Appendix E
Traffic Analysis

STATE OF OREGON **INTEROFFICE MEMO**

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Date: April 10th, 2009

TO: **Mike Baker, Principal Planner**
Region 3 Planning

FROM: **Christina Fera-Thomas, Transportation Analyst**
Peter L. Schuytema, P.E., Senior Transportation Analyst
Transportation Planning Analysis Unit

SUBJECT: **Fern Valley Interchange Area Management Plan**
Development Scenario Traffic Analysis Technical Memorandum

The purpose of this document is to present the analysis results for the Fern Valley Interchange Area Management Plan (IAMP). The function of the Fern Valley IAMP is to preserve the capacity of the interchange over the next 20 years as proposed by the Fern Valley Interchange Environmental Assessment (EA).

This traffic analysis memorandum is intended to complement the IAMP document and to be included as an IAMP appendix. The IAMP document should be referenced for more details on the development of the scenarios and the proposed measures.

Scenario Descriptions

The Base Scenario represents the growth in the study area over the next 20 years to 2030 which is reflected in the build alternatives from the Fern Valley Interchange EA. The Base Scenario is using the official future population and employment estimates for the Rogue Valley metropolitan area and land uses from the current comprehensive plans.

Development Scenario 1 represents the full build-out of the City of Phoenix Comprehensive Plan and areas outside of the city limits that have already been developed. The build-out assumes a realistic level of development based on established development patterns rather than assuming developments that generate the maximum amount of trips. All of the IAMP measures and decisions made will be based on Development Scenario 1 since it is consistent with the City of Phoenix Comprehensive Plan.

Development Scenario 2 is built off of Development Scenario 1 and also includes development of the urban reserve areas. It is expected that these areas will begin to develop prior to 2030. The purpose of Development Scenario 2 is to help identify how this additional development might affect the interchange area.

Development Scenario 2 with South Stage Overcrossing adds the South Stage Road extension from OR99 east to North Phoenix Road. The purpose of this scenario was to see how much volume from the Fern Valley Interchange area would divert to the new connection.

Volume Development

The Rogue Valley Council of Governments (RVCOG) travel demand model was used to develop the volumes for the scenarios. The model is based on the current comprehensive plans of Jackson County, Central Point, Medford and Phoenix. This is the same model as was used to develop the alternatives in the Fern Valley Interchange EA. A set of volumes was created for each scenario for both the "Fern Valley Thru" and the "North Phoenix Thru" EA build alternatives

Base Scenario

The Base Scenario volumes are the 2030 Build Volumes from the Fern Valley Interchange EA. The existing EA build model scenario was used, so no additional model runs were necessary for this scenario. The Base Scenario volumes can be seen in Figures A1 through A3.

Development Scenario 1

A new model scenario, Model Scenario 1, was created by allocating the additional development in Development Scenario 1 on top of the EA build model scenario. The development from Development Scenario 1 was allocated to the appropriate Traffic Analysis Zone (TAZ) with the following exceptions:

- Northeast interchange quadrant – extra trips were added to better quantify development and the regional pull of the potential future development on the old orchard property east of the interchange. Trips were removed from Model Scenario 1 to avoid double-counting.
- Southeast interchange quadrant – trips were removed from Development Scenario 1 and applied directly to the model to appropriately represent the uniqueness of the truck stop. This prevents the truck stop from inadvertently competing with other dissimilar service uses in the model.

The volumes were post-processed using procedures from the National Cooperative Highway Research Council (NCHRP) Report 255. The Model Scenario 1 and the EA build model scenario were compared to develop a relative difference between scenarios. This difference was applied to the 2030 EA Build Design Hour Volumes (DHV) for each EA alternative to arrive at the Development Scenario 1 Volumes (Figures B1 through B3).

Development Scenario 2

The volumes for Development Scenario 2 were created using a process similar to that for Scenario 1. A new model scenario, Model Scenario 2, was created by allocating additional development in Development Scenario 2 on top of Model Scenario 1. The development in Development Scenario 2 was allocated to the appropriate TAZ with the following exceptions:

- Northeast interchange quadrant – extra trips were added to better quantify development and the regional pull of the potential future development on the old orchard property east of the interchange. Trips were removed from Model Scenario 1 to avoid double-counting.
- Southeast interchange quadrant – trips were removed from Development Scenario 1 and applied directly to the model to appropriately represent the uniqueness of the truck stop. This prevents the truck stop from inadvertently competing with other dissimilar service uses in the model.

These volumes were also post-processed using procedures from Report 255. Model Scenario 2 and Model Scenario 1 were compared to develop a relative difference between scenarios. This difference was applied to the Development Scenario 1 Volumes to arrive at the Development Scenario 2 Volumes (Figures C1 through C3).

Development Scenario 2 with South Stage Overcrossing

An additional model scenario was also created to analyze the effect a South Stage Road extension from OR99 east to North Phoenix Road would have on the system. The extension was modeled as four lanes at a speed of 40 miles per hour. Model Scenario 2 with South Stage Overcrossing and Model Scenario 2 were compared to develop a relative difference between scenarios. This difference was applied to the Development Scenario 2 Volumes to arrive at the Development Scenario 2 Volumes with South Stage Overcrossing (Figures D1 through D3).

Analysis Results

All of the analysis done for Development Scenarios 1 and 2 was based on the current configuration of the build alternatives as they were described in the Fern Valley Interchange EA. In order to accommodate and to quantify the impacts of the large development expected at the old orchard property, a new signalized access was added to the system. This new signalized access was added north of Fern Valley Road in both alternatives as shown in Figures B1 and B2. This signal or its location has not been approved as it is shown for analysis purposes only. The decision of where and what type of accesses/intersections will be added for this potential future development will be determined as part of the development review process.

Evaluation Criteria

When evaluating the scenarios, the 2003 Highway Design Manual (HDM) design Volume to Capacity (v/c) Ratios were used for an MPO area. HDM standards are used for design level analysis. The HDM design v/c for Interstate 5 (I5) and the interchange

ramp terminals is 0.75. Fern Valley Road, OR99, and all other local roads have an HDM v/c of 0.85.

When analyzing the IAMP Measures, the 1999 Oregon Highway Plan (OHP) mobility standards for a Metropolitan Planning Organization (MPO) area were used. OHP standards are used for planning level analysis. The maximum acceptable v/c ratio for I5 is 0.80. For the ramp terminals the v/c ratio should not exceed 0.85. Fern Valley Rd, OR 99, and all other local roads have a maximum acceptable v/c ratio of 0.90. A v/c ratio of 1.0 represents an intersection that is at capacity.

In addition to v/c ratios, 95th percentile queue lengths were also obtained to better understand the operation of the system. Excessively long queues are often seen in areas where v/c ratios exceed standards.

Development Scenario 1

For Development Scenario 1, both alternatives show the intersection of Fern Valley Road at OR99 being slightly over standard. The southbound queue on OR99 approaching Fern Valley Road is at least 1000 feet long. The westbound queues along Fern Valley Road between OR99 and the interchange are almost continuous; taking up the majority of the segment length. Figures B4 through B10 show the v/c ratios and queues for Development Scenario 1. The interchange area will experience significant congestion without any new capacity or land use changes especially along OR 99 and east of I5.

Fern Valley Thru Alternative

The northbound queue on South Phoenix Road at Fern Valley Road is more than 1000 feet long. This will cause issues with the intersecting roadways along South Phoenix Road. The eastbound queue at Fern Valley Road and North/South Phoenix Road extends onto the northbound off-ramp. The intersection of Fern Valley Road and North/South Phoenix Road is overcapacity. See Table 1 for critical v/c ratio comparison.

North Phoenix Thru Alternative

The intersection of South Phoenix Road Extension and North Phoenix Road is overcapacity; the westbound queue is 1500 feet long and almost reaches the South Phoenix Road and Fern Valley Road intersection. The intersection of South Phoenix Road and Fern Valley Road is also overcapacity. See Table 2 for critical v/c ratio comparison.

Development Scenario 2

In Development Scenario 2 these issues described for Development Scenario 1 have gotten worse. The southbound queue on OR99 now approximately a mile long. The intersection of Fern Valley Road and the northbound ramp terminal is now over standard. Figures C4 through C10 show the v/c and queues for Development Scenario 2. While the v/c's at the interchange are not over standard, the related queuing along OR99, Fern Valley Road, and on I5 indicates that the interchange area and related roadway system has reached or exceeded capacity to handle traffic or any new growth.

Fern Valley Thru Alternative

All the traffic issues from Development Scenario 1 have gotten worse. The eastbound queue at Fern Valley Road and North/South Phoenix road now extends all the way to I5 mainline. There is significant slowing on I5 southbound mainline and the southbound off-ramp. See Table 1 for critical v/c ratio comparison.

North Phoenix Thru Alternative

The westbound queue at South Phoenix Road extension and North Phoenix Road now extends past the intersection of South Phoenix Road and Fern Valley Road. There is significant slowing on I5 mainline northbound and southbound. See Table 2 for critical v/c ratio comparison.

Table 1: Fern Valley Thru Critical Volume to Capacity Ratios[1]

	Base Scenario	Scenario 1	Scenario 2	Scenario 2 w/South Stage
Fern Valley Road at OR99[2]	0.75	**0.87**	**0.88**	**0.89**
Fern Valley Road at NB Ramps	0.52 0.68		**0.76**	0.59
Fern Valley Road at N/S Phoenix Road	0.68	**1.04**	**1.26**	**1.10**

[1]Black-shaded cells represent v/c ratios that are exceeding HDM mobility standards.
[2]The v/c ratios shown in this table for Fern Valley Road at OR 99 include the additional lanes that are part of the Capacity Expansion measure.

Table 2: North Phoenix Thru Critical Volume to Capacity Ratios[1]

	Base Scenario	Scenario 1	Scenario 2	Scenario 2 w/South Stage
Fern Valley Road at OR99[2]	0.75	**0.87**	**0.88**	**0.89**
Fern Valley Road at NB Ramps	0.52 0.68		**0.76**	0.59
N Phoenix Road at South Phoenix Road Extension	0.60	**1.21**	**1.35**	**1.25**
South Phoenix Road at Fern Valley Road	0.40	**>2.00**	**>2.00**	**>2.00**

[1]Black-shaded cells represent v/c ratios that are exceeding HDM mobility standards.
[2]The v/c ratios shown in this table for Fern Valley Road at OR 99 include the additional lanes that are part of the Capacity Expansion measure.

Development Scenario 2 with South Stage Overcrossing

Figures D4 through D6 show the v/c ratios for Development Scenario 2 with the South Stage Extension. The addition of the South Stage Road extension has increased the volumes on I5 as well as on OR99 South of Fern Valley Road. Overall, the volumes on Fern Valley Road, North Phoenix Road, and OR99 north of Fern Valley Road, have decreased. The v/c ratio at Fern Valley Road and OR99 is slightly higher than it was for Development Scenario 2. These changes in volume have improved the v/c ratios on the eastside in both alternatives, but they are still overcapacity. While the South Stage Road extension is a good addition to the roadway system, additional connections will be necessary to handle the Development Scenario 2 volumes.

IAMP Measures

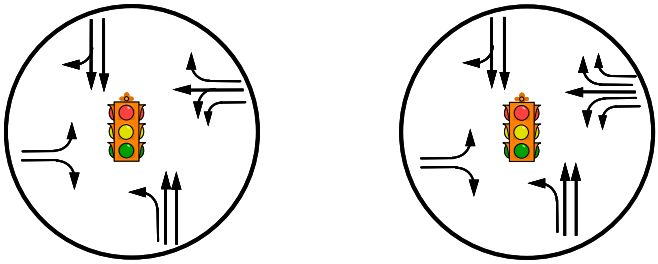
This section covers two out of the ten of the measures covered in the IAMP; the Capacity Expansion Measure and the Trip Budget Measure. These are the measures that are dependent on the traffic analysis. The IAMP document provides additional information on these and the other measures.

Capacity Expansion

This measure would improve intersections with v/c ratios that are over standard by adding capacity. There are two parts to this measure:

The first part will be built as part of the Fern Valley Interchange project. It includes adding an additional exclusive left and an additional exclusive right turn lane at the intersection of Fern Valley Road and OR 99.[1]

Illustration 1: Fern Valley Road at OR 99



BUILD **BUILD WITH ADDED CAPACITY**

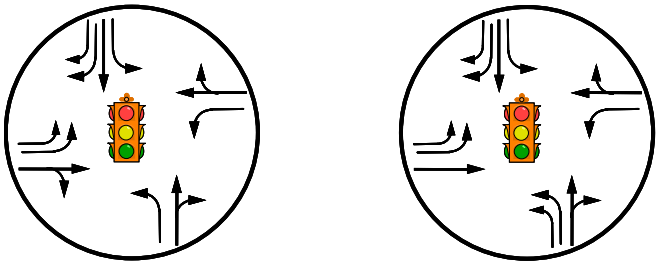
The second part of the measure is the proposed capacity expansion which is alternative specific. The illustrations below show the proposed changes. Table 3 shows a comparison of the v/c ratios with and without capacity expansion.

[1] Since these improvements have been added to the EA analysis, all figures and tables within this memorandum reflect this configuration.

Fern Valley Thru

For the Fern Valley Thru Alternative a second northbound left-turn lane and an exclusive eastbound right-turn lane would be added to the intersection of Fern Valley Road and North/South Phoenix Road, reducing the v/c ratio from 1.04 to 0.82.

Illustration 2: Fern Valley Road at North/South Phoenix Road

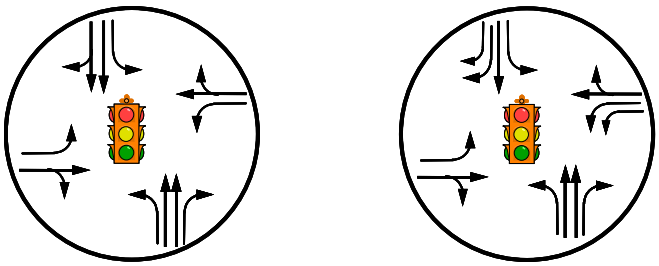


BUILD **BUILD WITH ADDED CAPACITY**

North Phoenix Thru

For the North Phoenix Thru Alternative this would include a second westbound left-turn lane at the intersection of Fern Valley Road/North Phoenix Road and South Phoenix Road Extension, as well as turning the intersection at Fern Valley Road and South Phoenix Road into a four-way stop with a southbound right turn lane[2].

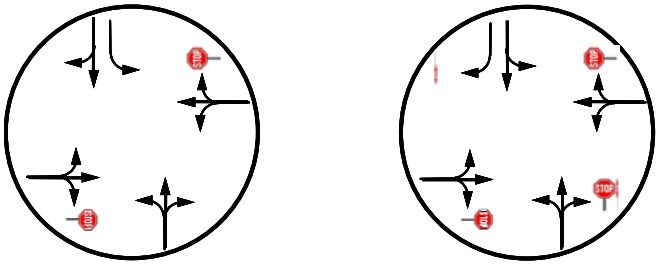
Illustration 3: North Phoenix Road at South Phoenix Road Extension



BUILD **BUILD WITH ADDED CAPACITY**

[2] Although not part of the original North Phoenix Thru alternative, a southbound right turn lane does currently exist at the intersection of Fern Valley Road and South Phoenix Road.

Illustration 4: South Phoenix Road at Fern Valley Road



BUILD **BUILD WITH ADDED CAPACITY**

Table 3: V/C Ratios for Capacity Expansion Measure[1]

Intersection	Alternative	Scenario 1	Scenario 1 with Capacity Expansion
Fern Valley Road at OR 99	Both	**1.15**	**0.87**
Fern Valley Road at N/S Phoenix Road	Fern Valley Thru	**1.04**	0.82
N Phoenix Road at South Phoenix Road Ex.	North Phoenix Thru	**1.21**	0.80
South Phoenix Road at Fern Valley Road	North Phoenix Thru	**>2.00**	0.43

[1]Black-shaded cells represent v/c ratios that are exceeding HDM mobility standards.

Trip Budget

The Trip Budget Measure works in combination with the Capacity Expansion Measure. The City of Phoenix will adopt an amendment to its Land Development Code to establish a trip budget overlay zone. This zone will include land that the Phoenix Comprehensive Plan designates Interchange Business as well as the property that is bordered by Fern Valley Road to the north, OR 99 to the west, and East Bolz Lane to the east.

Allowable growth is defined as the number of afternoon peak-hour trips that can be generated by parcels within the overlay zone without exceeding the OHP mobility standards. This calculation is based on RVCOG model volumes. The allowable growth is a set number and cannot change. It equals the total trips allowed minus the existing trips. The intersection of Fern Valley Road and OR99 has the highest v/c ratio of the intersections in the project area (0.87). Because of this, it was used to determine how much growth beyond what is already in Development Scenario 1 the system could handle. For the purpose of the trip budget analysis, the OHP mobility standard was used (0.90). The additional growth that the Fern Valley Road & OR99 intersection can handle makes up the 3 percent difference between the OHP standard and the intersection v/c ratio.

Parcel Budgets are defined as the afternoon peak-hour primary[3] trips parcels could generate when developed or redeveloped without City approval of additional trips from the Trip Bank. The Parcel Budget was figured by taking the number of vacant developable acres multiplied by 20 trips per acre plus any trips from existing development. The parcel budget rate can be adjusted, which would either increase or decrease the Trip Bank.

The Trip Bank Trips are defined as those trips that are available to be allocated at the City's discretion. Trip Bank Trips are calculated by subtracting the parcel budget trips, and urban reserve trips from the allowable growth. Urban Reserve Trips are the number of new trips that are generated in the model by PH-5, PH-10, and MD-5. Table 4 shows the derivation of the Trip Budget.

Table 4: Trip Budget

	PM Peak-hour Trips
Allowable Growth in Overlay Zone District and Urban Reserve Areas	2219
Trips from new development within the overlay zone allowed by parcel budgets[1]	1084
Trips from New Development within the Urban Reserves	156
Trip Bank Trips	979

[1]Based on 20 trips per acre.

Summary

The traffic analysis for the IAMP has shown a need for measures that can protect the capacity of the interchange and the critical intersections within the study area. Development Scenario 1 identified the critical locations within the project area that needed to be addressed by the IAMP. IAMP measures will be used to improve these conditions.

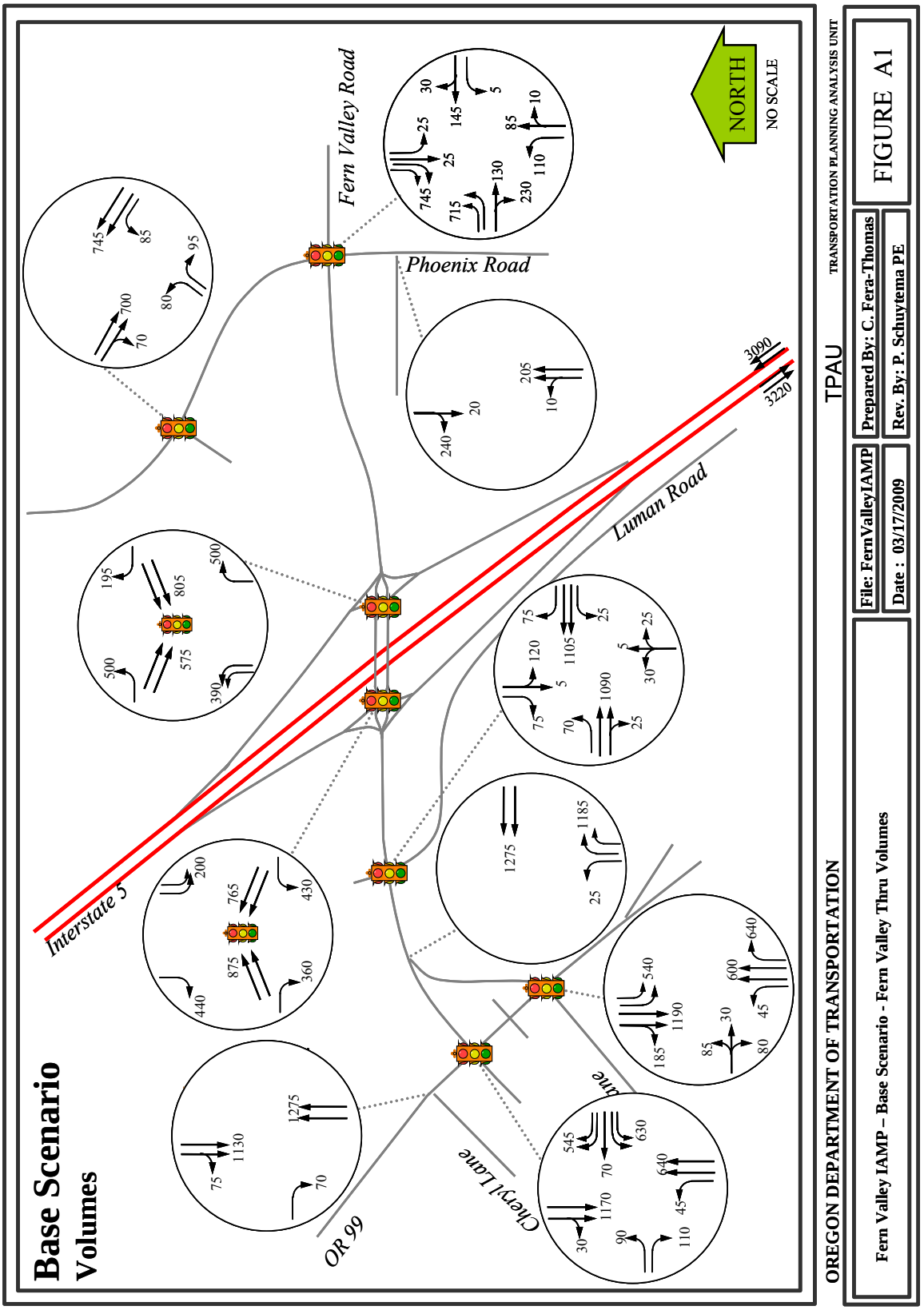
Scenario 2 was used to identify what might occur when the area develops beyond what is in the City of Phoenix Comprehensive Plan. This analysis verified what the critical locations are, confirming what was seen in Scenario 1. Scenario 2 with the South Stage Overcrossing showed improvement in certain locations, but overall was not a great enough improvement system-wide to make it a valid solution to the capacity issues.

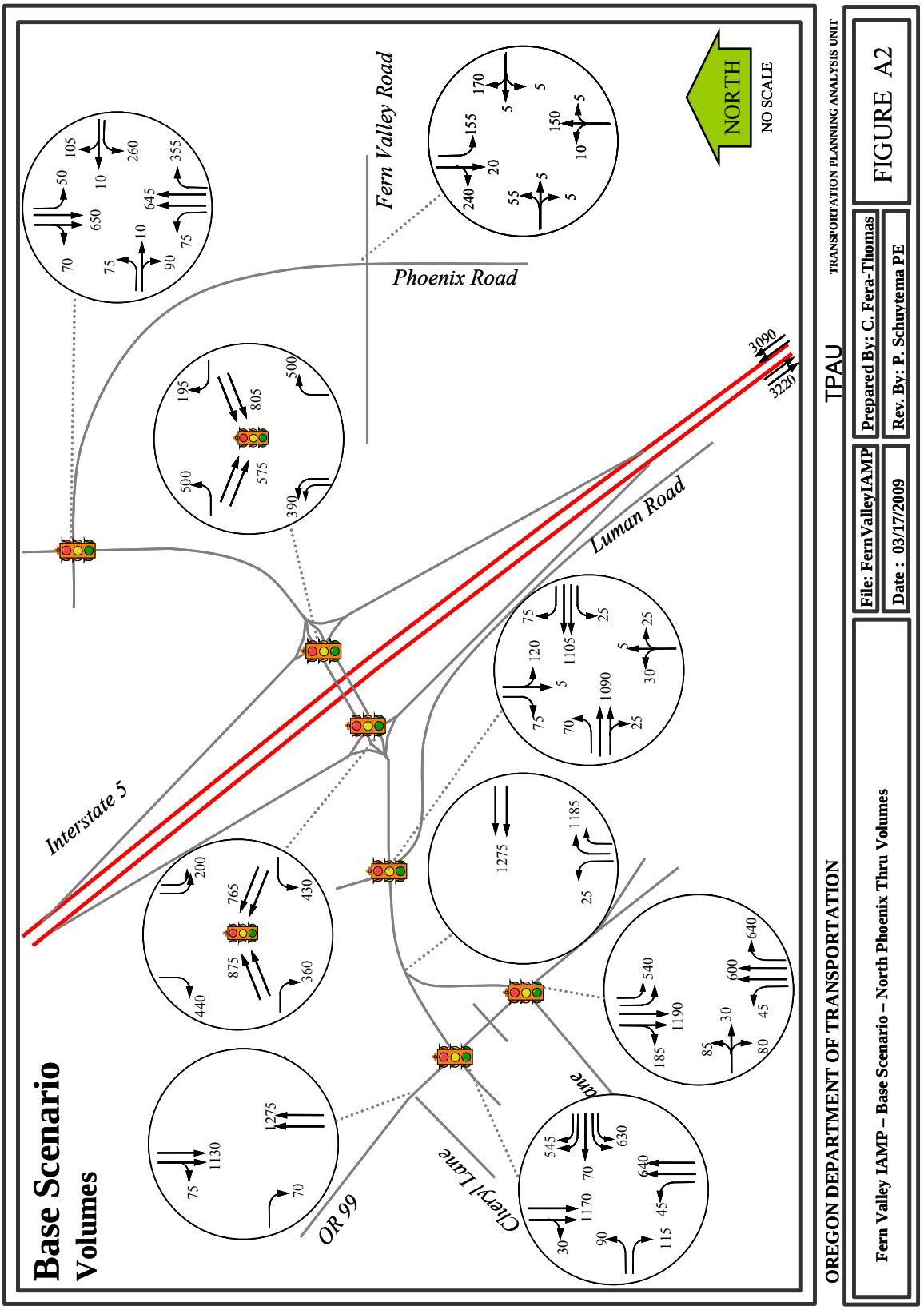
If there are any questions or comments, please contact me at 503-986-4119.

