RIGHT OF WAY
TECHNICAL REPORT

I-5: Fern Valley Interchange

May, 2007
Addendum Added April 2010

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ODOT

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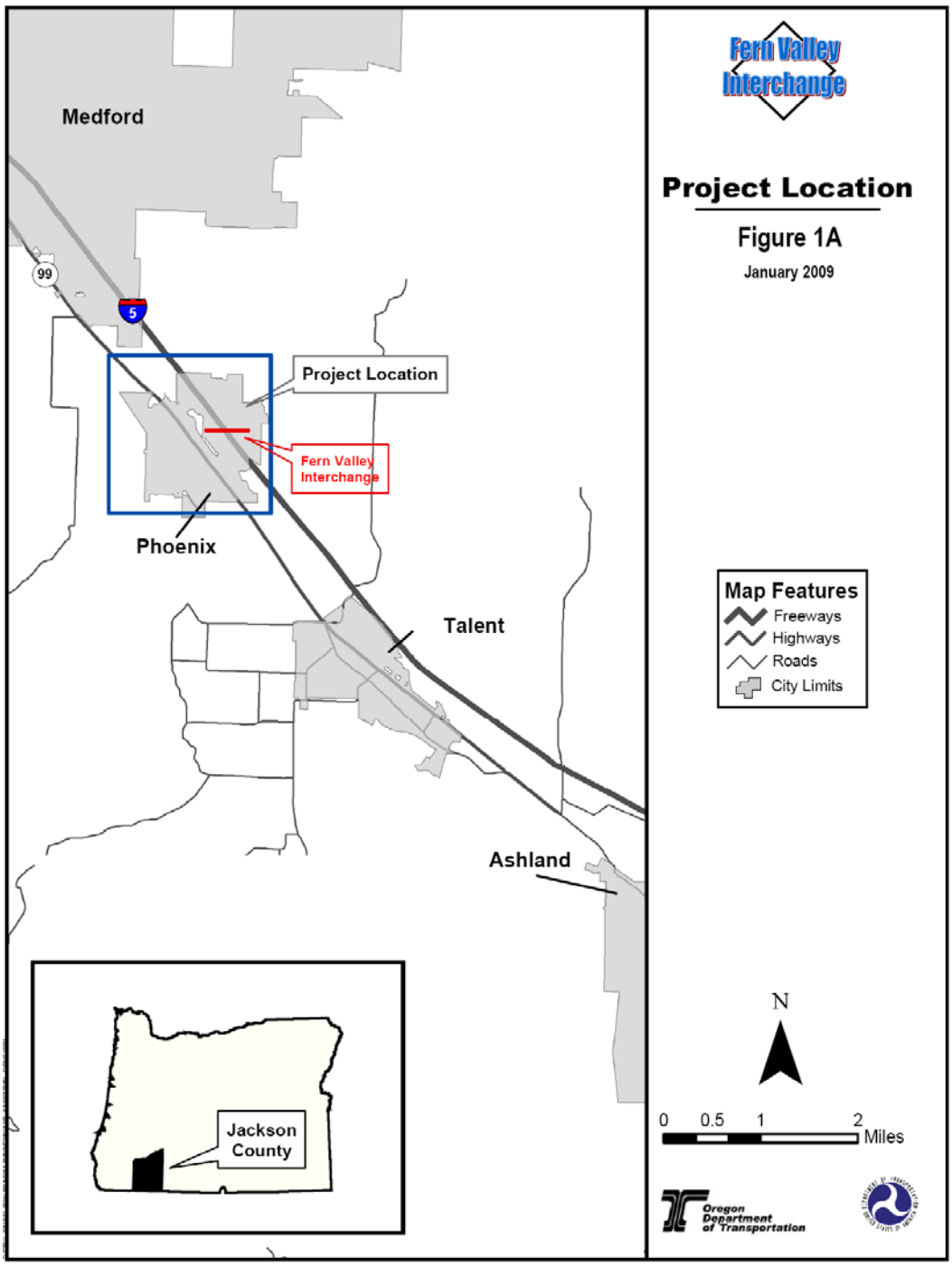
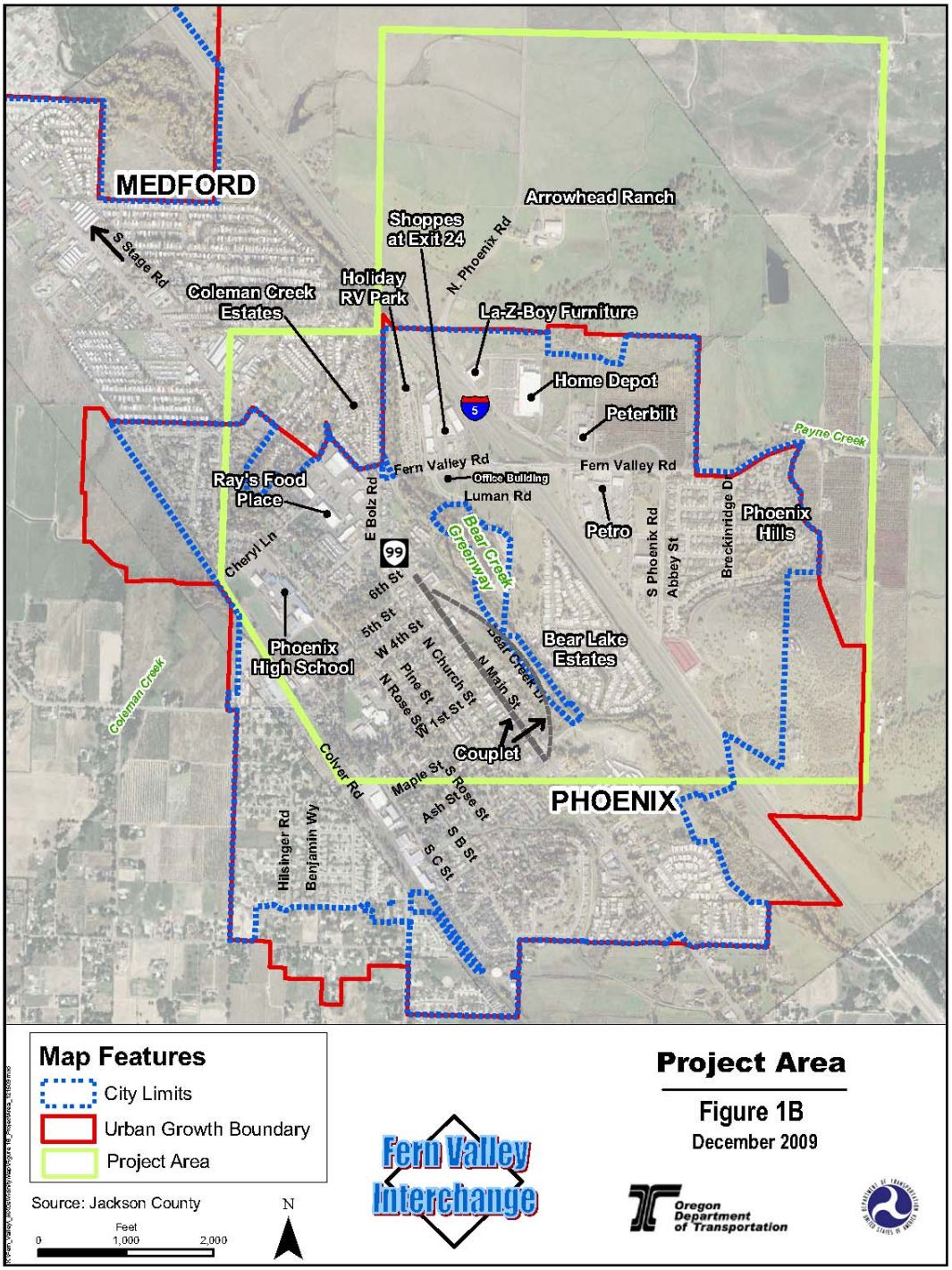
LIST OF ACRONYMS AND ABBREVIATIONS

