Avenue Off-Ramp		34	1,547	1	230	229	(1)	0.1	51	4	250	253	3	0.2	51	5
	Fair Avenue Off-Ramp		138	1,289	2	2,744	2,692	(52)	1.0	60	22	2,980	2,999	19	0.3	60	25
		Yakima Avenue Off-Ramp	142	1,290	2	2,744	2,668	(76)	1.5	59	23	2,980	2,975	(5)	0.1	59	25
	Yakima Avenue Off-Ramp		10	652	1	552	558	6	0.3	32	20	600	613	13	0.5	21	**37**
	Yakima Avenue Off-Ramp		141	1,385	2	2,192	2,129	(63)	1.3	60	18	2,380	2,380	0	0.0	60	20
		Yakima Avenue On-Ramp	143	1,511	2	2,192	2,127	(65)	1.4	60	18	2,380	2,380	0	0.0	60	20
	Yakima Avenue On-Ramp		16	302	3	1,095	938	(157)	4.9	48	7	1,190	938	(252)	**7.7**	48	7
			109	502	2	1,095	944	(151)	4.7	46	10	1,190	945	(245)	**7.5**	45	11
			110	562	1	1,095	947	(148)	4.6	51	19	1,190	945	(245)	**7.5**	51	19
	Yakima Avenue On-Ramp		111	1,102	2	3,287	3,056	(231)	4.1	59	26	3,570	3,310	(260)	4.4	59	**28**
			112	1,863	2	3,287	3,067	(220)	3.9	59	26	3,570	3,326	(244)	4.2	59	**28**
		Nob Hill Boulevard Off-Ramp	145	1,820	2	3,287	3,049	(238)	4.2	59	26	3,570	3,308	(262)	4.5	58	**28**
	Nob Hill Boulevard Off-Ramp		53	1,017	1	699	661	(38)	1.5	52	13	760	747	(13)	0.5	52	14
	Nob Hill Boulevard Off-Ramp		144	1,385	2	2,588	2,401	(187)	3.7	60	20	2,810	2,573	(237)	4.6	60	21
		Nob Hill Boulevard On-Ramp	147	1,414	2	2,588	2,395	(193)	3.9	60	20	2,810	2,574	(236)	4.5	60	21
	Nob Hill Boulevard On-Ramp		116	352	1	442	427	(15)	0.7	46	9	480	469	(11)	0.5	46	10
	Nob Hill Boulevard On-Ramp		115	1,070	3	3,030	2,826	(204)	3.8	59	16	3,290	3,042	(248)	4.4	59	17
		End	171	1,072	3	3,030	2,832	(198)	3.7	59	16	3,290	3,037	(253)	4.5	59	17
I-82 Westbound Mainline	Start		164	1,750	2	3,291	3,286	(5)	0.1	57	29	3,670	3,689	19	0.3	56	33
			165	1,750	2	3,291	3,283	(8)	0.1	58	**29**	3,670	3,686	16	0.3	57	**32**
			166	1,750	2	3,291	3,276	(15)	0.3	57	**29**	3,670	3,685	15	0.2	57	**32**
		Nob Hill Boulevard Off-Ramp	167	1,750	2	3,291	3,255	(36)	0.6	59	28	3,670	3,664	(6)	0.1	58	**32**
	Nob Hill Boulevard Off-Ramp		47	546	1	663	641	(22)	0.9	53	12	740	729	(11)	0.4	53	14
	Nob Hill Boulevard Off-Ramp		148	1,154	2	2,628	2,625	(3)	0.1	60	22	2,930	2,951	21	0.4	60	25
			149	1,230	2	2,628	2,626	(2)	0.0	60	22	2,930	2,947	17	0.3	60	25
		Nob Hill Boulevard On-Ramp	114	427	2	2,628	2,618	(10)	0.2	60	22	2,930	2,937	7	0.1	60	24
	Nob Hill Boulevard On-Ramp		45	1,641	2	753	727	(26)	1.0	46	8	840	801	(39)	1.4	46	9
	Nob Hill Boulevard On-Ramp		168	741	3	3,381	3,384	3	0.1	60	19	3,770	3,777	7	0.1	60	21
			150	1,169	3	3,381	3,387	6	0.1	59	19	3,770	3,777	7	0.1	58	22
			113	1,519	2	3,381	3,379	(2)	0.0	59	**29**	3,770	3,776	6	0.1	57	**34**
		Yakima Avenue Off-Ramp	152	1,473	2	3,381	3,362	(19)	0.3	56	**30**	3,770	3,765	(5)	0.1	53	**36**
	Yakima Avenue Off-Ramp		106	492	1	1,139	1,157	18	0.5	55	21	1,270	1,317	47	1.3	54	25
	Yakima Avenue Off-Ramp		151	1,294	2	2,242	2,177	(65)	1.4	60	18	2,500	2,422	(78)	1.6	59	21
		Yakima Avenue On-Ramp	153	1,334	2	2,242	2,170	(72)	1.5	60	18	2,500	2,421	(79)	1.6	60	20
	Yakima Avenue On-Ramp		3	1,205	1	717	672	(45)	1.7	44	15	800	761	(39)	1.4	43	18
	Yakima Avenue On-Ramp		104	726	2	2,959	2,877	(82)	1.5	59	24	3,300	3,218	(82)	1.4	58	28
			105	1,663	2	2,959	2,881	(78)	1.4	59	24	3,300	3,223	(77)	1.4	59	27
			154	1,598	2	2,959	2,881	(78)	1.4	60	24	3,300	3,223	(77)	1.4	60	27
			155	1,598	2	2,959	2,876	(83)	1.5	59	24	3,300	3,221	(79)	1.4	59	27
		US 12 / 1st Street Off-Ramp	156	1,601	2	2,959	2,858	(101)	1.9	59	24	3,300	3,201	(99)	1.7	56	**29**
	US 12 / 1st Street Off-Ramp		102	870	1	1,103	1,063	(40)	1.2	54	20	1,230	1,188	(42)	1.2	53	22
	US 12 / 1st Street Off-Ramp		136	1,815	2	1,856	1,809	(47)	1.1	60	15	2,070	2,027	(43)	0.9	60	17
		US 12 / 1st Street On-Ramp	137	1,841	2	1,856	1,809	(47)	1.1	61	15	2,070	2,028	(42)	0.9	60	17
	US 12 / 1st Street On-Ramp		97	1,173	1	1,337	1,353	16	0.4	43	**31**	1,490	1,453	(37)	1.0	43	**34**
	US 12 / 1st Street On-Ramp	End	98	1,881	3	3,193	3,165	(28)	0.5	60	18	3,560	3,482	(78)	1.3	60	19

I-82, Yakima Avenue IJR
2035 No-Build PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	5:00 - 5:30 PM Summary					
						Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Eastbound Mainline	Start		87	1,746	3	3,466	3,467	1	0.0	58	20
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,466	3,460	(6)	0.1	57	20
	US 12 / 1st Street Off-Ramp		90	858	2	1,600	1,586	(14)	0.4	48	16
	US 12 / 1st Street Off-Ramp		91	872	2	1,866	1,867	1	0.0	58	16
			117	401	2	1,866	1,866	0	0.0	58	16
		US 12 / 1st Street On-Ramp	118	1,992	2	1,866	1,869	3	0.1	59	16
	US 12 / 1st Street On-Ramp		99	549	2	1,324	1,330	6	0.2	56	12
			10114	218	1	1,324	1,356	32	0.9	56	24
	US 12 / 1st Street On-Ramp		100	655	2	3,190	3,212	22	0.4	57	**28**
			101	1,623	2	3,190	3,227	37	0.7	58	28
			139	1,553	2	3,190	3,227	37	0.7	60	27
		Fair Avenue Off-Ramp	140	1,553	2	3,190	3,218	28	0.5	59	27
	Fair Avenue Off-Ramp		34	1,547	1	247	256	9	0.6	51	5
	Fair Avenue Off-Ramp		138	1,289	2	2,943	2,968	25	0.5	60	25
		Yakima Avenue Off-Ramp	142	1,290	2	2,943	2,947	4	0.1	58	25
	Yakima Avenue Off-Ramp		10	652	1	593	583	(10)	0.4	23	**32**
	Yakima Avenue Off-Ramp		141	1,385	2	2,350	2,389	39	0.8	60	20
		Yakima Avenue On-Ramp	143	1,511	2	2,350	2,389	39	0.8	60	20
	Yakima Avenue On-Ramp		16	302	3	1,175	912	(263)	**8.1**	47	6
			109	502	2	1,175	918	(257)	**7.9**	45	10
			110	562	1	1,175	919	(256)	**7.9**	51	18
	Yakima Avenue On-Ramp		111	1,102	2	3,525	3,291	(234)	4.0	59	**28**
			112	1,863	2	3,525	3,303	(222)	3.8	59	**28**
		Nob Hill Boulevard Off-Ramp	145	1,820	2	3,525	3,286	(239)	4.1	58	**28**
	Nob Hill Boulevard Off-Ramp		53	1,017	1	750	702	(48)	1.8	52	14
	Nob Hill Boulevard Off-Ramp		144	1,385	2	2,775	2,599	(176)	3.4	60	22
		Nob Hill Boulevard On-Ramp	147	1,414	2	2,775	2,599	(176)	3.4	60	22
	Nob Hill Boulevard On-Ramp		116	352	1	474	463	(11)	0.5	45	10
	Nob Hill Boulevard On-Ramp		115	1,070	3	3,249	3,067	(182)	3.2	59	17
		End	171	1,072	3	3,249	3,084	(165)	2.9	59	17
I-82 Westbound Mainline	Start		164	1,750	2	3,532	3,531	(1)	0.0	57	31
			165	1,750	2	3,532	3,535	3	0.1	57	**31**
			166	1,750	2	3,532	3,537	5	0.1	57	**31**
		Nob Hill Boulevard Off-Ramp	167	1,750	2	3,532	3,522	(10)	0.2	58	**30**
	Nob Hill Boulevard Off-Ramp		47	546	1	712	706	(6)	0.2	53	13
	Nob Hill Boulevard Off-Ramp		148	1,154	2	2,820	2,834	14	0.3	60	24
			149	1,230	2	2,820	2,834	14	0.3	60	24
		Nob Hill Boulevard On-Ramp	114	427	2	2,820	2,826	6	0.1	60	24
	Nob Hill Boulevard On-Ramp		45	1,641	2	808	780	(28)	1.0	46	8
	Nob Hill Boulevard On-Ramp		168	741	3	3,628	3,648	20	0.3	60	20
			150	1,169	3	3,628	3,653	25	0.4	59	21
			113	1,519	2	3,628	3,653	25	0.4	58	**32**
		Yakima Avenue Off-Ramp	152	1,473	2	3,628	3,640	12	0.2	55	**34**
	Yakima Avenue Off-Ramp		106	492	1	1,222	1,239	17	0.5	54	23
	Yakima Avenue Off-Ramp		151	1,294	2	2,406	2,380	(26)	0.5	59	20
		Yakima Avenue On-Ramp	153	1,334	2	2,406	2,380	(26)	0.5	60	20
	Yakima Avenue On-Ramp		3	1,205	1	770	731	(39)	1.4	44	17
	Yakima Avenue On-Ramp		104	726	2	3,176	3,145	(31)	0.5	59	27
			105	1,663	2	3,176	3,154	(22)	0.4	59	27
			154	1,598	2	3,176	3,155	(21)	0.4	60	26
			155	1,598	2	3,176	3,157	(19)	0.3	59	27
		US 12 / 1st Street Off-Ramp	156	1,601	2	3,176	3,146	(30)	0.5	58	27
	US 12 / 1st Street Off-Ramp		102	870	1	1,184	1,169	(15)	0.4	53	22
	US 12 / 1st Street Off-Ramp		136	1,815	2	1,992	1,992	(0)	0.0	60	17
		US 12 / 1st Street On-Ramp	137	1,841	2	1,992	1,989	(3)	0.1	60	16
	US 12 / 1st Street On-Ramp		97	1,173	1	1,434	1,472	38	1.0	43	35
	US 12 / 1st Street On-Ramp	End	98	1,881	3	3,426	3,459	33	0.6	60	19

I-82, Yakima Avenue IJR
2035 No-Build PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

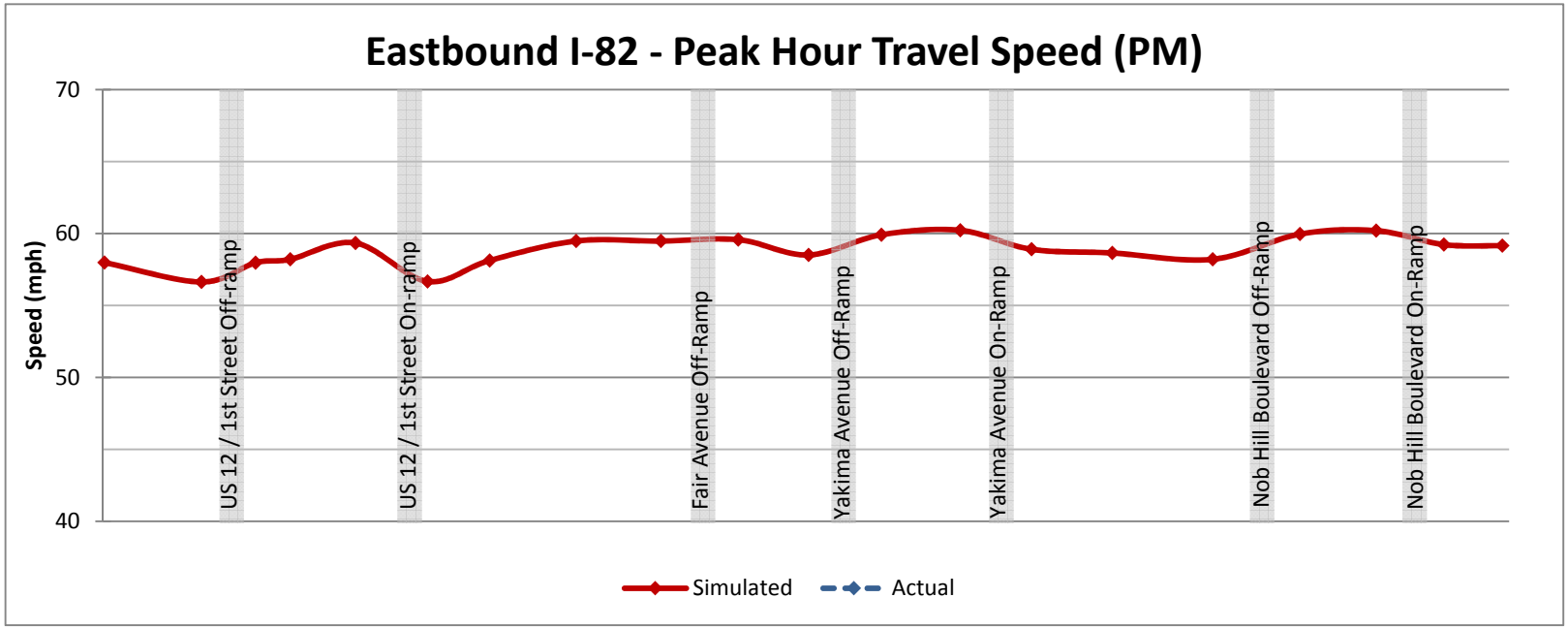
	Location		Link	Length (ft)	Number of Lanes	3:30 - 3:45 Summary			3:45 - 4:00 Summary			4:00 - 4:15 Summary			4:15 - 4:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Eastbound Mainline	Start		87	1,746	3	3,158	58	18	3,299	58	19	3,406	58	20	3,557	58	20
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,139	58	18	3,291	57	19	3,395	57	20	3,549	57	21
	US 12 / 1st Street Off-Ramp		90	858	2	1,470	49	15	1,497	48	16	1,566	48	16	1,608	48	17
	US 12 / 1st Street Off-Ramp		91	872	2	1,665	58	14	1,783	58	15	1,821	58	16	1,932	58	17
			117	401	2	1,666	58	14	1,781	58	15	1,819	58	16	1,933	58	17
		US 12 / 1st Street On-Ramp	118	1,992	2	1,665	59	14	1,776	59	15	1,823	59	15	1,929	59	16
	US 12 / 1st Street On-Ramp		99	549	2	1,150	58	10	1,236	58	11	1,263	58	11	1,309	56	12
			10114	218	1	1,169	58	20	1,256	57	22	1,287	57	23	1,333	56	24
	US 12 / 1st Street On-Ramp		100	655	2	2,814	59	24	3,016	58	26	3,093	58	27	3,239	58	**28**
			101	1,623	2	2,822	60	24	3,023	59	26	3,111	59	26	3,256	58	28
			139	1,553	2	2,813	60	23	3,026	60	25	3,106	60	26	3,257	60	27
		Fair Avenue Off-Ramp	140	1,553	2	2,803	60	23	3,021	60	25	3,097	60	26	3,250	59	27
	Fair Avenue Off-Ramp		34	1,547	1	219	51	4	239	51	5	252	51	5	235	51	5
	Fair Avenue Off-Ramp		138	1,289	2	2,600	60	22	2,783	60	23	2,855	60	24	3,012	60	25
		Yakima Avenue Off-Ramp	142	1,290	2	2,576	59	22	2,760	59	23	2,838	59	24	2,983	59	25
	Yakima Avenue Off-Ramp		10	652	1	523	35	16	594	28	24	611	21	**36**	609	25	35
	Yakima Avenue Off-Ramp		141	1,385	2	2,068	60	17	2,191	60	18	2,233	60	19	2,396	60	20
		Yakima Avenue On-Ramp	143	1,511	2	2,066	60	17	2,188	60	18	2,228	60	18	2,392	60	20
	Yakima Avenue On-Ramp		16	302	3	950	47	7	925	48	6	940	48	7	948	47	7
			109	502	2	953	45	11	935	46	10	943	45	10	955	44	11
			110	562	1	953	51	19	941	51	18	937	51	18	957	50	19
	Yakima Avenue On-Ramp		111	1,102	2	3,002	59	25	3,110	59	26	3,155	59	27	3,330	59	**28**
			112	1,863	2	3,017	59	25	3,116	59	26	3,175	59	27	3,333	59	**28**
		Nob Hill Boulevard Off-Ramp	145	1,820	2	3,007	60	25	3,090	59	26	3,156	59	27	3,312	58	**28**
	Nob Hill Boulevard Off-Ramp		53	1,017	1	663	52	13	658	52	13	718	52	14	756	52	15
	Nob Hill Boulevard Off-Ramp		144	1,385	2	2,353	60	19	2,449	60	20	2,440	60	20	2,566	60	21
		Nob Hill Boulevard On-Ramp	147	1,414	2	2,344	60	19	2,446	60	20	2,448	60	20	2,563	60	21
	Nob Hill Boulevard On-Ramp		116	352	1	423	46	9	432	46	9	435	46	9	449	45	10
	Nob Hill Boulevard On-Ramp		115	1,070	3	2,779	60	16	2,872	59	16	2,894	59	16	3,006	59	17
		End	171	1,072	3	2,785	60	16	2,878	59	16	2,902	59	16	3,009	59	17
I-82 Westbound Mainline	Start		164	1,750	2	3,198	57	28	3,374	57	30	3,520	57	31	3,690	56	33
			165	1,750	2	3,196	58	28	3,369	57	**29**	3,514	57	**31**	3,683	57	**32**
			166	1,750	2	3,188	57	28	3,364	57	**29**	3,511	57	**31**	3,683	57	**32**
		Nob Hill Boulevard Off-Ramp	167	1,750	2	3,165	59	27	3,345	59	**29**	3,491	58	**30**	3,659	58	**32**
	Nob Hill Boulevard Off-Ramp		47	546	1	629	53	12	653	53	12	680	53	13	734	53	14
	Nob Hill Boulevard Off-Ramp		148	1,154	2	2,546	60	21	2,705	60	23	2,826	60	24	2,935	60	25
			149	1,230	2	2,550	60	21	2,702	60	22	2,817	60	23	2,931	60	24
		Nob Hill Boulevard On-Ramp	114	427	2	2,547	60	21	2,689	60	22	2,810	60	23	2,924	60	24
	Nob Hill Boulevard On-Ramp		45	1,641	2	720	46	8	733	46	8	754	46	8	797	46	9
	Nob Hill Boulevard On-Ramp		168	741	3	3,308	60	18	3,460	60	19	3,593	60	20	3,769	60	21
			150	1,169	3	3,307	59	19	3,466	59	20	3,595	58	21	3,768	59	21
			113	1,519	2	3,294	59	28	3,464	58	**30**	3,595	58	**31**	3,763	57	**33**
		Yakima Avenue Off-Ramp	152	1,473	2	3,284	57	**29**	3,440	55	**31**	3,584	55	**32**	3,755	51	**37**
	Yakima Avenue Off-Ramp		106	492	1	1,115	55	20	1,199	55	22	1,223	54	23	1,332	53	25
	Yakima Avenue Off-Ramp		151	1,294	2	2,138	60	18	2,216	60	19	2,335	59	20	2,390	59	20
		Yakima Avenue On-Ramp	153	1,334	2	2,133	60	18	2,207	60	18	2,342	60	19	2,387	60	20
	Yakima Avenue On-Ramp		3	1,205	1	641	44	15	703	44	16	707	44	16	764	43	18
	Yakima Avenue On-Ramp		104	726	2	2,800	59	24	2,953	59	25	3,077	58	26	3,188	58	27
			105	1,663	2	2,805	60	24	2,957	59	25	3,081	59	26	3,195	59	27
			154	1,598	2	2,807	60	23	2,954	60	25	3,078	60	26	3,193	60	27
			155	1,598	2	2,804	60	24	2,947	59	25	3,078	59	26	3,185	59	27
		US 12 / 1st Street Off-Ramp	156	1,601	2	2,779	59	23	2,936	58	25	3,052	57	27	3,155	56	**28**
	US 12 / 1st Street Off-Ramp		102	870	1	1,053	54	20	1,074	54	20	1,152	53	22	1,174	54	22
	US 12 / 1st Street Off-Ramp		136	1,815	2	1,740	60	14	1,879	60	16	1,907	60	16	1,991	60	17
		US 12 / 1st Street On-Ramp	137	1,841	2	1,743	61	14	1,875	61	15	1,904	60	16	1,988	60	16
	US 12 / 1st Street On-Ramp		97	1,173	1	1,311	43	**30**	1,395	43	**32**	1,414	43	**33**	1,458	43	34
	US 12 / 1st Street On-Ramp	End	98	1,881	3	3,070	60	17	3,260	60	18	3,316	60	19	3,444	60	19

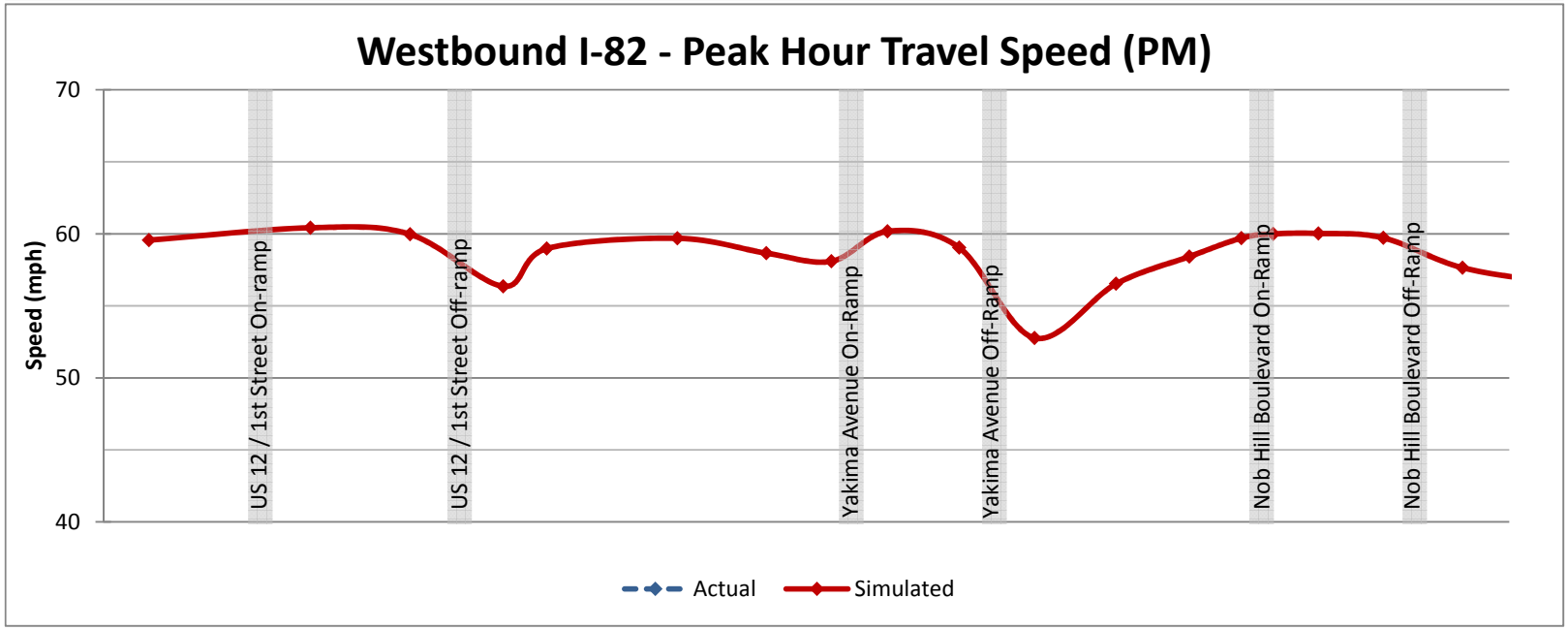
I-82, Yakima Avenue IJR
2035 No-Build PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	4:30 - 4:45 Summary			4:45 - 5:00 Summary			5:00 - 5:15 Summary			5:15 - 5:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Eastbound Mainline	Start		87	1,746	3	3,719	58	21	3,536	58	20	3,538	58	20	3,396	58	19
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,710	56	22	3,529	56	21	3,530	57	21	3,389	57	20
	US 12 / 1st Street Off-Ramp		90	858	2	1,739	48	18	1,579	48	16	1,620	48	17	1,551	48	16
	US 12 / 1st Street Off-Ramp		91	872	2	1,957	58	17	1,952	58	17	1,902	58	16	1,831	58	16
			117	401	2	1,957	58	17	1,951	58	17	1,904	58	16	1,829	58	16
		US 12 / 1st Street On-Ramp	118	1,992	2	1,960	59	17	1,952	59	16	1,905	59	16	1,833	59	15
	US 12 / 1st Street On-Ramp		99	549	2	1,374	57	12	1,314	53	13	1,387	55	13	1,273	58	11
			10114	218	1	1,397	56	25	1,338	54	25	1,412	54	26	1,300	57	23
	US 12 / 1st Street On-Ramp		100	655	2	3,341	55	**30**	3,266	56	**29**	3,304	56	**30**	3,120	58	27
			101	1,623	2	3,347	58	**29**	3,290	58	**29**	3,316	58	**29**	3,138	59	27
			139	1,553	2	3,340	59	**28**	3,307	59	28	3,304	59	28	3,151	60	26
		Fair Avenue Off-Ramp	140	1,553	2	3,324	59	28	3,311	59	28	3,283	59	28	3,152	59	27
	Fair Avenue Off-Ramp		34	1,547	1	268	51	5	260	51	5	276	51	5	237	51	5
	Fair Avenue Off-Ramp		138	1,289	2	3,059	59	26	3,069	60	26	3,012	59	25	2,923	60	24
		Yakima Avenue Off-Ramp	142	1,290	2	3,031	59	26	3,048	58	26	2,996	58	26	2,899	58	25
	Yakima Avenue Off-Ramp		10	652	1	604	18	**39**	627	21	**40**	586	22	**37**	580	25	27
	Yakima Avenue Off-Ramp		141	1,385	2	2,445	60	20	2,447	60	21	2,433	60	20	2,346	60	20
		Yakima Avenue On-Ramp	143	1,511	2	2,441	60	20	2,459	60	20	2,435	60	20	2,344	60	19
	Yakima Avenue On-Ramp		16	302	3	944	48	7	922	48	6	896	47	6	929	48	7
			109	502	2	952	45	11	928	45	10	900	45	10	937	45	10
			110	562	1	955	50	19	928	51	18	899	51	18	940	51	19
	Yakima Avenue On-Ramp		111	1,102	2	3,378	59	**29**	3,378	59	**29**	3,312	58	**28**	3,270	59	28
			112	1,863	2	3,393	59	**29**	3,403	58	**29**	3,320	58	**28**	3,286	59	**28**
		Nob Hill Boulevard Off-Ramp	145	1,820	2	3,378	58	**29**	3,386	58	**29**	3,311	58	**29**	3,260	58	28
	Nob Hill Boulevard Off-Ramp		53	1,017	1	753	52	15	759	52	15	714	52	14	689	52	13
	Nob Hill Boulevard Off-Ramp		144	1,385	2	2,645	60	22	2,640	60	22	2,614	60	22	2,584	60	22
		Nob Hill Boulevard On-Ramp	147	1,414	2	2,644	60	22	2,641	60	22	2,613	60	22	2,586	60	22
	Nob Hill Boulevard On-Ramp		116	352	1	500	45	11	492	46	11	476	45	11	450	46	10
	Nob Hill Boulevard On-Ramp		115	1,070	3	3,123	59	18	3,144	59	18	3,097	59	17	3,037	59	17
		End	171	1,072	3	3,122	59	18	3,115	59	18	3,116	59	18	3,052	59	17
I-82 Westbound Mainline	Start		164	1,750	2	3,886	55	35	3,660	56	32	3,621	56	32	3,441	57	30
			165	1,750	2	3,880	57	34	3,666	57	**32**	3,624	57	**32**	3,447	57	**30**
			166	1,750	2	3,869	57	34	3,676	57	**32**	3,624	57	**32**	3,451	57	**30**
		Nob Hill Boulevard Off-Ramp	167	1,750	2	3,844	57	**34**	3,663	58	**32**	3,607	58	**31**	3,436	58	**30**
	Nob Hill Boulevard Off-Ramp		47	546	1	772	53	15	730	53	14	727	53	14	685	53	13
	Nob Hill Boulevard Off-Ramp		148	1,154	2	3,089	59	26	2,956	60	25	2,892	60	24	2,776	60	23
			149	1,230	2	3,086	60	26	2,953	60	25	2,894	60	24	2,774	60	23
		Nob Hill Boulevard On-Ramp	114	427	2	3,072	60	26	2,942	60	25	2,892	60	24	2,760	60	23
	Nob Hill Boulevard On-Ramp		45	1,641	2	843	46	9	811	46	9	782	46	8	777	46	8
	Nob Hill Boulevard On-Ramp		168	741	3	3,945	60	22	3,800	60	21	3,713	60	21	3,582	60	20
			150	1,169	3	3,947	58	23	3,799	59	22	3,717	59	21	3,589	59	20
			113	1,519	2	3,946	55	**36**	3,801	57	**34**	3,704	57	**32**	3,601	58	**31**
		Yakima Avenue Off-Ramp	152	1,473	2	3,927	52	**38**	3,797	53	**36**	3,684	54	34	3,596	55	**33**
	Yakima Avenue Off-Ramp		106	492	1	1,370	54	26	1,343	53	25	1,248	55	23	1,229	54	23
	Yakima Avenue Off-Ramp		151	1,294	2	2,524	59	21	2,437	59	21	2,408	59	20	2,352	59	20
		Yakima Avenue On-Ramp	153	1,334	2	2,521	60	21	2,435	60	20	2,414	60	20	2,346	60	19
	Yakima Avenue On-Ramp		3	1,205	1	796	43	18	777	43	18	751	43	17	712	44	16
	Yakima Avenue On-Ramp		104	726	2	3,352	58	**29**	3,254	58	**28**	3,204	58	27	3,086	59	26
			105	1,663	2	3,356	58	**29**	3,259	58	28	3,222	59	27	3,085	59	26
			154	1,598	2	3,350	60	**28**	3,270	60	27	3,224	60	27	3,087	60	26
			155	1,598	2	3,350	59	**28**	3,269	59	28	3,220	59	27	3,093	59	26
		US 12 / 1st Street Off-Ramp	156	1,601	2	3,339	56	**30**	3,257	56	**29**	3,198	57	28	3,093	58	27
	US 12 / 1st Street Off-Ramp		102	870	1	1,242	53	23	1,184	53	22	1,181	53	22	1,157	53	22
	US 12 / 1st Street Off-Ramp		136	1,815	2	2,121	60	18	2,091	60	17	2,022	60	17	1,961	60	16
		US 12 / 1st Street On-Ramp	137	1,841	2	2,118	60	18	2,103	60	17	2,019	60	17	1,959	60	16
	US 12 / 1st Street On-Ramp		97	1,173	1	1,456	43	**34**	1,482	42	35	1,515	42	**36**	1,428	43	**33**
	US 12 / 1st Street On-Ramp	End	98	1,881	3	3,578	60	20	3,590	59	20	3,527	59	20	3,391	60	19


Eastbound I-82 - Peak Hour Travel Speed (PM)
Speed (mph)
70
60
50
40
US 12 / 1st Street Off-ramp
US 12 / 1st Street On-ramp
Fair Avenue Off-Ramp
Yakima Avenue Off-Ramp
Yakima Avenue On-Ramp
Nob Hill Boulevard Off-Ramp
Nob Hill Boulevard On-Ramp
Simulated
Actual


Westbound I-82 - Peak Hour Travel Speed (PM)
Speed (mph)
70
60
50
40
US 12 / 1st Street On-ramp
US 12 / 1st Street Off-ramp
Yakima Avenue On-Ramp
Yakima Avenue Off-Ramp
Nob Hill Boulevard On-Ramp
Nob Hill Boulevard Off-Ramp
Actual
Simulated

I-82, Yakima Avenue IJR
2035 CD Option - AM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

6:30 - 7:00 AM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Left Turn		Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	317	96	413	0	292	120	412	0	-25	24	-1	-	1.4	2.3	0.0	-	5	2	-	A	A	4	A	7	A	63	-	-	-	-
		WB Arterial	75	582	0	657	69	587	0	656	-6	5	0	-1	0.7	0.2	-	0.0	6	3	-	A	A	-	3	A			63	400	63	-	-
		Off-Ramp	219	0	124	343	213	0	114	327	-6	0	-10	-16	0.4	-	0.9	0.9	25	-	3	C	-	A	17	B			-	Continuous	176	-	-
	WB Ramps (Signalized)	EB Arterial	46	490	0	536	49	454	0	503	3	-36	0	-33	0.4	1.7	-	1.4	3	4	-	A	A	-	4	A			71	400	71	-	-
		WB Arterial	0	460	108	568	0	468	96	564	0	8	-12	-4	-	0.4	1.2	0.2	-	4	2	-	A	A	4	A	6	A	69	-	-	-	-
		Off-Ramp	197	0	93	290	189	0	99	288	-8	0	6	-2	0.6	-	0.6	0.1	21	-	2	C	-	A	14	B			-	Continuous	126	-	-
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	279	0	279	0	277	0	277	0	-2	0	-2	-	0.1	-	0.1	-	6	-	-	A	-	6	A	6	A	74	-	-	-	-
		WB Arterial	0	170	0	170	0	160	0	160	0	-10	0	-10	-	0.8	-	0.8	-	6	-	-	A	-	6	A			53	-	-	-	-
		Off-Ramp	165	0	18	183	160	0	30	190	-5	0	12	7	0.4	-	2.4	0.5	5	-	4	A	-	A	5	A			-	500	66	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	422	97	519	0	418	95	513	0	-4	-2	-6	-	0.2	0.2	0.3	-	17	6	-	B	A	15	B	17	B	139	-	-	225	139
		WB Arterial	312	513	0	825	342	479	0	821	30	-34	0	-4	1.7	1.5	-	0.1	26	4	-	C	A	-	13	B			144	270	144	-	-
		Off-Ramp	269	0	41	310	266	0	49	315	-3	0	8	5	0.2	-	1.2	0.3	37	-	7	D	-	A	32	C			141	Continuous	141	225	-
	WB Ramps (Signalized)	EB Arterial	15	676	0	691	19	663	0	682	4	-13	0	-9	1.0	0.5	-	0.3	7	-	-	A	A	-	0	A	1	A	0	400	0	-	-
		WB Arterial	0	825	189	1014	0	823	176	999	0	-2	-13	-15	-	0.1	1.0	0.5	-	1	2	-	A	A	1	A			0	-	-	-	-
		Off-Ramp	0	0	154	154	0	0	149	149	0	0	-5	-5	-	-	0.4	0.4	-	-	1	-	-	A	1	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	402	41	443	0	389	57	446	0	-13	16	3	-	0.7	2.3	0.1	-	20	2	-	B	A	18	B	16	B	119	-	-	375	-
		WB Arterial	489	561	0	1050	456	566	0	1022	-33	5	0	-28	1.5	0.2	-	0.9	22	3	-	C	A	-	11	B			141	275	141	-	-
		Off-Ramp	302	0	147	449	305	0	133	438	3	0	-14	-11	0.2	-	1.2	0.5	32	-	2	C	-	A	23	C			136	Continuous	136	300	-
	WB Ramps (Signalized)	EB Arterial	44	660	0	704	43	660	0	703	-1	0	0	-1	0.2	-	-	0.0	34	1	-	C	A	-	3	A	5	A	48	275	48	-	-
		WB Arterial	0	1009	554	1563	0	1005	553	1558	0	-4	-1	-5	-	0.1	0.0	0.1	-	6	3	-	A	A	5	A			158	-	-	375	0
		Off-Ramp	41	0	150	191	33	0	149	182	-8	0	-1	-9	1.3	-	0.1	0.7	35	-	1	C	-	A	7	A			42	Continuous	42	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

7:00 - 8:00 AM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Left Turn		Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	389	118	507	0	395	114	509	0	6	-4	2	-	0.3	0.4	0.1	-	6	3	-	A	A	5	A	8	A	77	-	-	-	-
		WB Arterial	92	976	0	1068	86	953	0	1039	-6	-23	0	-29	0.6	0.7	-	0.9	8	4	-	A	A	-	4	A			82	400	82	-	-
		Off-Ramp	268	0	152	420	284	0	139	423	16	0	-13	3	1.0	-	1.1	0.1	26	-	5	C	-	A	19	B			-	Continuous	205	-	-
	WB Ramps (Signalized)	EB Arterial	74	583	0	657	70	609	0	679	-4	26	0	22	0.5	1.1	-	0.9	6	6	-	A	A	-	6	A	8	A	85	400	85	-	-
		WB Arterial	0	749	176	925	0	724	175	899	0	-25	-1	-26	-	0.9	0.1	0.9	-	6	4	-	A	A	6	A			118	-	-	-	-
		Off-Ramp	319	0	151	470	317	0	125	442	-2	0	-26	-28	0.1	-	2.2	1.3	23	-	3	C	-	A	17	B			-	Continuous	199	-	-
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	342	0	342	0	342	0	342	0	0	0	0	-	-	-	-	-	7	-	-	A	-	7	A	6	A	84	-	-	-	-
		WB Arterial	0	208	0	208	0	199	0	199	0	-9	0	-9	-	0.6	-	0.6	-	6	-	-	A	-	6	A			69	-	-	-	-
		Off-Ramp	202	0	22	224	190	0	33	223	-12	0	11	-1	0.9	-	2.1	0.1	6	-	4	A	-	A	6	A			-	500	85	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	518	119	637	0	532	104	636	0	14	-15	-1	-	0.6	1.4	0.0	-	19	7	-	B	A	17	B	17	B	170	-	-	225	170
		WB Arterial	381	951	0	1332	390	896	0	1286	9	-55	0	-46	0.5	1.8	-	1.3	30	5	-	C	A	-	13	B			161	270	161	-	-
		Off-Ramp	330	0	50	380	331	0	69	400	1	0	19	20	0.1	-	2.5	1.0	36	-	9	D	-	A	31	C			158	Continuous	158	225	-
	WB Ramps (Signalized)	EB Arterial	25	823	0	848	23	837	0	860	-2	14	0	12	0.4	0.5	-	0.4	14	1	-	B	A	-	1	A	2	A	0	400	0	-	-
		WB Arterial	0	1332	305	1637	0	1287	296	1583	0	-45	-9	-54	-	1.2	0.5	1.3	-	2	2	-	A	A	2	A			14	-	-	-	-
		Off-Ramp	0	0	250	250	0	0	235	235	0	0	-15	-15	-	-	1.0	1.0	-	-	2	-	-	A	2	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	493	50	543	0	483	61	544	0	-10	11	1	-	0.5	1.5	0.0	-	21	3	-	C	A	19	B	14	B	147	-	-	375	-
		WB Arterial	600	1105	0	1705	558	1107	0	1665	-42	2	0	-40	1.7	0.1	-	1.0	22	4	-	C	A	-	10	A			163	275	163	-	-
		Off-Ramp	370	0	180	550	382	0	164	546	12	0	-16	-4	0.6	-	1.2	0.2	31	-	4	C	-	A	23	C			157	Continuous	157	300	-
	WB Ramps (Signalized)	EB Arterial	71	792	0	863	85	779	0	864	14	-13	0	1	1.6	0.5	-	0.0	34	1	-	C	A	-	4	A	7	A	66	275	66	-	-
		WB Arterial	0	1638	899	2537	0	1616	840	2456	0	-22	-59	-81	-	0.5	2.0	1.6	-	9	6	-	A	A	8	A			256	-	-	375	1
		Off-Ramp	67	0	243	310	55	0	243	298	-12	0	0	-12	1.5	-	-	0.7	38	-	1	D	-	A	8	A			58	Continuous	58	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

8:00 - 8:30 AM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Left Turn		Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	320	97	417	0	328	88	416	0	8	-9	-1	-	0.4	0.9	0.0	-	5	2	-	A	A	4	A	7	A	59	-	-	-	-
		WB Arterial	76	891	0	967	86	904	0	990	10	13	0	23	1.1	0.4	-	0.7	8	4	-	A	A	-	4	A			82	400	82	-	-
		Off-Ramp	221	0	125	346	229	0	114	343	8	0	-11	-3	0.5	-	1.0	0.2	25	-	4	C	-	A	18	B			-	Continuous	187	-	-
	WB Ramps (Signalized)	EB Arterial	68	473	0	541	65	493	0	558	-3	20	0	17	0.4	0.9	-	0.7	5	6	-	A	A	-	6	A	8	A	82	400	82	-	-
		WB Arterial	0	677	159	836	0	682	153	835	0	5	-6	-1	-	0.2	0.5	0.0	-	5	3	-	A	A	5	A			109	-	-	-	-
		Off-Ramp	290	0	137	427	307	0	120	427	17	0	-17	0	1.0	-	1.5	-	23	-	3	C	-	A	17	B			-	Continuous	189	-	-
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	282	0	282	0	284	0	284	0	2	0	2	-	0.1	-	0.1	-	7	-	-	A	-	7	A	6	A	76	-	-	-	-
		WB Arterial	0	172	0	172	0	169	0	169	0	-3	0	-3	-	0.2	-	0.2	-	6	-	-	A	-	6	A			57	-	-	-	-
		Off-Ramp	167	0	18	185	170	0	32	202	3	0	14	17	0.2	-	2.8	1.2	6	-	4	A	-	A	6	A			-	500	79	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	427	98	525	0	436	88	524	0	9	-10	-1	-	0.4	1.0	0.0	-	18	7	-	B	A	16	B	15	B	138	-	-	225	138
		WB Arterial	314	896	0	1210	332	903	0	1235	18	7	0	25	1.0	0.2	-	0.7	29	4	-	C	A	-	11	B			137	270	137	-	-
		Off-Ramp	272	0	41	313	277	0	45	322	5	0	4	9	0.3	-	0.6	0.5	36	-	9	D	-	A	32	C			157	Continuous	157	225	-
	WB Ramps (Signalized)	EB Arterial	23	676	0	699	33	685	0	718	10	9	0	19	1.9	0.3	-	0.7	12	-	-	B	A	-	1	A	1	A	2	400	2	-	-
		WB Arterial	0	1210	277	1487	0	1233	269	1502	0	23	-8	15	-	0.7	0.5	0.4	-	1	2	-	A	A	1	A			27	-	-	-	-
		Off-Ramp	0	0	227	227	0	0	239	239	0	0	12	12	-	-	0.8	0.8	-	-	1	-	-	A	1	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	406	41	447	0	397	45	442	0	-9	4	-5	-	0.4	0.6	0.2	-	20	2	-	B	A	18	B	13	B	129	-	-	375	-
		WB Arterial	495	1055	0	1550	516	1066	0	1582	21	11	0	32	0.9	0.3	-	0.8	21	3	-	C	A	-	9	A			136	275	136	-	-
		Off-Ramp	305	0	148	453	325	0	145	470	20	0	-3	17	1.1	-	0.2	0.8	31	-	4	C	-	A	23	C			137	Continuous	137	300	-
	WB Ramps (Signalized)	EB Arterial	64	647	0	711	84	630	0	714	20	-17	0	3	2.3	0.7	-	0.1	35	1	-	C	A	-	5	A	7	A	61	275	61	-	-
		WB Arterial	0	1489	817	2306	0	1502	803	2305	0	13	-14	-1	-	0.3	0.5	0.0	-	9	6	-	A	A	8	A			226	-	-	375	12
		Off-Ramp	61	0	221	282	58	0	230	288	-3	0	9	6	0.4	-	0.6	0.4	39	-	1	D	-	A	9	A			58	Continuous	58	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

I-82, Yakima Avenue IJR
2035 CD Option - AM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

6:30 - 7:00 AM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	136	68	204	0	159	49	208	0	131	76	207	0	150	58	208	0	151	57	208	0	151	57	208	0	130	74	204
		WB Arterial	36	280	0	316	34	303	0	337	30	281	0	311	38	290	0	328	34	299	0	333	39	288	0	327	36	294	0	330
		Off-Ramp	117	0	60	177	105	0	44	149	107	0	60	167	100	0	43	143	105	0	53	158	92	0	63	155	112	0	65	177
	WB Ramps (Signalized)	EB Arterial	28	227	0	255	30	232	0	262	19	219	0	238	29	222	0	251	22	233	0	255	26	216	0	242	21	219	0	240
		WB Arterial	0	228	51	279	0	234	49	283	0	229	53	282	0	241	44	285	0	234	51	285	0	231	48	279	0	240	42	282
		Off-Ramp	85	0	62	147	104	0	45	149	81	0	48	129	87	0	44	131	99	0	38	137	95	0	55	150	89	0	39	128
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	137	0	137	0	140	0	140	0	139	0	139	0	139	0	139	0	140	0	140	0	141	0	141	0	136	0	136
		WB Arterial	0	78	0	78	0	73	0	73	0	77	0	77	0	85	0	85	0	82	0	82	0	81	0	81	0	85	0	85
		Off-Ramp	74	0	14	88	83	0	15	98	72	0	16	88	91	0	13	104	81	0	14	95	90	0	14	104	75	0	18	93
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	218	41	259	0	198	53	251	0	211	46	257	0	211	49	260	0	204	52	256	0	207	52	259	0	212	40	252
		WB Arterial	155	243	0	398	191	228	0	419	173	238	0	411	167	223	0	390	197	232	0	429	163	229	0	392	157	265	0	422
		Off-Ramp	134	0	26	160	139	0	26	165	131	0	18	149	125	0	25	150	137	0	24	161	128	0	26	154	137	0	28	165
	WB Ramps (Signalized)	EB Arterial	12	342	0	354	8	331	0	339	12	329	0	341	8	327	0	335	8	333	0	341	9	325	0	334	16	325	0	341
		WB Arterial	0	395	96	491	0	422	71	493	0	412	96	508	0	393	93	486	0	424	89	513	0	389	100	489	0	427	79	506
		Off-Ramp	0	0	67	67	0	0	75	75	0	0	87	87	0	0	76	76	0	0	58	58	0	0	68	68	0	0	84	84
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	196	31	227	0	185	32	217	0	200	23	223	0	184	35	219	0	198	28	226	0	194	32	226	0	207	24	231
		WB Arterial	228	273	0	501	214	290	0	504	217	296	0	513	216	291	0	507	250	277	0	527	240	302	0	542	226	271	0	497
		Off-Ramp	159	0	84	243	156	0	54	210	172	0	72	244	143	0	56	199	140	0	65	205	175	0	54	229	134	0	80	214
	WB Ramps (Signalized)	EB Arterial	25	340	0	365	21	326	0	347	22	354	0	376	20	310	0	330	11	331	0	342	19	351	0	370	21	331	0	352
		WB Arterial	0	499	271	770	0	505	286	791	0	499	272	771	0	489	280	769	0	517	268	785	0	523	252	775	0	488	291	779
		Off-Ramp	14	0	77	91	12	0	74	86	20	0	87	107	21	0	91	112	14	0	79	93	21	0	86	107	14	0	63	77

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables cc

7:00 - 8:00 AM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	398	113	511	0	403	108	511	0	395	114	509	0	395	112	507	0	394	113	507	0	393	111	504	0	404	107	511
		WB Arterial	80	968	0	1048	95	948	0	1043	85	953	0	1038	89	940	0	1029	76	964	0	1040	85	944	0	1029	83	951	0	1034
		Off-Ramp	264	0	129	393	297	0	146	443	280	0	133	413	294	0	152	446	270	0	128	398	307	0	157	464	295	0	129	424
	WB Ramps (Signalized)	EB Arterial	67	597	0	664	69	631	0	700	75	596	0	671	69	617	0	686	77	586	0	663	68	632	0	700	70	627	0	697
		WB Arterial	0	735	168	903	0	720	178	898	0	715	188	903	0	709	188	897	0	734	162	896	0	727	174	901	0	741	154	895
		Off-Ramp	315	0	129	444	322	0	114	436	326	0	140	466	322	0	122	444	308	0	139	447	309	0	120	429	298	0	119	417
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	343	0	343	0	343	0	343	0	342	0	342	0	340	0	340	0	344	0	344	0	338	0	338	0	345	0	345
		WB Arterial	0	203	0	203	0	201	0	201	0	198	0	198	0	198	0	198	0	199	0	199	0	205	0	205	0	190	0	190
		Off-Ramp	190	0	27	217	207	0	35	242	187	0	38	225	214	0	35	249	186	0	32	218	183	0	28	211	174	0	41	215
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	533	108	641	0	544	86	630	0	548	93	641	0	518	111	629	0	532	99	631	0	535	99	634	0	544	107	651
		WB Arterial	400	911	0	1311	376	918	0	1294	400	902	0	1302	397	880	0	1277	393	903	0	1296	371	891	0	1262	398	901	0	1299
		Off-Ramp	358	0	67	425	299	0	64	363	369	0	74	443	318	0	74	392	356	0	85	441	338	0	71	409	330	0	70	400
	WB Ramps (Signalized)	EB Arterial	23	866	0	889	23	816	0	839	19	889	0	908	27	808	0	835	22	863	0	885	24	849	0	873	21	850	0	871
		WB Arterial	0	1312	280	1592	0	1290	295	1585	0	1302	284	1586	0	1280	317	1597	0	1300	293	1593	0	1266	313	1579	0	1300	292	1592
		Off-Ramp	0	0	228	228	0	0	230	230	0	0	253	253	0	0	220	220	0	0	227	227	0	0	244	244	0	0	258	258
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	477	63	540	0	480	67	547	0	479	67	546	0	488	54	542	0	480	64	544	0	481	58	539	0	482	59	541
		WB Arterial	543	1120	0	1663	566	1102	0	1668	597	1077	0	1674	567	1103	0	1670	530	1130	0	1660	504	1100	0	1604	581	1099	0	1680
		Off-Ramp	373	0	147	520	401	0	168	569	393	0	151	544	399	0	173	572	369	0	169	538	384	0	162	546	397	0	174	571
	WB Ramps (Signalized)	EB Arterial	88	761	0	849	83	795	0	878	86	784	0	870	77	809	0	886	81	769	0	850	97	768	0	865	84	793	0	877
		WB Arterial	0	1602	866	2468	0	1607	841	2448	0	1632	827	2459	0	1629	838	2467	0	1610	849	2459	0	1557	895	2452	0	1630	817	2447
		Off-Ramp	55	0	238	293	61	0	251	312	45	0	240	285	57	0	245	302	62	0	223	285	52	0	237	289	54	0	278	332

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables cc

8:00 - 8:30 AM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	154	53	207	0	163	43	206	0	157	51	208	0	161	45	206	0	173	35	208	0	165	44	209	0	158	51	209
		WB Arterial	37	450	0	487	40	457	0	497	53	460	0	513	43	438	0	481	45	425	0	470	37	452	0	489	42	450	0	492
		Off-Ramp	105	0	45	150	111	0	64	175	126	0	57	183	109	0	53	162	110	0	60	170	118	0	60	178	110	0	58	168
	WB Ramps (Signalized)	EB Arterial	34	224	0	258	27	245	0	272	40	245	0	285	32	241	0	273	37	246	0	283	36	249	0	285	33	240	0	273
		WB Arterial	0	337	80	417	0	345	74	419	0	349	70	419	0	342	76	418	0	333	84	417	0	339	80	419	0	338	83	421
		Off-Ramp	149	0	56	205	157	0	65	222	167	0	65	232	142	0	55	197	138	0	53	191	144	0	73	217	151	0	72	223
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	141	0	141	0	138	0	138	0	143	0	143	0	140	0	140	0	141	0	141	0	144	0	144	0	142	0	142
		WB Arterial	0	88	0	88	0	85	0	85	0	83	0	83	0	80	0	80	0	80	0	80	0	88	0	88	0	86	0	86
		Off-Ramp	82	0	20	102	85	0	12	97	89	0	18	107	80	0	11	91	96	0	18	114	72	0	18	90	88	0	16	104
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	211	44	255	0	230	45	275	0	214	47	261	0	216	46	262	0	214	44	258	0	216	41	257	0	216	46	262
		WB Arterial	166	457	0	623	152	455	0	607	162	450	0	612	171	439	0	610	186	431	0	617	146	490	0	636	176	434	0	610
		Off-Ramp	132	0	20	152	129	0	18	147	133	0	27	160	138	0	17	155	124	0	22	146	148	0	29	177	141	0	18	159
	WB Ramps (Signalized)	EB Arterial	11	333	0	344	17	342	0	359	22	337	0	359	11	345	0	356	18	322	0	340	24	338	0	362	9	357	0	366
		WB Arterial	0	629	128	757	0	612	150	762	0	616	127	743	0	602	131	733	0	616	130	746	0	636	133	769	0	610	132	742
		Off-Ramp	0	0	128	128	0	0	123	123	0	0	119	119	0	0	110	110	0	0	105	105	0	0	122	122	0	0	119	119
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	200	21	221	0	200	21	221	0	199	18	217	0	201	21	222	0	200	19	219	0	203	27	230	0	199	22	221
		WB Arterial	250	532	0	782	252	538	0	790	253	521	0	774	262	526	0	788	248	556	0	804	271	530	0	801	246	541	0	787
		Off-Ramp	154	0	63	217	167	0	81	248	148	0	65	213	170	0	72	242	154	0	79	233	161	0	79	240	150	0	59	209
	WB Ramps (Signalized)	EB Arterial	41	309	0	350	42	322	0	364	48	299	0	347	46	321	0	367	48	301	0	349	40	322	0	362	25	321	0	346
		WB Arterial	0	749	402	1151	0	749	419	1168	0	742	408	1150	0	739	407	1146	0	758	378	1136	0	763	401	1164	0	755	406	1161
		Off-Ramp	28	0	130	158	32	0	132	164	20	0	102	122	27	0	110	137	34	0	106	140	33	0	109	142	22	0	108	130

I-82, Yakima Avenue IJR
2035 CD Option - AM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

6:30 - 7:00 AM

Intersection		Approach	Modeled Volumes																		Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11					Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total					
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	148	58	206	0	163	42		205	0	145	56	201	0	140	67	207	206	2.3	1.6	1%
		WB Arterial	30	294	0	324	36	282	0		318	33	299	0	332	33	317	0	350	328	10.8	7.7	2%
		Off-Ramp	114	0	57	171	93	0	63		156	129	0	55	184	99	0	65	164	164	12.8	9.2	6%
	WB Ramps (Signalized)	EB Arterial	23	234	0	257	22	234	0		256	31	244	0	275	21	218	0	239	252	11.4	8.1	3%
		WB Arterial	0	235	47	282	0	229	53		282	0	241	43	284	0	232	46	278	282	2.4	1.7	1%
		Off-Ramp	91	0	51	142	94	0	51		145	97	0	58	155	117	0	56	173	144	13.2	9.4	7%
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	138	0	138	0	140	0		140	0	135	0	135	0	139	0	139	139	1.9	1.3	1%
		WB Arterial	0	85	0	85	0	77	0		77	0	75	0	75	0	80	0	80	80	4.2	3.0	4%
		Off-Ramp	82	0	17	99	74	0	11		85	76	0	16	92	80	0	15	95	95	6.3	4.5	5%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	207	48	255	0	218	44		262	0	200	54	254	0	211	46	257	257	3.4	2.4	1%
		WB Arterial	159	261	0	420	172	235	0		407	171	244	0	415	177	237	0	414	411	12.7	9.0	2%
		Off-Ramp	129	0	26	155	137	0	27		164	117	0	19	136	147	0	26	173	157	10.1	7.2	5%
	WB Ramps (Signalized)	EB Arterial	4	331	0	335	16	342	0		358	6	307	0	313	5	354	0	359	341	13.0	9.3	3%
		WB Arterial	0	415	95	510	0	403	94		497	0	422	76	498	0	422	81	503	499	9.1	6.5	1%
		Off-Ramp	0	0	75	75	0	0	68		68	0	0	76	76	0	0	86	86	75	8.9	6.4	9%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	194	31	225	0	191	28		219	0	192	29	221	0	200	21	221	223	4.2	3.0	1%
		WB Arterial	229	286	0	515	236	288	0		524	226	275	0	501	228	265	0	493	511	14.8	10.6	2%
		Off-Ramp	156	0	57	213	133	0	59		192	158	0	73	231	149	0	76	225	219	17.2	12.3	6%
	WB Ramps (Signalized)	EB Arterial	26	327	0	353	26	303	0		329	22	335	0	357	26	324	0	350	352	15.0	10.7	3%
		WB Arterial	0	511	271	782	0	520	267		787	0	492	291	783	0	484	292	776	779	7.3	5.3	1%
		Off-Ramp	15	0	59	74	13	0	67		80	17	0	73	90	18	0	66	84	91	12.8	9.2	10%

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables or

7:00 - 8:00 AM

Intersection		Approach	Modeled Volumes																		Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11					Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total					
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	370	137	507	0	399	113		512	0	392	122	514	0	400	108	508	509	2.9	2.1	0%
		WB Arterial	97	961	0	1058	93	937	0		1030	76	956	0	1032	89	964	0	1053	1039	10.0	7.2	1%
		Off-Ramp	259	0	134	393	304	0	136		440	271	0	141	412	284	0	139	423	423	23.5	16.8	4%
	WB Ramps (Signalized)	EB Arterial	60	573	0	633	76	629	0		705	60	602	0	662	79	605	0	684	679	22.1	15.8	2%
		WB Arterial	0	720	182	902	0	720	178		898	0	724	171	895	0	721	182	903	899	3.3	2.3	0%
		Off-Ramp	338	0	126	464	306	0	126		432	309	0	122	431	332	0	120	452	442	15.0	10.7	2%
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	345	0	345	0	339	0		339	0	346	0	346	0	337	0	337	342	3.1	2.2	1%
		WB Arterial	0	201	0	201	0	197	0		197	0	204	0	204	0	195	0	195	199	4.3	3.1	2%
		Off-Ramp	192	0	30	222	179	0	31		210	192	0	36	228	190	0	28	218	223	12.4	8.8	4%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	530	101	631	0	530	109		639	0	515	120	635	0	518	112	630	636	6.8	4.8	1%
		WB Arterial	378	905	0	1283	399	873	0		1272	396	884	0	1280	383	886	0	1269	1286	15.5	11.1	1%
		Off-Ramp	336	0	63	399	299	0	59		358	313	0	74	387	328	0	55	383	400	28.1	20.1	5%
	WB Ramps (Signalized)	EB Arterial	28	840	0	868	20	808	0		828	24	806	0	830	25	816	0	841	861	27.3	19.6	2%
		WB Arterial	0	1282	280	1562	0	1271	300		1571	0	1278	298	1576	0	1271	306	1577	1583	10.8	7.7	0%
		Off-Ramp	0	0	204	204	0	0	251		251	0	0	230	230	0	0	243	243	235	16.1	11.5	5%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	495	53	548	0	489	56		545	0	478	65	543	0	486	61	547	544	3.1	2.2	0%
		WB Arterial	559	1140	0	1699	575	1086	0		1661	544	1152	0	1696	577	1063	0	1640	1665	26.2	18.7	1%
		Off-Ramp	375	0	162	537	368	0	174		542	387	0	159	546	354	0	165	519	546	18.4	13.2	2%
	WB Ramps (Signalized)	EB Arterial	75	795	0	870	87	770	0		857	89	772	0	861	88	752	0	840	864	14.1	10.1	1%
		WB Arterial	0	1632	821	2453	0	1622	827		2449	0	1642	804	2446	0	1610	856	2466	2456	8.4	6.0	0%
		Off-Ramp	68	0	247	315	44	0	220		264	65	0	251	316	42	0	241	283	298	19.5	14.0	5%

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables or

8:00 - 8:30 AM

Intersection		Approach	Modeled Volumes																		Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11					Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total					
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	164	47	211	0	164	42		206	0	176	32	208	0	167	41	208	208	1.5	1.1	1%
		WB Arterial	46	447	0	493	46	463	0		509	50	471	0	521	36	461	0	497	495	14.6	10.5	2%
		Off-Ramp	126	0	56	182	121	0	59		180	113	0	61	174	109	0	53	162	171	10.2	7.3	4%
	WB Ramps (Signalized)	EB Arterial	32	258	0	290	27	257	0		284	35	255	0	290	27	250	0	277	279	9.6	6.9	2%
		WB Arterial	0	337	76	413	0	353	66		419	0	342	78	420	0	338	72	410	417	3.2	2.3	1%
		Off-Ramp	156	0	50	206	157	0	57		214	172	0	60	232	158	0	54	212	214	13.3	9.5	4%
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	141	0	141	0	141	0		141	0	142	0	142	0	149	0	149	142	2.8	2.0	1%
		WB Arterial	0	85	0	85	0	80	0		80	0	83	0	83	0	91	0	91	84	3.7	2.6	3%
		Off-Ramp	81	0	19	100	96	0	12		108	68	0	16	84	97	0	16	113	101	9.7	6.9	7%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	232	42	274	0	224	41		265	0	212	42	254	0	213	48	261	262	6.9	4.9	2%
		WB Arterial	167	454	0	621	169	441	0		610	156	477	0	633	173	437	0	610	617	9.9	7.1	1%
		Off-Ramp	140	0	26	166	146	0	20		166	146	0	27	173	144	0	25	169	161	10.3	7.4	5%
	WB Ramps (Signalized)	EB Arterial	16	357	0	373	22	350	0		372	10	346	0	356	19	343	0	362	359	10.2	7.3	2%
		WB Arterial	0	618	125	743	0	607	154		761	0	633	124	757	0	604	143	747	751	10.9	7.8	1%
		Off-Ramp	0	0	119	119	0	0	129		129	0	0	117	117	0	0	122	122	119	7.0	5.0	4%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	192	23	215	0	191	31		222	0	195	24	219	0	201	22	223	221	3.8	2.7	1%
		WB Arterial	250	537	0	787	258	540	0		798	270	499	0	769	280	541	0	821	791	14.5	10.4	1%
		Off-Ramp	177	0	90	267	168	0	83		251	178	0	69	247	160	0	60	220	235	18.4	13.2	6%
	WB Ramps (Signalized)	EB Arterial	43	320	0	363	35	319	0		354	47	320	0	367	46	312	0	358	357	8.1	5.8	2%
		WB Arterial	0	749	392	1141	0	766	391		1157	0	724	430	1154	0	765	384	1149	1152	9.7	6.9	1%
		Off-Ramp	29	0	113	142	27	0	120		147	33	0	126	159	33	0	107	140	144	12.6	9.0	6%