[3] Primary trips are new trips to and from parcels, not including pass-by or diverted link trips.

cc: Anna Henson, Environmental Project Coordinator, Region 3
Kate Lyman, URS
Dick Leever, Project Leader, Region 3
John Kelly, URS
John McDonald, Long Range Planner, Region 3
Nancy Reynolds, URS
Brian Sheadel, Roadway Designer, Region 3
Dorothy Upton, Transportation Planning Analysis Unit
File

ANNEX A - BASE SCENARIO


Base Scenario
Volumes
Interstate 5
Fern Valley Road
Phoenix Road
Luman Road
OR 99
Cheryl Lane
NORTH
NO SCALE
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Base Scenario - Fern Valley Thru Volumes
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE A1


Base Scenario
Volumes
Interstate 5
Fern Valley Road
Phoenix Road
Luman Road
OR 99
Cheryl Lane
NORTH
NO SCALE
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
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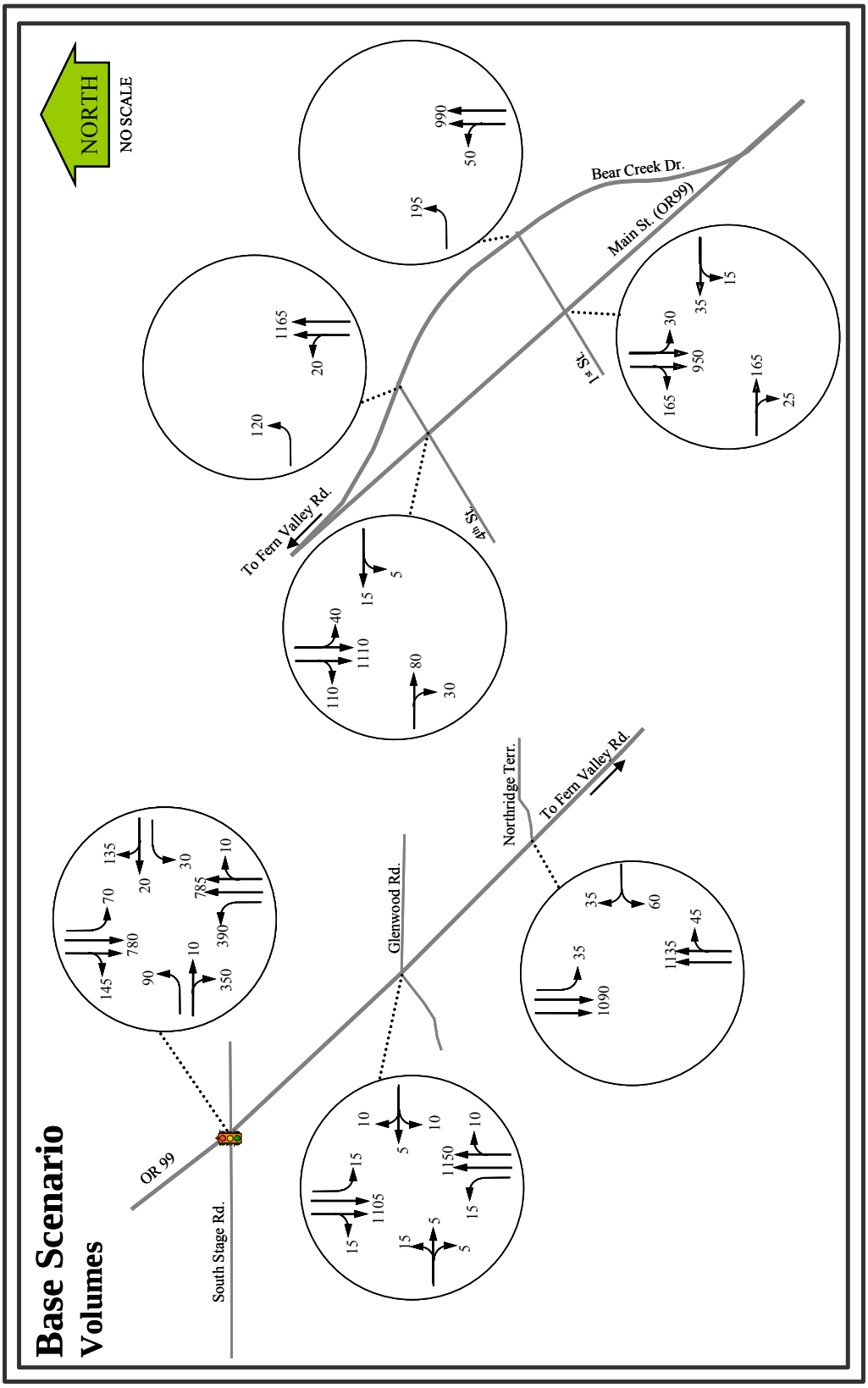
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE A2



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TPAU

TRANSPORTATION PLANNING ANALYSIS UNIT

Fern Valley IAMP – Base Scenario - Common Volumes

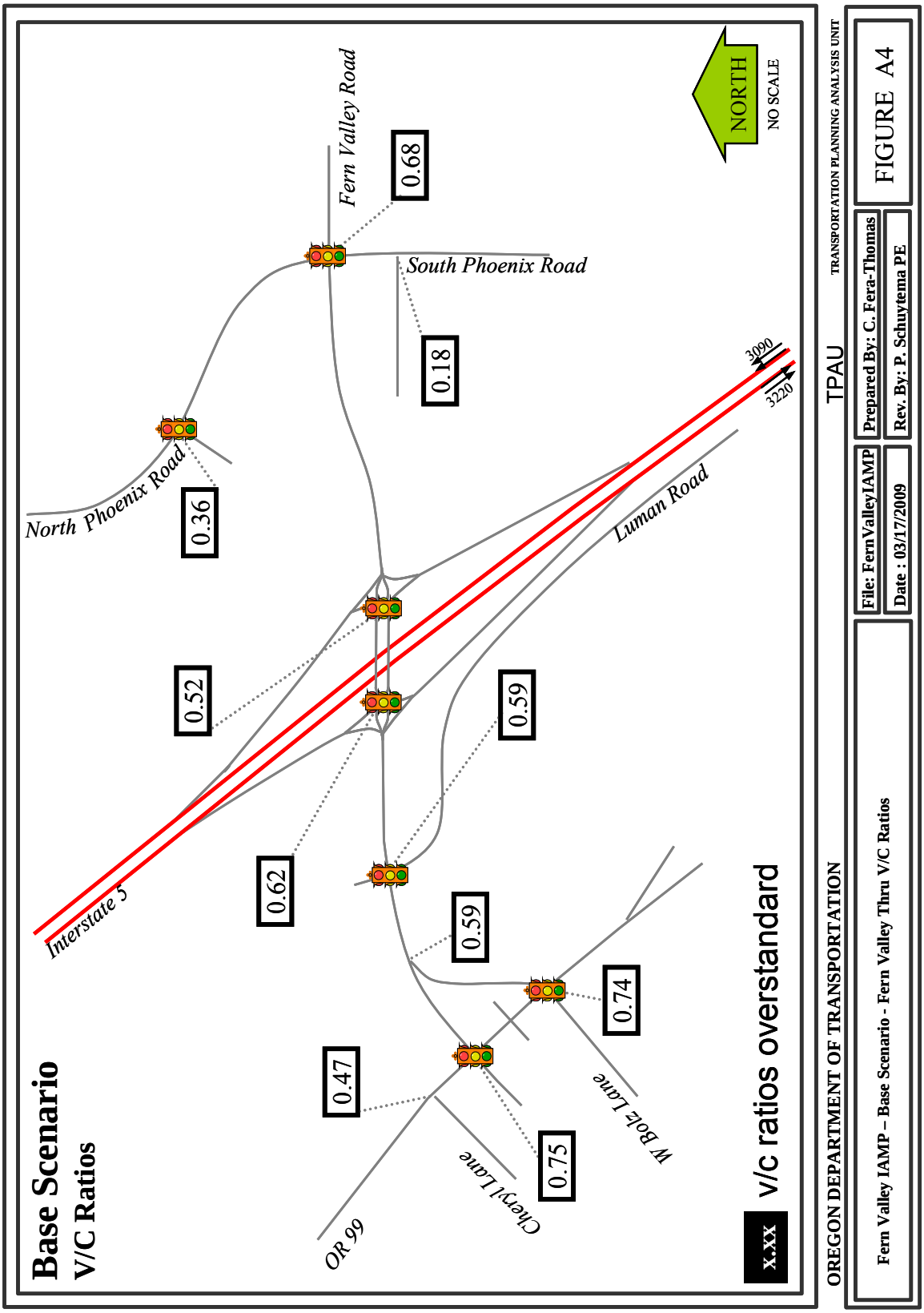
File: FernValleyIAMP

Date : 03/17/2009

Prep. By: P. Schuytema, PE

Rev. By: D. Norval, PE

FIGURE A3


Base Scenario
V/C Ratios
Fern Valley Road
South Phoenix Road
North Phoenix Road
Luman Road
Interstate 5
OR 99
Cheryl Lane
W Bolz Lane
0.68
0.18
0.36
0.52
0.59
0.62
0.59
0.74
0.47
0.75
3090
3220
NORTH
NO SCALE
x.xx
v/c ratios overstandard
OREGON DEPARTMENT OF TRANSPORTATION
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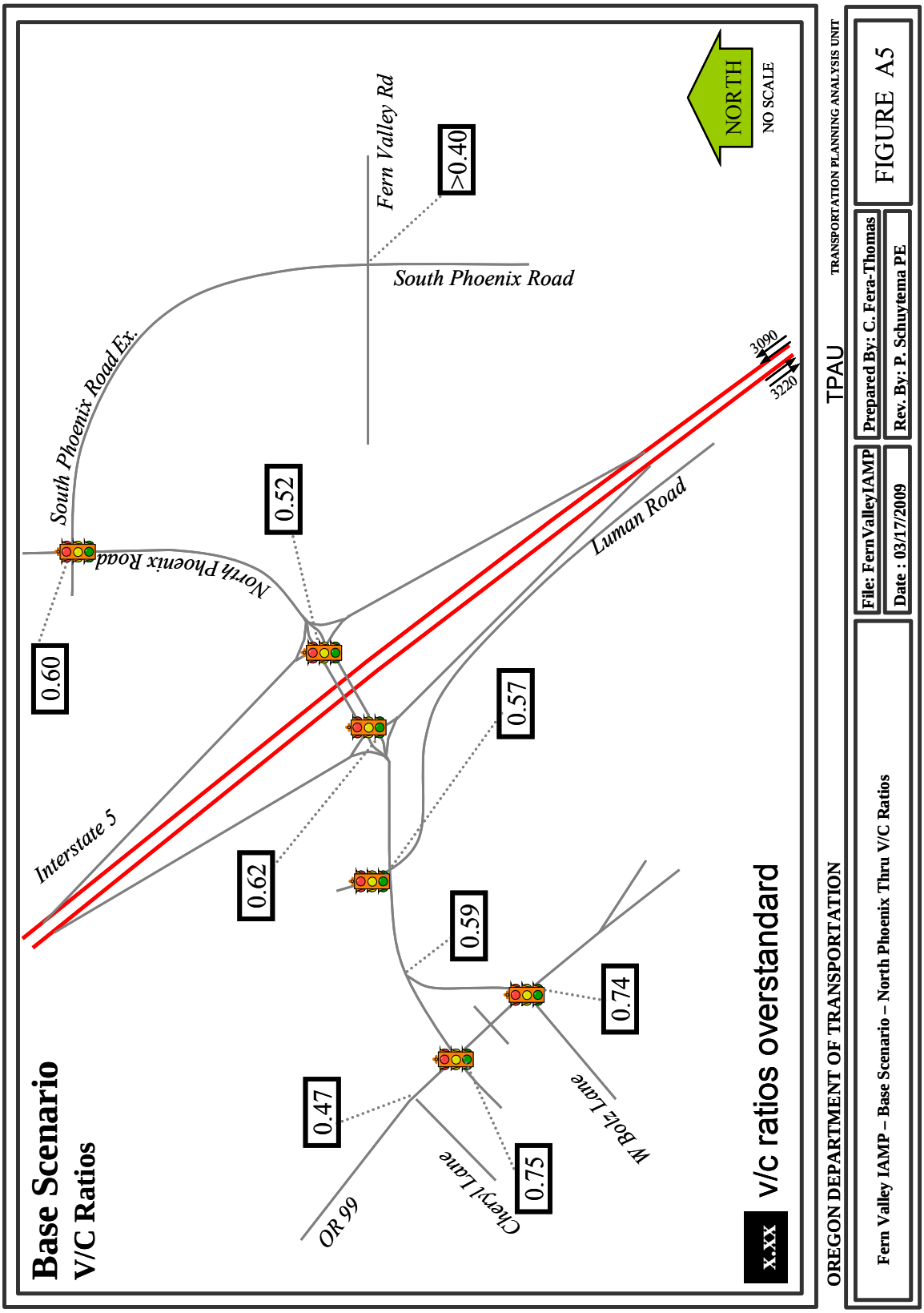
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Base Scenario - Fern Valley Thru V/C Ratios
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE A4


Base Scenario
V/C Ratios
Interstate 5
South Phoenix Road Ex.
North Phoenix Road
Fern Valley Rd
South Phoenix Road
Luman Road
OR 99
Cheryl Lane
W Bolz Lane
0.60
0.52
>0.40
0.62
0.57
0.59
0.74
0.47
0.75
3090
3220
NORTH
NO SCALE
X.XX
v/c ratios overstandard
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TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Base Scenario – North Phoenix Thru V/C Ratios
File: FernValleyIAMP
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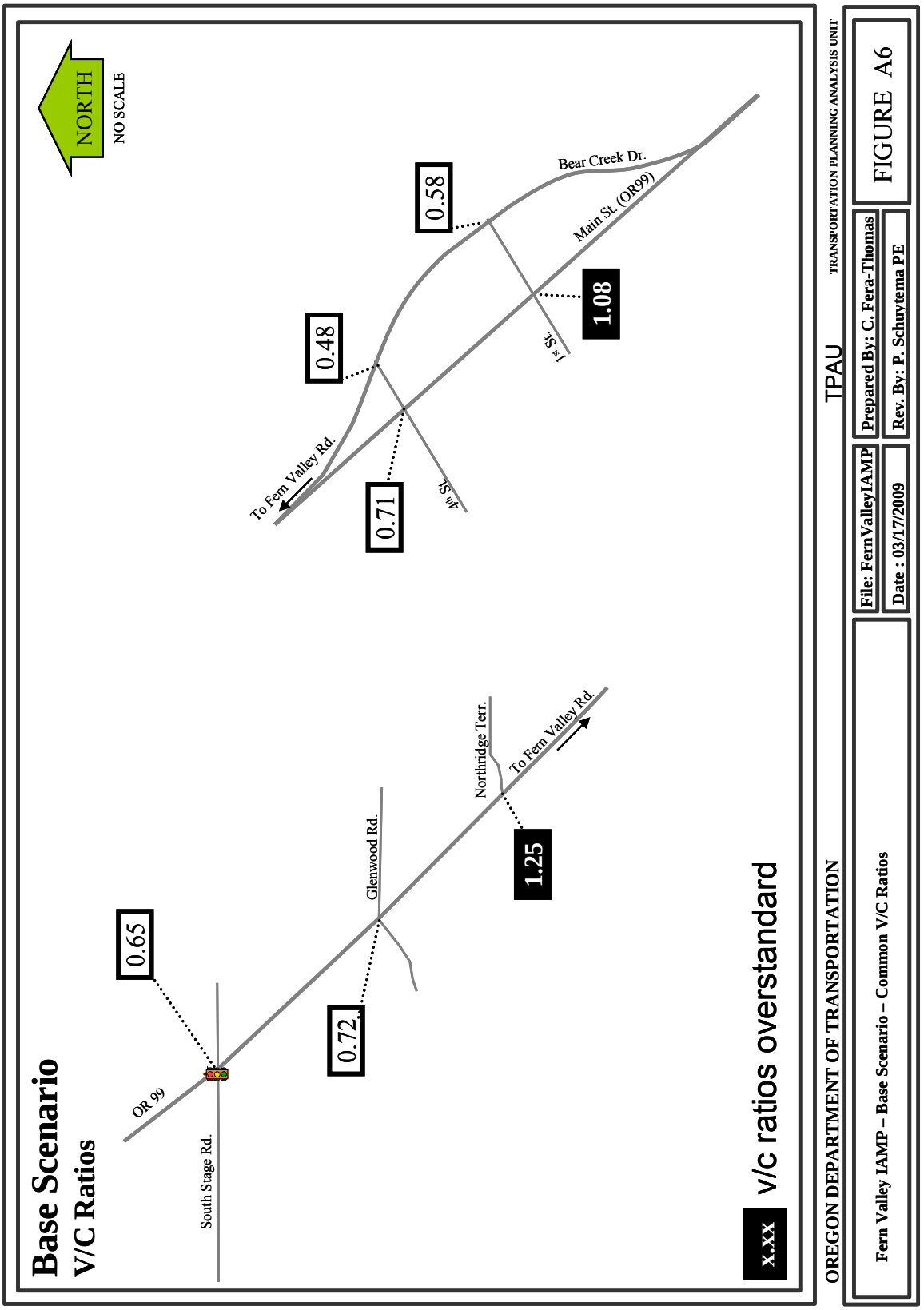
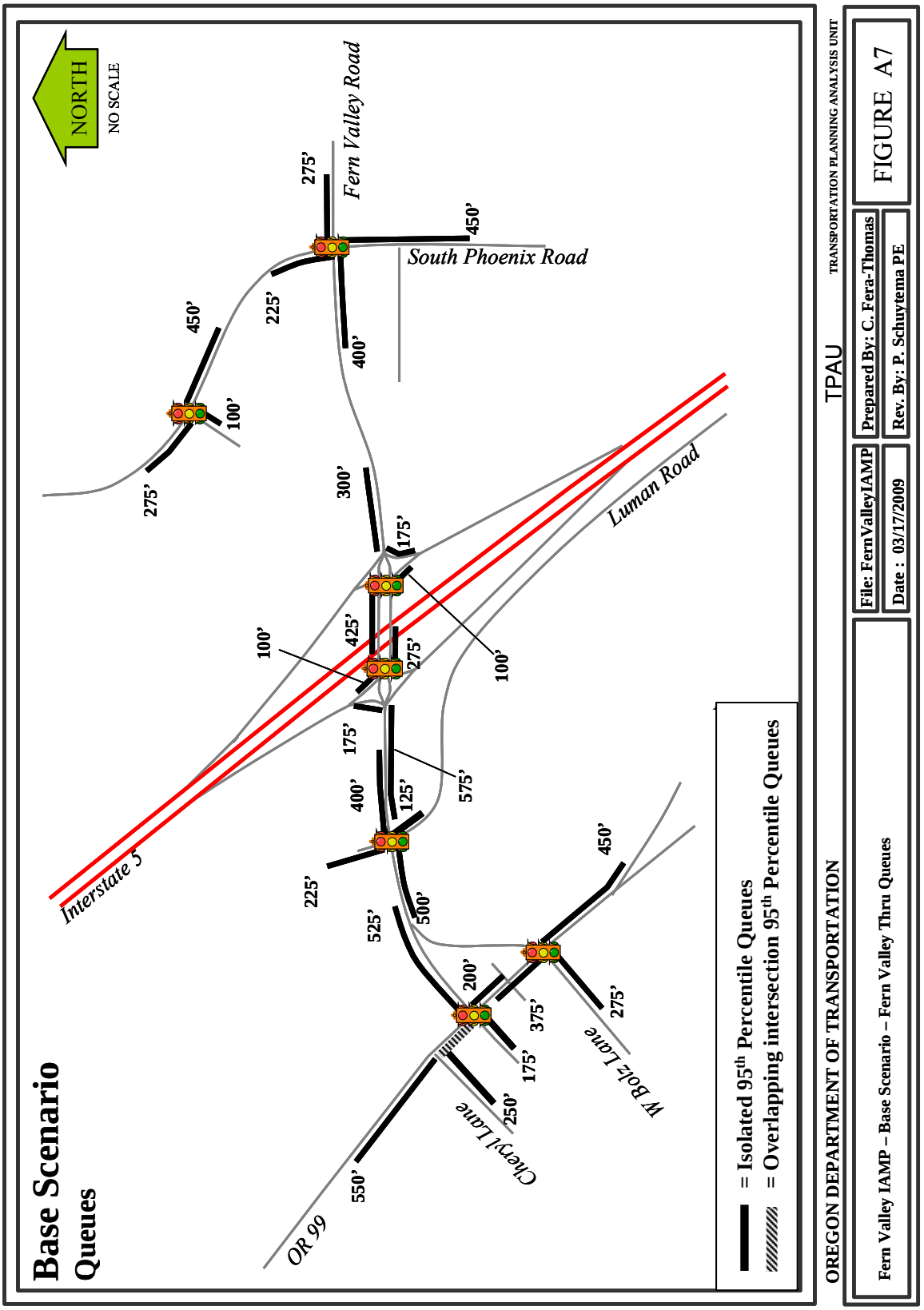
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE A5


Base Scenario
V/C Ratios
NORTH
NO SCALE
OR 99
South Stage Rd.
0.65
Glenwood Rd.
0.72
Northridge Terr.
To Fern Valley Rd.
1.25
To Fern Valley Rd.
0.71
4th St.
0.48
I St.
0.58
Bear Creek Dr.
Main St. (OR99)
1.08
X.XX
v/c ratios overstandard
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Base Scenario – Common V/C Ratios
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE A6


Base Scenario
Queues
NORTH
NO SCALE
Fern Valley Road
South Phoenix Road
Luman Road
Interstate 5
OR 99
Cheryl Lane
W Bolz Lane
275'
450'
225'
400'
100'
300'
175'
425'
575'
125'
500'
525'
200'
375'
250'
550'
= Isolated 95th Percentile Queues
= Overlapping intersection 95th Percentile Queues
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Base Scenario – Fern Valley Thru Queues
File: FernValleyIAMP
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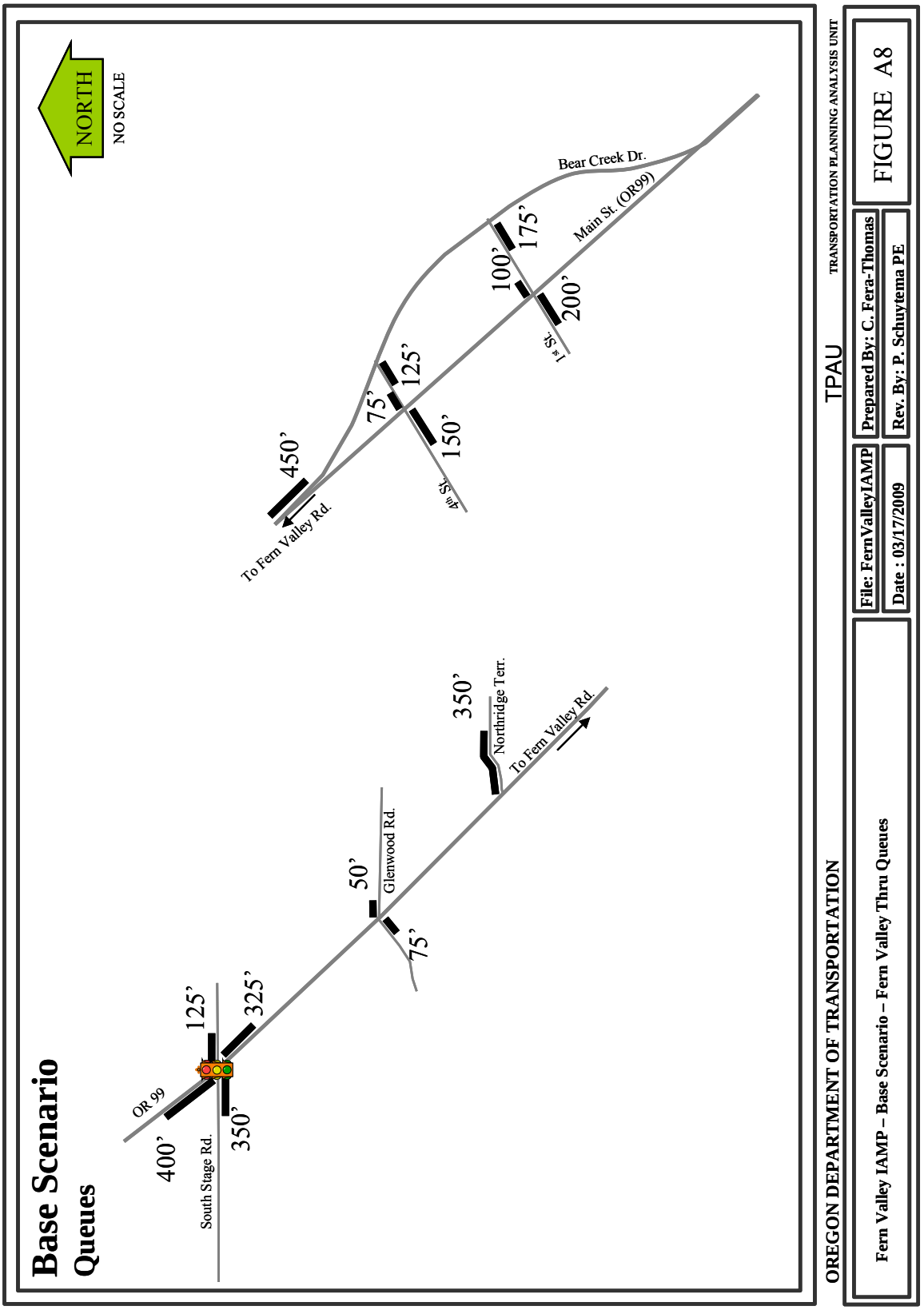
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE A7