CDI	Crossing Diamond Interchange (Diverging Diamond Interchange)
CEQ	Council of Environmental Quality
EA	Environmental Assessment
FHWA	Federal Highway Administration
FVI	Fern Valley Interchange
NEPA	National Environmental Policy Act
ODOT	Oregon Department of Transportation

1. INTRODUCTION

The Right of Way Technical Report has been prepared to support the Environmental Assessment (EA) for the proposed Fern Valley Interchange project, located along I-5 in southwest Oregon (shown in Figures 1A and 1B).





Most of the project is located within the Phoenix city limits and urban growth boundary (UGB), and extends from OR 99[1] (in Phoenix) west of the interchange to the Phoenix UGB and to Arrowhead Ranch (north of the UGB) east of the interchange. The project area west of the interchange is primarily a developed urban area, except for the Bear Creek Greenway

[1] OR 99 is also known as Highway 99, and also as Main Street (including the southbound portion of the couplet) through the City of Phoenix.

(a narrow corridor of publicly-owned land along Bear Creek) and partially developed land in the southwest interchange quadrant. The project area northeast of the interchange is primarily located in an area that has been experiencing increased commercial development. The southeast interchange quadrant contains commercial development and the Phoenix Hills neighborhood.

The purpose of this technical report is to provide an assessment of the potential right of way impacts associated with this project. This impact analysis has been conducted pursuant to the requirements of the National Environmental Policy Act; the Council of Environmental Quality; and the Federal Highway Administration (FHWA).

1.1 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The following provides an overview of the purpose and need for the Fern Valley Interchange project. A detailed description of the purpose and need is provided in the EA published for this project.

The purpose of the proposed action is to reduce congestion and improve operational conditions at the Interstate 5 (I-5) interchange with Fern Valley Road, on Fern Valley Road within the City of Phoenix UGB, and on OR 99 near its intersection with Fern Valley Road. The need for the proposed action includes the following:

- The Fern Valley Interchange is experiencing increasing congestion, which has caused vehicles to queue on the off-ramps during commute times. By 2030, these queues will spill back onto I-5, increasing the risk of high-speed, rear end collisions. The capacity of the interchange is degrading rapidly, and traffic safety remains an ongoing concern. Future traffic problems will worsen these conditions.
- The Fern Valley Interchange does not meet current interchange design standards—the approaches to the overcrossing are steep and limit traffic visibility; and the length of the I-5 ramps and acceleration lanes are substandard, which results in short stopping and acceleration distances.
- Fern Valley Road and OR 99 have substandard shoulders, do not have dedicated bicycle lanes, and sidewalks are discontinuous; these conditions create safety concerns for bicyclists and pedestrians.
- Fern Valley Road crosses Bear Creek between I-5 and OR 99. This narrow bridge creates a bottleneck on Fern Valley Road. In addition, the bridge is in poor condition;[2] the bridge is now limited to loads less than 80,000 pounds.
- The OR 99/Fern Valley Road intersection is substandard--the western leg of the intersection is a retail business parking lot rather than another roadway. There are numerous driveways close to the intersection creating safety issues.

[2] Bridge inspection (in July 2007) resulted in a bridge sufficiency rating of 6 out of 100, with 100 being the best rating possible.

2. DESCRIPTION OF THE ALTERNATIVES

Three alternatives are evaluated in this technical report: a No-Build Alternative and two build alternatives. The proposed build alternative descriptions are based on preliminary design only. Projects normally have design changes during the final design phase—after the environmental process is complete but prior to construction. A full description of the project alternatives and more detailed graphics are provided in the EA.

Addendum: Subsequent to completion of this technical report, the Fern Valley Thru Alternative was dismissed from consideration based on land use goal exception requirements. The N. Phoenix Thru Alternative was advanced as the Build Alternative into the EA.

2.1 NO-BUILD ALTERNATIVE

The No-Build Alternative is evaluated and documented to provide a basis for comparison with the build alternatives. The No-Build Alternative means the proposed project would not be built. Routine maintenance would continue and short-term minor safety improvement activities would occur. If the No-Build Alternative is selected, the following planned projects and developments in the project area are still likely to occur in the next 20 years:

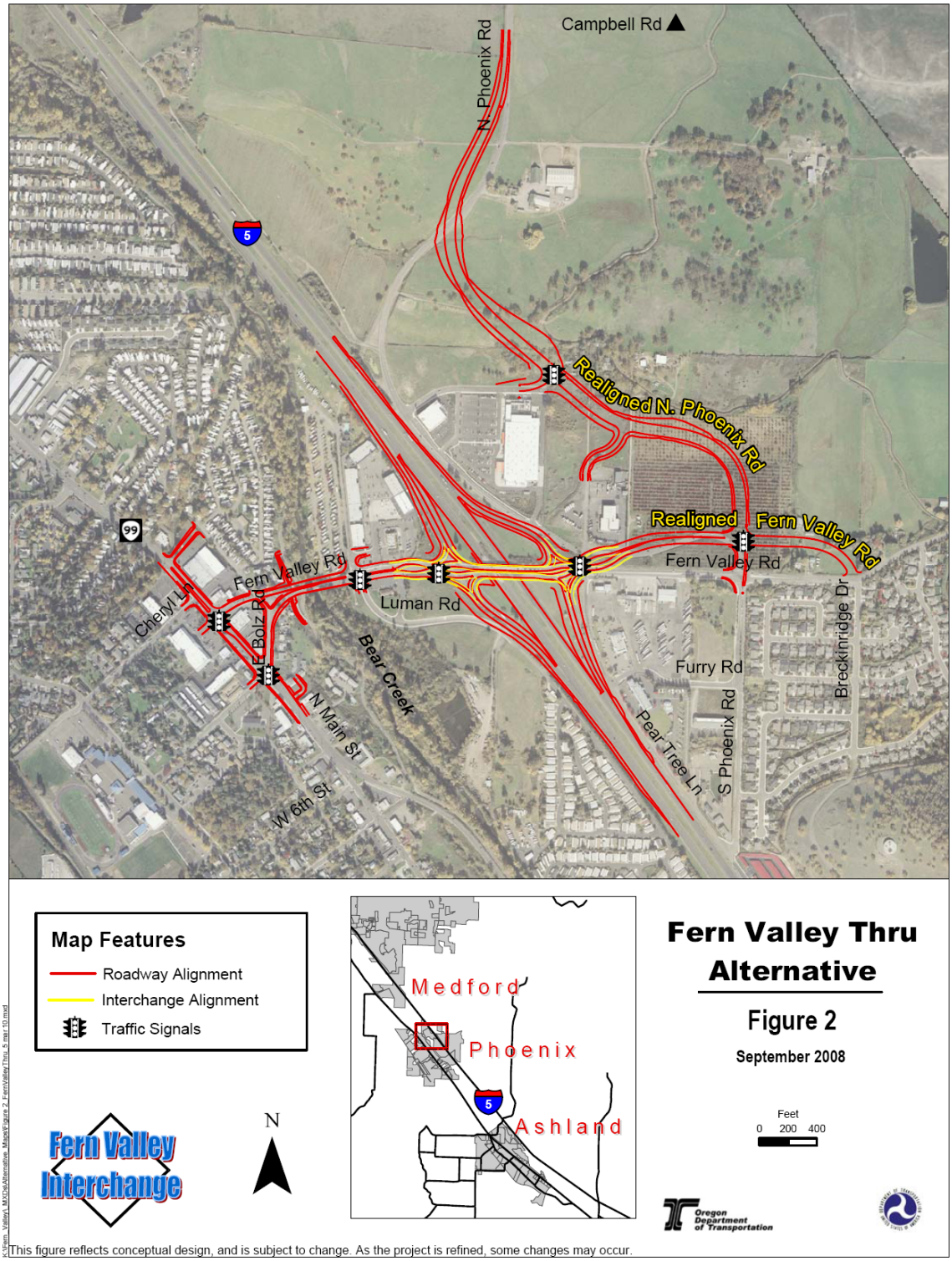
- Providing bike lanes and sidewalks on 1st Street (Rose Street to OR 99 southbound), on 4th Street (Rose Street to Colver Road), on Bolz Road (OR 99 to Fern Valley Road), and on Colver Road (1st Street to the Phoenix southern UGB);
- Providing bike lanes on 4th Street (OR 99 southbound to OR 99 northbound), and on Rose Street (1st Street to 5th Street); and
- Constructing new streets with bike lanes and sidewalks on 3rd Street (existing terminus to OR 99 northbound) and Parking Street (OR 99 northbound to 3rd Street).

2.2 BUILD ALTERNATIVES

Two build alternatives are evaluated in this report: the Fern Valley Thru Alternative and the N. Phoenix Thru Alternative. Both build alternative alignments are almost the same west of I-5, but are very different east of I-5. The following summarizes the build alternatives.

2.2.1 Fern Valley Thru Alternative

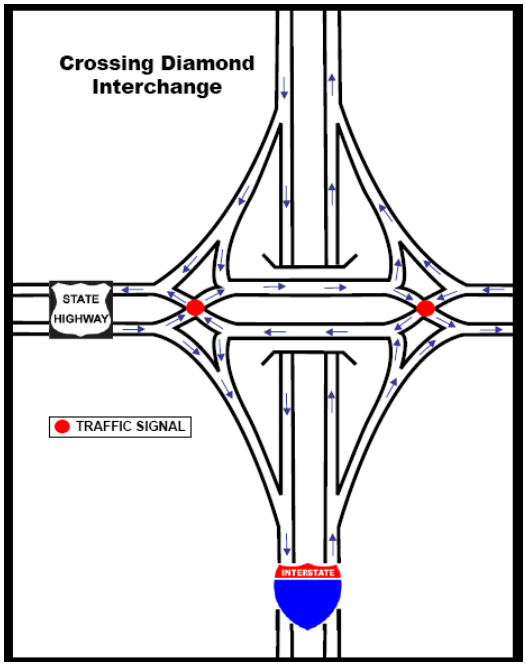
The Fern Valley Thru Alternative, shown in Figure 2, generally follows the existing alignment of Fern Valley Road and includes the following:



West of I-5, the following elements are included:

- From MP 11.07 to MP 11.34, OR 99 would be two lanes in each direction (except at intersections). Fern Valley Road would be two lanes in each direction, but would turn into a one-way road just west of Bear Creek—westbound traffic would follow Fern Valley Road and eastbound traffic would use E. Bolz Road.
- Travel lane widths on OR 99 in the project area would be reduced to 11 feet.
- Bikes on Fern Valley Road and E. Bolz Road would use 6-foot-wide shoulders that would be designated by pavement markings for bike travel. OR 99 and in transition areas (e.g., when a 4-lane roadway transitions to a 2-lane roadway) would have 5-foot shoulders.
- OR 99, Fern Valley Road, and E. Bolz Road would have 6-foot sidewalks on both sides of the roadway.
- The 2-lane Bear Creek Bridge (36 feet wide) would be replaced with a 4-lane bridge (100 feet wide).
- A median would be installed on OR 99 from north of Cheryl Lane to E. Bolz Road.
- If this alternative is selected, final design could indicate that some existing pavement may no longer be needed, and would therefore be removed upon completion of the project. Minimal pavement removal is anticipated west of I-5.
- Retaining walls may be constructed east of OR 99 from Cheryl Lane to E. Bolz Road, east of the Bear Creek Greenway multi-use path and adjacent to the Bear Creek Bridge, and north and south of Fern Valley Road near the Fern Valley Road/Luman Road intersection.

The interchange would be a new interchange design concept, the Crossing Diamond Interchange (CDI) (also known as the Diverging Diamond Interchange). With this type of interchange, drivers are directed to the opposite side of the bridge to cross the interstate (see inset). This allows drivers to make "free" left turns onto the interchange ramps. This design concept results is very efficient traffic operations, and has the advantage of a narrower width than the conventional diamond interchange design concept.



The new interchange would generally follow the existing alignment of Fern Valley Road, except at the east end, which would be shifted slightly to the north. Signals would be located at both the west and east interchange ramp terminals. There would be two lanes in each direction for the CDI. Bikes would be accommodated on the CDI by 6-foot shoulders at most locations; the shoulders would be designated by pavement markings for bike travel. Pedestrian movement would be through the center of the CDI.

East of I-5, the following elements are included:

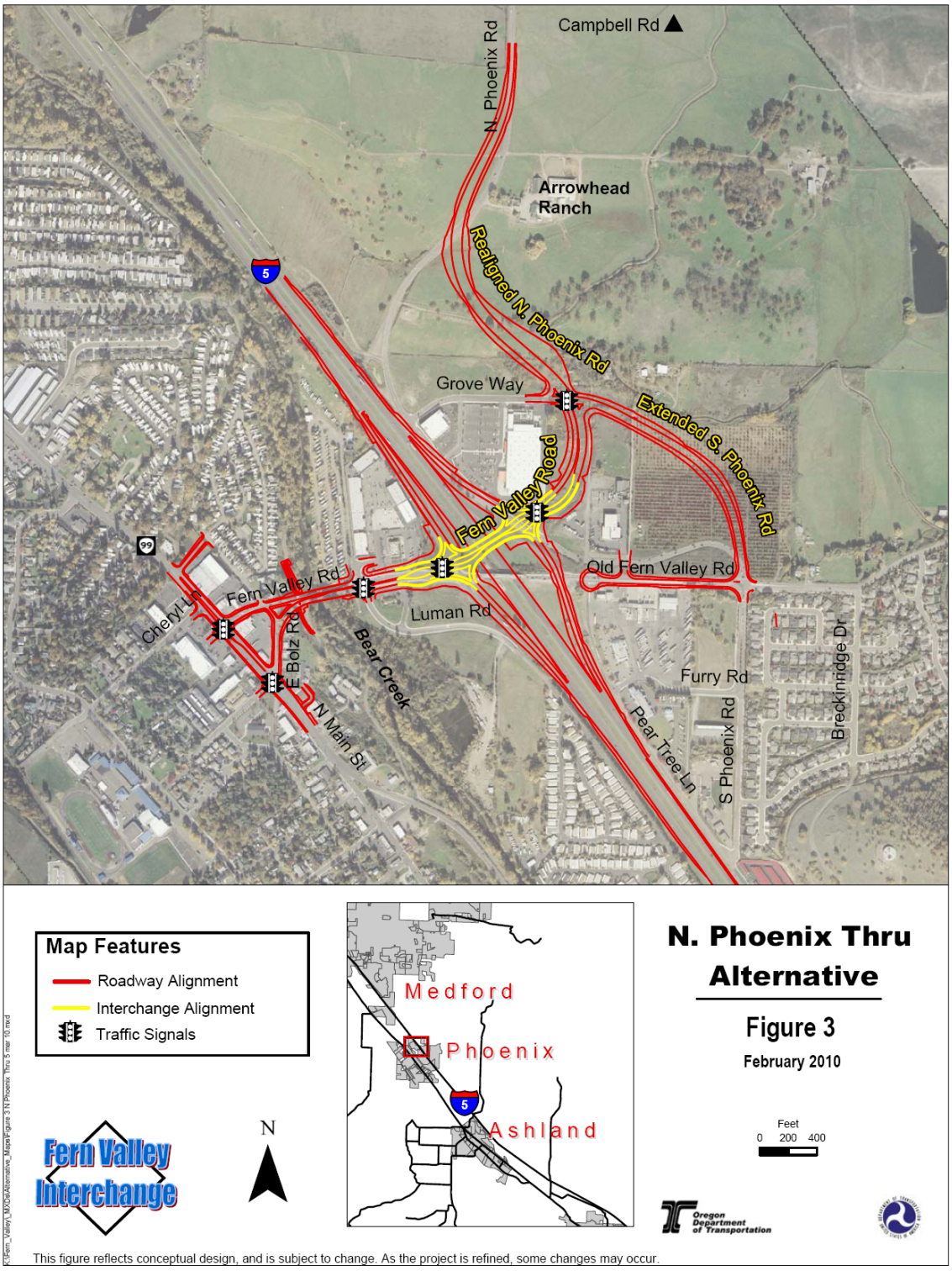
- Realigned Fern Valley Road would be two lanes in each direction (except at intersections), would be located just north of and parallel to existing Fern Valley Road, and would reconnect to existing Fern Valley Road at Breckinridge Drive.
- Realigned N. Phoenix Road would be located further east than existing N. Phoenix Road, would be two lanes in each direction (except at intersections), and would reconnect to existing N. Phoenix Road near Campbell Road.
- Bikes on Realigned Fern Valley Road, Realigned N. Phoenix Road, S. Phoenix Road, and existing Fern Valley Road would have 6-foot shoulders that would be designated by pavement markings for bike travel. (Some locations in transition areas may be 5- to 8-foot shoulders.)
- Both Realigned Fern Valley Road and Realigned N. Phoenix Road would have 6-foot sidewalks on both sides of the roadways.
- The east leg of the existing Fern Valley Road/S. Phoenix Road intersection would be blocked; no through movement for vehicles would be allowed. Bike and pedestrian circulation through the east leg of the intersection would remain.
- Retaining walls may be constructed at the east end of the I-5 structure and adjacent to the Home Depot parking lot.
- If this alternative is selected, final design could indicate that some existing pavement may no longer be needed, and would therefore be removed upon completion of the project.