I-82, Yakima Avenue IJR
2035 CD Option - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	6:30 - 7:00 AM Summary						7:00 - 8:00 AM Summary					
						Volume				Speed (mph)	Density (vplpm)	Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic			Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Eastbound Mainline	Start		87	1,746	3	2,691	2,689	(2)	0.0	58	15	3,296	3,315	19	0.3	58	19
		US 12 / 1st Street Off-Ramp	169	1,114	3	2,691	2,678	(13)	0.3	57	16	3,296	3,307	11	0.2	57	19
	US 12 / 1st Street Off-Ramp		90	858	2	1,053	1,056	3	0.1	49	11	1,290	1,277	(13)	0.4	49	13
	US 12 / 1st Street Off-Ramp		91	872	2	1,638	1,617	(21)	0.5	58	14	2,006	2,021	15	0.3	58	17
			117	401	2	1,638	1,617	(21)	0.5	58	14	2,006	2,020	14	0.3	58	17
		US 12 / 1st Street On-Ramp	118	1,992	2	1,638	1,616	(22)	0.5	59	14	2,006	2,020	14	0.3	59	17
	US 12 / 1st Street On-Ramp		99	549	2	939	922	(17)	0.6	59	8	1,150	1,152	2	0.0	58	10
			10114	218	1	939	939	0	0.0	59	16	1,150	1,172	22	0.6	59	20
	US 12 / 1st Street On-Ramp		100	655	3	2,577	2,544	(33)	0.7	61	14	3,156	3,175	19	0.3	60	18
		CD Roadway Off-Ramp	101	1,892	3	2,577	2,550	(27)	0.5	60	14	3,156	3,186	30	0.5	59	18
	CD Roadway Off-Ramp		26	1,135	1	820	816	(4)	0.2	53	16	1,004	1,024	20	0.6	52	20
	CD Roadway Off-Ramp		139	1,274	2	1,757	1,730	(27)	0.7	60	14	2,152	2,160	8	0.2	60	18
			140	1,553	2	1,757	1,724	(33)	0.8	61	14	2,152	2,159	7	0.1	60	18
			138	1,289	2	1,757	1,725	(32)	0.8	61	14	2,152	2,156	4	0.1	60	18
			142	1,290	2	1,757	1,722	(35)	0.8	61	14	2,152	2,154	2	0.0	60	18
			141	1,385	2	1,757	1,719	(38)	0.9	61	14	2,152	2,152	(0)	0.0	60	18
			143	1,511	2	1,757	1,718	(39)	0.9	61	14	2,152	2,151	(1)	0.0	60	18
			111	1,102	2	1,757	1,718	(39)	0.9	61	14	2,152	2,149	(3)	0.1	60	18
		CD Roadway On-Ramp	112	652	2	1,757	1,718	(39)	0.9	61	14	2,152	2,147	(5)	0.1	60	18
	CD Roadway On-Ramp		189	1,699	2	652	703	51	2.0	50	7	798	773	(25)	0.9	50	8
	CD Roadway On-Ramp		146	1,203	3	2,409	2,422	13	0.3	60	13	2,950	2,921	(29)	0.5	60	16
		Nob Hill Boulevard Off-Ramp	145	1,814	3	2,409	2,419	10	0.2	60	13	2,950	2,920	(30)	0.6	60	16
	Nob Hill Boulevard Off-Ramp		53	981	1	449	443	(6)	0.3	53	8	550	546	(4)	0.2	52	10
	Nob Hill Boulevard Off-Ramp		144	1,385	2	1,960	1,970	10	0.2	60	16	2,400	2,371	(29)	0.6	60	20
		Nob Hill Boulevard On-Ramp	147	1,414	2	1,960	1,970	10	0.2	60	16	2,400	2,367	(33)	0.7	60	20
	Nob Hill Boulevard On-Ramp		116	352	1	530	513	(17)	0.7	48	11	650	619	(31)	1.2	47	13
	Nob Hill Boulevard On-Ramp		115	1,070	3	2,490	2,483	(7)	0.1	60	14	3,050	2,983	(67)	1.2	59	17
		End	171	1,072	3	2,490	2,492	2	0.0	60	14	3,050	2,982	(68)	1.2	59	17
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	820	816	(4)	0.2	53	16	1,004	1,024	20	0.6	52	20
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	526	510	(16)	0.7	44	11	644	647	3	0.1	44	15
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	294	303	9	0.5	45	7	360	376	16	0.8	44	8
		E-W Corridor On-Ramp	194	1,399	1	294	303	9	0.5	44	7	360	376	16	0.8	44	8
	E-W Corridor On-Ramp		187	787	1	171	188	17	1.3	40	5	210	201	(9)	0.7	40	5
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	465	489	24	1.1	44	11	570	574	4	0.2	44	13
	Yakima Avenue Off-Ramp		10	624	1	310	319	9	0.5	35	9	380	400	20	1.0	34	12
	Yakima Avenue Off-Ramp		195	1,500	1	155	172	17	1.3	45	4	190	176	(14)	1.1	44	4
		Yakima Avenue / Fair Avenue On-Ramp	196	1,537	1	155	171	16	1.3	45	4	190	175	(15)	1.1	44	4
	Yakima Avenue / Fair Avenue On-Ramp		110	570	1	497	529	32	1.4	43	12	608	599	(9)	0.4	43	14
	Yakima Avenue / Fair Avenue On-Ramp	End of C-D Roadway	189	1,699	2	652	703	51	2.0	50	7	798	773	(25)	0.9	50	8

I-82, Yakima Avenue IJR
2035 CD Option - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	6:30 - 7:00 AM Summary						7:00 - 8:00 AM Summary					
						Volume				Speed (mph)	Density (vplpm)	Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic			Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Westbound Mainline	Start		164	1,750	2	1,838	1,834	(4)	0.1	59	16	2,980	2,956	(24)	0.4	58	26
			165	1,750	2	1,838	1,833	(5)	0.1	58	16	2,980	2,948	(32)	0.6	58	26
			166	1,750	2	1,838	1,830	(8)	0.2	58	16	2,980	2,941	(39)	0.7	57	26
		Nob Hill Boulevard Off-Ramp	167	1,750	2	1,838	1,821	(17)	0.4	60	15	2,980	2,927	(53)	1.0	59	25
	Nob Hill Boulevard Off-Ramp		47	546	1	191	182	(9)	0.6	54	3	310	299	(11)	0.6	54	6
	Nob Hill Boulevard Off-Ramp		148	1,154	2	1,647	1,641	(6)	0.2	61	14	2,670	2,627	(43)	0.8	60	22
			149	1,230	2	1,647	1,640	(7)	0.2	61	14	2,670	2,621	(49)	1.0	60	22
		Nob Hill Boulevard On-Ramp	114	427	2	1,647	1,635	(12)	0.3	61	13	2,670	2,610	(60)	1.2	60	22
	Nob Hill Boulevard On-Ramp		45	1,641	2	598	573	(25)	1.0	47	6	970	889	(81)	2.7	46	10
	Nob Hill Boulevard On-Ramp		168	741	3	2,245	2,236	(9)	0.2	61	12	3,640	3,540	(100)	1.7	60	20
			150	1,169	3	2,245	2,237	(8)	0.2	61	12	3,640	3,540	(100)	1.7	60	20
			113	1,519	3	2,245	2,233	(12)	0.3	61	12	3,640	3,533	(107)	1.8	60	20
		CD Roadway Off-Ramp	152	681	3	2,245	2,227	(18)	0.4	61	12	3,640	3,523	(117)	2.0	60	20
	CD Roadway Off-Ramp		183	697	2	888	877	(11)	0.4	58	8	1,440	1,403	(37)	1.0	56	12
	CD Roadway Off-Ramp		151	2,077	2	1,357	1,346	(11)	0.3	61	11	2,200	2,118	(82)	1.8	60	18
			153	1,334	2	1,357	1,343	(14)	0.4	61	11	2,200	2,115	(85)	1.8	60	18
			105	1,663	2	1,357	1,339	(18)	0.5	61	11	2,200	2,110	(90)	1.9	60	18
			154	1,598	2	1,357	1,336	(21)	0.6	61	11	2,200	2,107	(93)	2.0	60	17
		CD Roadway On-Ramp	155	1,236	2	1,357	1,336	(21)	0.6	61	11	2,200	2,102	(98)	2.1	60	17
	CD Roadway On-Ramp		200	1,369	1	346	331	(15)	0.8	56	6	560	550	(10)	0.4	56	10
	CD Roadway On-Ramp	US 12 / 1st Street Off-Ramp	156	1,955	3	1,703	1,656	(47)	1.2	61	9	2,760	2,635	(125)	2.4	60	15
	US 12 / 1st Street Off-Ramp		102	833	1	654	638	(16)	0.6	54	12	1,060	1,021	(39)	1.2	54	19
	US 12 / 1st Street Off-Ramp		136	1,805	2	1,049	1,020	(29)	0.9	61	8	1,700	1,619	(81)	2.0	61	13
		US 12 / 1st Street On-Ramp	137	1,841	2	1,049	1,020	(29)	0.9	61	8	1,700	1,616	(84)	2.1	61	13
	US 12 / 1st Street On-Ramp		97	1,173	1	444	462	18	0.9	45	10	720	733	13	0.5	44	17
	US 12 / 1st Street On-Ramp	End	98	1,881	3	1,493	1,479	(14)	0.4	60	8	2,420	2,345	(75)	1.5	60	13
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	697	2	888	877	(11)	0.4	58	8	1,440	1,403	(37)	1.0	56	12
	Yakima Avenue Off-Ramp		106	464	1	610	596	(14)	0.6	45	13	990	967	(23)	0.7	44	22
	Yakima Avenue Off-Ramp		190	1,500	1	278	280	2	0.1	45	6	450	436	(14)	0.7	45	10
		Yakima Avenue On-Ramp	198	1,490	1	278	280	2	0.1	44	6	450	437	(13)	0.6	44	10
	Yakima Avenue On-Ramp		202	865	1	204	195	(9)	0.6	41	5	330	319	(11)	0.6	40	8
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	482	474	(8)	0.3	44	11	780	752	(28)	1.0	44	17
	E-W Corridor Off-Ramp		188	573	1	290	285	(5)	0.3	42	7	470	440	(30)	1.4	40	11
	E-W Corridor Off-Ramp		199	1,258	1	192	189	(3)	0.2	45	4	310	308	(2)	0.1	44	7
		E-W Corridor On-Ramp	201	1,258	1	192	189	(3)	0.2	44	4	310	308	(2)	0.1	44	7
	E-W Corridor On-Ramp		182	912	1	154	145	(9)	0.7	42	3	250	244	(6)	0.4	41	6
	E-W Corridor On-Ramp	End of C-D Roadway	200	1,369	1	346	331	(15)	0.8	56	6	560	550	(10)	0.4	56	10

I-82, Yakima Avenue IJR
2035 CD Option - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	8:00 - 8:30 AM Summary					
						Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Eastbound Mainline	Start		87	1,746	3	2,715	2,719	4	0.1	58	16
		US 12 / 1st Street Off-Ramp	169	1,114	3	2,715	2,721	6	0.1	58	16
	US 12 / 1st Street Off-Ramp		90	858	2	1,062	1,058	(4)	0.1	50	11
	US 12 / 1st Street Off-Ramp		91	872	2	1,653	1,664	11	0.3	58	14
			117	401	2	1,653	1,667	14	0.3	58	14
		US 12 / 1st Street On-Ramp	118	1,992	2	1,653	1,670	17	0.4	59	14
	US 12 / 1st Street On-Ramp		99	549	2	947	971	24	0.8	59	8
			10114	218	1	947	989	42	1.3	59	17
	US 12 / 1st Street On-Ramp		100	655	3	2,600	2,652	52	1.0	61	15
		CD Roadway Off-Ramp	101	1,892	3	2,600	2,668	68	1.3	60	15
	CD Roadway Off-Ramp		26	1,135	1	827	825	(2)	0.1	52	16
	CD Roadway Off-Ramp		139	1,274	2	1,773	1,848	75	1.8	60	15
			140	1,553	2	1,773	1,852	79	1.9	61	15
			138	1,289	2	1,773	1,856	83	1.9	61	15
			142	1,290	2	1,773	1,859	86	2.0	61	15
			141	1,385	2	1,773	1,865	92	2.1	61	15
			143	1,511	2	1,773	1,866	93	2.2	60	15
			111	1,102	2	1,773	1,869	96	2.2	60	15
		CD Roadway On-Ramp	112	652	2	1,773	1,869	96	2.3	60	15
	CD Roadway On-Ramp		189	1,699	2	657	663	6	0.2	50	7
	CD Roadway On-Ramp		146	1,203	3	2,430	2,544	114	2.3	60	14
		Nob Hill Boulevard Off-Ramp	145	1,814	3	2,430	2,557	127	2.5	60	14
	Nob Hill Boulevard Off-Ramp		53	981	1	453	459	6	0.3	52	9
	Nob Hill Boulevard Off-Ramp		144	1,385	2	1,977	2,102	125	2.8	60	17
		Nob Hill Boulevard On-Ramp	147	1,414	2	1,977	2,109	132	2.9	60	17
	Nob Hill Boulevard On-Ramp		116	352	1	536	561	25	1.1	47	12
	Nob Hill Boulevard On-Ramp		115	1,070	3	2,513	2,671	158	3.1	60	15
		End	171	1,072	3	2,513	2,666	153	3.0	60	15
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	827	825	(2)	0.1	52	16
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	531	532	1	0.0	44	12
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	296	293	(3)	0.2	44	7
		E-W Corridor On-Ramp	194	1,399	1	296	293	(3)	0.1	44	7
	E-W Corridor On-Ramp		187	787	1	173	174	1	0.1	40	4
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	469	467	(2)	0.1	44	11
	Yakima Avenue Off-Ramp		10	624	1	313	317	4	0.3	34	9
	Yakima Avenue Off-Ramp		195	1,500	1	156	151	(5)	0.4	44	3
		Yakima Avenue / Fair Avenue On-Ramp	196	1,537	1	156	152	(4)	0.3	44	3
	Yakima Avenue / Fair Avenue On-Ramp		110	570	1	501	510	9	0.4	43	12
	Yakima Avenue / Fair Avenue On-Ramp	End of C-D Roadway	189	1,699	2	657	663	6	0.2	50	7

I-82, Yakima Avenue IJR
2035 CD Option - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	8:00 - 8:30 AM Summary					
						Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Westbound Mainline	Start		164	1,750	2	2,705	2,706	1	0.0	58	23
			165	1,750	2	2,705	2,713	8	0.2	58	23
			166	1,750	2	2,705	2,719	14	0.3	58	24
		Nob Hill Boulevard Off-Ramp	167	1,750	2	2,705	2,718	13	0.3	59	23
	Nob Hill Boulevard Off-Ramp		47	546	1	282	284	2	0.1	54	5
	Nob Hill Boulevard Off-Ramp		148	1,154	2	2,423	2,448	25	0.5	60	20
			149	1,230	2	2,423	2,449	26	0.5	60	20
		Nob Hill Boulevard On-Ramp	114	427	2	2,423	2,445	22	0.4	60	20
	Nob Hill Boulevard On-Ramp		45	1,641	2	881	852	(29)	1.0	46	9
	Nob Hill Boulevard On-Ramp		168	741	3	3,304	3,337	33	0.6	60	18
			150	1,169	3	3,304	3,337	33	0.6	60	18
			113	1,519	3	3,304	3,343	39	0.7	60	18
		CD Roadway Off-Ramp	152	681	3	3,304	3,346	42	0.7	60	19
	CD Roadway Off-Ramp		183	697	2	1,307	1,320	13	0.4	57	12
	CD Roadway Off-Ramp		151	2,077	2	1,997	2,028	31	0.7	61	17
			153	1,334	2	1,997	2,027	30	0.7	61	17
			105	1,663	2	1,997	2,033	36	0.8	60	17
			154	1,598	2	1,997	2,034	37	0.8	60	17
		CD Roadway On-Ramp	155	1,236	2	1,997	2,039	42	0.9	60	17
	CD Roadway On-Ramp		200	1,369	1	508	517	9	0.4	56	9
	CD Roadway On-Ramp	US 12 / 1st Street Off-Ramp	156	1,955	3	2,505	2,552	47	0.9	60	14
	US 12 / 1st Street Off-Ramp		102	833	1	962	979	17	0.5	54	18
	US 12 / 1st Street Off-Ramp		136	1,805	2	1,543	1,587	44	1.1	61	13
		US 12 / 1st Street On-Ramp	137	1,841	2	1,543	1,586	43	1.1	61	13
	US 12 / 1st Street On-Ramp		97	1,173	1	653	679	26	1.0	44	15
	US 12 / 1st Street On-Ramp	End	98	1,881	3	2,196	2,269	73	1.5	60	13
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	697	2	1,307	1,320	13	0.4	57	12
	Yakima Avenue Off-Ramp		106	464	1	899	913	14	0.5	44	21
	Yakima Avenue Off-Ramp		190	1,500	1	408	414	6	0.3	45	9
		Yakima Avenue On-Ramp	198	1,490	1	408	416	8	0.4	44	9
	Yakima Avenue On-Ramp		202	865	1	300	301	1	0.1	41	7
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	708	713	5	0.2	44	16
	E-W Corridor Off-Ramp		188	573	1	427	419	(8)	0.4	40	10
	E-W Corridor Off-Ramp		199	1,258	1	281	293	12	0.7	44	7
		E-W Corridor On-Ramp	201	1,258	1	281	297	16	0.9	44	7
	E-W Corridor On-Ramp		182	912	1	227	218	(9)	0.6	42	5
	E-W Corridor On-Ramp	End of C-D Roadway	200	1,369	1	508	517	9	0.4	56	9

I-82, Yakima Avenue IJR
2035 CD Option - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	6:30 - 6:45 Summary			6:45 - 7:00 Summary			7:00 - 7:15 Summary			7:15 - 7:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Eastbound Mainline	Start		87	1,746	3	2,590	58	15	2,787	58	16	3,111	58	18	3,333	58	19
		US 12 / 1st Street Off-Ramp	169	1,114	3	2,575	58	15	2,780	57	16	3,097	58	18	3,325	58	19
	US 12 / 1st Street Off-Ramp		90	858	2	999	50	10	1,113	49	11	1,168	49	12	1,297	49	13
	US 12 / 1st Street Off-Ramp		91	872	2	1,573	58	13	1,662	58	14	1,916	58	16	2,022	58	17
			117	401	2	1,573	58	13	1,661	58	14	1,915	58	16	2,023	58	17
		US 12 / 1st Street On-Ramp	118	1,992	2	1,572	60	13	1,661	59	14	1,915	59	16	2,019	59	17
	US 12 / 1st Street On-Ramp		99	549	2	888	60	7	957	59	8	1,048	59	9	1,151	59	10
			10114	218	1	902	60	15	977	59	16	1,063	59	18	1,173	59	20
	US 12 / 1st Street On-Ramp		100	655	3	2,466	61	14	2,621	61	14	2,961	60	16	3,173	60	18
		CD Roadway Off-Ramp	101	1,892	3	2,470	60	14	2,631	60	15	2,965	59	17	3,188	60	18
	CD Roadway Off-Ramp		26	1,135	1	807	53	15	824	53	16	970	52	19	1,013	52	19
	CD Roadway Off-Ramp		139	1,274	2	1,661	60	14	1,798	60	15	1,996	60	17	2,166	60	18
			140	1,553	2	1,656	61	14	1,793	61	15	1,993	60	16	2,164	60	18
			138	1,289	2	1,660	61	14	1,791	61	15	1,983	61	16	2,163	60	18
			142	1,290	2	1,654	61	14	1,789	61	15	1,979	60	16	2,158	60	18
			141	1,385	2	1,655	61	14	1,783	61	15	1,976	60	16	2,152	60	18
			143	1,511	2	1,654	61	14	1,782	60	15	1,968	60	16	2,143	60	18
			111	1,102	2	1,650	61	14	1,785	60	15	1,963	60	16	2,138	60	18
		CD Roadway On-Ramp	112	652	2	1,650	61	14	1,786	60	15	1,954	60	16	2,139	60	18
	CD Roadway On-Ramp		189	1,699	2	679	50	7	727	50	7	712	50	7	753	50	8
	CD Roadway On-Ramp		146	1,203	3	2,332	60	13	2,511	60	14	2,667	60	15	2,893	60	16
		Nob Hill Boulevard Off-Ramp	145	1,814	3	2,342	61	13	2,495	60	14	2,675	60	15	2,880	60	16
	Nob Hill Boulevard Off-Ramp		53	981	1	437	53	8	450	53	9	532	52	10	533	52	10
	Nob Hill Boulevard Off-Ramp		144	1,385	2	1,902	60	16	2,038	60	17	2,138	60	18	2,342	60	20
		Nob Hill Boulevard On-Ramp	147	1,414	2	1,899	60	16	2,042	60	17	2,132	60	18	2,335	60	19
	Nob Hill Boulevard On-Ramp		116	352	1	473	48	10	553	47	12	574	47	12	604	47	13
	Nob Hill Boulevard On-Ramp		115	1,070	3	2,373	60	13	2,592	59	15	2,678	59	15	2,950	59	17
		End	171	1,072	3	2,390	60	13	2,594	60	15	2,663	59	15	2,935	59	17
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	807	53	15	824	53	16	970	52	19	1,013	52	19
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	498	44	11	523	44	12	623	44	14	633	44	14
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	312	45	7	293	45	7	346	44	8	374	44	8
		E-W Corridor On-Ramp	194	1,399	1	314	44	7	292	44	7	345	44	8	377	44	9
	E-W Corridor On-Ramp		187	787	1	189	40	5	187	40	5	182	40	5	205	40	5
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	503	44	11	475	44	11	524	44	12	582	44	13
	Yakima Avenue Off-Ramp		10	624	1	332	35	10	305	35	9	359	34	10	405	34	12
	Yakima Avenue Off-Ramp		195	1,500	1	175	45	4	168	45	4	168	44	4	178	44	4
		Yakima Avenue / Fair Avenue On-Ramp	196	1,537	1	175	45	4	167	44	4	170	44	4	176	44	4
	Yakima Avenue / Fair Avenue On-Ramp		110	570	1	499	43	12	559	43	13	545	43	13	578	43	14
	Yakima Avenue / Fair Avenue On-Ramp	End of C-D Roadway	189	1,699	2	679	50	7	727	50	7	712	50	7	753	50	8

I-82, Yakima Avenue IJR
2035 CD Option - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	6:30 - 6:45 Summary			6:45 - 7:00 Summary			7:00 - 7:15 Summary			7:15 - 7:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Westbound Mainline	Start		164	1,750	2	1,687	59	14	1,980	59	17	2,556	58	22	2,890	58	25
			165	1,750	2	1,691	58	14	1,975	58	17	2,541	58	22	2,880	58	25
			166	1,750	2	1,694	58	15	1,966	58	17	2,526	58	22	2,876	58	25
		Nob Hill Boulevard Off-Ramp	167	1,750	2	1,687	60	14	1,955	60	16	2,506	59	21	2,864	59	24
	Nob Hill Boulevard Off-Ramp		47	546	1	173	54	3	191	54	4	253	54	5	273	54	5
	Nob Hill Boulevard Off-Ramp		148	1,154	2	1,518	61	12	1,764	61	15	2,247	60	19	2,592	60	22
			149	1,230	2	1,521	61	13	1,759	61	15	2,239	60	19	2,578	60	21
		Nob Hill Boulevard On-Ramp	114	427	2	1,517	61	12	1,753	61	14	2,223	60	18	2,567	60	21
	Nob Hill Boulevard On-Ramp		45	1,641	2	527	47	6	619	46	7	766	46	8	883	46	10
	Nob Hill Boulevard On-Ramp		168	741	3	2,074	61	11	2,398	61	13	3,020	60	17	3,482	60	19
			150	1,169	3	2,077	61	11	2,396	61	13	3,014	60	17	3,480	60	19
			113	1,519	3	2,073	61	11	2,392	61	13	3,004	60	17	3,470	60	19
		CD Roadway Off-Ramp	152	681	3	2,068	61	11	2,386	61	13	2,991	60	17	3,461	60	19
	CD Roadway Off-Ramp		183	697	2	814	58	7	940	58	8	1,189	57	10	1,401	57	12
	CD Roadway Off-Ramp		151	2,077	2	1,248	61	10	1,444	61	12	1,798	61	15	2,053	60	17
			153	1,334	2	1,250	61	10	1,436	61	12	1,791	61	15	2,051	60	17
			105	1,663	2	1,244	61	10	1,434	61	12	1,786	60	15	2,035	60	17
			154	1,598	2	1,241	61	10	1,430	61	12	1,776	60	15	2,034	60	17
		CD Roadway On-Ramp	155	1,236	2	1,243	61	10	1,429	61	12	1,767	60	15	2,028	60	17
	CD Roadway On-Ramp		200	1,369	1	300	56	5	362	56	6	467	56	8	537	56	10
	CD Roadway On-Ramp	US 12 / 1st Street Off-Ramp	156	1,955	3	1,534	61	8	1,777	61	10	2,212	60	12	2,557	60	14
	US 12 / 1st Street Off-Ramp		102	833	1	600	54	11	676	54	12	846	54	16	1,006	53	19
	US 12 / 1st Street Off-Ramp		136	1,805	2	940	61	8	1,100	61	9	1,360	61	11	1,561	61	13
		US 12 / 1st Street On-Ramp	137	1,841	2	942	61	8	1,098	61	9	1,352	61	11	1,556	61	13
	US 12 / 1st Street On-Ramp		97	1,173	1	457	45	10	468	45	10	682	44	15	712	44	16
	US 12 / 1st Street On-Ramp	End	98	1,881	3	1,395	60	8	1,563	60	9	2,023	60	11	2,270	60	13
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	697	2	814	58	7	940	58	8	1,189	57	10	1,401	57	12
	Yakima Avenue Off-Ramp		106	464	1	548	45	12	645	45	14	810	44	18	969	44	22
	Yakima Avenue Off-Ramp		190	1,500	1	266	45	6	294	45	6	375	45	8	435	45	10
		Yakima Avenue On-Ramp	198	1,490	1	265	44	6	295	44	7	376	44	9	433	44	10
	Yakima Avenue On-Ramp		202	865	1	179	41	4	211	41	5	276	41	7	308	41	8
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	445	44	10	504	44	11	645	44	15	734	44	17
	E-W Corridor Off-Ramp		188	573	1	273	42	7	297	42	7	373	41	9	437	40	11
	E-W Corridor Off-Ramp		199	1,258	1	173	44	4	205	45	5	266	45	6	298	44	7
		E-W Corridor On-Ramp	201	1,258	1	174	44	4	205	45	5	266	44	6	298	44	7
	E-W Corridor On-Ramp		182	912	1	129	42	3	161	42	4	203	42	5	242	41	6
	E-W Corridor On-Ramp	End of C-D Roadway	200	1,369	1	300	56	5	362	56	6	467	56	8	537	56	10

I-82, Yakima Avenue IJR
2035 CD Option - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

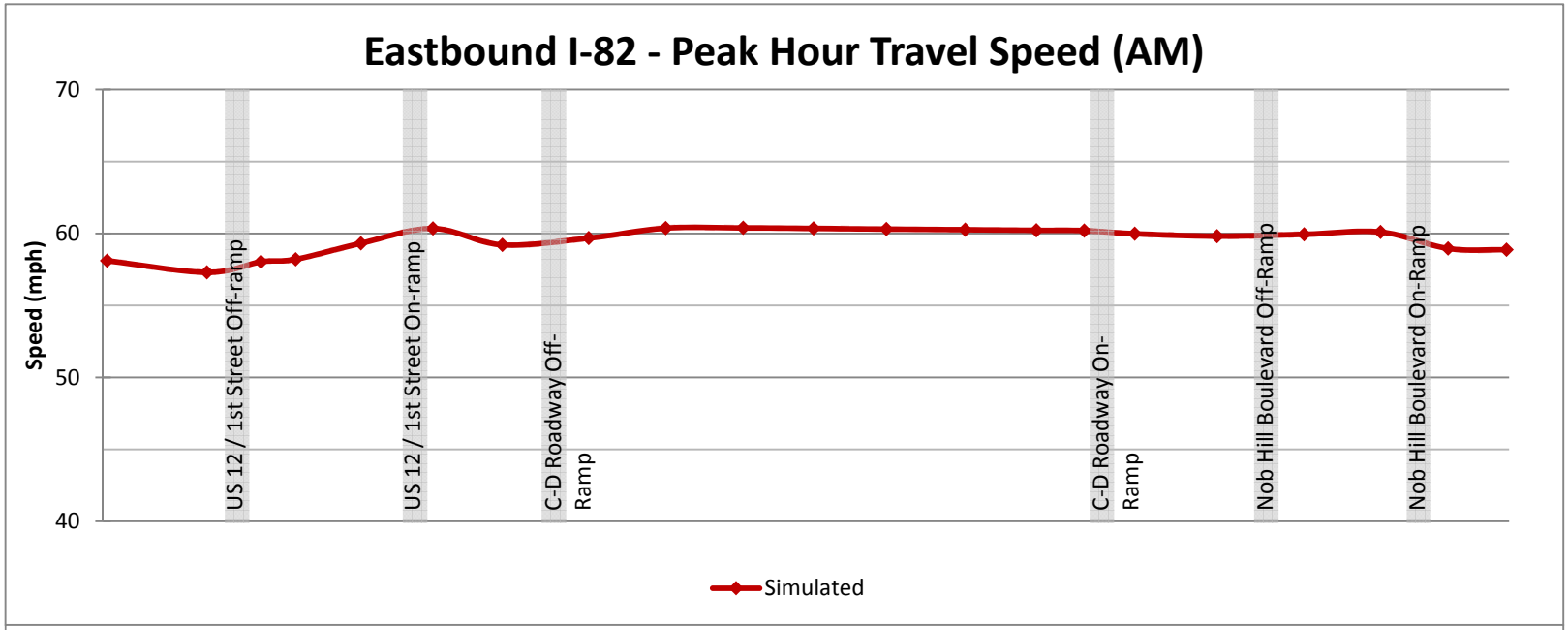
	Location		Link	Length (ft)	Number of Lanes	7:30 - 7:45 Summary			7:45 - 8:00 Summary			8:00 - 8:15 Summary			8:15 - 8:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Eastbound Mainline	Start		87	1,746	3	3,577	58	21	3,238	58	19	2,893	58	17	2,546	59	14
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,569	57	21	3,235	57	19	2,894	58	17	2,547	58	15
	US 12 / 1st Street Off-Ramp		90	858	2	1,385	49	14	1,257	49	13	1,118	50	11	998	50	10
	US 12 / 1st Street Off-Ramp		91	872	2	2,176	58	19	1,969	58	17	1,782	58	15	1,546	58	13
			117	401	2	2,173	58	19	1,970	58	17	1,788	58	15	1,546	58	13
		US 12 / 1st Street On-Ramp	118	1,992	2	2,172	59	18	1,975	59	17	1,793	59	15	1,548	60	13
	US 12 / 1st Street On-Ramp		99	549	2	1,215	58	11	1,192	58	10	1,017	59	9	925	59	8
			10114	218	1	1,238	58	21	1,214	58	21	1,037	59	17	941	60	16
	US 12 / 1st Street On-Ramp		100	655	3	3,393	60	19	3,172	60	18	2,824	61	16	2,481	61	14
		CD Roadway Off-Ramp	101	1,892	3	3,397	59	19	3,192	59	18	2,839	60	16	2,496	60	14
	CD Roadway Off-Ramp		26	1,135	1	1,070	52	21	1,044	52	20	874	52	17	777	53	15
	CD Roadway Off-Ramp		139	1,274	2	2,318	59	20	2,160	60	18	1,961	60	16	1,735	60	14
			140	1,553	2	2,313	60	19	2,165	60	18	1,966	61	16	1,738	61	14
			138	1,289	2	2,313	60	19	2,165	60	18	1,974	61	16	1,737	61	14
			142	1,290	2	2,312	60	19	2,168	60	18	1,985	60	16	1,732	61	14
			141	1,385	2	2,310	60	19	2,168	60	18	1,993	60	16	1,736	61	14
			143	1,511	2	2,318	60	19	2,174	60	18	1,999	60	17	1,732	61	14
			111	1,102	2	2,320	60	19	2,175	60	18	2,000	60	17	1,738	61	14
		CD Roadway On-Ramp	112	652	2	2,323	60	19	2,174	60	18	2,004	60	17	1,735	60	14
	CD Roadway On-Ramp		189	1,699	2	827	49	8	801	49	8	728	50	7	598	50	6
	CD Roadway On-Ramp		146	1,203	3	3,152	60	18	2,971	60	17	2,745	60	15	2,343	60	13
		Nob Hill Boulevard Off-Ramp	145	1,814	3	3,157	59	18	2,966	60	17	2,762	60	15	2,352	60	13
	Nob Hill Boulevard Off-Ramp		53	981	1	575	52	11	542	52	10	494	52	9	424	53	8
	Nob Hill Boulevard Off-Ramp		144	1,385	2	2,575	60	22	2,428	60	20	2,274	60	19	1,931	60	16
		Nob Hill Boulevard On-Ramp	147	1,414	2	2,568	60	21	2,432	60	20	2,289	60	19	1,929	60	16
	Nob Hill Boulevard On-Ramp		116	352	1	664	46	14	633	46	14	584	47	12	538	47	11
	Nob Hill Boulevard On-Ramp		115	1,070	3	3,238	59	18	3,064	59	17	2,853	59	16	2,488	60	14
		End	171	1,072	3	3,257	58	19	3,073	59	18	2,856	59	16	2,477	60	14
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	1,070	52	21	1,044	52	20	874	52	17	777	53	15
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	670	44	15	660	44	15	564	44	13	500	44	11
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	400	44	9	383	44	9	311	44	7	274	44	6
		E-W Corridor On-Ramp	194	1,399	1	395	44	9	386	44	9	313	44	7	274	44	6
	E-W Corridor On-Ramp		187	787	1	205	39	5	210	39	5	195	40	5	153	40	4
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	595	44	14	597	44	14	507	44	12	427	44	10
	Yakima Avenue Off-Ramp		10	624	1	416	34	12	422	34	12	335	34	10	300	35	9
	Yakima Avenue Off-Ramp		195	1,500	1	178	45	4	178	44	4	174	45	4	129	44	3
		Yakima Avenue / Fair Avenue On-Ramp	196	1,537	1	178	44	4	177	44	4	175	44	4	129	44	3
	Yakima Avenue / Fair Avenue On-Ramp		110	570	1	652	42	15	622	42	15	554	43	13	466	43	11
	Yakima Avenue / Fair Avenue On-Ramp	End of C-D Roadway	189	1,699	2	827	49	8	801	49	8	728	50	7	598	50	6

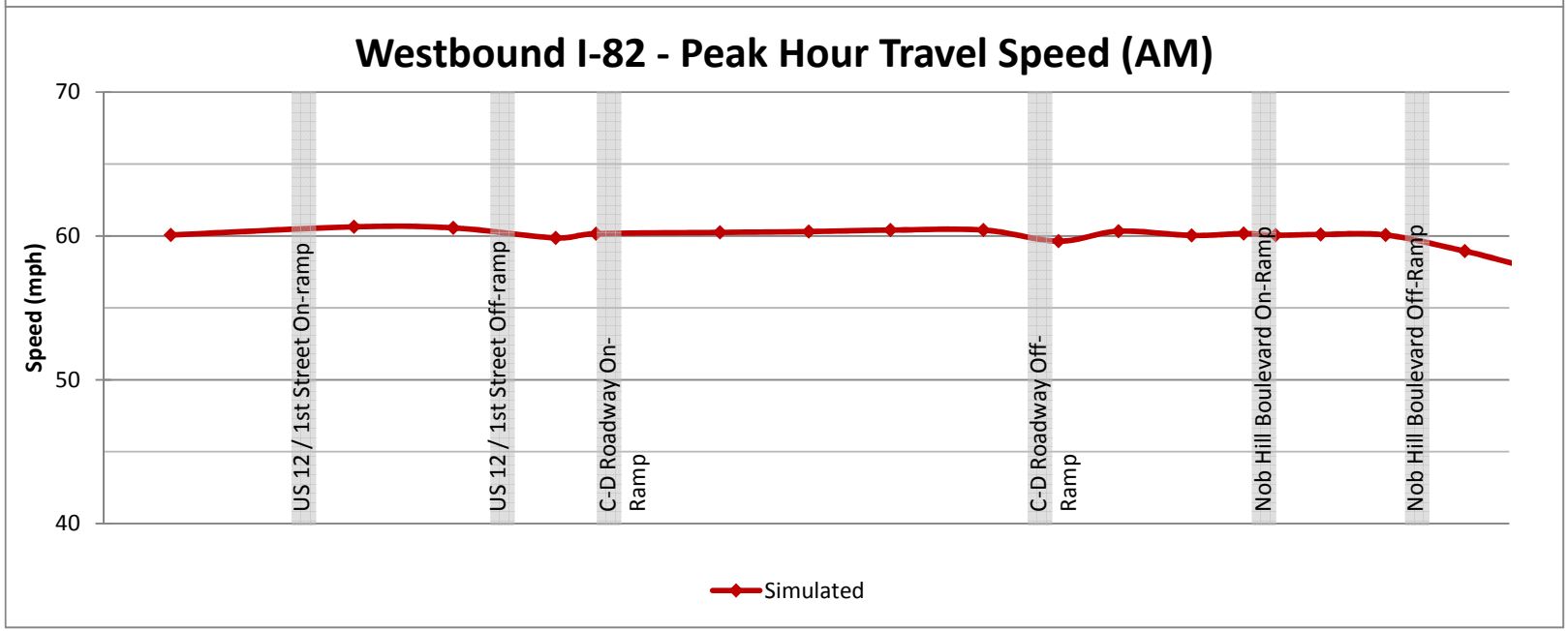
I-82, Yakima Avenue IJR
2035 CD Option - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	7:30 - 7:45 Summary			7:45 - 8:00 Summary			8:00 - 8:15 Summary			8:15 - 8:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Westbound Mainline	Start		164	1,750	2	3,280	57	29	3,098	57	27	2,815	58	24	2,597	58	22
			165	1,750	2	3,269	58	28	3,100	58	27	2,825	58	24	2,602	58	22
			166	1,750	2	3,259	57	28	3,105	57	27	2,831	58	25	2,606	58	23
		Nob Hill Boulevard Off-Ramp	167	1,750	2	3,238	59	28	3,099	59	26	2,832	59	24	2,605	59	22
	Nob Hill Boulevard Off-Ramp		47	546	1	331	54	6	339	54	6	299	54	6	269	54	5
	Nob Hill Boulevard Off-Ramp		148	1,154	2	2,902	60	24	2,768	60	23	2,552	60	21	2,344	60	19
			149	1,230	2	2,897	60	24	2,770	60	23	2,550	60	21	2,348	60	19
		Nob Hill Boulevard On-Ramp	114	427	2	2,881	60	24	2,767	60	23	2,546	60	21	2,344	60	19
	Nob Hill Boulevard On-Ramp		45	1,641	2	966	46	10	940	46	10	871	46	9	832	46	9
	Nob Hill Boulevard On-Ramp		168	741	3	3,902	60	22	3,757	60	21	3,463	60	19	3,211	60	18
			150	1,169	3	3,900	60	22	3,765	60	21	3,466	60	19	3,209	60	18
			113	1,519	3	3,893	60	22	3,763	60	21	3,475	60	19	3,210	61	18
		CD Roadway Off-Ramp	152	681	3	3,887	59	22	3,753	60	21	3,481	59	20	3,211	60	18
	CD Roadway Off-Ramp		183	697	2	1,531	56	14	1,491	56	13	1,383	56	12	1,256	57	11
	CD Roadway Off-Ramp		151	2,077	2	2,349	60	19	2,271	60	19	2,098	60	17	1,958	61	16
			153	1,334	2	2,337	60	19	2,281	60	19	2,094	60	17	1,961	61	16
			105	1,663	2	2,328	60	19	2,291	60	19	2,095	60	17	1,971	61	16
			154	1,598	2	2,326	60	19	2,291	60	19	2,099	60	17	1,969	60	16
		CD Roadway On-Ramp	155	1,236	2	2,322	60	19	2,291	60	19	2,106	60	17	1,971	60	16
	CD Roadway On-Ramp		200	1,369	1	608	56	11	587	55	11	530	56	9	503	56	9
	CD Roadway On-Ramp	US 12 / 1st Street Off-Ramp	156	1,955	3	2,913	59	16	2,860	60	16	2,627	60	15	2,477	60	14
	US 12 / 1st Street Off-Ramp		102	833	1	1,132	53	21	1,102	53	21	1,008	54	19	949	54	18
	US 12 / 1st Street Off-Ramp		136	1,805	2	1,782	60	15	1,774	61	15	1,629	60	13	1,545	61	13
		US 12 / 1st Street On-Ramp	137	1,841	2	1,770	61	15	1,787	61	15	1,626	61	13	1,547	61	13
	US 12 / 1st Street On-Ramp		97	1,173	1	827	44	19	710	44	16	727	44	17	630	44	14
	US 12 / 1st Street On-Ramp	End	98	1,881	3	2,593	60	14	2,492	60	14	2,362	60	13	2,177	60	12
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	697	2	1,531	56	14	1,491	56	13	1,383	56	12	1,256	57	11
	Yakima Avenue Off-Ramp		106	464	1	1,042	44	24	1,046	44	24	962	44	22	864	44	20
	Yakima Avenue Off-Ramp		190	1,500	1	489	45	11	446	45	10	429	45	9	399	45	9
		Yakima Avenue On-Ramp	198	1,490	1	490	44	11	451	44	10	427	44	10	404	44	9
	Yakima Avenue On-Ramp		202	865	1	345	40	9	346	40	9	316	40	8	286	41	7
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	830	43	19	799	43	18	735	43	17	691	44	16
	E-W Corridor Off-Ramp		188	573	1	492	40	12	458	40	11	430	40	11	407	41	10
	E-W Corridor Off-Ramp		199	1,258	1	334	44	8	335	44	8	304	44	7	283	44	6
		E-W Corridor On-Ramp	201	1,258	1	331	44	8	336	44	8	307	44	7	287	44	6
	E-W Corridor On-Ramp		182	912	1	279	41	7	252	40	6	218	42	5	217	42	5
	E-W Corridor On-Ramp	End of C-D Roadway	200	1,369	1	608	56	11	587	55	11	530	56	9	503	56	9


Eastbound I-82 - Peak Hour Travel Speed (AM)
Speed (mph)
70
60
50
40
US 12 / 1st Street Off-ramp
US 12 / 1st Street On-ramp
C-D Roadway Off-Ramp
C-D Roadway On-Ramp
Nob Hill Boulevard Off-Ramp
Nob Hill Boulevard On-Ramp
Simulated


Westbound I-82 - Peak Hour Travel Speed (AM)
Speed (mph)
70
60
50
40
US 12 / 1st Street On-ramp
US 12 / 1st Street Off-ramp
C-D Roadway On-Ramp
C-D Roadway Off-Ramp
Nob Hill Boulevard On-Ramp
Nob Hill Boulevard Off-Ramp
Simulated

I-82, Yakima Avenue IJR
2035 CD Option - PM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

3:30 - 4:00 PM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Modeled Storage & Maximum Traffic Queuing (feet): Left Turn		Modeled Storage & Maximum Traffic Queuing (feet): Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	975	442	1417	0	970	444	1414	0	-5	2	-3	-	0.2	0.1	0.1	-	16	13	-	B	B	15	B	13	B	297	-	-	-	0
		WB Arterial	202	831	0	1033	176	833	0	1009	-26	2	0	-24	1.9	0.1	-	0.8	17	3	-	B	A	-	5	A			88	400	88	-	-
		Off-Ramp	311	0	103	414	325	0	95	420	14	0	-8	6	0.8	-	0.8	0.3	32	-	5	C	-	A	26	C			-	Continuous	262	-	6
	WB Ramps (Signalized)	EB Arterial	167	1119	0	1286	152	1135	0	1287	-15	16	0	1	1.2	0.5	-	0.0	7	4	-	A	A	-	4	A			103	400	103	-	-
		WB Arterial	0	746	515	1261	0	727	530	1257	0	-19	15	-4	-	0.7	0.7	0.1	-	12	9	-	B	A	11	B	9	A	233	-	-	-	-
		Off-Ramp	287	0	269	556	285	0	272	557	-2	0	3	1	0.1	-	0.2	0.0	22	-	5	C	-	A	14	B			-	Continuous	182	-	-
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	583	0	583	0	580	0	580	0	-3	0	-3	-	0.1	-	0.1	-	8	-	-	A	-	8	A	8	A	152	-	-	-	-
		WB Arterial	0	529	0	529	0	497	0	497	0	-32	0	-32	-	1.4	-	1.4	-	8	-	-	A	-	8	A			136	-	-	-	-
		Off-Ramp	228	0	48	276	233	0	45	278	5	0	-3	2	0.3	-	0.4	0.1	10	-	6	A	-	A	9	A			-	500	110	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1299	193	1492	0	1298	188	1486	0	-1	-5	-6	-	0.0	0.4	0.2	-	18	10	-	B	A	17	B	17	B	371	-	-	225	371
		WB Arterial	369	779	0	1148	371	754	0	1125	2	-25	0	-23	0.1	0.9	-	0.7	32	3	-	C	A	-	13	B			168	270	168	-	-
		Off-Ramp	318	0	23	341	319	0	24	343	1	0	1	2	0.1	-	0.2	0.1	37	-	7	D	-	A	35	C			154	Continuous	154	225	-
	WB Ramps (Signalized)	EB Arterial	129	1488	0	1617	132	1480	0	1612	3	-8	0	-5	0.3	0.2	-	0.1	15	1	-	B	A	-	2	A	2	A	62	400	62	-	-
		WB Arterial	0	1139	373	1512	0	1124	371	1495	0	-15	-2	-17	-	0.4	0.1	0.4	-	2	4	-	A	A	2	A			83	-	-	-	-
		Off-Ramp	0	0	448	448	0	0	452	452	0	0	4	4	-	-	0.2	0.2	-	-	3	-	-	A	3	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1440	96	1536	0	1466	93	1559	0	26	-3	23	-	0.7	0.3	0.6	-	19	3	-	B	A	18	B	16	B	366	-	-	375	7
		WB Arterial	309	1075	0	1384	295	1060	0	1355	-14	-15	0	-29	0.8	0.5	-	0.8	33	3	-	C	A	-	10	A			131	275	131	-	-
		Off-Ramp	641	0	160	801	592	0	168	760	-49	0	8	-41	2.0	-	0.6	1.5	29	-	3	C	-	A	23	C			220	Continuous	220	300	-
	WB Ramps (Signalized)	EB Arterial	190	1891	0	2081	173	1881	0	2054	-17	-10	0	-27	1.3	0.2	-	0.6	23	1	-	C	A	-	3	A	5	A	95	275	95	-	-
		WB Arterial	0	1342	760	2102	0	1325	775	2100	0	-17	15	-2	-	0.5	0.5	0.0	-	9	6	-	A	A	8	A			207	-	-	375	0
		Off-Ramp	42	0	523	565	42	0	492	534	0	0	-31	-31	-	-	1.4	1.3	37	-	1	D	-	A	4	A			50	Continuous	50	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

4:00 - 5:00 PM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Modeled Storage & Maximum Traffic Queuing (feet): Left Turn		Modeled Storage & Maximum Traffic Queuing (feet): Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1059	480	1539	0	1064	488	1552	0	5	8	13	-	0.2	0.4	0.3	-	19	17	-	B	B	18	B	15	B	368	-	-	-	0
		WB Arterial	220	932	0	1152	205	927	0	1132	-15	-5	0	-20	1.0	0.2	-	0.6	21	3	-	C	A	-	6	A			121	400	121	-	-
		Off-Ramp	338	0	112	450	337	0	104	441	-1	0	-8	-9	0.1	-	0.8	0.4	31	-	5	C	-	A	25	C			-	Continuous	258	-	0
	WB Ramps (Signalized)	EB Arterial	186	1211	0	1397	170	1230	0	1400	-16	19	0	3	1.2	0.5	-	0.1	9	4	-	A	A	-	5	A			105	400	105	-	-
		WB Arterial	0	831	574	1405	0	818	589	1407	0	-13	15	2	-	0.5	0.6	0.1	-	15	12	-	B	B	14	B	10	B	322	-	-	-	-
		Off-Ramp	321	0	299	620	315	0	289	604	-6	0	-10	-16	0.3	-	0.6	0.6	22	-	6	C	-	A	14	B			-	Continuous	200	-	-
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	634	0	634	0	637	0	637	0	3	0	3	-	0.1	-	0.1	-	9	-	-	A	-	9	A	9	A	185	-	-	-	-
		WB Arterial	0	575	0	575	0	548	0	548	0	-27	0	-27	-	1.1	-	1.1	-	8	-	-	A	-	8	A			147	-	-	-	-
		Off-Ramp	248	0	52	300	248	0	59	307	0	0	7	7	-	-	0.9	0.4	10	-	6	A	-	A	9	A			-	500	123	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1409	209	1618	0	1416	216	1632	0	7	7	14	-	0.2	0.5	0.3	-	20	12	-	B	B	19	B	18	B	446	-	-	225	446
		WB Arterial	401	879	0	1280	384	880	0	1264	-17	1	0	-16	0.9	0.0	-	0.4	34	3	-	C	A	-	12	B			191	270	191	-	-
		Off-Ramp	345	0	25	370	338	0	30	368	-7	0	5	-2	0.4	-	1.0	0.1	36	-	8	D	-	A	34	C			164	Continuous	164	225	-
	WB Ramps (Signalized)	EB Arterial	144	1610	0	1754	137	1614	0	1751	-7	4	0	-3	0.6	0.1	-	0.1	18	2	-	B	A	-	3	A	3	A	74	400	74	-	-
		WB Arterial	0	1270	416	1686	0	1266	425	1691	0	-4	9	5	-	0.1	0.4	0.1	-	3	5	-	A	A	4	A			115	-	-	-	-
		Off-Ramp	0	0	500	500	0	0	498	498	0	0	-2	-2	-	-	0.1	0.1	-	-	3	-	-	A	3	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1564	104	1668	0	1578	101	1679	0	14	-3	11	-	0.4	0.3	0.3	-	22	3	-	C	A	21	C	17	B	444	-	-	375	30
		WB Arterial	336	1208	0	1544	328	1213	0	1541	-8	5	0	-3	0.4	0.1	-	0.1	34	3	-	C	A	-	10	A			139	275	139	-	-
		Off-Ramp	696	0	174	870	688	0	183	871	-8	0	9	1	0.3	-	0.7	0.0	30	-	5	C	-	A	25	C			253	Continuous	253	300	-
	WB Ramps (Signalized)	EB Arterial	212	2048	0	2260	189	2072	0	2261	-23	24	0	1	1.6	0.5	-	0.0	23	1	-	C	A	-	3	A	6	A	101	275	101	-	-
		WB Arterial	0	1497	848	2345	0	1492	855	2347	0	-5	7	2	-	0.1	0.2	0.0	-	10	7	-	A	A	9	A			247	-	-	375	11
		Off-Ramp	47	0	583	630	52	0	582	634	5	0	-1	4	0.7	-	0.0	0.2	36	-	1	D	-	A	4	A			54	Continuous	54	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

5:00 - 5:30 PM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Modeled Storage & Maximum Traffic Queuing (feet): Left Turn		Modeled Storage & Maximum Traffic Queuing (feet): Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1046	474	1520	0	1032	488	1520	0	-14	14	0	-	0.4	0.6	-	-	19	17	-	B	B	18	B	15	B	391	-	-	-	13
		WB Arterial	217	893	0	1110	200	893	0	1093	-17	0	0	-17	1.2	-	-	0.5	20	3	-	B	A	-	6	A			106	400	106	-	-
		Off-Ramp	333	0	111	444	340	0	93	433	7	0	-18	-11	0.4	-	1.8	0.5	33	-	6	C	-	A	27	C			-	Continuous	288	-	5
	WB Ramps (Signalized)	EB Arterial	179	1200	0	1379	179	1197	0	1376	0	-3	0	-3	-	0.1	-	0.1	9	4	-	A	A	-	5	A	10	A	106	400	106	-	-
		WB Arterial	0	801	553	1354	0	793	561	1354	0	-8	8	0	-	0.3	0.3	-	-	14	12	-	B	B	13	B			289	-	-	-	-
		Off-Ramp	309	0	288	597	300	0	276	576	-9	0	-12	-21	0.5	-	0.7	0.9	23	-	6	C	-	A	15	B			-	Continuous	175	-	-
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	626	0	626	0	625	0	625	0	-1	0	-1	-	0.0	-	0.0	-	8	-	-	A	-	8	A	8	A	158	-	-	-	-
		WB Arterial	0	568	0	568	0	537	0	537	0	-31	0	-31	-	1.3	-	1.3	-	8	-	-	A	-	8	A			146	-	-	-	-
		Off-Ramp	245	0	51	296	234	0	55	289	-11	0	4	-7	0.7	-	0.5	0.4	10	-	6	A	-	A	9	A			-	500	124	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1389	206	1595	0	1387	221	1608	0	-2	15	13	-	0.1	1.0	0.3	-	19	12	-	B	B	18	B	18	B	393	-	-	225	393
		WB Arterial	396	835	0	1231	394	832	0	1226	-2	-3	0	-5	0.1	0.1	-	0.1	34	3	-	C	A	-	13	B			199	270	199	-	-
		Off-Ramp	340	0	25	365	334	0	40	374	-6	0	15	9	0.3	-	2.6	0.5	37	-	9	D	-	A	34	C			172	Continuous	172	225	-
	WB Ramps (Signalized)	EB Arterial	139	1590	0	1729	124	1597	0	1721	-15	7	0	-8	1.3	0.2	-	0.2	17	1	-	B	A	-	2	A	2	A	52	400	52	-	-
		WB Arterial	0	1221	400	1621	0	1225	401	1626	0	4	1	5	-	0.1	0.0	0.1	-	2	4	-	A	A	2	A			103	-	-	-	-
		Off-Ramp	0	0	481	481	0	0	502	502	0	0	21	21	-	-	0.9	0.9	-	-	3	-	-	A	3	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1544	103	1647	0	1518	95	1613	0	-26	-8	-34	-	0.7	0.8	0.8	-	21	3	-	C	A	20	B	18	B	407	-	-	375	14
		WB Arterial	331	1155	0	1486	349	1134	0	1483	18	-21	0	-3	1.0	0.6	-	0.1	35	3	-	C	A	-	11	B			138	275	138	-	-
		Off-Ramp	687	0	172	859	705	0	177	882	18	0	5	23	0.7	-	0.4	0.8	30	-	4	C	-	A	25	C			260	Continuous	260	300	-
	WB Ramps (Signalized)	EB Arterial	204	2027	0	2231	198	2036	0	2234	-6	9	0	3	0.4	0.2	-	0.1	23	1	-	C	A	-	3	A	6	A	121	275	121	-	-
		WB Arterial	0	1441	816	2257	0	1413	829	2242	0	-28	13	-15	-	0.7	0.5	0.3	-	10	7	-	A	A	9	A			234	-	-	375	0
		Off-Ramp	45	0	561	606	54	0	553	607	9	0	-8	1	1.3	-	0.3	0.0	35	-	1	C	-	A	4	A			54	Continuous	54	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

I-82, Yakima Avenue IJR
2035 CD Option - PM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

3:30 - 4:00 PM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	484	221	705	0	496	210	706	0	477	233	710	0	488	227	715	0	499	212	711	0	505	201	706	0	473	226	699
		WB Arterial	76	411	0	487	90	434	0	524	85	432	0	517	77	418	0	495	84	411	0	495	94	402	0	496	97	423	0	520
		Off-Ramp	156	0	56	212	148	0	54	202	153	0	50	203	148	0	55	203	161	0	36	197	156	0	52	208	183	0	46	229
	WB Ramps (Signalized)	EB Arterial	79	567	0	646	75	566	0	641	76	551	0	627	78	558	0	636	85	563	0	648	82	563	0	645	70	574	0	644
		WB Arterial	0	358	270	628	0	372	256	628	0	374	254	628	0	356	276	632	0	341	292	633	0	364	259	623	0	382	247	629
		Off-Ramp	130	0	154	284	154	0	139	293	148	0	148	296	141	0	133	274	155	0	117	272	135	0	125	260	141	0	138	279
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	286	0	286	0	293	0	293	0	290	0	290	0	294	0	294	0	292	0	292	0	290	0	290	0	288	0	288
		WB Arterial	0	244	0	244	0	254	0	254	0	248	0	248	0	250	0	250	0	256	0	256	0	254	0	254	0	233	0	233
		Off-Ramp	112	0	25	137	105	0	26	131	103	0	29	132	104	0	20	124	122	0	25	147	122	0	22	144	115	0	25	140
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	664	85	749	0	665	81	746	0	656	90	746	0	644	109	753	0	635	99	734	0	655	90	745	0	650	87	737
		WB Arterial	174	367	0	541	195	386	0	581	199	363	0	562	190	370	0	560	208	366	0	574	171	392	0	563	167	410	0	577
		Off-Ramp	149	0	7	156	168	0	13	181	154	0	15	169	178	0	8	186	175	0	12	187	162	0	14	176	168	0	12	180
	WB Ramps (Signalized)	EB Arterial	80	736	0	816	64	775	0	839	60	753	0	813	76	746	0	822	55	746	0	801	64	744	0	808	66	747	0	813
		WB Arterial	0	546	191	737	0	581	170	751	0	559	187	746	0	561	175	736	0	560	192	752	0	563	195	758	0	581	186	767
		Off-Ramp	0	0	244	244	0	0	225	225	0	0	208	208	0	0	222	222	0	0	255	255	0	0	214	214	0	0	218	218
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	743	44	787	0	720	49	769	0	716	55	771	0	728	49	777	0	745	34	779	0	734	52	786	0	733	53	786
		WB Arterial	141	532	0	673	136	539	0	675	137	543	0	680	152	503	0	655	167	525	0	692	146	537	0	683	163	509	0	672
		Off-Ramp	283	0	89	372	305	0	73	378	293	0	86	379	296	0	83	378	312	0	83	395	277	0	89	366	292	0	84	376
	WB Ramps (Signalized)	EB Arterial	86	942	0	1028	83	950	0	1033	92	919	0	1011	86	953	0	1039	84	958	0	1042	97	903	0	1000	64	960	0	1024
		WB Arterial	0	654	380	1034	0	670	385	1055	0	668	385	1053	0	648	395	1043	0	683	386	1069	0	666	369	1035	0	652	411	1063
		Off-Ramp	26	0	238	264	13	0	270	283	26	0	249	275	15	0	257	272	20	0	222	242	18	0	253	271	22	0	255	277

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables cc

4:00 - 5:00 PM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1074	478	1552	0	1047	497	1544	0	1076	469	1545	0	1067	483	1550	0	1059	488	1547	0	1055	499	1554	0	1055	506	1561
		WB Arterial	207	921	0	1128	202	924	0	1126	217	904	0	1121	217	916	0	1133	220	917	0	1137	201	914	0	1115	177	942	0	1119
		Off-Ramp	311	0	94	405	332	0	125	457	347	0	97	444	350	0	109	459	326	0	101	427	368	0	100	468	337	0	101	438
	WB Ramps (Signalized)	EB Arterial	175	1204	0	1379	178	1201	0	1379	169	1252	0	1421	179	1231	0	1410	161	1226	0	1387	171	1261	0	1432	173	1224	0	1397
		WB Arterial	0	833	575	1408	0	807	597	1404	0	811	598	1409	0	815	591	1406	0	844	564	1408	0	818	586	1404	0	800	602	1402
		Off-Ramp	292	0	316	608	314	0	288	602	307	0	317	624	321	0	270	591	296	0	297	593	303	0	274	577	318	0	307	625
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	639	0	639	0	637	0	637	0	637	0	637	0	632	0	632	0	639	0	639	0	633	0	633	0	640	0	640
		WB Arterial	0	541	0	541	0	555	0	555	0	549	0	549	0	531	0	531	0	546	0	546	0	533	0	533	0	545	0	545
		Off-Ramp	250	0	46	296	246	0	66	312	272	0	41	313	276	0	62	338	247	0	52	299	237	0	66	303	263	0	59	322
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1421	204	1625	0	1410	234	1644	0	1388	228	1616	0	1397	205	1602	0	1455	187	1642	0	1423	208	1631	0	1414	228	1642
		WB Arterial	405	879	0	1284	336	911	0	1247	376	895	0	1271	380	865	0	1245	400	886	0	1286	376	892	0	1268	400	857	0	1257
		Off-Ramp	350	0	29	379	343	0	28	371	335	0	36	371	342	0	31	373	344	0	40	384	333	0	26	359	318	0	28	346
	WB Ramps (Signalized)	EB Arterial	142	1624	0	1766	140	1613	0	1753	138	1577	0	1715	137	1592	0	1729	135	1662	0	1797	122	1636	0	1758	136	1591	0	1727
		WB Arterial	0	1281	407	1688	0	1246	427	1673	0	1273	416	1689	0	1246	461	1707	0	1292	419	1711	0	1270	421	1691	0	1263	424	1687
		Off-Ramp	0	0	513	513	0	0	487	487	0	0	521	521	0	0	447	447	0	0	497	497	0	0	481	481	0	0	514	514
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1590	85	1675	0	1582	102	1684	0	1583	106	1689	0	1580	98	1678	0	1580	100	1680	0	1572	110	1682	0	1569	103	1672
		WB Arterial	312	1243	0	1555	335	1192	0	1527	351	1212	0	1563	346	1226	0	1572	306	1223	0	1529	305	1180	0	1485	327	1215	0	1542
		Off-Ramp	680	0	181	861	677	0	162	839	678	0	191	869	699	0	200	899	702	0	176	878	688	0	175	863	698	0	186	884
	WB Ramps (Signalized)	EB Arterial	186	2072	0	2258	197	2045	0	2242	193	2053	0	2246	194	2067	0	2261	195	2100	0	2295	165	2096	0	2261	192	2065	0	2257
		WB Arterial	0	1494	868	2362	0	1478	862	2340	0	1511	838	2349	0	1517	840	2357	0	1486	857	2343	0	1436	919	2355	0	1496	833	2329
		Off-Ramp	55	0	555	610	49	0	602	651	48	0	538	586	51	0	573	624	48	0	589	637	55	0	593	648	54	0	604	658

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables cc

5:00 - 5:30 PM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	525	236	761	0	522	252	774	0	521	235	756	0	521	235	756	0	514	249	763	0	494	261	755	0	518	243	761
		WB Arterial	103	465	0	568	89	444	0	533	95	474	0	569	112	412	0	524	98	445	0	543	93	449	0	542	100	452	0	552
		Off-Ramp	158	0	53	211	154	0	43	197	151	0	52	203	182	0	46	228	163	0	50	213	170	0	42	212	185	0	50	235
	WB Ramps (Signalized)	EB Arterial	78	607	0	685	92	588	0	680	95	573	0	668	100	610	0	710	82	594	0	676	79	585	0	664	91	618	0	709
		WB Arterial	0	394	282	676	0	395	287	682	0	415	264	679	0	391	283	674	0	396	277	673	0	395	290	685	0	400	286	686
		Off-Ramp	173	0	138	311	149	0	136	285	160	0	126	286	136	0	150	286	153	0	123	276	137	0	130	267	152	0	152	304
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	312	0	312	0	307	0	307	0	313	0	313	0	311	0	311	0	312	0	312	0	318	0	318	0	308	0	308
		WB Arterial	0	279	0	279	0	282	0	282	0	265	0	265	0	281	0	281	0	247	0	247	0	259	0	259	0	267	0	267
		Off-Ramp	113	0	27	140	123	0	23	146	117	0	26	143	117	0	26	143	113	0	26	139	136	0	26	162	102	0	37	139
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	709	95	804	0	679	134	813	0	670	132	802	0	694	112	806	0	704	98	802	0	690	100	790	0	708	97	805
		WB Arterial	203	432	0	635	193	406	0	599	199	418	0	617	186	403	0	589	215	404	0	619	207	425	0	632	203	413	0	616
		Off-Ramp	172	0	29	201	153	0	24	177	147	0	23	170	178	0	14	192	157	0	24	181	160	0	22	182	169	0	15	184
	WB Ramps (Signalized)	EB Arterial	64	816	0	880	52	772	0	824	56	764	0	820	65	807	0	872	71	793	0	864	58	793	0	851	66	816	0	882
		WB Arterial	0	638	195	833	0	600	225	825	0	619	175	794	0	586	204	790	0	616	197	813	0	635	186	821	0	611	225	836
		Off-Ramp	0	0	242	242	0	0	267	267	0	0	247	247	0	0	234	234	0	0	251	251	0	0	247	247	0	0	244	244
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	772	38	810	0	748	54	802	0	747	55	802	0	760	50	810	0	755	53	808	0	762	49	811	0	755	51	806
		WB Arterial	163	569	0	732	171	560	0	731	174	568	0	742	160	558	0	718	171	583	0	754	183	569	0	752	161	577	0	738
		Off-Ramp	338	0	85	423	360	0	95	455	362	0	83	445	330	0	90	420	378	0	88	466	386	0	104	490	345	0	78	423
	WB Ramps (Signalized)	EB Arterial	106	1009	0	1115	88	1035	0	1123	95	1030	0	1125	92	1006	0	1098	84	1047	0	1131	112	1037	0	1149	105	1003	0	1108
		WB Arterial	0	709	411	1120	0	695	438	1133	0	702	422	1124	0	685	430	1115	0	716	392	1108	0	724	402	1126	0	700	431	1131
		Off-Ramp	20	0	288	308	33	0	269	302	32	0	274	306	28	0	259	287	25	0	297	322	24	0	268	292	28	0	253	281

I-82, Yakima Avenue IJR
2035 CD Option - PM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