Base Scenario
Queues
NORTH
NO SCALE
OR 99
South Stage Rd.
400’
125’
350’
325’
50’
Glenwood Rd.
75’
350’
Northridge Terr.
To Fern Valley Rd.
450’
To Fern Valley Rd.
75’
125’
150’
4th St.
100’
175’
200’
1st St.
Bear Creek Dr.
Main St. (OR99)
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Base Scenario – Fern Valley Thru Queues
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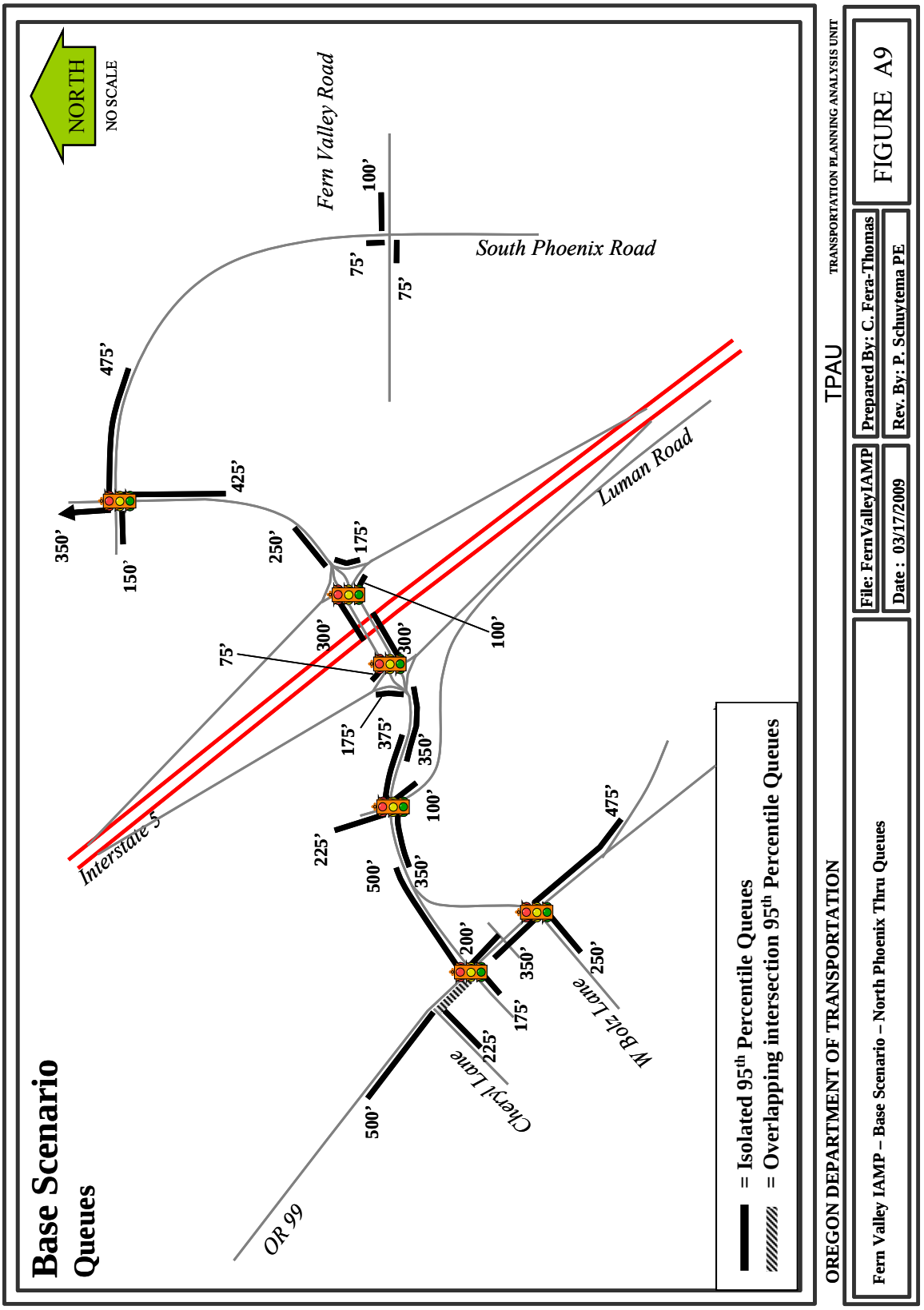
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE A8


Base Scenario
Queues
NORTH
NO SCALE
Fern Valley Road
South Phoenix Road
Luman Road
Interstate 5
OR 99
Cheryl Lane
W Bolz Lane
100'
75'
75'
475'
425'
350'
150'
250'
175'
300'
300'
75'
100'
175'
375'
350'
100'
225'
500'
350'
200'
175'
225'
500'
350'
250'
475'
= Isolated 95th Percentile Queues
= Overlapping intersection 95th Percentile Queues
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Base Scenario – North Phoenix Thru Queues
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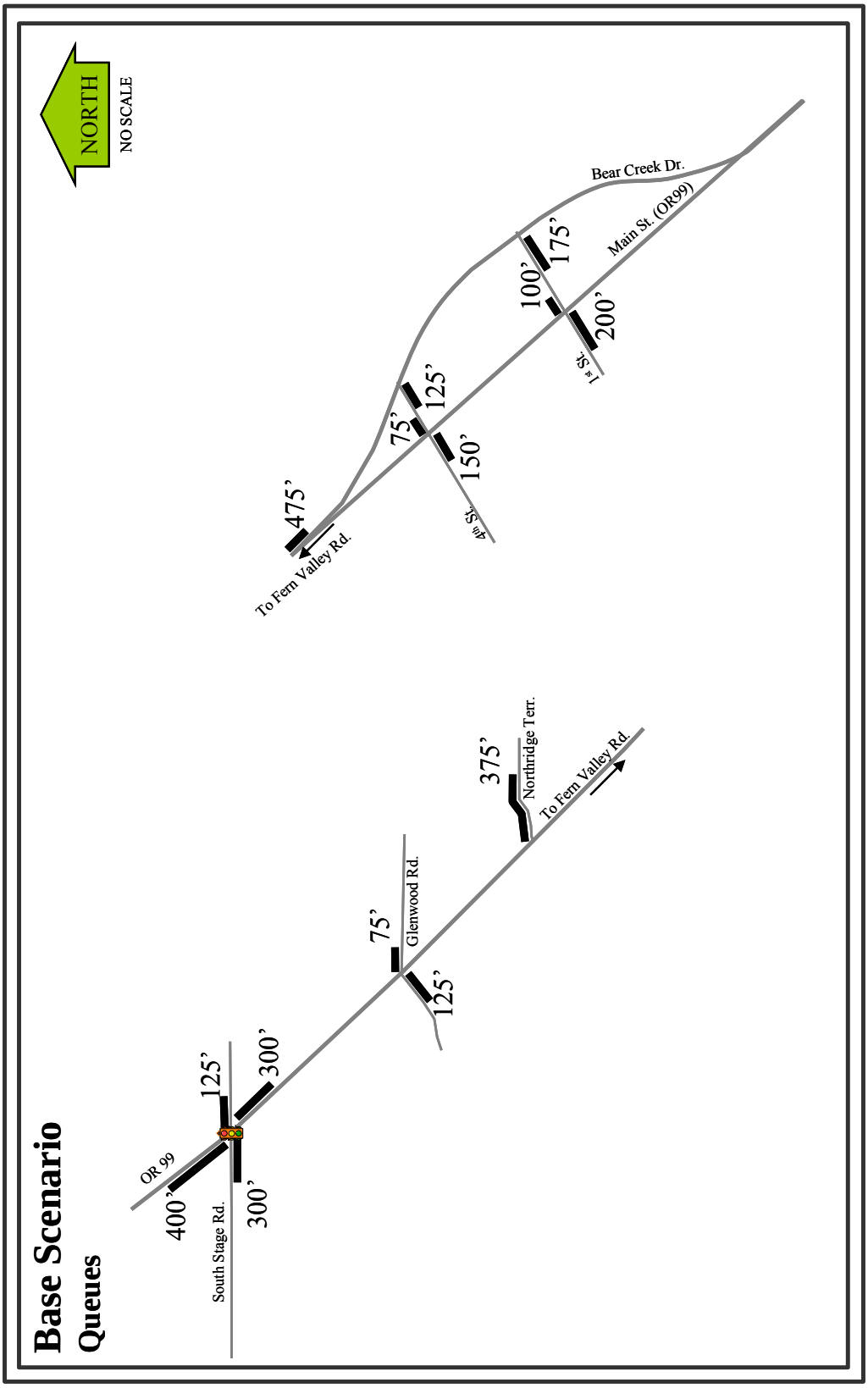
Rev. By: P. Schuytema PE
FIGURE A9



OREGON DEPARTMENT OF TRANSPORTATION

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TRANSPORTATION PLANNING ANALYSIS UNIT

Fern Valley IAMP – Base Scenario – North Phoenix Thru Queues

File: FernValleyIAMP

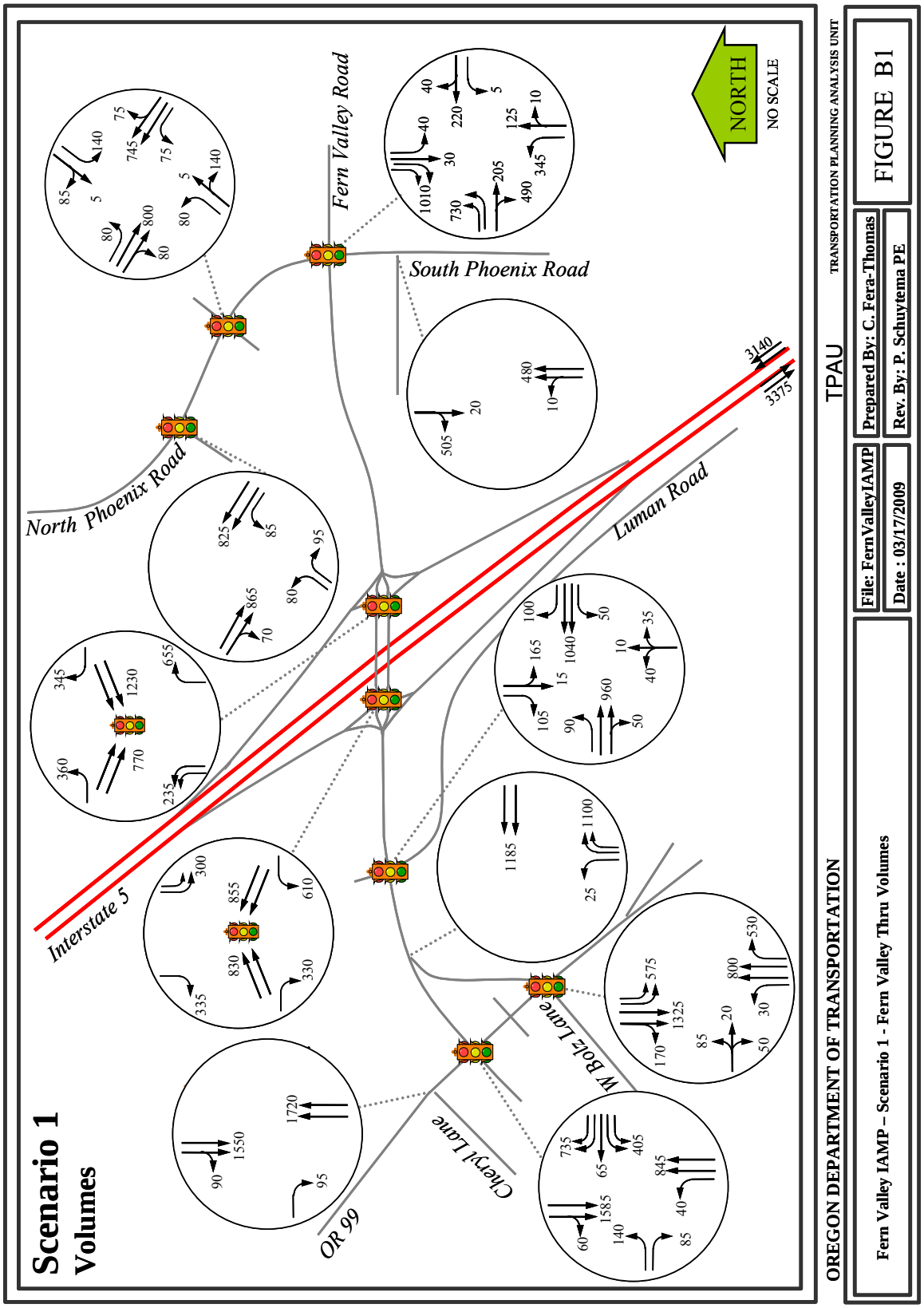
Date : 03/17/2009

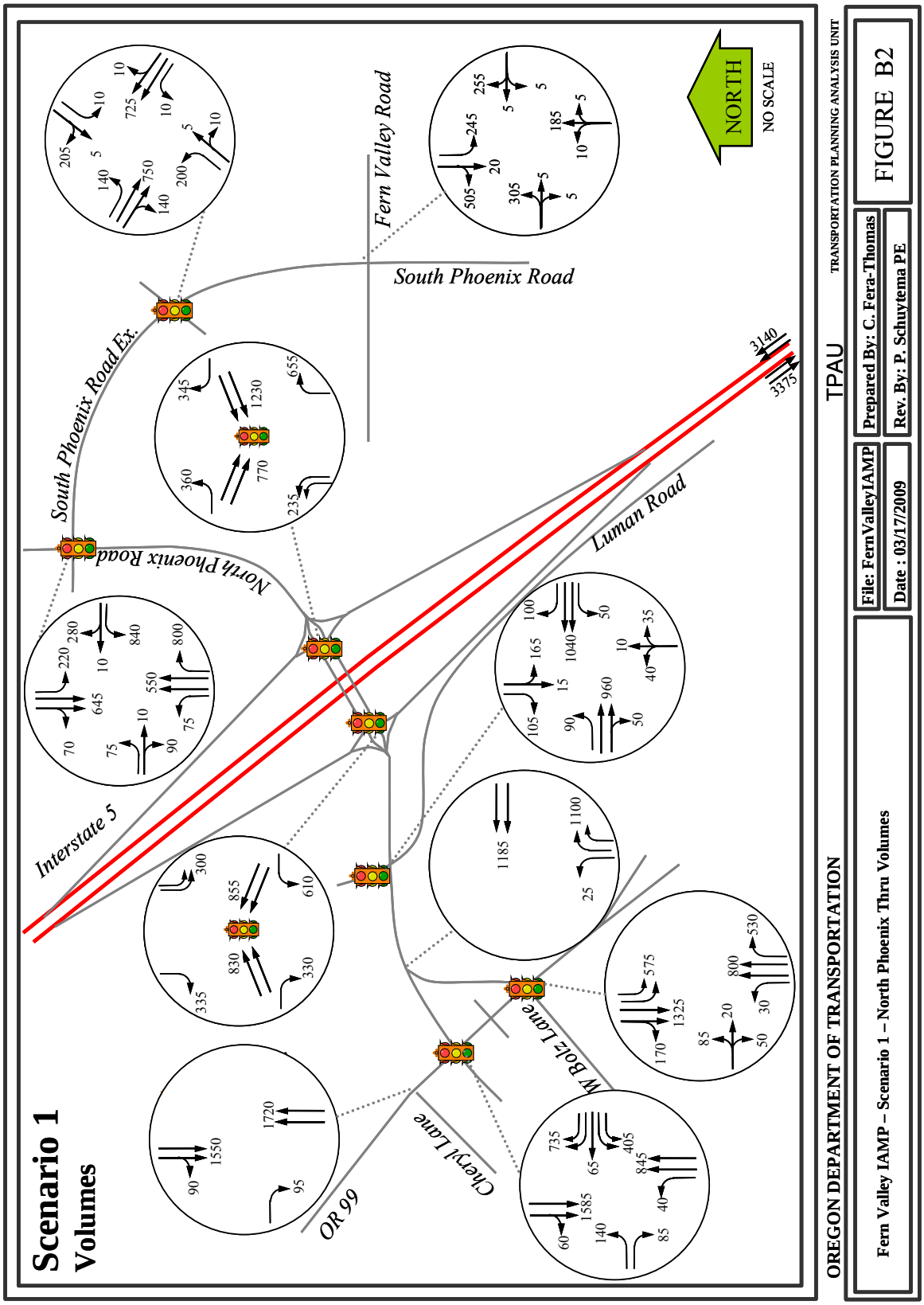
Prepared By: C. Fera-Thomas

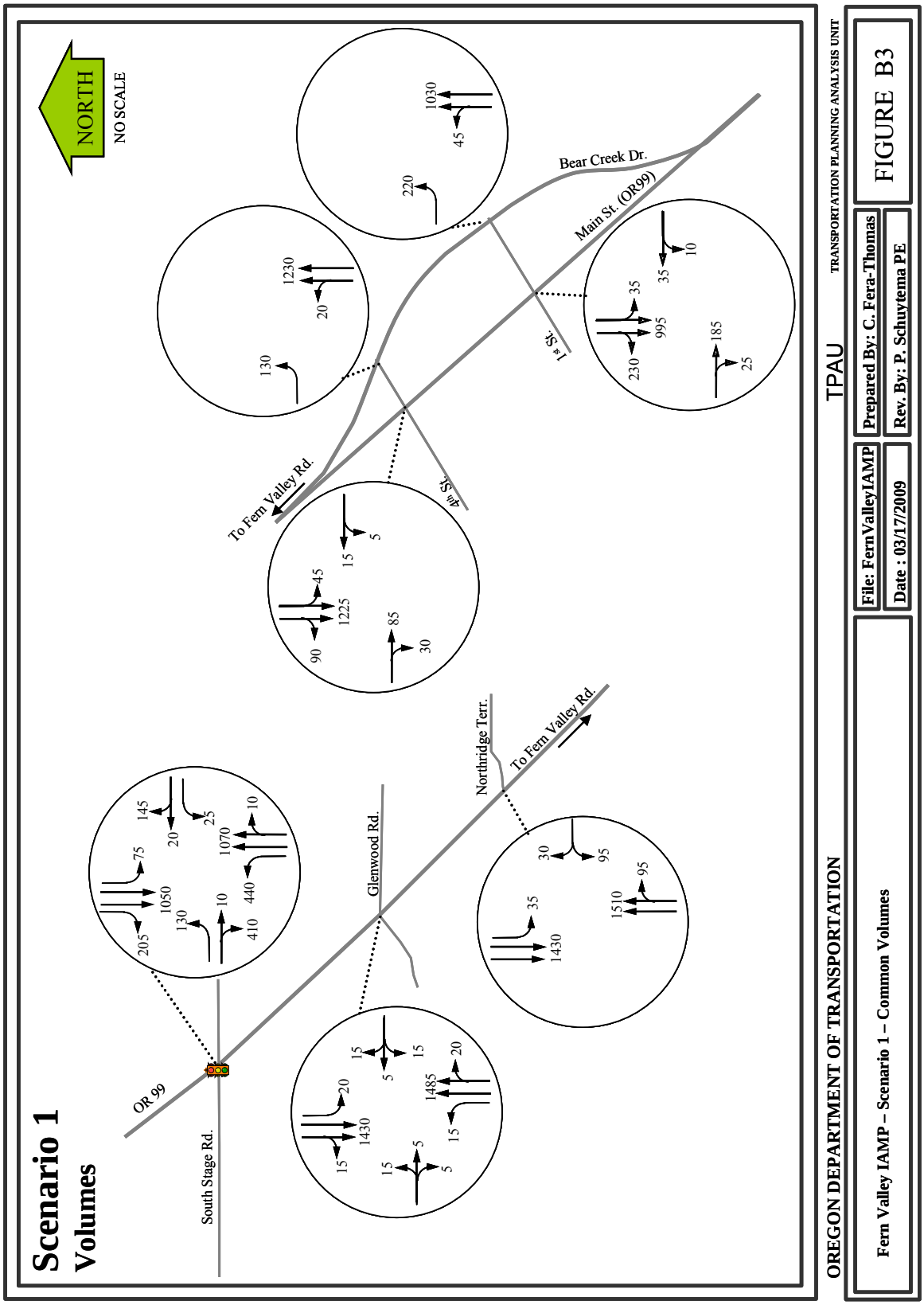
Rev. By: P. Schuytema PE

FIGURE A10

ANNEX B – SCENARIO 1


Scenario 1
Volumes
Interstate 5
North Phoenix Road
Fern Valley Road
South Phoenix Road
Luman Road
W Bolz Lane
Cheryl Lane
OR 99
NORTH
NO SCALE
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 1 - Fern Valley Thru Volumes
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE B1


Scenario 1
Volumes
Interstate 5
South Phoenix Road Ex.
North Phoenix Road
Fern Valley Road
South Phoenix Road
Luman Road
OR 99
Cheryl Lane
W Bolt Lane
NORTH
NO SCALE
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 1 – North Phoenix Thru Volumes
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE B2



OREGON DEPARTMENT OF TRANSPORTATION

TPAU

TRANSPORTATION PLANNING ANALYSIS UNIT

Fern Valley IAMP – Scenario 1 – Common Volumes

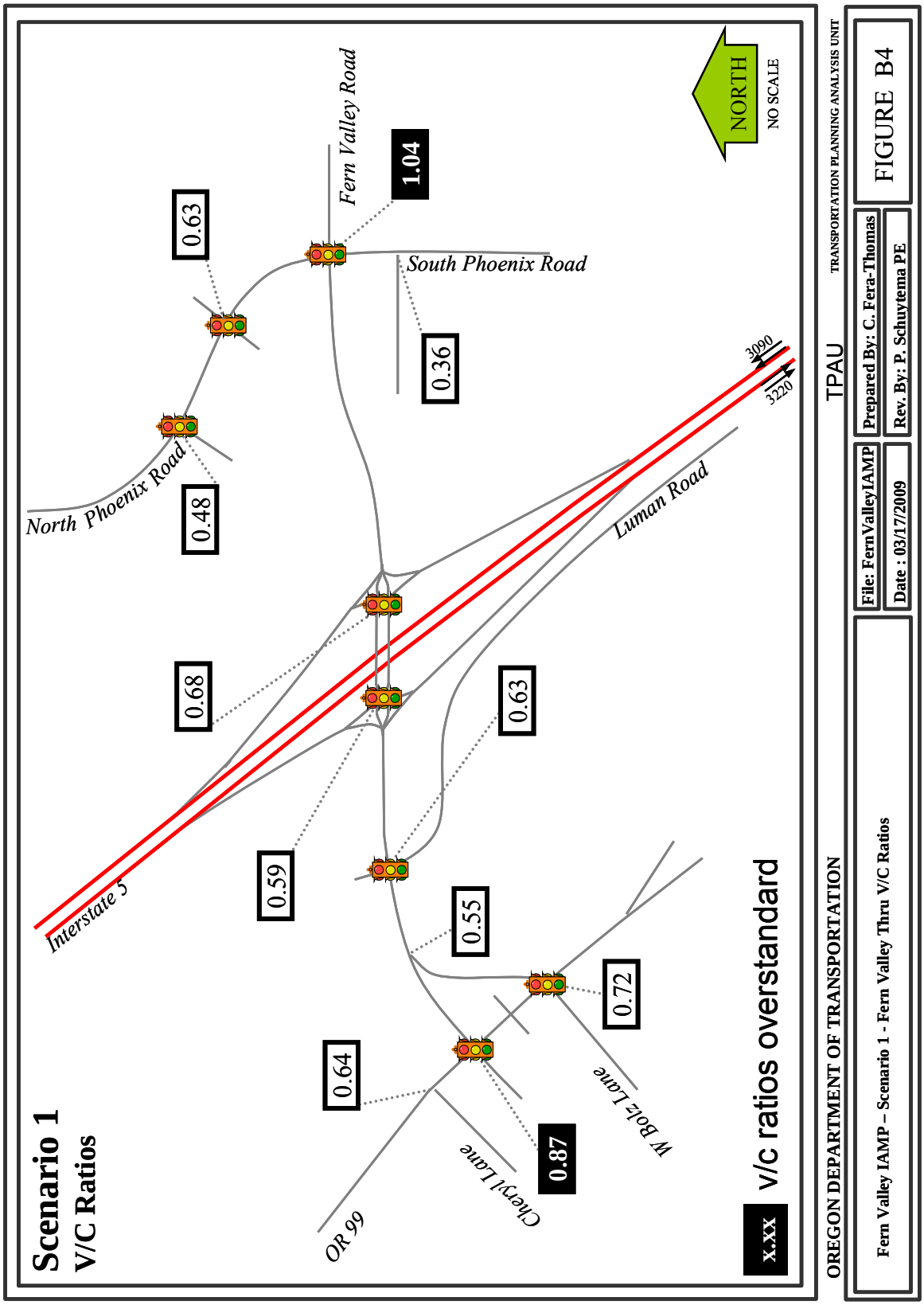
File: FernValleyIAMP

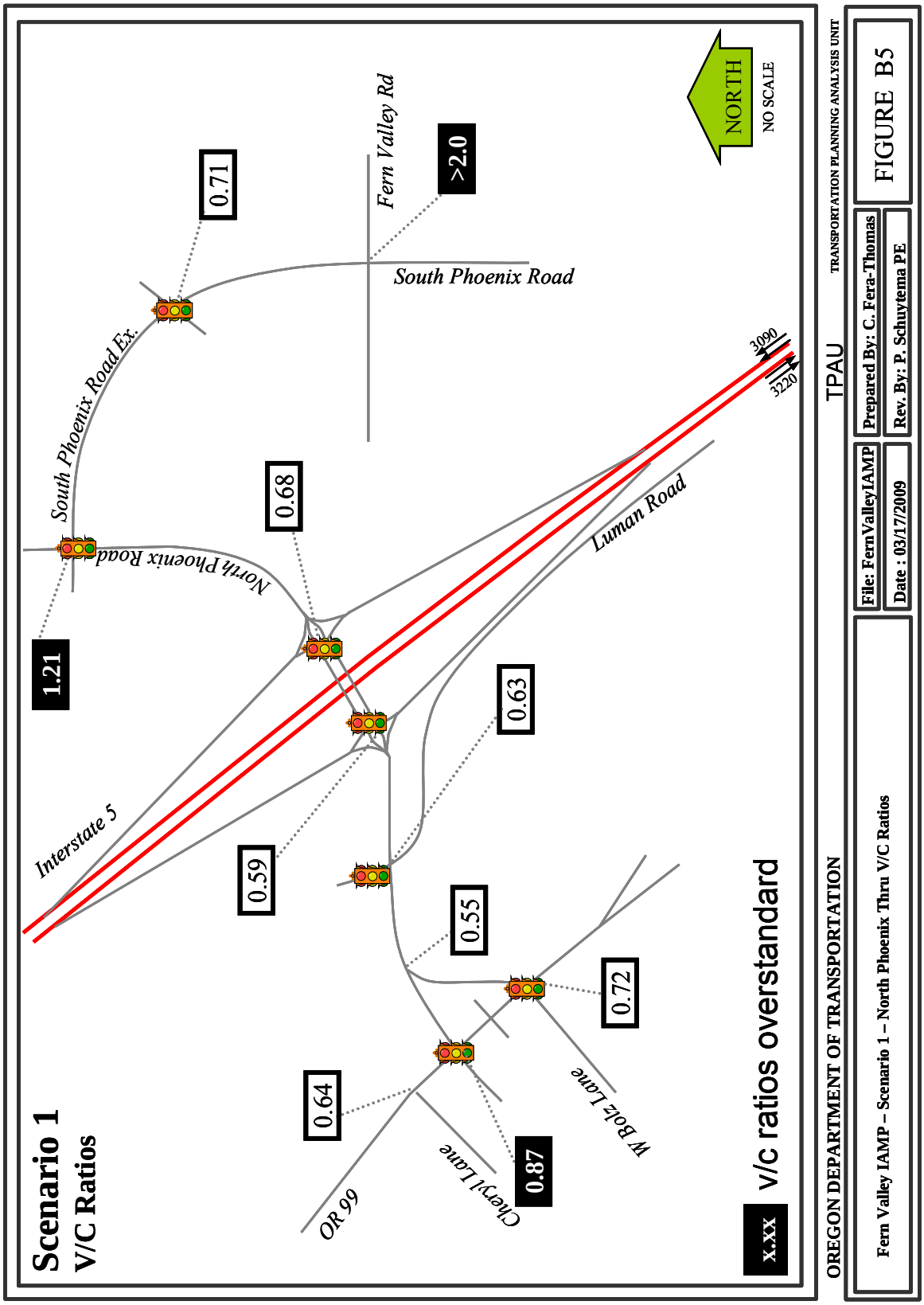
Date : 03/17/2009

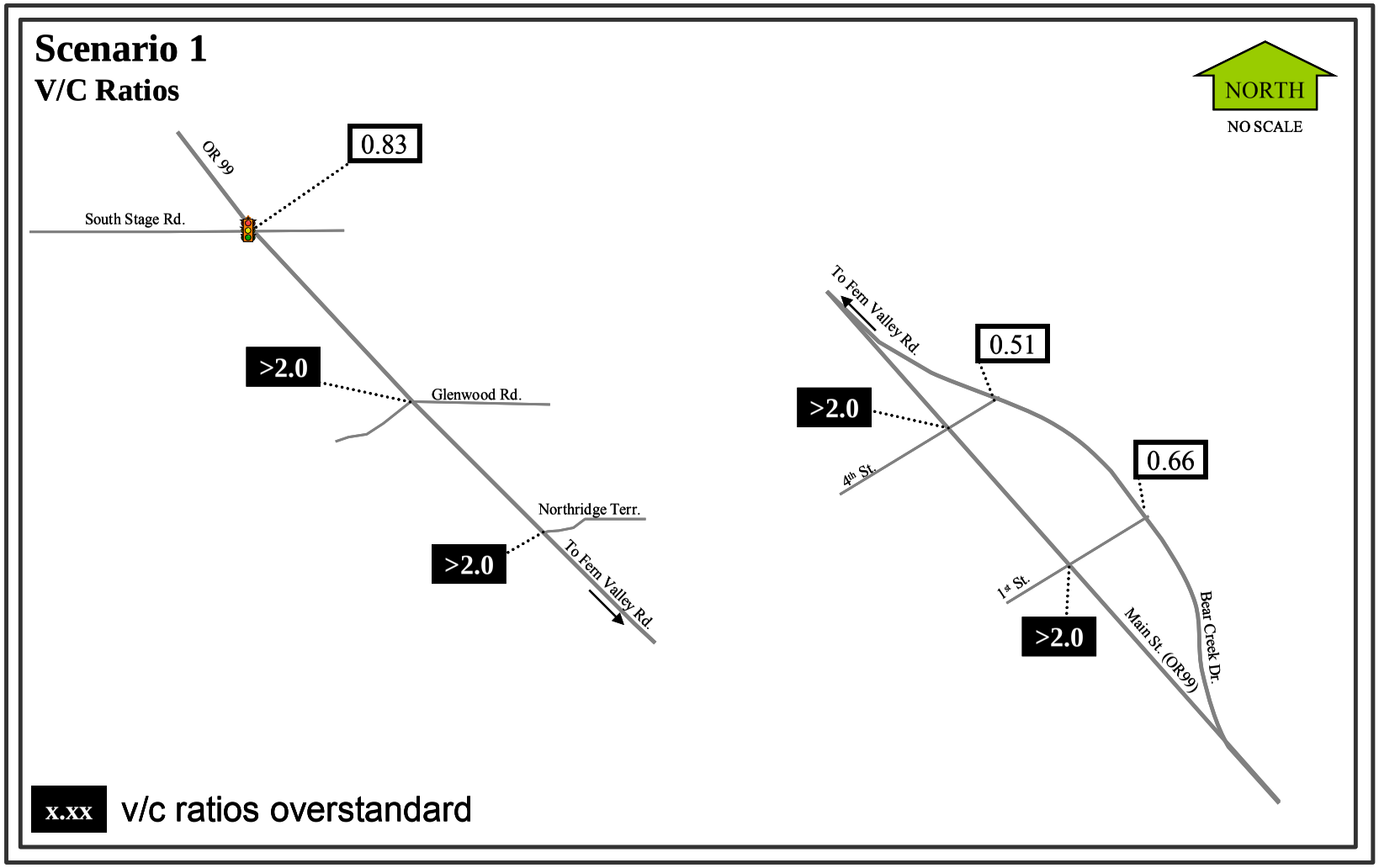
Prepared By: C. Fera-Thomas

Rev. By: P. Schuytema PE

FIGURE B3


Scenario 1
V/C Ratios
Interstate 5
North Phoenix Road
Fern Valley Road
South Phoenix Road
Luman Road
OR 99
Cheryl Lane
W Bolz Lane
0.63
0.48
1.04
0.36
0.68
0.63
0.59
0.55
0.72
0.64
0.87
3090
3220
NORTH
NO SCALE
X.XX
v/c ratios overstandard
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 1 - Fern Valley Thru V/C Ratios
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE B4