2.2.2 N. Phoenix Thru Alternative

The N. Phoenix Thru Alternative, shown in Figure 3, generally follows a more north-south orientation than the Fern Valley Thru Alternative. West of I-5, the alternatives would be the same, except the N. Phoenix Thru Alternative would slightly shift the alignment to the north just west of I-5. The design concept of the CDI would be the same as the Fern Valley Thru Alternative, except the alignment would have a slightly more north/south alignment with the N. Phoenix Thru Alternative.

East of I-5, the following elements are included:

- The N. Phoenix Thru Alternative would turn north and reconnect with existing N. Phoenix Road near Campbell Road.
- S. Phoenix Road would be extended directly north, and turn west to connect with Realigned N. Phoenix Road directly across from Grove Way.
- Realigned N. Phoenix Road would be two lanes in each direction until it tapers to reconnect to existing N. Phoenix Road near Campbell Road. Existing Fern Valley Road would be one lane in each direction. Extended S. Phoenix Road would be one lane in each direction with a center turn lane. Grove Way would be one lane in each direction with a center turn lane at the intersection with Realigned N. Phoenix Road.


Campbell Rd
N. Phoenix Rd
Arrowhead Ranch
Realigned N. Phoenix Rd
Grove Way
Extended S. Phoenix Rd
Fern Valley Road
Old Fern Valley Rd
Luman Rd
Fern Valley Rd
Cheryl Ln
E Bolz Rd
N Main St
Bear Creek
Furry Rd
Pear Tree Ln
S Phoenix Rd
Breckinridge Dr
5
99
Map Features
Roadway Alignment
Interchange Alignment
Traffic Signals
Medford
Phoenix
Ashland
N
Fern Valley Interchange
N. Phoenix Thru Alternative
Figure 3
February 2010
Feet
0 200 400
Oregon Department of Transportation
This figure reflects conceptual design, and is subject to change. As the project is refined, some changes may occur.

- Bikes on Realigned N. Phoenix Road, Extended S. Phoenix Road, and existing Fern Valley Road would be accommodated on 6-foot shoulders that would be designated by pavement markings for bike travel. (Some locations in transition areas may include 5 to 8-foot shoulders.)
- All roads affected by the project east of the interchange would have 6-foot sidewalks on both sides of the roads.
- Full traffic movements would be provided at the existing Fern Valley Road/S. Phoenix Road intersection (compared to restricted traffic movements with the Fern Valley Thru Alternative—where no traffic movement would be allowed at the east leg of the intersection).
- A median would be installed from the northbound ramps to the Realigned Phoenix Road/Grove Way intersection.
- Retaining walls may be constructed at the east end of the I-5 structure and adjacent to Home Depot.
- Short sections of pavement may be removed from existing N. Phoenix Road north of the urban growth boundary (UGB), where they are not needed for approach roads.