3:30 - 4:00 PM

Intersection		Approach	Modeled Volumes																		Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11					Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total					
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	459	249	708	0	476	231		707	0	491	210	701	0	486	221	707		707	4.4	3.2	0%
		WB Arterial	95	423	0	518	76	416	0		492	87	407	0	494	109	406	0	515		505	13.8	9.8	2%
		Off-Ramp	162	0	43	205	165	0	43		208	182	0	46	228	171	0	44	215		210	10.4	7.4	4%
	WB Ramps (Signalized)	EB Arterial	77	539	0	616	69	577	0		646	78	594	0	672	66	588	0	654		643	14.3	10.2	2%
		WB Arterial	0	369	260	629	0	357	275		632	0	363	262	625	0	361	263	624		628	3.3	2.4	0%
		Off-Ramp	148	0	140	288	135	0	114		249	132	0	147	279	150	0	139	289		278	14.2	10.2	4%
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	284	0	284	0	293	0		293	0	287	0	287	0	291	0	291		290	3.2	2.3	1%
		WB Arterial	0	242	0	242	0	256	0		256	0	255	0	255	0	241	0	241		248	7.6	5.4	2%
		Off-Ramp	127	0	21	148	120	0	18		138	123	0	19	142	126	0	20	146		139	7.6	5.4	4%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	651	87	738	0	660	100		760	0	625	101	726	0	632	104	736		743	9.6	6.9	1%
		WB Arterial	183	375	0	558	185	383	0		568	179	387	0	566	190	346	0	536		562	13.9	9.9	2%
		Off-Ramp	146	0	18	164	148	0	9		157	148	0	10	158	156	0	15	171		171	11.5	8.2	5%
	WB Ramps (Signalized)	EB Arterial	71	727	0	798	63	735	0		798	68	709	0	777	60	721	0	781		806	17.8	12.7	2%
		WB Arterial	0	558	184	742	0	569	185		754	0	562	181	743	0	542	193	735		747	10.1	7.2	1%
		Off-Ramp	0	0	237	237	0	0	241		241	0	0	204	204	0	0	219	219		226	16.1	11.5	5%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	739	43	782	0	726	50		776	0	734	45	779	0	745	38	783		780	6.0	4.3	1%
		WB Arterial	152	539	0	691	146	538	0		684	140	540	0	680	141	524	0	665		677	10.9	7.8	1%
		Off-Ramp	305	0	84	389	292	0	77		369	317	0	89	406	282	0	90	372		380	12.0	8.6	2%
	WB Ramps (Signalized)	EB Arterial	78	958	0	1036	78	940	0		1018	103	943	0	1046	98	919	0	1017		1027	14.2	10.2	1%
		WB Arterial	0	679	374	1053	0	663	394		1057	0	662	393	1055	0	640	392	1032		1050	12.3	8.8	1%
		Off-Ramp	18	0	237	255	25	0	237		262	26	0	253	279	22	0	233	255		267	12.5	8.9	3%

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables cc

4:00 - 5:00 PM

Intersection		Approach	Modeled Volumes																		Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11					Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total					
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1074	477	1551	0	1089	471		1560	0	1073	482	1555	0	1038	516	1554		1552	5.5	3.9	0%
		WB Arterial	196	941	0	1137	225	928	0		1153	208	932	0	1140	185	957	0	1142		1132	11.3	8.1	1%
		Off-Ramp	327	0	102	429	350	0	114		464	326	0	93	419	330	0	110	440		441	19.9	14.3	3%
	WB Ramps (Signalized)	EB Arterial	163	1241	0	1404	171	1265	0		1436	161	1226	0	1387	172	1201	0	1373		1400	22.0	15.7	1%
		WB Arterial	0	811	601	1412	0	847	560		1407	0	802	607	1409	0	809	603	1412		1407	3.2	2.3	0%
		Off-Ramp	330	0	269	599	310	0	297		607	344	0	288	632	335	0	261	596		605	16.6	11.9	2%
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	645	0	645	0	630	0		630	0	642	0	642	0	630	0	630		637	4.9	3.5	1%
		WB Arterial	0	578	0	578	0	554	0		554	0	555	0	555	0	543	0	543		548	12.8	9.1	2%
		Off-Ramp	227	0	65	292	244	0	64		308	243	0	67	310	226	0	62	288		307	14.3	10.2	3%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1405	238	1643	0	1404	222		1626	0	1420	211	1631	0	1437	207	1644		1631	13.6	9.7	1%
		WB Arterial	388	892	0	1280	408	848	0		1256	378	891	0	1269	382	869	0	1251		1265	14.7	10.5	1%
		Off-Ramp	337	0	29	366	337	0	34		371	359	0	28	387	319	0	25	344		368	13.9	9.9	3%
	WB Ramps (Signalized)	EB Arterial	138	1604	0	1742	135	1615	0		1750	146	1624	0	1770	135	1620	0	1755		1751	22.8	16.3	1%
		WB Arterial	0	1285	401	1686	0	1251	446		1697	0	1270	413	1683	0	1246	442	1688		1691	10.7	7.6	0%
		Off-Ramp	0	0	503	503	0	0	500		500	0	0	506	506	0	0	513	513		498	20.8	14.9	3%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1591	95	1686	0	1559	117		1676	0	1572	103	1675	0	1583	93	1676		1679	5.3	3.8	0%
		WB Arterial	337	1212	0	1549	343	1201	0		1544	316	1217	0	1533	332	1223	0	1555		1541	23.3	16.7	1%
		Off-Ramp	674	0	174	848	691	0	202		893	685	0	178	863	691	0	186	877		870	18.2	13.0	1%
	WB Ramps (Signalized)	EB Arterial	217	2056	0	2273	170	2079	0		2249	183	2061	0	2244	183	2095	0	2278		2260	16.2	11.6	1%
		WB Arterial	0	1507	835	2342	0	1505	838		2343	0	1484	857	2341	0	1501	859	2360		2347	10.1	7.2	0%
		Off-Ramp	42	0	581	623	50	0	553		603	57	0	640	697	61	0	572	633		634	30.2	21.6	3%

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables cc

5:00 - 5:30 PM

Intersection		Approach	Modeled Volumes																		Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11					Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total					
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	526	235	761	0	529	227		756	0	500	259	759	0	507	254	761		760	5.3	3.8	0%
		WB Arterial	90	454	0	544	116	418	0		534	114	449	0	563	88	452	0	540		547	14.8	10.6	2%
		Off-Ramp	191	0	45	236	190	0	45		235	182	0	43	225	142	0	42	184		216	17.2	12.3	6%
	WB Ramps (Signalized)	EB Arterial	105	609	0	714	94	623	0		717	87	608	0	695	82	570	0	652		688	22.3	16.0	2%
		WB Arterial	0	397	270	667	0	378	295		673	0	415	266	681	0	387	285	672		677	6.0	4.3	1%
		Off-Ramp	146	0	130	276	150	0	139		289	143	0	137	280	153	0	157	310		288	14.4	10.3	4%
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	310	0	310	0	315	0		315	0	312	0	312	0	319	0	319		312	3.7	2.7	1%
		WB Arterial	0	265	0	265	0	271	0		271	0	257	0	257	0	278	0	278		268	11.2	8.0	3%
		Off-Ramp	125	0	35	160	113	0	23		136	110	0	28	138	120	0	27	147		145	8.7	6.2	4%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	694	125	819	0	695	110		805	0	691	108	799	0	694	103	797		804	7.7	5.5	1%
		WB Arterial	207	406	0	613	181	410	0		591	198	421	0	619	173	436	0	609		613	14.9	10.6	2%
		Off-Ramp	160	0	14	174	184	0	22		206	173	0	16	189	183	0	16	199		187	11.7	8.3	4%
	WB Ramps (Signalized)	EB Arterial	60	797	0	857	64	806	0		870	57	808	0	865	68	810	0	878		860	21.2	15.1	2%
		WB Arterial	0	608	205	813	0	593	202		795	0	624	194	818	0	605	199	804		813	15.7	11.2	1%
		Off-Ramp	0	0	252	252	0	0	249		249	0	0	259	259	0	0	267	267		251	10.2	7.3	3%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	751	48	799	0	759	48		807	0	776	36	812	0	766	42	808		807	4.2	3.0	0%
		WB Arterial	177	555	0	732	182	584	0		766	180	544	0	724	195	569	0	764		741	15.9	11.4	2%
		Off-Ramp	356	0	86	442	339	0	90		429	352	0	85	437	332	0	91	423		441	21.9	15.7	4%
	WB Ramps (Signalized)	EB Arterial	102	1003	0	1105	103	993	0		1096	97	1036	0	1133	103	999	0	1102		1117	16.8	12.0	1%
		WB Arterial	0	698	409	1107	0	724	399		1123	0	691	431	1122	0	726	397	1123		1121	8.3	5.9	1%
		Off-Ramp	31	0	274	305	29	0	283		312	21	0	299	320	28	0	276	304		304	12.8	9.1	3%

I-82, Yakima Avenue IJR
2035 CD Option - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	3:30 - 4:00 PM Summary						4:00 - 5:00 PM Summary					
						Volume				Speed (mph)	Density (vplpm)	Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic			Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Eastbound Mainline	Start		87	1,746	3	3,186	3,185	(1)	0.0	58	18	3,460	3,501	41	0.7	58	20
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,186	3,173	(13)	0.2	58	18	3,460	3,493	33	0.6	57	21
	US 12 / 1st Street Off-Ramp		90	858	2	1,390	1,388	(2)	0.1	49	14	1,510	1,510	(0)	0.0	48	16
	US 12 / 1st Street Off-Ramp		91	872	2	1,796	1,779	(17)	0.4	58	15	1,950	1,976	26	0.6	58	17
			117	401	2	1,796	1,777	(19)	0.5	58	15	1,950	1,976	26	0.6	58	17
		US 12 / 1st Street On-Ramp	118	1,992	2	1,796	1,774	(22)	0.5	59	15	1,950	1,977	27	0.6	59	17
	US 12 / 1st Street On-Ramp		99	549	2	1,298	1,264	(34)	0.9	58	11	1,410	1,415	5	0.1	56	13
			10114	209	1	1,298	1,268	(30)	0.8	58	22	1,410	1,417	7	0.2	57	25
	US 12 / 1st Street On-Ramp		100	655	3	3,094	3,023	(71)	1.3	60	17	3,360	3,375	15	0.3	60	19
		CD Roadway Off-Ramp	101	1,893	3	3,094	3,034	(60)	1.1	60	17	3,360	3,387	27	0.5	60	19
	CD Roadway Off-Ramp		26	1,135	1	948	981	33	1.1	53	19	1,030	1,058	28	0.9	52	20
	CD Roadway Off-Ramp		139	1,274	2	2,146	2,050	(96)	2.1	60	17	2,330	2,327	(3)	0.1	60	19
			140	1,553	2	2,146	2,049	(97)	2.1	61	17	2,330	2,325	(5)	0.1	60	19
			138	1,289	2	2,146	2,048	(98)	2.1	60	17	2,330	2,323	(7)	0.2	60	19
			142	1,290	2	2,146	2,049	(97)	2.1	60	17	2,330	2,321	(9)	0.2	60	19
			141	1,385	2	2,146	2,048	(98)	2.1	60	17	2,330	2,321	(9)	0.2	60	19
			143	1,511	2	2,146	2,049	(97)	2.1	60	17	2,330	2,318	(12)	0.2	60	19
			111	1,102	2	2,146	2,044	(102)	2.2	60	17	2,330	2,318	(12)	0.3	60	19
		CD Roadway On-Ramp	112	650	2	2,146	2,046	(100)	2.2	60	17	2,330	2,315	(15)	0.3	60	19
	CD Roadway On-Ramp		189	1,699	2	1,537	1,523	(14)	0.4	48	16	1,670	1,679	9	0.2	47	18
	CD Roadway On-Ramp		146	1,203	3	3,683	3,569	(114)	1.9	59	20	4,000	3,996	(4)	0.1	59	23
		Nob Hill Boulevard Off-Ramp	145	1,813	3	3,683	3,567	(116)	1.9	60	20	4,000	3,997	(3)	0.0	59	23
	Nob Hill Boulevard Off-Ramp		53	980	1	801	775	(26)	0.9	52	15	870	870	(0)	0.0	51	17
	Nob Hill Boulevard Off-Ramp		144	1,385	2	2,882	2,786	(96)	1.8	60	23	3,130	3,124	(6)	0.1	60	26
		Nob Hill Boulevard On-Ramp	147	1,414	2	2,882	2,787	(95)	1.8	60	23	3,130	3,122	(8)	0.1	60	26
	Nob Hill Boulevard On-Ramp		116	352	1	405	388	(17)	0.9	48	8	440	429	(11)	0.5	48	9
	Nob Hill Boulevard On-Ramp		115	1,070	3	3,287	3,178	(109)	1.9	59	18	3,570	3,548	(22)	0.4	59	20
		End	171	1,072	3	3,287	3,184	(103)	1.8	59	18	3,570	3,548	(22)	0.4	59	20
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	948	981	33	1.1	53	19	1,030	1,058	28	0.9	52	20
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	690	689	(1)	0.0	44	16	750	742	(8)	0.3	44	17
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	258	290	32	1.9	44	7	280	312	32	1.9	45	7
		E-W Corridor On-Ramp	194	1,399	1	258	290	32	1.9	44	7	280	313	33	1.9	44	7
	E-W Corridor On-Ramp		187	777	1	644	619	(25)	1.0	37	17	700	693	(7)	0.3	37	19
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	902	905	3	0.1	44	21	980	1,006	26	0.8	43	23
	Yakima Avenue Off-Ramp		10	624	1	341	341	0	0.0	34	10	370	368	(2)	0.1	34	11
	Yakima Avenue Off-Ramp		195	1,500	1	561	564	3	0.1	44	13	610	639	29	1.1	44	15
		Yakima Avenue / Fair Avenue On-Ramp	196	1,540	1	561	562	1	0.1	44	13	610	640	30	1.2	44	15
	Yakima Avenue / Fair Avenue On-Ramp		110	570	1	976	962	(14)	0.4	42	23	1,060	1,043	(17)	0.5	42	25
	Yakima Avenue / Fair Avenue On-Ramp	End of C-D Roadway	189	1,699	2	1,537	1,523	(14)	0.4	48	16	1,670	1,679	9	0.2	47	18

I-82, Yakima Avenue IJR
2035 CD Option - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	3:30 - 4:00 PM Summary						4:00 - 5:00 PM Summary					
						Volume				Speed (mph)	Density (vplpm)	Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic			Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Westbound Mainline	Start		164	1,750	2	3,471	3,464	(7)	0.1	57	31	3,870	3,891	21	0.3	55	35
			165	1,750	2	3,471	3,460	(11)	0.2	57	**30**	3,870	3,887	17	0.3	57	34
			166	1,750	2	3,471	3,451	(20)	0.3	57	**30**	3,870	3,886	16	0.3	57	34
		Nob Hill Boulevard Off-Ramp	167	1,750	2	3,471	3,432	(39)	0.7	58	**29**	3,870	3,868	(2)	0.0	57	**34**
	Nob Hill Boulevard Off-Ramp		47	546	1	565	533	(32)	1.4	53	10	630	634	4	0.2	53	12
	Nob Hill Boulevard Off-Ramp		148	1,154	2	2,906	2,911	5	0.1	60	24	3,240	3,247	7	0.1	59	27
			149	1,230	2	2,906	2,908	2	0.0	60	24	3,240	3,244	4	0.1	60	27
		Nob Hill Boulevard On-Ramp	114	427	2	2,906	2,901	(5)	0.1	59	25	3,240	3,233	(7)	0.1	59	28
	Nob Hill Boulevard On-Ramp		45	1,641	2	950	915	(35)	1.1	46	10	1,060	1,007	(53)	1.7	46	11
	Nob Hill Boulevard On-Ramp		168	741	3	3,856	3,861	5	0.1	60	22	4,300	4,285	(15)	0.2	59	24
			150	1,169	3	3,856	3,859	3	0.0	60	21	4,300	4,288	(12)	0.2	60	24
			113	1,519	3	3,856	3,852	(4)	0.1	60	21	4,300	4,288	(12)	0.2	60	24
		CD Roadway Off-Ramp	152	684	3	3,856	3,833	(23)	0.4	60	21	4,300	4,273	(27)	0.4	59	24
	CD Roadway Off-Ramp		183	698	2	1,497	1,506	9	0.2	56	13	1,670	1,666	(4)	0.1	56	15
	CD Roadway Off-Ramp		151	2,067	2	2,359	2,334	(25)	0.5	60	19	2,630	2,616	(14)	0.3	60	22
			153	1,334	2	2,359	2,335	(24)	0.5	60	19	2,630	2,614	(16)	0.3	60	22
			105	1,663	2	2,359	2,336	(23)	0.5	60	19	2,630	2,612	(18)	0.4	60	22
			154	1,598	2	2,359	2,333	(26)	0.5	60	19	2,630	2,610	(20)	0.4	60	22
		CD Roadway On-Ramp	155	1,235	2	2,359	2,325	(34)	0.7	60	19	2,630	2,613	(17)	0.3	60	22
	CD Roadway On-Ramp		200	1,367	1	1,067	1,066	(1)	0.0	55	19	1,190	1,196	6	0.2	55	22
	CD Roadway On-Ramp	US 12 / 1st Street Off-Ramp	156	1,950	3	3,426	3,388	(38)	0.6	59	19	3,820	3,805	(15)	0.2	57	22
	US 12 / 1st Street Off-Ramp		102	832	1	1,390	1,375	(15)	0.4	52	26	1,550	1,542	(8)	0.2	52	**30**
	US 12 / 1st Street Off-Ramp		136	1,801	2	2,036	2,012	(24)	0.5	60	17	2,270	2,260	(10)	0.2	59	19
		US 12 / 1st Street On-Ramp	137	1,841	2	2,036	2,009	(27)	0.6	60	17	2,270	2,257	(13)	0.3	60	19
	US 12 / 1st Street On-Ramp		97	1,173	1	1,246	1,262	16	0.5	44	**29**	1,390	1,385	(5)	0.1	43	**32**
	US 12 / 1st Street On-Ramp	End	98	1,881	3	3,282	3,265	(17)	0.3	60	18	3,660	3,643	(17)	0.3	60	20
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	698	2	1,497	1,506	9	0.2	56	13	1,670	1,666	(4)	0.1	56	15
	Yakima Avenue Off-Ramp		106	464	1	1,058	1,063	5	0.2	44	24	1,180	1,186	6	0.2	43	27
	Yakima Avenue Off-Ramp		190	1,500	1	439	445	6	0.3	45	10	490	483	(7)	0.3	45	11
		Yakima Avenue On-Ramp	198	1,490	1	439	454	15	0.7	44	10	490	489	(1)	0.0	43	11
	Yakima Avenue On-Ramp		202	855	1	502	502	0	0.0	39	13	560	561	1	0.0	38	15
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	941	945	4	0.1	43	22	1,050	1,038	(12)	0.4	43	24
	E-W Corridor Off-Ramp		188	573	1	556	553	(3)	0.1	40	14	620	598	(22)	0.9	40	15
	E-W Corridor Off-Ramp		199	1,258	1	385	388	3	0.1	44	9	430	437	7	0.3	44	10
		E-W Corridor On-Ramp	201	1,258	1	385	390	5	0.3	43	9	430	441	11	0.5	43	10
	E-W Corridor On-Ramp		182	912	1	682	680	(2)	0.1	37	19	760	759	(1)	0.0	33	23
	E-W Corridor On-Ramp	End of C-D Roadway	200	1,367	1	1,067	1,066	(1)	0.0	55	19	1,190	1,196	6	0.2	55	22

I-82, Yakima Avenue IJR
2035 CD Option - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	5:00 - 5:30 PM Summary					
						Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Eastbound Mainline	Start		87	1,746	3	3,417	3,417	0	0.0	58	20
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,417	3,411	(6)	0.1	57	20
	US 12 / 1st Street Off-Ramp		90	858	2	1,491	1,481	(10)	0.3	48	15
	US 12 / 1st Street Off-Ramp		91	872	2	1,926	1,924	(2)	0.0	58	17
			117	401	2	1,926	1,924	(2)	0.0	58	17
		US 12 / 1st Street On-Ramp	118	1,992	2	1,926	1,927	1	0.0	59	16
	US 12 / 1st Street On-Ramp		99	549	2	1,392	1,405	13	0.3	57	12
			10114	209	1	1,392	1,409	17	0.5	57	25
	US 12 / 1st Street On-Ramp		100	655	3	3,318	3,318	0	0.0	60	19
		CD Roadway Off-Ramp	101	1,893	3	3,318	3,337	19	0.3	60	19
	CD Roadway Off-Ramp		26	1,135	1	1,017	1,025	8	0.3	53	20
	CD Roadway Off-Ramp		139	1,274	2	2,301	2,311	10	0.2	60	19
			140	1,553	2	2,301	2,314	13	0.3	60	19
			138	1,289	2	2,301	2,316	15	0.3	60	19
			142	1,290	2	2,301	2,320	19	0.4	60	19
			141	1,385	2	2,301	2,319	18	0.4	60	19
			143	1,511	2	2,301	2,320	19	0.4	60	19
			111	1,102	2	2,301	2,317	16	0.3	60	19
		CD Roadway On-Ramp	112	650	2	2,301	2,316	15	0.3	60	19
	CD Roadway On-Ramp		189	1,699	2	1,649	1,675	26	0.6	46	18
	CD Roadway On-Ramp		146	1,203	3	3,950	4,000	50	0.8	58	23
		Nob Hill Boulevard Off-Ramp	145	1,813	3	3,950	4,004	54	0.9	59	23
	Nob Hill Boulevard Off-Ramp		53	980	1	859	863	4	0.1	51	17
	Nob Hill Boulevard Off-Ramp		144	1,385	2	3,091	3,138	47	0.8	60	26
		Nob Hill Boulevard On-Ramp	147	1,414	2	3,091	3,135	44	0.8	60	26
	Nob Hill Boulevard On-Ramp		116	352	1	434	443	9	0.4	48	9
	Nob Hill Boulevard On-Ramp		115	1,070	3	3,525	3,569	44	0.7	59	20
		End	171	1,072	3	3,525	3,559	34	0.6	59	20
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	1,017	1,025	8	0.3	53	20
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	740	715	(25)	0.9	44	16
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	277	308	31	1.8	45	7
		E-W Corridor On-Ramp	194	1,399	1	277	308	31	1.8	44	7
	E-W Corridor On-Ramp		187	777	1	691	688	(3)	0.1	36	19
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	968	996	28	0.9	43	23
	Yakima Avenue Off-Ramp		10	624	1	365	371	6	0.3	34	11
	Yakima Avenue Off-Ramp		195	1,500	1	603	626	23	0.9	44	14
		Yakima Avenue / Fair Avenue On-Ramp	196	1,540	1	603	624	21	0.8	44	14
	Yakima Avenue / Fair Avenue On-Ramp		110	570	1	1,046	1,050	4	0.1	42	25
	Yakima Avenue / Fair Avenue On-Ramp	End of C-D Roadway	189	1,699	2	1,649	1,675	26	0.6	46	18

I-82, Yakima Avenue IJR
2035 CD Option - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	5:00 - 5:30 PM Summary					
						Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Westbound Mainline	Start		164	1,750	2	3,724	3,723	(1)	0.0	56	33
			165	1,750	2	3,724	3,730	6	0.1	57	**33**
			166	1,750	2	3,724	3,732	8	0.1	57	**33**
		Nob Hill Boulevard Off-Ramp	167	1,750	2	3,724	3,720	(4)	0.1	58	**32**
	Nob Hill Boulevard Off-Ramp		47	546	1	606	605	(1)	0.1	54	11
	Nob Hill Boulevard Off-Ramp		148	1,154	2	3,118	3,131	13	0.2	60	26
			149	1,230	2	3,118	3,130	12	0.2	60	26
		Nob Hill Boulevard On-Ramp	114	427	2	3,118	3,124	6	0.1	59	26
	Nob Hill Boulevard On-Ramp		45	1,641	2	1,020	991	(29)	0.9	46	11
	Nob Hill Boulevard On-Ramp		168	741	3	4,138	4,155	17	0.3	59	23
			150	1,169	3	4,138	4,160	22	0.3	60	23
			113	1,519	3	4,138	4,159	21	0.3	60	23
		CD Roadway Off-Ramp	152	684	3	4,138	4,150	12	0.2	60	23
	CD Roadway Off-Ramp		183	698	2	1,607	1,617	10	0.3	56	14
	CD Roadway Off-Ramp		151	2,067	2	2,531	2,546	15	0.3	60	21
			153	1,334	2	2,531	2,547	16	0.3	60	21
			105	1,663	2	2,531	2,548	17	0.3	60	21
			154	1,598	2	2,531	2,554	23	0.5	60	21
		CD Roadway On-Ramp	155	1,235	2	2,531	2,554	23	0.5	60	21
	CD Roadway On-Ramp		200	1,367	1	1,145	1,156	11	0.3	55	21
	CD Roadway On-Ramp	US 12 / 1st Street Off-Ramp	156	1,950	3	3,676	3,716	40	0.7	58	22
	US 12 / 1st Street Off-Ramp		102	832	1	1,492	1,485	(7)	0.2	52	**28**
	US 12 / 1st Street Off-Ramp		136	1,801	2	2,184	2,241	57	1.2	60	19
		US 12 / 1st Street On-Ramp	137	1,841	2	2,184	2,243	59	1.3	60	19
	US 12 / 1st Street On-Ramp		97	1,173	1	1,338	1,315	(23)	0.6	43	**30**
	US 12 / 1st Street On-Ramp	End	98	1,881	3	3,522	3,561	39	0.7	60	20
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	698	2	1,607	1,617	10	0.3	56	14
	Yakima Avenue Off-Ramp		106	464	1	1,136	1,155	19	0.6	43	27
	Yakima Avenue Off-Ramp		190	1,500	1	471	465	(6)	0.3	45	10
		Yakima Avenue On-Ramp	198	1,490	1	471	470	(1)	0.0	44	11
	Yakima Avenue On-Ramp		202	855	1	539	525	(14)	0.6	39	14
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	1,010	988	(22)	0.7	43	23
	E-W Corridor Off-Ramp		188	573	1	597	573	(24)	1.0	40	14
	E-W Corridor Off-Ramp		199	1,258	1	413	414	1	0.1	44	9
		E-W Corridor On-Ramp	201	1,258	1	413	419	6	0.3	43	10
	E-W Corridor On-Ramp		182	912	1	732	740	8	0.3	34	22
	E-W Corridor On-Ramp	End of C-D Roadway	200	1,367	1	1,145	1,156	11	0.3	55	21

I-82, Yakima Avenue IJR
2035 CD Option - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	3:30 - 3:45 Summary			3:45 - 4:00 Summary			4:00 - 4:15 Summary			4:15 - 4:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Eastbound Mainline	Start		87	1,746	3	3,113	58	18	3,256	58	19	3,354	58	19	3,505	58	20
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,097	58	18	3,248	58	19	3,343	56	20	3,497	56	21
	US 12 / 1st Street Off-Ramp		90	858	2	1,378	49	14	1,398	48	14	1,458	48	15	1,501	47	16
	US 12 / 1st Street Off-Ramp		91	872	2	1,713	58	15	1,844	58	16	1,875	58	16	1,989	58	17
			117	401	2	1,711	58	15	1,843	58	16	1,874	58	16	1,988	58	17
		US 12 / 1st Street On-Ramp	118	1,992	2	1,711	59	14	1,838	59	15	1,879	59	16	1,987	59	17
	US 12 / 1st Street On-Ramp		99	549	2	1,225	58	11	1,303	58	11	1,335	58	11	1,380	57	12
			10114	209	1	1,227	58	21	1,308	58	22	1,335	58	23	1,383	58	24
	US 12 / 1st Street On-Ramp		100	655	3	2,920	60	16	3,125	60	17	3,198	60	18	3,347	60	19
		CD Roadway Off-Ramp	101	1,893	3	2,928	60	16	3,140	60	17	3,216	60	18	3,353	60	19
	CD Roadway Off-Ramp		26	1,135	1	921	53	17	1,042	52	20	1,035	53	20	1,043	52	20
	CD Roadway Off-Ramp		139	1,274	2	2,009	61	17	2,092	60	17	2,182	60	18	2,300	60	19
			140	1,553	2	2,010	61	17	2,089	60	17	2,183	60	18	2,295	60	19
			138	1,289	2	2,008	61	17	2,088	60	17	2,184	60	18	2,286	60	19
			142	1,290	2	2,010	60	17	2,087	60	17	2,185	60	18	2,281	60	19
			141	1,385	2	2,008	60	17	2,088	60	17	2,184	60	18	2,277	60	19
			143	1,511	2	2,003	60	17	2,094	60	17	2,181	60	18	2,273	60	19
			111	1,102	2	1,999	60	17	2,090	60	17	2,184	60	18	2,270	60	19
		CD Roadway On-Ramp	112	650	2	2,003	60	17	2,090	60	17	2,178	60	18	2,273	60	19
	CD Roadway On-Ramp		189	1,699	2	1,508	48	16	1,539	47	16	1,593	48	17	1,663	47	18
	CD Roadway On-Ramp		146	1,203	3	3,520	59	20	3,618	59	20	3,770	59	21	3,943	58	22
		Nob Hill Boulevard Off-Ramp	145	1,813	3	3,525	60	20	3,609	60	20	3,776	59	21	3,944	59	22
	Nob Hill Boulevard Off-Ramp		53	980	1	751	52	15	800	52	16	845	51	16	862	51	17
	Nob Hill Boulevard Off-Ramp		144	1,385	2	2,765	60	23	2,808	60	23	2,930	60	25	3,075	60	26
		Nob Hill Boulevard On-Ramp	147	1,414	2	2,760	60	23	2,813	60	23	2,930	60	24	3,063	60	26
	Nob Hill Boulevard On-Ramp		116	352	1	376	48	8	400	48	8	405	49	8	432	48	9
	Nob Hill Boulevard On-Ramp		115	1,070	3	3,138	60	18	3,217	59	18	3,325	59	19	3,482	59	20
		End	171	1,072	3	3,153	59	18	3,215	59	18	3,335	59	19	3,457	59	20
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	921	53	17	1,042	52	20	1,035	53	20	1,043	52	20
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	642	44	15	736	44	17	739	44	17	724	44	16
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	279	44	6	301	45	7	292	45	7	314	45	7
		E-W Corridor On-Ramp	194	1,399	1	280	44	6	300	44	7	290	44	7	315	44	7
	E-W Corridor On-Ramp		187	777	1	601	38	16	637	37	17	661	37	18	699	36	19
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	876	44	20	933	44	21	953	44	22	1,014	43	23
	Yakima Avenue Off-Ramp		10	624	1	332	34	10	350	35	10	338	35	10	373	34	11
	Yakima Avenue Off-Ramp		195	1,500	1	547	44	12	580	44	13	617	44	14	640	44	15
		Yakima Avenue / Fair Avenue On-Ramp	196	1,540	1	547	44	13	578	44	13	621	44	14	638	44	15
	Yakima Avenue / Fair Avenue On-Ramp		110	570	1	957	42	23	967	42	23	974	42	23	1,035	42	25
	Yakima Avenue / Fair Avenue On-Ramp	End of C-D Roadway	189	1,699	2	1,508	48	16	1,539	47	16	1,593	48	17	1,663	47	18

I-82, Yakima Avenue IJR
2035 CD Option - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	3:30 - 3:45 Summary			3:45 - 4:00 Summary			4:00 - 4:15 Summary			4:15 - 4:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Westbound Mainline	Start		164	1,750	2	3,372	57	30	3,556	57	31	3,712	56	33	3,895	55	35
			165	1,750	2	3,372	57	**29**	3,549	57	**31**	3,705	57	**32**	3,887	57	34
			166	1,750	2	3,360	57	**29**	3,542	57	**31**	3,704	57	**33**	3,881	57	34
		Nob Hill Boulevard Off-Ramp	167	1,750	2	3,341	58	**29**	3,524	58	**30**	3,685	58	**32**	3,855	56	34
	Nob Hill Boulevard Off-Ramp		47	546	1	529	53	10	538	54	10	606	53	11	641	53	12
	Nob Hill Boulevard Off-Ramp		148	1,154	2	2,823	60	24	2,998	60	25	3,088	59	26	3,225	59	27
			149	1,230	2	2,826	60	24	2,990	60	25	3,083	60	26	3,219	60	27
		Nob Hill Boulevard On-Ramp	114	427	2	2,817	59	24	2,984	59	25	3,074	59	26	3,207	59	27
	Nob Hill Boulevard On-Ramp		45	1,641	2	899	46	10	931	46	10	958	46	10	1,019	46	11
	Nob Hill Boulevard On-Ramp		168	741	3	3,766	60	21	3,956	60	22	4,076	59	23	4,265	59	24
			150	1,169	3	3,762	60	21	3,956	60	22	4,085	60	23	4,263	60	24
			113	1,519	3	3,747	60	21	3,957	60	22	4,091	60	23	4,259	60	24
		CD Roadway Off-Ramp	152	684	3	3,731	60	21	3,935	60	22	4,086	59	23	4,250	59	24
	CD Roadway Off-Ramp		183	698	2	1,446	57	13	1,566	56	14	1,566	56	14	1,710	56	15
	CD Roadway Off-Ramp		151	2,067	2	2,294	60	19	2,374	60	20	2,521	60	21	2,551	60	21
			153	1,334	2	2,295	60	19	2,376	60	20	2,512	60	21	2,552	60	21
			105	1,663	2	2,298	60	19	2,375	60	20	2,511	60	21	2,537	60	21
			154	1,598	2	2,299	60	19	2,368	60	20	2,507	60	21	2,539	60	21
		CD Roadway On-Ramp	155	1,235	2	2,298	60	19	2,352	60	20	2,507	60	21	2,545	60	21
	CD Roadway On-Ramp		200	1,367	1	1,011	55	18	1,121	55	20	1,143	55	21	1,166	55	21
	CD Roadway On-Ramp	US 12 / 1st Street Off-Ramp	156	1,950	3	3,308	59	19	3,469	58	20	3,640	57	21	3,710	57	22
	US 12 / 1st Street Off-Ramp		102	832	1	1,348	52	26	1,402	52	27	1,490	52	**29**	1,530	52	**29**
	US 12 / 1st Street Off-Ramp		136	1,801	2	1,962	60	16	2,062	60	17	2,147	60	18	2,184	60	18
		US 12 / 1st Street On-Ramp	137	1,841	2	1,955	60	16	2,063	60	17	2,146	60	18	2,177	60	18
	US 12 / 1st Street On-Ramp		97	1,173	1	1,219	44	28	1,305	43	**30**	1,345	44	**31**	1,390	43	**32**
	US 12 / 1st Street On-Ramp	End	98	1,881	3	3,164	60	18	3,366	60	19	3,493	60	20	3,569	60	20
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	698	2	1,446	57	13	1,566	56	14	1,566	56	14	1,710	56	15
	Yakima Avenue Off-Ramp		106	464	1	1,016	44	23	1,111	44	25	1,110	44	26	1,231	43	**29**
	Yakima Avenue Off-Ramp		190	1,500	1	436	45	10	455	45	10	461	45	10	480	45	11
		Yakima Avenue On-Ramp	198	1,490	1	446	44	10	462	43	11	467	44	11	486	44	11
	Yakima Avenue On-Ramp		202	855	1	486	39	12	519	39	13	538	38	14	543	38	14
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	920	43	21	969	43	23	993	43	23	1,020	43	24
	E-W Corridor Off-Ramp		188	573	1	543	40	13	562	40	14	584	40	15	587	40	15
	E-W Corridor Off-Ramp		199	1,258	1	371	44	8	405	44	9	408	44	9	425	44	10
		E-W Corridor On-Ramp	201	1,258	1	372	43	9	408	43	9	410	43	9	429	43	10
	E-W Corridor On-Ramp		182	912	1	641	37	17	719	36	20	735	34	22	742	34	22
	E-W Corridor On-Ramp	End of C-D Roadway	200	1,367	1	1,011	55	18	1,121	55	20	1,143	55	21	1,166	55	21

I-82, Yakima Avenue IJR
2035 CD Option - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

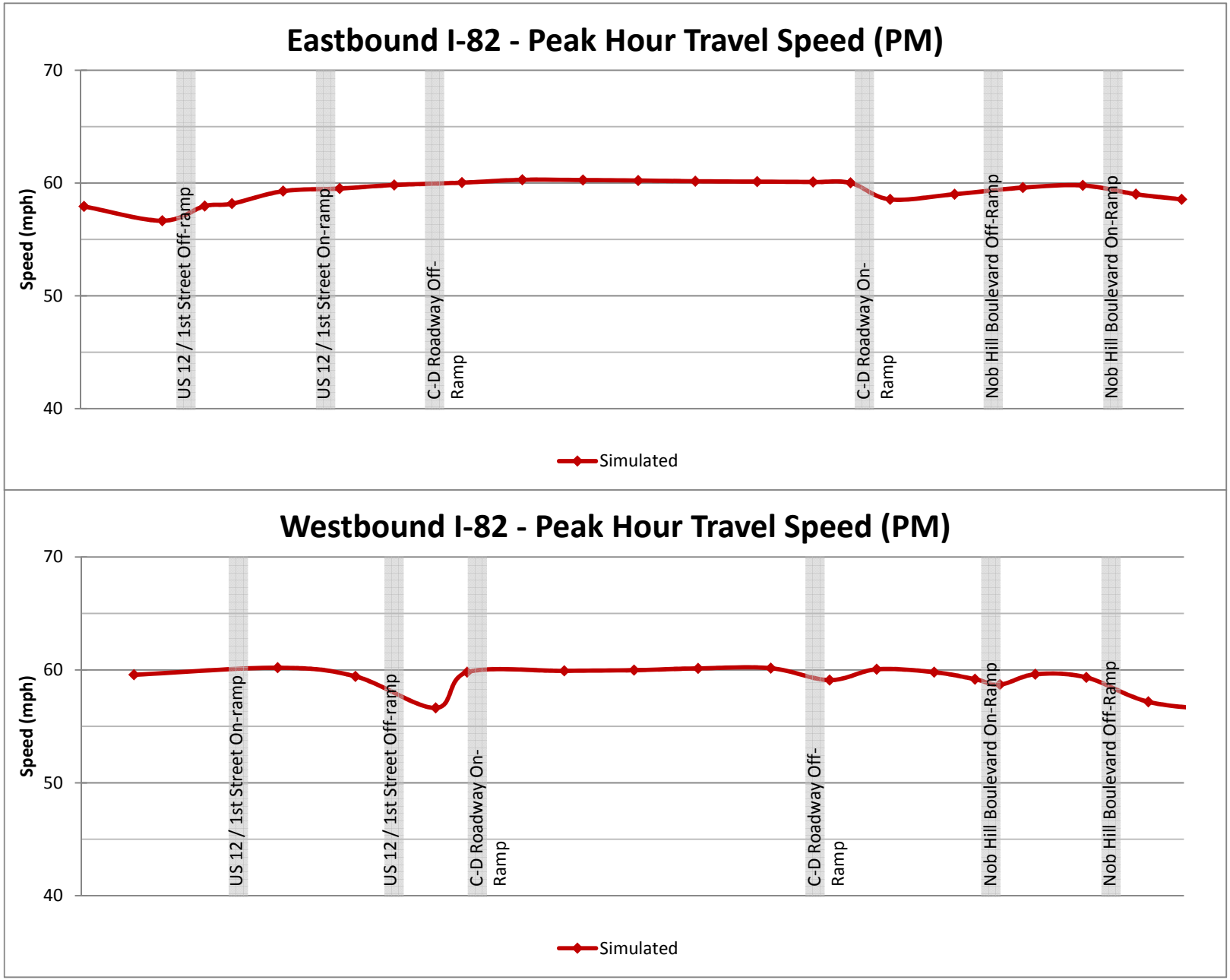
	Location		Link	Length (ft)	Number of Lanes	4:30 - 4:45 Summary			4:45 - 5:00 Summary			5:00 - 5:15 Summary			5:15 - 5:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Eastbound Mainline	Start		87	1,746	3	3,663	58	21	3,484	58	20	3,486	58	20	3,349	58	19
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,656	57	21	3,477	57	20	3,478	57	20	3,344	57	20
	US 12 / 1st Street Off-Ramp		90	858	2	1,618	48	17	1,462	48	15	1,500	48	16	1,462	48	15
	US 12 / 1st Street Off-Ramp		91	872	2	2,031	58	18	2,008	58	17	1,973	58	17	1,875	58	16
			117	401	2	2,029	58	17	2,012	58	17	1,974	58	17	1,874	58	16
		US 12 / 1st Street On-Ramp	118	1,992	2	2,026	59	17	2,017	59	17	1,974	59	17	1,881	59	16
	US 12 / 1st Street On-Ramp		99	549	2	1,530	55	14	1,416	55	13	1,415	57	12	1,394	56	12
			10114	209	1	1,532	56	27	1,416	56	25	1,419	58	25	1,399	57	24
	US 12 / 1st Street On-Ramp		100	655	3	3,538	59	20	3,418	59	19	3,374	60	19	3,263	60	18
		CD Roadway Off-Ramp	101	1,893	3	3,545	59	20	3,436	60	19	3,395	60	19	3,279	60	18
	CD Roadway Off-Ramp		26	1,135	1	1,118	52	21	1,037	53	20	1,041	52	20	1,010	53	19
	CD Roadway Off-Ramp		139	1,274	2	2,414	59	20	2,414	60	20	2,352	60	20	2,270	60	19
			140	1,553	2	2,408	60	20	2,413	60	20	2,350	60	19	2,277	60	19
			138	1,289	2	2,408	60	20	2,413	60	20	2,350	60	19	2,283	60	19
			142	1,290	2	2,408	60	20	2,411	60	20	2,352	60	20	2,287	60	19
			141	1,385	2	2,402	60	20	2,419	60	20	2,351	60	20	2,287	60	19
			143	1,511	2	2,407	60	20	2,412	60	20	2,357	60	20	2,284	60	19
			111	1,102	2	2,408	60	20	2,409	60	20	2,355	60	20	2,280	60	19
		CD Roadway On-Ramp	112	650	2	2,404	60	20	2,405	60	20	2,361	60	20	2,271	60	19
	CD Roadway On-Ramp		189	1,699	2	1,741	47	18	1,719	47	18	1,700	46	18	1,649	47	18
	CD Roadway On-Ramp		146	1,203	3	4,145	58	24	4,126	58	24	4,069	58	23	3,932	58	22
		Nob Hill Boulevard Off-Ramp	145	1,813	3	4,135	59	23	4,133	59	24	4,068	59	23	3,940	59	22
	Nob Hill Boulevard Off-Ramp		53	980	1	897	51	18	875	51	17	883	51	17	842	51	16
	Nob Hill Boulevard Off-Ramp		144	1,385	2	3,231	60	27	3,263	60	27	3,173	60	27	3,102	59	26
		Nob Hill Boulevard On-Ramp	147	1,414	2	3,231	60	27	3,265	60	27	3,167	60	26	3,104	60	26
	Nob Hill Boulevard On-Ramp		116	352	1	453	48	9	425	48	9	451	48	9	435	48	9
	Nob Hill Boulevard On-Ramp		115	1,070	3	3,692	59	21	3,691	59	21	3,614	59	20	3,523	59	20
		End	171	1,072	3	3,701	58	21	3,700	58	21	3,613	59	21	3,506	59	20
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	1,118	52	21	1,037	53	20	1,041	52	20	1,010	53	19
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	790	44	18	716	44	16	726	44	17	705	44	16
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	321	45	7	323	45	7	311	45	7	306	45	7
		E-W Corridor On-Ramp	194	1,399	1	321	44	7	325	44	7	308	44	7	307	44	7
	E-W Corridor On-Ramp		187	777	1	710	36	20	700	37	19	705	36	20	671	37	18
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	1,029	43	24	1,027	43	24	1,010	43	23	981	44	23
	Yakima Avenue Off-Ramp		10	624	1	378	34	11	382	34	11	378	34	11	364	34	11
	Yakima Avenue Off-Ramp		195	1,500	1	650	44	15	647	44	15	636	44	15	616	44	14
		Yakima Avenue / Fair Avenue On-Ramp	196	1,540	1	648	44	15	652	44	15	633	43	15	614	44	14
	Yakima Avenue / Fair Avenue On-Ramp		110	570	1	1,096	42	26	1,067	42	26	1,068	41	26	1,031	42	25
	Yakima Avenue / Fair Avenue On-Ramp	End of C-D Roadway	189	1,699	2	1,741	47	18	1,719	47	18	1,700	46	18	1,649	47	18

I-82, Yakima Avenue IJR
2035 CD Option - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	4:30 - 4:45 Summary			4:45 - 5:00 Summary			5:00 - 5:15 Summary			5:15 - 5:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Westbound Mainline	Start		164	1,750	2	4,091	54	38	3,865	55	35	3,817	56	34	3,630	56	32
			165	1,750	2	4,089	56	**36**	3,868	57	34	3,820	57	**34**	3,640	57	**32**
			166	1,750	2	4,084	56	**36**	3,875	57	34	3,824	57	**34**	3,640	57	**32**
		Nob Hill Boulevard Off-Ramp	167	1,750	2	4,066	57	**36**	3,867	58	**34**	3,811	58	**33**	3,630	58	**31**
	Nob Hill Boulevard Off-Ramp		47	546	1	663	53	12	627	53	12	625	53	12	584	54	11
	Nob Hill Boulevard Off-Ramp		148	1,154	2	3,419	59	**29**	3,258	60	27	3,196	60	27	3,066	60	26
			149	1,230	2	3,416	59	**29**	3,259	60	27	3,188	60	27	3,072	60	26
		Nob Hill Boulevard On-Ramp	114	427	2	3,398	58	**29**	3,251	59	28	3,183	59	27	3,065	59	26
	Nob Hill Boulevard On-Ramp		45	1,641	2	1,043	46	11	1,007	46	11	980	46	11	1,002	46	11
	Nob Hill Boulevard On-Ramp		168	741	3	4,494	59	25	4,307	59	24	4,208	59	24	4,101	59	23
			150	1,169	3	4,490	60	25	4,315	60	24	4,211	60	23	4,110	60	23
			113	1,519	3	4,478	60	25	4,325	60	24	4,214	60	23	4,104	60	23
		CD Roadway Off-Ramp	152	684	3	4,451	58	26	4,307	59	24	4,209	60	23	4,091	60	23
	CD Roadway Off-Ramp		183	698	2	1,717	55	16	1,670	55	15	1,631	56	15	1,603	56	14
	CD Roadway Off-Ramp		151	2,067	2	2,732	60	23	2,659	60	22	2,578	60	21	2,513	60	21
			153	1,334	2	2,727	60	23	2,665	60	22	2,573	60	21	2,522	60	21
			105	1,663	2	2,734	60	23	2,666	60	22	2,589	60	22	2,508	60	21
			154	1,598	2	2,733	60	23	2,662	60	22	2,597	60	22	2,511	60	21
		CD Roadway On-Ramp	155	1,235	2	2,732	60	23	2,666	60	22	2,593	60	22	2,515	60	21
	CD Roadway On-Ramp		200	1,367	1	1,230	54	23	1,246	54	23	1,172	54	22	1,140	55	21
	CD Roadway On-Ramp	US 12 / 1st Street Off-Ramp	156	1,950	3	3,958	56	23	3,913	56	24	3,763	57	22	3,669	59	21
	US 12 / 1st Street Off-Ramp		102	832	1	1,580	52	**31**	1,566	52	**30**	1,507	52	**29**	1,463	52	28
	US 12 / 1st Street Off-Ramp		136	1,801	2	2,357	59	20	2,353	59	20	2,271	59	19	2,211	60	18
		US 12 / 1st Street On-Ramp	137	1,841	2	2,352	60	20	2,352	60	20	2,273	60	19	2,214	60	18
	US 12 / 1st Street On-Ramp		97	1,173	1	1,404	43	**33**	1,401	43	**32**	1,355	43	**31**	1,274	44	**29**
	US 12 / 1st Street On-Ramp	End	98	1,881	3	3,752	59	21	3,760	60	21	3,622	60	20	3,499	60	20
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	698	2	1,717	55	16	1,670	55	15	1,631	56	15	1,603	56	14
	Yakima Avenue Off-Ramp		106	464	1	1,203	43	28	1,201	43	28	1,155	44	27	1,155	43	27
	Yakima Avenue Off-Ramp		190	1,500	1	517	45	11	473	45	10	476	45	10	455	45	10
		Yakima Avenue On-Ramp	198	1,490	1	524	43	12	480	43	11	483	44	11	457	44	10
	Yakima Avenue On-Ramp		202	855	1	577	38	15	585	38	15	544	38	14	505	39	13
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	1,083	43	25	1,057	43	25	1,021	43	24	955	43	22
	E-W Corridor Off-Ramp		188	573	1	630	40	16	593	40	15	598	40	15	548	40	14
	E-W Corridor Off-Ramp		199	1,258	1	450	44	10	464	44	10	425	44	10	404	44	9
		E-W Corridor On-Ramp	201	1,258	1	454	43	10	472	43	11	429	44	10	409	43	9
	E-W Corridor On-Ramp		182	912	1	785	32	25	774	32	25	751	33	23	728	35	21
	E-W Corridor On-Ramp	End of C-D Roadway	200	1,367	1	1,230	54	23	1,246	54	23	1,172	54	22	1,140	55	21


Eastbound I-82 - Peak Hour Travel Speed (PM)
Speed (mph)
70
60
50
40
US 12 / 1st Street Off-ramp
US 12 / 1st Street On-ramp
C-D Roadway Off-Ramp
C-D Roadway On-Ramp
Nob Hill Boulevard Off-Ramp
Nob Hill Boulevard On-Ramp
Simulated
Westbound I-82 - Peak Hour Travel Speed (PM)
Speed (mph)
70
60
50
40
US 12 / 1st Street On-ramp
US 12 / 1st Street Off-ramp
C-D Roadway On-Ramp
C-D Roadway Off-Ramp
Nob Hill Boulevard On-Ramp
Nob Hill Boulevard Off-Ramp
Simulated

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - AM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

6:30 - 7:00 AM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Modeled Storage & Maximum Traffic Queuing (feet): Left Turn		Modeled Storage & Maximum Traffic Queuing (feet): Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	317	96	413	0	292	120	412	0	-25	24	-1	-	1.4	2.3	0.0	-	5	2	-	A	A	4	A	7	A	61	-	-	-	-
		WB Arterial	75	582	0	657	69	591	0	660	-6	9	0	3	0.7	0.4	-	0.1	6	3	-	A	A	-	3	A			61	400	61	-	-
		Off-Ramp	219	0	124	343	213	0	115	328	-6	0	-9	-15	0.4	-	0.8	0.8	25	-	3	C	-	A	17	B			-	Continuous	169	-	-
	WB Ramps (Signalized)	EB Arterial	46	490	0	536	49	454	0	503	3	-36	0	-33	0.4	1.7	-	1.4	3	4	-	A	A	-	4	A	6	A	68	400	68	-	-
		WB Arterial	0	460	108	568	0	468	95	563	0	8	-13	-5	-	0.4	1.3	0.2	-	4	2	-	A	A	4	A			68	-	-	-	-
		Off-Ramp	197	0	93	290	192	0	97	289	-5	0	4	-1	0.4	-	0.4	0.1	22	-	2	C	-	A	15	B			-	Continuous	122	-	-
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	279	0	279	0	277	0	277	0	-2	0	-2	-	0.1	-	0.1	-	6	-	-	A	-	6	A	6	A	73	-	-	-	-
		WB Arterial	0	170	0	170	0	160	0	160	0	-10	0	-10	-	0.8	-	0.8	-	6	-	-	A	-	6	A			56	-	-	-	-
		Off-Ramp	165	0	18	183	160	0	30	190	-5	0	12	7	0.4	-	2.4	0.5	6	-	3	A	-	A	6	A			-	500	66	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	422	97	519	0	418	95	513	0	-4	-2	-6	-	0.2	0.2	0.3	-	17	7	-	B	A	15	B	17	B	138	-	-	225	138
		WB Arterial	312	513	0	825	342	479	0	821	30	-34	0	-4	1.7	1.5	-	0.1	27	3	-	C	A	-	13	B			145	270	145	-	-
		Off-Ramp	269	0	41	310	265	0	49	314	-4	0	8	4	0.2	-	1.2	0.2	37	-	8	D	-	A	32	C			141	Continuous	141	225	-
	WB Ramps (Signalized)	EB Arterial	15	676	0	691	19	663	0	682	4	-13	0	-9	1.0	0.5	-	0.3	7	-	-	A	A	-	0	A	1	A	1	400	1	-	-
		WB Arterial	0	825	189	1014	0	823	176	999	0	-2	-13	-15	-	0.1	1.0	0.5	-	1	2	-	A	A	1	A			0	-	-	-	-
		Off-Ramp	0	0	154	154	0	0	150	150	0	0	-4	-4	-	-	0.3	0.3	-	-	1	-	-	A	1	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	402	41	443	0	389	57	446	0	-13	16	3	-	0.7	2.3	0.1	-	20	2	-	B	A	18	B	16	B	118	-	-	375	-
		WB Arterial	489	561	0	1050	456	566	0	1022	-33	5	0	-28	1.5	0.2	-	0.9	22	3	-	C	A	-	11	B			141	275	141	-	-
		Off-Ramp	302	0	147	449	304	0	132	436	2	0	-15	-13	0.1	-	1.3	0.6	32	-	2	C	-	A	23	C			142	Continuous	142	300	-
	WB Ramps (Signalized)	EB Arterial	44	660	0	704	43	660	0	703	-1	0	0	-1	0.2	-	-	0.0	34	1	-	C	A	-	3	A	5	A	47	275	47	-	-
		WB Arterial	0	1009	554	1563	0	1005	553	1558	0	-4	-1	-5	-	0.1	0.0	0.1	-	6	3	-	A	A	5	A			155	-	-	375	0
		Off-Ramp	41	0	150	191	33	0	155	188	-8	0	5	-3	1.3	-	0.4	0.2	35	-	1	C	-	A	7	A			45	Continuous	45	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

7:00 - 8:00 AM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Modeled Storage & Maximum Traffic Queuing (feet): Left Turn		Modeled Storage & Maximum Traffic Queuing (feet): Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	389	118	507	0	395	114	509	0	6	-4	2	-	0.3	0.4	0.1	-	6	3	-	A	A	5	A	8	A	75	-	-	-	-
		WB Arterial	92	976	0	1068	86	954	0	1040	-6	-22	0	-28	0.6	0.7	-	0.9	8	4	-	A	A	-	4	A			83	400	83	-	-
		Off-Ramp	268	0	152	420	284	0	138	422	16	0	-14	2	1.0	-	1.2	0.1	27	-	5	C	-	A	20	B			-	Continuous	210	-	-
	WB Ramps (Signalized)	EB Arterial	74	583	0	657	70	609	0	679	-4	26	0	22	0.5	1.1	-	0.9	5	5	-	A	A	-	5	A	8	A	86	400	86	-	-
		WB Arterial	0	749	176	925	0	724	175	899	0	-25	-1	-26	-	0.9	0.1	0.9	-	6	4	-	A	A	6	A			114	-	-	-	-
		Off-Ramp	319	0	151	470	319	0	126	445	0	0	-25	-25	-	-	2.1	1.2	23	-	3	C	-	A	17	B			-	Continuous	188	-	-
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	342	0	342	0	342	0	342	0	0	0	0	-	-	-	-	-	7	-	-	A	-	7	A	6	A	83	-	-	-	-
		WB Arterial	0	208	0	208	0	199	0	199	0	-9	0	-9	-	0.6	-	0.6	-	6	-	-	A	-	6	A			66	-	-	-	-
		Off-Ramp	202	0	22	224	190	0	33	223	-12	0	11	-1	0.9	-	2.1	0.1	6	-	4	A	-	A	6	A			-	500	83	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	518	119	637	0	532	104	636	0	14	-15	-1	-	0.6	1.4	0.0	-	19	7	-	B	A	17	B	17	B	170	-	-	225	170
		WB Arterial	381	951	0	1332	390	896	0	1286	9	-55	0	-46	0.5	1.8	-	1.3	30	5	-	C	A	-	13	B			161	270	161	-	-
		Off-Ramp	330	0	50	380	331	0	69	400	1	0	19	20	0.1	-	2.5	1.0	35	-	9	C	-	A	31	C			162	Continuous	162	225	-
	WB Ramps (Signalized)	EB Arterial	25	823	0	848	23	838	0	861	-2	15	0	13	0.4	0.5	-	0.4	14	1	-	B	A	-	1	A	2	A	0	400	0	-	-
		WB Arterial	0	1332	305	1637	0	1287	296	1583	0	-45	-9	-54	-	1.2	0.5	1.3	-	2	2	-	A	A	2	A			14	-	-	-	-
		Off-Ramp	0	0	250	250	0	0	236	236	0	0	-14	-14	-	-	0.9	0.9	-	-	1	-	-	A	1	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	493	50	543	0	483	61	544	0	-10	11	1	-	0.5	1.5	0.0	-	21	3	-	C	A	19	B	14	B	148	-	-	375	-
		WB Arterial	600	1105	0	1705	558	1108	0	1666	-42	3	0	-39	1.7	0.1	-	0.9	22	4	-	C	A	-	10	A			162	275	162	-	-
		Off-Ramp	370	0	180	550	382	0	164	546	12	0	-16	-4	0.6	-	1.2	0.2	31	-	4	C	-	A	23	C			156	Continuous	156	300	-
	WB Ramps (Signalized)	EB Arterial	71	792	0	863	85	779	0	864	14	-13	0	1	1.6	0.5	-	0.0	34	1	-	C	A	-	4	A	7	A	63	275	63	-	-
		WB Arterial	0	1638	899	2537	0	1616	840	2456	0	-22	-59	-81	-	0.5	2.0	1.6	-	9	6	-	A	A	8	A			247	-	-	375	2
		Off-Ramp	67	0	243	310	57	0	237	294	-10	0	-6	-16	1.3	-	0.4	0.9	36	-	1	D	-	A	8	A			57	Continuous	57	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

8:00 - 8:30 AM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Modeled Storage & Maximum Traffic Queuing (feet): Left Turn		Modeled Storage & Maximum Traffic Queuing (feet): Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	320	97	417	0	327	88	415	0	7	-9	-2	-	0.4	0.9	0.1	-	5	2	-	A	A	4	A	7	A	60	-	-	-	-
		WB Arterial	76	891	0	967	87	907	0	994	11	16	0	27	1.2	0.5	-	0.9	7	4	-	A	A	-	4	A			77	400	77	-	-
		Off-Ramp	221	0	125	346	229	0	114	343	8	0	-11	-3	0.5	-	1.0	0.2	26	-	4	C	-	A	19	B			-	Continuous	185	-	-
	WB Ramps (Signalized)	EB Arterial	68	473	0	541	66	492	0	558	-2	19	0	17	0.2	0.9	-	0.7	4	5	-	A	A	-	5	A	8	A	80	400	80	-	-
		WB Arterial	0	677	159	836	0	683	152	835	0	6	-7	-1	-	0.2	0.6	0.0	-	5	3	-	A	A	5	A			110	-	-	-	-
		Off-Ramp	290	0	137	427	309	0	121	430	19	0	-16	3	1.1	-	1.4	0.1	23	-	3	C	-	A	17	B			-	Continuous	182	-	-
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	282	0	282	0	284	0	284	0	2	0	2	-	0.1	-	0.1	-	7	-	-	A	-	7	A	6	A	75	-	-	-	-
		WB Arterial	0	172	0	172	0	169	0	169	0	-3	0	-3	-	0.2	-	0.2	-	6	-	-	A	-	6	A			56	-	-	-	-
		Off-Ramp	167	0	18	185	171	0	32	203	4	0	14	18	0.3	-	2.8	1.3	6	-	4	A	-	A	6	A			-	500	81	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	427	98	525	0	436	88	524	0	9	-10	-1	-	0.4	1.0	0.0	-	18	7	-	B	A	16	B	15	B	138	-	-	225	138
		WB Arterial	314	896	0	1210	331	903	0	1234	17	7	0	24	0.9	0.2	-	0.7	29	4	-	C	A	-	11	B			140	270	140	-	-
		Off-Ramp	272	0	41	313	277	0	45	322	5	0	4	9	0.3	-	0.6	0.5	35	-	8	C	-	A	31	C			150	Continuous	150	225	-
	WB Ramps (Signalized)	EB Arterial	23	676	0	699	33	685	0	718	10	9	0	19	1.9	0.3	-	0.7	12	-	-	B	A	-	1	A	1	A	2	400	2	-	-
		WB Arterial	0	1210	277	1487	0	1233	269	1502	0	23	-8	15	-	0.7	0.5	0.4	-	1	2	-	A	A	1	A			15	-	-	-	-
		Off-Ramp	0	0	227	227	0	0	234	234	0	0	7	7	-	-	0.5	0.5	-	-	1	-	-	A	1	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	406	41	447	0	396	45	441	0	-10	4	-6	-	0.5	0.6	0.3	-	20	2	-	B	A	18	B	13	B	129	-	-	375	-
		WB Arterial	495	1055	0	1550	517	1062	0	1579	22	7	0	29	1.0	0.2	-	0.7	21	3	-	C	A	-	9	A			132	275	132	-	-
		Off-Ramp	305	0	148	453	325	0	145	470	20	0	-3	17	1.1	-	0.2	0.8	32	-	3	C	-	A	23	C			139	Continuous	139	300	-
	WB Ramps (Signalized)	EB Arterial	64	647	0	711	84	630	0	714	20	-17	0	3	2.3	0.7	-	0.1	35	1	-	C	A	-	5	A	7	A	58	275	58	-	-
		WB Arterial	0	1489	817	2306	0	1502	803	2305	0	13	-14	-1	-	0.3	0.5	0.0	-	9	6	-	A	A	8	A			241	-	-	375	10
		Off-Ramp	61	0	221	282	54	0	235	289	-7	0	14	7	0.9	-	0.9	0.4	36	-	1	D	-	A	8	A			59	Continuous	59	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - AM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

6:30 - 7:00 AM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	136	68	204	0	159	49	208	0	132	75	207	0	150	58	208	0	151	57	208	0	151	57	208	0	130	74	204
		WB Arterial	36	293	0	329	34	304	0	338	30	290	0	320	38	297	0	335	33	300	0	333	39	288	0	327	35	297	0	332
		Off-Ramp	117	0	60	177	105	0	44	149	107	0	60	167	100	0	45	145	105	0	53	158	92	0	63	155	112	0	65	177
	WB Ramps (Signalized)	EB Arterial	28	227	0	255	30	232	0	262	19	220	0	239	29	222	0	251	22	233	0	255	26	216	0	242	21	219	0	240
		WB Arterial	0	228	51	279	0	234	49	283	0	229	52	281	0	241	44	285	0	234	50	284	0	231	48	279	0	240	42	282
		Off-Ramp	98	0	57	155	105	0	43	148	89	0	45	134	94	0	47	141	98	0	34	132	95	0	45	140	91	0	44	135
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	137	0	137	0	140	0	140	0	139	0	139	0	139	0	139	0	140	0	140	0	141	0	141	0	136	0	136
		WB Arterial	0	78	0	78	0	73	0	73	0	77	0	77	0	85	0	85	0	82	0	82	0	81	0	81	0	85	0	85
		Off-Ramp	74	0	14	88	83	0	15	98	72	0	16	88	91	0	13	104	81	0	14	95	90	0	14	104	75	0	18	93
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	218	41	259	0	198	53	251	0	211	46	257	0	211	49	260	0	204	52	256	0	207	52	259	0	212	40	252
		WB Arterial	155	243	0	398	191	228	0	419	173	238	0	411	167	223	0	390	197	232	0	429	163	229	0	392	157	265	0	422
		Off-Ramp	134	0	26	160	139	0	26	165	131	0	18	149	125	0	25	150	137	0	24	161	128	0	26	154	137	0	28	165
	WB Ramps (Signalized)	EB Arterial	13	342	0	355	8	331	0	339	12	329	0	341	8	327	0	335	8	333	0	341	9	325	0	334	16	324	0	340
		WB Arterial	0	395	96	491	0	422	71	493	0	412	96	508	0	393	93	486	0	424	89	513	0	389	100	489	0	427	79	506
		Off-Ramp	0	0	64	64	0	0	79	79	0	0	82	82	0	0	69	69	0	0	55	55	0	0	76	76	0	0	91	91
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	196	31	227	0	187	32	219	0	200	23	223	0	184	35	219	0	196	28	224	0	195	32	227	0	207	24	231
		WB Arterial	228	273	0	501	214	289	0	503	217	291	0	508	216	289	0	505	250	276	0	526	240	302	0	542	226	275	0	501
		Off-Ramp	161	0	85	246	154	0	53	207	172	0	72	244	143	0	56	199	141	0	65	206	175	0	54	229	134	0	80	214
	WB Ramps (Signalized)	EB Arterial	25	342	0	367	21	326	0	347	22	354	0	376	20	310	0	330	11	331	0	342	19	351	0	370	21	330	0	351
		WB Arterial	0	498	271	769	0	501	286	787	0	499	272	771	0	489	280	769	0	519	268	787	0	524	252	776	0	490	291	781
		Off-Ramp	15	0	85	100	14	0	67	81	16	0	73	89	20	0	87	107	12	0	93	105	21	0	77	98	16	0	65	81