Scenario 1
V/C Ratios
Interstate 5
South Phoenix Road Ex.
North Phoenix Road
Fern Valley Rd
South Phoenix Road
Luman Road
OR 99
Cheryl Lane
W Bolz Lane
1.21
0.71
>2.0
0.68
0.59
0.63
0.55
0.72
0.64
0.87
3090
3220
NORTH
NO SCALE
X.XX
v/c ratios overstandard
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 1 – North Phoenix Thru V/C Ratios
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE B5

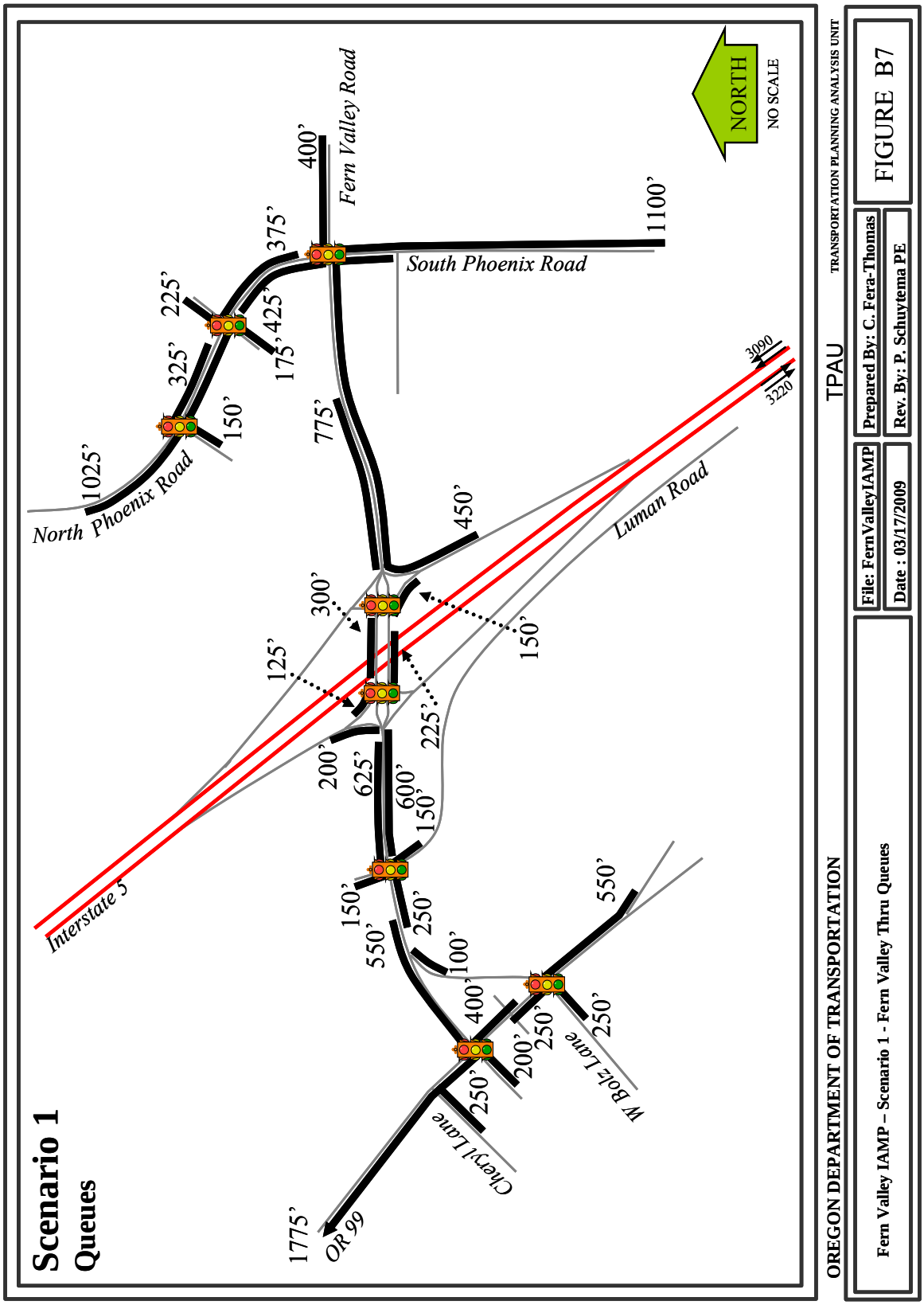


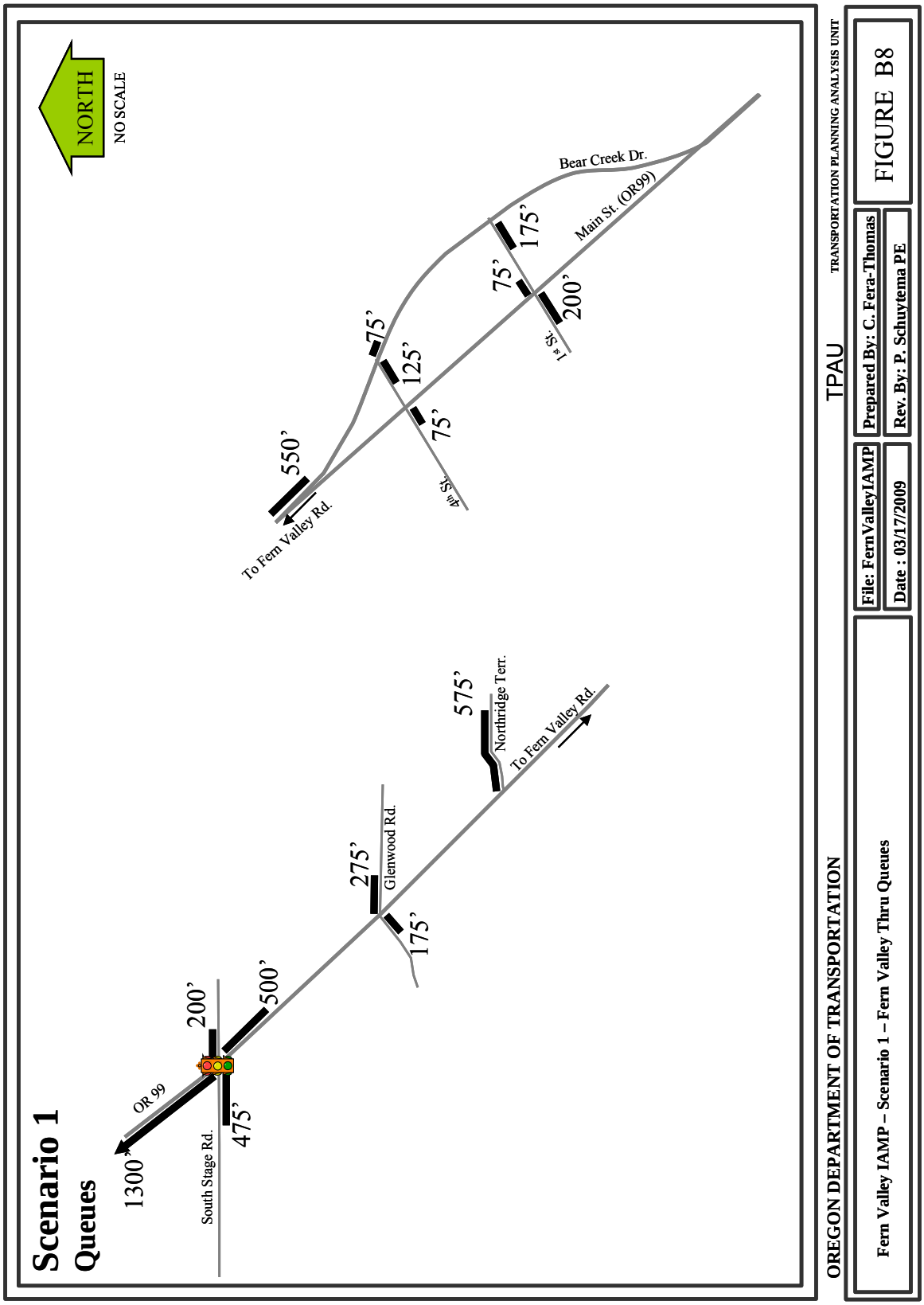
OREGON DEPARTMENT OF TRANSPORTATION

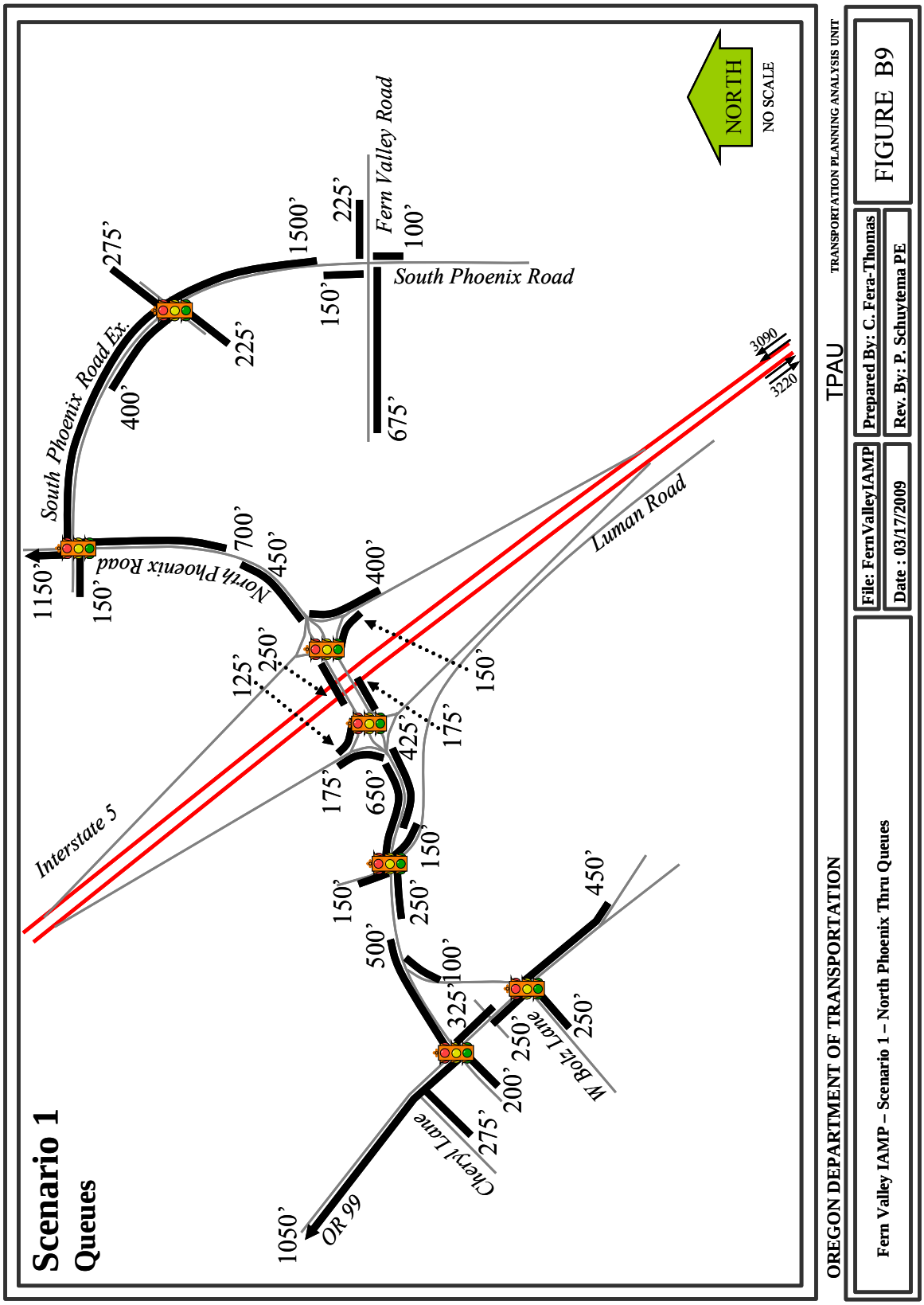
TPAU

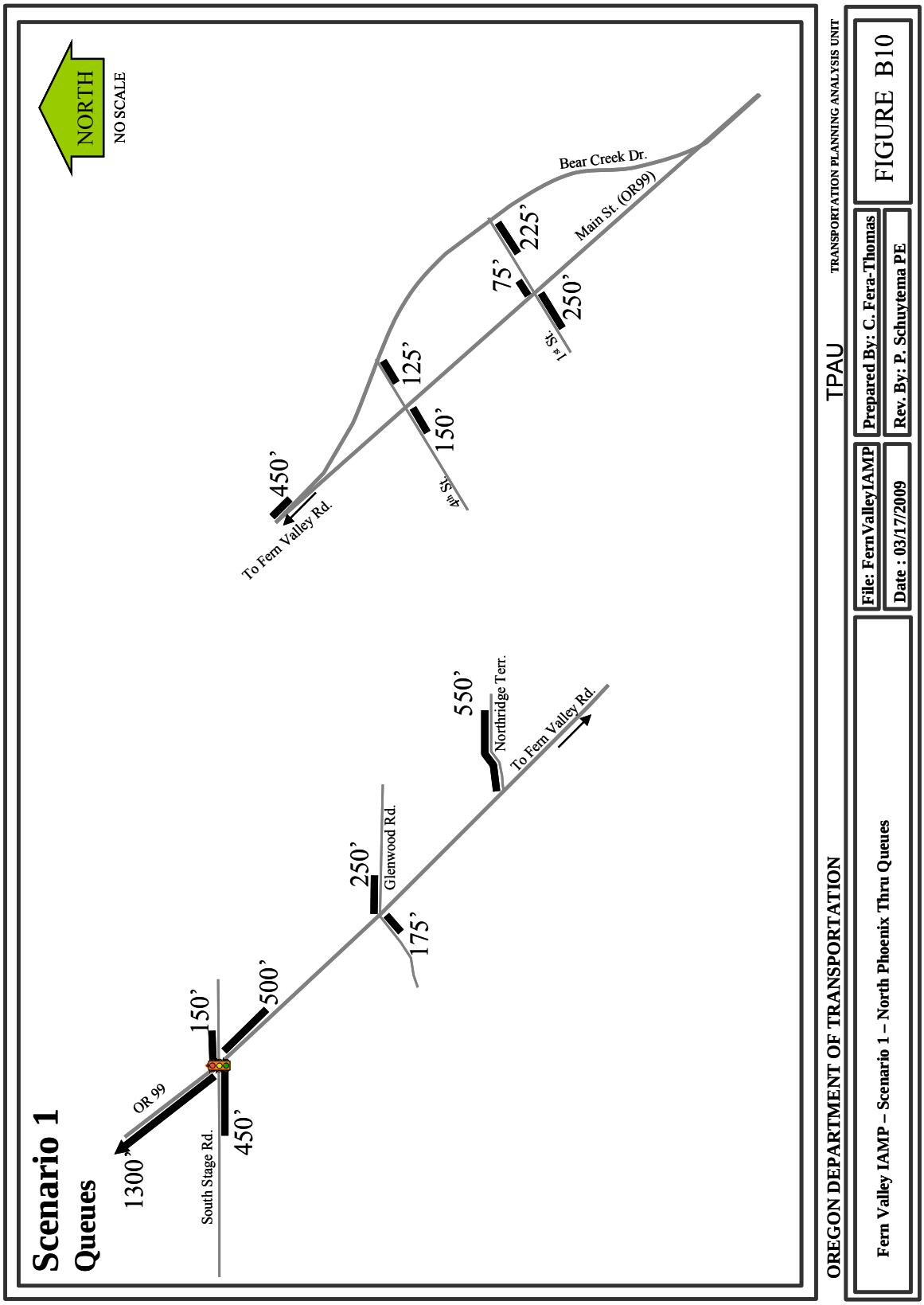
TRANSPORTATION PLANNING ANALYSIS UNIT

Fern Valley IAMP – Scenario 1 – Common V/C Ratios	File: FernValleyIAMP	Prepared By: C. Fera-Thomas	FIGURE B6
	Date : 03/17/2009	Rev. By: P. Schuytema PE	

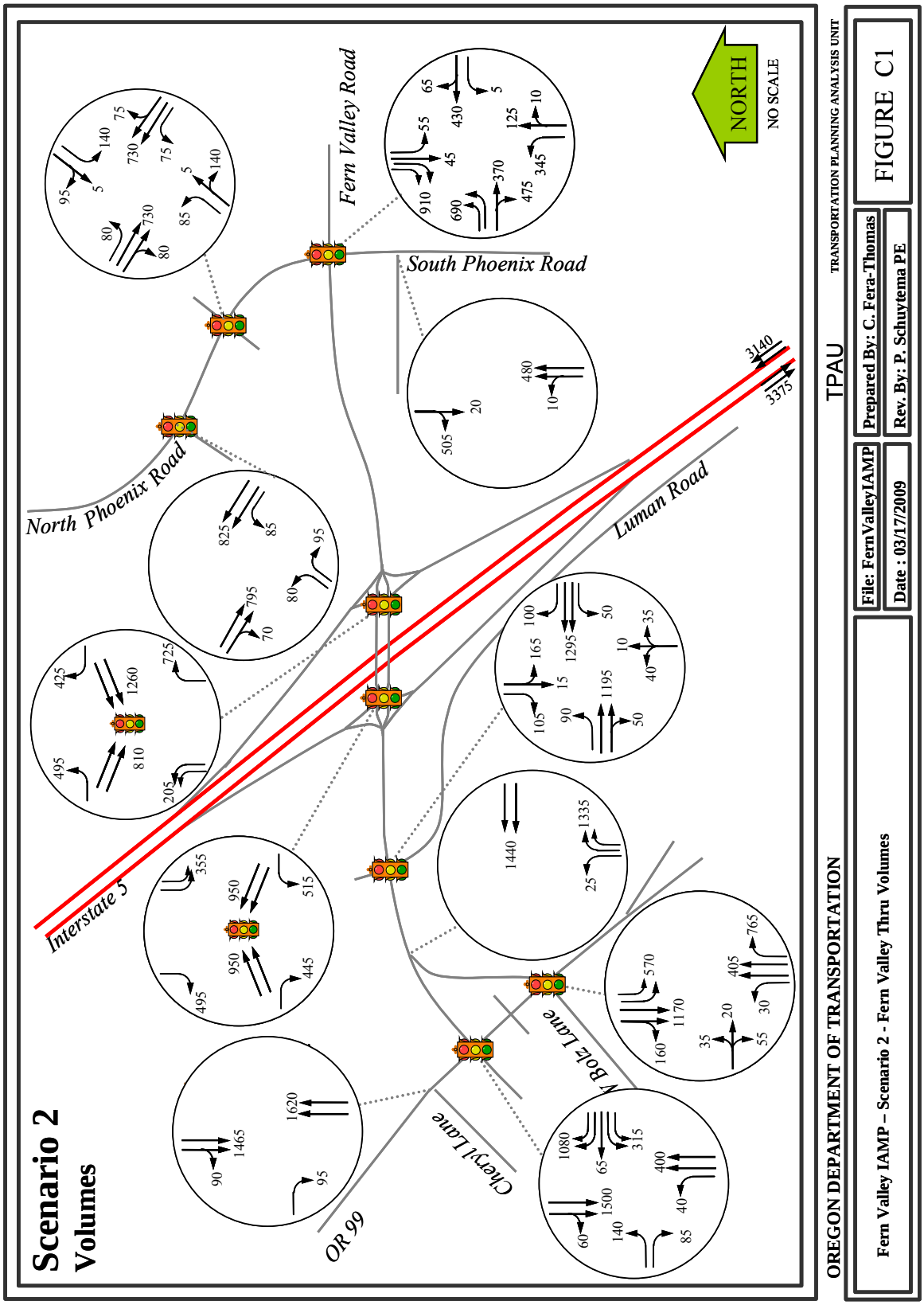

Scenario 1
Queues
NORTH
NO SCALE
Fern Valley Road
South Phoenix Road
North Phoenix Road
Luman Road
Interstate 5
OR 99
Cheryl Lane
W Bolz Lane
400'
1100'
375'
225'
325'
425'
175'
150'
1025'
775'
450'
300'
125'
150'
225'
200'
625'
600'
150'
150'
250'
550'
100'
400'
200'
250'
250'
250'
550'
1775'
3090
3220
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 1 - Fern Valley Thru Queues
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE B7

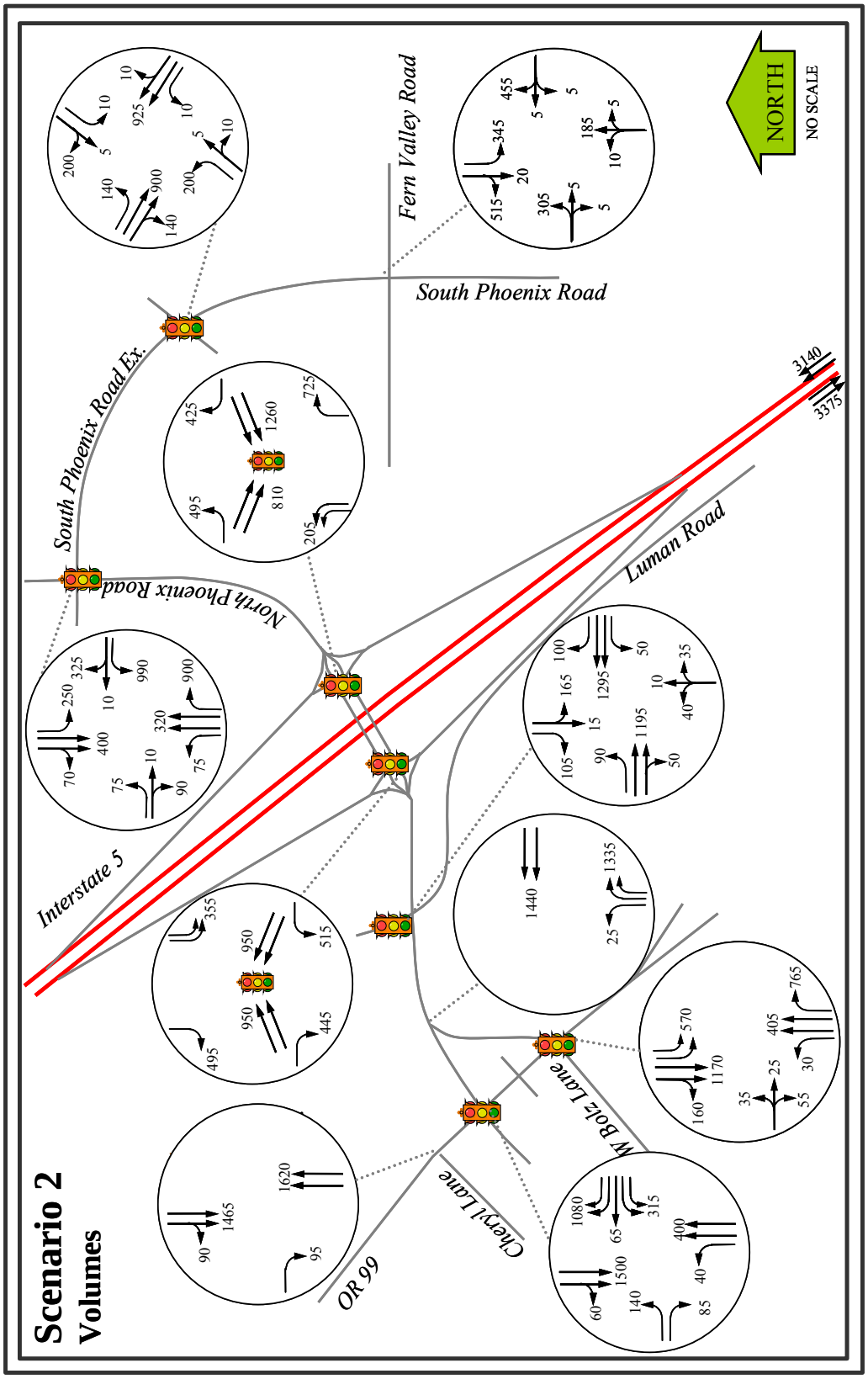

Scenario 1
Queues
NORTH
NO SCALE
1300'
OR 99
South Stage Rd.
200'
475'
500'
275'
Glenwood Rd.
175'
575'
Northridge Terr.
To Fern Valley Rd.
550'
To Fern Valley Rd.
75'
125'
75'
4th St.
75'
175'
200'
1st St.
Bear Creek Dr.
Main St. (OR99)
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 1 – Fern Valley Thru Queues
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE B8