2.2.3 Interchange Area Management Plan

High traffic volumes can overload an interchange—using up available traffic capacity so the interchange no longer functions effectively. In order to ensure the interchange functions as long as possible, an Interchange Area Management Plan (IAMP) is being been developed. The Fern Valley Interchange IAMP is being developed to:

- Preserve the capacity of the proposed interchange for at least the first 20 years of its design life, and the capacity of Fern Valley Road, OR 99 and N. Phoenix Road in the vicinity of the interchange.
- Ensure the safe and efficient operation of the interchange and connecting roadways, and protect the function of the interchange in the transportation system.

Measures included in the IAMP are intended to:

- Limit the extent of land uses that generate high rates of motor vehicle trips in the interchange area (e.g., fast-food restaurants, discount club stores, and discount "superstores").
- Apply specific transportation system management (TSM) actions and transportation demand management (TDM) actions. TSM addresses the operation of the roadway system, transit system, and facilities for bicycles and pedestrians. TDM seeks to reduce peak-hour motor vehicle trips by encouraging people to make trips using alternatives to single-occupant motor vehicles or during off-peak times.
- Limit trip generation outside the interchange area if necessary to meet mobility performance standards and preserve interchange capacity.

The IAMP includes the measures listed below; these are described in the EA in Section 2.2.1, Land Use Measures; Section 2.2.2, Transportation System Management Measures; and Section 2.2.3, Transportation Demand Management Measures.

Land use measures

- Trip budget overlay zone
- Capacity expansion and retention
- ODOT adoption of plan and code components
- South Valley Transportation Strategy
- Alternative mobility standard at I-5 ramp terminal intersections
- Building setback requirements on OR 99

TSM measures

- Future bus transfer sites and bus stop locations
- Shared park-and-ride lots

TDM measures

- Motor vehicle trip reduction requirements and programs

3. PROJECT LIMITS DESCRIPTION

Right of way estimates were prepared based on aerial mapping with the two alternatives overlaid on the maps covering the approximate area between South Phoenix Road on east Fern Valley Road and OR 99 to the west.

4. RIGHT OF WAY METHODOLOGY

Standard ODOT Right of Way liaison procedures for estimating impacts were used for this project report. The report is prepared from general information since final design work has not been done at this phase of the project. The conclusions within this report have been made using aerial alternative maps as well as county assessor taxlot information, zoning, and comprehensive plan maps. The potential project effects on the various parcels have been considered after a field review of each of the properties that would be impacted. No relevant information about septic systems, wells or other private water systems is known as this time, and none were noted during the field work. Any septic systems or wells that are found to be in the acquisition area will be dealt with during the appraisal and acquisition process. Other utilities will be relocated as necessary during construction.

When the project proceeds to the acquisition phase, property owners will be offered Just Compensation for the required rights-of-way. Just compensation is based on the valuation of the needed property and an estimation of the compensable economic damages to the remaining property and improvements. The valuation process will be conducted either by an experienced and qualified ODOT employee or by an independent fee appraiser under contract with ODOT. Department procedures, guided by Federal Regulations and Oregon law, have been designed to protect both owners of properties needed for highway rights-of-way as well as other taxpayers.

This project will be affecting access to many properties. Reasonable access would be provided to each property or damages, if compensable, would be determined by the appraisal process. A landlocked property owner would be offered the appraised value for the loss of access. In some cases, access would be eliminated from an existing location for safety or traffic control reasons. If there is alternate, reasonable access to the remainder, there may be no compensable damage.

Median barriers would be added to some sections of the highway thereby changing full ingress/egress to the highway to right-in/right-out movements. This restriction of access is within ODOT's regulatory powers, and no compensable damages can be appraised. Properties that have access reservations at locations where the approach to the highway would be closed would be compensated for the transfer of the reservation property right based on an appraisal of the property before and after acquisition of the reservation. Research to determine possible reservation locations has not yet been done, so reservation costs are not included in this report.

When an ODOT permitted approach to the highway is closed, the property owner may be eligible for a discretionary remedy to correct internal circulation issues. The remedy consideration is required by SB 86, but it is offered at the discretion of ODOT. If a remedy is considered appropriate, the offer would be determined by a qualified ODOT employee based on contractor bids, but the remedy determination is neither negotiable nor can it be appealed. An approach permit inventory was not available at the time of the report, so no remedy costs have been included.