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables cc

7:00 - 8:00 AM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	398	113	511	0	403	108	511	0	394	115	509	0	395	112	507	0	394	113	507	0	393	111	504	0	402	108	510
		WB Arterial	80	961	0	1041	95	954	0	1049	83	949	0	1032	90	943	0	1033	76	982	0	1058	84	957	0	1041	83	944	0	1027
		Off-Ramp	264	0	128	392	296	0	146	442	280	0	133	413	294	0	150	444	270	0	128	398	307	0	157	464	295	0	130	425
	WB Ramps (Signalized)	EB Arterial	67	597	0	664	69	630	0	699	76	595	0	671	67	617	0	684	77	586	0	663	68	632	0	700	69	628	0	697
		WB Arterial	0	735	167	902	0	720	178	898	0	714	189	903	0	709	188	897	0	733	163	896	0	727	174	901	0	742	153	895
		Off-Ramp	308	0	132	440	328	0	118	446	322	0	135	457	328	0	118	446	327	0	121	448	323	0	130	453	293	0	124	417
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	345	0	345	0	343	0	343	0	342	0	342	0	340	0	340	0	344	0	344	0	338	0	338	0	345	0	345
		WB Arterial	0	204	0	204	0	201	0	201	0	198	0	198	0	198	0	198	0	199	0	199	0	205	0	205	0	191	0	191
		Off-Ramp	188	0	27	215	207	0	35	242	187	0	38	225	213	0	35	248	186	0	32	218	183	0	28	211	174	0	41	215
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	533	108	641	0	544	86	630	0	548	93	641	0	518	111	629	0	532	99	631	0	535	99	634	0	544	107	651
		WB Arterial	400	911	0	1311	376	919	0	1295	400	902	0	1302	397	880	0	1277	393	903	0	1296	372	891	0	1263	398	901	0	1299
		Off-Ramp	358	0	67	425	299	0	64	363	369	0	74	443	318	0	74	392	354	0	84	438	338	0	73	411	330	0	70	400
	WB Ramps (Signalized)	EB Arterial	23	866	0	889	23	816	0	839	19	889	0	908	27	808	0	835	22	867	0	889	24	849	0	873	21	851	0	872
		WB Arterial	0	1312	280	1592	0	1293	295	1588	0	1302	284	1586	0	1280	317	1597	0	1300	293	1593	0	1266	313	1579	0	1300	292	1592
		Off-Ramp	0	0	246	246	0	0	229	229	0	0	259	259	0	0	211	211	0	0	240	240	0	0	227	227	0	0	247	247
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	477	63	540	0	480	67	547	0	479	67	546	0	488	54	542	0	480	64	544	0	481	58	539	0	482	59	541
		WB Arterial	543	1131	0	1674	566	1110	0	1676	597	1089	0	1686	563	1106	0	1669	531	1128	0	1659	504	1104	0	1608	582	1088	0	1670
		Off-Ramp	371	0	148	519	401	0	168	569	393	0	151	544	399	0	174	573	369	0	170	539	384	0	162	546	398	0	173	571
	WB Ramps (Signalized)	EB Arterial	88	759	0	847	83	795	0	878	86	784	0	870	77	809	0	886	81	769	0	850	97	768	0	865	84	794	0	878
		WB Arterial	0	1603	866	2469	0	1607	841	2448	0	1632	827	2459	0	1629	838	2467	0	1610	849	2459	0	1557	895	2452	0	1630	817	2447
		Off-Ramp	65	0	231	296	69	0	238	307	57	0	245	302	60	0	250	310	61	0	204	265	56	0	241	297	43	0	254	297

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables cc

8:00 - 8:30 AM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	154	53	207	0	163	43	206	0	157	51	208	0	161	45	206	0	173	35	208	0	165	44	209	0	160	50	210
		WB Arterial	37	465	0	502	40	462	0	502	56	462	0	518	43	457	0	500	44	420	0	464	36	452	0	488	42	447	0	489
		Off-Ramp	105	0	46	151	112	0	64	176	126	0	57	183	109	0	53	162	110	0	60	170	118	0	60	178	110	0	57	167
	WB Ramps (Signalized)	EB Arterial	34	224	0	258	27	246	0	273	39	245	0	284	34	241	0	275	37	246	0	283	36	249	0	285	34	239	0	273
		WB Arterial	0	337	81	418	0	345	74	419	0	349	69	418	0	343	74	417	0	333	83	416	0	340	79	419	0	336	85	421
		Off-Ramp	164	0	51	215	158	0	66	224	171	0	68	239	159	0	57	216	136	0	73	209	142	0	65	207	147	0	62	209
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	139	0	139	0	138	0	138	0	143	0	143	0	140	0	140	0	141	0	141	0	144	0	144	0	142	0	142
		WB Arterial	0	87	0	87	0	85	0	85	0	83	0	83	0	80	0	80	0	80	0	80	0	88	0	88	0	85	0	85
		Off-Ramp	84	0	20	104	85	0	12	97	89	0	18	107	81	0	11	92	96	0	18	114	72	0	18	90	88	0	16	104
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	211	44	255	0	230	45	275	0	214	47	261	0	216	46	262	0	214	44	258	0	216	41	257	0	216	46	262
		WB Arterial	166	457	0	623	152	456	0	608	162	450	0	612	171	439	0	610	186	431	0	617	145	490	0	635	176	434	0	610
		Off-Ramp	132	0	20	152	129	0	17	146	133	0	27	160	138	0	17	155	126	0	22	148	148	0	27	175	141	0	18	159
	WB Ramps (Signalized)	EB Arterial	11	333	0	344	17	342	0	359	22	337	0	359	11	345	0	356	18	318	0	336	24	338	0	362	9	357	0	366
		WB Arterial	0	629	128	757	0	609	149	758	0	616	127	743	0	602	131	733	0	616	130	746	0	636	133	769	0	610	132	742
		Off-Ramp	0	0	108	108	0	0	125	125	0	0	125	125	0	0	112	112	0	0	110	110	0	0	111	111	0	0	120	120
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	200	21	221	0	196	21	217	0	199	18	217	0	201	21	222	0	200	19	219	0	203	27	230	0	199	22	221
		WB Arterial	250	520	0	770	253	531	0	784	253	522	0	775	266	524	0	790	247	564	0	811	271	525	0	796	245	541	0	786
		Off-Ramp	154	0	61	215	168	0	81	249	148	0	65	213	170	0	71	241	154	0	78	232	161	0	79	240	148	0	60	208
	WB Ramps (Signalized)	EB Arterial	41	309	0	350	42	322	0	364	48	299	0	347	46	321	0	367	48	301	0	349	40	322	0	362	25	320	0	345
		WB Arterial	0	749	402	1151	0	749	419	1168	0	744	408	1152	0	739	407	1146	0	755	378	1133	0	763	401	1164	0	754	406	1160
		Off-Ramp	17	0	113	130	26	0	129	155	21	0	119	140	25	0	100	125	43	0	104	147	26	0	115	141	24	0	114	138

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - AM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

6:30 - 7:00 AM

Intersection		Approach	Modeled Volumes																	Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11				Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total				
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	148	58	206	0	163	42		205	0	145	56	201	0	140	67	207	206	2.3	1.6	1%
		WB Arterial	31	296	0	327	36	285	0		321	32	298	0	330	33	303	0	336	330	5.8	4.2	1%
		Off-Ramp	114	0	57	171	93	0	63		156	129	0	55	184	99	0	65	164	164	12.5	8.9	5%
	WB Ramps (Signalized)	EB Arterial	23	234	0	257	22	234	0		256	31	244	0	275	21	218	0	239	252	11.3	8.1	3%
		WB Arterial	0	235	47	282	0	229	53		282	0	241	42	283	0	232	46	278	282	2.2	1.6	1%
		Off-Ramp	92	0	55	147	97	0	50		147	94	0	60	154	103	0	56	159	145	9.1	6.5	4%
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	137	0	137	0	140	0		140	0	135	0	135	0	139	0	139	138	1.9	1.4	1%
		WB Arterial	0	85	0	85	0	77	0		77	0	75	0	75	0	80	0	80	80	4.2	3.0	4%
		Off-Ramp	82	0	17	99	74	0	11		85	76	0	16	92	80	0	15	95	95	6.3	4.5	5%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	207	48	255	0	218	44		262	0	200	54	254	0	211	46	257	257	3.4	2.4	1%
		WB Arterial	159	261	0	420	172	235	0		407	171	244	0	415	177	237	0	414	411	12.7	9.0	2%
		Off-Ramp	130	0	26	156	137	0	27		164	115	0	20	135	147	0	26	173	157	10.3	7.4	5%
	WB Ramps (Signalized)	EB Arterial	4	332	0	336	16	342	0		358	6	309	0	315	5	354	0	359	341	12.6	9.0	3%
		WB Arterial	0	415	95	510	0	403	94		497	0	422	76	498	0	422	81	503	499	9.1	6.5	1%
		Off-Ramp	0	0	71	71	0	0	77		77	0	0	72	72	0	0	90	90	75	10.6	7.6	**10%**
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	194	31	225	0	191	28		219	0	192	29	221	0	200	21	221	223	4.0	2.8	1%
		WB Arterial	229	292	0	521	235	284	0		519	226	279	0	505	228	264	0	492	511	14.3	10.3	2%
		Off-Ramp	156	0	56	212	133	0	59		192	156	0	72	228	149	0	76	225	218	17.6	12.6	6%
	WB Ramps (Signalized)	EB Arterial	26	327	0	353	26	303	0		329	22	334	0	356	26	324	0	350	352	15.1	10.8	3%
		WB Arterial	0	511	271	782	0	520	267		787	0	492	291	783	0	484	292	776	779	7.1	5.1	1%
		Off-Ramp	20	0	70	90	9	0	74		83	20	0	74	94	17	0	86	103	94	9.6	6.9	7%

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables cc

7:00 - 8:00 AM

Intersection		Approach	Modeled Volumes																	Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11				Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total				
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	370	137	507	0	399	113		512	0	393	121	514	0	400	108	508	509	2.8	2.0	0%
		WB Arterial	96	952	0	1048	93	934	0		1027	77	960	0	1037	89	958	0	1047	1040	9.9	7.1	1%
		Off-Ramp	259	0	134	393	303	0	136		439	271	0	141	412	284	0	138	422	422	23.3	16.7	4%
	WB Ramps (Signalized)	EB Arterial	60	573	0	633	76	628	0		704	60	603	0	663	78	605	0	683	678	21.8	15.6	2%
		WB Arterial	0	720	182	902	0	720	178		898	0	720	176	896	0	720	182	902	899	2.9	2.1	0%
		Off-Ramp	330	0	126	456	303	0	126		429	316	0	130	446	327	0	127	454	445	12.2	8.7	2%
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	346	0	346	0	339	0		339	0	346	0	346	0	337	0	337	342	3.3	2.4	1%
		WB Arterial	0	201	0	201	0	197	0		197	0	204	0	204	0	195	0	195	199	4.2	3.0	2%
		Off-Ramp	192	0	30	222	178	0	31		209	192	0	36	228	190	0	28	218	223	12.4	8.9	4%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	530	101	631	0	530	109		639	0	515	120	635	0	518	112	630	636	6.8	4.8	1%
		WB Arterial	378	905	0	1283	399	873	0		1272	396	883	0	1279	383	886	0	1269	1286	15.4	11.0	1%
		Off-Ramp	336	0	63	399	299	0	59		358	314	0	73	387	328	0	55	383	400	27.7	19.8	5%
	WB Ramps (Signalized)	EB Arterial	28	840	0	868	20	808	0		828	24	803	0	827	25	816	0	841	861	28.1	20.1	2%
		WB Arterial	0	1282	280	1562	0	1271	300		1571	0	1279	297	1576	0	1271	306	1577	1583	10.9	7.8	0%
		Off-Ramp	0	0	233	233	0	0	242		242	0	0	216	216	0	0	241	241	236	14.1	10.1	4%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	495	53	548	0	489	56		545	0	478	65	543	0	486	61	547	544	3.1	2.2	0%
		WB Arterial	559	1137	0	1696	576	1090	0		1666	544	1145	0	1689	578	1065	0	1643	1667	24.4	17.4	1%
		Off-Ramp	375	0	163	538	368	0	174		542	389	0	161	550	354	0	164	518	546	18.8	13.5	2%
	WB Ramps (Signalized)	EB Arterial	75	795	0	870	87	770	0		857	89	774	0	863	88	752	0	840	864	14.4	10.3	1%
		WB Arterial	0	1632	821	2453	0	1622	827		2449	0	1642	804	2446	0	1610	856	2466	2456	8.5	6.1	0%
		Off-Ramp	66	0	233	299	48	0	231		279	58	0	239	297	43	0	236	279	293	13.5	9.7	3%

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables cc

8:00 - 8:30 AM

Intersection		Approach	Modeled Volumes																	Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11				Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total				
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	165	46	211	0	164	42		206	0	174	34	208	0	165	43	208	208	1.6	1.2	1%
		WB Arterial	46	450	0	496	46	438	0		484	51	447	0	498	35	487	0	522	497	15.9	11.4	2%
		Off-Ramp	126	0	57	183	122	0	59		181	113	0	61	174	109	0	54	163	172	10.1	7.3	4%
	WB Ramps (Signalized)	EB Arterial	32	258	0	290	27	258	0		285	36	252	0	288	28	247	0	275	279	9.3	6.6	2%
		WB Arterial	0	336	76	412	0	354	64		418	0	343	78	421	0	340	71	411	417	3.2	2.3	1%
		Off-Ramp	161	0	47	208	131	0	70		201	152	0	55	207	180	0	54	234	215	12.1	8.7	4%
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	141	0	141	0	141	0		141	0	142	0	142	0	149	0	149	142	2.9	2.1	1%
		WB Arterial	0	85	0	85	0	80	0		80	0	83	0	83	0	91	0	91	84	3.6	2.5	3%
		Off-Ramp	81	0	19	100	97	0	12		109	68	0	16	84	97	0	16	113	101	9.7	6.9	7%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	232	42	274	0	224	41		265	0	212	42	254	0	213	48	261	262	6.9	4.9	2%
		WB Arterial	167	454	0	621	169	441	0		610	155	479	0	634	173	437	0	610	617	9.8	7.0	1%
		Off-Ramp	140	0	26	166	146	0	20		166	146	0	27	173	144	0	25	169	161	9.8	7.0	4%
	WB Ramps (Signalized)	EB Arterial	16	357	0	373	22	350	0		372	10	346	0	356	19	343	0	362	359	11.0	7.8	2%
		WB Arterial	0	618	125	743	0	607	154		761	0	633	125	758	0	604	143	747	751	10.6	7.6	1%
		Off-Ramp	0	0	111	111	0	0	117		117	0	0	130	130	0	0	120	120	117	7.4	5.3	4%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	195	23	218	0	191	31		222	0	195	24	219	0	198	22	220	221	3.6	2.6	1%
		WB Arterial	250	536	0	786	258	537	0		795	270	503	0	773	279	539	0	818	789	15.0	10.8	1%
		Off-Ramp	177	0	90	267	168	0	83		251	178	0	69	247	161	0	61	222	235	18.6	13.3	6%
	WB Ramps (Signalized)	EB Arterial	43	321	0	364	35	319	0		354	47	320	0	367	46	312	0	358	357	8.3	5.9	2%
		WB Arterial	0	751	392	1143	0	766	391		1157	0	727	430	1157	0	765	384	1149	1153	10.0	7.1	1%
		Off-Ramp	25	0	127	152	24	0	117		141	34	0	140	174	32	0	114	146	144	13.1	9.4	6%

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
- 28 to 34
- 35 to 43
- > 43

	Location		Link	Length (ft)	Number of Lanes	6:30 - 7:00 AM Summary						7:00 - 8:00 AM Summary					
						Volume				Speed (mph)	Density (vplpm)	Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic			Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Eastbound Mainline	Start		87	1,746	3	2,691	2,689	(2)	0.0	58	15	3,296	3,315	19	0.3	58	19
		US 12 / 1st Street Off-Ramp	169	1,114	3	2,691	2,678	(13)	0.3	57	16	3,296	3,307	11	0.2	57	19
	US 12 / 1st Street Off-Ramp		90	858	2	1,053	1,056	3	0.1	49	11	1,290	1,277	(13)	0.4	49	13
	US 12 / 1st Street Off-Ramp		91	872	2	1,638	1,617	(21)	0.5	58	14	2,006	2,021	15	0.3	58	17
			117	401	2	1,638	1,617	(21)	0.5	58	14	2,006	2,020	14	0.3	58	17
		US 12 / 1st Street On-Ramp	118	1,992	2	1,638	1,616	(22)	0.5	59	14	2,006	2,020	14	0.3	59	17
	US 12 / 1st Street On-Ramp		99	549	2	939	922	(17)	0.6	59	8	1,150	1,152	2	0.0	58	10
			10114	218	1	939	939	0	0.0	59	16	1,150	1,172	22	0.6	59	20
	US 12 / 1st Street On-Ramp		100	655	3	2,577	2,544	(33)	0.7	61	14	3,156	3,175	19	0.3	60	18
		CD Roadway Off-Ramp	101	1,892	3	2,577	2,530	(47)	0.9	60	14	3,156	3,160	4	0.1	59	18
	CD Roadway Off-Ramp		26	1,135	1	820	816	(4)	0.1	53	16	1,004	1,024	20	0.6	52	20
	CD Roadway Off-Ramp		139	1,274	3	1,757	1,729	(28)	0.7	61	9	2,152	2,160	8	0.2	61	12
			140	1,552	3	1,757	1,723	(34)	0.8	61	9	2,152	2,159	7	0.1	61	12
			138	1,288	3	1,757	1,725	(32)	0.8	61	9	2,152	2,156	4	0.1	61	12
			142	1,288	3	1,757	1,722	(35)	0.8	61	9	2,152	2,155	3	0.1	61	12
			141	1,384	3	1,757	1,719	(38)	0.9	61	9	2,152	2,152	0	0.0	61	12
			143	1,508	3	1,757	1,719	(38)	0.9	61	9	2,152	2,151	(1)	0.0	61	12
		CD Roadway On-Ramp	111	1,102	3	1,757	1,718	(39)	0.9	61	9	2,152	2,148	(4)	0.1	61	12
	CD Roadway On-Ramp		206	377	1	652	704	52	2.0	59	12	798	775	(23)	0.8	58	13
	CD Roadway On-Ramp		112	653	4	2,409	2,422	13	0.3	61	10	2,950	2,921	(29)	0.5	61	12
			146	550	4	2,409	2,420	11	0.2	60	10	2,950	2,919	(31)	0.6	60	12
			207	650	3	2,409	2,422	13	0.3	60	13	2,950	2,920	(30)	0.6	60	16
		Nob Hill Boulevard Off-Ramp	145	1,814	3	2,409	2,401	(8)	0.2	61	13	2,950	2,897	(53)	1.0	60	16
	Nob Hill Boulevard Off-Ramp		53	981	1	449	443	(6)	0.3	53	8	550	545	(5)	0.2	52	10
	Nob Hill Boulevard Off-Ramp		144	1,385	3	1,960	1,970	10	0.2	61	11	2,400	2,371	(29)	0.6	61	13
		Nob Hill Boulevard On-Ramp	147	1,412	3	1,960	1,971	11	0.2	61	11	2,400	2,368	(32)	0.7	61	13
	Nob Hill Boulevard On-Ramp		116	353	1	530	513	(17)	0.8	48	11	650	618	(32)	1.3	47	13
	Nob Hill Boulevard On-Ramp		115	600	4	2,490	2,480	(10)	0.2	60	10	3,050	2,982	(68)	1.2	60	13
		End	171	1,526	3	2,490	2,487	(3)	0.1	61	14	3,050	2,979	(71)	1.3	60	16
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	820	816	(4)	0.1	53	16	1,004	1,024	20	0.6	52	20
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	526	511	(15)	0.7	44	12	644	646	2	0.1	44	15
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	294	303	9	0.5	45	7	360	376	16	0.8	44	8
		E-W Corridor On-Ramp	194	1,399	1	294	303	9	0.5	44	7	360	376	16	0.8	44	8
	E-W Corridor On-Ramp		187	787	1	171	188	17	1.3	40	5	210	200	(10)	0.7	40	5
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	465	488	23	1.1	44	11	570	574	4	0.2	44	13
	Yakima Avenue Off-Ramp		10	624	1	310	319	9	0.5	35	9	380	400	20	1.0	34	12
	Yakima Avenue Off-Ramp		195	1,500	1	155	172	17	1.3	45	4	190	176	(14)	1.1	45	4
		Yakima Avenue / Fair Avenue On-Ramp	196	892	1	155	171	16	1.3	45	4	190	175	(15)	1.1	44	4
	Yakima Avenue / Fair Avenue On-Ramp		109	495	1	497	522	25	1.1	43	12	608	592	(16)	0.6	43	14
	Yakima Avenue / Fair Avenue On-Ramp		205	639	2	652	701	49	1.9	44	8	798	775	(23)	0.8	44	9
		End of C-D Roadway	189	657	2	652	702	50	1.9	49	7	798	776	(22)	0.8	49	8

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
- 28 to 34
- 35 to 43
- > 43

	Location		Link	Length (ft)	Number of Lanes	6:30 - 7:00 AM Summary						7:00 - 8:00 AM Summary					
						Volume				Speed (mph)	Density (vplpm)	Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic			Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Westbound Mainline	Start		164	1,750	3	1,838	1,834	(4)	0.1	59	10	2,980	2,957	(23)	0.4	59	17
			165	1,748	3	1,838	1,833	(5)	0.1	59	10	2,980	2,949	(31)	0.6	58	17
			166	1,747	3	1,838	1,831	(7)	0.2	59	10	2,980	2,943	(37)	0.7	58	17
		Nob Hill Boulevard Off-Ramp	167	1,748	3	1,838	1,819	(19)	0.5	60	10	2,980	2,926	(54)	1.0	60	16
	Nob Hill Boulevard Off-Ramp		47	546	1	191	188	(3)	0.2	54	3	310	295	(15)	0.9	54	5
	Nob Hill Boulevard Off-Ramp		148	1,152	3	1,647	1,635	(12)	0.3	61	9	2,670	2,636	(34)	0.7	61	14
			149	1,227	3	1,647	1,635	(12)	0.3	61	9	2,670	2,629	(41)	0.8	61	14
		Nob Hill Boulevard On-Ramp	114	427	3	1,647	1,630	(17)	0.4	61	9	2,670	2,617	(53)	1.0	61	14
	Nob Hill Boulevard On-Ramp		45	1,640	2	598	573	(25)	1.0	47	6	970	889	(81)	2.7	46	10
	Nob Hill Boulevard On-Ramp		168	741	4	2,245	2,231	(14)	0.3	61	9	3,640	3,546	(94)	1.6	60	15
			150	1,408	4	2,245	2,228	(17)	0.4	60	9	3,640	3,541	(99)	1.6	59	15
			113	1,279	3	2,245	2,226	(19)	0.4	61	12	3,640	3,539	(101)	1.7	60	20
		CD Roadway Off-Ramp	152	681	3	2,245	2,217	(28)	0.6	60	12	3,640	3,527	(113)	1.9	59	20
	CD Roadway Off-Ramp		183	696	2	888	887	(1)	0.0	57	8	1,440	1,408	(32)	0.9	56	13
	CD Roadway Off-Ramp		151	2,077	3	1,357	1,328	(29)	0.8	61	7	2,200	2,120	(80)	1.7	61	12
			153	1,330	3	1,357	1,326	(31)	0.8	61	7	2,200	2,116	(84)	1.8	61	12
			105	1,663	3	1,357	1,326	(31)	0.8	61	7	2,200	2,111	(89)	1.9	61	12
			154	1,595	3	1,357	1,325	(32)	0.9	61	7	2,200	2,108	(92)	2.0	61	12
		CD Roadway On-Ramp	155	830	3	1,357	1,325	(32)	0.9	61	7	2,200	2,104	(96)	2.1	61	12
	CD Roadway On-Ramp		200	962	1	346	331	(15)	0.8	55	6	560	550	(10)	0.4	54	10
	CD Roadway On-Ramp		204	439	4	1,703	1,652	(51)	1.2	60	7	2,760	2,648	(112)	2.1	59	11
		US 12 / 1st Street Off-Ramp	156	1,919	3	1,703	1,645	(58)	1.4	60	9	2,760	2,638	(122)	2.3	59	15
	US 12 / 1st Street Off-Ramp		102	833	1	654	634	(20)	0.8	55	12	1,060	1,018	(42)	1.3	54	19
	US 12 / 1st Street Off-Ramp		136	1,805	2	1,049	1,014	(35)	1.1	61	8	1,700	1,626	(74)	1.8	61	13
		US 12 / 1st Street On-Ramp	137	1,841	2	1,049	1,013	(36)	1.1	61	8	1,700	1,622	(78)	1.9	61	13
	US 12 / 1st Street On-Ramp		97	1,173	1	444	462	18	0.9	45	10	720	733	13	0.5	44	17
	US 12 / 1st Street On-Ramp	End	98	1,881	3	1,493	1,473	(20)	0.5	61	8	2,420	2,351	(69)	1.4	60	13
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	696	2	888	887	(1)	0.0	57	8	1,440	1,408	(32)	0.9	56	13
	Yakima Avenue Off-Ramp		106	464	1	610	603	(7)	0.3	45	13	990	966	(24)	0.8	44	22
	Yakima Avenue Off-Ramp		190	1,500	1	278	283	5	0.3	45	6	450	442	(8)	0.4	45	10
		Yakima Avenue On-Ramp	198	1,490	1	278	283	5	0.3	44	6	450	442	(8)	0.4	44	10
	Yakima Avenue On-Ramp		202	865	1	204	195	(9)	0.6	41	5	330	319	(11)	0.6	40	8
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	482	476	(6)	0.3	44	11	780	756	(24)	0.9	44	17
	E-W Corridor Off-Ramp		188	573	1	290	286	(4)	0.3	42	7	470	444	(26)	1.2	40	11
	E-W Corridor Off-Ramp		199	1,258	1	192	189	(3)	0.2	45	4	310	308	(2)	0.1	44	7
		E-W Corridor On-Ramp	201	1,258	1	192	189	(3)	0.2	44	4	310	308	(2)	0.1	44	7
	E-W Corridor On-Ramp		182	912	1	154	145	(9)	0.8	42	3	250	245	(5)	0.3	41	6
	E-W Corridor On-Ramp	End of C-D Roadway	200	962	1	346	331	(15)	0.8	55	6	560	550	(10)	0.4	54	10

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	8:00 - 8:30 AM Summary					
						Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Eastbound Mainline	Start		87	1,746	3	2,715	2,719	4	0.1	58	16
		US 12 / 1st Street Off-Ramp	169	1,114	3	2,715	2,721	6	0.1	58	16
	US 12 / 1st Street Off-Ramp		90	858	2	1,062	1,059	(3)	0.1	50	11
	US 12 / 1st Street Off-Ramp		91	872	2	1,653	1,664	11	0.3	58	14
			117	401	2	1,653	1,668	15	0.4	58	14
		US 12 / 1st Street On-Ramp	118	1,992	2	1,653	1,671	18	0.4	59	14
	US 12 / 1st Street On-Ramp		99	549	2	947	971	24	0.8	59	8
			10114	218	1	947	988	41	1.3	59	17
	US 12 / 1st Street On-Ramp		100	655	3	2,600	2,653	53	1.0	61	15
		CD Roadway Off-Ramp	101	1,892	3	2,600	2,648	48	0.9	60	15
	CD Roadway Off-Ramp		26	1,135	1	827	825	(2)	0.1	52	16
	CD Roadway Off-Ramp		139	1,274	3	1,773	1,849	76	1.8	61	10
			140	1,552	3	1,773	1,853	80	1.9	61	10
			138	1,288	3	1,773	1,856	83	1.9	61	10
			142	1,288	3	1,773	1,859	86	2.0	61	10
			141	1,384	3	1,773	1,866	93	2.2	61	10
			143	1,508	3	1,773	1,868	95	2.2	61	10
		CD Roadway On-Ramp	111	1,102	3	1,773	1,872	99	2.3	61	10
	CD Roadway On-Ramp		206	377	1	657	665	8	0.3	59	11
	CD Roadway On-Ramp		112	653	4	2,430	2,537	107	2.1	61	10
			146	550	4	2,430	2,539	109	2.2	60	10
			207	650	3	2,430	2,552	122	2.4	60	14
		Nob Hill Boulevard Off-Ramp	145	1,814	3	2,430	2,537	107	2.1	61	14
	Nob Hill Boulevard Off-Ramp		53	981	1	453	458	5	0.2	53	9
	Nob Hill Boulevard Off-Ramp		144	1,385	3	1,977	2,099	122	2.7	61	11
		Nob Hill Boulevard On-Ramp	147	1,412	3	1,977	2,106	129	2.9	61	12
	Nob Hill Boulevard On-Ramp		116	353	1	536	557	21	0.9	48	12
	Nob Hill Boulevard On-Ramp		115	600	4	2,513	2,664	151	3.0	60	11
		End	171	1,526	3	2,513	2,659	146	2.9	61	15
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	827	825	(2)	0.1	52	16
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	531	533	2	0.1	44	12
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	296	293	(3)	0.1	44	7
		E-W Corridor On-Ramp	194	1,399	1	296	294	(2)	0.1	44	7
	E-W Corridor On-Ramp		187	787	1	173	177	4	0.3	40	4
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	469	470	1	0.0	44	11
	Yakima Avenue Off-Ramp		10	624	1	313	316	3	0.2	34	9
	Yakima Avenue Off-Ramp		195	1,500	1	156	155	(1)	0.1	45	3
		Yakima Avenue / Fair Avenue On-Ramp	196	892	1	156	155	(1)	0.1	45	3
	Yakima Avenue / Fair Avenue On-Ramp		109	495	1	501	501	(0)	0.0	44	12
	Yakima Avenue / Fair Avenue On-Ramp		205	639	2	657	664	7	0.3	44	8
		End of C-D Roadway	189	657	2	657	664	7	0.3	50	7

I-82, Yakima Avenue IJR
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Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	8:00 - 8:30 AM Summary					
						Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Westbound Mainline	Start		164	1,750	3	2,705	2,706	1	0.0	59	15
			165	1,748	3	2,705	2,713	8	0.2	59	15
			166	1,747	3	2,705	2,720	15	0.3	58	16
		Nob Hill Boulevard Off-Ramp	167	1,748	3	2,705	2,714	9	0.2	60	15
	Nob Hill Boulevard Off-Ramp		47	546	1	282	285	3	0.2	54	5
	Nob Hill Boulevard Off-Ramp		148	1,152	3	2,423	2,444	21	0.4	61	13
			149	1,227	3	2,423	2,446	23	0.5	61	13
		Nob Hill Boulevard On-Ramp	114	427	3	2,423	2,445	22	0.4	61	13
	Nob Hill Boulevard On-Ramp		45	1,640	2	881	853	(28)	1.0	46	9
	Nob Hill Boulevard On-Ramp		168	741	4	3,304	3,339	35	0.6	60	14
			150	1,408	4	3,304	3,337	33	0.6	60	14
			113	1,279	3	3,304	3,345	41	0.7	60	19
		CD Roadway Off-Ramp	152	681	3	3,304	3,343	39	0.7	60	19
	CD Roadway Off-Ramp		183	696	2	1,307	1,322	15	0.4	56	12
	CD Roadway Off-Ramp		151	2,077	3	1,997	2,029	32	0.7	61	11
			153	1,330	3	1,997	2,034	37	0.8	61	11
			105	1,663	3	1,997	2,035	38	0.9	61	11
			154	1,595	3	1,997	2,039	42	0.9	61	11
		CD Roadway On-Ramp	155	830	3	1,997	2,044	47	1.1	61	11
	CD Roadway On-Ramp		200	962	1	508	517	9	0.4	54	10
	CD Roadway On-Ramp		204	439	4	2,505	2,558	53	1.1	59	11
		US 12 / 1st Street Off-Ramp	156	1,919	3	2,505	2,553	48	1.0	60	14
	US 12 / 1st Street Off-Ramp		102	833	1	962	989	27	0.9	54	18
	US 12 / 1st Street Off-Ramp		136	1,805	2	1,543	1,579	36	0.9	61	13
		US 12 / 1st Street On-Ramp	137	1,841	2	1,543	1,580	37	0.9	61	13
	US 12 / 1st Street On-Ramp		97	1,173	1	653	674	21	0.8	44	15
	US 12 / 1st Street On-Ramp	End	98	1,881	3	2,196	2,257	61	1.3	60	13
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	696	2	1,307	1,322	15	0.4	56	12
	Yakima Avenue Off-Ramp		106	464	1	899	913	14	0.5	44	21
	Yakima Avenue Off-Ramp		190	1,500	1	408	413	5	0.2	45	9
		Yakima Avenue On-Ramp	198	1,490	1	408	416	8	0.4	44	9
	Yakima Avenue On-Ramp		202	865	1	300	299	(1)	0.1	40	7
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	708	712	4	0.2	43	16
	E-W Corridor Off-Ramp		188	573	1	427	418	(9)	0.4	40	10
	E-W Corridor Off-Ramp		199	1,258	1	281	293	12	0.7	44	7
		E-W Corridor On-Ramp	201	1,258	1	281	295	14	0.8	44	7
	E-W Corridor On-Ramp		182	912	1	227	220	(7)	0.5	41	5
	E-W Corridor On-Ramp	End of C-D Roadway	200	962	1	508	517	9	0.4	54	10

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	6:30 - 6:45 Summary			6:45 - 7:00 Summary			7:00 - 7:15 Summary			7:15 - 7:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Eastbound Mainline	Start		87	1,746	3	2,590	58	15	2,787	58	16	3,111	58	18	3,333	58	19
		US 12 / 1st Street Off-Ramp	169	1,114	3	2,575	58	15	2,780	57	16	3,097	58	18	3,325	58	19
	US 12 / 1st Street Off-Ramp		90	858	2	999	50	10	1,113	49	11	1,168	49	12	1,297	49	13
	US 12 / 1st Street Off-Ramp		91	872	2	1,573	58	13	1,662	58	14	1,916	58	16	2,022	58	17
			117	401	2	1,573	58	13	1,661	58	14	1,915	58	16	2,023	58	17
		US 12 / 1st Street On-Ramp	118	1,992	2	1,572	60	13	1,661	59	14	1,915	59	16	2,019	59	17
	US 12 / 1st Street On-Ramp		99	549	2	888	60	7	957	59	8	1,048	59	9	1,151	59	10
			10114	218	1	902	60	15	977	59	16	1,063	59	18	1,173	59	20
	US 12 / 1st Street On-Ramp		100	655	3	2,467	61	14	2,621	61	14	2,961	60	16	3,173	60	18
		CD Roadway Off-Ramp	101	1,892	3	2,450	60	14	2,610	60	14	2,941	60	16	3,163	59	18
	CD Roadway Off-Ramp		26	1,135	1	807	53	15	825	52	16	969	52	19	1,012	51	20
	CD Roadway Off-Ramp		139	1,274	3	1,658	61	9	1,799	61	10	1,995	61	11	2,167	61	12
			140	1,552	3	1,652	61	9	1,794	61	10	1,993	61	11	2,164	61	12
			138	1,288	3	1,658	61	9	1,791	61	10	1,984	61	11	2,163	61	12
			142	1,288	3	1,655	61	9	1,789	61	10	1,981	61	11	2,157	61	12
			141	1,384	3	1,654	61	9	1,784	61	10	1,977	61	11	2,153	61	12
			143	1,508	3	1,655	61	9	1,783	61	10	1,968	61	11	2,145	61	12
		CD Roadway On-Ramp	111	1,102	3	1,650	61	9	1,785	61	10	1,963	61	11	2,142	61	12
	CD Roadway On-Ramp		206	377	1	680	59	12	728	58	12	714	58	12	753	58	13
	CD Roadway On-Ramp		112	653	4	2,329	61	10	2,516	61	10	2,668	61	11	2,893	61	12
			146	550	4	2,327	61	10	2,512	60	10	2,664	60	11	2,891	60	12
			207	650	3	2,333	61	13	2,510	60	14	2,667	60	15	2,889	60	16
		Nob Hill Boulevard Off-Ramp	145	1,814	3	2,324	61	13	2,478	61	14	2,652	60	15	2,857	60	16
	Nob Hill Boulevard Off-Ramp		53	981	1	437	53	8	450	53	9	533	53	10	532	52	10
	Nob Hill Boulevard Off-Ramp		144	1,385	3	1,903	61	10	2,038	61	11	2,138	61	12	2,343	61	13
		Nob Hill Boulevard On-Ramp	147	1,412	3	1,900	61	10	2,042	61	11	2,133	61	12	2,340	61	13
	Nob Hill Boulevard On-Ramp		116	353	1	472	48	10	553	47	12	574	47	12	603	47	13
	Nob Hill Boulevard On-Ramp		115	600	4	2,370	60	10	2,591	60	11	2,685	60	11	2,949	60	12
		End	171	1,526	3	2,383	61	13	2,591	61	14	2,663	61	15	2,944	60	16
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	807	53	15	825	52	16	969	52	19	1,012	51	20
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	499	44	11	523	44	12	622	44	14	632	44	14
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	312	45	7	293	45	7	346	45	8	373	44	8
		E-W Corridor On-Ramp	194	1,399	1	314	44	7	292	44	7	345	44	8	376	44	9
	E-W Corridor On-Ramp		187	787	1	189	40	5	187	40	5	183	40	5	206	40	5
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	503	44	11	474	44	11	525	44	12	582	44	13
	Yakima Avenue Off-Ramp		10	624	1	332	35	10	306	35	9	358	34	10	404	34	12
	Yakima Avenue Off-Ramp		195	1,500	1	174	45	4	169	45	4	168	45	4	180	44	4
		Yakima Avenue / Fair Avenue On-Ramp	196	892	1	174	45	4	169	44	4	169	44	4	178	44	4
	Yakima Avenue / Fair Avenue On-Ramp		109	495	1	495	43	11	550	43	13	539	43	12	571	43	13
	Yakima Avenue / Fair Avenue On-Ramp		205	639	2	676	44	8	725	44	8	716	44	8	755	44	9
		End of C-D Roadway	189	657	2	678	50	7	726	49	7	715	49	7	755	50	8

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	6:30 - 6:45 Summary			6:45 - 7:00 Summary			7:00 - 7:15 Summary			7:15 - 7:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Westbound Mainline	Start		164	1,750	3	1,687	59	10	1,981	59	11	2,557	59	14	2,891	59	16
			165	1,748	3	1,692	59	10	1,975	59	11	2,542	59	14	2,881	58	16
			166	1,747	3	1,695	59	10	1,967	59	11	2,528	58	14	2,876	58	16
		Nob Hill Boulevard Off-Ramp	167	1,748	3	1,686	60	9	1,952	60	11	2,506	60	14	2,861	60	16
	Nob Hill Boulevard Off-Ramp		47	546	1	166	55	3	210	54	4	253	54	5	288	54	5
	Nob Hill Boulevard Off-Ramp		148	1,152	3	1,524	61	8	1,746	61	10	2,248	61	12	2,580	61	14
			149	1,227	3	1,528	61	8	1,743	61	10	2,237	61	12	2,571	61	14
		Nob Hill Boulevard On-Ramp	114	427	3	1,525	61	8	1,736	61	9	2,225	61	12	2,561	61	14
	Nob Hill Boulevard On-Ramp		45	1,640	2	527	47	6	619	46	7	766	46	8	883	46	10
	Nob Hill Boulevard On-Ramp		168	741	4	2,082	61	9	2,380	61	10	3,019	60	12	3,474	60	14
			150	1,408	4	2,082	61	9	2,374	60	10	3,013	60	13	3,466	60	15
			113	1,279	3	2,080	61	11	2,372	61	13	3,008	60	17	3,461	60	19
		CD Roadway Off-Ramp	152	681	3	2,070	60	11	2,365	60	13	2,994	60	17	3,450	59	19
	CD Roadway Off-Ramp		183	696	2	825	57	7	948	57	8	1,189	56	11	1,385	56	12
	CD Roadway Off-Ramp		151	2,077	3	1,240	61	7	1,417	61	8	1,800	61	10	2,068	61	11
			153	1,330	3	1,244	61	7	1,409	61	8	1,794	61	10	2,061	61	11
			105	1,663	3	1,244	61	7	1,409	61	8	1,784	61	10	2,045	61	11
			154	1,595	3	1,246	61	7	1,403	61	8	1,773	61	10	2,045	61	11
		CD Roadway On-Ramp	155	830	3	1,250	61	7	1,401	61	8	1,765	61	10	2,043	61	11
	CD Roadway On-Ramp		200	962	1	301	54	6	361	55	7	467	54	9	538	54	10
	CD Roadway On-Ramp		204	439	4	1,551	60	6	1,753	60	7	2,223	60	9	2,575	59	11
		US 12 / 1st Street Off-Ramp	156	1,919	3	1,543	60	9	1,746	60	10	2,207	60	12	2,572	60	14
	US 12 / 1st Street Off-Ramp		102	833	1	589	55	11	678	55	12	827	54	15	1,007	54	19
	US 12 / 1st Street Off-Ramp		136	1,805	2	958	61	8	1,069	61	9	1,378	61	11	1,567	61	13
		US 12 / 1st Street On-Ramp	137	1,841	2	960	61	8	1,066	61	9	1,368	61	11	1,556	61	13
	US 12 / 1st Street On-Ramp		97	1,173	1	457	45	10	468	45	10	682	44	15	712	44	16
	US 12 / 1st Street On-Ramp	End	98	1,881	3	1,411	60	8	1,534	61	8	2,042	60	11	2,261	60	13
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	696	2	825	57	7	948	57	8	1,189	56	11	1,385	56	12
	Yakima Avenue Off-Ramp		106	464	1	547	45	12	659	45	15	817	44	18	950	44	22
	Yakima Avenue Off-Ramp		190	1,500	1	278	45	6	288	46	6	369	46	8	436	45	10
		Yakima Avenue On-Ramp	198	1,490	1	280	44	6	286	44	6	367	44	8	437	44	10
	Yakima Avenue On-Ramp		202	865	1	179	41	4	211	41	5	276	41	7	307	41	8
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	457	44	10	496	44	11	637	44	15	740	44	17
	E-W Corridor Off-Ramp		188	573	1	282	42	7	289	42	7	367	41	9	439	40	11
	E-W Corridor Off-Ramp		199	1,258	1	173	44	4	205	45	5	267	44	6	297	44	7
		E-W Corridor On-Ramp	201	1,258	1	173	44	4	205	45	5	265	44	6	298	44	7
	E-W Corridor On-Ramp		182	912	1	129	42	3	160	42	4	204	42	5	243	41	6
	E-W Corridor On-Ramp	End of C-D Roadway	200	962	1	301	54	6	361	55	7	467	54	9	538	54	10

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

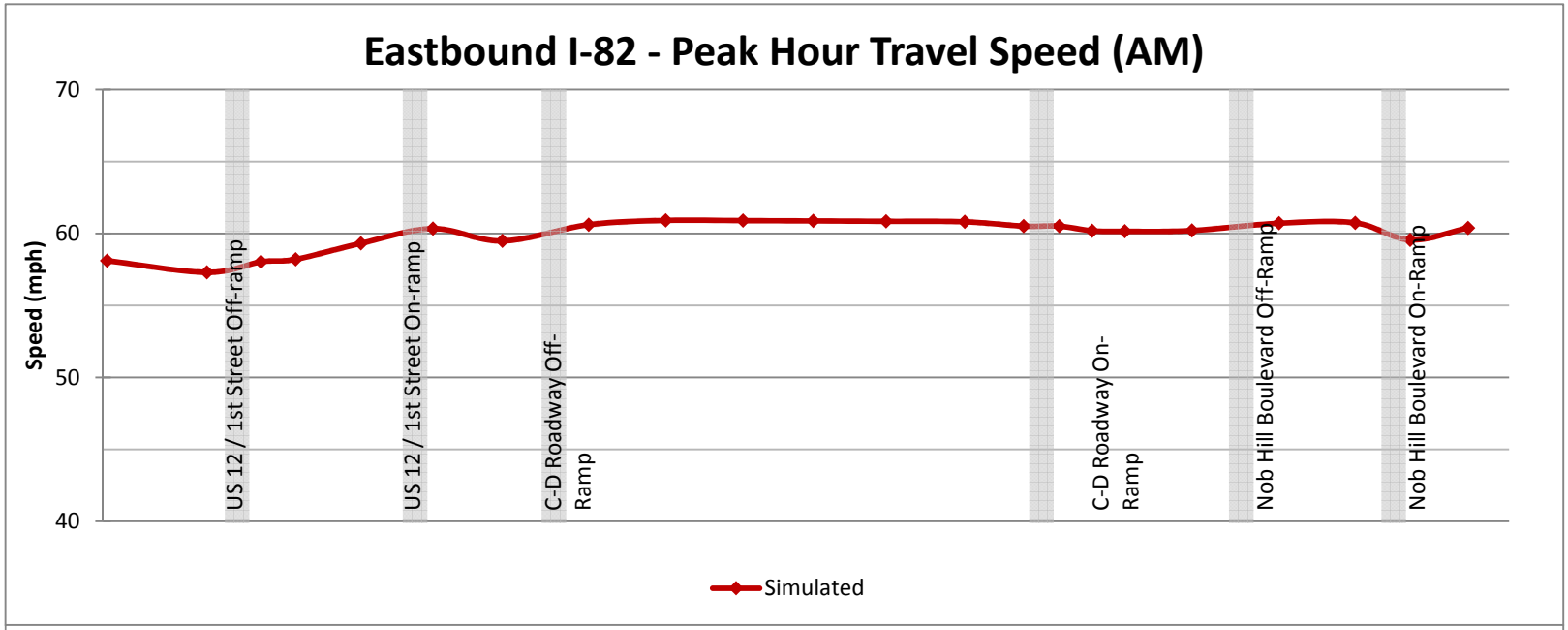
Density Range
28 to 34
35 to 43
> 43

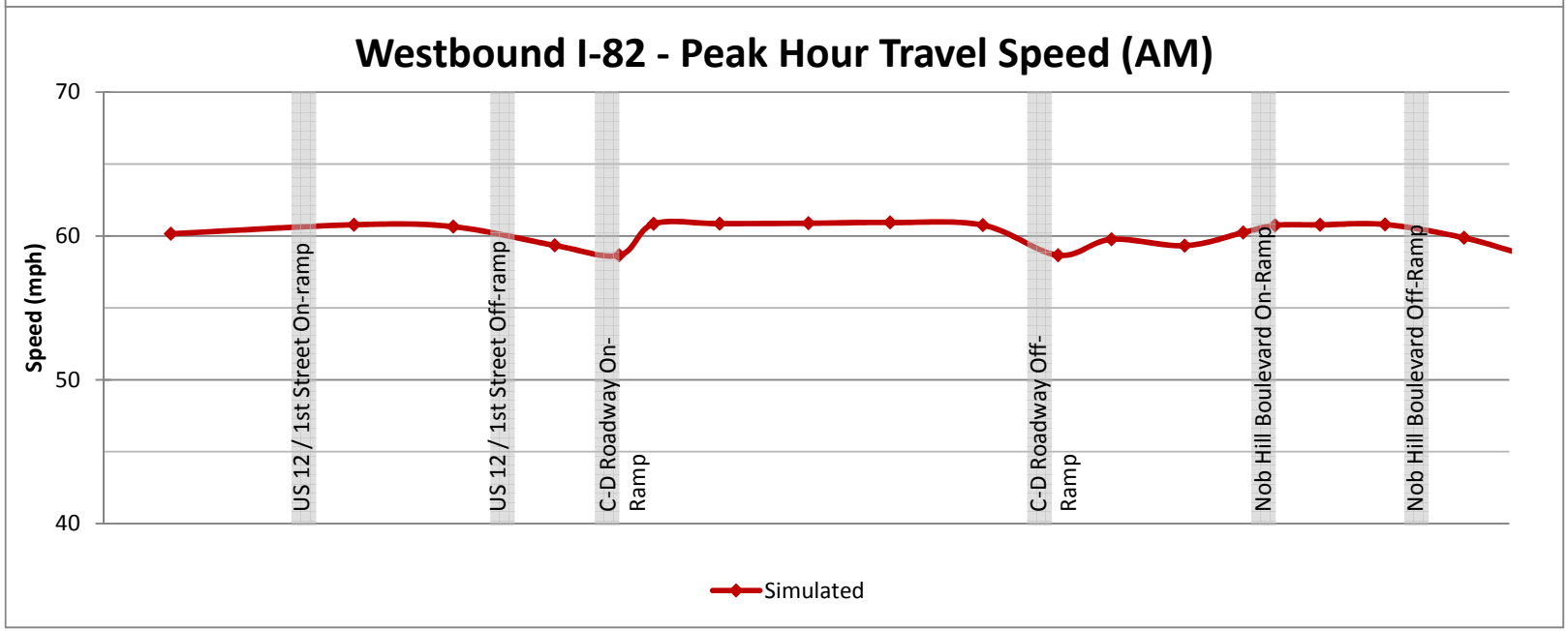
	Location		Link	Length (ft)	Number of Lanes	7:30 - 7:45 Summary			7:45 - 8:00 Summary			8:00 - 8:15 Summary			8:15 - 8:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Eastbound Mainline	Start		87	1,746	3	3,577	58	21	3,238	58	19	2,891	58	17	2,547	59	15
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,569	57	21	3,235	57	19	2,893	58	17	2,549	58	15
	US 12 / 1st Street Off-Ramp		90	858	2	1,385	49	14	1,257	49	13	1,121	50	11	997	50	10
	US 12 / 1st Street Off-Ramp		91	872	2	2,176	58	19	1,969	58	17	1,780	58	15	1,549	58	13
			117	401	2	2,173	58	19	1,970	58	17	1,786	58	15	1,549	58	13
		US 12 / 1st Street On-Ramp	118	1,992	2	2,172	59	18	1,975	59	17	1,789	59	15	1,553	60	13
	US 12 / 1st Street On-Ramp		99	549	2	1,215	58	11	1,192	58	10	1,020	59	9	922	59	8
			10114	218	1	1,238	58	21	1,214	58	21	1,037	59	17	940	60	16
	US 12 / 1st Street On-Ramp		100	655	3	3,393	60	19	3,172	60	18	2,821	61	16	2,485	61	14
		CD Roadway Off-Ramp	101	1,892	3	3,370	59	19	3,166	59	18	2,815	60	16	2,482	60	14
	CD Roadway Off-Ramp		26	1,135	1	1,073	51	21	1,043	51	20	876	52	17	775	53	15
	CD Roadway Off-Ramp		139	1,274	3	2,319	60	13	2,157	61	12	1,960	61	11	1,737	61	9
			140	1,552	3	2,314	61	13	2,163	61	12	1,964	61	11	1,742	61	10
			138	1,288	3	2,313	61	13	2,164	61	12	1,972	61	11	1,740	61	9
			142	1,288	3	2,315	61	13	2,166	61	12	1,982	61	11	1,737	61	9
			141	1,384	3	2,314	61	13	2,167	61	12	1,991	61	11	1,740	61	10
			143	1,508	3	2,316	61	13	2,174	61	12	1,997	61	11	1,738	61	10
		CD Roadway On-Ramp	111	1,102	3	2,319	61	13	2,170	61	12	2,000	61	11	1,744	61	10
	CD Roadway On-Ramp		206	377	1	826	58	14	807	58	14	727	59	12	603	59	10
	CD Roadway On-Ramp		112	653	4	3,147	60	13	2,977	60	12	2,727	61	11	2,347	61	10
			146	550	4	3,146	60	13	2,972	60	12	2,729	60	11	2,349	61	10
			207	650	3	3,152	60	18	2,971	60	16	2,749	60	15	2,355	61	13
		Nob Hill Boulevard Off-Ramp	145	1,814	3	3,135	60	17	2,945	60	16	2,726	60	15	2,348	61	13
	Nob Hill Boulevard Off-Ramp		53	981	1	576	52	11	542	52	10	493	53	9	423	53	8
	Nob Hill Boulevard Off-Ramp		144	1,385	3	2,576	61	14	2,428	61	13	2,254	61	12	1,943	61	11
		Nob Hill Boulevard On-Ramp	147	1,412	3	2,571	61	14	2,427	61	13	2,270	61	12	1,943	61	11
	Nob Hill Boulevard On-Ramp		116	353	1	665	46	14	631	46	14	579	48	12	535	47	11
	Nob Hill Boulevard On-Ramp		115	600	4	3,237	59	14	3,055	59	13	2,839	60	12	2,489	60	10
		End	171	1,526	3	3,244	60	18	3,065	60	17	2,833	61	16	2,486	61	14
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	1,073	51	21	1,043	51	20	876	52	17	775	53	15
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	671	44	15	660	44	15	564	44	13	501	44	11
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	401	44	9	383	45	9	313	44	7	274	45	6
		E-W Corridor On-Ramp	194	1,399	1	395	44	9	387	44	9	314	44	7	274	44	6
	E-W Corridor On-Ramp		187	787	1	205	39	5	207	39	5	197	40	5	157	40	4
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	594	44	14	595	44	14	510	44	12	430	44	10
	Yakima Avenue Off-Ramp		10	624	1	416	34	12	423	34	12	335	34	10	298	35	9
	Yakima Avenue Off-Ramp		195	1,500	1	177	45	4	177	44	4	177	45	4	133	45	3
		Yakima Avenue / Fair Avenue On-Ramp	196	892	1	177	45	4	179	44	4	178	44	4	133	45	3
	Yakima Avenue / Fair Avenue On-Ramp		109	495	1	644	43	15	615	43	14	541	43	12	460	44	11
	Yakima Avenue / Fair Avenue On-Ramp		205	639	2	828	44	9	802	44	9	728	44	8	601	44	7
		End of C-D Roadway	189	657	2	829	49	8	805	49	8	725	50	7	603	50	6

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - AM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	7:30 - 7:45 Summary			7:45 - 8:00 Summary			8:00 - 8:15 Summary			8:15 - 8:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Westbound Mainline	Start		164	1,750	3	3,281	59	19	3,099	59	18	2,816	59	16	2,597	59	15
			165	1,748	3	3,271	58	19	3,102	58	18	2,825	58	16	2,602	59	15
			166	1,747	3	3,262	58	19	3,105	58	18	2,834	58	16	2,605	58	15
		Nob Hill Boulevard Off-Ramp	167	1,748	3	3,237	60	18	3,098	60	17	2,826	60	16	2,602	60	14
	Nob Hill Boulevard Off-Ramp		47	546	1	318	54	6	319	54	6	291	54	5	280	54	5
	Nob Hill Boulevard Off-Ramp		148	1,152	3	2,920	61	16	2,793	61	15	2,554	61	14	2,335	61	13
			149	1,227	3	2,909	61	16	2,797	61	15	2,553	61	14	2,340	61	13
		Nob Hill Boulevard On-Ramp	114	427	3	2,890	61	16	2,791	61	15	2,551	61	14	2,338	61	13
	Nob Hill Boulevard On-Ramp		45	1,640	2	966	46	10	940	46	10	870	46	9	835	46	9
	Nob Hill Boulevard On-Ramp		168	741	4	3,910	60	16	3,780	60	16	3,473	60	14	3,204	60	13
			150	1,408	4	3,902	59	17	3,785	59	16	3,475	59	15	3,198	60	13
			113	1,279	3	3,899	60	22	3,789	60	21	3,483	60	19	3,207	60	18
		CD Roadway Off-Ramp	152	681	3	3,890	58	22	3,773	58	22	3,482	60	20	3,204	60	18
	CD Roadway Off-Ramp		183	696	2	1,557	55	14	1,501	55	14	1,376	56	12	1,268	56	11
	CD Roadway Off-Ramp		151	2,077	3	2,328	60	13	2,282	61	13	2,113	61	12	1,944	61	11
			153	1,330	3	2,327	61	13	2,282	61	12	2,117	61	12	1,950	61	11
			105	1,663	3	2,320	61	13	2,295	61	13	2,116	61	12	1,955	61	11
			154	1,595	3	2,317	61	13	2,297	61	13	2,114	61	12	1,964	61	11
		CD Roadway On-Ramp	155	830	3	2,315	61	13	2,294	61	13	2,120	61	12	1,969	61	11
	CD Roadway On-Ramp		200	962	1	608	54	11	587	53	11	530	54	10	503	54	9
	CD Roadway On-Ramp		204	439	4	2,917	58	13	2,877	58	12	2,643	59	11	2,473	59	10
		US 12 / 1st Street Off-Ramp	156	1,919	3	2,902	59	16	2,871	59	16	2,637	59	15	2,470	60	14
	US 12 / 1st Street Off-Ramp		102	833	1	1,136	53	21	1,104	53	21	1,024	54	19	955	54	18
	US 12 / 1st Street Off-Ramp		136	1,805	2	1,767	60	15	1,790	61	15	1,619	61	13	1,538	61	13
		US 12 / 1st Street On-Ramp	137	1,841	2	1,767	61	15	1,796	61	15	1,618	61	13	1,543	61	13
	US 12 / 1st Street On-Ramp		97	1,173	1	827	44	19	710	44	16	723	44	16	626	44	14
	US 12 / 1st Street On-Ramp	End	98	1,881	3	2,590	60	14	2,511	60	14	2,340	60	13	2,175	60	12
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	696	2	1,557	55	14	1,501	55	14	1,376	56	12	1,268	56	11
	Yakima Avenue Off-Ramp		106	464	1	1,062	44	24	1,036	44	24	947	44	21	880	44	20
	Yakima Avenue Off-Ramp		190	1,500	1	492	45	11	470	45	10	434	45	10	392	45	9
		Yakima Avenue On-Ramp	198	1,490	1	490	44	11	472	44	11	438	44	10	393	44	9
	Yakima Avenue On-Ramp		202	865	1	345	40	9	346	39	9	314	40	8	285	40	7
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	829	43	19	816	43	19	747	43	17	678	44	16
	E-W Corridor Off-Ramp		188	573	1	492	40	12	476	40	12	443	40	11	393	40	10
	E-W Corridor Off-Ramp		199	1,258	1	333	44	8	334	44	8	305	44	7	280	44	6
		E-W Corridor On-Ramp	201	1,258	1	330	44	7	336	44	8	307	44	7	282	44	6
	E-W Corridor On-Ramp		182	912	1	279	41	7	252	40	6	220	41	5	219	42	5
	E-W Corridor On-Ramp	End of C-D Roadway	200	962	1	608	54	11	587	53	11	530	54	10	503	54	9


Eastbound I-82 - Peak Hour Travel Speed (AM)
Speed (mph)
70
60
50
40
US 12 / 1st Street Off-ramp
US 12 / 1st Street On-ramp
C-D Roadway Off-Ramp
C-D Roadway On-Ramp
Nob Hill Boulevard Off-Ramp
Nob Hill Boulevard On-Ramp
Simulated


Westbound I-82 - Peak Hour Travel Speed (AM)
Speed (mph)
70
60
50
40
US 12 / 1st Street On-ramp
US 12 / 1st Street Off-ramp
C-D Roadway On-Ramp
C-D Roadway Off-Ramp
Nob Hill Boulevard On-Ramp
Nob Hill Boulevard Off-Ramp
Simulated

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - PM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

3:30 - 4:00 PM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Left Turn		Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	975	442	1417	0	971	445	1416	0	-4	3	-1	-	0.1	0.1	0.0	-	14	12	-	B	B	13	B	12	B	281	-	-	-	0
		WB Arterial	202	831	0	1033	178	828	0	1006	-24	-3	0	-27	1.7	0.1	-	0.8	17	3	-	B	A	-	5	A			96	400	96	-	-
		Off-Ramp	311	0	103	414	326	0	96	422	15	0	-7	8	0.8	-	-	0.4	31	-	4	C	-	A	25	C			-	Continuous	251	-	0
	WB Ramps (Signalized)	EB Arterial	167	1119	0	1286	153	1139	0	1292	-14	20	0	6	1.1	0.6	-	0.2	7	4	-	A	A	-	4	A			96	400	96	-	-
		WB Arterial	0	746	515	1261	0	726	530	1256	0	-20	15	-5	-	0.7	0.7	0.1	-	12	9	-	B	A	11	B	9	A	245	-	-	-	-
		Off-Ramp	287	0	269	556	280	0	273	553	-7	0	4	-3	0.4	-	0.2	0.1	22	-	5	C	-	A	14	B			-	Continuous	169	-	-
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	583	0	583	0	578	0	578	0	-5	0	-5	-	0.2	-	0.2	-	8	-	-	A	-	8	A	8	A	157	-	-	-	-
		WB Arterial	0	529	0	529	0	496	0	496	0	-33	0	-33	-	1.5	-	1.5	-	8	-	-	A	-	8	A			142	-	-	-	-
		Off-Ramp	228	0	48	276	232	0	46	278	4	0	-2	2	0.3	-	0.3	0.1	10	-	5	A	-	A	9	A			-	500	111	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1299	193	1492	0	1298	188	1486	0	-1	-5	-6	-	0.0	0.4	0.2	-	18	11	-	B	B	17	B	18	B	365	-	-	225	365
		WB Arterial	369	779	0	1148	371	753	0	1124	2	-26	0	-24	0.1	0.9	-	0.7	33	3	-	C	A	-	13	B			173	270	173	-	-
		Off-Ramp	318	0	23	341	318	0	25	343	0	0	2	2	-	-	0.4	0.1	37	-	8	D	-	A	35	C			154	Continuous	154	225	-
	WB Ramps (Signalized)	EB Arterial	129	1488	0	1617	132	1480	0	1612	3	-8	0	-5	0.3	0.2	-	0.1	15	1	-	B	A	-	2	A	2	A	61	400	61	-	-
		WB Arterial	0	1139	373	1512	0	1124	371	1495	0	-15	-2	-17	-	0.4	0.1	0.4	-	2	4	-	A	A	2	A			84	-	-	-	-
		Off-Ramp	0	0	448	448	0	0	453	453	0	0	5	5	-	-	0.2	0.2	-	-	3	-	-	A	3	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1440	96	1536	0	1465	93	1558	0	25	-3	22	-	0.7	0.3	0.6	-	19	3	-	B	A	18	B	16	B	368	-	-	375	6
		WB Arterial	309	1075	0	1384	295	1066	0	1361	-14	-9	0	-23	0.8	0.3	-	0.6	33	3	-	C	A	-	10	A			127	275	127	-	-
		Off-Ramp	641	0	160	801	592	0	167	759	-49	0	7	-42	2.0	-	0.5	1.5	29	-	3	C	-	A	23	C			216	Continuous	216	300	-
	WB Ramps (Signalized)	EB Arterial	190	1891	0	2081	173	1880	0	2053	-17	-11	0	-28	1.3	0.3	-	0.6	23	1	-	C	A	-	3	A	5	A	96	275	96	-	-
		WB Arterial	0	1342	760	2102	0	1323	775	2098	0	-19	15	-4	-	0.5	0.5	0.1	-	9	6	-	A	A	8	A			209	-	-	375	0
		Off-Ramp	42	0	523	565	48	0	503	551	6	0	-20	-14	0.9	-	0.9	0.6	36	-	1	D	-	A	4	A			51	Continuous	51	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

4:00 - 5:00 PM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Left Turn		Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1059	480	1539	0	1064	488	1552	0	5	8	13	-	0.2	0.4	0.3	-	19	18	-	B	B	19	B	15	B	376	-	-	-	6
		WB Arterial	220	932	0	1152	204	930	0	1134	-16	-2	0	-18	1.1	0.1	-	0.5	21	3	-	C	A	-	6	A			116	400	116	-	-
		Off-Ramp	338	0	112	450	336	0	104	440	-2	0	-8	-10	0.1	-	0.8	0.5	31	-	5	C	-	A	25	C			-	Continuous	254	-	0
	WB Ramps (Signalized)	EB Arterial	186	1211	0	1397	170	1230	0	1400	-16	19	0	3	1.2	0.5	-	0.1	10	4	-	A	A	-	5	A	10	B	103	400	103	-	-
		WB Arterial	0	831	574	1405	0	818	590	1408	0	-13	16	3	-	0.5	0.7	0.1	-	15	12	-	B	B	14	B			305	-	-	-	-
		Off-Ramp	321	0	299	620	319	0	294	613	-2	0	-5	-7	0.1	-	0.3	0.3	22	-	6	C	-	A	14	B			-	Continuous	190	-	-
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	634	0	634	0	637	0	637	0	3	0	3	-	0.1	-	0.1	-	9	-	-	A	-	9	A	9	A	181	-	-	-	-
		WB Arterial	0	575	0	575	0	548	0	548	0	-27	0	-27	-	1.1	-	1.1	-	8	-	-	A	-	8	A			150	-	-	-	-
		Off-Ramp	248	0	52	300	248	0	59	307	0	0	7	7	-	-	0.9	0.4	10	-	6	A	-	A	9	A			-	500	124	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1409	209	1618	0	1415	215	1630	0	6	6	12	-	0.2	0.4	0.3	-	20	13	-	B	B	19	B	19	B	450	-	-	225	450
		WB Arterial	401	879	0	1280	384	880	0	1264	-17	1	0	-16	0.9	0.0	-	0.4	35	4	-	C	A	-	13	B			191	270	191	-	-
		Off-Ramp	345	0	25	370	338	0	30	368	-7	0	5	-2	0.4	-	1.0	0.1	36	-	8	D	-	A	34	C			166	Continuous	166	225	-
	WB Ramps (Signalized)	EB Arterial	144	1610	0	1754	137	1614	0	1751	-7	4	0	-3	0.6	0.1	-	0.1	17	2	-	B	A	-	3	A	3	A	74	400	74	-	-
		WB Arterial	0	1270	416	1686	0	1266	425	1691	0	-4	9	5	-	0.1	0.4	0.1	-	3	5	-	A	A	4	A			114	-	-	-	-
		Off-Ramp	0	0	500	500	0	0	507	507	0	0	7	7	-	-	0.3	0.3	-	-	3	-	-	A	3	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1564	104	1668	0	1578	101	1679	0	14	-3	11	-	0.4	0.3	0.3	-	22	3	-	C	A	21	C	17	B	442	-	-	375	26
		WB Arterial	336	1208	0	1544	328	1211	0	1539	-8	3	0	-5	0.4	0.1	-	0.1	34	3	-	C	A	-	10	A			139	275	139	-	-
		Off-Ramp	696	0	174	870	688	0	183	871	-8	0	9	1	0.3	-	0.7	0.0	29	-	4	C	-	A	24	C			239	Continuous	239	300	-
	WB Ramps (Signalized)	EB Arterial	212	2048	0	2260	188	2072	0	2260	-24	24	0	0	1.7	0.5	-	-	23	1	-	C	A	-	3	A	6	A	103	275	103	-	-
		WB Arterial	0	1497	848	2345	0	1492	855	2347	0	-5	7	2	-	0.1	0.2	0.0	-	11	7	-	B	A	10	A			248	-	-	375	10
		Off-Ramp	47	0	583	630	50	0	575	625	3	0	-8	-5	0.4	-	0.3	0.2	37	-	1	D	-	A	4	A			55	Continuous	55	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

5:00 - 5:30 PM

Intersection		Approach	Volumes: Demand Volumes (veh/hr)				Volumes: Average Modeled Volumes - 11 Runs (veh/hr)				Volumes: Average Modeled - Demand Volumes (veh/hr)				Volumes: GEH Statistic				Delay Time: Total Delay by Movement (sec/veh)			Levels of Service*: Level of Service by Movement			Levels of Service*: LOS by Approach		Levels of Service*: LOS by Intersection		Modeled Storage & Maximum Traffic Queuing (feet): Through	Left Turn		Right Turn	
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Queue	Storage	Queue	Storage	Queue
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1046	474	1520	0	1029	485	1514	0	-17	11	-6	-	0.5	0.5	0.2	-	20	18	-	B	B	19	B	16	B	388	-	-	-	2
		WB Arterial	217	893	0	1110	201	910	0	1111	-16	17	0	1	1.1	0.6	-	0.0	19	3	-	B	A	-	6	A			103	400	103	-	-
		Off-Ramp	333	0	111	444	339	0	93	432	6	0	-18	-12	0.3	-	1.8	0.6	34	-	6	C	-	A	28	C			-	Continuous	295	-	7
	WB Ramps (Signalized)	EB Arterial	179	1200	0	1379	178	1192	0	1370	-1	-8	0	-9	0.1	0.2	-	0.2	10	4	-	A	A	-	5	A	10	B	105	400	105	-	-
		WB Arterial	0	801	553	1354	0	793	560	1353	0	-8	7	-1	-	0.3	0.3	0.0	-	15	12	-	B	B	14	B			279	-	-	-	-
		Off-Ramp	309	0	288	597	313	0	283	596	4	0	-5	-1	0.2	-	0.3	0.0	22	-	5	C	-	A	14	B			-	Continuous	179	-	-
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	626	0	626	0	626	0	626	0	0	0	0	-	-	-	-	-	8	-	-	A	-	8	A	8	A	165	-	-	-	-
		WB Arterial	0	568	0	568	0	537	0	537	0	-31	0	-31	-	1.3	-	1.3	-	8	-	-	A	-	8	A			145	-	-	-	-
		Off-Ramp	245	0	51	296	234	0	55	289	-11	0	4	-7	0.7	-	0.5	0.4	11	-	6	B	-	A	10	A			-	500	123	-	-
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1389	206	1595	0	1387	221	1608	0	-2	15	13	-	0.1	1.0	0.3	-	19	12	-	B	B	18	B	18	B	398	-	-	225	398
		WB Arterial	396	835	0	1231	394	833	0	1227	-2	-2	0	-4	0.1	0.1	-	0.1	34	3	-	C	A	-	13	B			201	270	201	-	-
		Off-Ramp	340	0	25	365	334	0	39	373	-6	0	14	8	0.3	-	2.5	0.4	36	-	8	D	-	A	33	C			164	Continuous	164	225	-
	WB Ramps (Signalized)	EB Arterial	139	1590	0	1729	124	1598	0	1722	-15	8	0	-7	1.3	0.2	-	0.2	17	2	-	B	A	-	3	A	3	A	54	400	54	-	-
		WB Arterial	0	1221	400	1621	0	1224	401	1625	0	3	1	4	-	0.1	0.0	0.1	-	2	4	-	A	A	2	A			103	-	-	-	-
		Off-Ramp	0	0	481	481	0	0	469	469	0	0	-12	-12	-	-	0.6	0.6	-	-	3	-	-	A	3	A			-	475	-	Continuous	-
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1544	103	1647	0	1519	95	1614	0	-25	-8	-33	-	0.6	0.8	0.8	-	21	3	-	C	A	20	B	17	B	406	-	-	375	14
		WB Arterial	331	1155	0	1486	348	1134	0	1482	17	-21	0	-4	0.9	0.6	-	0.1	35	3	-	C	A	-	11	B			140	275	140	-	-
		Off-Ramp	687	0	172	859	704	0	177	881	17	0	5	22	0.6	-	0.4	0.7	29	-	4	C	-	A	24	C			256	Continuous	256	300	-
	WB Ramps (Signalized)	EB Arterial	204	2027	0	2231	198	2037	0	2235	-6	10	0	4	0.4	0.2	-	0.1	23	1	-	C	A	-	3	A	6	A	109	275	109	-	-
		WB Arterial	0	1441	816	2257	0	1413	829	2242	0	-28	13	-15	-	0.7	0.5	0.3	-	10	7	-	A	A	9	A			242	-	-	375	0
		Off-Ramp	45	0	561	606	54	0	576	630	9	0	15	24	1.3	-	0.6	1.0	34	-	1	C	-	A	4	A			56	Continuous	56	-	-

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables comparing delay to LOS.