Scenario 1
Queues
NORTH
NO SCALE
Fern Valley Road
South Phoenix Road
South Phoenix Road Ex.
North Phoenix Road
Interstate 5
Luman Road
W Bolz Lane
Cheryl Lane
OR 99
1150'
150'
275'
400'
225'
1500'
225'
100'
150'
675'
700'
450'
400'
125'
250'
175'
425'
175'
650'
150'
150'
250'
150'
500'
100'
325'
200'
250'
275'
250'
450'
1050'
3090
3220
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 1 – North Phoenix Thru Queues
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE B9


Scenario 1
Queues
NORTH
NO SCALE
1300'
OR 99
South Stage Rd.
150'
450'
500'
250'
Glenwood Rd.
175'
550'
Northridge Terr.
To Fern Valley Rd.
450'
To Fern Valley Rd.
125'
150'
4th St.
75'
225'
250'
I st.
Bear Creek Dr.
Main St. (OR99)
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 1 – North Phoenix Thru Queues
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE B10

ANNEX C – SCENARIO 2


Scenario 2
Volumes
Interstate 5
North Phoenix Road
Fern Valley Road
South Phoenix Road
Luman Road
Cheryl Lane
Bolt Lane
OR 99
NORTH
NO SCALE
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 2 - Fern Valley Thru Volumes
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE C1



OREGON DEPARTMENT OF TRANSPORTATION

TPAU

TRANSPORTATION PLANNING ANALYSIS UNIT

Fern Valley IAMP – Scenario 2 – North Phoenix Thru Volumes

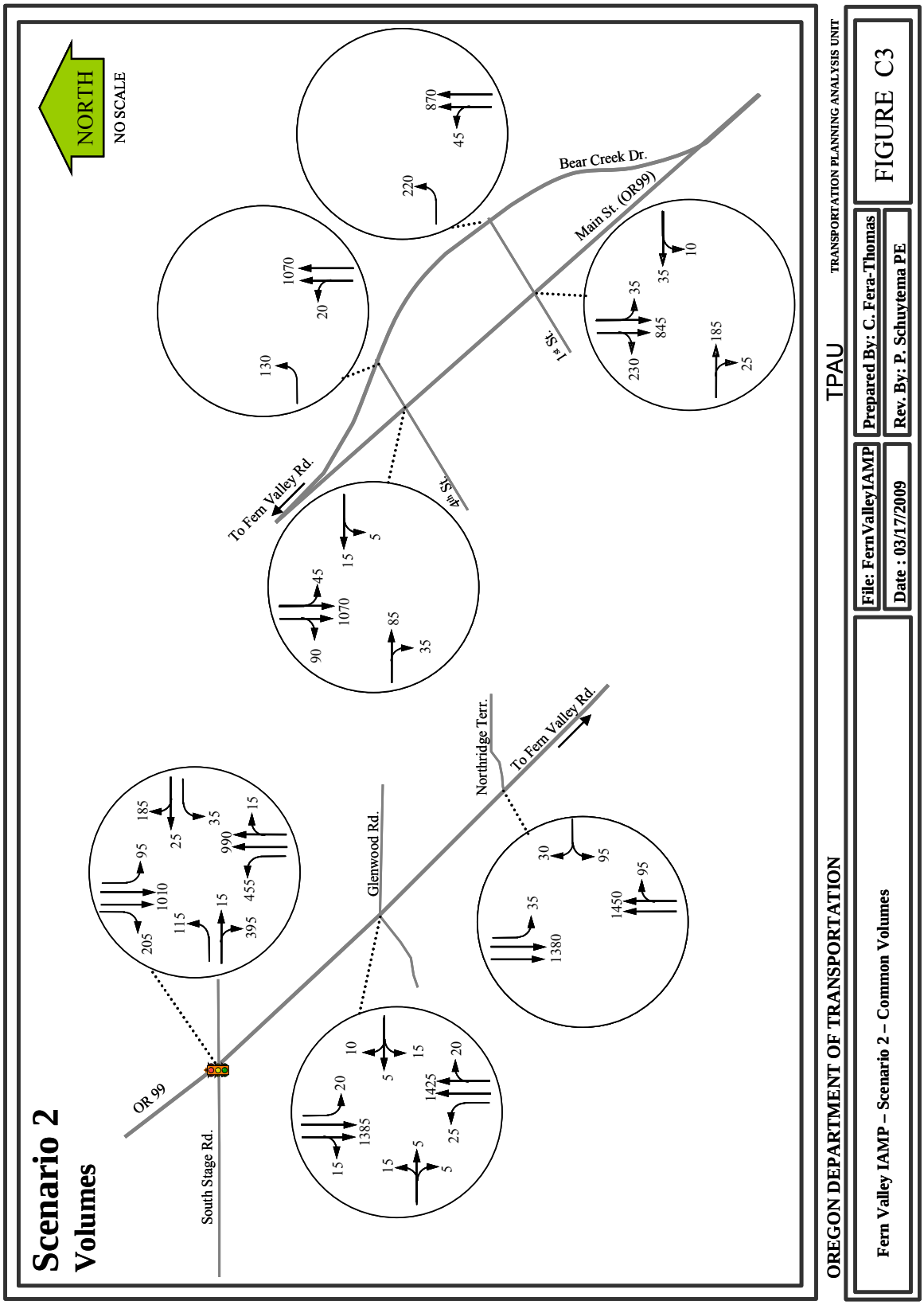
File: FernValleyIAMP

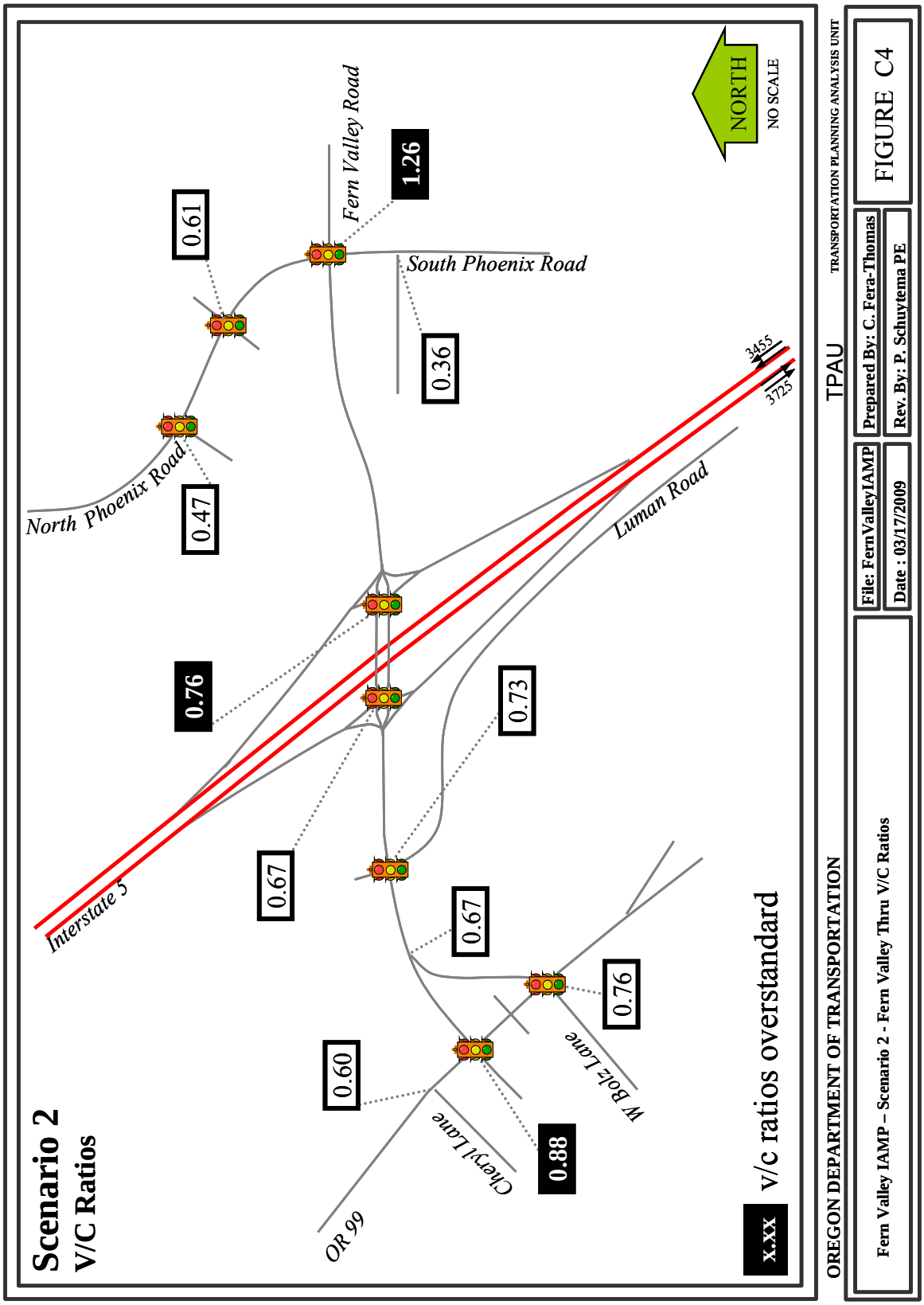
Date : 03/17/2009

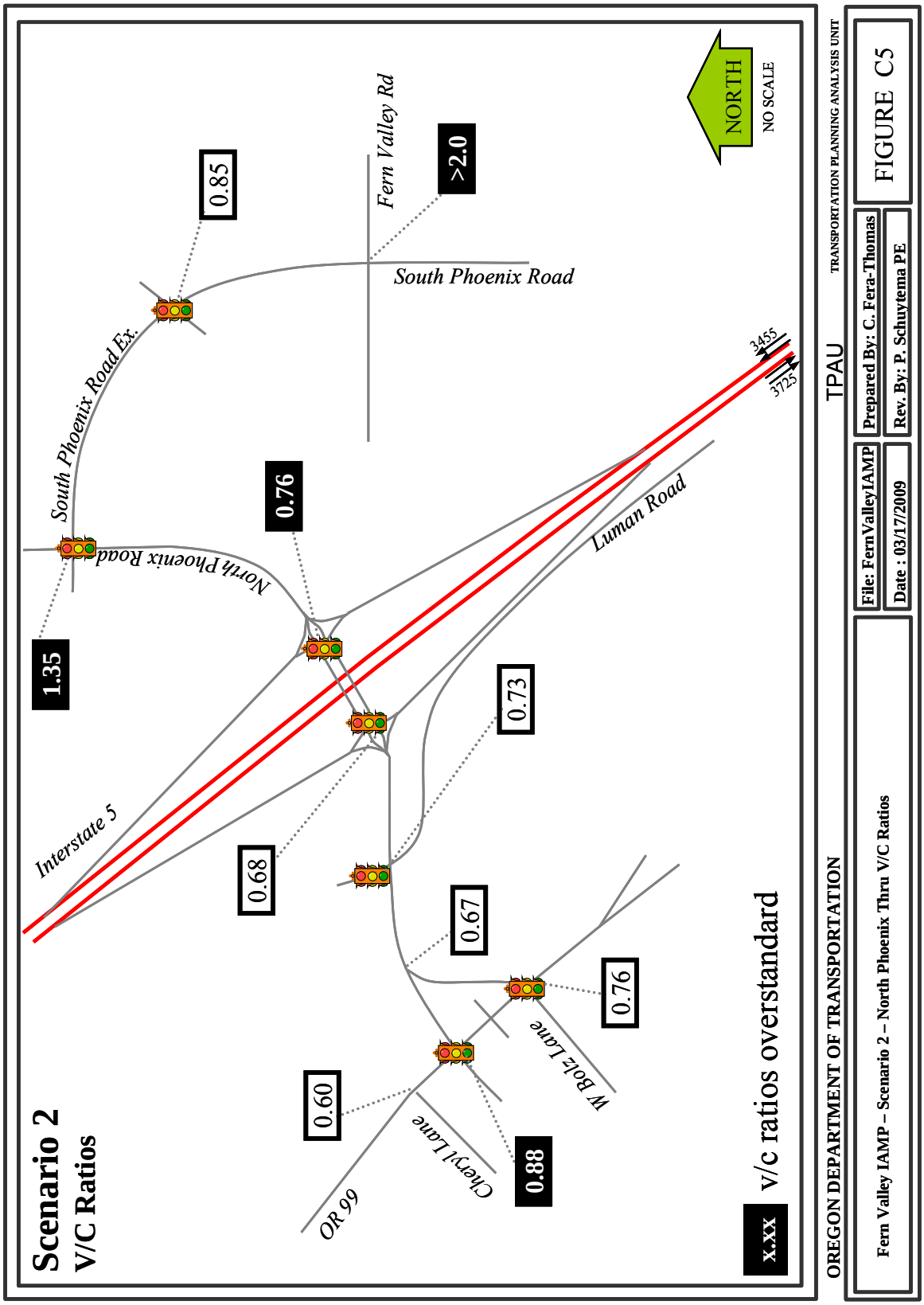
Prepared By: C. Fera-Thomas

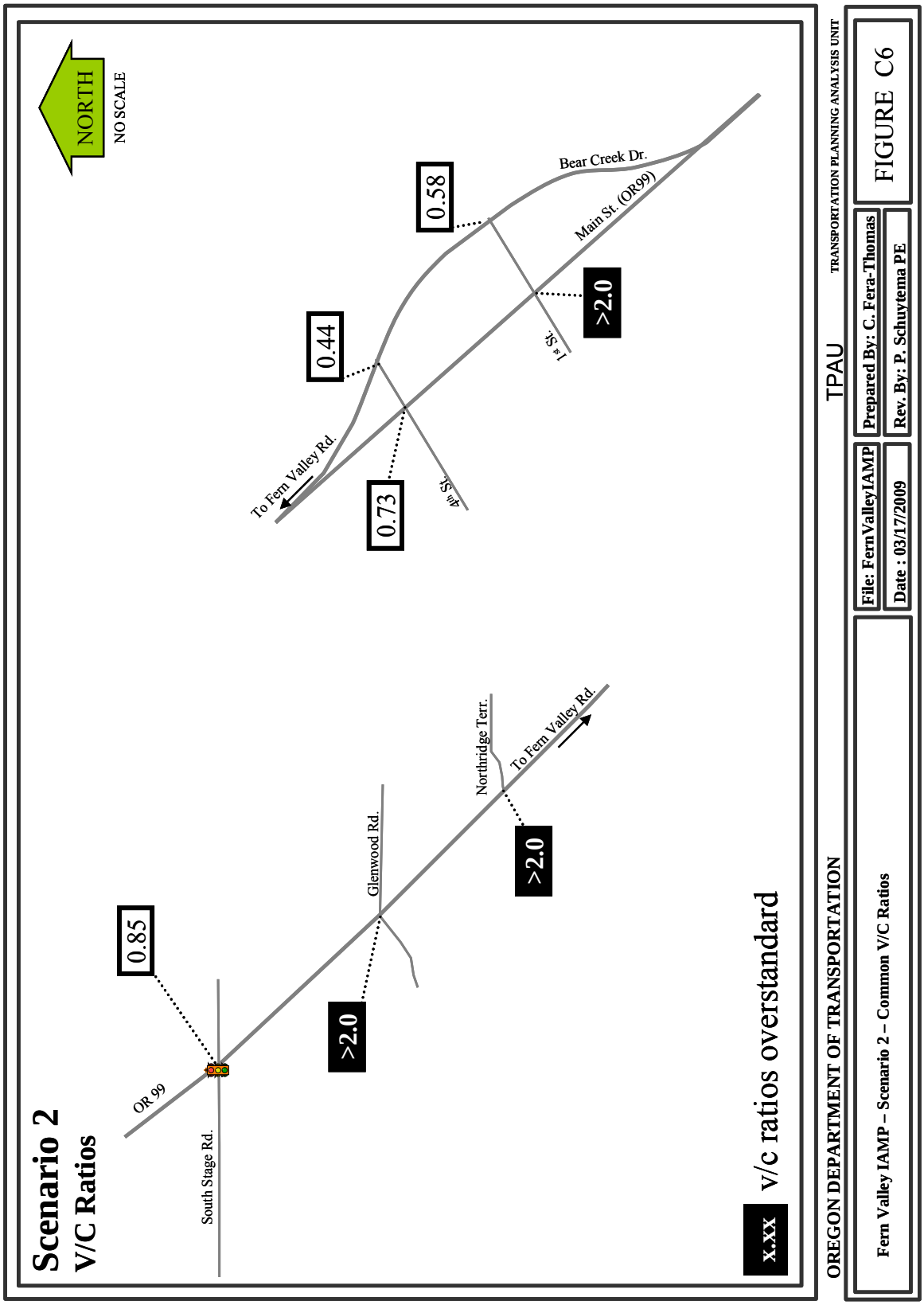
Rev. By: P. Schuytema PE

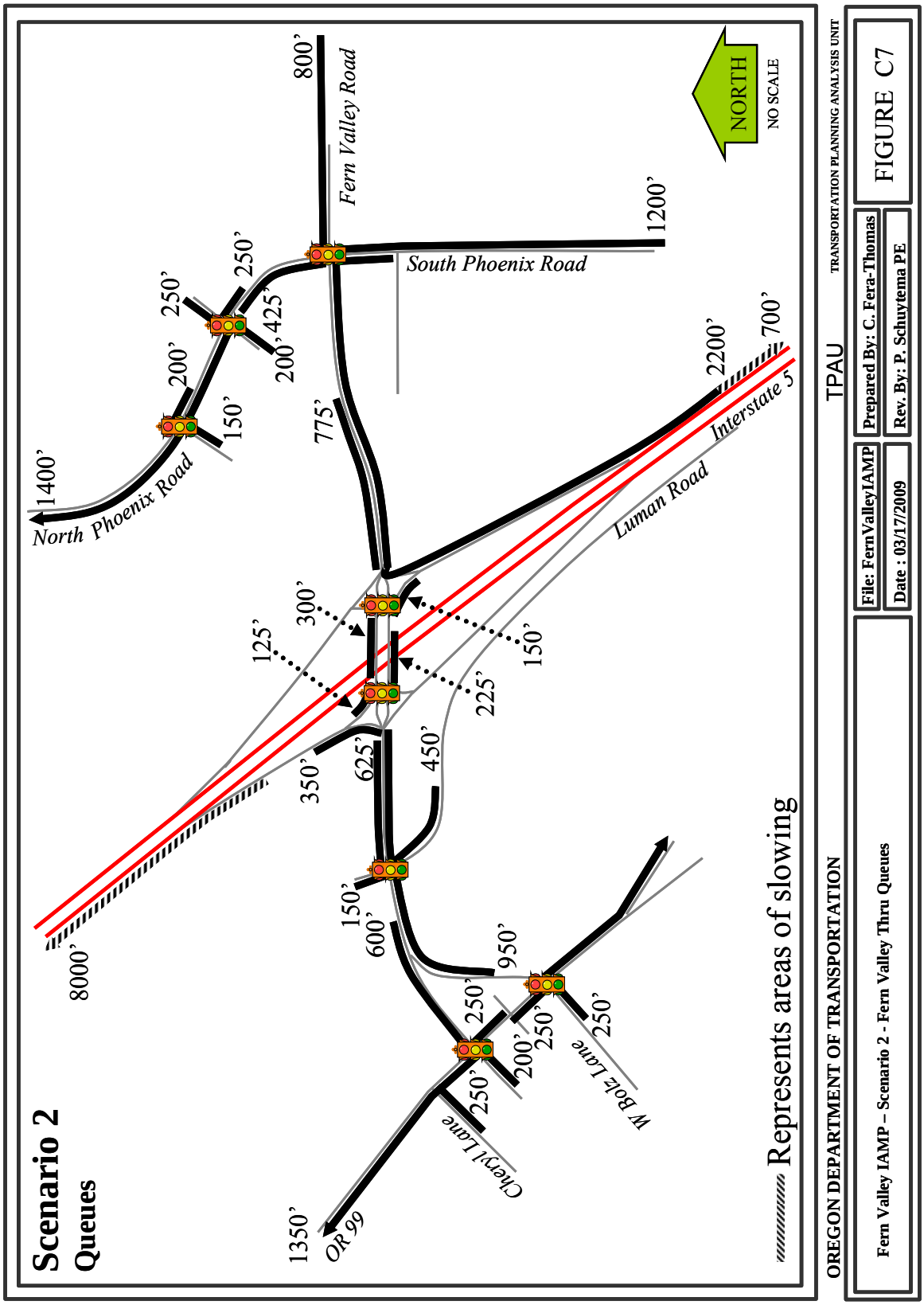
FIGURE C2

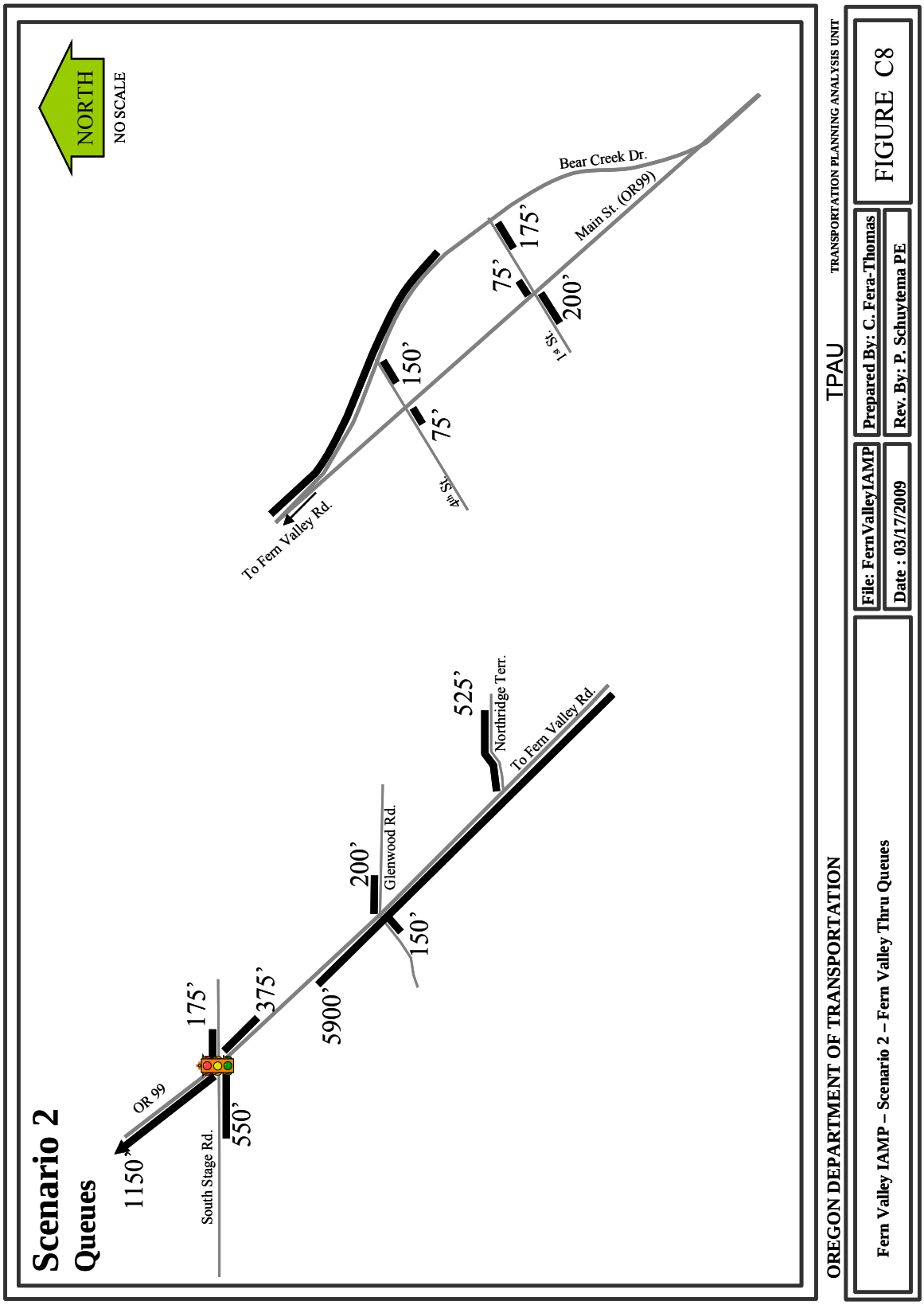

Scenario 2
Volumes
NORTH
NO SCALE
OR 99
South Stage Rd.
Glenwood Rd.
Northridge Terr.
To Fern Valley Rd.
To Fern Valley Rd.
4th St.
I & St.
Main St. (OR99)
Bear Creek Dr.
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 2 – Common Volumes
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE C3