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - PM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

3:30 - 4:00 PM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	488	216	704	0	495	211	706	0	479	232	711	0	488	226	714	0	499	214	713	0	506	203	709	0	472	227	699
		WB Arterial	77	407	0	484	91	434	0	525	88	431	0	519	78	419	0	497	86	401	0	487	93	399	0	492	97	437	0	534
		Off-Ramp	156	0	56	212	149	0	55	204	153	0	50	203	148	0	55	203	161	0	36	197	156	0	52	208	183	0	46	229
	WB Ramps (Signalized)	EB Arterial	78	559	0	637	76	568	0	644	76	553	0	629	81	556	0	637	86	573	0	659	82	571	0	653	72	576	0	648
		WB Arterial	0	358	268	626	0	371	261	632	0	373	254	627	0	356	277	633	0	342	290	632	0	364	259	623	0	383	246	629
		Off-Ramp	125	0	161	286	154	0	144	298	146	0	120	266	137	0	132	269	146	0	115	261	134	0	138	272	149	0	132	281
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	286	0	286	0	290	0	290	0	290	0	290	0	294	0	294	0	290	0	290	0	290	0	290	0	285	0	285
		WB Arterial	0	244	0	244	0	254	0	254	0	247	0	247	0	249	0	249	0	255	0	255	0	254	0	254	0	231	0	231
		Off-Ramp	112	0	25	137	106	0	26	132	104	0	31	135	104	0	20	124	122	0	26	148	122	0	22	144	115	0	25	140
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	664	85	749	0	665	81	746	0	656	90	746	0	644	109	753	0	635	99	734	0	653	90	743	0	650	87	737
		WB Arterial	174	367	0	541	195	386	0	581	199	363	0	562	190	370	0	560	208	366	0	574	171	392	0	563	167	410	0	577
		Off-Ramp	149	0	7	156	168	0	13	181	154	0	15	169	178	0	9	187	176	0	12	188	163	0	15	178	167	0	12	179
	WB Ramps (Signalized)	EB Arterial	80	735	0	815	64	776	0	840	60	753	0	813	75	746	0	821	55	745	0	800	64	741	0	805	66	746	0	812
		WB Arterial	0	546	191	737	0	581	170	751	0	559	187	746	0	561	175	736	0	560	192	752	0	563	195	758	0	581	186	767
		Off-Ramp	0	0	237	237	0	0	231	231	0	0	206	206	0	0	227	227	0	0	238	238	0	0	221	221	0	0	230	230
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	743	44	787	0	720	49	769	0	716	55	771	0	728	49	777	0	745	34	779	0	734	52	786	0	730	53	783
		WB Arterial	141	525	0	666	136	548	0	684	138	546	0	684	152	506	0	658	168	532	0	700	147	546	0	693	163	513	0	676
		Off-Ramp	281	0	89	370	305	0	73	378	293	0	85	378	299	0	83	382	310	0	80	390	277	0	89	366	295	0	84	379
	WB Ramps (Signalized)	EB Arterial	87	940	0	1027	83	950	0	1033	92	919	0	1011	86	953	0	1039	84	962	0	1046	97	908	0	1005	64	952	0	1016
		WB Arterial	0	655	380	1035	0	670	385	1055	0	670	385	1055	0	646	395	1041	0	681	386	1067	0	665	369	1034	0	652	411	1063
		Off-Ramp	24	0	247	271	22	0	250	272	28	0	269	297	18	0	260	278	25	0	260	285	26	0	269	295	26	0	225	251

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables cc

4:00 - 5:00 PM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1073	484	1557	0	1051	504	1555	0	1077	472	1549	0	1068	482	1550	0	1058	485	1543	0	1053	498	1551	0	1056	506	1562
		WB Arterial	204	940	0	1144	200	921	0	1121	216	918	0	1134	217	920	0	1137	217	922	0	1139	203	925	0	1128	178	919	0	1097
		Off-Ramp	311	0	94	405	332	0	124	456	347	0	96	443	350	0	109	459	326	0	101	427	368	0	100	468	337	0	101	438
	WB Ramps (Signalized)	EB Arterial	178	1212	0	1390	177	1210	0	1387	168	1258	0	1426	180	1234	0	1414	160	1214	0	1374	170	1254	0	1424	173	1227	0	1400
		WB Arterial	0	835	576	1411	0	808	590	1398	0	810	601	1411	0	812	593	1405	0	842	566	1408	0	818	589	1407	0	799	603	1402
		Off-Ramp	313	0	310	623	315	0	309	624	323	0	324	647	331	0	278	609	305	0	308	613	307	0	265	572	299	0	301	600
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	639	0	639	0	640	0	640	0	632	0	632	0	632	0	632	0	639	0	639	0	633	0	633	0	643	0	643
		WB Arterial	0	541	0	541	0	555	0	555	0	550	0	550	0	532	0	532	0	545	0	545	0	533	0	533	0	547	0	547
		Off-Ramp	250	0	46	296	246	0	66	312	272	0	39	311	276	0	62	338	247	0	52	299	237	0	66	303	262	0	59	321
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1422	204	1626	0	1410	234	1644	0	1388	228	1616	0	1397	205	1602	0	1456	187	1643	0	1425	208	1633	0	1412	228	1640
		WB Arterial	405	879	0	1284	336	911	0	1247	375	894	0	1269	380	865	0	1245	400	886	0	1286	376	892	0	1268	400	857	0	1257
		Off-Ramp	350	0	29	379	343	0	27	370	335	0	36	371	343	0	31	374	341	0	40	381	333	0	26	359	320	0	28	348
	WB Ramps (Signalized)	EB Arterial	142	1624	0	1766	140	1611	0	1751	138	1577	0	1715	137	1593	0	1730	135	1659	0	1794	122	1639	0	1761	136	1589	0	1725
		WB Arterial	0	1281	407	1688	0	1246	427	1673	0	1274	414	1688	0	1246	461	1707	0	1292	419	1711	0	1270	421	1691	0	1263	424	1687
		Off-Ramp	0	0	536	536	0	0	509	509	0	0	503	503	0	0	470	470	0	0	522	522	0	0	493	493	0	0	518	518
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1592	85	1677	0	1582	102	1684	0	1578	106	1684	0	1580	98	1678	0	1580	100	1680	0	1572	110	1682	0	1572	103	1675
		WB Arterial	312	1247	0	1559	335	1188	0	1523	351	1210	0	1561	349	1224	0	1573	305	1219	0	1524	305	1169	0	1474	327	1209	0	1536
		Off-Ramp	683	0	180	863	678	0	162	840	679	0	190	869	696	0	200	896	708	0	179	887	689	0	175	864	697	0	186	883
	WB Ramps (Signalized)	EB Arterial	185	2077	0	2262	197	2047	0	2244	193	2052	0	2245	194	2064	0	2258	195	2093	0	2288	165	2091	0	2256	192	2074	0	2266
		WB Arterial	0	1494	868	2362	0	1478	862	2340	0	1511	838	2349	0	1519	840	2359	0	1486	857	2343	0	1436	919	2355	0	1496	833	2329
		Off-Ramp	55	0	534	589	45	0	597	642	45	0	553	598	49	0	586	635	50	0	558	608	44	0	570	614	48	0	603	651

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables cc

5:00 - 5:30 PM

Intersection		Approach	Modeled Volumes																									
			Run 1				Run 2				Run 3				Run 4				Run 5				Run 6				Run 7			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	517	232	749	0	519	244	763	0	521	233	754	0	525	234	759	0	508	242	750	0	495	262	757	0	518	242	760
		WB Arterial	106	451	0	557	88	458	0	546	94	473	0	567	115	423	0	538	101	447	0	548	93	461	0	554	99	462	0	561
		Off-Ramp	158	0	53	211	154	0	43	197	151	0	53	204	180	0	46	226	164	0	49	213	170	0	42	212	185	0	50	235
	WB Ramps (Signalized)	EB Arterial	75	597	0	672	93	579	0	672	97	578	0	675	95	610	0	705	81	588	0	669	80	585	0	665	91	617	0	708
		WB Arterial	0	391	283	674	0	394	291	685	0	413	263	676	0	397	278	675	0	398	277	675	0	395	289	684	0	396	287	683
		Off-Ramp	160	0	153	313	157	0	139	296	159	0	142	301	139	0	144	283	146	0	130	276	154	0	121	275	161	0	149	310
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	312	0	312	0	307	0	307	0	316	0	316	0	311	0	311	0	313	0	313	0	318	0	318	0	308	0	308
		WB Arterial	0	279	0	279	0	282	0	282	0	265	0	265	0	281	0	281	0	249	0	249	0	259	0	259	0	267	0	267
		Off-Ramp	113	0	27	140	123	0	23	146	116	0	26	142	117	0	26	143	111	0	26	137	137	0	26	163	103	0	37	140
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	708	95	803	0	679	134	813	0	670	132	802	0	694	112	806	0	703	98	801	0	691	101	792	0	710	97	807
		WB Arterial	203	432	0	635	193	406	0	599	200	420	0	620	186	404	0	590	215	404	0	619	207	425	0	632	203	414	0	617
		Off-Ramp	172	0	28	200	153	0	22	175	147	0	22	169	178	0	15	193	159	0	24	183	159	0	22	181	168	0	15	183
	WB Ramps (Signalized)	EB Arterial	64	816	0	880	52	774	0	826	56	764	0	820	65	807	0	872	71	795	0	866	58	793	0	851	66	819	0	885
		WB Arterial	0	638	195	833	0	600	225	825	0	617	177	794	0	586	203	789	0	616	197	813	0	635	186	821	0	611	225	836
		Off-Ramp	0	0	236	236	0	0	224	224	0	0	238	238	0	0	219	219	0	0	250	250	0	0	239	239	0	0	240	240
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	770	38	808	0	744	54	798	0	754	55	809	0	760	50	810	0	755	53	808	0	762	49	811	0	755	51	806
		WB Arterial	163	571	0	734	171	554	0	725	175	559	0	734	157	551	0	708	171	583	0	754	183	576	0	759	161	581	0	742
		Off-Ramp	339	0	87	426	360	0	97	457	364	0	84	448	333	0	89	422	370	0	86	456	383	0	103	486	341	0	78	419
	WB Ramps (Signalized)	EB Arterial	106	1009	0	1115	88	1034	0	1122	98	1034	0	1132	92	1009	0	1101	84	1050	0	1134	112	1035	0	1147	105	1001	0	1106
		WB Arterial	0	709	411	1120	0	694	438	1132	0	702	421	1123	0	686	429	1115	0	716	392	1108	0	726	402	1128	0	701	431	1132
		Off-Ramp	22	0	298	320	27	0	296	323	22	0	266	288	22	0	292	314	24	0	290	314	31	0	277	308	29	0	290	319

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - PM Peak Period
Arterial Measures of Effectiveness
VISSIM 11 Run Summary

3:30 - 4:00 PM

Intersection		Approach	Modeled Volumes																	Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11				Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total				
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	458	249	707	0	476	231		707	0	491	213	704	0	488	223	711	708	4.5	3.2	0%
		WB Arterial	95	401	0	496	76	426	0		502	88	404	0	492	109	397	0	506	503	16.3	11.7	2%
		Off-Ramp	161	0	43	204	172	0	43		215	182	0	46	228	172	0	44	216	211	10.4	7.5	4%
	WB Ramps (Signalized)	EB Arterial	77	542	0	619	69	579	0		648	78	598	0	676	69	590	0	659	646	15.7	11.3	2%
		WB Arterial	0	367	258	625	0	354	275		629	0	362	261	623	0	363	264	627	628	3.5	2.5	0%
		Off-Ramp	131	0	150	281	147	0	110		257	132	0	150	282	141	0	147	288	276	12.5	8.9	3%
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	286	0	286	0	291	0		291	0	287	0	287	0	291	0	291	289	2.7	2.0	1%
		WB Arterial	0	243	0	243	0	252	0		252	0	255	0	255	0	242	0	242	248	7.4	5.3	2%
		Off-Ramp	124	0	21	145	120	0	18		138	123	0	19	142	126	0	20	146	139	7.0	5.0	4%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	657	89	746	0	660	100		760	0	625	101	726	0	632	104	736	743	9.5	6.8	1%
		WB Arterial	183	375	0	558	185	383	0		568	179	386	0	565	190	346	0	536	562	13.8	9.9	2%
		Off-Ramp	142	0	18	160	149	0	9		158	148	0	10	158	156	0	15	171	171	12.0	8.6	5%
	WB Ramps (Signalized)	EB Arterial	71	728	0	799	63	737	0		800	68	711	0	779	60	721	0	781	806	17.4	12.4	2%
		WB Arterial	0	558	184	742	0	569	185		754	0	562	181	743	0	542	193	735	747	10.1	7.2	1%
		Off-Ramp	0	0	247	247	0	0	249		249	0	0	204	204	0	0	203	203	227	16.5	11.8	5%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	738	43	781	0	726	50		776	0	734	45	779	0	745	38	783	779	5.7	4.1	1%
		WB Arterial	152	546	0	698	146	542	0		688	140	536	0	676	141	521	0	662	680	14.2	10.2	1%
		Off-Ramp	305	0	83	388	293	0	77		370	315	0	88	403	282	0	90	372	380	10.8	7.7	2%
	WB Ramps (Signalized)	EB Arterial	78	956	0	1034	78	941	0		1019	103	939	0	1042	99	919	0	1018	1026	13.5	9.6	1%
		WB Arterial	0	680	374	1054	0	661	394		1055	0	660	393	1053	0	635	392	1027	1049	12.8	9.2	1%
		Off-Ramp	26	0	257	283	28	0	227		255	20	0	239	259	21	0	261	282	275	15.4	11.0	4%

* Level of service (LOS) letter designations are based on 2010 Highway Capacity Manual tables cc

4:00 - 5:00 PM

Intersection		Approach	Modeled Volumes																	Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11				Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total				
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1075	476	1551	0	1090	468		1558	0	1071	481	1552	0	1035	516	1551	1553	5.1	3.7	0%
		WB Arterial	196	951	0	1147	225	918	0		1143	208	928	0	1136	184	967	0	1151	1134	15.0	10.7	1%
		Off-Ramp	328	0	102	430	343	0	114		457	326	0	93	419	330	0	110	440	440	19.1	13.6	3%
	WB Ramps (Signalized)	EB Arterial	166	1237	0	1403	173	1259	0		1432	163	1229	0	1392	167	1197	0	1364	1401	21.9	15.6	1%
		WB Arterial	0	812	605	1417	0	848	563		1411	0	803	604	1407	0	806	602	1408	1408	5.0	3.6	0%
		Off-Ramp	332	0	280	612	300	0	311		611	339	0	294	633	346	0	249	595	613	19.9	14.3	2%
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	643	0	643	0	632	0		632	0	640	0	640	0	630	0	630	637	4.9	3.5	1%
		WB Arterial	0	577	0	577	0	557	0		557	0	554	0	554	0	542	0	542	548	12.6	9.0	2%
		Off-Ramp	230	0	65	295	244	0	64		308	243	0	67	310	226	0	62	288	307	13.8	9.9	3%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1399	236	1635	0	1404	222		1626	0	1419	211	1630	0	1437	207	1644	1631	13.0	9.3	1%
		WB Arterial	388	892	0	1280	408	848	0		1256	378	891	0	1269	382	869	0	1251	1265	14.6	10.4	1%
		Off-Ramp	341	0	28	369	337	0	35		372	359	0	28	387	318	0	26	344	369	13.3	9.5	3%
	WB Ramps (Signalized)	EB Arterial	138	1603	0	1741	135	1614	0		1749	146	1623	0	1769	135	1620	0	1755	1751	22.4	16.0	1%
		WB Arterial	0	1285	401	1686	0	1251	446		1697	0	1270	413	1683	0	1246	442	1688	1691	10.7	7.7	0%
		Off-Ramp	0	0	467	467	0	0	509		509	0	0	525	525	0	0	522	522	507	22.2	15.9	3%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	1592	95	1687	0	1559	117		1676	0	1572	103	1675	0	1583	93	1676	1679	4.2	3.0	0%
		WB Arterial	337	1217	0	1554	342	1208	0		1550	316	1217	0	1533	332	1216	0	1548	1540	26.9	19.2	1%
		Off-Ramp	673	0	175	848	689	0	202		891	680	0	177	857	691	0	186	877	870	18.1	12.9	1%
	WB Ramps (Signalized)	EB Arterial	217	2059	0	2276	170	2077	0		2247	183	2062	0	2245	182	2093	0	2275	2260	14.8	10.6	0%
		WB Arterial	0	1507	835	2342	0	1503	838		2341	0	1484	857	2341	0	1501	860	2361	2347	10.6	7.6	0%
		Off-Ramp	47	0	583	630	57	0	556		613	58	0	611	669	53	0	575	628	625	23.7	16.9	3%

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5:00 - 5:30 PM

Intersection		Approach	Modeled Volumes																	Modeled Approach Volume Statistics			
			Run 8				Run 9					Run 10				Run 11				Average	Standard Deviation	Confidence Interval (95% Level of Confidence, t-distribution)	% Error (±)
			Left	Thru	Right	Total	Left	Thru	Right	Diagonal	Total	Left	Thru	Right	Total	Left	Thru	Right	Total				
E-W Corridor / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	527	232	759	0	523	232		755	0	501	257	758	0	506	255	761	757	4.4	3.2	0%
		WB Arterial	90	463	0	553	117	455	0		572	113	460	0	573	88	454	0	542	556	11.8	8.4	2%
		Off-Ramp	191	0	45	236	190	0	45		235	182	0	44	226	142	0	42	184	216	17.0	12.2	6%
	WB Ramps (Signalized)	EB Arterial	102	608	0	710	95	622	0		717	84	604	0	688	84	570	0	654	685	21.5	15.4	2%
		WB Arterial	0	394	265	659	0	384	290		674	0	411	272	683	0	389	285	674	677	7.4	5.3	1%
		Off-Ramp	160	0	142	302	183	0	134		317	150	0	153	303	153	0	148	301	298	14.3	10.2	3%
Fair Avenue / I-82 EB Off-Ramp	EB Ramp (Signalized)	EB Arterial	0	310	0	310	0	314	0		314	0	314	0	314	0	319	0	319	313	3.8	2.7	1%
		WB Arterial	0	265	0	265	0	271	0		271	0	258	0	258	0	278	0	278	269	10.7	7.7	3%
		Off-Ramp	125	0	35	160	113	0	23		136	110	0	28	138	120	0	27	147	145	9.0	6.4	4%
Yakima Avenue / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	694	124	818	0	696	110		806	0	692	108	800	0	694	103	797	804	7.2	5.1	1%
		WB Arterial	207	406	0	613	182	411	0		593	198	421	0	619	173	436	0	609	613	14.6	10.4	2%
		Off-Ramp	160	0	15	175	184	0	21		205	173	0	17	190	183	0	16	199	187	11.7	8.3	4%
	WB Ramps (Signalized)	EB Arterial	60	797	0	857	64	807	0		871	57	809	0	866	68	809	0	877	861	21.2	15.2	2%
		WB Arterial	0	608	205	813	0	593	202		795	0	624	194	818	0	605	199	804	813	15.8	11.3	1%
		Off-Ramp	0	0	231	231	0	0	222		222	0	0	226	226	0	0	252	252	234	11.0	7.8	3%
Nob Hill Boulevard / I-82 Interchange	EB Ramps (Signalized)	EB Arterial	0	751	48	799	0	759	48		807	0	776	35	811	0	766	42	808	807	4.4	3.1	0%
		WB Arterial	177	545	0	722	183	581	0		764	179	561	0	740	195	574	0	769	741	19.0	13.6	2%
		Off-Ramp	358	0	85	443	339	0	90		429	352	0	85	437	333	0	90	423	441	20.3	14.5	3%
	WB Ramps (Signalized)	EB Arterial	102	1000	0	1102	103	992	0		1095	97	1038	0	1135	103	1000	0	1103	1117	17.5	12.5	1%
		WB Arterial	0	697	409	1106	0	725	399		1124	0	691	431	1122	0	726	396	1122	1121	8.6	6.1	1%
		Off-Ramp	22	0	283	305	27	0	285		312	37	0	291	328	32	0	301	333	315	12.2	8.7	3%

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	3:30 - 4:00 PM Summary						4:00 - 5:00 PM Summary					
						Volume				Speed (mph)	Density (vplpm)	Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic			Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Eastbound Mainline	Start		87	1,746	3	3,186	3,185	(1)	0.0	58	18	3,460	3,501	41	0.7	58	20
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,186	3,173	(13)	0.2	58	18	3,460	3,493	33	0.6	57	21
	US 12 / 1st Street Off-Ramp		90	858	2	1,390	1,388	(2)	0.1	49	14	1,510	1,510	(0)	0.0	48	16
	US 12 / 1st Street Off-Ramp		91	872	2	1,796	1,779	(17)	0.4	58	15	1,950	1,976	26	0.6	58	17
			117	401	2	1,796	1,777	(19)	0.5	58	15	1,950	1,976	26	0.6	58	17
		US 12 / 1st Street On-Ramp	118	1,992	2	1,796	1,774	(22)	0.5	59	15	1,950	1,977	27	0.6	59	17
	US 12 / 1st Street On-Ramp		99	549	2	1,298	1,264	(34)	0.9	58	11	1,410	1,415	5	0.1	56	13
			10114	209	1	1,298	1,268	(30)	0.8	58	22	1,410	1,416	6	0.2	57	25
	US 12 / 1st Street On-Ramp		100	655	3	3,094	3,023	(71)	1.3	60	17	3,360	3,375	15	0.3	59	19
		CD Roadway Off-Ramp	101	1,894	3	3,094	3,011	(83)	1.5	60	17	3,360	3,363	3	0.1	59	19
	CD Roadway Off-Ramp		26	1,135	1	948	981	33	1.1	52	19	1,030	1,058	28	0.9	52	20
	CD Roadway Off-Ramp		139	1,274	3	2,146	2,050	(96)	2.1	61	11	2,330	2,327	(3)	0.1	61	13
			140	1,550	3	2,146	2,050	(96)	2.1	61	11	2,330	2,325	(5)	0.1	61	13
			138	1,287	3	2,146	2,048	(98)	2.1	61	11	2,330	2,323	(7)	0.1	61	13
			142	1,288	3	2,146	2,048	(98)	2.1	61	11	2,330	2,322	(8)	0.2	61	13
			141	1,382	3	2,146	2,048	(98)	2.1	61	11	2,330	2,321	(9)	0.2	61	13
			143	1,509	3	2,146	2,050	(96)	2.1	61	11	2,330	2,319	(11)	0.2	61	13
		CD Roadway On-Ramp	111	1,102	3	2,146	2,044	(102)	2.2	61	11	2,330	2,317	(13)	0.3	61	13
	CD Roadway On-Ramp		206	379	1	1,537	1,526	(11)	0.3	54	**28**	1,670	1,681	11	0.3	53	**32**
	CD Roadway On-Ramp		112	651	4	3,683	3,569	(114)	1.9	60	15	4,000	3,997	(3)	0.1	59	17
			146	550	4	3,683	3,570	(113)	1.9	59	15	4,000	3,997	(3)	0.0	59	17
			207	650	3	3,683	3,570	(113)	1.9	60	20	4,000	3,996	(4)	0.1	59	22
		Nob Hill Boulevard Off-Ramp	145	1,813	3	3,683	3,537	(146)	2.4	60	20	4,000	3,960	(40)	0.6	60	22
	Nob Hill Boulevard Off-Ramp		53	980	1	801	775	(26)	0.9	52	15	870	870	0	0.0	52	17
	Nob Hill Boulevard Off-Ramp		144	1,385	3	2,882	2,792	(90)	1.7	61	15	3,130	3,123	(7)	0.1	61	17
		Nob Hill Boulevard On-Ramp	147	1,411	3	2,882	2,791	(91)	1.7	61	15	3,130	3,122	(8)	0.1	61	17
	Nob Hill Boulevard On-Ramp		116	352	1	405	388	(17)	0.8	48	8	440	429	(11)	0.5	48	9
	Nob Hill Boulevard On-Ramp		115	602	4	3,287	3,181	(106)	1.9	60	13	3,570	3,548	(22)	0.4	60	15
		End	171	1,527	3	3,287	3,185	(102)	1.8	60	18	3,570	3,546	(24)	0.4	60	20
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	948	981	33	1.1	52	19	1,030	1,058	28	0.9	52	20
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	690	689	(1)	0.0	44	16	750	742	(8)	0.3	44	17
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	258	290	32	1.9	44	7	280	312	32	1.9	45	7
		E-W Corridor On-Ramp	194	1,399	1	258	290	32	1.9	44	7	280	313	33	1.9	44	7
	E-W Corridor On-Ramp		187	777	1	644	621	(23)	0.9	38	17	700	692	(8)	0.3	37	19
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	902	907	5	0.2	44	21	980	1,006	26	0.8	44	23
	Yakima Avenue Off-Ramp		10	624	1	341	342	1	0.0	35	10	370	368	(2)	0.1	35	11
	Yakima Avenue Off-Ramp		195	1,500	1	561	566	5	0.2	44	13	610	638	28	1.1	44	15
		Yakima Avenue / Fair Avenue On-Ramp	196	912	1	561	565	4	0.1	44	13	610	639	29	1.2	44	15
	Yakima Avenue / Fair Avenue On-Ramp		109	511	1	976	948	(28)	0.9	42	22	1,060	1,031	(29)	0.9	42	24
	Yakima Avenue / Fair Avenue On-Ramp		205	622	2	1,537	1,526	(11)	0.3	43	18	1,670	1,684	14	0.3	43	20
		End of C-D Roadway	189	656	2	1,537	1,526	(11)	0.3	45	17	1,670	1,682	12	0.3	44	19

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	3:30 - 4:00 PM Summary						4:00 - 5:00 PM Summary					
						Volume				Speed (mph)	Density (vplpm)	Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic			Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Westbound Mainline	Start		164	1,750	3	3,471	3,464	(7)	0.1	59	20	3,870	3,892	22	0.4	58	22
			165	1,745	3	3,471	3,462	(9)	0.2	58	20	3,870	3,891	21	0.3	58	22
			166	1,746	3	3,471	3,454	(17)	0.3	58	20	3,870	3,889	19	0.3	58	22
		Nob Hill Boulevard Off-Ramp	167	1,745	3	3,471	3,426	(45)	0.8	59	19	3,870	3,864	(6)	0.1	59	22
	Nob Hill Boulevard Off-Ramp		47	546	1	565	552	(13)	0.5	53	10	630	625	(5)	0.2	53	12
	Nob Hill Boulevard Off-Ramp		148	1,151	3	2,906	2,892	(14)	0.3	61	16	3,240	3,260	20	0.3	60	18
			149	1,228	3	2,906	2,891	(15)	0.3	61	16	3,240	3,256	16	0.3	61	18
		Nob Hill Boulevard On-Ramp	114	427	3	2,906	2,882	(24)	0.5	60	16	3,240	3,244	4	0.1	60	18
	Nob Hill Boulevard On-Ramp		45	1,640	2	950	915	(35)	1.1	46	10	1,060	1,007	(53)	1.7	46	11
	Nob Hill Boulevard On-Ramp		168	738	4	3,856	3,845	(11)	0.2	60	16	4,300	4,299	(1)	0.0	59	18
			150	1,407	4	3,856	3,843	(13)	0.2	59	16	4,300	4,299	(1)	0.0	58	19
			113	1,276	3	3,856	3,836	(20)	0.3	59	22	4,300	4,297	(3)	0.0	58	25
		CD Roadway Off-Ramp	152	684	3	3,856	3,818	(38)	0.6	59	22	4,300	4,281	(19)	0.3	58	25
	CD Roadway Off-Ramp		183	698	2	1,497	1,494	(3)	0.1	56	13	1,670	1,680	10	0.2	55	15
	CD Roadway Off-Ramp		151	2,067	3	2,359	2,331	(28)	0.6	61	13	2,630	2,611	(19)	0.4	61	14
			153	1,332	3	2,359	2,330	(29)	0.6	61	13	2,630	2,611	(19)	0.4	61	14
			105	1,663	3	2,359	2,331	(28)	0.6	61	13	2,630	2,609	(21)	0.4	61	14
			154	1,596	3	2,359	2,322	(37)	0.8	61	13	2,630	2,610	(20)	0.4	61	14
		CD Roadway On-Ramp	155	829	3	2,359	2,316	(43)	0.9	61	13	2,630	2,611	(19)	0.4	61	14
	CD Roadway On-Ramp		200	958	1	1,067	1,066	(1)	0.0	53	20	1,190	1,197	7	0.2	52	23
	CD Roadway On-Ramp		204	441	4	3,426	3,366	(60)	1.0	58	15	3,820	3,796	(24)	0.4	56	17
		US 12 / 1st Street Off-Ramp	156	1,920	3	3,426	3,379	(47)	0.8	59	19	3,820	3,807	(13)	0.2	57	22
	US 12 / 1st Street Off-Ramp		102	832	1	1,390	1,375	(15)	0.4	53	26	1,550	1,557	7	0.2	52	**30**
	US 12 / 1st Street Off-Ramp		136	1,801	2	2,036	2,004	(32)	0.7	60	17	2,270	2,247	(23)	0.5	60	19
		US 12 / 1st Street On-Ramp	137	1,841	2	2,036	1,999	(37)	0.8	61	17	2,270	2,246	(24)	0.5	60	19
	US 12 / 1st Street On-Ramp		97	1,173	1	1,246	1,262	16	0.5	44	**29**	1,390	1,385	(5)	0.1	43	**32**
	US 12 / 1st Street On-Ramp	End	98	1,881	3	3,282	3,251	(31)	0.5	60	18	3,660	3,632	(28)	0.5	60	20
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	698	2	1,497	1,494	(3)	0.1	56	13	1,670	1,680	10	0.2	55	15
	Yakima Avenue Off-Ramp		106	464	1	1,058	1,056	(2)	0.1	44	24	1,180	1,191	11	0.3	44	27
	Yakima Avenue Off-Ramp		190	1,500	1	439	442	3	0.1	45	10	490	491	1	0.1	45	11
		Yakima Avenue On-Ramp	198	1,490	1	439	448	9	0.4	44	10	490	498	8	0.4	43	11
	Yakima Avenue On-Ramp		202	855	1	502	502	0	0.0	39	13	560	561	1	0.0	38	15
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	941	940	(1)	0.0	43	22	1,050	1,045	(5)	0.1	43	24
	E-W Corridor Off-Ramp		188	573	1	556	548	(8)	0.3	40	14	620	606	(14)	0.6	40	15
	E-W Corridor Off-Ramp		199	1,258	1	385	388	3	0.1	44	9	430	437	7	0.3	44	10
		E-W Corridor On-Ramp	201	1,258	1	385	390	5	0.2	43	9	430	441	11	0.5	43	10
	E-W Corridor On-Ramp		182	912	1	682	682	(0)	0.0	37	18	760	759	(1)	0.0	33	23
	E-W Corridor On-Ramp	End of C-D Roadway	200	958	1	1,067	1,066	(1)	0.0	53	20	1,190	1,197	7	0.2	52	23

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	5:00 - 5:30 PM Summary					
						Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Eastbound Mainline	Start		87	1,746	3	3,417	3,417	0	0.0	58	20
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,417	3,412	(5)	0.1	57	20
	US 12 / 1st Street Off-Ramp		90	858	2	1,491	1,472	(19)	0.5	48	15
	US 12 / 1st Street Off-Ramp		91	872	2	1,926	1,935	9	0.2	58	17
			117	401	2	1,926	1,935	9	0.2	58	17
		US 12 / 1st Street On-Ramp	118	1,992	2	1,926	1,938	12	0.3	59	16
	US 12 / 1st Street On-Ramp		99	549	2	1,392	1,407	15	0.4	57	12
			10114	209	1	1,392	1,409	17	0.5	57	25
	US 12 / 1st Street On-Ramp		100	655	3	3,318	3,331	13	0.2	59	19
		CD Roadway Off-Ramp	101	1,894	3	3,318	3,326	8	0.1	60	19
	CD Roadway Off-Ramp		26	1,135	1	1,017	1,030	13	0.4	52	20
	CD Roadway Off-Ramp		139	1,274	3	2,301	2,321	20	0.4	61	13
			140	1,550	3	2,301	2,324	23	0.5	61	13
			138	1,287	3	2,301	2,326	25	0.5	61	13
			142	1,288	3	2,301	2,327	26	0.5	61	13
			141	1,382	3	2,301	2,326	25	0.5	61	13
			143	1,509	3	2,301	2,325	24	0.5	61	13
		CD Roadway On-Ramp	111	1,102	3	2,301	2,322	21	0.4	61	13
	CD Roadway On-Ramp		206	379	1	1,649	1,682	33	0.8	53	32
	CD Roadway On-Ramp		112	651	4	3,950	4,001	51	0.8	59	17
			146	550	4	3,950	4,002	52	0.8	59	17
			207	650	3	3,950	4,010	60	1.0	59	23
		Nob Hill Boulevard Off-Ramp	145	1,813	3	3,950	3,971	21	0.3	60	22
	Nob Hill Boulevard Off-Ramp		53	980	1	859	861	2	0.1	52	17
	Nob Hill Boulevard Off-Ramp		144	1,385	3	3,091	3,141	50	0.9	61	17
		Nob Hill Boulevard On-Ramp	147	1,411	3	3,091	3,139	48	0.9	61	17
	Nob Hill Boulevard On-Ramp		116	352	1	434	440	6	0.3	48	9
	Nob Hill Boulevard On-Ramp		115	602	4	3,525	3,569	44	0.7	60	15
		End	171	1,527	3	3,525	3,559	34	0.6	60	20
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	1,017	1,030	13	0.4	52	20
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	740	720	(20)	0.7	44	16
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	277	307	30	1.7	45	7
		E-W Corridor On-Ramp	194	1,399	1	277	306	29	1.7	44	7
	E-W Corridor On-Ramp		187	777	1	691	684	(7)	0.2	36	19
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	968	990	22	0.7	43	23
	Yakima Avenue Off-Ramp		10	624	1	365	370	5	0.3	35	11
	Yakima Avenue Off-Ramp		195	1,500	1	603	621	18	0.7	44	14
		Yakima Avenue / Fair Avenue On-Ramp	196	912	1	603	621	18	0.7	44	14
	Yakima Avenue / Fair Avenue On-Ramp		109	511	1	1,046	1,044	(2)	0.1	42	25
	Yakima Avenue / Fair Avenue On-Ramp		205	622	2	1,649	1,679	30	0.7	43	20
		End of C-D Roadway	189	656	2	1,649	1,683	34	0.8	43	19

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	5:00 - 5:30 PM Summary					
						Volume				Speed (mph)	Density (vplpm)
	From	To				Actual (veh/hr)	Simulated (veh/hr)	Difference (veh/hr)	GEH Statistic		
I-82 Westbound Mainline	Start		164	1,750	3	3,724	3,723	(1)	0.0	58	21
			165	1,745	3	3,724	3,726	2	0.0	58	21
			166	1,746	3	3,724	3,732	8	0.1	58	22
		Nob Hill Boulevard Off-Ramp	167	1,745	3	3,724	3,711	(13)	0.2	59	21
	Nob Hill Boulevard Off-Ramp		47	546	1	606	626	20	0.8	53	12
	Nob Hill Boulevard Off-Ramp		148	1,151	3	3,118	3,114	(4)	0.1	61	17
			149	1,228	3	3,118	3,112	(6)	0.1	61	17
		Nob Hill Boulevard On-Ramp	114	427	3	3,118	3,105	(13)	0.2	60	17
	Nob Hill Boulevard On-Ramp		45	1,640	2	1,020	990	(30)	0.9	46	11
	Nob Hill Boulevard On-Ramp		168	738	4	4,138	4,142	4	0.1	59	17
			150	1,407	4	4,138	4,144	6	0.1	58	18
			113	1,276	3	4,138	4,147	9	0.1	59	24
		CD Roadway Off-Ramp	152	684	3	4,138	4,137	(1)	0.0	59	23
	CD Roadway Off-Ramp		183	698	2	1,607	1,615	8	0.2	55	15
	CD Roadway Off-Ramp		151	2,067	3	2,531	2,535	4	0.1	61	14
			153	1,332	3	2,531	2,537	6	0.1	61	14
			105	1,663	3	2,531	2,540	9	0.2	61	14
			154	1,596	3	2,531	2,547	16	0.3	61	14
		CD Roadway On-Ramp	155	829	3	2,531	2,550	19	0.4	61	14
	CD Roadway On-Ramp		200	958	1	1,145	1,155	10	0.3	52	22
	CD Roadway On-Ramp		204	441	4	3,676	3,687	11	0.2	57	16
		US 12 / 1st Street Off-Ramp	156	1,920	3	3,676	3,707	31	0.5	58	21
	US 12 / 1st Street Off-Ramp		102	832	1	1,492	1,468	(24)	0.6	52	28
	US 12 / 1st Street Off-Ramp		136	1,801	2	2,184	2,240	56	1.2	60	19
		US 12 / 1st Street On-Ramp	137	1,841	2	2,184	2,245	61	1.3	60	19
	US 12 / 1st Street On-Ramp		97	1,173	1	1,338	1,309	(29)	0.8	44	**30**
	US 12 / 1st Street On-Ramp	End	98	1,881	3	3,522	3,557	35	0.6	60	20
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	698	2	1,607	1,615	8	0.2	55	15
	Yakima Avenue Off-Ramp		106	464	1	1,136	1,133	(3)	0.1	44	26
	Yakima Avenue Off-Ramp		190	1,500	1	471	485	14	0.7	45	11
		Yakima Avenue On-Ramp	198	1,490	1	471	492	21	1.0	44	11
	Yakima Avenue On-Ramp		202	855	1	539	524	(15)	0.6	38	14
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	1,010	1,008	(2)	0.0	43	23
	E-W Corridor Off-Ramp		188	573	1	597	592	(5)	0.2	40	15
	E-W Corridor Off-Ramp		199	1,258	1	413	414	1	0.1	44	9
		E-W Corridor On-Ramp	201	1,258	1	413	419	6	0.3	43	10
	E-W Corridor On-Ramp		182	912	1	732	737	5	0.2	34	22
	E-W Corridor On-Ramp	End of C-D Roadway	200	958	1	1,145	1,155	10	0.3	52	22

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	3:30 - 3:45 Summary			3:45 - 4:00 Summary			4:00 - 4:15 Summary			4:15 - 4:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Eastbound Mainline	Start		87	1,746	3	3,113	58	18	3,256	58	19	3,354	58	19	3,505	58	20
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,097	58	18	3,248	58	19	3,343	56	20	3,497	56	21
	US 12 / 1st Street Off-Ramp		90	858	2	1,378	49	14	1,398	48	14	1,458	48	15	1,501	47	16
	US 12 / 1st Street Off-Ramp		91	872	2	1,713	58	15	1,844	58	16	1,875	58	16	1,989	58	17
			117	401	2	1,711	58	15	1,843	58	16	1,874	58	16	1,988	58	17
		US 12 / 1st Street On-Ramp	118	1,992	2	1,711	59	14	1,838	59	15	1,879	59	16	1,987	59	17
	US 12 / 1st Street On-Ramp		99	549	2	1,225	58	11	1,303	58	11	1,335	58	11	1,380	57	12
			10114	209	1	1,228	58	21	1,308	58	22	1,335	58	23	1,383	58	24
	US 12 / 1st Street On-Ramp		100	655	3	2,920	60	16	3,126	60	17	3,198	60	18	3,347	59	19
		CD Roadway Off-Ramp	101	1,894	3	2,907	60	16	3,116	59	17	3,192	60	18	3,329	59	19
	CD Roadway Off-Ramp		26	1,135	1	921	52	18	1,042	52	20	1,035	52	20	1,041	52	20
	CD Roadway Off-Ramp		139	1,274	3	2,009	61	11	2,091	61	12	2,183	61	12	2,301	60	13
			140	1,550	3	2,010	61	11	2,089	61	11	2,184	61	12	2,296	61	13
			138	1,287	3	2,008	61	11	2,088	61	11	2,185	61	12	2,288	61	13
			142	1,288	3	2,009	61	11	2,088	61	11	2,186	61	12	2,281	61	13
			141	1,382	3	2,009	61	11	2,087	61	11	2,183	61	12	2,279	61	13
			143	1,509	3	2,004	61	11	2,095	61	11	2,179	61	12	2,274	61	12
		CD Roadway On-Ramp	111	1,102	3	1,998	61	11	2,090	61	11	2,182	61	12	2,270	61	12
	CD Roadway On-Ramp		206	379	1	1,510	54	28	1,541	54	**28**	1,589	55	**29**	1,669	54	**31**
	CD Roadway On-Ramp		112	651	4	3,516	60	15	3,623	60	15	3,773	60	16	3,937	60	17
			146	550	4	3,520	59	15	3,619	59	15	3,775	59	16	3,937	59	17
			207	650	3	3,527	60	20	3,612	60	20	3,777	59	21	3,936	59	22
		Nob Hill Boulevard Off-Ramp	145	1,813	3	3,497	60	20	3,577	60	20	3,742	60	21	3,896	60	22
	Nob Hill Boulevard Off-Ramp		53	980	1	750	52	14	799	52	15	848	52	16	861	52	17
	Nob Hill Boulevard Off-Ramp		144	1,385	3	2,771	61	15	2,813	61	15	2,928	61	16	3,060	61	17
		Nob Hill Boulevard On-Ramp	147	1,411	3	2,764	61	15	2,818	61	15	2,922	61	16	3,057	61	17
	Nob Hill Boulevard On-Ramp		116	352	1	377	48	8	400	48	8	405	49	8	432	48	9
	Nob Hill Boulevard On-Ramp		115	602	4	3,138	60	13	3,225	60	13	3,315	60	14	3,483	60	15
		End	171	1,527	3	3,153	61	17	3,218	60	18	3,320	60	18	3,461	60	19
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	921	52	18	1,042	52	20	1,035	52	20	1,041	52	20
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	642	44	14	736	44	17	739	44	17	723	44	16
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	279	44	6	301	45	7	292	45	7	313	45	7
		E-W Corridor On-Ramp	194	1,399	1	281	44	6	300	44	7	290	44	7	315	44	7
	E-W Corridor On-Ramp		187	777	1	601	38	16	641	37	17	660	38	18	698	37	19
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	880	44	20	935	44	21	949	44	22	1,011	44	23
	Yakima Avenue Off-Ramp		10	624	1	333	34	10	350	35	10	337	35	10	372	34	11
	Yakima Avenue Off-Ramp		195	1,500	1	548	44	12	583	44	13	612	44	14	640	44	15
		Yakima Avenue / Fair Avenue On-Ramp	196	912	1	549	44	13	580	44	13	609	44	14	643	44	15
	Yakima Avenue / Fair Avenue On-Ramp		109	511	1	943	42	22	953	42	23	963	42	23	1,022	42	24
	Yakima Avenue / Fair Avenue On-Ramp		205	622	2	1,505	43	17	1,546	43	18	1,584	43	18	1,682	43	20
		End of C-D Roadway	189	656	2	1,508	45	17	1,544	45	17	1,587	46	17	1,674	44	19

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	3:30 - 3:45 Summary			3:45 - 4:00 Summary			4:00 - 4:15 Summary			4:15 - 4:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Westbound Mainline	Start		164	1,750	3	3,372	59	19	3,557	58	20	3,713	58	21	3,898	58	22
			165	1,745	3	3,373	58	19	3,551	58	20	3,710	58	21	3,893	58	22
			166	1,746	3	3,364	58	19	3,544	58	20	3,706	58	21	3,892	58	22
		Nob Hill Boulevard Off-Ramp	167	1,745	3	3,334	60	19	3,518	59	20	3,682	59	21	3,866	59	22
	Nob Hill Boulevard Off-Ramp		47	546	1	550	54	10	554	53	10	569	54	11	619	54	12
	Nob Hill Boulevard Off-Ramp		148	1,151	3	2,800	61	15	2,984	61	16	3,129	61	17	3,262	61	18
			149	1,228	3	2,809	61	15	2,973	61	16	3,124	61	17	3,253	61	18
		Nob Hill Boulevard On-Ramp	114	427	3	2,798	60	15	2,966	60	16	3,111	60	17	3,237	60	18
	Nob Hill Boulevard On-Ramp		45	1,640	2	899	46	10	932	46	10	956	46	10	1,020	46	11
	Nob Hill Boulevard On-Ramp		168	738	4	3,750	60	16	3,941	60	17	4,116	59	17	4,294	59	18
			150	1,407	4	3,744	59	16	3,943	59	17	4,114	58	18	4,291	58	19
			113	1,276	3	3,729	59	21	3,943	59	22	4,117	59	23	4,278	58	25
		CD Roadway Off-Ramp	152	684	3	3,709	59	21	3,926	59	22	4,109	58	23	4,265	58	25
	CD Roadway Off-Ramp		183	698	2	1,451	56	13	1,537	55	14	1,614	55	15	1,675	55	15
	CD Roadway Off-Ramp		151	2,067	3	2,267	61	12	2,396	61	13	2,503	61	14	2,597	61	14
			153	1,332	3	2,267	61	12	2,393	61	13	2,496	61	14	2,601	61	14
			105	1,663	3	2,267	61	12	2,395	61	13	2,496	61	14	2,588	61	14
			154	1,596	3	2,253	61	12	2,390	61	13	2,505	61	14	2,586	61	14
		CD Roadway On-Ramp	155	829	3	2,256	61	12	2,376	61	13	2,506	61	14	2,588	61	14
	CD Roadway On-Ramp		200	958	1	1,013	53	19	1,118	53	21	1,138	52	22	1,171	52	23
	CD Roadway On-Ramp		204	441	4	3,257	58	14	3,475	58	15	3,634	57	16	3,743	57	17
		US 12 / 1st Street Off-Ramp	156	1,920	3	3,268	59	19	3,489	59	20	3,641	58	21	3,742	56	23
	US 12 / 1st Street Off-Ramp		102	832	1	1,338	53	25	1,411	53	27	1,494	52	**29**	1,551	52	**30**
	US 12 / 1st Street Off-Ramp		136	1,801	2	1,924	60	16	2,083	60	17	2,138	60	18	2,185	59	18
		US 12 / 1st Street On-Ramp	137	1,841	2	1,918	61	16	2,080	60	17	2,142	60	18	2,180	60	18
	US 12 / 1st Street On-Ramp		97	1,173	1	1,219	44	28	1,305	43	**30**	1,345	44	**31**	1,390	43	**32**
	US 12 / 1st Street On-Ramp	End	98	1,881	3	3,126	60	17	3,377	60	19	3,491	60	19	3,560	60	20
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	698	2	1,451	56	13	1,537	55	14	1,614	55	15	1,675	55	15
	Yakima Avenue Off-Ramp		106	464	1	1,033	44	23	1,079	44	25	1,147	44	26	1,166	44	27
	Yakima Avenue Off-Ramp		190	1,500	1	425	45	9	458	45	10	465	45	10	512	45	11
		Yakima Avenue On-Ramp	198	1,490	1	432	44	10	463	44	11	473	44	11	517	43	12
	Yakima Avenue On-Ramp		202	855	1	486	39	12	519	39	13	538	39	14	543	38	14
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	908	43	21	973	43	23	998	43	23	1,047	43	24
	E-W Corridor Off-Ramp		188	573	1	531	41	13	565	40	14	588	40	15	616	40	15
	E-W Corridor Off-Ramp		199	1,258	1	371	44	8	405	44	9	406	44	9	427	44	10
		E-W Corridor On-Ramp	201	1,258	1	372	44	9	407	43	9	410	43	9	430	43	10
	E-W Corridor On-Ramp		182	912	1	647	38	17	716	36	20	729	35	21	749	34	22
	E-W Corridor On-Ramp	End of C-D Roadway	200	958	1	1,013	53	19	1,118	53	21	1,138	52	22	1,171	52	23

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range

28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	4:30 - 4:45 Summary			4:45 - 5:00 Summary			5:00 - 5:15 Summary			5:15 - 5:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Eastbound Mainline	Start		87	1,746	3	3,663	58	21	3,484	58	20	3,484	58	20	3,351	58	19
		US 12 / 1st Street Off-Ramp	169	1,114	3	3,656	57	21	3,477	57	20	3,476	57	20	3,348	57	20
	US 12 / 1st Street Off-Ramp		90	858	2	1,618	48	17	1,462	48	15	1,494	48	16	1,450	48	15
	US 12 / 1st Street Off-Ramp		91	872	2	2,031	58	18	2,008	58	17	1,978	58	17	1,891	58	16
			117	401	2	2,029	58	17	2,012	58	17	1,979	58	17	1,891	58	16
		US 12 / 1st Street On-Ramp	118	1,992	2	2,026	59	17	2,017	59	17	1,980	59	17	1,896	59	16
	US 12 / 1st Street On-Ramp		99	549	2	1,530	55	14	1,416	55	13	1,418	57	12	1,396	56	13
			10114	209	1	1,532	56	27	1,416	56	25	1,419	58	25	1,399	57	25
	US 12 / 1st Street On-Ramp		100	655	3	3,538	59	20	3,417	59	19	3,384	59	19	3,278	59	18
		CD Roadway Off-Ramp	101	1,894	3	3,520	59	20	3,412	60	19	3,379	60	19	3,273	60	18
	CD Roadway Off-Ramp		26	1,135	1	1,119	51	22	1,036	52	20	1,043	52	20	1,016	52	19
	CD Roadway Off-Ramp		139	1,274	3	2,414	60	13	2,409	61	13	2,360	61	13	2,281	61	13
			140	1,550	3	2,409	61	13	2,409	61	13	2,359	61	13	2,288	61	13
			138	1,287	3	2,408	61	13	2,411	61	13	2,356	61	13	2,295	61	13
			142	1,288	3	2,409	61	13	2,412	61	13	2,355	61	13	2,298	61	13
			141	1,382	3	2,402	61	13	2,420	61	13	2,355	61	13	2,297	61	13
			143	1,509	3	2,407	61	13	2,414	61	13	2,358	61	13	2,291	61	13
		CD Roadway On-Ramp	111	1,102	3	2,409	61	13	2,408	61	13	2,356	61	13	2,287	61	13
	CD Roadway On-Ramp		206	379	1	1,740	52	**34**	1,727	54	**32**	1,702	54	**32**	1,662	53	**32**
	CD Roadway On-Ramp		112	651	4	4,148	59	18	4,129	59	17	4,061	59	17	3,940	59	17
			146	550	4	4,150	59	18	4,127	59	18	4,062	59	17	3,943	59	17
			207	650	3	4,149	59	23	4,124	59	23	4,071	59	23	3,950	59	22
		Nob Hill Boulevard Off-Ramp	145	1,813	3	4,107	59	23	4,096	59	23	4,022	60	22	3,920	60	22
	Nob Hill Boulevard Off-Ramp		53	980	1	896	52	17	877	52	17	881	52	17	841	52	16
	Nob Hill Boulevard Off-Ramp		144	1,385	3	3,245	60	18	3,258	60	18	3,169	61	17	3,113	61	17
		Nob Hill Boulevard On-Ramp	147	1,411	3	3,242	61	18	3,268	61	18	3,165	61	17	3,112	61	17
	Nob Hill Boulevard On-Ramp		116	352	1	453	48	9	425	48	9	447	48	9	433	48	9
	Nob Hill Boulevard On-Ramp		115	602	4	3,694	60	15	3,698	60	15	3,603	60	15	3,535	60	15
		End	171	1,527	3	3,706	60	21	3,696	60	20	3,600	60	20	3,518	60	19
I-82 Eastbound CD Roadway	Start of C-D Roadway	E-W Corridor / Fair Avenue Off-Ramp	26	1,135	1	1,119	51	22	1,036	52	20	1,043	52	20	1,016	52	19
	E-W Corridor / Fair Avenue Off-Ramp		27	620	1	791	44	18	715	44	16	728	44	17	711	44	16
	E-W Corridor / Fair Avenue Off-Ramp		192	1,440	1	322	45	7	323	45	7	308	45	7	305	45	7
		E-W Corridor On-Ramp	194	1,399	1	321	44	7	326	44	7	305	44	7	307	44	7
	E-W Corridor On-Ramp		187	777	1	712	36	20	701	36	19	702	36	20	667	37	18
	E-W Corridor On-Ramp	Yakima Avenue Off-Ramp	193	1,297	1	1,033	43	24	1,029	43	24	1,004	43	23	976	43	22
	Yakima Avenue Off-Ramp		10	624	1	380	35	11	381	34	11	377	35	11	362	34	11
	Yakima Avenue Off-Ramp		195	1,500	1	653	44	15	650	44	15	628	44	14	614	44	14
		Yakima Avenue / Fair Avenue On-Ramp	196	912	1	646	44	15	657	44	15	628	44	14	614	44	14
	Yakima Avenue / Fair Avenue On-Ramp		109	511	1	1,085	42	26	1,052	42	25	1,060	42	25	1,027	42	24
	Yakima Avenue / Fair Avenue On-Ramp		205	622	2	1,742	42	21	1,728	43	20	1,701	43	20	1,658	43	19
		End of C-D Roadway	189	656	2	1,740	41	22	1,727	45	19	1,706	44	20	1,660	43	19

I-82, Yakima Avenue IJR
2035 CD Option with 6-Lane I-82 - PM Peak Period
Freeway Measures of Effectiveness
VISSIM 11 Run Summary

Density Range
28 to 34
35 to 43
> 43

	Location		Link	Length (ft)	Number of Lanes	4:30 - 4:45 Summary			4:45 - 5:00 Summary			5:00 - 5:15 Summary			5:15 - 5:30 Summary		
	From	To				Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)	Simulated Volume (veh/hr)	Speed (mph)	Density (vplpm)
I-82 Westbound Mainline	Start		164	1,750	3	4,095	58	23	3,862	58	22	3,821	58	22	3,624	58	21
			165	1,745	3	4,093	58	24	3,867	58	22	3,824	58	22	3,628	58	21
			166	1,746	3	4,087	58	24	3,873	58	22	3,829	58	22	3,635	58	21
		Nob Hill Boulevard Off-Ramp	167	1,745	3	4,053	58	23	3,856	59	22	3,801	59	21	3,621	59	20
	Nob Hill Boulevard Off-Ramp		47	546	1	681	53	13	629	53	12	658	53	12	593	53	11
	Nob Hill Boulevard Off-Ramp		148	1,151	3	3,395	60	19	3,254	61	18	3,174	61	17	3,054	60	17
			149	1,228	3	3,387	60	19	3,258	61	18	3,173	61	17	3,052	61	17
		Nob Hill Boulevard On-Ramp	114	427	3	3,375	60	19	3,252	60	18	3,162	60	18	3,048	60	17
	Nob Hill Boulevard On-Ramp		45	1,640	2	1,043	46	11	1,007	46	11	979	46	11	1,002	46	11
	Nob Hill Boulevard On-Ramp		168	738	4	4,478	59	19	4,307	59	18	4,198	59	18	4,085	60	17
			150	1,407	4	4,472	57	20	4,319	58	19	4,198	58	18	4,091	58	18
			113	1,276	3	4,465	58	26	4,327	58	25	4,198	59	24	4,096	59	23
		CD Roadway Off-Ramp	152	684	3	4,447	57	26	4,304	59	24	4,188	59	24	4,087	59	23
	CD Roadway Off-Ramp		183	698	2	1,722	54	16	1,708	55	16	1,620	55	15	1,611	56	15
	CD Roadway Off-Ramp		151	2,067	3	2,730	61	15	2,616	61	14	2,579	61	14	2,492	61	14
			153	1,332	3	2,728	61	15	2,620	61	14	2,574	61	14	2,499	61	14
			105	1,663	3	2,733	61	15	2,619	61	14	2,578	61	14	2,503	61	14
			154	1,596	3	2,728	61	15	2,621	61	14	2,583	61	14	2,512	61	14
		CD Roadway On-Ramp	155	829	3	2,724	61	15	2,629	61	14	2,577	61	14	2,522	61	14
	CD Roadway On-Ramp		200	958	1	1,240	52	24	1,240	52	24	1,177	52	23	1,134	52	22
	CD Roadway On-Ramp		204	441	4	3,952	56	18	3,855	57	17	3,725	56	17	3,648	57	16
		US 12 / 1st Street Off-Ramp	156	1,920	3	3,972	56	24	3,873	57	23	3,747	57	22	3,667	58	21
	US 12 / 1st Street Off-Ramp		102	832	1	1,613	52	**31**	1,570	52	**30**	1,496	52	**29**	1,439	53	27
	US 12 / 1st Street Off-Ramp		136	1,801	2	2,348	59	20	2,317	60	19	2,249	60	19	2,231	60	19
		US 12 / 1st Street On-Ramp	137	1,841	2	2,341	60	19	2,322	60	19	2,248	60	19	2,242	60	19
	US 12 / 1st Street On-Ramp		97	1,173	1	1,404	43	**33**	1,403	43	**32**	1,346	43	**31**	1,273	44	**29**
	US 12 / 1st Street On-Ramp	End	98	1,881	3	3,749	59	21	3,728	60	21	3,601	60	20	3,513	60	20
I-82 Westbound CD Roadway	Start of C-D Roadway	Yakima Avenue Off-Ramp	183	698	2	1,722	54	16	1,708	55	16	1,620	55	15	1,611	56	15
	Yakima Avenue Off-Ramp		106	464	1	1,226	44	**28**	1,225	44	**28**	1,137	44	26	1,129	44	26
	Yakima Avenue Off-Ramp		190	1,500	1	501	45	11	487	45	11	486	45	11	484	45	11
		Yakima Avenue On-Ramp	198	1,490	1	508	43	12	493	43	11	495	44	11	490	44	11
	Yakima Avenue On-Ramp		202	855	1	577	37	15	585	39	15	546	38	14	502	38	13
	Yakima Avenue On-Ramp	E-W Corridor Off-Ramp	197	998	1	1,070	43	25	1,067	43	25	1,037	43	24	980	43	23
	E-W Corridor Off-Ramp		188	573	1	618	40	16	601	40	15	607	40	15	576	40	14
	E-W Corridor Off-Ramp		199	1,258	1	448	44	10	465	44	10	427	44	10	402	44	9
		E-W Corridor On-Ramp	201	1,258	1	455	43	11	472	43	11	430	44	10	408	43	9
	E-W Corridor On-Ramp		182	912	1	787	31	25	773	32	24	752	33	23	723	35	21
	E-W Corridor On-Ramp	End of C-D Roadway	200	958	1	1,240	52	24	1,240	52	24	1,177	52	23	1,134	52	22

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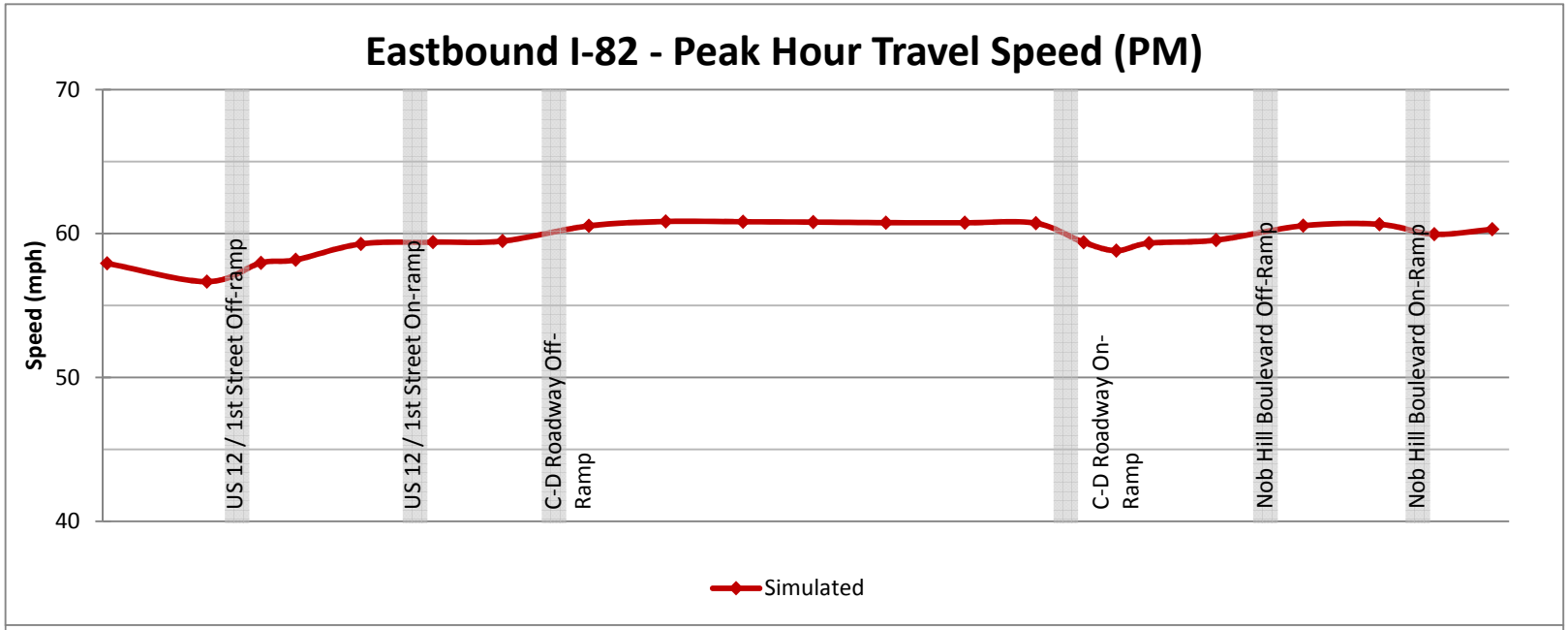
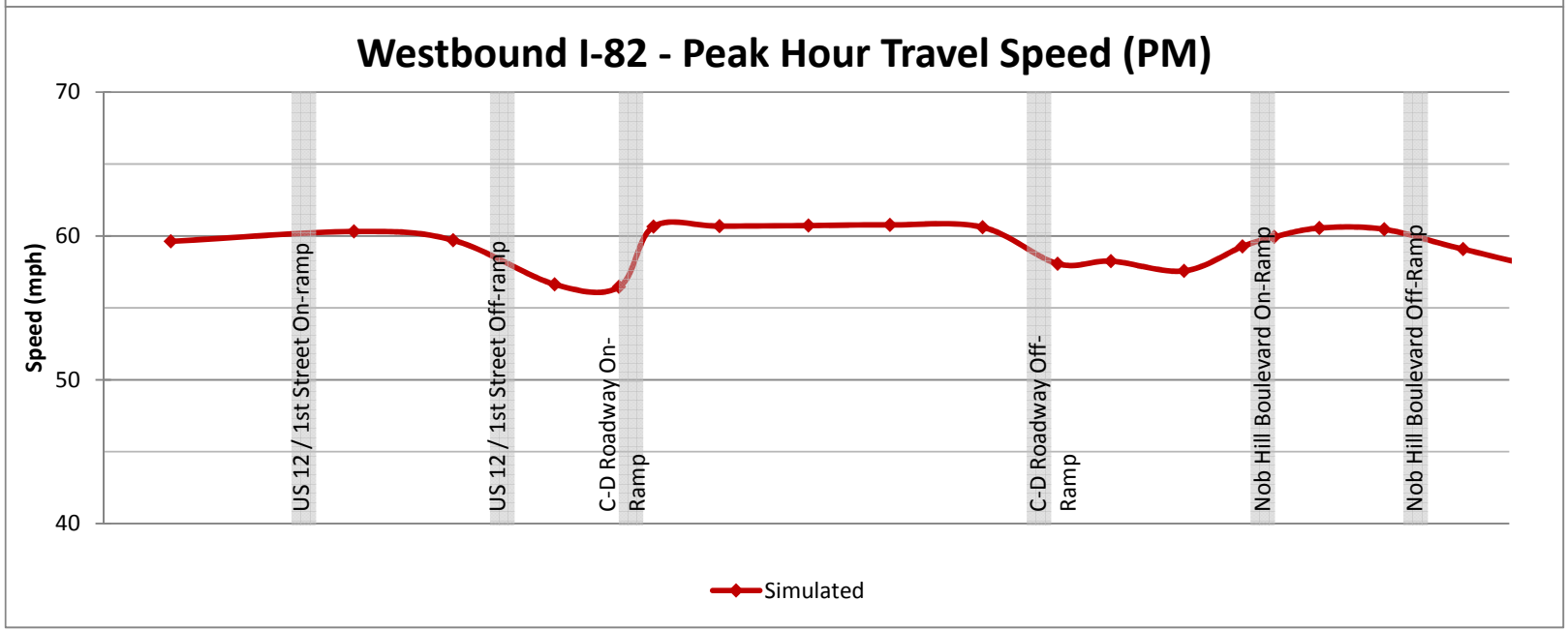

Eastbound I-82 - Peak Hour Travel Speed (PM)
Speed (mph)
70
60
50
40
US 12 / 1st Street Off-ramp
US 12 / 1st Street On-ramp
C-D Roadway Off-Ramp
C-D Roadway On-Ramp
Nob Hill Boulevard Off-Ramp
Nob Hill Boulevard On-Ramp
Simulated


Westbound I-82 - Peak Hour Travel Speed (PM)
Speed (mph)
70
60
50
40
US 12 / 1st Street On-ramp
US 12 / 1st Street Off-ramp
C-D Roadway On-Ramp
C-D Roadway Off-Ramp
Nob Hill Boulevard On-Ramp
Nob Hill Boulevard Off-Ramp
Simulated

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INTERCHANGE JUSTIFICATION REPORT

I-82/Yakima Avenue/Terrace Heights Drive Interchange
MP 31.40 to MP 34.77

Appendix E

Explanation of the CACs, CALs & IALs

Munchinski, Bob

From: Izawa, Kumiko <IzawaK@wsdot.wa.gov>
Sent: Tuesday, September 18, 2012 4:14 PM
To: Munchinski, Bob
Cc: Neeley, Matthew
Subject: RE: CAc, CAL and IAL
Attachments: Safety Prioirty List.docx

Bob,
I have attached the write up of the WSDOT safety priority lists.
Please let me know if you have any questions.
Thank you

WSDOT Safety Priority Lists – Highway Safety Subprogram (I-2)

Lists of highway segments and intersections are prioritized by WSDOT for potential safety improvements on state highways. These lists are composed of collision analysis segments, and intersection analysis locations (IALs). The two lists provide candidate segments for including in the safety program each biennium. WSDOT reviews criteria for each of these priority lists on a biennial basis to ensure that any emerging safety needs are being met.