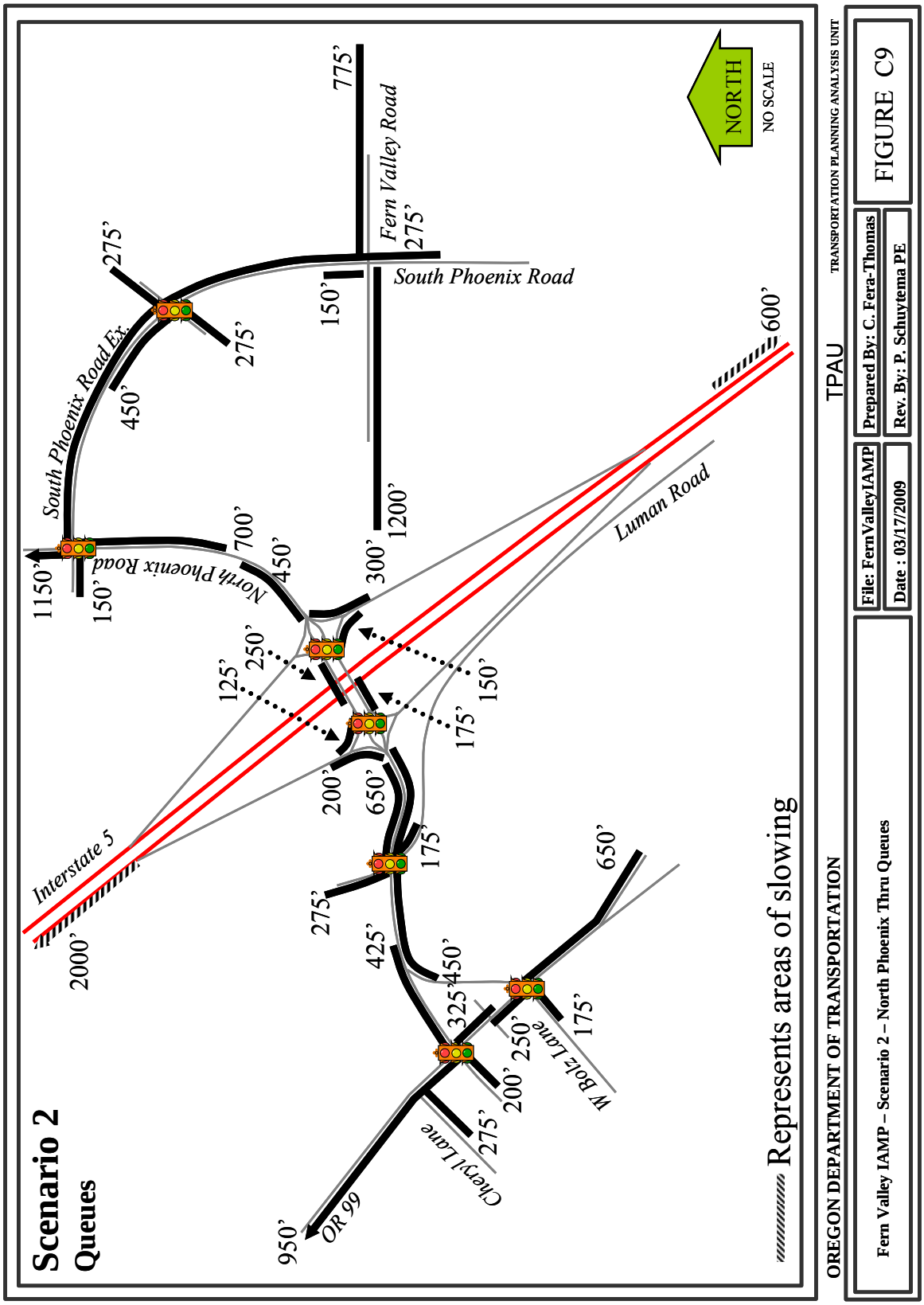

Scenario 2
V/C Ratios
Interstate 5
North Phoenix Road
Fern Valley Road
South Phoenix Road
Luman Road
Cheryl Lane
W Bolz Lane
OR 99
0.61
0.47
1.26
0.36
0.76
0.67
0.73
0.67
0.60
0.88
0.76
3455
3725
NORTH
NO SCALE
X.XX
v/c ratios overstandard
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 2 - Fern Valley Thru V/C Ratios
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE C4


Scenario 2
V/C Ratios
Interstate 5
South Phoenix Road Ex.
North Phoenix Road
Fern Valley Rd
South Phoenix Road
Luman Road
OR 99
Cheryl Lane
W Bolz Lane
1.35
0.85
>2.0
0.76
0.73
0.68
0.67
0.76
0.60
0.88
3455
3725
NORTH
NO SCALE
x.xx
v/c ratios overstandard
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 2 – North Phoenix Thru V/C Ratios
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE C5


Scenario 2
V/C Ratios
NORTH
NO SCALE
OR 99
South Stage Rd.
0.85
Glenwood Rd.
>2.0
Northridge Terr.
To Fern Valley Rd.
>2.0
To Fern Valley Rd.
0.73
4th St.
0.44
I & St.
0.58
>2.0
Bear Creek Dr.
Main St. (OR99)
X.XX v/c ratios overstandard
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 2 – Common V/C Ratios
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE C6


Scenario 2
Queues
Represents areas of slowing
NORTH
NO SCALE
Fern Valley Road
South Phoenix Road
North Phoenix Road
Interstate 5
Luman Road
Cheryl Lane
W Bolz Lane
OR 99
800'
1200'
1400'
8000'
1350'
700'
2200'
775'
425'
250'
200'
150'
300'
125'
225'
350'
625'
450'
600'
950'
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 2 - Fern Valley Thru Queues
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE C7


Scenario 2
Queues
NORTH
NO SCALE
1150'
OR 99
South Stage Rd.
175'
550'
375'
5900'
200'
Glenwood Rd.
150'
525'
Northridge Terr.
To Fern Valley Rd.
To Fern Valley Rd.
150'
75'
4th St.
75'
175'
1st St.
200'
Bear Creek Dr.
Main St. (OR99)
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 2 – Fern Valley Thru Queues
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE C8



OREGON DEPARTMENT OF TRANSPORTATION

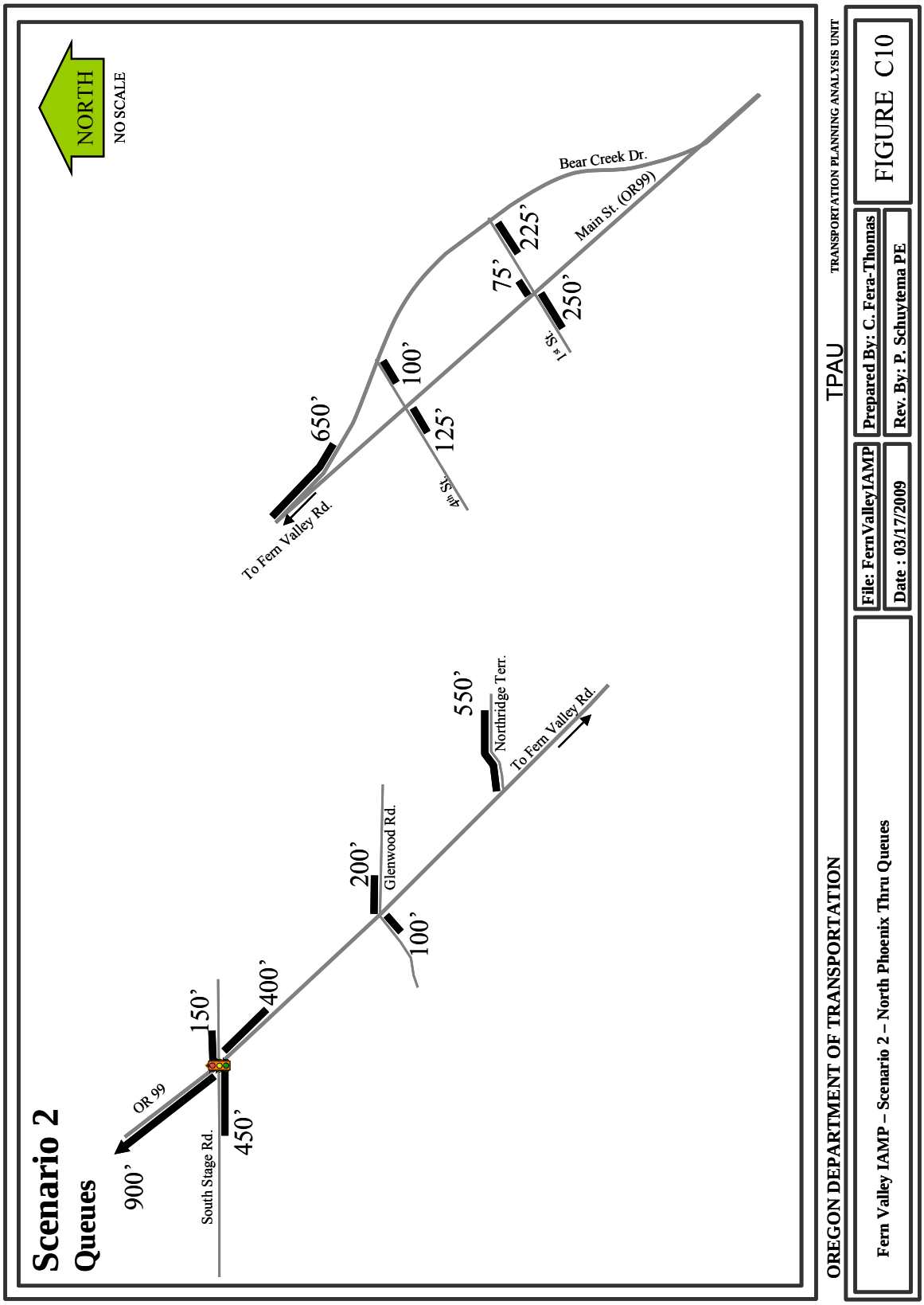
TPAU TRANSPORTATION PLANNING ANALYSIS UNIT

Fern Valley IAMP – Scenario 2 – North Phoenix Thru Queues

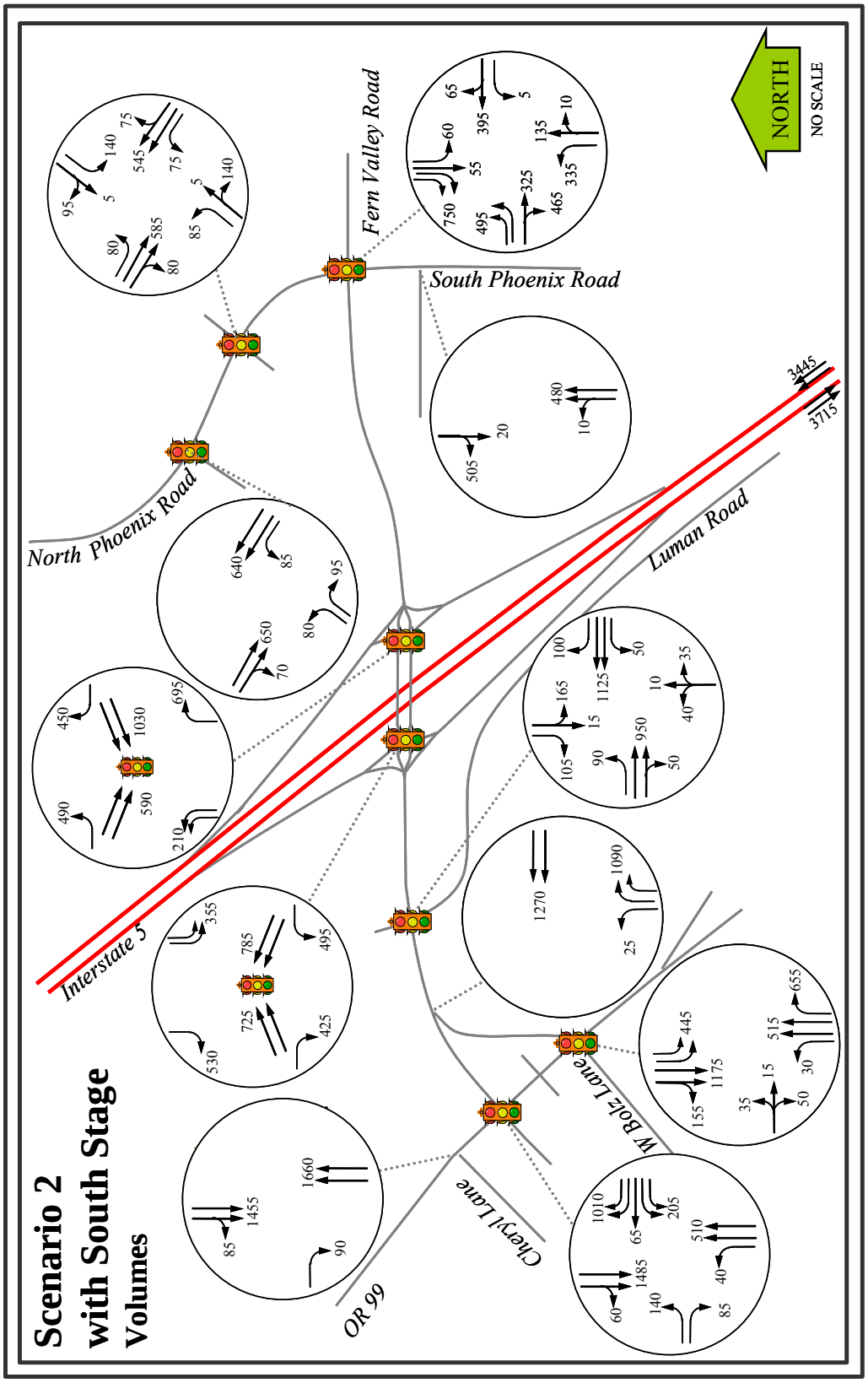
File: FernValleyIAMP | Prepared By: C. Fera-Thomas

Date : 03/17/2009 | Rev. By: P. Schuytema PE

FIGURE C9


Scenario 2
Queues
NORTH
NO SCALE
900'
OR 99
South Stage Rd.
150'
450'
400'
200'
Glenwood Rd.
100'
550'
Northridge Terr.
To Fern Valley Rd.
650'
To Fern Valley Rd.
100'
4th St.
125'
75'
225'
I st.
250'
Bear Creek Dr.
Main St. (OR99)
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 2 – North Phoenix Thru Queues
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE C10

ANNEX D – SCENARIO 2 WITH SOUTH STAGE OVERCROSSING



OREGON DEPARTMENT OF TRANSPORTATION

TPAU

TRANSPORTATION PLANNING ANALYSIS UNIT

Fern Valley IAMP – Scenario 2 with S. Stage Connection - Fern Valley Thru Volumes

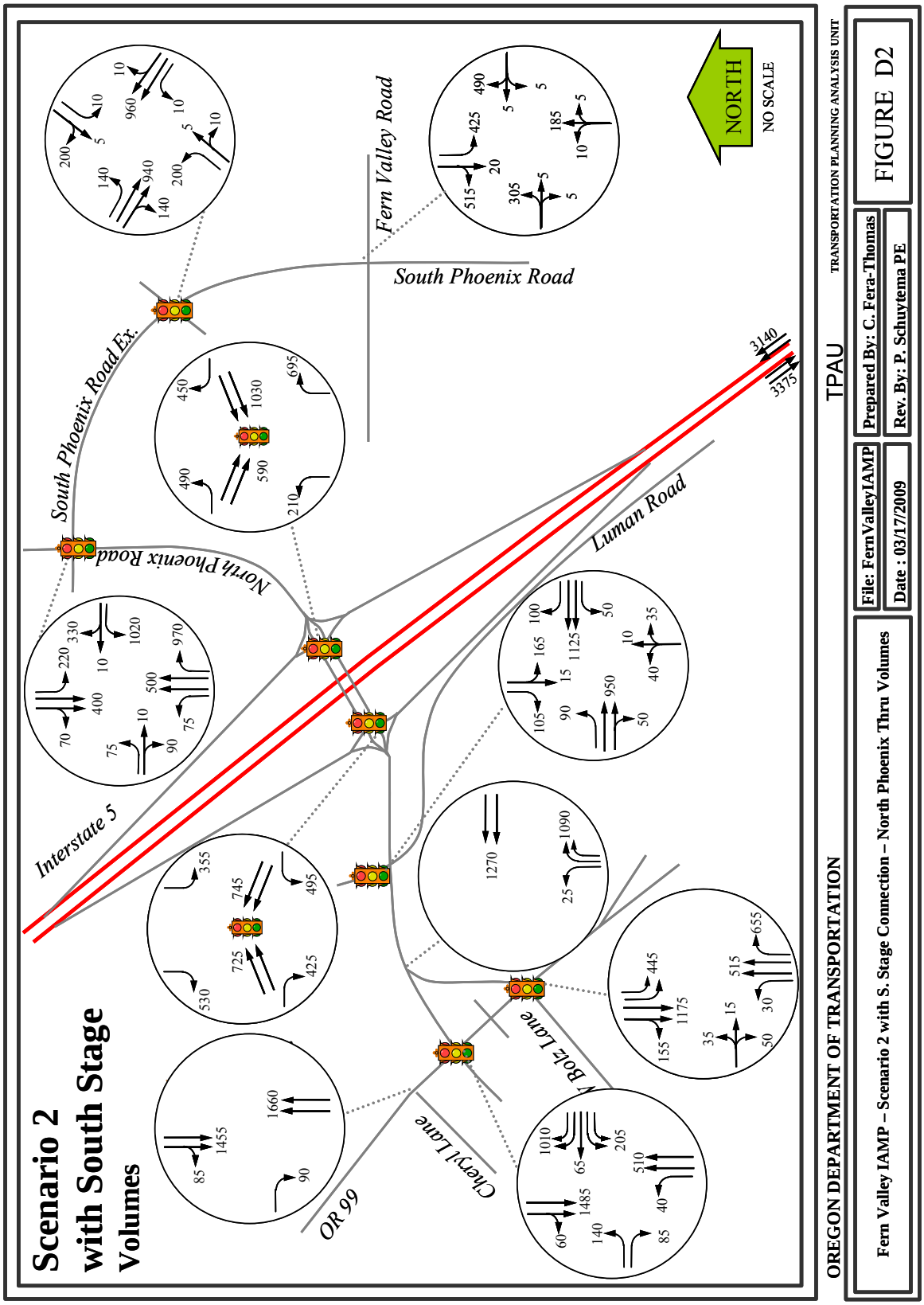
File: FernValleyIAMP

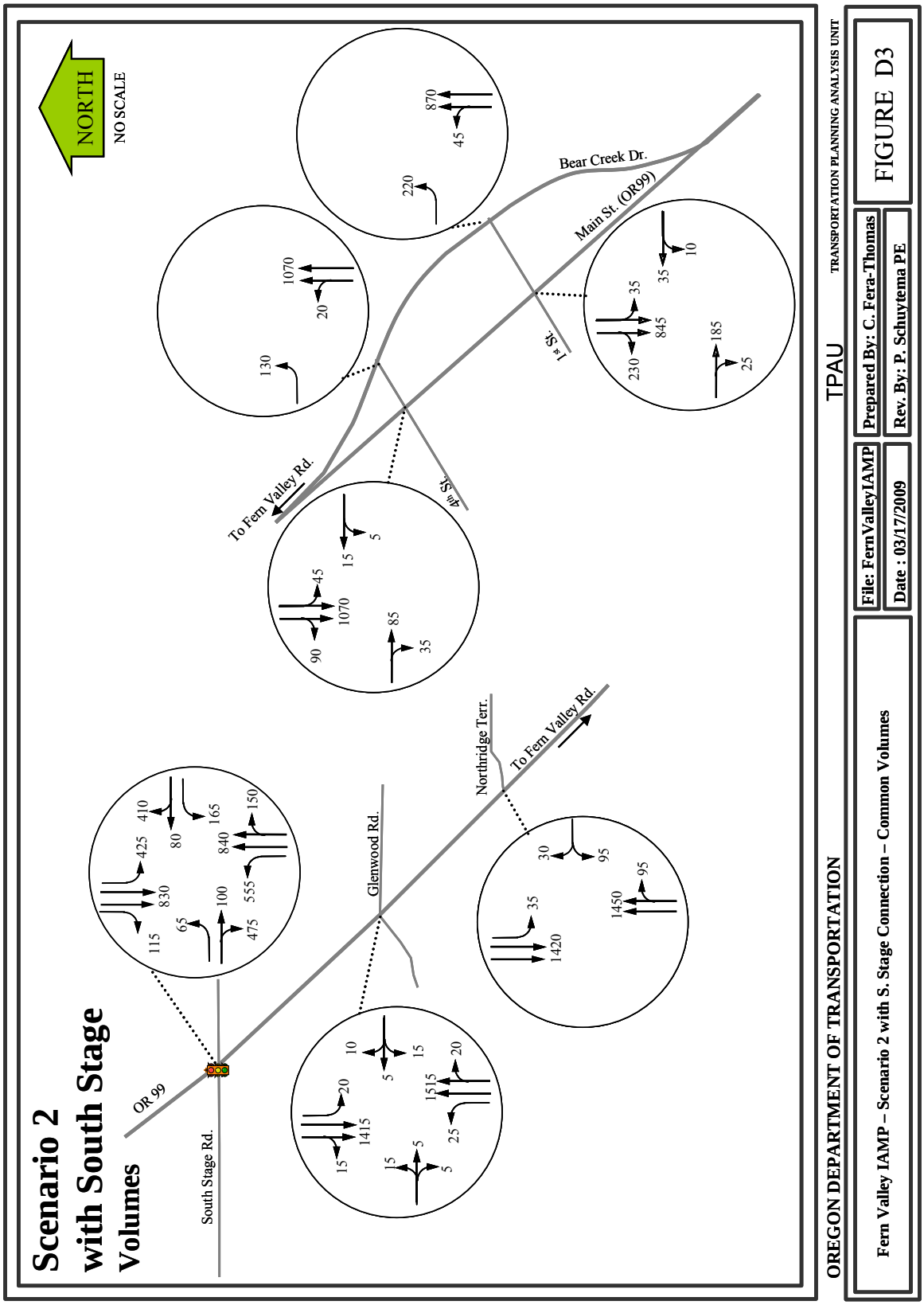
Date : 03/17/2009

Prepared By: C. Fera-Thomas

Rev. By: P. Schuytema PE

FIGURE D1


Scenario 2
with South Stage
Volumes
Interstate 5
South Phoenix Road Ex.
North Phoenix Road
Fern Valley Road
South Phoenix Road
Luman Road
OR 99
Cheryl Lane
Bolt Lane
NORTH
NO SCALE
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 2 with S. Stage Connection – North Phoenix Thru Volumes
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE D2