Collision Analysis Segments (also referred to as CAL/CAC)

The Highway Safety Executive Committee formally adopted the Highway Safety Manual (HSM) for statewide implementation in 2011. HSM introduces a science-based technical approach. It helps identify sites with the most potential for reducing crash severity or frequency, and potential countermeasures for addressing factors contributing to crashes. Additional information of HSM can be found at www.highwaysafetymanual.org

As part of the endorsement of HSM, WSDOT implemented a new tool for identifying and prioritizing safety needs within the state system. The tool is known as SafetyAnalyst which was developed as a cooperative effort between the Federal Highway Administration and participating state and local agencies, and was transferred to the American Association of State Highway and Transportation Officials in 2010. SafetyAnalyst is used as part of part B of HSM.

WSDOT created a list of segments using SafetyAnalyst's Network Screening tool, which analyzed the entire roadway network to identify sites with potential for safety improvements. The network screening methodology uses Empirical Bayes principles to predict the potential for safety improvements on roadway segments. This network screening approach combines observed collision data and a predicted average crash frequency to calculate an expected average crash frequency on a roadway segment. The expected average crash frequency is weighted relative to fatal and serious injuries collisions that occurred between 2005 and 2010.

The collision analysis segments are composed of the top 221 statewide locations with the highest expected average crash frequency of fatal and serious injury crashes. The 221 location are separated into Urban Westside location, Rural Westside location and Eastside location. There are 100 Urban Westside locations with an expected average crash frequency greater than or equal to 2.86 crashes per mile per year. There are 21 Rural Westside locations with an expected average crash frequency greater than or equal to 1 crash per mile per year. There are 100 Eastside locations with an expected average crash frequency greater than or equal to 1.08 crashes per mile per year.

Please note that this analysis does not include city streets or state highways in cities with a population over 25,000. This restriction is based on the Revised Code of Washington (RCW) 47.24.020

Intersection Analysis Locations (IAL)

The Intersection Analysis locations are composed of intersections that have experienced more than 8 crashes between 2006 and 2010, and the total societal cost is greater than or equal to $900,000. The 8 crashes include at-angle, left-turn opposite direction, or rear-end crashes. The total societal cost is calculated based on collision type and posted speed limits of the intersection on the major roadway. Please note the RCW 47.24.020 qualification.

INTERCHANGE JUSTIFICATION REPORT

I-82/Yakima Avenue/Terrace Heights Drive Interchange
MP 31.40 to MP 34.77

Appendix F

Collision Summaries by Interchanges

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COLLISION SUMMARY FOR I-82 / US 12 / SR 823 / FIRST STREET INTERCHANGE
1/2006 THRU 12/2010 COLLISIONS

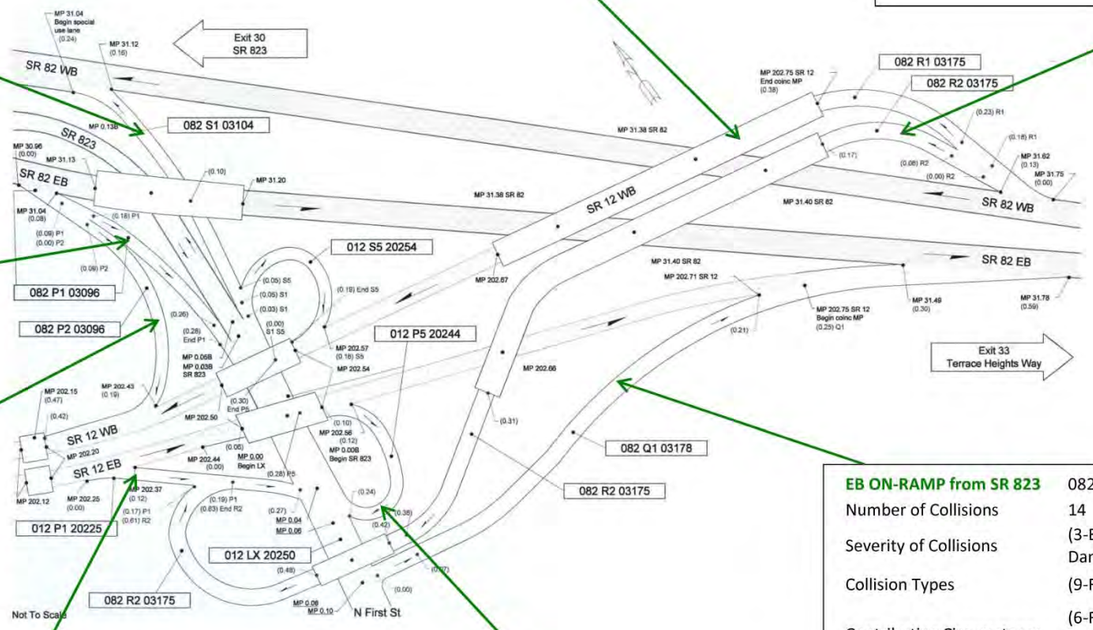
WB ON-RAMP from SR 823	082 S1 03104
Number of Collisions	2
Severity of Collisions	(2-Property Damage Only)
Collision Types	(1-Sideswipe; 1-Over Embankment)
Contributing Circumstance	(1-Inattention; 1-Under Influence of Alcohol)

WB OFF-RAMP to SR 823	082 R1 03175
Number of Collisions	8
Severity of Collisions	(1-Seriouis Injury; 2-Evident Injury; 1-Possible Injury; 4-Property Damage Only)
Collision Types	(6-Fixed Object; 1-Rear-end; 1-Fire in Vehicle)
Contributing Circumstance	(3-Exceeded Reas. Speed; 3 Inattention; 2-None)

WB OFF-RAMP to SR 823	082 R2 03175
Number of Collisions	15
Severity of Collisions	(3-Evident Injury; 3-Possible Injury; 9-Property Damage Only)
Collision Types	(1-Rear-end; 13-Fixed Object; 1-Other)
Contributing Circumstance	(8-Exceeded Reas. Speed; 1-Follow Too Closely; 2-Inattention; 3-Other; 1-None)

EB OFF-RAMP to SR 823	082 P1 03096
Number of Collisions	3
Severity of Collisions	(1-Serious Injury; 2-Property Damage Only)
Collision Types	(2-Sideswipe; 1-Fixed Object)
Contributing Circumstance	(1-Did not grant RW; 1-Inattention; 1-Under influence of Alcohol)

EB OFF-RAMP to US 12	082 P2 03096
Number of Collisions	14
Severity of Collisions	(6-EvidentInjury; 1-Possible Injury; 7-Property Damage Only)
Collision Types	(2-Rear-end; 5-Fixed Object; 6-Vehicle Overturned; 1-Over Embankment)
Contributing Circumstance	(1-Follow Too Closely; 9-Exceeding Reas. Speed; 2-Driver Distracted; 2-Underinfluence of Alcohol)



EB ON-RAMP from SR 823	082 Q1 03178
Number of Collisions	14
Severity of Collisions	(3-Evident Injury; 1-Possible Injury; 10-Property Damage Only)
Collision Types	(9-Rear-end; 1-Sideswiped; 4-Fixed Object)
Contributing Circumstance	(6-Follow Too Closely; 1-Exceeding Reas. Speed; 1-Did not Grant RW;1-Under influence of Alcohol; 1-Inproper Turn; 1-Inattention; 1-Other; 2-None)

EB OFF-RAMP to SR 823	012 P1 20225
Number of Collisions	11
Severity of Collisions	(2-Evident Injury; 4-Possible Injury; 5-Property Damage Only)
Collision Types	(8-Rear-end; 1-Sideswipe; 2-Fixed Object)
Contributing Circumstance	(7-Follow Too Closely; 1-Inattention; 1-other; 2-None Listed)

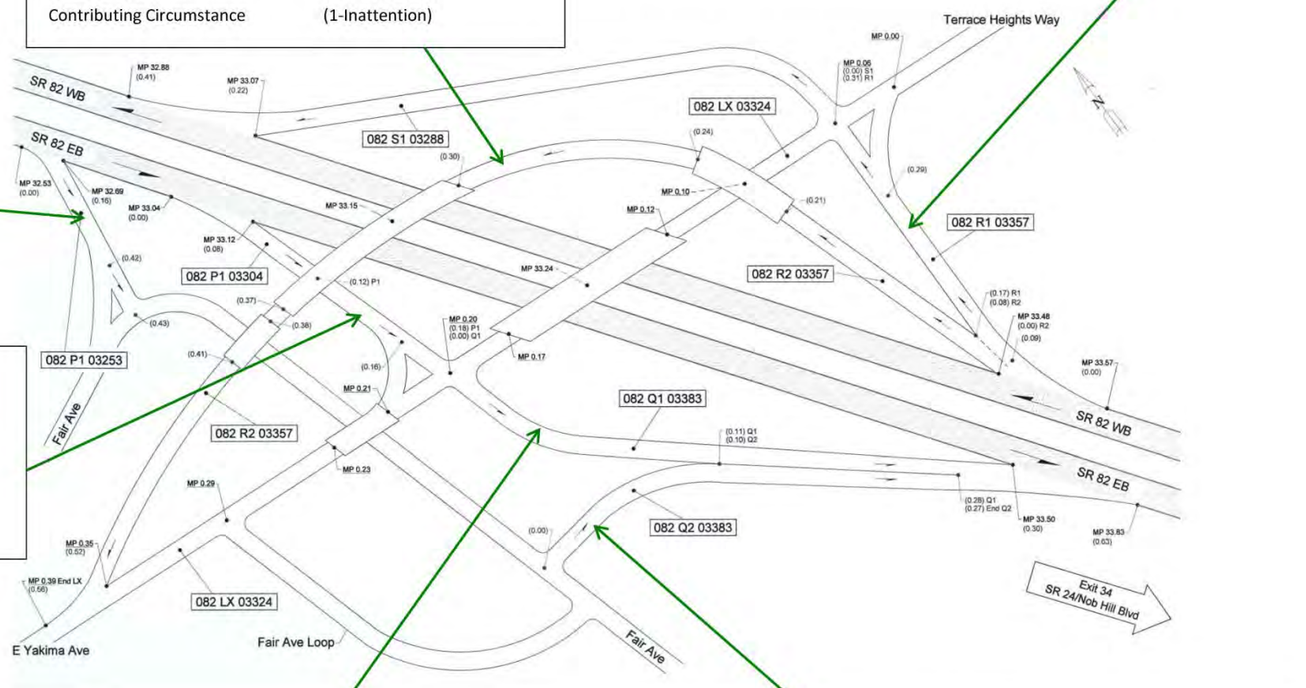
EB OFF-LOOP RAMP to SR 823	012 P5 20244
Number of Collisions	14
Severity of Collisions	(1-Evident Injury; 2-Possible Injury; 11-Property Damage Only)
Collision Types	(8-Rear-end; 5-Fixed Object; 1-Vehicle Overturned)
Contributing Circumstance	(5-Follow Too Closely; 8-Exceeding Reas. Speed; 1-Inattention)

COLLISION SUMMARY FOR I-82 / YAKIMA AVENUE / TERRACE HEIGHTS BOULEVARD INTERCHANGE
1/2006 THRU 12/2010 COLLISIONS

EB OFF-RAMP to Fair Avenue	082 P1 03253
Number of Collisions	5
Severity of Collisions	(1-Possible Injury; 4 - Property Damage Only)
Collision Types	(2-Rear-end; 2-Entering at Angle; 1-Fixed Object)
Contributing Circumstance	(2-Disregard Traffic Signal; 1-Exceeding Reas. Speed; 2- Other)

WB OFF-RAMP to Yakima Avenue	082 R203357
Number of Collisions	1
Severity of Collisions	(1-Property Damage Only)
Collision Types	(1-Fixed Object)
Contributing Circumstance	(1-Inattention)

WB OFF-RAMP to Yakima Avenue	082 R1 03357
Number of Collisions	20
Severity of Collisions	(1-Evident; 5-Possible; 14-Property Damage Only)
Collision Types	(20-Rear-end)
Contributing Circumstance	(1-Exceeded Reas. Speed; 2-Follow Too Closely; 13 Inattention; 1-Other; 3-None)



EB OFF-RAMP to Yakima Avenue	082 P1 03304
Number of Collisions	11
Severity of Collisions	(1-Fatality; 1-Serious Injury; 2-Evident Injury; 2-Possible Injury; 5-Property Damage Only)
Collision Types	(8-Rear-end; 1-Fixed Object; 1-Over Embankment; 1-Vehicle Overturned)
Contributing Circumstance	(2-Follow Too Closely; 2-Inattention; 1-Medication;

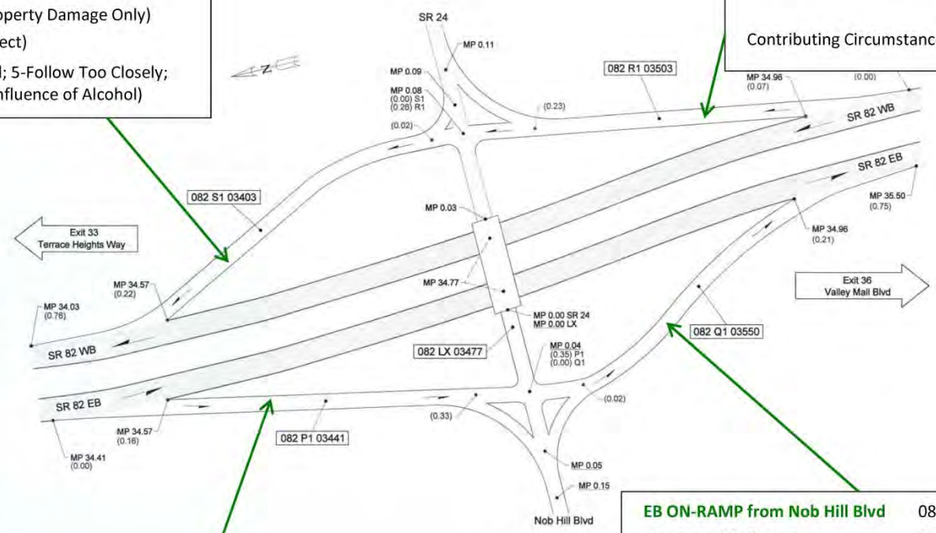
EB ON-RAMP from Yakima Avenue	082 Q1 03383
Number of Collisions	6
Severity of Collisions	(6-Property Damage Only)
Collision Types	(1-Rear-end; 2-Sideswiped; 1-Fixed Object; 2-Turning)
Contributing Circumstance	(1-Follow Too Closely; 1-Exceeding Reas. Speed; 2-Did not Grant RW; 1-Inproper Turn; 1-Inattention)

EB ON-RAMP from Fair Avenue	082 Q2 03383
Number of Collisions	4
Severity of Collisions	(1-Evident Injury; 1-Possible Injury; 2-Property Damage Only)
Collision Types	(2-Fixed Object; 1-Vehicle/Pedalcyclist; 1-Turning)
Contributing Circumstance	(3-Follow Too Closely; 3 Inattention; 1-Under Influence of Alcohol;1-other)

COLLISION SUMMARY FOR I-82 / NOB HILL BOULEVARD INTERCHANGE
1/2006 THRU 12/2010 COLLISIONS

WB ON-RAMP from Nob Hill Blvd	082 S1 03403
Number of Collisions	12
Severity of Collisions	(2-Possible Injury; 10-Property Damage Only)
Collision Types	(9-Rear-end; 3-Fixed Object)
Contributing Circumstance	(3-Exceeded Reas. Speed; 5-Follow Too Closely; 3-Inattention; 1-Under Influence of Alcohol)

WB OFF-RAMP to Nob Hill Road	082 R1 03503
Number of Collisions	13
Severity of Collisions	(1-Fatality; 6-Possible Injury; 6-Property Damage Only)
Collision Types	(9-Rear-end; 1-Vehicle/Pedalcyclist;1-Vehicle Overturned; 1-Fire in Vehicle; 1-Struck by construction Machinery)
Contributing Circumstance	(4-Exceeded Reas. Speed; 4-Follow Too Closely; 3-Under Influence of Alcohol; 2-None)



EB OFF-RAMP to Nob Hill Blvd	082 P1 03441
Number of Collisions	20
Severity of Collisions	(2-Evident Injury; 1-Possible Injury; 17-Property Damage Only)
Collision Types	(14-Rear-end; 4-Fixed Object; 1-Vehicle Overturned; 1-other)
Contributing Circumstance	(6-Follow Too Closely; 4-Inattention; 3-Exceeding Reas. Speed 2-Driver Distracted;3-Other; 2-None Listed)

EB ON-RAMP from Nob Hill Blvd	082 Q1 03550
Number of Collisions	8
Severity of Collisions	(2-Evident Injury; 2-Possible Injury; 4-Property Damage Only)
Collision Types	(5-Rear-end; 1-Fixed Object; 1-Vehicle Overturned; 1-Other)
Contributing Circumstance	(3-Follow Too Closely; 3 Inattention; 1-Under Influence of Alcohol;1-other)

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INTERCHANGE JUSTIFICATION REPORT

I-82/Yakima Avenue/Terrace Heights Drive Interchange
MP 31.40 to MP 34.77

Appendix G

ISATe Collision Analysis Summary

Analysis Segment Map – Mainline – 2035 No Build
Analysis Segment Map – Mainline – 2035 C/D Alternative
Analysis Segment Map – Mainline – 2035 Roundabout Alternative
List of Ramp Segments – 2035 No-Build
List of Ramp Segments – 2035 C/D Alternative
List of Ramp Segments – 2035 Roundabout Alternative
Frequency and Number of Crashes Summary – Mainline
Frequency and Number of Crashes Summary – Ramps and C/D Roadways
Frequency and Number of Crashes Summary – Ramp Terminals
2035 No Build with 4 lane I-82 Predicted Crashes
2035 No Build with 6 lane I-82 Predicted Crashes
2035 C/D Alternative with 4-lane I-82 Predicted Crashes
2035 C/D Alternative with 6-lane I-82 Predicted Crashes
2035 Roundabout Alternative with 6-lane I-82 Predicted Crashes

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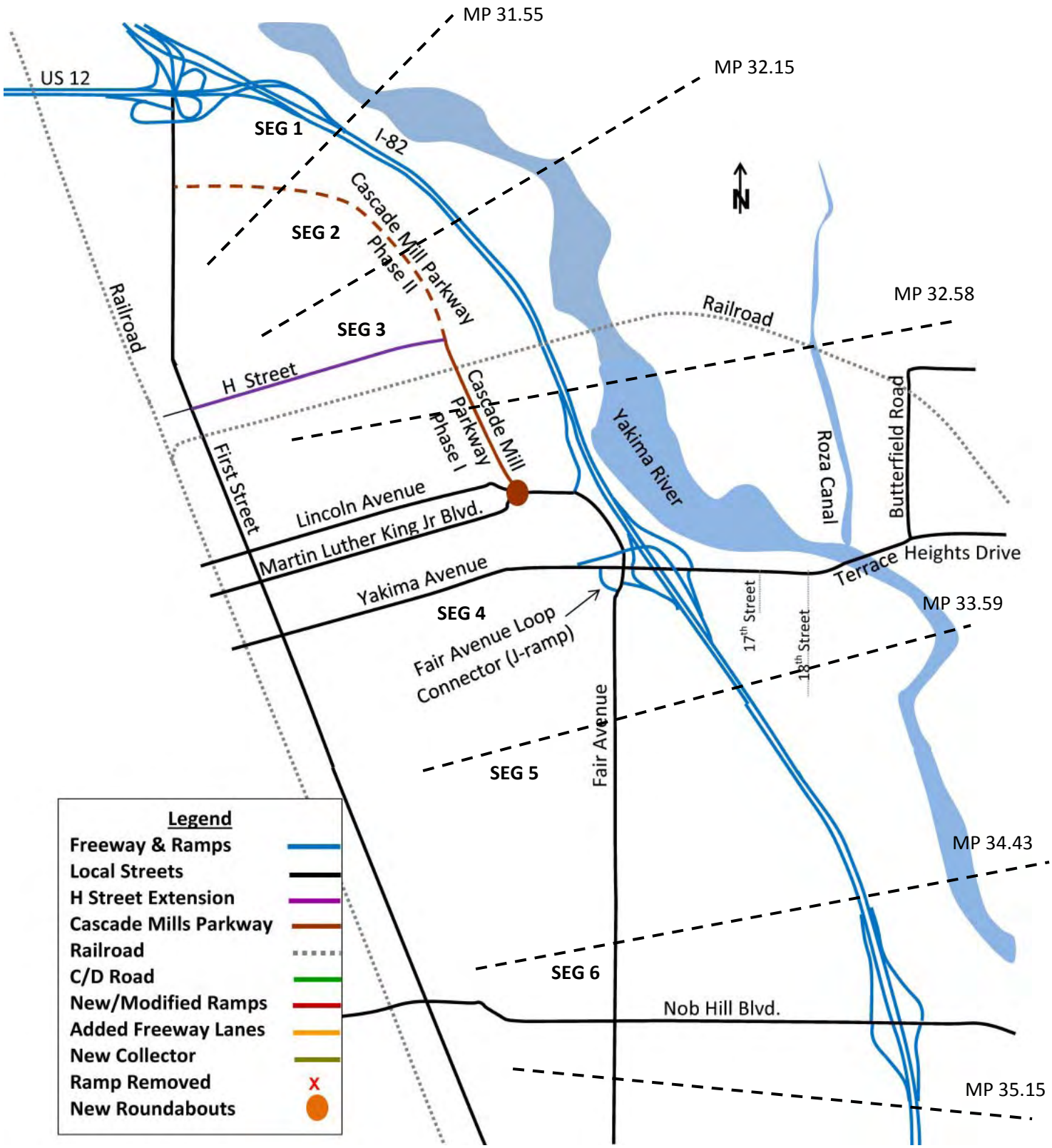
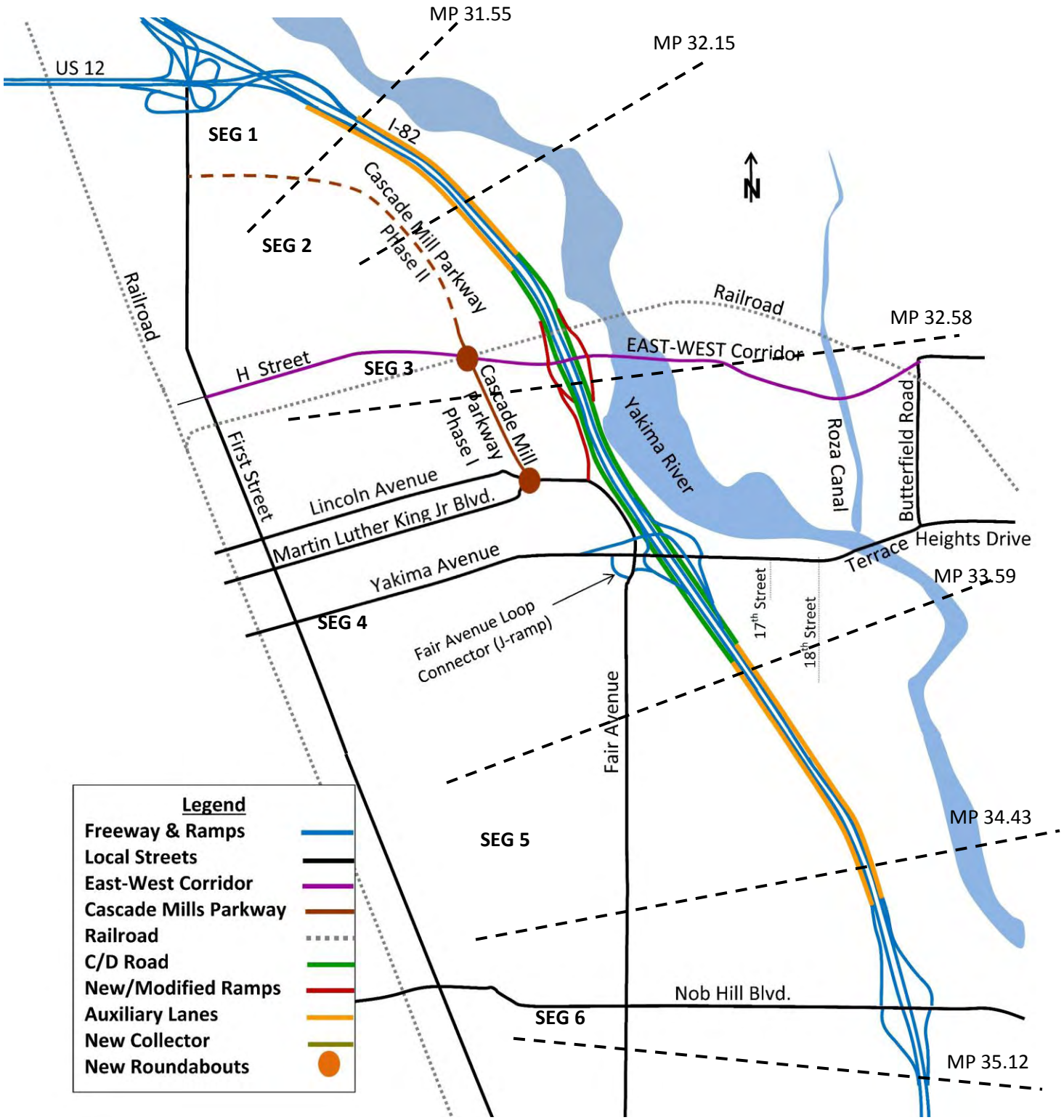
I-82 Yakima Ave/Terrace Heights Drive IJR ISATe Crash Analysis

2035 No Build – Mainline Segments



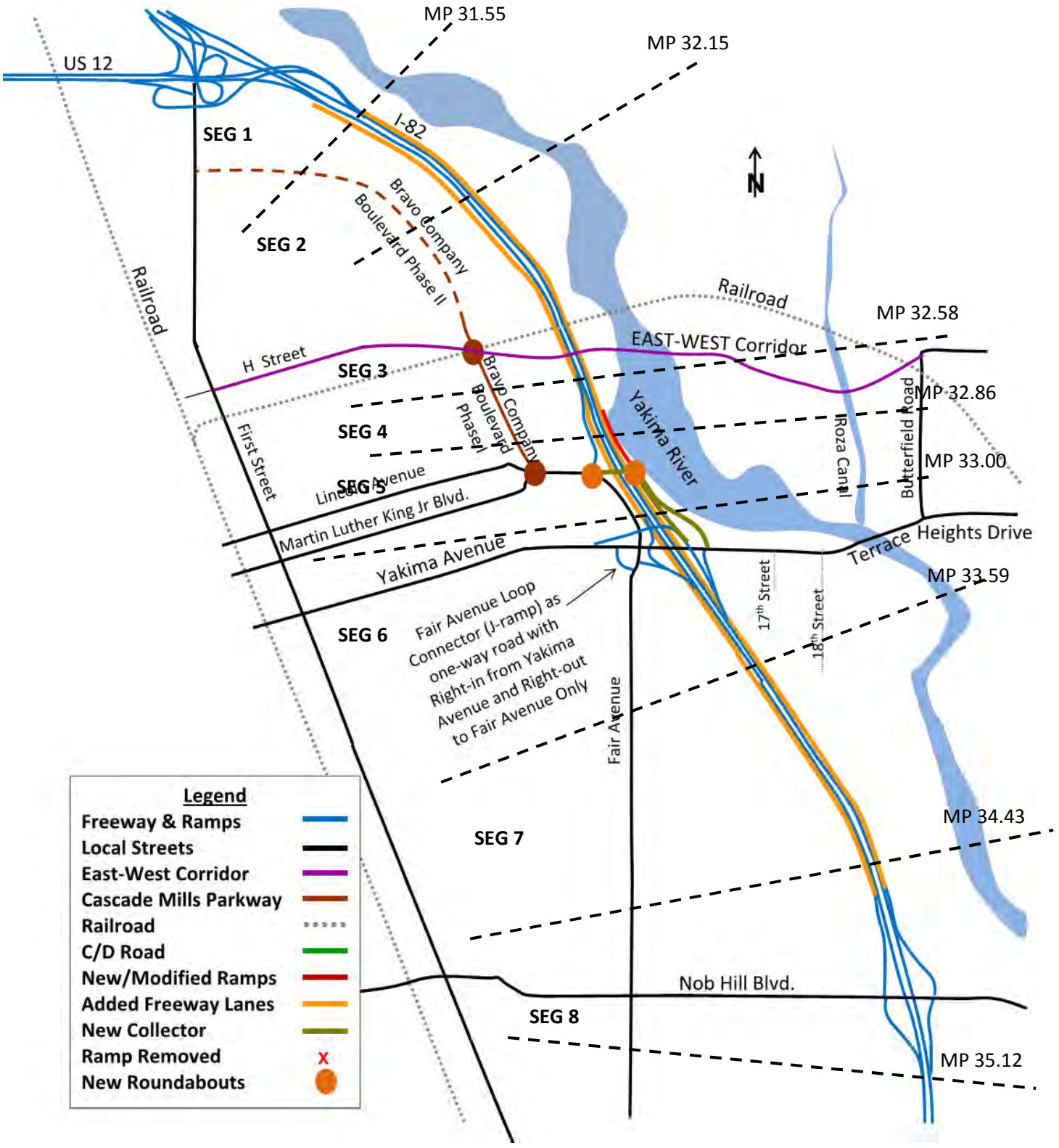
I-82 Yakima Ave/Terrace Heights Drive IJR ISATe Crash Analysis – 2035 Build

2035 C/D Alternative – Mainline Segments



I-82 Yakima Ave/Terrace Heights Drive IJR ISATe Crash Analysis – 2035 Build

2035 Roundabout Alternative – Mainline Segments



Ramp Segments for No Build Condition

Ramp Number (R)	Description
1	Off-Ramp from I-82WB to US12
2	On-Ramp from US12 to I-82EB
3	Off-Ramp from I-82EB to Fair Avenue
4	On-Ramp from Yakima Avenue to I-82WB
5	Off-Ramp from I-82EB to Yakima Avenue
6	Off-Ramp from I-82WB to Yakima Avenue EB
7	On-Ramp from Yakima Avenue to I-82EB
8	On-Ramp from Nob Hill to I-82WB
9	Off-Ramp from I-82EB to Nob Hill
10	Off-Ramp from I-82WB to Nob Hill
11	On-Ramp from Nob Hill to I-82EB
12	Off-Ramp from NB C/D to Yakima Avenue WB
13	On-Ramp from Fair Avenue to R7

Ramp Segments for C/D Build Condition

Ramp Number (R)	Description
1	Off-Ramp from I-82WB to US12
2	On-Ramp from US12 to I-82EB
3	On-Ramp from NB C/D to I-82WB
4	NB C/D Segment NB from R5 to R3
5	On-Ramp from E-W to NB C/D
6	NB C/D Segment from R7 to R5
7	Off-Ramp from NB C/D to E-W
8	NB C/D Segment from R9 to R7
9	On-Ramp from Yakima Avenue to NB C/D
10	NB C/D Segment from R11 to R9
11	Off-Ramp from NB C/D to Yakima Ave EB
12	NB C/D Segment from R13 to R11
13	Off-Ramp from I-82WB to C/D NB
14	Off-Ramp from I-82EB to C/D SB
15	SB C/D Segment from R14 to R16
16	Off-Ramp from SB C/D to E-W
17	Off-Ramp from E-W to Fair Avenue
18	SB C/D Segment from R16 to R19
19	On-Ramp from E-W to SB C/D
20	SB C/D Segment from R11 to 21
21	Off-Ramp from SB C/D to Yakima Avenue
22	SB C/D Segment from R21 to R23
23	On-Ramp from Yakima Avenue to SBC/D
24	SB C/D Segment from R23 to R25
25	On-Ramp from SB C/D to I-82EB
26	On-Ramp from Nob Hill to I-82WB
27	Off-Ramp from I-82EB to Nob Hill
28	Off-Ramp from I-82WB to Nob Hill
29	On-Ramp from Nob Hill to I-82EB
30	Off-Ramp from NB C/D to Yakima Avenue WB
31	On-Ramp from Fair Avenue to R23

Ramp Segments for Roundabout Build Alternative

Ramp Number (R)	Description
1	Off-Ramp from I-82WB to Nob Hill
2	Off-Ramp from I-82WB to Nob Hill Part 2
3	On-Ramp from Nob Hill to I-82WB
4	Off-Ramp from I-82WB to Yakima Ave Bypass
5	Off-Ramp from Yakima Ave Bypass to Yakima Ave
6	Yakima Ave Bypass to Yakima Ave WB Connector
7	Yakima Ave Bypass to B Street Connector
8	B Street Connector from Yakima Ave to Yakima Ave Bypass
9	B Street Connector to Roundabout (E)
10	On-Ramp from B Street Connector to I-82WB
11	Off-Ramp from I-82WB to US12
12	On-Ramp from US12 to I-82EB
13	Off-Ramp from I-82EB to Fair Avenue
14	Off-Ramp from I-82EB to Yakima Avenue
15	Off-Ramp from I-82EB to Yakima Avenue Part 2
16	On-Ramp from Yakima Avenue to Fair Ave Ramp
17	On-Ramp from Fair Avenue to Yakima Ave Ramp
18	Fair Ave and Yakima Ave ramp connection to I-82EB
19	Off-Ramp from I-82EB to Nob Hill
20	Off-Ramp from I-82EB to Nob Hill Part 2
21	On-Ramp from Nob Hill to I-82EB
22	Off-Ramp from Yakima Ave Bypass to Yakima Avenue WB

FREQUENCY OF 2035 MAINLINE CRASHES PER MVM BY SEGMENT & CORRIDOR FOR ALTERNATIVES

2035 No Build Conditions with 4 lanes and volumes

Mainline							
Segment	1	2	3	4	5	6	Corridor
Length of Segment (mi)	0.56	0.60	0.43	1.01	0.84	0.69	4.13
ADT of Segment	39,600	65,300	65,300	48,800	73,400	57,400	58,108
Vehicles-Miles per day	22,176	39,180	28,079	49,288	61,656	39,606	239,985
Vehicle-Miles per year	8,094,240	14,300,700	10,248,835	17,990,120	22,504,440	14,456,190	87,594,525
Number of Crashes per Year	4.73	9.58	6.86	9.97	15.75	8.57	55.46
Crashes per Vehicle Mile	0.00000058	0.00000067	0.00000067	0.00000055	0.00000070	0.00000059	0.00000063
Crashes per 1 MVM per Year	0.58	0.67	0.67	0.55	0.70	0.59	0.63

2035 No Build Conditions with 6 lanes and volumes

Mainline							
Segment	1	2	3	4	5	6	Corridor
Length of Segment (mi)	0.56	0.60	0.43	1.01	0.84	0.69	4.13
ADT of Segment	41,200	70,100	66,600	52,500	78,300	60,600	61,593
Vehicles-Miles per day	23,072	42,060	28,638	53,025	65,772	41,814	254,381
Vehicle-Miles per year	8,421,280	15,351,900	10,452,870	19,354,125	24,006,780	15,262,110	92,849,065
Number of Crashes per Year	4.97	9.19	6.73	10.98	14.58	8.30	54.75
Crashes per Vehicle Mile	0.00000059	0.00000060	0.00000064	0.00000057	0.00000061	0.00000054	0.00000059
Crashes per 1 MVM per Year	0.59	0.60	0.64	0.57	0.61	0.54	0.59

2035 Build - C/D Alter. I-82 4-lanes

Mainline							
Segment	1	2	3	4	5	6	Corridor
Length of Segment (mi)	0.56	0.60	0.43	1.01	0.84	0.69	4.13
ADT of Segment	42,500	72,100	49,600	49,600	81,300	61,900	60,408
Vehicles-Miles per day	23,800	43,260	21,328	50,096	68,292	42,711	249,487
Vehicle-Miles per year	8,687,000	15,789,900	7,784,720	18,285,040	24,926,580	15,589,515	91,062,755
Number of Crashes per Year	5.16	12.20	4.61	10.11	14.23	8.96	55.27
Crashes per Vehicle Mile	0.00000059	0.00000077	0.00000059	0.00000055	0.00000057	0.00000057	0.00000061
Crashes per 1 MVM per Year	0.59	0.77	0.59	0.55	0.57	0.57	0.61

2035 Build - C/D Alter. I-82 6-lanes

Mainline							
Segment	1	2	3	4	5	6	Corridor
Length of Segment (mi)	0.56	0.60	0.43	1.01	0.84	0.69	4.13
ADT of Segment	42,200	71,800	49,600	49,600	83,000	63,700	60,971
Vehicles-Miles per day	23,632	43,080	21,328	50,096	69,720	43,953	251,809
Vehicle-Miles per year	8,625,680	15,724,200	7,784,720	18,285,040	25,447,800	16,042,845	91,910,285
Number of Crashes per Year	5.12	9.75	4.63	10.11	15.84	8.85	54.29
Crashes per Vehicle Mile	0.00000059	0.00000062	0.00000060	0.00000055	0.00000062	0.00000055	0.00000059
Crashes per 1 MVM per Year	0.59	0.62	0.60	0.55	0.62	0.55	0.59

2035 Build - RB Alter. I-82 6-lanes

Mainline									
Segment	1	2	3	4	5	6	7	8	Corridor
Length of Segment (mi)	0.56	0.60	0.43	0.28	0.14	0.59	0.84	0.69	4.13
ADT of Segment	41,300	70,900	70,900	66,800	55,600	50,100	78,800	61,400	63,138
Vehicles-Miles per day	23,128	42,540	30,487	18,704	7,784	29,559	66,192	42,366	260,760
Vehicle-Miles per year	8,441,720	15,527,100	11,127,755	6,826,960	2,841,160	10,789,035	24,160,080	15,463,590	95,177,400
Number of Crashes per Year	4.98	9.41	7.39	4.19	1.95	6.40	14.49	9.86	58.69
Crashes per Vehicle Mile	0.00000059	0.00000061	0.00000066	0.00000061	0.00000069	0.00000059	0.00000060	0.00000064	0.00000062
Crashes per 1 MVM per Year	0.59	0.61	0.66	0.61	0.69	0.59	0.60	0.64	0.62

Note: MVM = Million Vehicles Miles

revised 12/15/2016

FREQUENCY OF 2035 RAMP & C/D ROADWAY CRASHES PER MVM BY SEGMENT & CORRIDOR FOR ALTERNATIVES

	Mainline								Ramps									
2035 No Build Conditions with 4 lanes and volumes	Segment	1	2						4		6						3	
	Length of Segment (mi)	0.379	0.207						0.251		0.250						0.365	
	ADT of Segment	12,300	13,400						8,000		4,100						2,500	
	Vehicles-Miles per day	4,657	2,774						2,011		1,025						911	
	Vehicle-Miles per year	1,699,718	1,012,474						733,871		374,125						332,682	
	Number of Crashes per Year	1.52	0.59						0.69		0.79						0.43	
	Crashes per Vehicle	0.00000089	0.00000058						0.00000093		0.00000212						0.00000128	
	Crashes per 1 MVM per Year	0.89	0.58						0.93		2.12						1.28	

		Ramps & C/D Roadways																
2035 No Build Conditions with 6 lanes and volumes	Segment	1	2						4		6						3	
	Length of Segment (mi)	0.379	0.207						0.251		0.250						0.365	
	ADT of Segment	13,500	15,400						8,500		5,100						3,500	
	Vehicles-Miles per day	5,111	3,188						2,136		1,275						1,276	
	Vehicle-Miles per year	1,865,544	1,163,590						779,738		465,375						465,755	
	Number of Crashes per Year	1.63	0.67						0.72		0.93						0.54	
	Crashes per Vehicle	0.00000087	0.00000057						0.00000092		0.00000199						0.00000117	
	Crashes per 1 MVM per Year	0.87	0.57						0.92		1.99						1.17	

		Ramps & C/D Roadways																	
2035 Build - C/D Alter. I-82 4-lanes	Segment	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Length of Segment (mi)	0.379	0.207	0.266	0.170	0.209	0.411	0.213	0.244	0.260	0.528	0.264	0.125	0.165	0.124	0.107	0.276	0.572	0.567
	ADT of Segment	15,500	14,100	12,100	12,100	7,800	4,300	6,200	10,500	5,600	4,900	4,600	15,900	15,900	10,400	10,400	7,600	3,100	2,800
	Vehicles-Miles per day	5,868	2,919	3,213	2,063	1,628	1,769	1,323	2,565	1,457	2,586	1,213	1,984	2,629	1,294	1,113	2,097	1,773	1,589
	Vehicle-Miles per year	2,141,921	1,065,364	1,172,715	752,813	594,203	645,635	483,030	936,349	531,905	944,043	442,645	724,338	959,556	472,343	406,201	765,477	647,184	579,908
	Number of Crashes per Year	1.81	0.61	0.96	0.65	0.66	0.51	0.58	0.79	0.67	0.73	0.66	1.08	0.94	0.40	0.34	0.63	0.70	0.48
	Crashes per Vehicle	0.00000085	0.00000058	0.00000082	0.00000086	0.00000110	0.00000078	0.00000121	0.00000084	0.00000126	0.00000077	0.00000148	0.00000149	0.00000098	0.00000085	0.00000083	0.00000083	0.00000108	0.00000083
	Crashes per 1 MVM per Year	0.85	0.58	0.82	0.86	1.10	0.78	1.21	0.84	1.26	0.77	1.48	1.49	0.98	0.85	0.83	0.83	1.08	0.83

		Ramps & C/D Roadways																	
2035 Build - C/D Alter. I-82 6-lanes	Segment	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Length of Segment (mi)	0.379	0.207	0.266	0.170	0.209	0.411	0.213	0.244	0.260	0.528	0.264	0.125	0.165	0.124	0.107	0.276	0.572	0.567
	ADT of Segment	15,500	14,100	11,900	11,900	7,600	4,300	6,200	10,500	5,600	4,900	5,100	16,700	16,700	10,300	10,300	7,500	3,000	2,800
	Vehicles-Miles per day	5,868	2,919	3,160	2,028	1,586	1,769	1,323	2,565	1,457	2,586	1,345	2,084	2,761	1,282	1,102	2,070	1,716	1,589
	Vehicle-Miles per year	2,141,921	1,065,364	1,153,331	740,369	578,967	645,635	483,030	936,349	531,905	944,043	490,759	760,783	1,007,836	467,801	402,295	755,405	626,307	579,908
	Number of Crashes per Year	1.81	0.61	0.94	0.64	0.64	0.51	0.58	0.79	0.67	0.73	0.71	1.14	0.98	0.40	0.33	0.63	0.68	0.48
	Crashes per Vehicle	0.00000085	0.00000058	0.00000082	0.00000086	0.00000111	0.00000078	0.00000121	0.00000084	0.00000126	0.00000077	0.00000144	0.00000150	0.00000097	0.00000086	0.00000083	0.00000083	0.00000109	0.00000083
	Crashes per 1 MVM per Year	0.85	0.58	0.82	0.86	1.11	0.78	1.21	0.84	1.26	0.77	1.44	1.50	0.97	0.86	0.83	0.83	1.09	0.83

		Ramps																	
2035 Build - RB Alter. I-82 6-lanes	Segment	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Length of Segment (mi)	0.166	0.031	0.232	0.101	0.152	0.216	0.095	0.178	0.109	0.125	0.532	0.388	0.326	0.129	0.064	0.199	0.184	0.208
	ADT of Segment	6,900	6,900	9,500	15,000	4,800	10,200	5,300	7,700	13,000	11,120	15,500	14,100	4,100	5,500	5,500	6,800	6,900	13,700
	Vehicles-Miles per day	1,143	213	2,208	1,517	729	2,198	502	1,367	1,411	1,388	8,249	5,474	1,337	709	354	1,352	1,268	2,854
	Vehicle-Miles per year	417,365	77,749	805,800	553,722	266,118	802,419	183,191	498,917	514,940	506,604	3,010,904	1,998,168	487,836	258,922	129,271	493,580	462,679	1,041,771
	Number of Crashes per Year	0.44	0.08	1.22	0.37	0.63	0.59	0.13	0.76	0.71	0.55	2.43	1.56	0.51	0.24	0.63	1.05	0.52	1.24
	Crashes per Vehicle	0.00000104	0.00000107	0.00000151	0.00000067	0.00000237	0.00000073	0.00000071	0.00000153	0.00000137	0.00000109	0.00000081	0.00000078	0.00000104	0.00000093	0.00000486	0.00000214	0.00000113	0.00000119
	Crashes per 1 MVM per Year	1.04	1.07	1.51	0.67	2.37	0.73	0.71	1.53	1.37	1.09	0.81	0.78	1.04	0.93	4.86	2.14	1.13	1.19

Note: MVM = Million Vehicles Miles

Revised 12-15-2016

FREQUENCY OF 2035 RAMP & C/D ROADWAY CRASHES PER MVM BY SEGMENT & CORRIDOR FOR ALTERNATIVES

	Mainline		Ramps											
2035 No Build Conditions with 4 lanes and volumes	Segment			5		7			8	9	10	11	12	13	Corridor
	Length of Segment (mi)			0.154		0.325			0.349	0.314	0.320	0.365	0.447	0.20	3.92
	ADT of Segment			6,000		11,900			8,400	7,600	7,400	4,800	8,600	6,400	7,830
	Vehicles-Miles per day			924		3,868			2,932	2,385	2,366	1,752	3,846	1,251	30,700
	Vehicle-Miles per year			337,210		1,411,638			1,070,197	870,553	863,502	639,414	1,403,632	456,582	11,205,597
	Number of Crashes per Year			0.57		2.52			1.40	0.61	0.74	0.72	2.06	0.61	13.24
	Crashes per Vehicle			0.00000168		0.00000179			0.00000131	0.00000070	0.00000086	0.00000113	0.00000147	0.00000133	0.00000118
	Crashes per 1 MVM per Year			1.68		1.79			1.31	0.70	0.86	1.13	1.47	1.33	1.18

	Ramps & C/D Roadways													
2035 No Build Conditions with 6 lanes and volumes	Segment			5		7			8	9	10	11	12	13	Corridor
	Length of Segment (mi)			0.154		0.325			0.349	0.314	0.320	0.365	0.447	0.20	3.92
	ADT of Segment			5,600		11,900			10,000	7,700	6,600	4,100	8,800	3,900	8,143
	Vehicles-Miles per day			862		3,868			3,491	2,416	2,110	1,496	3,935	762	31,927
	Vehicle-Miles per year			314,730		1,411,638			1,274,044	882,007	770,150	546,166	1,436,275	278,230	11,653,240
	Number of Crashes per Year			0.54		2.52			1.64	0.62	0.68	0.63	2.10	0.41	13.63
	Crashes per Vehicle			0.00000171		0.00000179			0.00000129	0.00000070	0.00000089	0.00000116	0.00000146	0.00000148	0.00000117
	Crashes per 1 MVM per Year			1.71		1.79			1.29	0.70	0.89	1.16	1.46	1.48	1.17

	Ramps & C/D Roadways														
2035 Build - C/D Alter. I-82 4-lanes	Segment	19	20	21	22	23	24	25	26	27	28	29	30	31	Corridor
	Length of Segment (mi)	0.256	0.194	0.220	0.528	0.356	0.188	0.340	0.349	0.314	0.365	0.320	0.447	0.20	9.16
	ADT of Segment	6,900	9,700	3,700	6,000	5,300	15,800	15,800	10,700	8,700	6,200	3,900	6,400	4,500	7,713
	Vehicles-Miles per day	1,766	1,883	815	3,168	1,887	2,977	5,368	3,735	2,730	2,263	1,247	2,862	890	70,675
	Vehicle-Miles per year	644,412	687,313	297,468	1,156,386	688,799	1,086,774	1,959,469	1,363,227	996,554	825,909	455,089	1,044,564	324,767	25,796,361
	Number of Crashes per Year	0.46	0.51	0.33	0.94	0.85	0.70	1.23	1.74	0.68	0.91	0.47	1.66	0.55	24.24
	Crashes per Vehicle	0.00000072	0.00000075	0.00000110	0.00000082	0.00000124	0.00000065	0.00000063	0.00000128	0.00000068	0.00000110	0.00000104	0.00000159	0.00000169	0.00000094
	Crashes per 1 MVM per Year	0.72	0.75	1.10	0.82	1.24	0.65	0.63	1.28	0.68	1.10	1.04	1.59	1.69	0.94

	Ramps & C/D Roadways														
2035 Build - C/D Alter. I-82 6-lanes	Segment	19	20	21	22	23	24	25	26	27	28	29	30	31	Corridor
	Length of Segment (mi)	0.256	0.194	0.220	0.528	0.356	0.188	0.340	0.349	0.314	0.365	0.320	0.447	0.20	9.16
	ADT of Segment	7,000	9,800	3,700	6,100	6,100	16,700	16,700	10,600	8,700	6,300	4,400	6,700	4,500	7,853
	Vehicles-Miles per day	1,791	1,902	815	3,221	2,172	3,147	5,674	3,700	2,730	2,299	1,407	2,996	890	71,956
	Vehicle-Miles per year	653,751	694,399	297,468	1,175,659	792,769	1,148,679	2,071,085	1,350,486	996,554	839,230	513,433	1,093,528	324,767	26,263,817
	Number of Crashes per Year	0.47	0.52	0.33	0.96	0.95	0.75	1.30	1.73	0.68	0.92	0.52	1.72	0.55	24.66
	Crashes per Vehicle	0.00000072	0.00000075	0.00000110	0.00000082	0.00000120	0.00000065	0.00000063	0.00000128	0.00000068	0.00000109	0.00000101	0.00000157	0.00000169	0.00000094
	Crashes per 1 MVM per Year	0.72	0.75	1.10	0.82	1.20	0.65	0.63	1.28	0.68	1.09	1.01	1.57	1.69	0.94

	Ramps					
2035 Build - RB Alter. I-82 6-lanes	Segment	19	20	21	22	Corridor
	Length of Segment (mi)	0.157	0.114	0.320	0.313	4.34
	ADT of Segment	7,900	7,900	4,800	4,900	9,103
	Vehicles-Miles per day	1,242	898	1,535	1,531	39,479
	Vehicle-Miles per year	453,277	327,670	560,109	558,906	14,409,919
	Number of Crashes per Year	0.32	0.28	0.58	0.96	15.79
	Crashes per Vehicle	0.00000070	0.00000084	0.00000104	0.00000171	0.00000110
	Crashes per 1 MVM per Year	0.70	0.84	1.04	1.71	1.10

Note: MVM = Million Vehicles Miles

FREQUENCY OF 2035 RAMP TERMINAL CRASHES PER MILLION VEHICLES PER TERMINAL & CORRIDOR BY ALTERNATIVES

	Terminals								
	Terminal Number	1	2	3	4			7	8	Corridor
2035 No		Yakima EB	Yakima WB	Nob Hill - EB	Nob Hill - WB			Fair Ave Exit	Fair Ave Ent.	
Build	ADT of Terminal	48,310	41,430	53,860	41,810			17,770	20,320	223,500
Conditions	Average Yearly Traffic	17,633,150	15,121,950	19,658,900	15,260,650			6,486,050	7,416,800	81,577,500
with 4 lanes	Number of Crashes per Year	10.42	5.52	10.22	8.13			1.74	1.26	37.28
and volumes	Crashes per Vehicle per Year	0.00000059	0.00000037	0.00000052	0.00000053			0.00000027	0.00000017	0.00000046
	Crashes per 1 million Vehilcles per Year	0.59	0.37	0.52	0.53			0.27	0.17	0.46

	Terminals								
	Terminal Number	1	2	3	4			7	8	Corridor
2035 No		Yakima EB	Yakima WB	Nob Hill - EB	Nob Hill - WB			Fair Ave Exit	Fair Ave Ent.	
Build	ADT of Terminal	49,810	43,530	54,660	41,210			17,770	20,320	227,300
Conditions	Average Yearly Traffic	18,180,650	15,888,450	19,950,900	15,041,650			6,486,050	7,416,800	82,964,500
with 6 lanes	Number of Crashes per Year	11.35	5.86	10.12	8.00			1.74	1.26	38.34
and volumes	Crashes per Vehicle per Year	0.00000062	0.00000037	0.00000051	0.00000053			0.00000027	0.00000017	0.00000046
	Crashes per 1 million Vehilcles per Year	0.62	0.37	0.51	0.53			0.27	0.17	0.46

	Terminals								
	Terminal Number	1	2	3	4	5	6	7	8	Corridor
		Yakima EB	Yakima WB	Nob Hill - EB	Nob Hill - WB	E/W - EB	E/W - WB	Fair Ave Exit	Fair Ave Ent.	
2035 Build -	ADT of Terminal	38,970	32,590	52,180	40,340	33,440	40,010	16,870	15,520	269,920
C/D Alter.	Average Yearly Traffic	14,224,050	11,895,350	19,045,700	14,724,100	12,205,600	14,603,650	6,157,550	5,664,800	98,520,800
I-82 4-lanes	Number of Crashes per Year	9.22	3.86	9.51	8.47	4.96	7.52	1.92	0.92	46.39
	Crashes per Vehicle per Year	0.00000065	0.00000032	0.00000050	0.00000058	0.00000041	0.00000052	0.00000031	0.00000016	0.00000047
	Crashes per 1 million Vehilcles per Year	0.65	0.32	0.50	0.58	0.41	0.52	0.31	0.16	0.47

	Terminals								
	Terminal Number	1	2	3	4	5	6	7	8	Corridor
		Yakima EB	Yakima WB	Nob Hill - EB	Nob Hill - WB	E/W - EB	E/W - WB	Fair Ave Exit	Fair Ave Ent.	
2035 Build -	ADT of Terminal	38,950	32,520	52,260	40,540	34,200	37,400	17,210	15,470	268,550
C/D Alter.	Average Yearly Traffic	14,187,550	11,869,800	19,074,900	14,797,100	12,475,700	11,457,350	6,281,650	5,646,550	95,790,600
I-82 6-lanes	Number of Crashes per Year	9.55	3.95	9.59	8.56	5.21	6.56	1.89	0.92	46.22
	Crashes per Vehicle per Year	0.00000067	0.00000033	0.00000050	0.00000058	0.00000042	0.00000057	0.00000030	0.00000016	0.00000048
	Crashes per 1 million Vehilcles per Year	0.67	0.33	0.50	0.58	0.42	0.57	0.30	0.16	0.48

	Terminals								
	Terminal Number	1	2	3	4	5	6	7		Corridor
		Yak-Ave-WB Side	Yak-Ave-EB Side	Nob-Hill-WB-Side	Nob-Hill-EB-Side	Fair Ave RB- WB Sid	Fair Ave RB- EB Sid	Fair Ave to 82EB		
2035 Build -	ADT of Terminal	40,730	32,060	51,470	39,800	18,470	21,530	19,070		223,130
RB Alter.	Average Yearly Traffic	14,866,450	11,701,900	18,786,550	14,527,000	6,741,550	7,858,450	6,960,550		81,442,450
I-82 6-lanes	Number of Crashes per Year	8.10	5.27	11.40	8.45	3.20	5.17	1.68		43.27
	Crashes per Vehicle per Year	0.00000054	0.00000045	0.00000061	0.00000058	0.00000048	0.00000066	0.00000024		0.00000053
	Crashes per 1 million Vehilcles per Year	0.54	0.45	0.61	0.58	0.48	0.66	0.24		0.53

Ramp Terminals

Revised 12-15-2016

Output Summary

General Information

Project description:	I-82: No Build 2035 (Not Using Collision Data) - 2 lanes				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035				
Last year of analysis:	2035				

Crash Data Description

Freeway segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp terminals	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	103.0	0.5	1.7	9.1	23.1	68.5
Estimated average crash freq. during Study Period, crashes/yr:	103.0	0.5	1.7	9.1	23.1	68.5

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	6	55.5	0.4	1.0	5.4	10.9	37.7
Ramp segments, crashes:	13	13.2	0.1	0.4	1.8	3.2	7.8
Crossroad ramp terminals, crashes:	4	34.3	0.0	0.3	1.9	9.1	23.0

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2035	103.0	0.5	1.7	9.1	23.1	68.5
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						
	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						
	2056						
	2057						
	2058						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.4	0.0	0.0	0.0	0.2	0.2
	Right-angle crashes:	8.7	0.0	0.1	0.6	2.6	5.5
	Rear-end crashes:	45.0	0.2	0.7	3.8	11.2	29.1
	Sideswipe crashes:	12.7	0.0	0.1	0.7	1.7	10.1
	Other multiple-vehicle crashes:	1.7	0.0	0.0	0.1	0.3	1.2
	Total multiple-vehicle crashes:	68.5	0.3	1.0	5.4	15.9	46.0
Single vehicle	Crashes with animal:	0.4	0.0	0.0	0.0	0.0	0.4
	Crashes with fixed object:	25.5	0.2	0.5	2.7	5.1	17.0
	Crashes with other object:	2.7	0.0	0.0	0.1	0.3	2.3
	Crashes with parked vehicle:	0.5	0.0	0.0	0.1	0.1	0.4
	Other single-vehicle crashes	5.3	0.1	0.2	0.9	1.7	2.5
	Total single-vehicle crashes:	34.5	0.3	0.7	3.7	7.2	22.5
Total crashes:		103.0	0.5	1.7	9.1	23.1	68.5

Evaluation Site Summary

General Information

Project description:	I-82: No Build 2035 (Not Using Collision Data) - 2 lanes				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035	Total length of freeway segments for Study Period (mi):	4.135		
Last year of analysis:	2035				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Study Period Description	
1	4	0.563	MP 30.99 to MP 31.55	
2	4	0.602	MP 31.55 to MP 32.15	
3	4	0.429	MP 32.15 to MP 32.58	
4	4	1.004	MP 32.58 to MP 33.59	
5	4	0.843	MP 33.59 to MP 34.43	
6	4	0.694	MP 34.43 to MP 35.12	
7	0	0.000	0	
8	0	0.000	0	
9	0	0.000	0	
10	0	0.000	0	
11	0	0.000	0	
12	0	0.000	0	
13	0	0.000	0	
14	0	0.000	0	
15	0	0.000	0	
16	0	0.000	0	
17	0	0.000	0	
18	0	0.000	0	
19	0	0.000	0	
20	0	0.000	0	

Ramp Segments

Number	Study Period Description		Number	Study Period Description	
1	82WB to US12		21	0	
2	US12 to 82EB		22	0	
3	82EB to Fair Ave		23	0	
4	Yakima Ave to 82WB		24	0	
5	82EB to Yakima Ave		25	0	
6	82WB to Yakima Ave EB		26	0	
7	Yakima Ave to 82EB		27	0	
8	Nob Hill to 82WB		28	0	
9	82EB to Nob Hill		29	0	
10	82WB to Nob Hill		30	0	
11	Nob Hill to 82EB		31	0	
12	82WB to Yakima Ave WB		32	0	
13	Fair Ave to Ramp to 82EB		33	0	
14	0		34	0	
15	0		35	0	
16	0		36	0	
17	0		37	0	
18	0		38	0	
19	0		39	0	
20	0		40	0	

Crossroad Ramp Terminals

Number	Config.	Control	Study Period Description	
1	D4	Signal	Yak-Ave-E	
2	D4	Signal	Yak-Ave-W	
3	D4	Signal	Nob-Hil-E	
4	D4	Signal	Nob-Hil-W	
5	0	0	0	
6	0	0	0	

Output Summary

General Information

Project description:	I-82: No Build 2035 (Not Using Collision Data) (Terminal 7 & 8)				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035				
Last year of analysis:	2035				

Crash Data Description

Freeway segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp terminals	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	3.0	0.0	0.0	0.2	1.0	1.7
Estimated average crash freq. during Study Period, crashes/yr:	3.0	0.0	0.0	0.2	1.0	1.7

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Ramp segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Crossroad ramp terminals, crashes:	2	3.0	0.0	0.0	0.2	1.0	1.7

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2035	3.0	0.0	0.0	0.2	1.0	1.7
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						
	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						
	2056						
	2057						
	2058						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Right-angle crashes:	0.9	0.0	0.0	0.1	0.3	0.5
	Rear-end crashes:	1.5	0.0	0.0	0.1	0.5	0.8
	Sideswipe crashes:	0.2	0.0	0.0	0.0	0.0	0.2
	Other multiple-vehicle crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Total multiple-vehicle crashes:	2.7	0.0	0.0	0.2	0.9	1.6
Single vehicle	Crashes with animal:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with fixed object:	0.2	0.0	0.0	0.0	0.1	0.1
	Crashes with other object:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with parked vehicle:	0.0	0.0	0.0	0.0	0.0	0.0
	Other single-vehicle crashes	0.0	0.0	0.0	0.0	0.0	0.0
	Total single-vehicle crashes:	0.3	0.0	0.0	0.0	0.1	0.2
	Total crashes:	3.0	0.0	0.0	0.2	1.0	1.7

Evaluation Site Summary

General Information

Project description:	I-82: No Build 2035 (Not Using Collision Data) (Terminal 7 & 8)				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035	Total length of freeway segments for Study Period (mi):	0.000		
Last year of analysis:	2035				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Study Period Description
1	0	0.000	0
2	0	0.000	0
3	0	0.000	0
4	0	0.000	0
5	0	0.000	0
6	0	0.000	0
7	0	0.000	0
8	0	0.000	0
9	0	0.000	0
10	0	0.000	0
11	0	0.000	0
12	0	0.000	0
13	0	0.000	0
14	0	0.000	0
15	0	0.000	0
16	0	0.000	0
17	0	0.000	0
18	0	0.000	0
19	0	0.000	0
20	0	0.000	0

Ramp Segments

Number	Study Period Description		Number	Study Period Description	
1	0		21	0	
2	0		22	0	
3	0		23	0	
4	0		24	0	
5	0		25	0	
6	0		26	0	
7	0		27	0	
8	0		28	0	
9	0		29	0	
10	0		30	0	
11	0		31	0	
12	0		32	0	
13	0		33	0	
14	0		34	0	
15	0		35	0	
16	0		36	0	
17	0		37	0	
18	0		38	0	
19	0		39	0	
20	0		40	0	

Crossroad Ramp Terminals

Number	Config.	Control	Study Period Description
1	D3ex	Signal	Fair Ave Exit
2	D3en	One stop	Fair Ave Entrance
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0

Output Summary

General Information

Project description:	I-82: No Build 2035 (Not Using Collision Data)				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035				
Last year of analysis:	2035				

Crash Data Description

Freeway segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp terminals	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	103.7	0.6	1.8	9.8	22.1	69.3
Estimated average crash freq. during Study Period, crashes/yr:	103.7	0.6	1.8	9.8	22.1	69.3

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	6	54.7	0.4	1.2	6.1	9.7	37.4
Ramp segments, crashes:	13	13.6	0.1	0.4	1.8	3.2	8.0
Crossroad ramp terminals, crashes:	4	35.3	0.0	0.3	1.9	9.2	23.9

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2035	103.7	0.6	1.8	9.8	22.1	69.3
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						
	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						
	2056						
	2057						
	2058						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.4	0.0	0.0	0.1	0.2	0.2
	Right-angle crashes:	8.9	0.0	0.1	0.6	2.6	5.6
	Rear-end crashes:	41.8	0.2	0.7	3.9	10.2	26.8
	Sideswipe crashes:	11.5	0.0	0.1	0.7	1.4	9.1
	Other multiple-vehicle crashes:	1.6	0.0	0.0	0.2	0.3	1.1
	Total multiple-vehicle crashes:	64.2	0.3	1.0	5.4	14.6	42.9
Single vehicle	Crashes with animal:	0.5	0.0	0.0	0.0	0.0	0.4
	Crashes with fixed object:	29.2	0.2	0.6	3.1	5.3	19.8
	Crashes with other object:	3.3	0.0	0.0	0.2	0.3	2.8
	Crashes with parked vehicle:	0.6	0.0	0.0	0.1	0.1	0.4
	Other single-vehicle crashes	6.0	0.1	0.2	1.0	1.8	2.9
	Total single-vehicle crashes:	39.5	0.3	0.9	4.4	7.5	26.4
	Total crashes:	103.7	0.6	1.8	9.8	22.1	69.3

Evaluation Site Summary

General Information

Project description:	I-82: No Build 2035 (Not Using Collision Data)				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035	Total length of freeway segments for Study Period (mi):	4.135		
Last year of analysis:	2035				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Study Period Description
1	4	0.563	MP 30.99 to MP 31.55
2	6	0.602	MP 31.55 to MP 32.15
3	6	0.429	MP 32.15 to MP 32.58
4	6	1.004	MP 32.58 to MP 33.59
5	6	0.843	MP 33.59 to MP 34.43
6	6	0.694	MP 34.43 to MP 35.12
7	0	0.000	0
8	0	0.000	0
9	0	0.000	0
10	0	0.000	0
11	0	0.000	0
12	0	0.000	0
13	0	0.000	0
14	0	0.000	0
15	0	0.000	0
16	0	0.000	0
17	0	0.000	0
18	0	0.000	0
19	0	0.000	0
20	0	0.000	0

Ramp Segments

Number	Study Period Description		Number	Study Period Description	
1	82WB to US12		21	0	
2	US12 to 82EB		22	0	
3	82EB to Fair Ave		23	0	
4	Yakima Ave to 82WB		24	0	
5	82EB to Yakima Ave		25	0	
6	82WB to Yakima Ave EB		26	0	
7	Yakima Ave to 82EB		27	0	
8	Nob Hill to 82WB		28	0	
9	82EB to Nob Hill		29	0	
10	82WB to Nob Hill		30	0	
11	Nob Hill to 82EB		31	0	
12	82WB to Yakima Ave WB		32	0	
13	Fair Ave to Ramp to 82EB		33	0	
14	0		34	0	
15	0		35	0	
16	0		36	0	
17	0		37	0	
18	0		38	0	
19	0		39	0	
20	0		40	0	

Crossroad Ramp Terminals

Number	Config.	Control	Study Period Description
1	D4	Signal	Yak-Ave-E
2	D4	Signal	Yak-Ave-W
3	D4	Signal	Nob-Hil-E
4	D4	Signal	Nob-Hil-W
5	0	0	0
6	0	0	0

Output Summary

General Information

Project description:	I-82: No Build 2035 (Not Using Collision Data) (Terminal 7 & 8)				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035				
Last year of analysis:	2035				

Crash Data Description

Freeway segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp terminals	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	3.0	0.0	0.0	0.2	1.0	1.7
Estimated average crash freq. during Study Period, crashes/yr:	3.0	0.0	0.0	0.2	1.0	1.7

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Ramp segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Crossroad ramp terminals, crashes:	2	3.0	0.0	0.0	0.2	1.0	1.7

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2035	3.0	0.0	0.0	0.2	1.0	1.7
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						
	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						
	2056						
	2057						
	2058						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Right-angle crashes:	0.9	0.0	0.0	0.1	0.3	0.5
	Rear-end crashes:	1.5	0.0	0.0	0.1	0.5	0.8
	Sideswipe crashes:	0.2	0.0	0.0	0.0	0.0	0.2
	Other multiple-vehicle crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Total multiple-vehicle crashes:	2.7	0.0	0.0	0.2	0.9	1.6
Single vehicle	Crashes with animal:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with fixed object:	0.2	0.0	0.0	0.0	0.1	0.1
	Crashes with other object:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with parked vehicle:	0.0	0.0	0.0	0.0	0.0	0.0
	Other single-vehicle crashes	0.0	0.0	0.0	0.0	0.0	0.0
	Total single-vehicle crashes:	0.3	0.0	0.0	0.0	0.1	0.2
	Total crashes:	3.0	0.0	0.0	0.2	1.0	1.7

Evaluation Site Summary

General Information

Project description:	I-82: No Build 2035 (Not Using Collision Data) (Terminal 7 & 8)				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035	Total length of freeway segments for Study Period (mi):	0.000		
Last year of analysis:	2035				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Study Period Description
1	0	0.000	0
2	0	0.000	0
3	0	0.000	0
4	0	0.000	0
5	0	0.000	0
6	0	0.000	0
7	0	0.000	0
8	0	0.000	0
9	0	0.000	0
10	0	0.000	0
11	0	0.000	0
12	0	0.000	0
13	0	0.000	0
14	0	0.000	0
15	0	0.000	0
16	0	0.000	0
17	0	0.000	0
18	0	0.000	0
19	0	0.000	0
20	0	0.000	0

Ramp Segments

Number	Study Period Description		Number	Study Period Description	
1	0		21	0	
2	0		22	0	
3	0		23	0	
4	0		24	0	
5	0		25	0	
6	0		26	0	
7	0		27	0	
8	0		28	0	
9	0		29	0	
10	0		30	0	
11	0		31	0	
12	0		32	0	
13	0		33	0	
14	0		34	0	
15	0		35	0	
16	0		36	0	
17	0		37	0	
18	0		38	0	
19	0		39	0	
20	0		40	0	

Crossroad Ramp Terminals

Number	Config.	Control	Study Period Description
1	D3ex	Signal	Fair Ave Exit
2	D3en	One stop	Fair Ave Entrance
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0

Output Summary

General Information

Project description:	I-82: 2035 2 Lanes Mainline + CD Road				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035				
Last year of analysis:	2035				

Crash Data Description

Freeway segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp terminals	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	123.1	0.6	2.1	11.3	27.6	81.4
Estimated average crash freq. during Study Period, crashes/yr:	123.1	0.6	2.1	11.3	27.6	81.4

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	6	55.3	0.4	1.0	5.4	10.4	38.0
Ramp segments, crashes:	31	24.2	0.2	0.7	3.5	5.8	14.0
Crossroad ramp terminals, crashes:	6	43.5	0.0	0.4	2.4	11.4	29.4

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2035	123.1	0.6	2.1	11.3	27.6	81.4
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						
	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						
	2056						
	2057						
	2058						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.6	0.0	0.0	0.1	0.2	0.3
	Right-angle crashes:	10.9	0.0	0.1	0.7	3.2	6.9
	Rear-end crashes:	51.9	0.2	0.8	4.6	13.0	33.4
	Sideswipe crashes:	14.5	0.1	0.1	0.8	1.8	11.7
	Other multiple-vehicle crashes:	2.4	0.0	0.0	0.2	0.5	1.6
	Total multiple-vehicle crashes:	80.3	0.3	1.1	6.4	18.7	53.8
Single vehicle	Crashes with animal:	0.5	0.0	0.0	0.0	0.0	0.4
	Crashes with fixed object:	31.9	0.2	0.7	3.5	6.3	21.1
	Crashes with other object:	3.0	0.0	0.0	0.2	0.3	2.6
	Crashes with parked vehicle:	0.6	0.0	0.0	0.1	0.1	0.4
	Other single-vehicle crashes	6.7	0.1	0.2	1.2	2.1	3.1
	Total single-vehicle crashes:	42.8	0.3	1.0	4.9	8.9	27.6
	Total crashes:	123.1	0.6	2.1	11.3	27.6	81.4

Evaluation Site Summary

General Information

Project description:	I-82: 2035 2 Lanes Mainline + CD Road				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035	Total length of freeway segments for Study Period (mi):	4.135		
Last year of analysis:	2035				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Study Period Description
1	4	0.563	MP 30.99 to MP 31.55
2	4	0.602	MP 31.55 to MP 32.15
3	4	0.429	MP 32.15 to MP 32.58
4	4	1.004	MP 32.58 to MP 33.59
5	6	0.843	MP 33.59 to MP 34.43
6	4	0.694	MP 34.43 to MP 35.12
7	0	0.000	0
8	0	0.000	0
9	0	0.000	0
10	0	0.000	0
11	0	0.000	0
12	0	0.000	0
13	0	0.000	0
14	0	0.000	0
15	0	0.000	0
16	0	0.000	0
17	0	0.000	0
18	0	0.000	0
19	0	0.000	0
20	0	0.000	0

Ramp Segments

Number	Study Period Description	Number	Study Period Description
1	82WB to US12	21	CD SB to Yakima Ave
2	US12 to 82EB	22	CD Seg from R21 to R23
3	CD NB to 82WB	23	Yakima Ave to CD SB
4	CD Seg from R5 to R3	24	CD Seg from R23 to R25
5	E-W to CD NB	25	CD SB to 82EB
6	CD Seg from R7 to R5	26	Nob Hill to 82WB
7	CD NB to E-W	27	82EB to Nob Hill
8	CD Seg from R9 to R7	28	82WB to Nob Hill
9	Yakima Ave to CD NB	29	Nob Hill to 82EB
10	CD Seg from R11 to R9	30	CD NB to Yakima Ave WB
11	CD NB to Yakima Ave EB	31	Fair Ave to Ramp to CD Roa
12	CD Seg from R13 to R11	32	0
13	82WB to CD NB	33	0
14	82EB to CD SB	34	0
15	CD Seg from R14 to R16	35	0
16	CD SB to E-W	36	0
17	CD SB to Fair Ave	37	0
18	CD Seg from R17 to R19	38	0
19	E-W to CD SB	39	0
20	CD Seg from R19 to R21	40	0

Crossroad Ramp Terminals

Number	Config.	Control	Study Period Description
1	D4	Signal	Yak-Ave-E
2	D4	Signal	Yak-Ave-W
3	D4	Signal	Nob-Hil-E
4	D4	Signal	Nob-Hil-W
5	D4	Signal	E/W-E
6	D4	Signal	E/W-W

Output Summary

General Information

Project description:	I-82: 2035 2 Lanes Mainline + CD Road (Terminal 7 & 8)				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035				
Last year of analysis:	2035				

Crash Data Description

Freeway segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp terminals	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	2.8	0.0	0.0	0.2	1.0	1.6
Estimated average crash freq. during Study Period, crashes/yr:	2.8	0.0	0.0	0.2	1.0	1.6

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Ramp segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Crossroad ramp terminals, crashes:	2	2.8	0.0	0.0	0.2	1.0	1.6

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2035	2.8	0.0	0.0	0.2	1.0	1.6
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						
	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						
	2056						
	2057						
	2058						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Right-angle crashes:	0.8	0.0	0.0	0.1	0.3	0.5
	Rear-end crashes:	1.5	0.0	0.0	0.1	0.6	0.8
	Sideswipe crashes:	0.2	0.0	0.0	0.0	0.0	0.2
	Other multiple-vehicle crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Total multiple-vehicle crashes:	2.6	0.0	0.0	0.2	0.9	1.5
Single vehicle	Crashes with animal:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with fixed object:	0.2	0.0	0.0	0.0	0.0	0.1
	Crashes with other object:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with parked vehicle:	0.0	0.0	0.0	0.0	0.0	0.0
	Other single-vehicle crashes	0.0	0.0	0.0	0.0	0.0	0.0
	Total single-vehicle crashes:	0.2	0.0	0.0	0.0	0.1	0.1
	Total crashes:	2.8	0.0	0.0	0.2	1.0	1.6

Evaluation Site Summary

General Information

Project description:	I-82: 2035 2 Lanes Mainline + CD Road (Terminal 7 & 8)				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035	Total length of freeway segments for Study Period (mi):	0.000		
Last year of analysis:	2035				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Study Period Description	
1	0	0.000	0	
2	0	0.000	0	
3	0	0.000	0	
4	0	0.000	0	
5	0	0.000	0	
6	0	0.000	0	
7	0	0.000	0	
8	0	0.000	0	
9	0	0.000	0	
10	0	0.000	0	
11	0	0.000	0	
12	0	0.000	0	
13	0	0.000	0	
14	0	0.000	0	
15	0	0.000	0	
16	0	0.000	0	
17	0	0.000	0	
18	0	0.000	0	
19	0	0.000	0	
20	0	0.000	0	

Ramp Segments

Number	Study Period Description		Number	Study Period Description	
1	0		21	0	
2	0		22	0	
3	0		23	0	
4	0		24	0	
5	0		25	0	
6	0		26	0	
7	0		27	0	
8	0		28	0	
9	0		29	0	
10	0		30	0	
11	0		31	0	
12	0		32	0	
13	0		33	0	
14	0		34	0	
15	0		35	0	
16	0		36	0	
17	0		37	0	
18	0		38	0	
19	0		39	0	
20	0		40	0	

Crossroad Ramp Terminals

Number	Config.	Control	Study Period Description	
1	D3ex	Signal	Fair Ave Exit	
2	D3en	One stop	Fair Ave Entrance	
3	0	0	0	
4	0	0	0	
5	0	0	0	
6	0	0	0	

Output Summary

General Information

Project description:	I-82: 2035 3 Lanes Mainline + CD Road				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035				
Last year of analysis:	2035				

Crash Data Description

Freeway segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp terminals	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	122.4	0.7	2.2	11.9	26.8	80.8
Estimated average crash freq. during Study Period, crashes/yr:	122.4	0.7	2.2	11.9	26.8	80.8

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	6	54.3	0.4	1.1	6.0	9.7	37.0
Ramp segments, crashes:	31	24.7	0.2	0.7	3.6	5.9	14.3
Crossroad ramp terminals, crashes:	6	43.4	0.0	0.4	2.4	11.2	29.5

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2035	122.4	0.7	2.2	11.9	26.8	80.8
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						
	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						
	2056						
	2057						
	2058						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.5	0.0	0.0	0.1	0.2	0.3
	Right-angle crashes:	10.8	0.0	0.1	0.7	3.1	6.8
	Rear-end crashes:	49.0	0.2	0.8	4.5	12.1	31.3
	Sideswipe crashes:	13.6	0.1	0.1	0.8	1.7	10.9
	Other multiple-vehicle crashes:	2.3	0.0	0.0	0.2	0.5	1.5
	Total multiple-vehicle crashes:	76.2	0.3	1.1	6.4	17.5	50.8
Single vehicle	Crashes with animal:	0.5	0.0	0.0	0.0	0.0	0.5
	Crashes with fixed object:	34.4	0.3	0.8	4.0	6.6	22.8
	Crashes with other object:	3.4	0.0	0.0	0.2	0.3	2.9
	Crashes with parked vehicle:	0.7	0.0	0.0	0.1	0.1	0.5
	Other single-vehicle crashes	7.2	0.1	0.2	1.3	2.2	3.4
	Total single-vehicle crashes:	46.2	0.4	1.1	5.5	9.3	29.9
	Total crashes:	122.4	0.7	2.2	11.9	26.8	80.8

Evaluation Site Summary

General Information

Project description:	I-82: 2035 3 Lanes Mainline + CD Road				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035	Total length of freeway segments for Study Period (mi):		4.135	
Last year of analysis:	2035				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Study Period Description
1	4	0.563	MP 30.99 to MP 31.55
2	6	0.602	MP 31.55 to MP 32.15
3	6	0.429	MP 32.15 to MP 32.58
4	6	1.004	MP 32.58 to MP 33.59
5	6	0.843	MP 33.59 to MP 34.43
6	6	0.694	MP 34.43 to MP 35.12
7	0	0.000	0
8	0	0.000	0
9	0	0.000	0
10	0	0.000	0
11	0	0.000	0
12	0	0.000	0
13	0	0.000	0
14	0	0.000	0
15	0	0.000	0
16	0	0.000	0
17	0	0.000	0
18	0	0.000	0
19	0	0.000	0
20	0	0.000	0

Ramp Segments

Number	Study Period Description	Number	Study Period Description
1	82WB to US12	21	CD SB to Yakima Ave
2	US12 to 82EB	22	CD Seg from R21 to R23
3	CD NB to 82WB	23	Yakima Ave to CD SB
4	CD Seg from R5 to R3	24	CD Seg from R23 to R25
5	E-W to CD NB	25	CD SB to 82EB
6	CD Seg from R7 to R5	26	Nob Hill to 82WB
7	CD NB to E-W	27	82EB to Nob Hill
8	CD Seg from R9 to R7	28	82WB to Nob Hill
9	Yakima Ave to CD NB	29	Nob Hill to 82EB
10	CD Seg from R11 to R9	30	CD NB to Yakima Ave WB
11	CD NB to Yakima Ave EB	31	Fair Ave to Ramp to CD Roa
12	CD Seg from R13 to R11	32	0
13	82WB to CD NB	33	0
14	82EB to CD SB	34	0
15	CD Seg from R14 to R16	35	0
16	CD SB to E-W	36	0
17	CD SB to Fair Ave	37	0
18	CD Seg from R17 to R19	38	0
19	E-W to CD SB	39	0
20	CD Seg from R19 to R21	40	0

Crossroad Ramp Terminals

Number	Config.	Control	Study Period Description
1	D4	Signal	Yak-Ave-E
2	D4	Signal	Yak-Ave-W
3	D4	Signal	Nob-Hil-E
4	D4	Signal	Nob-Hil-W
5	D4	Signal	E/W-E
6	D4	Signal	E/W-W

Output Summary

General Information

Project description:	I-82: 2035 3 Lanes Mainline + CD Road (Terminal 7 & 8)				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035				
Last year of analysis:	2035				

Crash Data Description

Freeway segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp terminals	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	2.8	0.0	0.0	0.2	1.0	1.6
Estimated average crash freq. during Study Period, crashes/yr:	2.8	0.0	0.0	0.2	1.0	1.6

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Ramp segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Crossroad ramp terminals, crashes:	2	2.8	0.0	0.0	0.2	1.0	1.6

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2035	2.8	0.0	0.0	0.2	1.0	1.6
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						
	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						
	2056						
	2057						
	2058						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Right-angle crashes:	0.8	0.0	0.0	0.1	0.3	0.4
	Rear-end crashes:	1.4	0.0	0.0	0.1	0.5	0.8
	Sideswipe crashes:	0.2	0.0	0.0	0.0	0.0	0.2
	Other multiple-vehicle crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Total multiple-vehicle crashes:	2.6	0.0	0.0	0.2	0.9	1.4
Single vehicle	Crashes with animal:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with fixed object:	0.2	0.0	0.0	0.0	0.0	0.1
	Crashes with other object:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with parked vehicle:	0.0	0.0	0.0	0.0	0.0	0.0
	Other single-vehicle crashes	0.0	0.0	0.0	0.0	0.0	0.0
	Total single-vehicle crashes:	0.2	0.0	0.0	0.0	0.1	0.1
	Total crashes:	2.8	0.0	0.0	0.2	1.0	1.6

Evaluation Site Summary

General Information

Project description:	I-82: 2035 3 Lanes Mainline + CD Road (Terminal 7 & 8)				
Analyst:	Chris	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035	Total length of freeway segments for Study Period (mi):	0.000		
Last year of analysis:	2035				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Study Period Description	
1	0	0.000	0	
2	0	0.000	0	
3	0	0.000	0	
4	0	0.000	0	
5	0	0.000	0	
6	0	0.000	0	
7	0	0.000	0	
8	0	0.000	0	
9	0	0.000	0	
10	0	0.000	0	
11	0	0.000	0	
12	0	0.000	0	
13	0	0.000	0	
14	0	0.000	0	
15	0	0.000	0	
16	0	0.000	0	
17	0	0.000	0	
18	0	0.000	0	
19	0	0.000	0	
20	0	0.000	0	

Ramp Segments

Number	Study Period Description		Number	Study Period Description	
1	0		21	0	
2	0		22	0	
3	0		23	0	
4	0		24	0	
5	0		25	0	
6	0		26	0	
7	0		27	0	
8	0		28	0	
9	0		29	0	
10	0		30	0	
11	0		31	0	
12	0		32	0	
13	0		33	0	
14	0		34	0	
15	0		35	0	
16	0		36	0	
17	0		37	0	
18	0		38	0	
19	0		39	0	
20	0		40	0	

Crossroad Ramp Terminals

Number	Config.	Control	Study Period Description	
1	D3ex	Signal	Fair Ave Exit	
2	D3en	One stop	Fair Ave Entrance	
3	0	0	0	
4	0	0	0	
5	0	0	0	
6	0	0	0	

Output Summary

General Information

Project description:	I-82: 2035 3 Lanes Mainline + RB				
Analyst:	Jonathan Shuster	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035				
Last year of analysis:	2035				

Crash Data Description

Freeway segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp terminals	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	115.9	0.6	1.9	10.4	25.3	77.6
Estimated average crash freq. during Study Period, crashes/yr:	115.9	0.6	1.9	10.4	25.3	77.6

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	8	58.5	0.5	1.2	6.2	10.5	40.2
Ramp segments, crashes:	22	15.8	0.1	0.4	2.0	3.8	9.4
Crossroad ramp terminals, crashes:	6	41.6	0.0	0.3	2.2	11.1	27.9

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2035	115.9	0.6	1.9	10.4	25.3	77.6
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						
	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						
	2056						
	2057						
	2058						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.5	0.0	0.0	0.1	0.2	0.3
	Right-angle crashes:	10.4	0.0	0.1	0.7	3.1	6.5
	Rear-end crashes:	48.2	0.2	0.8	4.3	12.0	30.9
	Sideswipe crashes:	13.2	0.1	0.1	0.8	1.7	10.6
	Other multiple-vehicle crashes:	1.9	0.0	0.0	0.2	0.4	1.3
	Total multiple-vehicle crashes:	74.3	0.3	1.1	6.0	17.3	49.6
Single vehicle	Crashes with animal:	0.5	0.0	0.0	0.0	0.0	0.5
	Crashes with fixed object:	30.8	0.2	0.6	3.2	5.7	21.0
	Crashes with other object:	3.4	0.0	0.0	0.2	0.3	2.9
	Crashes with parked vehicle:	0.6	0.0	0.0	0.1	0.1	0.4
	Other single-vehicle crashes	6.3	0.1	0.2	1.0	1.9	3.1
	Total single-vehicle crashes:	41.6	0.3	0.9	4.4	8.0	28.0
	Total crashes:	115.9	0.6	1.9	10.4	25.3	77.6

Evaluation Site Summary

General Information

Project description:	I-82: 2035 3 Lanes Mainline + RB				
Analyst:	Jonathan Shuster	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035	Total length of freeway segments for Study Period (mi):		4.161	
Last year of analysis:	2035				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Study Period Description
1	4	0.563	MP 30.99 to MP 31.55
2	6	0.602	MP 31.55 to MP 32.15
3	6	0.429	MP 32.15 to MP 32.58
4	6	0.284	MP 32.58 to MP 32.86
5	6	0.140	MP 32.86 to MP 33.00
6	6	0.606	MP 33.00 to MP 33.59
7	6	0.843	MP 33.59 to MP 34.43
8	4	0.694	MP 34.43 to MP 35.12
9	0	0.000	0
10	0	0.000	0
11	0	0.000	0
12	0	0.000	0
13	0	0.000	0
14	0	0.000	0
15	0	0.000	0
16	0	0.000	0
17	0	0.000	0
18	0	0.000	0
19	0	0.000	0
20	0	0.000	0

Ramp Segments

Number	Study Period Description		Number	Study Period Description	
1	82WB to Nob Hill		21	Nob Hill to 82EB	
2	82 WB to Nob Hill Part 2		22	82WB left to Yakima Ave	
3	Nob Hill to 82WB		23	0	
4	82WB to Yakima Ave		24	0	
5	82WB to Yakima Ave Part 2		25	0	
6	WB82 to Yakima Ave W		26	0	
7	WB82 to Yakima Ave to Fair		27	0	
8	Yakima Ave to Fair Ave RB		28	0	
9	Fair Ave RB Connector to Fa		29	0	
10	Fair Ave RB onto WB 82		30	0	
11	82WB offramp to US12		31	0	
12	US12 to 82EB		32	0	
13	82EB to Fair Ave		33	0	
14	82EB to Yakima Ave		34	0	
15	82EB to Yakima Ave Part 2		35	0	
16	Yakima Ave to 82EB		36	0	
17	Fair Ave to 82EB		37	0	
18	Fair Ave and Yakima Ave co		38	0	
19	82EB to Nob Hill		39	0	
20	82EB to Nob Hill Part 2		40	0	

Crossroad Ramp Terminals

Number	Config.	Control	Study Period Description
1	D4	Signal	Yak-Ave-WB Side
2	D4	Signal	Yak-Ave-EB Side
3	D4	Signal	Nob-Hill-WB Side
4	D4	Signal	Nob-Hill-EB Side
5	D3en	Signal	Fair Ave RB - WB Side
6	D4	Signal	Fair Ave RB - EB Side

Output Summary

General Information

Project description:	I-82: 2035 3 Lanes Mainline + RB				
Analyst:	Jonathan Shuster	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035				
Last year of analysis:	2035				

Crash Data Description

Freeway segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp terminals	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	1.7	0.0	0.0	0.1	0.4	1.2
Estimated average crash freq. during Study Period, crashes/yr:	1.7	0.0	0.0	0.1	0.4	1.2

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Ramp segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Crossroad ramp terminals, crashes:	1	1.7	0.0	0.0	0.1	0.4	1.2

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2035	1.7	0.0	0.0	0.1	0.4	1.2
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						
	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						
	2056						
	2057						
	2058						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Right-angle crashes:	0.7	0.0	0.0	0.0	0.2	0.5
	Rear-end crashes:	0.6	0.0	0.0	0.0	0.1	0.4
	Sideswipe crashes:	0.1	0.0	0.0	0.0	0.0	0.1
	Other multiple-vehicle crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Total multiple-vehicle crashes:	1.5	0.0	0.0	0.1	0.3	1.0
Single vehicle	Crashes with animal:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with fixed object:	0.2	0.0	0.0	0.0	0.0	0.1
	Crashes with other object:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with parked vehicle:	0.0	0.0	0.0	0.0	0.0	0.0
	Other single-vehicle crashes	0.0	0.0	0.0	0.0	0.0	0.0
	Total single-vehicle crashes:	0.2	0.0	0.0	0.0	0.0	0.2
	Total crashes:	1.7	0.0	0.0	0.1	0.4	1.2

Evaluation Site Summary

General Information

Project description:	I-82: 2035 3 Lanes Mainline + RB				
Analyst:	Jonathan Shuster	Date:	12/15/2016	Area type:	Urban
First year of analysis:	2035	Total length of freeway segments for Study Period (mi):		0.000	
Last year of analysis:	2035				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Study Period Description
1	0	0.000	0
2	0	0.000	0
3	0	0.000	0
4	0	0.000	0
5	0	0.000	0
6	0	0.000	0
7	0	0.000	0
8	0	0.000	0
9	0	0.000	0
10	0	0.000	0
11	0	0.000	0
12	0	0.000	0
13	0	0.000	0
14	0	0.000	0
15	0	0.000	0
16	0	0.000	0
17	0	0.000	0
18	0	0.000	0
19	0	0.000	0
20	0	0.000	0

Ramp Segments

Number	Study Period Description		Number	Study Period Description	
1	0		21	0	
2	0		22	0	
3	0		23	0	
4	0		24	0	
5	0		25	0	
6	0		26	0	
7	0		27	0	
8	0		28	0	
9	0		29	0	
10	0		30	0	
11	0		31	0	
12	0		32	0	
13	0		33	0	
14	0		34	0	
15	0		35	0	
16	0		36	0	
17	0		37	0	
18	0		38	0	
19	0		39	0	
20	0		40	0	

Crossroad Ramp Terminals

Number	Config.	Control	Study Period Description
1	D3en	One stop	Fair Ave to 82EB
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0

INTERCHANGE JUSTIFICATION REPORT

I-82/Yakima Avenue/Terrace Heights Drive Interchange
MP 31.40 to MP 34.77

Appendix H

Excerpts from Local Planning Documents

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Yakima Urban Area Comprehensive & Transportation Plan
2012 Addendum

Yakima Urban Area Comprehensive & Transportation Plan 2025
2012 Addendum

Yakima City Council
Micah Cawley, Mayor
Kathy Coffey
Dave Ettl
Sara Bristol
Bill Lover
Rick Ensey
Maureen Adkison

Tony O'Rourke, City Manager

Yakima County Commissioners
Mike Leita
Kevin Bouchey
Rand Elliott

City of Yakima Planning Commission
Ben Shoval, Chair
William Cook, Vice-Chair
Ron Anderson
Betty Carley
Al Rose
Scott Clark
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Staff and Consultant Team
Joan Davenport, Planning Manager, AICP, City of Yakima
Bruce Benson, Supervising Planner, City of Yakima
Jeff Peters, Associate Planner, City of Yakima
Joseph Calhoun, Associate Planner, City of Yakima
Rosalinda Ibarra, Planning Technician, City of Yakima

2009 Comprehensive Plan Amendment CPA#004-09& SEPA#018-09
Yakima Resources Saw Mill Redevelopment Comprehensive &
Transportation Plan Text Amendments

Prepared by: Dunollie Enterprises LLC in cooperation with the City of Yakima

Overview of Project

As stated in the City of Yakima's Urban Area Comprehensive Plan 2025, prior to August 2006 and at present, the City of Yakima has been cooperatively working with the property owners of the 211 acre Boise Cascade lumber facility (Yakima Resources) to create a redevelopment plan for the former lumber facility located in the vicinity of 805 N. 7th Street. The City of Yakima and numerous other property owners, including Yakima Resources, formed the Yakima Revenue Development Area (YRDA), and applied for Twenty Five Million in Washington State Local Infrastructure Financing Tool (LIFT) funding with the expressed purpose of redeveloping the Boise Cascade mill site into a mixed use planned development area, and revitalizing other commercial sites within the YRDA. The following sections are intended as an addendum to the City of Yakima's Comprehensive Plan, Transportation Plan, and Capital Facilities Plan. The below sections are also intended to provide a detailed description of the YRDA, update information with regard to the relationship of the YRDA and Regional Commercial Comprehensive Plan Designation, and providing additional Goals and Policies which support the YRDA. This addendum document is intended to update the previously adopted plan documents, and where conflicts between previously adopted text and the text in this addendum occur, the information in this addendum should be used.

Yakima Revenue Development Area (Cascade Mill)

The Yakima Revenue Development Area (YRDA) consists of 556 acres in census tract 02 of Yakima's Federal Renewal Community. The YRDA is adjacent to Interstate 82 from the US 12/North 1st Street Interchange through the Yakima Avenue/Terrace Heights exit. The YRDA is located entirely within the city limits and in one of the earliest plats of the City of Yakima.

As identified on the YRDA maps, the primary development zone is approximately 211 acres which were formerly used as the Boise Cascade Sawmill and Plywood Plant. Three smaller parcels located in this zone are:

- Former Jeld-Wen plant vacant since 2005 when Jeld Wen built a new plant in north central Yakima and listed for sale.
- Former Trail Wagons RV building currently leased for indoor soccer clinics.
- Pacific Power sub-station that mainly served the Boise site.

The balance of the YRDA consists of public property, including the Yakima River Greenway, and the stretch of Interstate 82 from the US 12 Interchange through the Yakima Avenue/Terrace Heights exit. The YRDA is bordered on the north and east by the Yakima River, which is the city limits, and on the west by a mix of residential neighborhood, commercial, and light industrial property. The southern boundary is adjacent to both commercial and public property.

The City supports continued timely development of the Yakima Revenue Development area and on September 23, 2008, was awarded LIFT financing through a competitive award process

which considered sites state-wide.

The City of Yakima's Yakima Avenue Interchange Analysis Summary Cascade Mill Redevelopment Yakima, WA, August 2008 identify that a significant amount of public infrastructure (approximately 20.7 acres of street grid, public rights-of-way, and easements, etc.) will be required to support the proposed 211-acre redevelopment including Commercial, Light Industrial, Medical/Professional Office, High-Density Residential, and Open Space. State law requires that in order for LIFT funding to be applied to the YRDA local governments must ensure that all proposed projects are identified within their Comprehensive Plans and other supporting documents. This addendum provides the updates and additional detail necessary to apply the LIFT funding within the YRDA.

Along with this support, the City's adopted land use policies must encourage compatible land uses surrounding the RDA, and promote increased vehicular access and focus on needed pedestrian and bicycle safety improvements throughout the RDA.

Land Use

Amending and updating Chapter 3, Land Use

Regional Commercial

The YRDA and Boise Cascade mill site lies within property that has a Future Land Use designation of Regional Commercial. The Regional Commercial designation is intended to provide the community with a mix of retail, service and business establishments on a medium to large scale. Commercial developments span a wide range of activities, such as, retail stores, business and professional services, hotel/motel operations, restaurants, theaters, and gas stations. Generally, regional commercial uses are the source of consumer goods and services for the community and the traveling public. Their locational market area, and site requirements tend to be as diverse as the mix of activities. In general, these developments tend to depend on auto visibility for customer attraction, and prefer locations with heavy traffic flows.

In the City of Yakima there are presently three commercial sites which have a Future Land Use designation of Regional Commercial:

1. The Yakima Revenue Development Area (YRDA) an approximate 224-acre redevelopment area primarily composed of the former Boise Cascade Sawmill (approximately 211 acres) located just south of I-82 and centered upon east. "G" Street as more fully described in the City of Yakima's approved September 23, 2008, Local Infrastructure Financing Tool application now herein adopted by reference.
2. The Yakima County State Fair Park and other contiguous properties involving approximately 257.20 acres located immediately northwest of the West Nob Hill Blvd. Interchange and I-82.
3. The approximate 156.87-acre commercially zoned site located immediately southeast of the 16th Avenue and I-82 Interchange.

The Yakima Revenue Development Area, the most significant of the three Regional Commercial designated areas, conforms to the intent of the Regional Commercial Future Land Use designation. The subject property is planned to have a wide mix of uses, and is located in an area

which takes prime advantage of the high auto visibility of I-82. Moreover, being the largest of the three areas, the YRDA is expected to yield the greatest public benefit as the City of Yakima has received $25 million in LIFT funding for public infrastructure improvements to the YRDA.

The redevelopment of this area into a mixed-use master planned development will provide the City of Yakima and its citizens with a much needed opportunity to enhance the economic vitality of one of the most economically distressed areas in the state.

The following policies and amendments to the goal are intended to supplement and amend the existing comprehensive plan policies and goals within Goal 3.9

Regional Commercial Goals & Policies

GOAL 3.9: PROVIDE AREAS ALONG EXISTING HIGHWAYS OR FREEWAYS FOR COMMERCIAL DEVELOPMENT AND ACTIVITIES THAT REQUIRE LARGE SITES AND HIGH VISIBILITY TO SERVE THE NEEDS OF THE COMMUNITY AND THE ENTIRE REGION.

3.19.12 Stabilize and revitalize existing commercial facilities in the Urban Area.

3.19.13 Provide convenient shopping location consistent with the development of the community.

3.19.14 Encourage development that shortens the distance between residential areas, schools, shopping, and employment centers.

3.19.15 Encourage a safe walking and biking environment connected to the Northeast Yakima neighborhood and the downtown core.

3.19.16 Encourage economic growth which minimizes the public's share of infrastructure costs.

3.19.17 Direct development in planned areas where infrastructure is either present or can be easily extended.

3.19.18 Encourage major commercial, industrial, and multi-family developments to locate inside the city limits.

3.19.19 Provide flexibility in design and density in planned developments and ensure development standards and quality of life considerations are preserved.

3.19.20 Encourage urban infill development with new construction that relates to the scale and density of the surrounding uses.

3.19.21 Encourage commercial, industrial, office, and multi-family developments to locate in planned development areas.

3.19.22 Designate and prioritize Focused Public Investment Areas or Corridors inside the Urban Area to facilitate coordinated and collaborative public infrastructure investment.

Adding a new goal 3.18 and supporting policies to provide additional information on the LIFT Award

GOAL 3.18: SUPPORT REDEVELOPMENT OF THE YAKIMA REDEVELOPMENT AREA AS OUTLINED IN THE LIFT APPLICATION FOR COMPETITIVE PROJECT AWARDS

Policies:

3.18.1 Integrate LIFT funding awards into the City of Yakima Capital Facilities Plans.

3.18.2 Develop infrastructure improvement plans needed to construct funded improvements under the LIFT award including:

3.18.2.1 Construction of a new I-82 interchange and supporting surface streets to provide for efficient vehicle circulation through the Yakima Revenue Development Area (YRDA).

3.18.2.1.1 Update existing plans for interchange improvements directly to the YRDA which will promote efficient east-west vehicle connections and circulation through the YRDA.

3.18.2.1.2 Improvements to the Fair Avenue ramp to handle the increasing traffic volumes.

3.18.2.1.3 Update and improve the Exit 33a off ramp to promote development within the YRDA and surrounding areas. Update should include removing the temporary status with FHWA.

3.18.2.1.4 Additional signalization at the Yakima Avenue and Fair Avenue.
Modify the Lincoln Avenue, MLK Boulevard, Fair Avenue intersection to include a roundabout.

3.18.2.2 Extend 10th Street to the north for local access to the site from the south.

3.18.2.3 Provide for pedestrian and vehicle links to existing "G" street, including access improvements to the existing corridor and surrounding neighborhood.

3.18.2.4 Water system improvement plans utilizing the existing infrastructure for domestic and irrigation service. Improvements should include the utilization of the existing water right for development activities including recreation and water features.

3.18.2.5 Extend sewer mains through Fair Avenue to provide additional capacity to the site.

3.18.2.6 Pathway improvements to the I-82 under crossings into the greenway and provide a safe route from the YRDA to Downtown, as well as an east-west connection through the YRDA. Pathway improvements include trails and bike routes as identified on maps V-1 and V-2 in the transportation section of the transportation plan.

3.18.2.7 Rail crossing safety improvements to provide safe pedestrian, bicycle, and vehicle circulation in the YRDA and adjacent NE Yakima neighborhood.

3.18.2.8 Identify and implement zoning and land use flexibility within the YRDA to promote the redevelopment of the urban infill project which is anticipated to include:

3.18.2.9 A "Lifestyle Center" featuring pedestrian-oriented design with a system of streams/canals, ponds, pathways, and green space that will serve the daily needs of the residential and employment center, as well as create a destination for those seeking a village-type shopping and recreation experience.

3.18.2.10 Connections for pedestrians and bikes to the Yakima River Greenway and also provide trail connections identified in the transportation chapter (maps VI-1 and VI-2).

3.18.2.11 A shopping complex to attract higher end retailers and businesses.

3.18.2.12 An auto mall site with offices and outdoor sales lot areas.

3.18.2.13 A site for industries targeted at the economic expansion of Yakima including medical office, customer/technical support centers, logistics and distribution, ancillary wine and agriculture, business and professional services, medical device and equipment manufacturing, and industrial supplies and machinery.

3.18.2.14 A high-quality employment center targeted to higher wage "creative class" employers. The campus will feature greenway and pedestrian/bike connections to the

greenway path system and also connections as depicted in the transportation plan pedestrian and bike pathways maps in Chapter V.

3.18.2.15 Medium- and high-density residential development including condominiums, town houses, and apartments.

3.18.2.16 Public spaces including green spaces, transit facilities, and pathways connecting with the Yakima River and Greenway.

3.18.2.17 Other possible public and semi-public facilities including a new regional YMCA, athletic facilities, a new regional ball park, and a new regional aquatic center.

3.18.3 Promote uses and redevelopment that will strengthen the connections between the YRDA and the existing surrounding communities including:

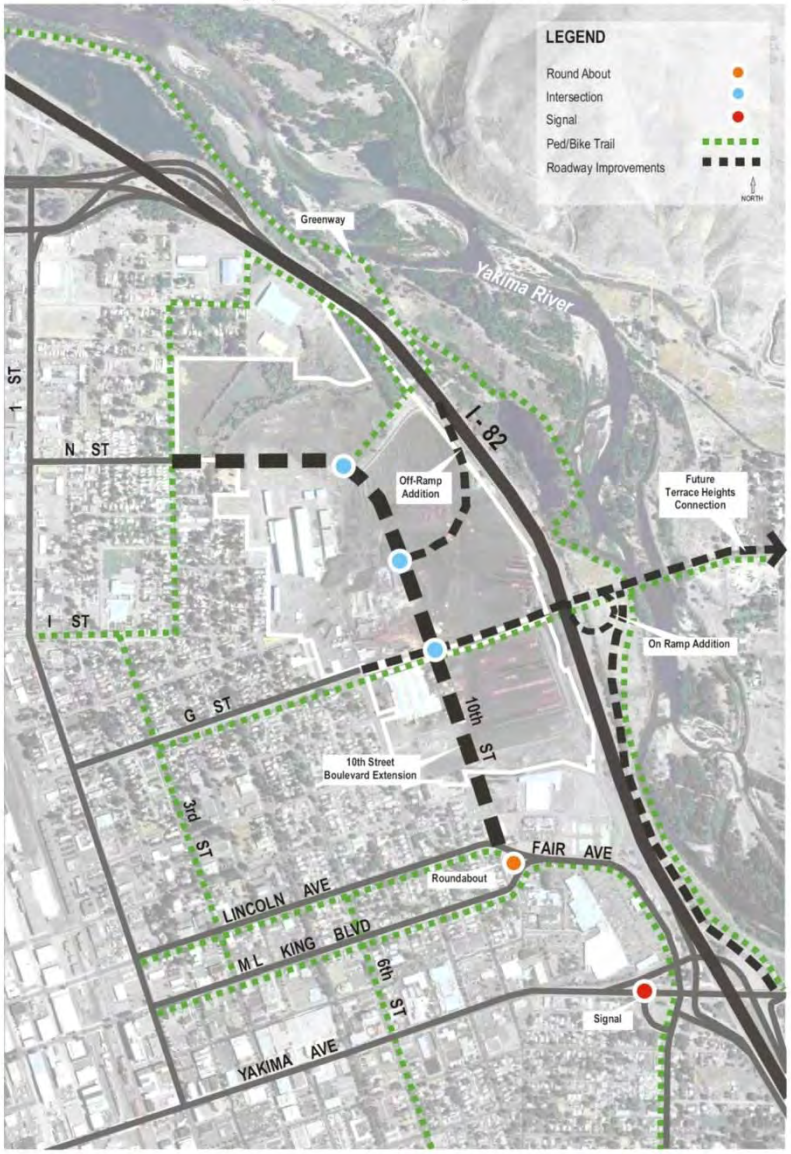
3.18.3.1 Promote safe and convenient connections to the Yakima River and Greenway path.

3.18.3.2 Promote safe and convenient connections to the Convention Center to capitalize on the proximity to this existing facility.

3.18.3.3 Promote safe and convenient access to the Downtown CBD.

3.18.3.4 Promote safe and convenient access to adjacent hotels and meeting facilities.

Map of the YRDA Development Area



Policies

4.3.1 Implement the funding obtained through the LIFT program for the identified infrastructure through adaptive reuse programs within the YRDA.
4.3.2 Promote partnerships with private investors and land owners to further maximize the public investment in the YRDA.
4.3.3 Facilitate remediation of any potential environmental or geotechnical conditions within the former landfill site to a standard suitable for mixed use development within a public private partnership consistent with the entire mill site redevelopment project.
4.3.4 Promote redevelopment in the YRDA to enhance regional competitiveness with a substantial economic impact, both in terms of investment and overall job creation.

Transportation
Amending and updating Chapter 6

As the YRDA develops various transportation related improvements will be necessary to support growth, promote safety, and integrate the development into the existing City of Yakima street system. The below provides a discussion of those required, related, and necessary improvements.

Yakima River Greenway Pathway Connections

The Yakima River Greenway, a continuous 10 mile paved walking/biking path system that stretches from Selah Gap to Union Gap, and west along the Naches River from its confluence with the Yakima River to the US 12-West 40th Avenue exit. The paved pathway connects parks, river access landings, nature trails, fishing lakes, and protected natural areas. However, the Greenway does not connect directly into any transit, employment, or commercial center, limiting its full potential for use as a multi-modal facility in the urban area.

The northern gate to the Yakima sawmill is directly adjacent to the only pathway connection that goes under Interstate 82. Currently, this undercrossing is a primitive dirt-rock road that is not accessible by bicyclists and pedestrians because of its hazardous conditions. It is also difficult to locate as it is not connected to the City's street grid. Occasionally this is used by fishermen making their way to Rotary Lake.

With LIFT funding, this undercrossing will be improved to connect directly into the new public pathway and street system that will be built for the employment, residential, and commercial center located in the heart of the RDA. For the first time, a commercial development will utilize the Greenway as a viable transportation link, and provide a safe route directly from the Greenway to the downtown that does not require crossing over interstate exits and on-ramps. This will enable workers, residents, visitors, and shoppers to use the Greenway as a primary route to their destination.

Freight – Rail and Air

As stated in the City of Yakima's Comprehensive Plan Chapter 6 Transportation, projected rail use by the Burlington-Northern Santa Fe (BNSF) Railroad on the main line through Yakima are projected to have significant growth in the total number, frequency and length of trains that will

travel through Yakima. On this main line, the current average of 10 trains daily is expected to increase to an average of 25 daily trains by 2025. Rail service on the lines that bisect Yakima are largely regional main lines, and do not stop in Yakima to transfer goods from the Yakima Valley. This freight movement on the main line is vital to the state and national economy.

While the movement of rail freight through Yakima is important to our state and national economy, the movement also creates local safety and economic impacts to the Yakima street system from both the regional lines, and local rail spurs.

To reduce these negative impacts the City of Yakima will need to consider future street improvements such as: grade separation or other measures to mitigate the impacts of rail crossing at "I" Street, "D" Street, Yakima Avenue, Mead Avenue, and Washington Avenue and the "G" and "H" Street corridors between I-82 and Front Street.

In addition, to promote efficient vehicle access, as well as, safe pedestrian and bicycle routes to the YRDA, safety improvements in the YRDA are included in the LIFT funding within the YRDA. Additional safety improvements for corridors surrounding the YRDA will also need to be identified in the future. Additional rail issues are included in the freight section of this report.

Future Conditions and Deficiencies

The Yakima Avenue Interchange is a key interchange for the redevelopment of the YRDA. The interchange is currently operating beyond capacity due to an increase in traffic from existing developments. This operational condition could place the YRDA at risk for various forms of development restrictions until capacity improvements are made. The City of Yakima has identified the Yakima Revenue Development Area as an area to focus public investment, and to provide for transportation network improvements which will encourage redevelopment and private investment in infill development. The City was also awarded LIFT funding through a state-wide competitive application process to provide for a funding source for the identified improvements. The transportation improvements included in the LIFT award include:

- A new east-west principal arterial through the site continuing from existing "G" street.
- A new north-south collector arterial through the Mill District.
- A second north-south collector arterial through the Mill District.
- A new I-82 interchange with connections to the new east-west arterial.
- A roundabout at MLK connecting to the north-south collector arterial.
- Internal loop road connections within the Mill District.
- A new off-ramp from the I-82 and Highway 12 interchange extending to the Mill District.

Transportation Goals & Policies

The policy below is added to and amends policies under goal 6.3:

GOAL 6.3: DEVELOP AND IMPROVE THE PEDESTRIAN NETWORK IN THE YAKIMA URBAN AREA.

Policies:

BUSINESS OF THE CITY COUNCIL
YAKIMA, WASHINGTON
AGENDA STATEMENT

Item No. 7.
For Meeting of: June 17, 2014

ITEM TITLE: Public Hearing to consider: A) Resolution regarding Adoption of the Six-Year-Transportation Improvement Program (TIP) for the years 2015 to 2020, and to amend the Metropolitan Transportation Plan, and B) Resolution Amending the Yakima Urban Area Comprehensive Plan Capital Facilities Element.

SUBMITTED BY: Debbie Cook, PE, Director of Utilities and Engineering
Brett Sheffield, Chief Engineer - (509)-576-6797

SUMMARY EXPLANATION:

Attached is the 2015 - 2020 Six-Year TIP, along with an explanation sheet that describes the information contained on the various columns of the Six-Year TIP. One project has been added to the Six-Year TIP. The project is:

#49 Wide Hollow Road Bridge

Projects that have been removed from the 2014 - 2019 TIP as they were completed or the funds were obligated include:

#2 - 64th Ave. Roadway Widening
#47 - 1st/Main & Nob Hill Corridor Safety Improvements

Council and the public are welcome to add other arterial system projects to the list. The Six-Year TIP project listing will be finalized at the June 17th hearing and sent to the Yakima Valley Conference of Governments (YVCOG) after approval.

City and County staff, together with the Council Intergovernmental Committee, are working toward common standards and coordinated planning for public projects that impact both the City and surrounding County areas. Agreement on these issues will be the first step toward the goal of seamless transportation planning process between the City and County.

A) Each year the City is required by RCW 35.77.010 and RCW 36.81.121 to update its Six-Year Transportation Improvement Program (TIP) for submittal to the Washington State Department of Transportation. This plan must include all transportation projects for which State gas tax revenue of Federal revenue will be used.

The current plan for 2015 - 2020 includes eleven projects that are funded. Funding for the remainder of the projects will continue to be sought.

#1 - Yakima Railroad Grade Separations, Phase 4
#2 - North 1st Street Revitalization, 'N' Street to SR 12
#3 - Tieton Drive and 64th Avenue Intersection Improvements
#4 - E. Nob Hill Boulevard and Fair Avenue Intersection Improvements
#6 - Powerhouse Road Sidewalk
#7 - Yakima Valley Transportation Company Preservation
#16 - West Valley Middle School Safety Improvements
#47 - 2014 Alley Paver
#48 - S. 80th Avenue Bridge
#49 - Wide Hollow Road Bridge
#50 - Lincoln Avenue Corridor Safety Improvements

Six-Year Transportation Improvement Program (TIP) Background

On August 10, 2005, the President signed into law the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). This act is the next authorization after the prior Transportation Equity Act of 1998 for the 21st Century (TEA-21) and previous Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. The current act again specifies the systems on which certain funds can be used and activities for which funds can be used and promotes the role of the Metropolitan Planning Organizations (MPO) in the planning and programming of projects. SAFETEA-LU requires each designated MPO to develop a Transportation Improvement Program (TIP), and the state to develop a Statewide Transportation Improvement Program (STIP) as a condition to securing federal funds for the transportation projects.

Projects listed in the STIP are the only projects that can be approved by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) to utilize federal fund of by the State of Washington for approved State funding agencies. The STIP is a prioritized program of transportation projects, complied from local and regional plans, along with the Washington Transportation System Plan (WTP), which provides a backbone for developing projects for the intermodal transportation network in the State of Washington.

The STIP contains federally funded projects plus state and local projects that are regionally significant. These projects have been identified through the planning process as the highest priority for the available funding to the State's Transportation Program. Planning activities of sate and local governments are essential parts of integrated regional planning processes. Long range transportation planning is a part of the comprehensive land use planning carried out by local governments. Citizen participation is an integral part of the planning process at all levels. Local Agencies are required to develop and adopt a Six-Year Transportation Program. All local agencies are required to hold at least one public hearing during the development of the Six-Year Transportation Program.

Project ranking has been performed utilizing data supplied by the Street and Traffic Division. The ranking will be integrated with other project needs and the total list will be reviewed and adjusted to the particular need of the City of Yakima.

B) The City needs to amend the Yakima Urban Area Comprehensive Plan Capital Facilities Element to incorporate the adopted Six-Year TIP for 2015 - 2020. This will ensure that we are in

compliance with the Growth Management Act and that we are consistent with the Comprehensive Plan as required. The amendment is limited to incorporate only those projects that adopted in the STIP and is not subject to the "once a year" change required under the laws of the Growth Management Act.

Resolution:		**Ordinance:**
Other (Specify):		
Contract:		**Contract Term:**
Start Date:		**End Date:**
Item Budgeted:		**Amount:**
Funding Source/Fiscal Impact:	Fund 142	
Strategic Priority:	Improve the Built Environment	
Insurance Required? No		
Mail to:		
Phone:		
APPROVED FOR SUBMITTAL:	 City Manager	

RECOMMENDATION:

1. Hold the Public Hearing to consider adoption of Resolution approving the Six-Year TIP and amending the regional metropolitan Transportation Plan and the Comprehensive Plan Capital Facilities Element.
2. Adopt the Six-Year TIP and amend the Metropolitan Transportation Plan and Yakima Urban Area Comprehensive Plan Capital Facilities Element.

ATTACHMENTS:

	Description	Upload Date	Type
☐	Resolution STIP	6/6/2014	Cover Memo
☐	2015 - 2020	6/6/2014	Cover Memo
☐	STIP explanation	6/6/2014	Cover Memo

RESOLUTION NO. R – 2014 -

A RESOLUTION adopting the Six-Year Transportation Improvement Program for the period of 2015 through 2020 for the construction of streets and arterials streets in the City of Yakima and amending the Metropolitan Transportation Plan.

WHEREAS, the City of Yakima annually prepares, reviews and adopts a Six Year Program for the construction of streets and arterial streets in the City of Yakima for the ensuing six year period, all as contemplated and required by State RCW 35.77.010 and applicable Federal law; and

WHEREAS, the City of Yakima desires to amend the Metropolitan Transportation Plan to ensure compliance with the Growth Management Act and the regional transportation plan for the construction of streets and arterial streets in the City of Yakima, all as contemplated and required by State and Federal law, and

WHEREAS, after public hearings on the matter, held at the regular meeting of the Yakima City Council on June 3, 2014 and June 17, 2014, with proper public notice as required by RCW 35.77.010, the City Council finds that the plan attached hereto should be adopted as the Six-Year Transportation Improvement Program for the period of 2015 through 2020 for the construction of streets and arterial streets in the City of Yakima, **now, therefore,**

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF YAKIMA:

The Six-Year Construction Program for the period of 2015 through 2020, a copy of which is attached hereto and by this reference made a part hereof, is hereby adopted as the official Six-Year Transportation Improvement Program for the City of Yakima, including proposed amendments to the Metropolitan Transportation Plan along with Street Improvements, which are also approved.

ADOPTED BY THE CITY COUNCIL this 17th day of June, 2014.

_____
Micah D. Cawley, Mayor

ATTEST:

_____
City Clerk

RESOLUTION NO. R – 2014 -

A RESOLUTION to amend the Yakima Urban Area Comprehensive Plan Capital Facilities Element to incorporate the Six-year Transportation Improvement Program (TIP) for the period of 2015 through 2020.

WHEREAS, the City of Yakima annually prepares, reviews and adopts a Six – Year Transportation Improvement Program for the construction of streets and arterial streets in the City of Yakima for the ensuing six year period, all as contemplated and required by State RCW 35.77.010 and applicable Federal law; and

WHEREAS, the City of Yakima desires to amend the Yakima Urban Area Comprehensive Plan Capital Facilities Element to reflect the adoption of the Six-year TIP, as contemplated and required by RCW 36.70A.070(6) to ensure compliance with the Growth Management Act and consistency of the Comprehensive Plan and the Six-year TIP; and,

WHEREAS, this amendment is limited to incorporation of the projects listed in the Six-year Transportation Improvement Plan for the period of 2015 to 2020 to the Capital Facilities Element of the Yakima Urban Area Comprehensive Plan, which is contemplated and provided under RCW 36.70A.130(2B) and RCW 35.77.010; and,

WHEREAS, public hearings were held by the Yakima City Council on the Six-year TIP on June 3, 2014 and June 17, 2014, with proper public notice as required by RCW 35.77.010; now, therefore

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF YAKIMA:

The adopted Six-Year Transportation Improvement Program for the period of 2015 through 2020 for the City of Yakima shall be incorporated as an amendment to the Capital facilities Element of the Yakima Urban Area Comprehensive Plan.

ADOPTED BY THE CITY COUNCIL this 17th day of June, 2014.

Micah D. Cawley, Mayor

ATTEST:

City Clerk

Agency: Yakima
Co. No.: 39 Co. Name: Yakima Co.
City No.: 1485 MPO/RTPO: YVCOG

Six Year Transportation Improvement Program
From 2015 to 2020
Hearing Date: 6/3/14 & 6/17/14 Adoption Date: 6/17/2014
Amend Date: Resolution No.:

Functional Class	Priority Number	Project Identification A. PIN/Federal Aid No. B. Bridge No. C. Project Title D. Street/Road Name or Number E. Beginning MP or Road - Ending MP or Road F. Describe Work to Be Done	Improvement Type(s)	Status	Total Length	Utility Codes	Project Costs in Thousands of Dollars Fund Source Information Project Phase	Phase Start	Federal Funding Federal Fund Code	Federal Cost by Phase	State Fund Code	State Funds	Local Funds	Total Funds	Expenditure Schedule (Local Agency) 1st	2nd	3rd	4th	Federally Funded Projects Only Envir. Type	R/W Required Date (MM/YY)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
16	17	*Tieton Dr. & S. 5th Ave. I/S Improvements* Tieton Drive *from:* Tieton Dr. *to:* S. 5th Ave. Remove existing traffic signal and construct a roundabout, remove and replace curb, gutter, sidewalk, street lighting and drainage	12	P	N/A	P W S T O	PE	1/1/2017	STP(U)	69			11	80			80		CE	Yes
							RW	1/1/2018	STP(U)	104			16	120				120		5/1/2019
							CN	6/1/2019	STP(U)	865			135	1,000				1,000		
							Totals			1,038			162	1,200			80	1,120		
16	18	*E. 'H' Street Extension, Ph. 1* E. 'H' Street *from:* 1st Street *to:* Yakima River Construct new roadway including water, sewer, curb, gutter, sidewalk, street lighting and storm drainage system.	01 08	P	1.10	P T W S O	PE	1/1/2016	STP(U)	432			68	500		500			CE	Yes
							RW	1/1/2017	STP(U)	432			68	500			500			12/1/2017
							CN	1/1/2018	STP(U)	2,162			338	2,500				2,500		
							Totals			3,026			474	3,500		500	500			
16	19	*Cascade Millsite Parkway* North 10th Street *from:* 'H' Street *to:* Lincoln Ave. Construct new roadway including water, sewer, curb, gutter, sidewalk, street lighting and storm drainage system.	01 06	P	1.3	P T W S O	PE	1/1/2016	STP(U)	350			54	404		404			CE	Yes
							RW	1/1/2017	STP(U)	2,750			425	3,175			3,175			1/1/2017
							CN	1/1/2018	STP(U)	3,950			486	4,436				4,436		
							Totals			7,050			965	8,015		404	3,175	4,436		
14	20	*Yakima Downtown Future Initiatives, Phase 5* *from:* 1st Street *to:* 9th Street Install historic lighting, sidewalk modifications and other improvements. Exact improvement area(s) to be determined	06 12	P	0.15	P T C S	PE	1/1/2016			OTHER	500		500		500			CE	No
							CN	4/1/2017			OTHER	5,500		5,500			5,500			
							Totals							6,000		500	5,500			

Agency: Yakima
Co. No.: 39 Co. Name: Yakima Co.
City No.: 1485 MPO/RTPO: YVCOG

Six Year Transportation Improvement Program
From 2015 to 2020

Hearing Date: 6/3/14 & 6/17/14 Adoption Date: 6/17/2014
Amend Date: Resolution No.:

Functional Class	Priority Number	Project Identification A. PIN/Federal Aid No. B. Bridge No. C. Project Title D. Street/Road Name or Number E. Beginning MP or Road - Ending MP or Road F. Describe Work to Be Done	Improvement Type(s)	Status	Total Length	Utility Codes	Project Costs in Thousands of Dollars								Expenditure Schedule (Local Agency)				Federally Funded Projects Only	
									Fund Source Information											
									Federal Funding											
							Project Phase	Phase Start	Federal Fund Code	Federal Cost by Phase	State Fund Code	State Funds	Local Funds	Total Funds	1st	2nd	3rd	4th	Envir. Type	R/W Required Date (MM/YY)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
14	25	*S. 48th Ave. & Summitview Ave. Signalization* Summitview Avenue *from:* Summitview Ave. *to: S. 48th Ave.* Install traffic signal at the intersection of Summitview Avenue and 48th Avenue.	12	P	N/A	P T	PE	1/1/2017	STP(S)	25			4	29			29		CE	Yes
							RW	6/1/2017	STP(S)	25			4	29			29			
							CN	1/1/2018	STP(S)	554			81	635				635		6/1/2018
							Totals			604			89	693			58	635		
14	26	*W. Lincoln Ave. & MLK Blvd. Realignment* W. Lincoln Avenue *from:* W. 5th Ave. *to:* Custer St. Realign W. Lincoln Avenue, install curb, gutter, sidewalks, street lighting, drainage.	01 12	P	0.50	C T W S O P G	PE	1/1/2016	STP(E)	424			67	491		491			CE	Yes
							RW	1/1/2017	STP(E)	1,047			163	1,210			1,210			
							CN	1/1/2018	STP(E)	1,801			281	2,082				2,082		1/1/2018
							Totals			3,272			511	3,783		491	1,210	2,082		
14	27	*E. Nob Hill Boulevard Reconstruction* E. Nob Hill Boulevard *from:* S. 6th Street *to:* S. 18th Street Reconstruct and widen roadway to 5 lanes with intersection improvements, curb, gutter, sidewalk, street lighting and drainage system	03 04 06	P	0.85	C T W S O P G	PE	1/1/2016	STP(C)	546			84	630		630			CE	Yes
							RW	1/1/2017	STP(C)	1,090			170	1,260			1,260			
							CN	1/1/2018	STP(C)	6,539			1,013	7,552				7,552		1/1/2018
							Totals			8,175			1,267	9,442		630	1,260	7,552		
14	28	*S. 72nd Ave. & W. Washington Ave. I/S* S. 72nd Avenue *from:* s. 72nd Ave. *to:* W. Washington Ave. Improve intersection by installing a traffic signal system or roundabout.	12 06	P	N/A	P T O S W	PE	1/1/2016	STP(C)	91			14	105		105			CE	Yes
							RW	1/1/2017	STP(C)	91			14	105			105			
							CN	1/1/2018	STP(C)	544			86	630				630		1/1/2018
							Totals			726			114	840		105	105	630		

Agency: Yakima
Co. No.: 39 Co. Name: Yakima Co.
City No.: 1485 MPO/RTPO: YVCOG

Six Year Transportation Improvement Program
From 2015 to 2020
Hearing Date: 6/3/14 & 6/17/14 Adoption Date: 6/17/2014
Amend Date: Resolution No.:

Functional Class	Priority Number	Project Identification A. PIN/Federal Aid No. B. Bridge No. C. Project Title D. Street/Road Name or Number E. Beginning MP or Road - Ending MP or Road F. Describe Work to Be Done	Improvement Type(s)	Status	Total Length	Utility Codes	Project Costs in Thousands of Dollars								Expenditure Schedule (Local Agency)				Federally Funded Projects Only	
									Fund Source Information										Envir. Type	R/W Required Date (MM/YY)
							Project Phase	Phase Start	Federal Funding: Federal Fund Code	Federal Funding: Federal Cost by Phase	State Fund Code	State Funds	Local Funds	Total Funds	1st	2nd	3rd	4th Thru 6th		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
14	53	*Nob Hill Boulevard Corridor Improvements* Nob Hill Boulevard *from:* I-82 *to:* 16th Ave. Study to determine strategies for improving the Nob Hill Boulevard corridor.	03 04	P	2.70	P T O S W C G	PE	1/1/2017	STP(U)	120			17	137			137			
							Totals			120			17	137			137			
14	54	*S. 1st Street/Main Street Corridor Improvements* S. 1st Street/Main Street *from:* Nob Hill Blvd. *to:* Barker Mill Bridge Joint project with Union Gap. Stucy to determine strategies for improving the 1st Street/Main Street corridor.	01	P	2.00	P T O S W C G	PE	1/1/2017	STP(U)	120			17	137			137			
							Totals			120			17	137			137			
16	55	*E. 'H' Street Extension, Ph. 2* E. 'H' Street *from:* 10th Street *to:* I-82 Construct new roadway including water, sewer, curb, gutter, sidewalk, street lighting and storm drainage system.	01 08	P	0.55	P T W S	PE	1/1/2016	STP(U)	432			68	500			500		CE	Yes
							RW	1/1/2018	STP(U)	432			68	500				500		
							CN	1/1/2019	STP(U)	2,162			338	2,500				2,500		1/1/2018
						O							474	3,500			500	3,000		

Terrace Heights Neighborhood Plan

A Subarea Plan of the

Yakima Urban Area Comprehensive Plan

Adopted 1999

Terrace Heights Neighborhood Plan

A Subarea Plan of the
Yakima Urban Area Comprehensive Plan

Adopted by the
Yakima City Council
August 17, 1999
(Ordinance 99-33)

Adopted by the
Board of Yakima County Commissioners
July 27, 1999
(Ordinance 8-1999)

Yakima City Council
John Puccinelli, Mayor
Mary Place, Mayor Pro Tem
Clarence Barnett
Henry Beauchamp
Lynn Buchanan
John Klingele
Bernard J. Sims

Board of Yakima County Commissioners
James M. Lewis, Chairman
Bettie Ingham
Jesse S. Palacios

Yakima Urban Area Regional Planning Commission
Deb Patterson, Chair
John Hodkinson, Jr.
Dennis Kelly
Kara Kondo
Chris Swanson

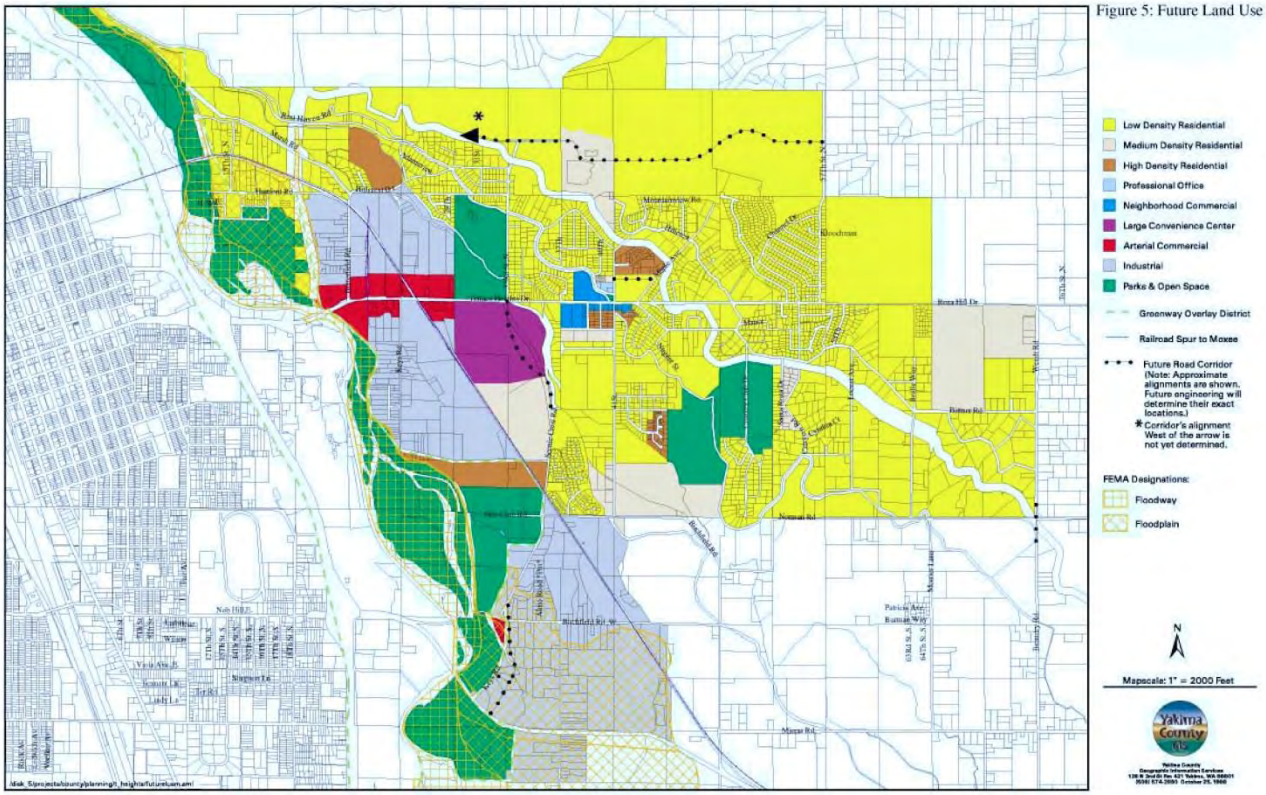


Figure 5: Future Land Use
Low Density Residential
Medium Density Residential
High Density Residential
Professional Office
Neighborhood Commercial
Large Convenience Center
Arterial Commercial
Industrial
Parks & Open Space
Greenway Overlay District
Railroad Spur to Moxee
Future Road Corridor (Note: Approximate alignments are shown. Future engineering will determine their exact locations.)
*Corridor's alignment West of the arrow is not yet determined.
FEMA Designations:
Floodway
Floodplain
N
Mapscale: 1" = 2000 Feet

YAKIMA COUNTY
PUBLIC SERVICES DEPARTMENT

COMMITMENT • SERVICE • EXCELLENCE
YAKIMA COUNTY

RECOMMENDED
6 YEAR TRANSPORTATION IMPROVEMENT PROGRAM
2015 - 2020

COUNTY COMMISSIONERS
Kevin J. Bouchey
J. Rand Elliott
Michael D. Leita

DIRECTOR
Vern M. Redifer, P.E.
COUNTY ENGINEER
Gary N. Ekstedt, P.E.