OREGON DEPARTMENT OF TRANSPORTATION

TPAU

TRANSPORTATION PLANNING ANALYSIS UNIT

Fern Valley IAMP – Scenario 2 with S. Stage Connection – Common Volumes

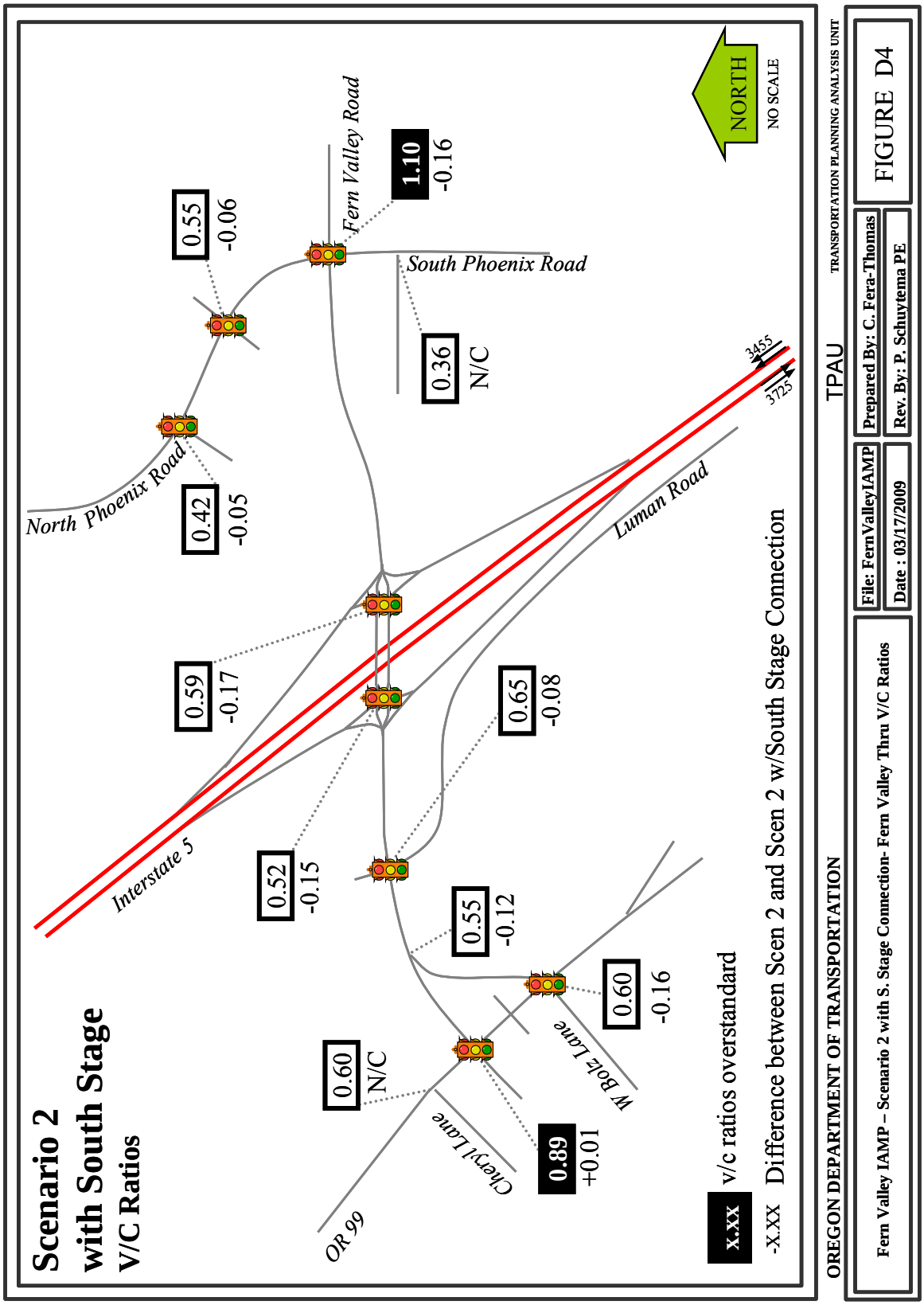
File: FernValleyIAMP

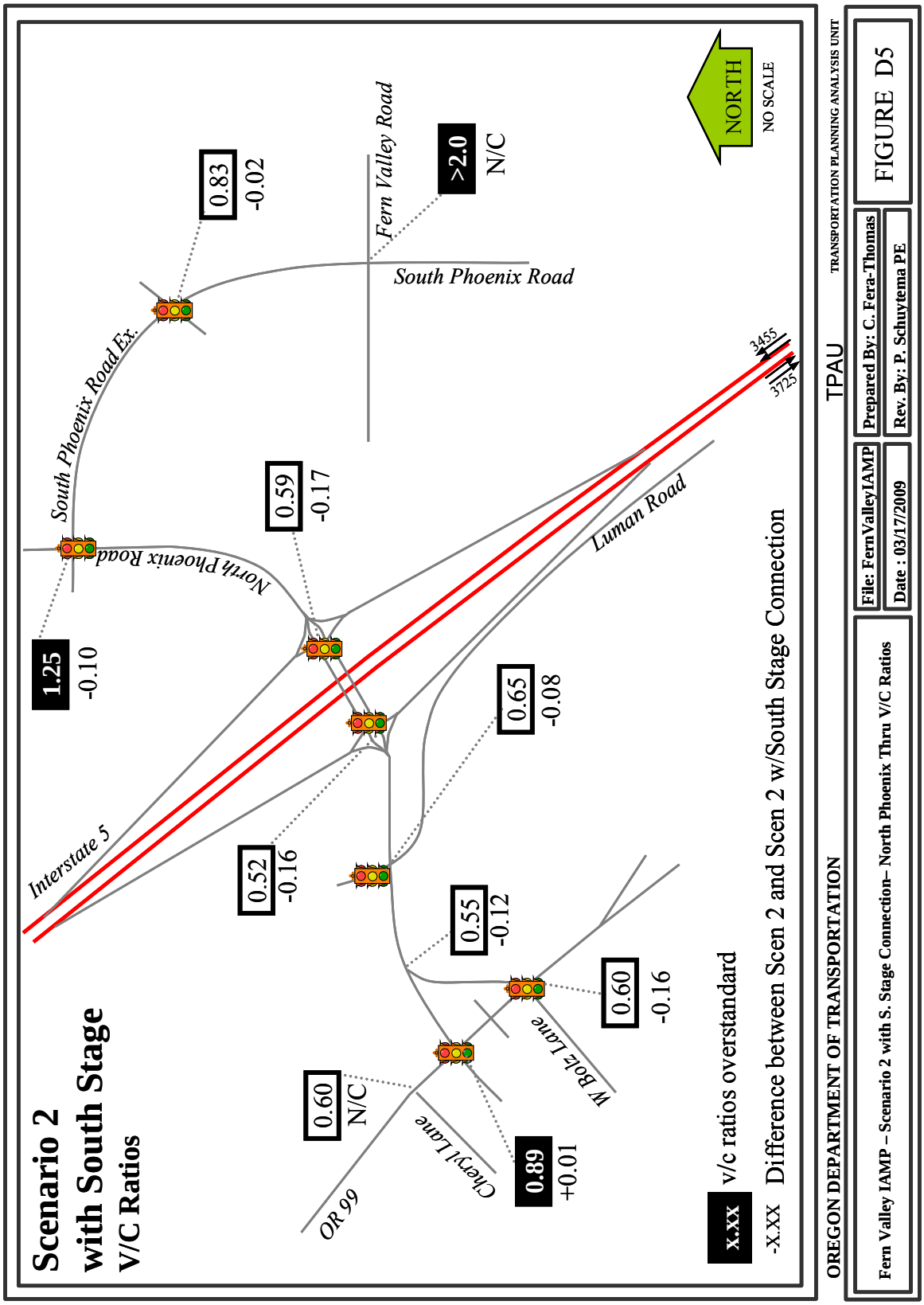
Date : 03/17/2009

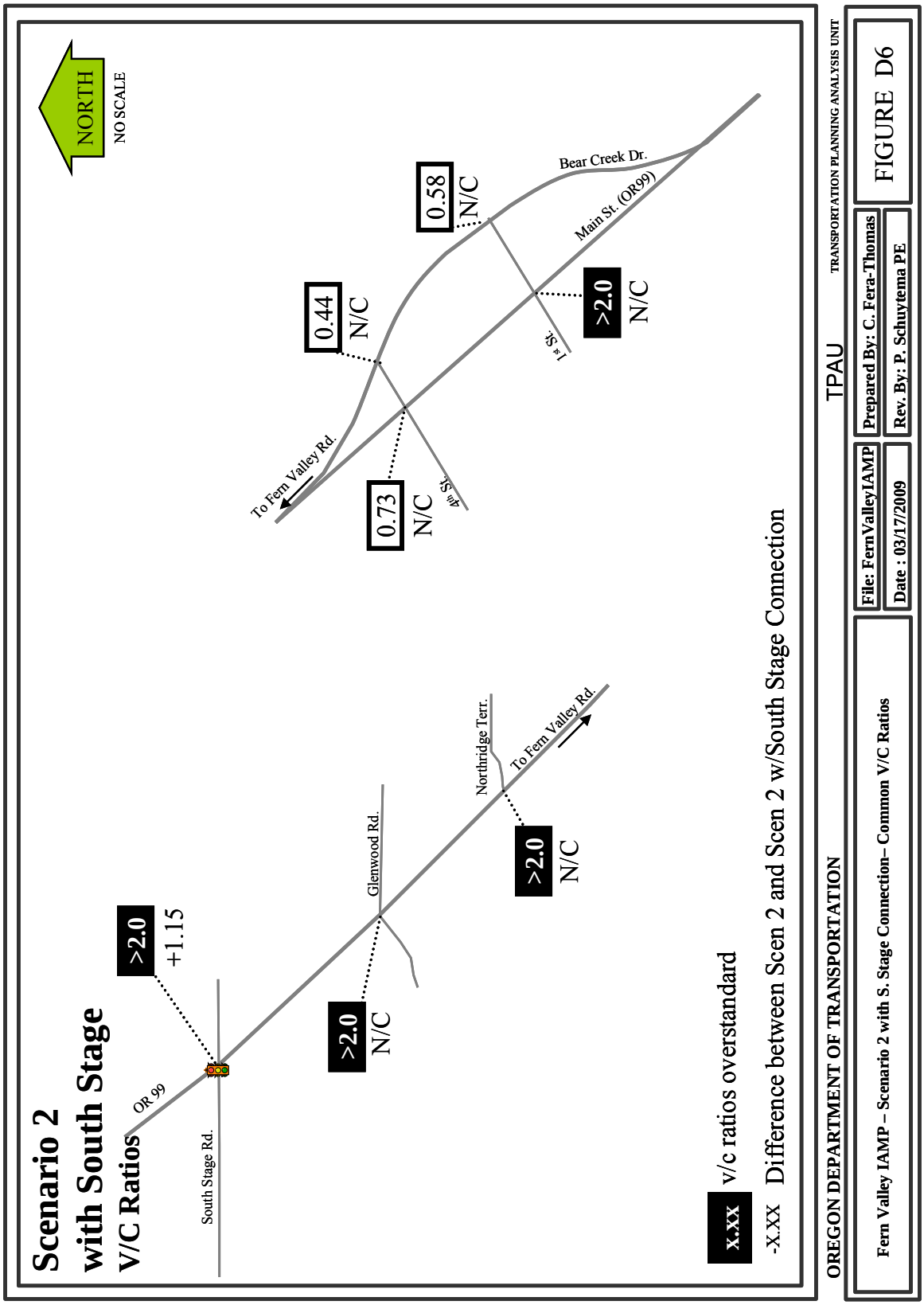
Prepared By: C. Fera-Thomas

Rev. By: P. Schuytema PE

FIGURE D3


Scenario 2
with South Stage
V/C Ratios
North Phoenix Road
Fern Valley Road
South Phoenix Road
Interstate 5
Luman Road
OR 99
Cheryl Lane
W Bolt Lane
0.55
-0.06
1.10
-0.16
0.36
N/C
0.42
-0.05
0.59
-0.17
0.65
-0.08
0.52
-0.15
0.55
-0.12
0.60
N/C
0.60
-0.16
0.89
+0.01
3455
3725
NORTH
NO SCALE
X.XX v/c ratios overstandard
-X.XX Difference between Scen 2 and Scen 2 w/South Stage Connection
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 2 with S. Stage Connection- Fern Valley Thru V/C Ratios
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE D4


Scenario 2
with South Stage
V/C Ratios
Interstate 5
South Phoenix Road Ex.
North Phoenix Road
Fern Valley Road
South Phoenix Road
Luman Road
W Bolt Lane
Cheryl Lane
OR 99
1.25
-0.10
0.83
-0.02
>2.0
N/C
0.59
-0.17
0.52
-0.16
0.65
-0.08
0.55
-0.12
0.60
-0.16
0.60
N/C
0.89
+0.01
3455
3725
NORTH
NO SCALE
x.xx v/c ratios overstandard
-x.xx Difference between Scen 2 and Scen 2 w/South Stage Connection
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 2 with S. Stage Connection– North Phoenix Thru V/C Ratios
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE D5


Scenario 2
with South Stage
V/C Ratios
NORTH
NO SCALE
OR 99
South Stage Rd.
>2.0
+1.15
>2.0
N/C
Glenwood Rd.
Northridge Terr.
To Fern Valley Rd.
>2.0
N/C
To Fern Valley Rd.
0.73
N/C
4th St.
0.44
N/C
0.58
N/C
I st.
Bear Creek Dr.
Main St. (OR99)
>2.0
N/C
x.xx v/c ratios overstandard
-X.XX Difference between Scen 2 and Scen 2 w/South Stage Connection
OREGON DEPARTMENT OF TRANSPORTATION
TPAU
TRANSPORTATION PLANNING ANALYSIS UNIT
Fern Valley IAMP – Scenario 2 with S. Stage Connection– Common V/C Ratios
File: FernValleyIAMP
Date : 03/17/2009
Prepared By: C. Fera-Thomas
Rev. By: P. Schuytema PE
FIGURE D6

Appendix F
Land Use Scenarios

This appendix describes the land use scenarios on which is based the traffic analysis contained in Appendix E and summarized beginning on page 5 of the body of the IAMP. Note that the scenarios were intended to show how development *could* occur to serve as a basis for modeling the roadway system to forecast traffic volumes and roadway system performance. The scenarios are forecasts of possible development and in no way confer entitlements to development on individual properties.

SCENARIO 1

Scenario 1 represents the full build-out of the existing City of Phoenix Comprehensive Plan and of already-urbanized areas outside city limits. "Full build-out" means that vacant land is developed and some developed land is redeveloped to conform to applicable Comprehensive Plan designations and zoning. Densities are similar to existing development; they are not maximum allowed densities.

Scenario 1 consists of the land uses, square footages, and numbers of dwelling units in the portion of the IAMP study area which is within the existing City of Phoenix UGB and the adjacent urbanized area outside the UGB along OR 99 to the north. This area is made up of all the analysis areas in Annex 1 of this appendix, except for analysis areas 1, 2, 3, 23, 51, and 52. Annex 2 is a map showing the boundaries of the analysis areas. Annexes 3 - 6 contain supporting documentation.

SCENARIO 2

Scenario 2 adds to Scenario 1 the full build-out of four City of Phoenix urban reserve areas included in the draft proposed Greater Bear Creek Valley Regional Plan.[1] These are urban reserve areas PH-1, PH-2, PH-5, and PH-10. "Build-out" means complete development of the urban reserve areas with the types of uses (residential, commercial, industrial, institutional, and parks/open space) the draft plan specifies for each urban reserve area. As with Scenario 1, densities are similar to existing development.

Scenario 2 consists of the land uses, square footages, and numbers of dwelling units for all analysis areas in Annex 1, i.e., the same area that Scenario 1 includes plus analysis areas 1, 2, 3, 23, 51, and 52.

THE ROLES OF SCENARIOS 1 AND 2 IN THE IAMP

The roles of the two scenarios in the IAMP differ. The IAMP is based on Scenario 1 because the IAMP needs to be compatible with the City of Phoenix Comprehensive Plan. Build-out of the Comprehensive Plan can be expected within the IAMP planning horizon, which is 2030. However, more development in the interchange area can be expected by 2030 than what is in the Comprehensive Plan as of today. Modeling traffic volumes

[1] Rogue Valley Council of Governments, Greater Bear Creek Valley Regional Plan, Draft, July 2008, http://rvcog.org/mn.asp?pg=rps_main_page.

under Scenario 2 helped identify the nature and extent of impacts to interchange performance from this additional development. The draft Regional Plan is the best available indication of the form and location of that additional development.

METHODOLOGY FOR DEVELOPMENT SCENARIO FORMULATION

In formulating the development scenarios, the IAMP team:

1. Drew the boundaries of the development scenario study area to include land the use of which would likely substantially affect traffic volumes on the interchange and on I-5, Fern Valley Road, OR 99, and N. Phoenix Road near the interchange.
2. Divided the study area into analysis areas, each composed of land that is similar in its present use and:
   a. if within the City of Phoenix urban growth boundary (UGB) or already developed with urban uses, had the same zoning;
   b. if within urban reserve areas PH-1, 2, 5, or 10, as identified in the September 5, 2007, draft of the RPS Plan,[2] had similar topography and the same owner or a limited number of owners.
3. For each analysis area, compiled in a MS Excel workbook:
   a. gross area (total area as measured by a geographic information system) and net area (the sum of tax lot acreages, i.e., exclusive of public right-of-way);
   b. comprehensive plan designation;
   c. applicable zoning;
   d. existing land use;
   e. tax lot number, address, owner, size in acres, value of land, and value of improvements for each tax lot making up the analysis area, from public tax assessment records.
4. Compiled floor area, site size, and the ratio of floor area to site size for various land uses in the Central Point/Medford/Phoenix/Talent area (referred to as "comparables").
5. Compiled information on proposed uses, in instances where an applicant has submitted information as part of a development approval process. (There were two such instances: the "orchard" property, which comprises analysis area 21, and the "triangle" property which comprises analysis area 42).
6. Identified on a map of analysis areas the boundaries of the 100-year floodplain.
7. Compiled a list of uses likely to be developed in the interchange area, their sizes, and the amount of land each would occupy.
8. For all large tracts of undeveloped land, deducted acreage for public streets, slopes, and existing irrigation canals.
9. Deducted from affected analysis areas acreage that would be used for the Fern Valley Interchange project, taking into account instances where the interchange project would replace existing roadways and that they could be vacated.
10. Identified analysis areas which do not warrant detailed examination because either:
    a. they are fully developed or nearly fully developed and existing uses are likely to

[2] Ibid. Urban reserve areas are areas outside existing UGBs into which UGBs would be expanded in the future under the RPS Plan.

remain unchanged (e.g., existing residential subdivisions and commercial properties that are stable and have high ratios of the value of improvements to the value of the land); or

b. redevelopment is likely to be piecemeal and unpredictable because of small lots, fragmented ownership, or other sources of uncertainty, and is unlikely to materially alter traffic generation or impact the interchange.

(TPAU based trip generation in these analysis areas on RVCOG model employment and household projections.)

11. For remaining analysis areas within the Phoenix UGB and including developed land along OR 99 north of the Phoenix UGB:
    a. judged whether individual properties are likely to be redeveloped, based on the ratio of the value of their improvements to the value of the land, development constraints (especially whether in the 100-year floodplain), and their desirability for development (mainly proximity to high-volume roadways);
    b. for existing uses likely to remain, identified commercial buildings by type of use and compiled or estimated their sizes in square feet, and counted or estimated numbers of dwelling units;
    c. for the analysis areas identified in step 5, used the compiled information;
    d. for other vacant land and land expected to be redeveloped, estimated square footages of commercial uses, based on the comparables; allocated expected uses from step 7; and estimated residential dwelling units based on zoning and site constraints.
12. For analysis areas in urban reserve areas PH-5 and 10:[3]
    a. computed the number of acres by category of use by applying the use allocation percentages in the RPS Plan;
    b. for residential lands, made an assumption of what City of Phoenix zoning would apply and either made assumptions about average lot size (analysis areas 1 and 2 in PH-5) or applied the density ratio from a nearby existing subdivision (analysis area 23 in PH-10);
    c. for commercial lands, allocated expected uses from step 7 and estimated the amount of other commercial uses based on the comparables from step 4;
    d. for industrial and institutional uses, estimated square footage based on the comparables from step 4;
    e. for parks/open space, used the amount computed in step 12.a.
13. Summarized the uses, square footages, numbers of dwelling units, and acreages.
14. Provided the results of the above steps to the members of the Fern Valley IAMP Citizens Advisory Committee and Project Development Team, recorded their review comments, and revised the results to respond to the comments.
15. Recorded notes on the application of the methodology and instances where circumstances required departing from details of the methodology.

[3] Urban reserve areas PH-1 and PH-2 make up analysis areas which were identified as not warranting detailed examination in step 10.

Analy-sis Area No.	TAZ[1] No.	Gross. Acres[2]	Net Acres[3]	Existing			Full-Buildout							
				Comprehensive Plan Designation	Zoning	Land Use	Zoning	Land Use	Dwelling Units	Commercial (Thousand Sq. Ft. or Units)	Industrial (Thousand Sq. Ft.)	Institutional (Thousand Sq. Ft.)	Parks and Open Space Acres	Notes
1	156	57.1	55.2	Agricultural Land	Exclusive Farm Use	Undeveloped, unclultivated; possibly pasture, but looks ungrazed.	11% Low Density Residential 11% Medium Density Residential 11% Commercial Highway 30% Industrial, Light Industrial 22% Low Density Residential (institutional uses) 12% Low Density Residential (parks and open space)	Residential	226	-	-	-	-	Part of urban reserve area PH-5. Use allocations come from September 2007 draft of Regional Problem Solving Plan. Zoning City of Phoenix Low Density Residential (R-1), with average lot size 8,000 SF. Now includes a few farm buildings. Land available for development adjusted for streets.
2	167	327.3	327.2	Agricultural Land	Exclusive Farm Use	Agriculture; mainly pasture.		13% Residential 15% Commercial 24% Industrial 31% Institutional 17% Parks & open space	262	Specialty retail center: 285 Chain drugstore: 15 Fast-food restaurant w/ drive-thru: 5 High-turnover sit-down restaurant: 5 Drive-in bank: 4 Motel: 120	60	400	40	Part of urban reserve area PH-5. Use allocations from September 2007 draft of Regional Problem Solving Plan. Residential zoning City of Phoenix Medium Density Residential (R-2) zoning, with average lot size 5,000 SF. Commercial: specialty retail centers, 10,000 SF/acre, except uses from use mix worksheet. Industrial: 11,000 SF/acre. Institutional: schools and day care centers, 6,000 SF/acre. Land available for development adjusted for streets and slopes. Includes Arrowhead Equestrian Center and a farmstead. Equestrian center not a protected historic resource, per draft EA analysis.
3	155	67.6	65.7	Agricultural Land	Exclusive Farm Use	Agriculture		Industrial	-		540	-	-	Part of urban reserve area PH-5. PH-5 use allocations come from September 2007 draft of Regional Problem Solving Plan. AA 3 100% industrial, 1,000 SF/acre. Land available for development adjusted for streets and slopes.
4	165	47.0	47.0	Urban Residential Land	Urban Residential-10	Mobile homes	Urban Residential-10	Mobile homes	250	-	-	-	-	Medford Estates mobile home park. Will remain. Units appear to mainly date from 1970's and 80's.
5	165	3.0	3.0	Commercial Land	General Commercial	Mixed commercial	General Commercial	Commercial (mini-warehouse)	-	Mini-warehouse: 25	-	-	-	Existing mini-warehouse will remain.
6	165	1.9	1.9	Commercial Land	General Commercial	Medical clinic	General Commercial	Medical clinic	-	Medical clinic: 15	-	-	-	Existing La Clinica del Valle will remain.
7	166	19.4	19.4	Commercial Land	General Commercial	Commercial	General Commercial	Commercial	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Redevelopment likely to be piecemeal and unpredictable because of small lots and fragmented ownership, and is unlikely to materially alter traffic generation or impact on interchange.
8	166	10.2	10.2	Industrial Land	Light Industrial	Industrial	Light Industrial	Industrial	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Redevelopment likely to be piecemeal and unpredictable because of small lots and fragmented ownership, and is unlikely to materially alter traffic generation or impact on interchange.
9	166	1.6	1.5	Urban Residential Land	Urban Residential-10	Commercial	Urban Residential-10	Commercial	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Redevelopment likely to be piecemeal and unpredictable because of small lots and fragmented ownership, and is unlikely to materially alter traffic generation or impact on interchange.
10	165	13.2	11.8	Urban Residential Land	Urban Residential-30	Assisted living center on OR 99, then apts. along Northridge	Urban Residential-30	Institutional, residential	140	-	-	Assisted living: 32	-	Northridge Center assisted living facility and existing mobile homes and apartments remain.
11	165	21.5	19.1	Urban Residential Land	Urban Residential-8	Modular homes along Northridge; mobile homes north	Urban Residential-8	Residential	86	-	-	-	-	35 mobile homes, 25 modular homes on Northridge, 26 single-family dwellings along Oak Crest Way remain.
12	166	22.5	22.4	Urban Residential Land	Urban Residential-10	Residential (mobile home park)	Urban Residential-10	Residential (mobile home park)	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Redevelopment likely to be piecemeal and unpredictable because of small lots and fragmented ownership, and is unlikely to materially alter traffic generation or impact on interchange.

Analy-sis Area No.	TAZ[1] No.	Gross. Acres[2]	Net Acres[3]	Existing			Full-Buildout							
				Comprehensive Plan Designation	Zoning	Land Use	Zoning	Land Use	Dwelling Units	Commercial (Thousand Sq. Ft. or Units)	Industrial (Thousand Sq. Ft.)	Institutional (Thousand Sq. Ft.)	Parks and Open Space Acres	Notes
13	166	12.1	12.1	Commercial Land	General Commercial	Commercial	General Commercial	Commercial	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Redevelopment likely to be piecemeal and unpredictable because of small lots and fragmented ownership, and is unlikely to materially alter traffic generation or impact on interchange.
14	165	17.6	17.1	Commercial Land	General Commercial	Commercial uses (RV parts and service, storage, contractors, residential)	General Commercial	Commercial	-	High-turnover sit-down restaurant: 5 Chain drugstore: 15 Specialty retail center: 48 Contractor: 5 RV parts & repair: 5 Mini-storage: 23	-	-	-	Existing mini-storage, one contractor, and RV repair uses remain; remaining lots redeveloped as high-turnover sit-down restaurant, chain drugstore (from use mix worksheet) and specialty retail centers. Trip generation rate for the RV parts and repair facility the average of the rates for auto parts and general light industrial (34 average daily trips per 1,000 sq. ft.).
15	165	36.7	33.3	Urban Residential Land	Urban Residential-10	Mobile home parks	Urban Residential-10	Residential	289	-	-	-	-	Present uses remain. Tax lots 381W09A-102, 809, and 110, which Jackson County owns, remain as open space. Other lots remain occupied by mobile home parks. Location of much of analysis area within the 100-year floodplain will deter redevelopment.
16	500	21.7	21.7	Interchange Business	Commercial Highway	Commercial; RV park	Commercial Highway	Commercial	-	Specialty retail center: 71 Fast food: 5.8 RV park: 96 spaces	-	-	-	Holiday RV Park, McDonald's, and Shops at Exit 24 shopping center remain. Project would reduce the size of the RV park by four spaces. Trips use mobile home park ratio for RV park and assume 80% occupancy.
17	501	5.2	4.8	Interchange Business	Commercial Highway	South of Grove Way Lazyboy furniture store, north undeveloped	Commercial Highway	Commercial	-	Furniture store: 39 Motel: 130	-	-	-	Lazyboy remains. Undeveloped parcel to north developed as 130-room motel.
18	501	15.5	14.5	Interchange Business	Commercial Highway	South of Grove Way Home Depot, north undeveloped	Commercial Highway	Commercial	-	Home improvement superstore: 130 High-turnover sit-down restaurant: 5 Specialty retail center: 7	-	-	-	Home Depot remains. Undeveloped parcel to north developed with a high turn-over sit-down restaurant (5,000 SF on 1.2 acres), with the remainder a specialty retail center at ratio of 10,000 SF per acre, but with 30 percent reduction in area because of slopes and some portion likely to be occupied by motel included in AA 17 (land north of Grove Way in AA 17 and AA 18 under single ownership).
19	501	4.1	4.1	Interchange Business	RR-5	Undeveloped; sloped	Commercial Highway	Commercial	-	5	-	-	-	Site has steep slopes and is occupied by a historic residence. Converted to bed & breakfast.
20	501	14.5	14.6	Interchange Business	Commercial Highway	About 1/4 Peterbilt truck repair, 3/4 undeveloped	Commercial Highway	Commercial	-	Heavy truck repair: 23 General office	-	-	-	For scenario, AAs 20 and 21a combined because either build alternative would reduce their combined area by about 8.2 acres. Truck repair in AA 20 remains. Remaining

Analy-sis Area No.	TAZ[1] No.	Gross. Acres[2]	Net Acres[3]	Existing			Full-Buildout							
				Comprehensive Plan Designation	Zoning	Land Use	Zoning	Land Use	Dwelling Units	Commercial (Thousand Sq. Ft. or Units)	Industrial (Thousand Sq. Ft.)	Institutional (Thousand Sq. Ft.)	Parks and Open Space Acres	Notes
21a	501	31.1	30.1	Interchange Business	Farm Residential	Orchard				building: 94 High-turnover restaurant: 14 Fast-food restaurant w/out drive through: 14 Hotel: 167 Discount club: 85 Gasoline/Service Station with Convenience Market: 3 Specialty retail center: 53				development consists of the development proposal described in a proposal for zone change of AA 21a, as described in March 15, 2007, letter from David Fletcher, ODOT, to Bart Benthul, JRH Engineering, plus one acre developed as a as gasoline/service station with convenience market and 1.3 acres developed as specialty retail center. Motor vehicle trips assume gasoline/service station has eight fueling positions.
21b	501	7.5	7.5	Residential Hillside	Exclusive Farm Use outside city limits; Farm Residential inside	Residential outside city limits; agriculture inside city limits	Low Density Residential	Residential	16	-	-	-	-	Because of slopes and comprehensive plan designation as Residential Hillside, this land developed in low density residential use.
22	501	1.0	0.3	Interchange Business	Commercial Highway	Undeveloped (ODOT owns portion south of N. Phoenix Rd.)	Commercial Highway	Commercial, except portion south of N. Phoenix Rd. undeveloped	-	-	-	-	-	Parcel on south side of N. Phoenix Road owned by ODOT; remains undeveloped. Highway improvements would occupy portion north of N. Phoenix Rd. under Fern Valley Thru Alternative. Under N. Phoenix Thru Alternative, portion north of N. Phoenix Rd. would be developed as part of development described for AAs 20 and 21a.
23	167	43.3	43.3	Agricultural Land	Exclusive Farm Use	Agriculture, w/ dwelling	15% Commercial Highway 85% Low Density Residential	15% commercial 85% SF residential	121	Supermarket: 50	-	-	-	This is urban reserve area PH-10 in the September 2007 draft of the Regional Problem Solving Plan. The plan calls for 85% residential development and 15% commercial development. Total acreage available for development reduced by acres occupied by irrigation canal and the acres used for the interchange project (using an average of the two build alternatives). Retail developed as the one 50,000 SF supermarket from the use mix worksheet. Supermarket size is comparable to the Altertson's on N. Phoenix Rd. Residential developed at same density as Phoenix Hills Subdivision immediately to the south, i.e., 3.7 DUs per gross acre.
24	506	54.8	43.0	Low Density Residential	Low Density Residential	Residential	Low Density Residential	Residential	199	-	-	-	-	Phoenix Hills subdivision, fully developed (undeveloped portions permanent open space and irrigation canal).
25	506	4.6	4.6	Interchange Business	Commercial Highway	Undeveloped	Commercial Highway	Commercial	-	Restaurant w/ drive-thru: 5 Retail specialty center: 24	-	-	-	Developed as fast-food restaurant with drive-thru (5,000 SF on one acre) from use mix worksheet, with remainder retail specialty center at 10,000 SF per acre.
26	506	1.3	1.3	Interchange Business	Commercial Highway	Undeveloped	Commercial Highway	Commercial	-	Retail specialty center: 12	-	-	-	Developed as a retail specialty center at 10,000 SF per acre.
27	506	1.9	1.9	Interchange Business	Commercial Highway	Light industrial	Commercial Highway	Light industrial	-	-	16	-	-	Existing building remains.