RECOMMENDED SIX YEAR TRANSPORTATION IMPROVEMENT PROGRAM 2015 TO 2020

Public Hearing: July 1, 2014; Adoption Date: July xx, 2014; Resolution Number: xxx-2014

ITEM	FC ULNA CS T.S	ROAD LOG NO.	ROAD NAME AND/OR BRIDGE NUMBER	LOCATION	PROJECT DESCRIPTION	MP FROM	MP TO	LENGTH	IMPRV. TYPE	UTIL. CODE	FUNDING		FUND SOURCE CODE	FUND SOURCE AMOUNT ($1,000's)		ESTIMATED EXPENDITURES BUDGET: PRELIM. ENGR. ($1,000's)	RIGHT OF WAY ($1,000's)	CONSTR. ($1,000's)	GRAND TOTAL ($1,000's)	1st. DOLLAR EXPENSE 2015 ($1,000's)	2nd. DOLLAR EXPENSE 2016 ($1,000's)	3rd. DOLLAR EXPENSE 2017 ($1,000's)	4th. - 6th. DOLLAR EXPENSE 2018 - 2020 ($1,000's)
URBAN ARTERIALS																							
1	16	N/A	EAST - WEST CORRIDOR	N 1ST STREET (CITY) BUTTERFIELD ROAD VIC.	Construct new arterial connection including new Yakima River Bridge.	N/A	N/A		01 08	C,G, P,T, Q,S	S	LOCAL	$0.0	0.00%	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	
												OTHER LOCAL	$2,012.0	100.00%	$1,212.0	$800.0	$0.0	$2,012.0	$1,212.0	$400.0	$400.0	
												TOTAL	$2,012.0	100.00%	$1,212.0	$806.6	$0.0	$2,012.0	$1,212.0	$409.0	$400.0	
												PROJECT PHASE STARTS				Jun-15						
2	16	50000	FORT RD.	HWY. 97 LIMITS TO .08 miles W of TEO RD.	Reconstruct to 5 lanes w/ curbs, gutters, sidewalks, lighting, channelization and Traffic Signals	0.00	0.60	0.60	02	C,G, P,S, T,W, O	S	LOCAL	$196.8	5.74%	$0.0	$0.0	$196.8	$196.8	$0.0	$196.8		
												OTHER LOCAL	$576.9	16.82%	$0.0	$0.0	$576.9	$576.9	$400.8	$176.9		
												TIB	$1,757.0	51.21%	$0.0	$0.0	$1,757.0	$1,757.0	$0.0	$1,757.0		
												STPU	$900.0	26.23%	$0.0	$0.0	$900.0	$900.0	$503.8	$357.0		
												TOTAL	$3,430.7	100.00%	$0.0	$0.0	$3,430.7	$3,430.7	$903.8	$2,527.7		
												PROJECT PHASE STARTS					Sep-14					
3	17	40050	BUTTERFIELD ROAD	TERRACE HEIGHTS DRIVE TO VICINITY of HARTFORD ROAD	Reconstruct to 3 lanes w/ curbs, gutters, sidewalks, and illumination.	0.00	0.45	0.45	02 17	C,G, P,S, T,W,	P	LOCAL	$672	38.66%	$98	$262	$312	$672	$98		$145	$429
												TIB	$1,065.7	61.34%	$0.0	$487.1	$578.6	$1,065.7	$0.0		$238.0	$838.7
												TOTAL	$1,737.5	100.00%	$98.0	$749.4	$890.1	$1,737.5	$98.0		$375.0	$1,264.5
												PROJECT PHASE STARTS				Jan-16	May-17					
4	16	30260	AHTANUM RD.	26TH AVE., S. VICINITY (CITY) TO 52ND AVE., S. VICINITY	Reconstruct to 3 lanes w/ curbs, gutters,pedestrian facilities and on-road bicycle facilities.	3.42	5.00	1.58	04	C,P, T,W, O	P	LOCAL	$933	39.08%	$150	$175	$608	$933	$75	$150	$100	$608
												TIB	$1,454.7	60.92%	$0.0	$325.0	$1,129.7	$1,454.7	$0.0	$116.3	$209.7	$1,129.7
												TOTAL	$2,388.0	35.08%	$150.0	$500.0	$1,738.0	$2,388.0	$75.0	$265.3	$309.7	$1,738.0
												PROJECT PHASE STARTS			May-15	Jan-16	May-18					
5	17	42750	SCENIC CREST RD.	UNIVERSITY PARKWAY TO VILLAS ROAD	Construct new collector arterial from University Parkway to new collector constructed as part of the Villas Plat	0.00	0.20	0.20	2	P,T W,O	P	LOCAL	$475.0	100.00%	$0.0	$0.0	$475.0	$475.0	$475.0			
												TOTAL	$475.0	100.00%	$0.0	$0.0	$475.0	$475.0	$475.0			
												PROJECT PHASE STARTS					May-18					
6	17	44080	MAPLE AVENUE	MAPLE COURT VIC. TO HILLCREST DRIVE VIC.	Reconstruct to 3 lanes w/ curbs, gutters, sidewalks, and illumination. Reconstruct Bridge.	0.22	0.42	0.20	03 09	C,G, P,S, T,W, O	P	LOCAL	$1,832.4	100.00%	$121.9	$75.0	$1,635.5	$1,832.4	$98.5	$98.4		$1,635.5
												TOTAL	$1,832.4	100.00%	$121.9	$75.0	$1,635.5	$1,832.4	$98.5	$98.4		$1,635.5
												PROJECT PHASE STARTS				May-16	Aug-19					
7	17	42250	BEAUDRY RD.	NORMAN RD. VICINITY	Construct new bridge crossing to Intersect with Bittner / Wendt Roads.	0.00	0.05	0.05	8 14	P,T	P	LOCAL	$270.0	100.00%	$250.0	$20.0		$270.0	$250.0	$20.0		
												TOTAL	$270.0	100.00%	$250.0	$20.0		$270.0	$250.0	$20.0		
												PROJECT PHASE STARTS				Jan-15						
8	16	10050	OLD NACHES HWY.	SR 12 TO MAPLEWAY RD.	Reconstruct to 3 lanes w/ curbs, gutters,pedestrian facilities and on-road bicycle facilities.	0.00	0.86	0.86	03	C,P, T,O	P	LOCAL	$850.0	100.00%	$100.0	$750.0		$850.0	$75.0	$75.0		$700.0
												TOTAL	$850.0	100.00%	$100.0	$750.0		$850.0	$75.0	$75.0		$700.0
												PROJECT PHASE STARTS				Jan-17						
9	16	10120	MAPLEWAY RD.	SELAH HEIGHTS RD. TO OLD NACHES HIGHWAY	Reconstruct to 3 lanes w/ curbs, gutters,pedestrian facilities and on-road bicycle facilities.	0.75	2.04	1.29	03	C,P, T,O	P	LOCAL	$525.0	100.00%	$125.0	$400.0		$525.0	$75.0	$50.0	$75.0	$325.0
												TOTAL	$525.0	100.00%	$125.0	$400.0		$525.0	$75.0	$50.0	$75.0	$325.0
												PROJECT PHASE STARTS				Jan-17						
10	16	30260	AHTANUM RD.	66TH AVE., S. VICINITY TO 90TH AVE., S. VICINITY	Reconstruct to 3 lanes w/ curbs, gutters,pedestrian facilities and on-road bicycle facilities.	5.80	7.37	1.57	04	C,P, T,W, O	P	LOCAL	$600.0	100.00%	$180.0	$420.0		$600.0			$180.0	$420.0
												TOTAL	$600.0	100.00%	$180.0	$420.0		$600.0			$180.0	$420.0
												PROJECT PHASE STARTS			Jan-17	Jan-18						
11	16	30360	WIDE HOLLOW RD.	YAKIMA CITY LIMIT TO COTTONWOOD CANYON Rd.	Reconstruct to 3 lanes w/ curbs, gutters,pedestrian facilities and shared bicycle facilities. Install Traffic Signal at 96th Ave.	0.75	2.03	1.28	04	C,P, T,W, O	P	LOCAL	$550.0	100.00%	$150.0	$400.0		$550.0				$550.0
												TOTAL	$550.0	100.00%	$150.0	$400.0		$550.0				$550.0
												PROJECT PHASE STARTS			Jan-18	May-19						
12	17	10020	POWERHOUSE RD., W.	YAKIMA CITY LIMITS TO NACHES RD., S.	Reconstruct to 3 lanes w/ curbs, gutters,pedestrian and on-road bicycle facilities.	1.21	1.58	0.37	02	C,P, T,O	P	LOCAL	$75.0	100.00%	$75.0			$75.0				$75.0
												TOTAL	$75.0	100.00%	$75.0			$75.0				$75.0
												PROJECT PHASE STARTS			Jan-18							

INTERCHANGE JUSTIFICATION REPORT

I-82/Yakima Avenue/Terrace Heights Drive Interchange
MP 31.40 to MP 34.77

Appendix I

Design Criteria and Documentation

Design memo

I-82 /Yakima Avenue/Terrace Heights Drive Interchange

December 28, 2016
Rev. __/__/__

DESIGN MEMORANDUM

Project Description:

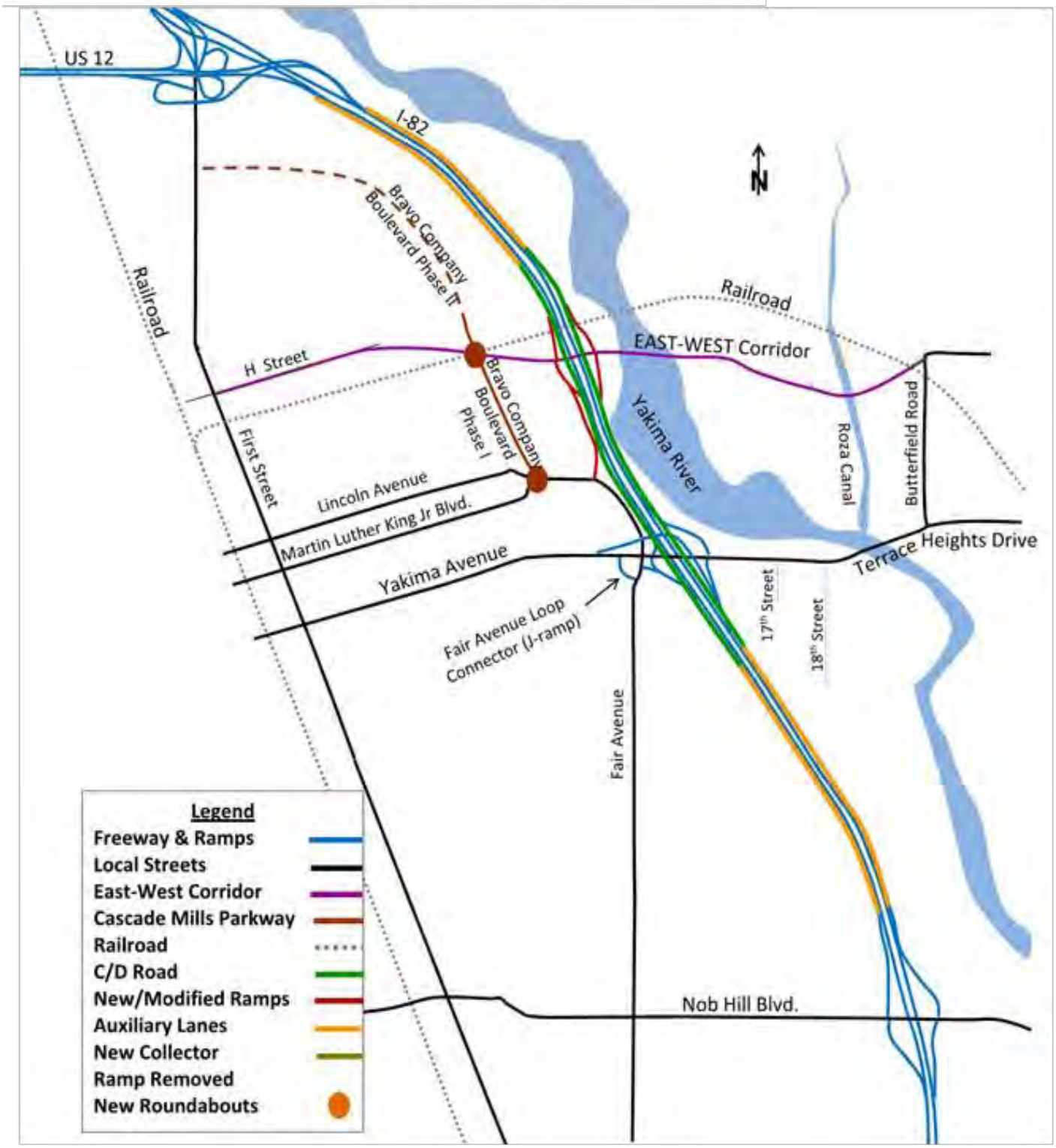
Due to growth in the Yakima urban area and the resulting congestion, in the early 1990s a comprehensive evaluation of the I-82/Yakima Interchange was completed. That evaluation recommended various improvements to the interstate as well as the local street system. Many of these projects have been completed.

While it is anticipated that additional improvements recommended will be staged over time to address an increases in traffic, the ultimate build alternative is proposed to include:

- A C/D roadway is added on both sides of I-82 from south of the I-82/Yakima Avenue Interchange to north of the I-82 Overpass over the local railroad;
- Auxiliary lanes are added westbound on I-82 from the westbound Nob Hill Boulevard on-ramp to the westbound Yakima Avenue off-ramp; from eastbound C/D on-ramp to the Nib Hill Boulevard off-ramp, westbound C/D on-ramp to the US 12 off-ramp; and from the eastbound US 12 on-ramp to the C/D off-ramp;
- All existing Yakima Avenue ramps are revised to connect to the C/D roadway;
- New on and off ramps with the new East-West Corridor arterial are connected to the C/D roadway;
- The existing I-82 off-ramp to Fair Avenue ramps is redesigned to connect to the EB on-ramp from the East-West Corridor;
- The existing I-82 on-ramp from Fair Avenue will continue to be connected to the eastbound Yakima Avenue on-ramp;
- The existing Fair Avenue Loop Connector (J ramp) is converted to a one-way connector from Yakima Avenue to Fair Avenue with right-in only from Yakima Avenue; and
- The C/D roadway is designed to allow for a future widening of I-82 to six lanes as a separate project.

See Figure 1: Proposed I-82/Yakima Avenue Interchange & Local Street Improvements Project.

FIGURE PP4-1: Recommended Modified 2C - C/D Alternative



Minimum Design Criteria to be Applied:

I-82 Limits: MP 31.3 Vic. to MP 33.5 Vic

I-82 ADT: 23,000 – 46,000 W/ Truck Percentage = 15%
Design will use volumes from modeling efforts.

Design Matrix: Exhibit 1100-2 Design Matrix 1: Interstate Routes (Mainline)

Functional Class:

I-82:	Urban Interstate
East West Corridor:	Minor Arterial (Proposed)
Yakima Ave/Terrace Heights Way:	Principal Arterial

Terrain Classification: Level

Design Year: 2035

Design Class: I-1

Design Level: FULL

Design Speed

Mainline:	70 MPH
Ramps:	60, 50, 25 MPH (1360-4)
CD Roadways:	45 MPH
Cross Streets:	35 MPH

Design Vehicle (turning movements): WB-67

Traffic Lanes Width

Mainline Lane:	12ft
Ramps/CD:	12ft single lane ramps, 24ft 2 lane ramps,
Cross Streets:	General Purpose Lanes 14ft, turn lanes 12ft.

Shoulders

Mainline:

Right of Traffic:	10ft
Left of Traffic:	10ft

Ramps/CD:

Right of Traffic:	4ft min 8ft where space allows
Left of Traffic:	2ft single lane ramps, 4ft 2 lane ramps

Cross Streets:

No shoulder in curbed sections

8ft in non-curbed areas (LAG Manual DHV over 200)

Median Width:

Shoulders at 10ft each + 2ft Concrete Median Barrier= 22ft.

Taper Rates for Changes in Width:

Design Manual section 1210.07

Grades:

Mainline: 3% (0.3% min)
Ramps/CD: 3% (5% max) Down grades up to 2% greater.
Cross Roads: 7% max. (design manual exhibit 1140-7)

Vertical Clearance:

Roadways: 16.5ft

Super Elevation:

Design Manual Exhibit 1250-4b e_{max} =8% (will use 6% or less because of snow and ice conditions)

Stopping Sight Distance:

Design Manual Exhibits 1260-1 and 1260-2

Span Length at Interchanges:

Bridges spanning the mainline will be designed assuming a pier in the median and allow the proposed total width of 2-12ft GP in each direction plus full shoulders and the CD roadway system.

Element	Width
Mainline Travel Lanes 2x12ft	24ft
Mainline Shoulders 2x10ft	20ft
Space for Median Barrier (Mainline/CD) 2ft	2ft
Space for Bridge Pier 8ft	8ft
Barrier for Pier Protection 2x1.5ft	3ft
Space for Mainline Drainage (shoulder to CD barrier)	6ft
Space for Retaining walls or CD Drainage	6ft
CD Travel Lane 1x12ft	12ft
CD Shoulders 1x2ft + 1x4ft	6ft
Future additional mainline lane	12
Total Minimum Clear Span Lengths	99ft

On Ramp Design:

On Ramps connections will be designed as single or two-lane connections as shown in the IJR.

Off Ramp Design:

Off Ramps will be designed as single or two-lane off connections as shown in the IJR with widening at the ramp terminals to accommodate turning movement volumes, length of storage capacity will be based on results of intersection modeling.

Sidewalk Width:

WSDOT:	5ft min. of useable sidewalk excluding curbs
Yakima County:	6.5ft Urban Arterial, 5ft Urban Access

Shared Use Path Design Manual Chapter 1515: (WSDOT Lead)

Design Speed:	20 mph
Horizontal Curve Radius:	74ft
Width:	12ft
Shoulder width:	2ft

Railroad Clearances:

Vertical Clearance:	23ft 4in plus structure deflection, use 23.5ft
Lateral Clearance:	Span entire Railroad Right of Way or if not feasible provide 25ft of clearance from centerline of track. Assume a second or double tracking will occur in the future, 25ft center to center between existing and new tracks.

Retaining Walls and Slopes:

It is assumed the design will require the use of retaining walls to allow the proposed interchanges and ramps to be accommodated within available space, minimize impacts to the Yakima Greenway Trail, and the Yakima River riparian buffer, and to minimize right of way needs.

Distance between Ramp Terminals for vehicle cueing storage will be based on modeling, retaining walls will be used in place of slopes where needed to avoid increasing interchange/C-D road footprint.

Retaining walls will be used to limit impacts to adjacent properties and avoid environmental impacts where practical.

In order to provide space for maintenance, access, and wall foundations, retaining walls will be set 10 feet back from the right of way to allow access between the right of way line and retaining walls.

Design Assumptions for Each Segment:

I-82 Mainline

- I-82 mainline currently provides for 2 east bound lanes and 2 west bound lanes.
- A C/D roadway is added on both sides of I-82 from south of the I-82/Yakima Avenue Interchange to north of the I-82 Overpass over the local railroad, a design deviation will be required for shoulder width at the Yakima Ave to avoid impacts to the existing fly over ramp;
- Auxiliary lanes are added westbound on I-82 from the westbound Nob Hill Boulevard on-ramp to the westbound Yakima Avenue off-ramp and from the C/D roadway to the US 12 off-ramp;

East-West Corridor Interchange:

For initial design the following assumptions will apply:

- New westbound on and off ramps with the new East-West Corridor are connected to the C/D roadway.
- A new eastbound off-ramp to the new East-West Corridor is connected to the C/D roadway.
- A new eastbound on-ramp from the new East-West Corridor is connected to the C/D roadway.

Yakima Avenue Interchange:

For initial design the following assumptions will apply:

- All existing Yakima Avenue ramps are revised to connect to the C/D roadway. The EB off ramp will require a design deviation for shoulder width to avoid reconstructed the existing fly over ramp.
- The existing I-82 off-ramp to Fair Avenue ramps is connected to the E-W Corridor EB on Ramp;
- The existing I-82 on-ramp from Fair Avenue is maintained; and
- The existing Fair Avenue Loop Connector (J ramp) is changes to a one-way roadway with a right-in only from Yakima Avenue and a right-out only to Fair Avenue.

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INTERCHANGE JUSTIFICATION REPORT

I-82/Yakima Avenue/Terrace Heights Drive Interchange
MP 31.40 to MP 34.77

Appendix J

Cost Estimate

Alternative 2C - Collector Distributor System

Alternative 3A - Roundabout

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I-82 / Yakima Ave Interchange Improvements
CD-Auxiliary Lanes_Alternative

ESTIMATE OF PROBABLE CONSTRUCTION COST					TOTAL	
No.	**Standard Item**	**Standard Item No.**	**Unit**	**Unit Price**	**Quantity**	**Cost**
Section 1: Preparation						
1	MOBILIZATION	0001	LS	$ 4,307,806	1	$ 4,307,806
2	CLEARING AND GRUBBING	0025	ACRE	$ 25,000	9.4	$ 235,000
3	REMOVAL OF STRUCTURES & OBSTRUCTIONS	0050	LS	$ 150,000	1	$ 150,000
4	REMOVING ASPHALT CONC. PAVEMENT	0120	SY	$ 9.00	17,303	$ 155,728
	Section Total					**$ 4,848,534**
Section 2: Grading						
5	ROADWAY EXCAVATION INCL. HAUL	0310	CY	$ 15.00	115,731	$ 1,735,968
6	SELECT BORROW INCL. HAUL	0408	TON	$ 8.00	1,393,686	$ 11,149,489
	Section Total					**$ 12,885,458**
Section 4: Drainage						
7	STORMWATER TREATMENT	SP	LS	$ 1,000,000.00	1	$ 1,000,000
8	SCHEDULE A CULV. PIPE ____IN DIAM.	1182	LF	$ 35.00	-	$ -
	Section Total					**$ 1,000,000**
Section 5: Storm Sewer						
9	CATCH BASIN TYPE 1	3091	EA	$ 1,500	48	$ 72,000
10	SCHEDULE A STORM SEWER PIPE ____IN DIAM.	3541	LF	$ 32.00	12,000	$ 384,000
	Section Total					**$ 456,000**
Section 8: Structure						
11	CDL/EWN Bridge Over Railroad Option 1-1	SP	LS	$ 1,819,208	1	$ 1,819,208
12	CDR/SFX Bridge Over Railroad: Option 2-1	SP	LS	$ 1,701,799	1	$ 1,701,799
13	SEW Bridge Over Railroad: Option 3-1	SP	LS	$ -	1	$ -
14	Widening - MR 1026+84	SP	LS	$ 707,214	1	$ 707,214
15	Widening - MR 1123+33	SP	LS	$ 181,793	1	$ 181,793
16	Widening - ML 1027+15	SP	LS	$ 772,875	1	$ 772,875
17	Widening - ML 1124+28	SP	LS	$ 684,206	1	$ 684,206
18	RETAINING WALL-FILL	SP	SF	$ 60	67,704	$ 4,062,248
19	RETAINING WALL-CUT	SP	SF	$ 130	12,257	$ 1,593,410
20	Tunnel	SP	LS	$ 2,500,000	-	$ -
	Section Total					**$ 11,522,752**
Section 9: Surfacing						
21	CRUSHED SURFACING BASE COURSE	5100	TON	$ 15.00	122,688	$ 1,840,318
	Section Total					**$ 1,840,318**
Section 14: Hot Mix Asphalt						
22	PLANING BITUMINOUS PAVEMENT	5711	SY	$ 10.00	88,058	$ 880,579
23	HMA CL. 1/2 IN PG 64-22	5767	TON	$ 95.00	40,588	$ 3,855,876
	Section Total					**$ 4,736,455**
Section 17: Erosion Control and Roadside Planting						
24	SEEDING, FERTILIZING, AND MULCHING	6414	ACRE	$ 15,000	9	$ 140,543
25	EROSION/WATER POLLUTION CONTROL	6490	EST	$ 750,000	1	$ 750,000
26	PLANT SELECTION	6550	EACH	$ 2.00	816,272	$ 1,632,544
	Section Total					**$ 2,523,087**
Section 18: Traffic						
27	CEMENT CONC. TRAFFIC CURB AND GUTTER	6700	LF	$ 23.00	1,600	$ 36,800
28	CEMENT CONC. TRAFFIC CURB	6701	LF	$ 22.00	-	$ -
29	MOUNTABLE CEMENT CONC. TRAFFIC CURB	6702	LF	$ 24.00	-	$ -
30	PLASTIC LINE	6870	LS	$ 250,000	1	$ 250,000
31	PERMANENT SIGNING	6890	LS	$ 500,000	1	$ 500,000
32	ILLUMINATION SYSTEM, COMPLETE	6904	LS	$ 750,000	1	$ 750,000
33	PROJECT TEMOPORARY TRAFFIC CONTROL	6971	LS	$ 5,000,000	1	$ 5,000,000
34	TRAFFIC SIGNAL SYSTEM	6971	LS	$ 200,000	1	$ 200,000
	Section Total					**$ 6,736,800**
Section 19: Other Items						
35	STRUCTURE EX CLASS B INCL. HAUL	7006	CY	$ 28.00	267	$ 7,467
36	ROADWAY SURVEY	7038	LS	$ 150,000	1	$ 150,000
37	CEMENT CONC. SIDEWALK	7055	LF	$ 75.00	-	$ -
38	CEMENT CONC. CURB RAMP TYPE ____	7058	EA	$ 1,500	-	$ -
39	CEMENT CONC. DRIVEWAY ENTRANCE, TYPE ____	7059	SY	$ 150.00	-	$ -
40	ADJUST UTILITY	SP	LS	$ 64,000	1	$ 64,000
41	MINOR CHANGE	7728	EST	$ 100,000	1	$ 100,000
42	RECORD DRAWINGS	2500	LS	$ 15,000	1	$ 15,000
43	UTILITY PERMITS & RELOCATION	SP	EST	$ 500,000	1	$ 500,000
	Section Total					**$ 836,467**
		SECTION SUBTOTAL				$ 43,078,064
		CONTINGENCY		25%		$ 10,769,516
		CONSTRUCTION SUBTOTAL				**$ 58,155,387**
		CONSTRUCTION ENGINEERING		10%		**$ 5,815,538.65**
		CONSTRUCTION TOTAL				**$ 63,970,925**
		DESIGN ENGINEERING		12%		**$ 7,676,511**
		RIGHT OF WAY COSTS		EST		**$ 2,665,505**
		PROJECT TOTAL				**$ 74,312,941**

I-82 / Yakima Ave Interchange Improvements
Alternative 3A

ESTIMATE OF PROBABLE CONSTRUCTION COST					Flyover to RAB		Ramp to ML		Yakima Ramp to RAB		Mainline Left		Mainline Right		Dog-Bone Roundabouts		Yakima Off-Ramp		TOTAL	
No.	Standard Item	Standard Item No.	Unit	Unit Price	Quantity	Subtotal	Quantity	Subtotal	Quantity	Subtotal	Quantity	Subtotal	Quantity	Subtotal	Quantity	Subtotal	Quantity	Subtotal	Quantity	Cost
Section 1: Prepartion																				
1	MOBILIZATION	0001	LS	$ 5,961,264	0.1	$ 662,363	0.1	$ 662,363	0.1	$ 662,363	0.2	$ 1,324,726	0.2	$ 1,324,726	0.1	$ 662,363	0.1	$ 662,363	1	$ 5,961,265
2	CLEARING AND GRUBBING	0025	ACRE	$ 25,000	0.06	$ 1,607	0.10	$ 2,551	0.13	$ 3,316	1.82	$ 45,499	1.91	$ 47,827	0.49	$ 12,276	0.08	$ 2,009	4.6	$ 115,084
3	REMOVAL OF STRUCTURES & OBSTRUCTIONS	0050	LS	$ 500,000	0.1	$ 55,556	0.1	$ 55,556	0.1	$ 55,556	0.2	$ 111,111	0.2	$ 111,111	0.1	$ 55,556	0.1	$ 55,556	1	$ 500,000
4	REMOVING ASPHALT CONC. PAVEMENT	0120	SY	$ 9.00	133	$ 1,200	-	$ -	222	$ 2,000	79,278	$ 713,500	83,333	$ 750,000	1,333	$ 12,000	667	$ 6,000	164,967	$ 1,484,700
	Section Total					**$ 779,088**		**$ 778,576**		**$ 784,106**		**$ 3,064,946**		**$ 3,142,602**		**$ 822,025**		**$ 789,491**		**$ 10,160,834**
Section 2: Grading																				
5	ROADWAY EXCAVATION INCL. HAUL	0310	CY	$ 15.00	913	$ 13,691	1,272	$ 19,075	49	$ 741	6,246	$ 93,686	2,804	$ 42,054	3,769	$ 56,541	25	$ 373	15,077	$ 226,161
6	SELECT BORROW INCL. HAUL	0408	TON	$ 8.00	56,488	$ 451,901	11,570	$ 92,558	20,423	$ 163,385	146,400	$ 1,171,198	181,722	$ 1,453,776	4,789	$ 38,312	35,275	$ 282,197	456,666	$ 3,653,327
	Section Total					**$ 465,591**		**$ 111,633**		**$ 164,126**		**$ 1,264,884**		**$ 1,495,830**		**$ 94,853**		**$ 282,570**		**$ 3,879,488**
Section 4: Drainage																				
7	QUARRY SPALLS	1086	TON	$ 32.00	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	2,222	$ 71,111	-	$ -	2,222	$ 71,111
8	SCHEDULE A CULV. PIPE ____IN DIAM.	1182	LF	$ 35.00	50	$ 1,750	50	$ 1,750	50	$ 1,750	500	$ 17,500	500	$ 17,500	100	$ 3,500	50	$ 1,750	1,300	$ 45,500
	Section Total					**$ 1,750**		**$ 1,750**		**$ 1,750**		**$ 17,500**		**$ 17,500**		**$ 74,611**		**$ 1,750**		**$ 116,611**
Section 5: Storm Sewer																				
9	CATCH BASIN TYPE 1	3091	EA	$ 1,500	3	$ 4,500	6	$ 9,000	4	$ 6,000	-	$ -	-	$ -	14	$ 21,000	3	$ 4,500	30	$ 45,000
10	SCHEDULE A STORM SEWER PIPE____IN DIAM.	3541	LF	$ 32.00	420	$ 13,440	800	$ 25,600	650	$ 20,800	-	$ -	-	$ -	1,400	$ 44,800	1,050	$ 33,600	4,320	$ 138,240
	Section Total					**$ 17,940**		**$ 34,600**		**$ 26,800**		**$ -**		**$ -**		**$ 65,800**		**$ 38,100**		**$ 183,240**
Section 8: Structure																				
11	TUNNEL UNDER I-82	SP	LS	$ 2,866,556	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	1	$ 2,866,556	1	$ -	2	$ 2,866,556
12	BRIDGES - 1027+00 ML	SP	LS	$ 2,762,128	-	$ -	-	$ -	-	$ -	1	$ 2,762,128	-	$ -	-	$ -	-	$ -	1	$ 2,762,128
13	BRIDGES - 1027+00 MR	SP	LS	$ 2,817,064	-	$ -	-	$ -	-	$ -	-	$ -	1	$ 2,817,064	-	$ -	-	$ -	1	$ 2,817,064
14	BRIDGES - 1052+00 ML	SP	LS	$ 4,273,849	-	$ -	-	$ -	-	$ -	1	$ 4,273,849	-	$ -	-	$ -	-	$ -	1	$ 4,273,849
15	BRIDGES - 1052+00 MR	SP	LS	$ 4,258,678	-	$ -	-	$ -	-	$ -	-	$ -	1	$ 4,258,678	-	$ -	-	$ -	1	$ 4,258,678
16	BRIDGES - 1024+00 ML	SP	LS	$ 901,481	-	$ -	-	$ -	-	$ -	1	$ 901,481	-	$ -	-	$ -	-	$ -	1	$ 901,481
17	BRIDGES - 1024+00 MR	SP	LS	$ 987,167	-	$ -	-	$ -	-	$ -	-	$ -	1	$ 987,167	-	$ -	-	$ -	1	$ 987,167
18	FLYOVER BRIDGE	SP	LS	$ 2,250,000	1	$ 2,250,000	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	1	$ 2,250,000
19	RETAINING WALL	SP	SF	$ 150	-	$ -	-	$ -	-	$ -	-	$ -	7,871	$ 1,180,666	800	$ 120,000	-	$ -	8,671	$ 1,300,666
	Section Total					**$ 2,250,000**		**$ -**		**$ -**		**$ 7,937,458**		**$ 9,243,575**		**$ 2,986,556**		**$ -**		**$ 22,417,589**
Section 9: Surfacing																				
20	CRUSHED SURFACING BASE COURSE	5100	TON	$ 15.00	1,036	$ 15,540	2,467	$ 37,000	2,004	$ 30,063	146,664	$ 2,199,958	154,167	$ 2,312,500	4,317	$ 64,750	3,238	$ 48,563	313,892	$ 4,708,373
	Section Total					**$ 15,540**		**$ 37,000**		**$ 30,063**		**$ 2,199,958**		**$ 2,312,500**		**$ 64,750**		**$ 48,563**		**$ 4,708,373**
Section 14: Hot Mix Asphalt																				
21	PLANING BITUMINOUS PAVEMENT	5711	SY	$ 10.00	833	$ 8,333	-	$ -	1,250	$ 12,500	333	$ 3,333	556	$ 5,556	833	$ 8,333	833	$ 8,333	4,639	$ 46,389
22	HMA CL. 1/2 IN PG 64-22	5767	TON	$ 95.00	469	$ 44,555	893	$ 84,867	726	$ 68,954	39,837	$ 3,784,523	41,875	$ 3,978,125	1,954	$ 185,646	1,173	$ 111,388	86,927	$ 8,258,057
	Section Total					**$ 52,888**		**$ 84,867**		**$ 81,454**		**$ 3,787,856**		**$ 3,983,681**		**$ 193,979**		**$ 119,721**		**$ 8,304,446**
Section 17: Erosion Control and Roadside Planting																				
23	SEEDING, FERTILIZING, AND MULCHING	6414	ACRE	$ 15,000	0.1	$ 964	0.1	$ 1,530	0.1	$ 1,990	1.8	$ 27,300	1.9	$ 28,696	0.5	$ 7,365	0.1	$ 1,205	5	$ 69,050
24	EROSION/WATER POLLUTION CONTROL	6490	EST	$ 750,000	0.1	$ 83,333	0.1	$ 83,333	0.1	$ 83,333	0.2	$ 166,667	0.2	$ 166,667	0.1	$ 83,333	0.1	$ 83,333	1	$ 750,000
25	PLANT SELECTION	6550	EACH	$ 2.00	-	$ -	35,556	$ 71,111	46,222	$ 92,444	317,111	$ 634,222	333,333	$ 666,667	28,519	$ 57,037	2,000	$ 4,000	762,741	$ 1,525,481
	Section Total					**$ 84,298**		**$ 155,975**		**$ 177,767**		**$ 828,188**		**$ 862,029**		**$ 147,736**		**$ 88,539**		**$ 2,344,532**
Section 18: Traffic																				
26	CEMENT CONC. TRAFFIC CURB AND GUTTER	6700	LF	$ 23.00	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	3,000	$ 69,000	-	$ -	3,000	$ 69,000
27	CEMENT CONC. TRAFFIC CURB	6701	LF	$ 22.00	200	$ 4,400	-	$ -	-	$ -	-	$ -	-	$ -	800	$ 17,600	-	$ -	1,000	$ 22,000
28	MOUNTABLE CEMENT CONC. TRAFFIC CURB	6702	LF	$ 24.00	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	240	$ 5,760	-	$ -	240	$ 5,760
29	PLASTIC LINE	6870	LS	$ 250,000	0.1	$ 27,778	0.1	$ 27,778	0.1	$ 27,778	0.2	$ 55,556	0.2	$ 55,556	0.1	$ 27,778	0.1	$ 27,778	1	$ 250,000
30	PERMANENT SIGNING	6890	LS	$ 500,000	0.1	$ 55,556	0.1	$ 55,556	0.1	$ 55,556	0.2	$ 111,111	0.2	$ 111,111	0.1	$ 55,556	0.1	$ 55,556	1	$ 500,000
31	ILLUMINATION SYSTEM, COMPLETE	6904	LS	$ 750,000	0.1	$ 83,333	0.1	$ 83,333	0.1	$ 83,333	0.2	$ 166,667	0.2	$ 166,667	0.1	$ 83,333	0.1	$ 83,333	1	$ 750,000
32	PROJECT TEMOPORARY TRAFFIC CONTROL	6971	LS	$ 12,900,000	0.1	$ 1,433,333	0.1	$ 1,433,333	0.1	$ 1,433,333	0.2	$ 2,866,667	0.2	$ 2,866,667	0.1	$ 1,433,333	0.1	$ 1,433,333	1	$ 12,900,000
	Section Total					**$ 1,604,400**		**$ 1,600,000**		**$ 1,600,000**		**$ 3,200,000**		**$ 3,200,000**		**$ 1,692,360**		**$ 1,600,000**		**$ 14,496,760**
Section 19: Other Items																				
33	STRUCTURE EX CLASS B INCL. HAUL	7006	CY	$ 28.00	140	$ 3,920	267	$ 7,467	217	$ 6,067	-	$ -	-	$ -	467	$ 13,067	350	$ 9,800	1,440	$ 40,320
34	ROADWAY SURVEY	7038	LS	$ 150,000	0.1	$ 16,667	0.1	$ 16,667	0.1	$ 16,667	0.2	$ 33,333	0.2	$ 33,333	0.1	$ 16,667	0.1	$ 16,667	1	$ 150,000
35	CEMENT CONC. SIDEWALK	7055	LF	$ 75.00	467	$ 35,000	240	$ 18,000	233	$ 17,500	467	$ 35,000	240	$ 18,000	200	$ 15,000	-	$ -	1,847	$ 138,500
36	CEMENT CONC. CURB RAMP TYPE ____	7058	EA	$ 1,500	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	12	$ 18,000	-	$ -	12	$ 18,000
37	CEMENT CONC. DRIVEWAY ENTRANCE, TYPE ____	7059	SY	$ 150.00	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	240	$ 36,000	-	$ -	240	$ 36,000
38	ADJUST UTILITY	SP	LS	$ 64,000	0.1	$ 7,111	0.1	$ 7,111	0.1	$ 7,111	0.2	$ 14,222	0.2	$ 14,222	0.1	$ 7,111	0.1	$ 7,111	1	$ 64,000
39	MINOR CHANGE	7728	EST	$ 100,000	0.1	$ 11,111	0.1	$ 11,111	0.1	$ 11,111	0.2	$ 22,222	0.2	$ 22,222	0.1	$ 11,111	0.1	$ 11,111	1	$ 100,000
40	RECORD DRAWINGS	2500	LS	$ 15,000	0.1	$ 1,667	0.1	$ 1,667	0.1	$ 1,667	0.2	$ 3,333	0.2	$ 3,333	0.1	$ 1,667	0.1	$ 1,667	1	$ 15,000
41	UTILITY PERMITS & RELOCATION	SP	EST	$ 500,000	0.1	$ 55,556	0.1	$ 55,556	0.1	$ 55,556	0.2	$ 111,111	0.2	$ 111,111	0.1	$ 55,556	0.1	$ 55,556	1	$ 500,000
	Section Total					**$ 131,031**		**$ 117,578**		**$ 115,678**		**$ 219,222**		**$ 202,222**		**$ 174,178**		**$ 101,911**		**$ 1,061,820**
	SECTION SUBTOTAL					$ 4,681,801		$ 2,201,509		$ 2,258,509		$ 20,325,178		$ 22,226,276		$ 5,574,653		$ 2,344,718		$ 59,612,643
	CONTINGENCY			25%		$ 1,170,450		$ 550,377		$ 564,627		$ 5,081,294		$ 5,556,569		$ 1,393,663.35		$ 586,179.39		$ 14,903,161
	CONSTRUCTION SUBTOTAL					$ 6,320,431		$ 2,972,037		$ 3,048,987		$ 27,438,990		$ 30,005,472		$ 7,525,782		$ 3,165,369		**$ 80,477,069**
	CONSTRUCTION ENGINEERING			10%		**$ 632,043.10**		**$ 297,203.71**		**$ 304,898.75**		**$ 2,743,898.99**		**$ 3,000,547.23**		**$ 752,578.21**		**$ 316,536.87**		**$ 8,047,707**
	CONSTRUCTION TOTAL					**$ 6,952,474**		**$ 3,269,241**		**$ 3,353,886**		**$ 30,182,889**		**$ 33,006,020**		**$ 8,278,360**		**$ 3,481,906**		**$ 88,524,776**
	DESIGN ENGINEERING			10%		**$ 695,247.41**		**$ 326,924.08**		**$ 335,388.62**		**$ 3,018,288.89**		**$ 3,300,601.96**		**$ 827,836.03**		**$ 348,190.56**		**$ 8,852,478**
	RIGHT OF WAY COSTS			EST		**$ -**		**$ -**		**$ -**		**$ -**		**$ -**		**$ 742,346**		**$ -**		**$ 742,346**
	PROJECT TOTAL					**$ 7,647,722**		**$ 3,596,165**		**$ 3,689,275**		**$ 33,201,178**		**$ 36,306,622**		**$ 9,848,542**		**$ 3,830,096**		**$ 98,119,599**

INTERCHANGE JUSTIFICATION REPORT

I-82/Yakima Avenue/Terrace Heights Drive Interchange
MP 31.40 to MP 34.77

Appendix K

Practical Solutions Approach

WHAT IS PRACTICAL SOLUTIONS AND WHY IS IT INCLUDED IN THIS IJR?

Moving Washington Forward: Practical Solutions

As defined by WSDOT, "Practical Solutions is a two-part strategy that includes: least cost planning and practical design in which WSDOT is undertaking to enable more flexible and sustainable transportation investment decisions. It encourages this by increasing the focus on project purpose and need throughout all phases of project development:

- Planning
- Program management
- Environmental analysis
- Design
- Construction
- Operation

It engages local stakeholders at the earliest stages of defining scope to ensure their input is included at the right stage of project design.

Transportation infrastructure investment decisions have wide-ranging implications for the long-term sustainability of our community, economy, and environment. The systems built over the last half a century have fueled strong economic growth, but those systems are in urgent need of repair and maintenance."[1]

Because of very limited budgets and a "hands on" approach by local elected officials, practical solutions have long been followed by local agencies; just not well defined as such. With an active partnership, including funding commitments, by Yakima County, the City of Yakima, and the State of Washington, a practical solutions approach is being implemented in this project.

WHAT IS THE PROBLEM TO BE SOLVED?

From the Charter Agreement signed by FHWA, WSDOT, Yakima County, the City of Yakima and the Yakima Valley Council of Governments:

"Through Yakima, I-82 is the major regional traffic corridor, with the Yakima Avenue Interchange serving as the main Gateway to both Downtown Yakima and Terrace Heights. While I-82 is the major north-south transportation corridor through Yakima, both it and the Yakima River pose a barrier to travel between the City of Yakima and the Terrace Heights neighborhood.

Currently, east-west traffic has only one option to travel between these two locations: the Yakima Avenue/Terrace Heights Drive corridor. As the population of Terrace Heights has continued to keep pace with projected growth rates, this existing corridor continues to suffer increased congestion and

[1] http://www.wsdot.wa.gov/Projects/PracticalDesign/

delays, along with the Yakima Avenue/I-82 Interchange. The purpose of this project is to evaluate congestion and safety issues at the Yakima Avenue Interchange, including evaluation of I-82 from US 12 to the Nob Hill Interchange, and provide recommendations to reduce congestion, both on the Interstate and at the Yakima Avenue Interchange. It is anticipated that ramp traffic at the Yakima Avenue Interchange will back up onto the mainline within the planning horizon."

WHAT COMMUNITY ENGAGEMENT HAS OCCURRED?

Over the course of the development of the E-W Corridor and the I-82 improvements; Yakima County and the City of Yakima have held a number of open houses and provided opportunity for public input. In addition to the open houses, newsletters and a project website was created to distribute information about the project and provide a means for ongoing comments from the public to be accumulated. During the development of the E-W Corridor Yakima County held open houses in June and November of 2010 and the County Board of Commissioners held an open meeting in October 2011.

The most recent public open house for the interchange modifications was held in October 2013. Proposed improvements to resolve these congestion issues were displayed and discussed with the community. Approximately 40 community members attended the open house and provided comments and expressed their concerns about the alternatives. Input received from the open house was used to refine the alternatives moved forward in the IJR.

In addition, as part of the process, the County and City formed both a Stakeholders Committee and Executive Committee through which to evaluate and narrow options to a final recommendation. The Stakeholders Committee included technical staff from:

- FHWA
- WSDOT Headquarters
- WSDOT Region
- Yakima Valley Council of Governments
- Yakima County
- City of Yakima

The Executive Committee included representatives from the same organizations, with elected representatives from the City and County and Executives from the remaining agencies.

The environmental process is underway and will include a minimum of one open house and additional opportunities for public input and comment through the project webpage.

HAVE CONTEXT CONSIDERATIONS BEEN IDENTIFIED?

The Yakima River serves as a major barrier between the City of Yakima and the Terrace Heights neighborhood. That, and two major land use trends have substantially impacted the need for this project; growth east of the Yakima River and the need to redevelop the old Boise Cascade Mill site on the west side of the River (within the City of Yakima and adjacent to I-82).

Additionally, cross Yakima River traffic is limited to only two bridges. A major flood event is likely to significantly damage the Terrace Height Drive/Yakima Avenue bridge, further reducing access to this important growth area in Yakima County.

Growth in Terrace Heights (neighborhood/subarea) and major land use demands along the University Parkway substantially increased traffic on Terrace Heights Drive/Yakima Avenue, raising a concurrency issue under the Growth Management Act.[2] As a result, in 2001, Yakima County completed the Terrace Heights Corridor Study, clearly defining traffic congestion issues on Terrace Heights Boulevard. At that time, a parallel east-west corridor was not considered a viable option due to the active Boise Cascade Mill as a significant impediment to a viable route. Then, in 2006, it was announced that the Boise Cascade Mill would close, laying off 225 employees, but opening 225-acres inside the Yakima City limits and immediately adjacent to I-82 for more intense urban development.

As a result, in 2008, Yakima County began the East-West Corridor Alignment Study (followed it in 2012 with an amendment/update). Additionally, in 2010, the City of Yakima was selected as one of nine jurisdictions in the State to receive LIFT (Local Infrastructure Financing Tool) designation, through with to encourage redevelopment of the Boise Cascade Mill site (which had been in operation since 1903).

The City, County and State then came together to evaluate congestion and safety concerns along the Yakima Avenue/Terrace Heights corridor and Yakima Avenue/I-82 interchange through the formal process of completing an Interchange Justification Report. Throughout this process, local land use issues and the limited opportunities to connect development on both sides of the Yakima River have help frame the process.

HAVE DEMAND MANAGEMENT STRATEGIES BEEN EXPLORED?

The Yakima Valley Council of Governments (YVCOG) is responsible for Transportation Demand Management and Commute Trip Reduction. A Yakima Valley Region CTR plan was adopted with goals to reduce single occupancy vehicle trips by 10 percent and Vehicle Miles Traveled by 13 percent. The region continues to work toward these goals, but with only two alternative routes for traffic needing to cross the Yakima River, TDM and CTR strategies will not relieve current and anticipated congestion issues.

[2] The Washington State Growth Management Act requires state and local governments to manage Washington's growth by identifying and protecting critical areas and natural resource lands, designating urban growth areas, preparing comprehensive plans and implementing them through capital investments and development regulations. Known GMA, the Act was adopted by the Legislature in 1990.

HAVE SYSTEM MANAGEMENT (OPERATIONAL) FIXES HAVE BEEN EXPLORED?

The City of Yakima and Yakima have been implementing transportation system management (TSM) strategies throughout the region to improve traffic operations in the near-term. These TSM strategies have included: improved channelization at critical intersections, coordination of traffic signals to help major traffic flows, and a program to resurface roads in the County and City. These strategies improve near-term issues but do not address long-term traffic needs.

HAVE MULTIMODAL STRATEGIES HAVE BEEN EXPLORED?

The City of Yakima has owned, maintained and operated Yakima Transit since 1966. The system provides transit services within the City of Yakima and the City of Union Gap, with service to the City of Selah through an inter-local agreement. Yakima Transit also participates in funding a Yakima-Ellensburg commuter route. There is no fixed route service to Terrace Heights or unincorporated Yakima County.

Both the City and County are actively planning to expand non-motorized service as part of this project, with a dedicated multipurpose trail (including bridge over the Yakima River) connecting Terrace Heights to both downtown Yakima and the Yakima River Greenway.

During this stage of East-West Corridor development, the extension of this new multi-purpose trail will extend from Butterfield Road on the east, over the Yakima River on its own dedicated bridge in order to avoid the steep grade needed to cross above I-82, connect with the Yakima River Greenway, then go under I-82 at the existing short-line railroad underpass, and extend to North 1st Street (a distance of nearly two-miles). Long range plans include extending the East-West Corridor to 57th Street in Terrace Heights and Fruitvale Boulevard in Yakima.

HAS A "NO-BUILD" SOLUTION HAS BEEN EVALUATED?

As part of the IJR, three build alternatives (including nine variations) and the no build alternative were evaluated. FHWA, WSDOT, and the local agencies concluded the "no-build" solution was not viable, as sections of I-82 would operate below level of service (LOS) D in the horizon year, and several movements at the I-82 ramp terminals with Yakima Avenue would operate at LOS F with traffic backing up along the I-82 off-ramps to the I-82 mainline. As a result, two Build alternatives with a variation to the number of I-82 lanes were advanced for further discussion (see IJR Policy Point 2).

HAS A "BUILD UP" AND INCREMENTAL APPROACH BEEN USED TO REDUCE PROJECT SCOPE?

Throughout development of the IJR, evaluation of local improvements, improvements to the Interstate, the degree to which improvements need to be implemented and when have been taken into consideration. During the process, it was thought that:

- I-82 would have to be expanded to three-lanes in each direction for the area commonly referred to as "Gap to Gap."
- The inclusion of three main-line lanes would require design deviations to avoid the reconstruction of the Yakima Avenue Interchange and flyover.
- The addition of the collector/distributor (C/D) lanes would reduce widening of I-82 through the C/D system area, reduce congestion on Yakima Avenue, and connect I-82 with the expanded regional transportation system, while at the same time reducing the number of access points to the Interstate from five to four.
- The bridges on I-82, over the short-line railroad tracks would have to be reconstructed to accommodate the additional mainline lanes.

The evaluation conducted as part of the IJR concluded that the following elements can be eliminated, reduced and/or delayed:

- Through the section of I-82 where the C/D lanes are constructed, the additional lanes on I-82 will not be needed until 2050 or later.
- The Yakima Avenue Interchange and flyover can be left in place.
- Without the addition of general purpose lanes on this section of I-82, the bridges needed to accommodate the additional capacity on the mainline are not needed over the short-line railroad through the 2035 horizon year.
- The identified project can be effectively phased in over the 20 year horizon with some elements delayed until 2025 or beyond, as shown on Figure K-1.

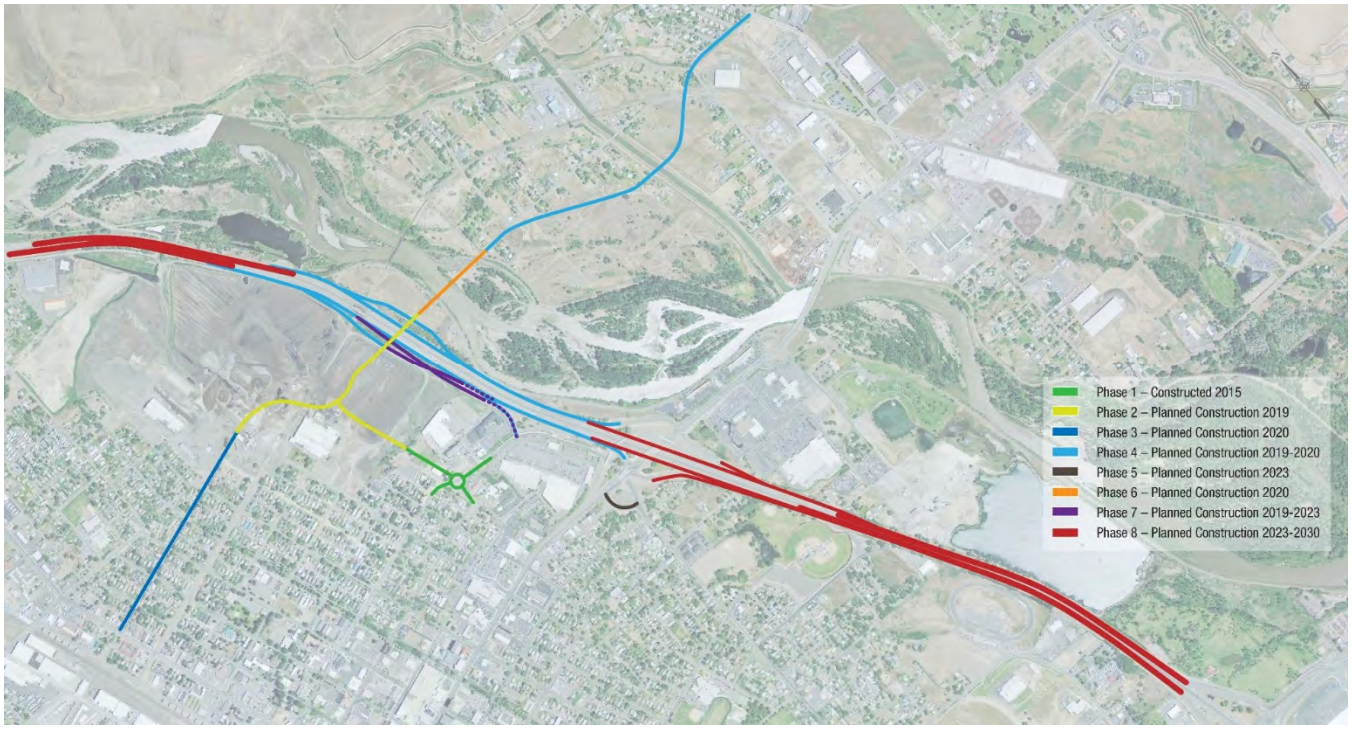
ARE PROJECT LIMITS ALIGNED WITH THE PROBLEM TO BE SOLVED?

The project is designed to reduce traffic congestion at the I-82 Yakima Avenue Interchange and improve traffic flow along I-82 between Nob Hill Boulevard and US 12. The IJR process requires the analysis to go one interchange either side of the access issues at the I-82/Yakima Avenue Interchange. As a result the minimum project area and associated Area of Potential Effect (APE) was defined accordingly and extends from US 12 to the Nob Hill Interchange.

HAS THE NEED FOR ADDITIONAL RIGHT-OF-WAY BEEN REDUCED OR ELIMINATED?

The preliminary design of the I-82 access improvements have utilize the existing I-82 right-of-way to the extent possible while allowing for possible future expansion. New right-of-way requirements are minimized and various shoulder design deviations have been used to reduce reconstruction of existing

Figure K-1: Preliminary Phasing Plan for the Implementation of the C/D Alternative



structures to minimize right-of-way. Walls at the new East-West Corridor Interchange ramps and bridge approaches will be used to reduce right-of-way needs.

HAS THE IMPACT TO UTILITIES HAS BEEN ELIMINATED, AVOIDED, OR MINIMIZED?

With I-82 close to the Yakima River there are few utilities within the I-82 access modification area. Because much of the new alignment will be on fill sections with limited cut areas, impacts to utilities are expected to be minimal. A detailed review of all utilities will be conducted during the preliminary design and environmental documentation phase for the I-82 access improvement project. The addition of the new East-West Corridor will provide a new opportunity for utilities to cross over I-82 and the Yakima River.

DOES THE PROJECT MINIMIZE, OR ELIMINATE, IMPACTS TO EXISTING STRUCTURES AND ENVIRONMENT?

The NEPA analysis will clearly define environmental impacts to be mitigated, but to date, no significant adverse impacts to the environment have been identified. The East-West Corridor project does include a bridge over the Yakima River, including piers in the water, but impacts appear to be negligible. Additionally, by eliminating the need for the additional general purpose lanes on this segment of I-82, the existing bridges over the short line railroad will not have to be replaced. With shoulder design deviations, it is assumed that the existing Yakima Avenue and the flyover bridges over I-82 can be maintained with the proposed access modifications.

DOES THE PROJECT CONSIDER AND MINIMIZE THE COST FOR MATERIALS, EQUIPMENT, LABOR, AND LONG-TERM MAINTENANCE?

Most of the proposed access modifications can be constructed outside the existing travel lanes. As a result, extensive temporary roads/ramps will not be required which will reduce the construction time, materials, and cost of the overall project, as compared to other options considered. Preliminary structure type and material evaluations have suggested that the roadway and pedestrian bridges be constructed with precast girders for the superstructure, resulting in low construction and maintenance cost. Current assumptions for storm water treatment assume infiltration in ponds and ditches as the preferred treatment method, omitting underground storage tanks or complex high maintenance systems.

IS THE DESIGN SPEED THE SAME AS POSTED SPEED?

The design of the I-82 was originally developed based on a design speed of 70 mph with a posted speed of 60 mph. The proposed access modifications do not change the original criteria. For ramps and C/D roads, a mid-range speed of 45 mph was selected as the design and posted speeds.

WAS THE DESIGN VEHICLE SELECTED TO AVOID OVER-DESIGN OF INTERSECTIONS AND SEGMENTS?

Because this is an interstate project, a WB-67, which is the largest vehicle legally allowed to operate on state highways in Washington, was selected as the design vehicle for all access connections.

WAS THE HIGHWAY SAFETY MANUAL WAS USED TO EVALUATE DESIGN OPTIONS?

The highway safety manual was used to compare the proposed access modifications with the No Build conditions. The analysis showed that the proposed access modification would have the same number of fatalities (less than 1) and the same number of serious injuries (about two per year) as compared to the No Build conditions in 2035. The Build Alternative did show and increase in total accidents (124 to 106) but these were mostly property damage only or possible injury collisions. This change in the overall number of collision falls within the yearly variation collisions (79to 119) experienced between 2006 and 2010).

WERE DESIGN DEVIATIONS USED TO REMOVE OR OPTIMIZE DESIGN ELEMENTS TO ADDRESS THE PROBLEM IN A COST EFFECTIVE MANNER?

FHWA discourages the use of design deviations on the Interstate. Even with that stated, the use of shoulder deviations are proposed on the C/D roadway and the eastbound off-ramp to Yakima Avenue in the vicinity of the Yakima Avenue flyover and the Yakima Avenue bridge over I-82, in order to avoid reconstructing these existing structures. A more detailed analysis will be conducted to the preliminary design of the proposed access modifications to determine if additional design deviations are justified.

DOES THE SOLUTION CONSIDER THE NEEDS OF ALL USERS?

During the design process, FHWA, WSDOT, Yakima County, the City of Yakima and YVCOG were careful to keep all user needs considered, including freight, passenger vehicles, transit and school buses, pedestrians, and cyclists. The proposed design was developed to provide improved traffic flow for all users across I-82 between Terrace Heights and the City of Yakima, reduce congestion along Yakima Avenue, and reduce short trips on the I-82 mainline. Additionally, trip purpose was also taken into consideration, including the fact that many visitors to Yakima are tourists and not as familiar with the local street network as regular users.