Analy-sis Area No.	TAZ[1] No.	Gross. Acres[2]	Net Acres[3]	Existing			Full-Buildout							
				Comprehensive Plan Designation	Zoning	Land Use	Zoning	Land Use	Dwelling Units	Commercial (Thousand Sq. Ft. or Units)	Industrial (Thousand Sq. Ft.)	Institutional (Thousand Sq. Ft.)	Parks and Open Space Acres	Notes
28	506	3.5	3.5	Interchange Business	Commercial Highway	Commercial	Commercial Highway	Commercial	-	Modular home sales: 2.5	-	-	-	Modular home sales continue. Permanent structure (vs. model homes) appears to be about 2,500 SF. Average daily trips use twice the rate for furniture stores.
29	506	10.6	10.6	Interchange Business	Commercial Highway	Commercial	Commercial Highway	Commercial	-	High-Turnover Sit-down Restaurant: 11 Service station with convenience market: 2.7 Truck servicing building: 12.8	-	-	-	Petro truck stop remains. Average daily trips does not include separate trips for fueling and uses light industrial rate for the truck servicing building.
30	506	4.8	4.8	Interchange Business	Commercial Highway	Commercial	Commercial Highway	Commercial	-	Motel: 46 RV Park: 45	-	-	-	Motel and RV park remain. Vacant land developed as expansion of RV park, for which City approval issued. Trips use mobile home park ratio for RV park and assume 80% occupancy.
31	505	8.7	0.7	Interchange Business	Commercial Highway	Undeveloped, except 1-story professional buildings. at Luman and N. Phoenix. Rd.	Commercial Highway	Commercial	-	Professional offices: 3.6 Retail specialty center: 27	-	-	-	Most of parcel 381W09A201 and about half of parcel 381W102901 (both north and south of Lumen Rd.) are within the 100-year floodplain. The interchange project will reduce the size of both parcels, but mainly 381W102901. Professional offices on parcel 381W09A201 remain. Parcel 381W102901 (both north and south of Lumen Rd.) developed as retail specialty centers, but with only half their area developable.
32	504	3.6	3.6	Commercial	Commercial Highway	Residential, commercial	Commercial Highway	Commercial	-	Specialty retail center: 30	-	-	-	Existing uses include six non-conforming single-family homes and the 17-unit motel Bavarian In Motel, built in 1947. A portion is within the 100-yr. floodplain and both interchange alternatives would use 0.3 acre. Remainder redeveloped as single retail specialty center.
33	504	1.5	1.5	Commercial	Commercial Highway	Commercial	Commercial Highway	Commercial	-	Sit-down restaurant: 3 Gasoline/ser-vice station with convenience market: 8 fueling positions Car wash Coffee stand	-	-	-	Site occupied by two buildings currently vacant. Build-out uses based on pre-application submitted to the City of Phoenix. Average daily trips for car wash (108) comes from the single study of a self-service car wash reported in the ITE trip manual. The manual contains no average weekday trips for automated car washes. Average daily trips for the coffee stand (100) equates to one every 8.4 minutes over 14 hours (the ITE trip manual does not include coffee stands).
34	500	5.1	4.9	Commercial	Commercial Highway	Commercial uses, residential on east end	Commercial Highway	Commercial	-	Retail specialty center: 65			-	Now occupied by Pacific Business Center, including the Salvation Army; a gas station; shops; and residential on east end. Existing commercial and retail remain; residential uses and gas station convert to retail specialty center use, with a ratio of 10,000 SF per acre (similar to existing retail). Area size reduced to reflect use of a total of 0.4 acres for the interchange project.
35	503	7.5	7.0	Commercial	Commercial Highway	Commercial	Commercial Highway	Commercial	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Existing uses remain. RVCOG model numbers to be used because the traffic analysis zone (TAZ) that contains this analysis area reflects only modest growth in population, households, and employment.

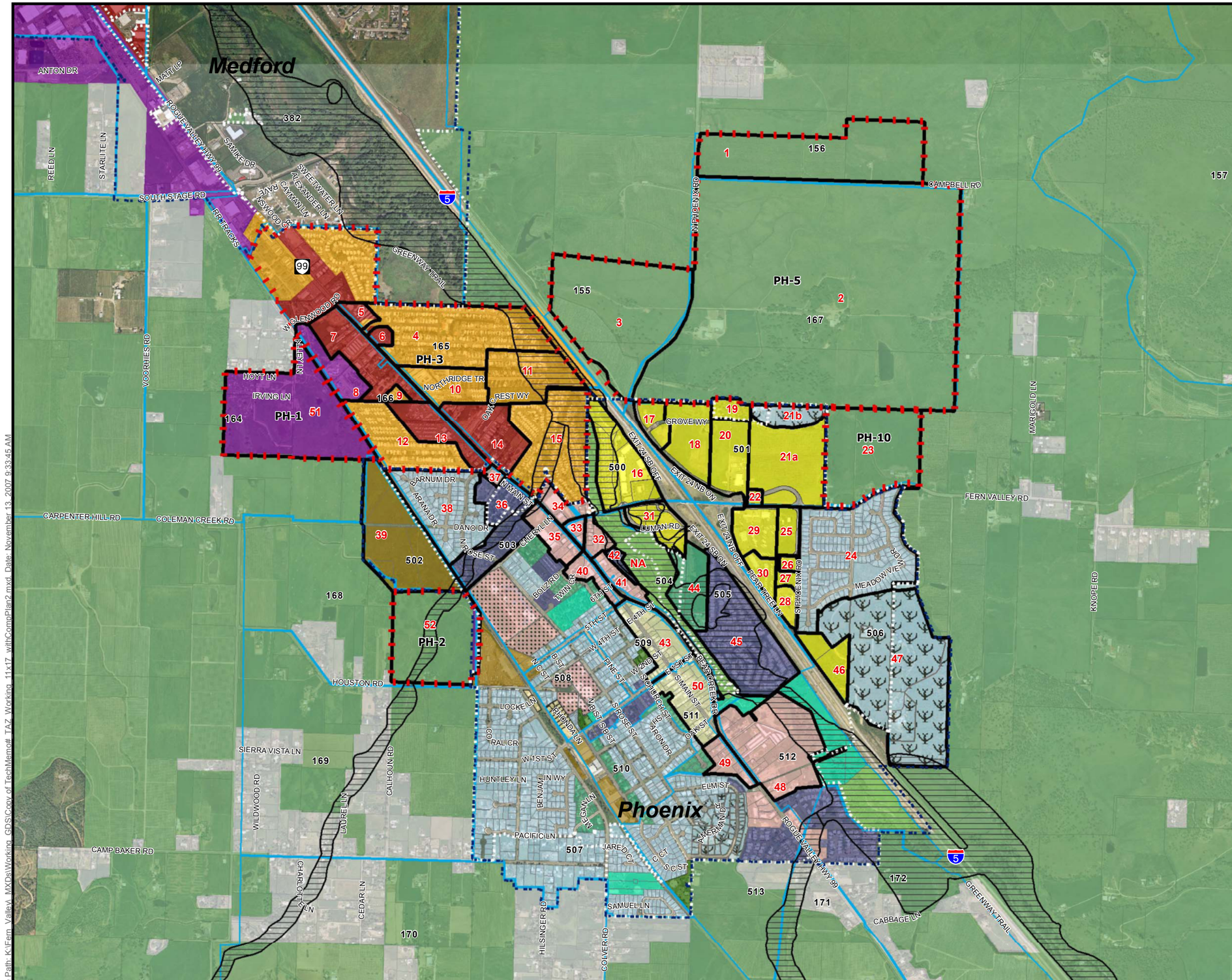
Analy-sis Area No.	TAZ[1] No.	Gross. Acres[2]	Net Acres[3]	Existing			Full-Buildout							
				Comprehensive Plan Designation	Zoning	Land Use	Zoning	Land Use	Dwelling Units	Commercial (Thousand Sq. Ft. or Units)	Industrial (Thousand Sq. Ft.)	Institutional (Thousand Sq. Ft.)	Parks and Open Space Acres	Notes
36	503	21.6	20.9	High Density Residential	High density residential	Residential	High density residential	Residential	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Existing uses remain. RVCOG model numbers to be used because the TAZ that contains this analysis area reflects only modest growth in population, households, and employment.
37	503	1.1	1.1	Commercial	Commercial Highway	Commercial	Commercial Highway	Commercial	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model	Use RVCOG model numbers	Use RVCOG model numbers	Existing uses remain. RVCOG model numbers to be used because the TAZ that contains this analysis area reflects only modest growth in population, households, and
38	503	29.7	23.2	Low Density Residential	Low Density Residential	Residential	Low Density Residential	Residential	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model	Use RVCOG model numbers	Use RVCOG model numbers	Existing uses remain. RVCOG model numbers to be used because the TAZ that contains this analysis area reflects only modest growth in population, households, and
39	502	34.7	33.8	Industrial	Industrial	Undeveloped	Industrial	Industrial	-	-	Industrial park: 300	-	-	Now undeveloped. Land developed as industrial park, with 20% deducted for streets.
40	503	4.2	4.1	Commercial	Commercial Highway	Commercial	Commercial Highway	Commercial	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Existing uses remain. RVCOG model numbers to be used because the TAZ that contains this analysis area reflects only modest growth in population, households, and employment.
41	504	4.7	4.5	Commercial	Commercial Highway	Commercial, undeveloped, residential	Commercial Highway	Commercial	-	Retail specialty center: 15 Automobile parts sales: 6.4 Gas station: 1.1 Automobile care center: 3.1 Motel: 22	-	-	-	Existing commercial uses remain or are replaced with similar uses. Vacant and residential land developed for services with ratios of building square footage to land area like the existing uses. Services classified as retail specialty centers for trip generation estimates. Not affected by use of a small amount of area for interchange project. Average daily trips for automobile care center based on light industrial ratio, because the ITE trip manual does not report average weekday trips for automobile care centers.
42	504	1.9	1.9	High Density Residential	High density residential	Residential, undeveloped	High density residential	Residential	20	-	-	-	-	The twenty existing townhouses remain. The 0.8-acre lot now undeveloped remains undeveloped because it is partially within the 100-year floodplain.
43	509	13.0	10.6	City Center District	City Center	Commercial	City Center	Commercial	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Redevelopment likely to be piecemeal and unpredictable because of small lots and fragmented ownership, and is unlikely to materially alter traffic generation or impact on interchange. Also, the City of Phoenix owns 3.8 acres, all or much of which is undevelopable because of slopes, wetland values, and legal restrictions under Section 6(f) of the Federal Land and Water Conservation Fund Act.
44	505	13.7	13.7	Medium Density Residential	High density residential	Residential (1 residence?), outdoor storage, RV storage	High density residential	Residential, RV storage	80	RV storage: 82,000	-	-	-	1.88 acres used for RV storage remains. Other two parcels have same owner, but about half of their area is in the 100-year floodplain. Developed for residential use under R-2 zoning with attached townhouses, 20% deducted for streets. Clustering used to avoid construction in the floodplain. Average daily trips for RV storage not included, because so low as to be immaterial.
45	505	37.2	37.2	High Density Residential	High density residential	Residential	High density residential	Residential	210	-	-	-	-	Bear Lake Mobile Estates remains as is, with 210 mobile homes.
46	506	9.6	9.6	Interchange Business	Farm Residential/ Commercial Highway	Commercial, Undeveloped	Farm Residential/ Commercial Highway	Commercial	-	Mini-warehouse: 60	-	-	-	North lot mini-storage; south undeveloped, with piles of rock and cement block debris. Mini-storage continues (size estimated, because tax records don't include). Half of the vacant parcel is rezoned Commercial Highway and developed for mini-storage; remainder remains vacant because of its slope.

Analy-sis Area No.	TAZ[1] No.	Gross. Acres[2]	Net Acres[3]	Existing			Full-Buildout							
				Comprehensive Plan Designation	Zoning	Land Use	Zoning	Land Use	Dwelling Units	Commercial (Thousand Sq. Ft. or Units)	Industrial (Thousand Sq. Ft.)	Institutional (Thousand Sq. Ft.)	Parks and Open Space Acres	Notes
47	506	81.9	81.9	Residential Hillside	Low Density Residential/ RR-5	Residential (very low density)	Low Density Residential/ RR-5	Residential (very low density)	5	-	-	-	-	Two residences added to existing three.
48	512	37.6	37.6	Commercial /Park Open Space	Commercial Highway/BC G	Commercial, parks and open space	Commercial Highway	Commercial, parks and open space	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Redevelopment likely to be piecemeal and unpredictable because of small lots and fragmented ownership, and is unlikely to materially alter traffic generation or impact the interchange. Also, 12 acres is a City of park.
49	511	5.5	5.5	Commercial	Commercial Highway	Commercial, residential	Commercial Highway	Commercial, residential	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Redevelopment likely to be piecemeal and unpredictable because of small lots and fragmented ownership, and is unlikely to materially alter traffic generation or impact the interchange.
50	511	14.9	13.2	City Center District	City Center	Commercial, undeveloped	City Center	Commercial, undeveloped	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Redevelopment likely to be piecemeal and unpredictable because of small lots and fragmented ownership, and is unlikely to materially alter traffic generation or impact the interchange.
51	164	59.5	57.7	Industrial Land	Light Industrial	Industrial, undeveloped	Industrial	Industrial	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	Use RVCOG model numbers	This is proposed Urban Reserve Area PH-1. Because the land is now zoned for industrial use, the RVCOG model numbers provide for growth in employment on it.
52	168	41.3	41.0	Agricultural Land	Exclusive Farm Use	Agriculture	Medium Density Residential	School	-	-	-	Use RVCOG model numbers	-	This is proposed Urban Reserve Area PH-2. The RAPS calls for 50 percent to be used for open space/parks and 50 percent for institutional use, specifically for schools. Roughly one-quarter of the area is within the 100-year floodplain of Coleman Creek, which runs diagonally from the SW corner to the NE corner. The Medford Irrigation Canal cuts across the NE corner. There is interest in using part of the site for expansion of the existing high school, which abuts analysis area 52 (across the railroad tracks). However, the high school is under-capacity now and projected to have even lower enrollment by 2009 (which is as far out as the district's current projections go). A district official shared his view that, if the district used the land at all in the near future, it would be for high school athletic facilities. The district has banked land for future schools in south Medford and Talent, as well as in Phoenix.

[1]Traffic Analysis Zone. Used for traffic modeling

[2]Total area from geographic information system.

[3]Exclusive of public right-of-way. Equals sum of tax lot acreages.



Appendix F, Annex 2

Development Scenario Analysis Areas

- Analysis Area Boundary
- Transportation Analysis Zone Boundary
- Proposed Urban Reserve Area
- City Boundary
- Urban Growth Boundary
- Taxlots
- FEMA 100-Year Floodplain

Comprehensive Plan Designations

City of Phoenix

- Bear Creek Greenway
- City Center District
- Commerical
- High Density Residential
- Industrial
- Interchange Business
- Low Density Residential
- Medium Density Residential
- Park Open Space
- Public
- Residential Employment
- Residential Hillside
- Schools

Jackson County

- Agricultural Land
- Commercial Land
- Industrial Land
- Rural Residential Land
- Urban Residential Land

Feet

0 1,000 2,000 3,000

N

Oregon Department of Transportation

Fern Valley Interchange

November 12, 2007

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Appendix F, Annex 3
Mix and Allocation of Uses Other Than Known Proposals and Retail Specialty Centers
Development Scenario
Fern Valley Interchange Area Management Plan

Use	Number	Sq. Ft.	Site Size (acres)	Analysis Areas Allocated To	Notes
Supermarket	1	50,000	5.0	23	Comparable to Albertson's on N. Phoenix Rd.
Discount Club	0				One discount club included in scenario for Analysis Area 21.
Chain drug store	2	15,000	7.0	2, 14	Comparable to Walgreens on Barnett Rd., Medford
Fast-Food Restaurant w/ Drive Through	2	5,000	1.0	2, 25	Comparable to McDonalds next to the Shops at Exit 24 and near Barnett Rd. and OR 99
Fast-Food Restaurant w/out Drive Through	NA	1,500	0.1		Comparable to a Subway in a small shopping center. Not allocated to analysis areas because the ITE trip manual[1] lacks an average weekday trip ratio for this use. Retail specialty center trips will include trips from these uses.
High-Turnover Sit-down Restaurant	3	5,000	1.2	2, 14, 18	Comparable to Applebee's on Biddle Rd. in Medford and Shari's in Central Point
Drive-in Bank	1	4,000	0.8	2	Comparable to Umpqua Banks on South Pacific Hwy. and Poplar Dr. A second additional bank is likely, but would probably be along OR 99 in a traffic analysis zone for which RVCOG numbers are used.
Quick Vehicle Lubrication Shop	NA	2,200	0.3		Comparable to Jiffy Lube on North Riverside Avenue, Medford. Not allocated to analysis areas because the ITE trip manual[1] lacks an average weekday trip ratio for this use. Retail specialty center trips will include trips from these uses.
Gasoline/Service Station with Convenience Market	1	3,000	1.0	20	Comparable to Talent Shell on Valley View Rd.
Motel	2	120	3.0	2, 17	One motel each is already included in Analysis Area 21. These are comparable in size to the Windmill Inn and Rogue Regency Inn on Biddle Rd. in Medford and the Super 8 Motel in Phoenix.

Appendix F, Annex 4
Comparable Properties
Development Scenario
Fern Valley Interchange Area Management Plan

Name	Size Acres	Building SF or Units	Maplot No.	Owner	SF/Acre or Units*/Acre	Notes
Home Depot	10.41	130,566	381W10 200	HOME DEPOT U S A INC	12,542	
Lazyboy	1.73	38,887	381W09A 2300	RECLIN-OR PROPERTIES LLC	22,478	
McDonald's	1	5,792	381W09A 202	MC DONALD'S CORPORATION	5,792	
McDonald's	0.71	5,361	371W30DC 6700	MEG LLC	7,551	
Applebee's 1388 Biddle Road, Medford	1.47	6,150	371W19BB 1201	JOE WONG FAMILY TRUST	4,184	
Shari's Restaurant 210 Penninger St, Central Point	0.84	4,444	372W02D 2903	EL GROUP A, LLC, ET AL.	5,290	
Shops at Exist 24	6.3	71,475	381W09A 205	BIDDLE ROAD LLC	11,345	
Costco, 3639 Crater Lake Highway, Medford	12.5	136,756	371W07A 5204	COSTCO WHOLESALE CORP	10,940	
Target 2000 Crater Lake Hwy. Medford	7.06	104,107	372W13DD 501	DAYTON HUDSON CORPORATION	14,746	
Albertsons, 910 North Phoenix Road, Medford, OR 97504	5.27	50,466	371W27CC 4600 371W34BB 100	ALBERTSON'S INC	9,576	
Walgreen's, 210 E Barnett, Medford	1	15,000	371W31A 400	HOUSE LEROY, TRUSTEE, et al.	15,000	Square footage a rough estimate.

Name	Size Acres	Building SF or Units	Maplot No.	Owner	SF/Acre or Units*/Acre	Notes
Shopping area at East Stewart Avenue and S. Riverside Ave. in Medford, including Shari's Restaurant, Blockbuster, Big 5 Sporting Goods, Goodwill, and grocery store	8.9	74,268	371W31A 1100	READ INVESTMENTS, et al.	8,345	
Umpqua Bank, 4000 South Pacific Highway, Medford, OR 97501	1.03	3,982	381W09A 2400	VALLEY OF THE ROGUE BANK	3,866	
Umpqua Bank, 2400 Poplar Dr., Medford	0.66	7,808	371W18BD 800	VALLEY OF THE ROGUE BANK	11,830	
Jiffy Lube, 1729 North Riverside Avenue, Medford, OR 97501	0.24	2,250	372W24AA 800	KELKIR CORPORATION	9,375	
Talent Shell 301 Valley View Rd, Talent	1.21	3,000	381W23D 100	SOUTH STAR OIL	2,479	
RC Auto Parts House 612 N Main, Phoenix	0.81	6,400	381W09DA 3500	RODNEY CAMERON	7,901	
Baxter Auto Parts 2888 Biddle Rd, Medford	0.74	10,650	371W18BB 800	MICHAEL LITTRELL	14,392	

Name	Size Acres	Building SF or Units	Maplot No.	Owner	SF/Acre or Units*/Acre	Notes
Schuck's Auto Supply 3555 Crater Lake Hwy, Medford	0.8	3,655	371W07D 201	OREGON INVESTMENTS LLC	4,569	
Windmill Inn 1950 Biddle Rd, Medford, OR	2.3	123	371W18C 3300	WINDMILL INNS/AMERICA INC	53	
Rogue Regency Inn 2300 Biddle Rd, Medford, OR	5.16	203	371W18BC 800	VENTURE LLC, et al.	39	
Super 8 Motel 300 Peartree Lane, Phoenix, OR	1.2	46	381W10 2800	MISTRY, BHAGVATIBEN AND PARBHUBHAI	38	
Alterra Wynwood of Rogue Valley (senior residential care, 95 beds) 3033 Barnett Rd Medford, OR 97504	3.31	85,000		AHC WYNWOOD OF ROGUE VALLEY LLC	25,680	Building square footage from aerial photo; building has three stories. 29 rooms per acre.
NORTHRIDGE CENTER ASSISTED LIVING (65 rooms) 3737 S. Pacific Hwy. Medford Oregon 97501	1.55	32,443	381W09BA 100	RIVERRIDGE MANAGEMENT LLC	20,931	42 rooms per acre.

Name	Size Acres	Building SF or Units	Maplot No.	Owner	SF/Acre or Units*/Acre	Notes
PHOENIX FAMILY DENTISTRY- JC PHY THERAPY 240 FERN VALLEY RD PHOENIX	1.35	3,580	381W09A 201	DOW FAMILY PARTNERSHIP	2,652	
LA CLINICA DEL VALLE FAMILY, 3617 South Pacific Hwy	1.85	15,000	381W04C 1000	HEALTH CARE CENTER INC	8,108	Square footage from staff, 10/15/07
New Horizons Preschool & Daycare 3073 Delta Waters Rd Medford OR 97504-5834	0.58	3,234	371W09 4401	COSSETTE, DAVID and CATHRYN	5,576	
Griffin Creek Elementary School, 2430 Griffin Creek Road, Medford, OR 97501	9	63,000	382W02CA 200	SCHOOL DISTRICT 549C	7,000	Building square footage from aerial photo; assumes single story.
Phoenix Hills Subdivision	53.44	199	381W10 misc.	Multiple	3.7	Total acres excludes parcels containing canal.
Lear Way Industrial Park, Medford	2.4	30,096	371W07A 70000, 70001, 800001, 800002, 90000, 90001,90002, 90004, 90005	Multiple	12,540	Square footage from assessor's data, acreage measured from aerial photo (10/16/07 e-mail).

Name	Size Acres	Building SF or Units	Maplot No.	Owner	SF/Acre or Units*/Acre	Notes
Industrial buildings, 540 W. DUTTON RD, WHITE CITY	0.64	11,485	361W17AA 201	ROCKWELL, JACOB F, et al.	17,945	Built 1997. See Economic and Community Dev. Dept. listing at link to right.
Industrial buildings, 3112 CRATER LAKE AVE, Medford	0.85	7,140			8,400	See Economic and Community Dev. Dept. listing at link to right.
Industrial buildings, 7675 Agate Rd., White City	4	42,000	361W19A 2200	ANTELOPE AGATE LLC	10,500	See Economic and Community Dev. Dept. listing at link to right.
A-1 Self-Storage 3558 S Pacific Hwy Medford, OR	2.4	22,000	381W09B 3600	DIETZEL REV LIVING TRUST	9,167	

Appendix F, Annex 5
Population, Households, and Employment Forecasts in RVCOG Model
Fern Valley Interchange Area Management Plan

	Population				Households			Employment		
Transportation Analysis Zone	**2002**	**2008**	**2015**	**2030**	**2008**	**2015**	**2030**	**2008**	**2015**	**2030**
155	36	44	54	75	17	21	31	4	8	18
156	249	542	884	1616	213	359	671	11	11	11
165	1581	1579	1576	1570	789	789	789	223	226	233
166	595	593	591	587	288	288	288	117	122	128
167	108	114	121	137	47	50	56	12	14	19
500	80	92	106	136	47	52	64	96	108	134
501	10	143	297	629	57	118	249	96	174	342
502	88	88	88	88	40	40	40	6	9	15
503	1003	1032	1065	1137	499	514	547	215	228	257
504	130	140	151	175	77	82	93	35	45	67
505	256	268	283	314	153	159	172	23	31	51
506	401	525	669	979	196	250	366	111	127	161
509	196	212	231	272	91	99	117	60	72	98
511	368	385	404	446	162	171	189	98	110	136
512	231	244	258	290	122	129	143	50	66	98
	Source: Rogue Valley Council of Governments, October 18, 2007.									

Appendix F, Annex 6
Effect of Build Alternatives on Land Available for Development
Fern Valley Interchange
(acres)

	Land Used for Right-of-Way by Build Alternative		Right-of-Way Vacated and Added to Adjoining Parcels		Net Reduction in Land Available for Development (Increases in Parentheses)			
Analysis Area	Fern Valley Thru	North Phoenix Thru	Fern Valley Thru	North Phoenix Thru	Fern Valley Thru	North Phoenix Thru	Average	Combined
2	4.1	4.7	1.3	1.3	2.8	3.4	3.1	
3	2.7	2.6	0.8	0.8	1.9	1.8	1.8	
16	0.6	0.6			0.6	0.6	0.6	
17			0.7	0.7	(0.7)	(0.7)	(0.7)	
18	1.3	2.9	0.7	0.7	0.6	2.1	1.4	
19	0.8	0.9			0.8	0.9	0.8	
20	2.3	5.4	0.3	0.4	2.1	5.0	3.6	8.3
21	6.8	4.0	0.6	0.8	6.2	3.2	4.7	
22	0.3			0.2	0.3	(0.2)	0.1	
23	1.3		0.0		1.3	0.0	0.6	
31	1.1	0.7	0.2	0.4	0.9	0.4	0.7	
32	0.3	0.3			0.3	0.3	0.3	
33	0.1	0.2			0.1	0.2	0.2	
34	0.4	0.4			0.4	0.4	0.4	
35	0.2	0.2			0.2	0.2	0.2	
40	0.1	0.1			0.1	0.1	0.1	
41	0.2	0.2			0.2	0.2	0.2	
Total	22.6	23.1	4.6	5.2	18.0	17.8	17.9	