The property appraisals for Just Compensation include determining if there is compensation due for impacts to the remainder and the amount of that compensation. As a result of acquisition for needed project right of way, parcels may be left, in some cases, with uneconomic remnants. An uneconomic remnant is the remaining part of a property not needed by the project that is determined to have little or no utility or value to the current owner. If the acquisition of only a portion of property would leave the owner with an uneconomic remnant, ODOT would offer to acquire the uneconomic remnant along with the portion of the property needed for the project.

Acquired property rights will be appraised at fair market value. Easements and encumbrances affecting the use and development of the property being appraised will be considered. The property will be appraised at its highest and best use, considering its legal and economic utility and desirability. The appraiser will disregard any increase or decrease in the fair market value of real property that is caused by the public improvement for which the property is to be acquired, or by the likelihood that the property would be acquired for such improvement. Value decrease due to physical deterioration within the reasonable control of the owner must be considered in determining the compensation for the property.

For those displaced by the project, ODOT provides a relocation assistance program. The "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970" and the "Uniform Relocation Act Amendments of 1987" insure the fair and equitable relocation and re-establishment of persons, businesses, farms and nonprofit organizations displaced as a

result of federal or federally assisted programs. This is done so that displaced persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. No project shall be advertised for construction until all eligible residential displaces have either obtained or have the right of possession to comparable replacement housing, or have been offered comparable replacement housing which is within their financial means and available for immediate occupancy. Eligible businesses and nonprofit organizations displaced by the project will also be offered relocation benefits. Replacement housing will be open to all persons regardless of race, color, religion, sex, or national origin, in conformance to Title VIII of the U.S. Civil Rights Act of 1968.

Eligible residential owners and renters displaced by the project may qualify for benefits which may include, but are not limited to, a Rent Supplement, a Housing Additive, including some incidental closing costs, cost to move personal property, and temporary storage of personal property, if approved by ODOT. Eligible displaced businesses may qualify for relocation benefits, including moving cost reimbursement in addition to limited reimbursements for business reestablishment, which is capped at $10,000, and site-search expenses. Alternatively a "fixed payment" amount, which is capped at $20,000, would also be available for qualifying businesses displaced by the project.

Off-premise signs (billboards) that are impacted may be eligible to be moved with relocation benefits.

Lawful occupants shall not be required to move unless they have received at least 90-days advance written notice of the earliest date by which they may be required.

An appeal process has been established for any relocates disputing any relocation eligibility or claim rulings.

Additional general information about ODOT's acquisition process and relocation assistance program can be found in two pamphlets available through the department: *Acquiring Land for Highways* and *Public Projects* and *Moving Because of the Highway or Public Projects?* Information is also available on the ODOT home page on the internet.

5. PROJECT IMPACTS

The proposed right of way for the two build alternatives was examined in terms of the estimated number of parcels affected, the total project areas required, the types of affected properties, and the property impacts.

5.1 ESTIMATED NUMBER OF PARCELS AFFECTED

An impacted parcel is defined as the property held under one legal entity. In many cases several taxlots are held under the same ownership and will be treated as one parcel.

Fern Valley Thru	N. Phoenix Thru
(40)	(38)

5.2 ESTIMATED TOTAL AREA REQUIRED

The following areas were based on the alternatives design overlay on aerial mapping.

	Fern Valley Thru	N. Phoenix Thru
Fee Acquisition -	971,472 sq. ft. (22.30 ac)	955,912 sq. ft. (21.95 ac)
Permanent Easements for Slopes & Utilities, Access Roads, & possible replacement Bus Shelters -	58,236 sq. ft. (1.34 ac)	60,906 sq. ft. (1.40 ac)
Temporary Construction Easements -	108,329 sq. ft (2.49 ac)	84,601 sq. ft. (1.94 ac)

5.3 TYPES OF AFFECTED PROPERTIES

The alternatives primarily affect properties zoned and improved as commercial, residential, and farm use. There is one vacant commercial parcel that will be impacted.

5.4 PROPERTY IMPACTS AND ASSUMPTIONS

A portion of the project involves strip takings along existing street and highway frontages with impacts to only landscaping, fencing, asphalt parking, and signs on improved properties as well as relocation of personal property. Any improvements such as fencing or landscaping that are located on existing right of way are not eligible for compensation or relocation benefits when those uses are eliminated.

On the east side of the Fern Valley Thru Alternative, between I-5 and the neighboring property, Pear Tree Lane would become a cul-de-sac at its north end. A prior agreement had been reached with property owners for Pear Tree Lane to remain open to Fern Valley Road. When Pear Tree Lane closes, the City of Phoenix easement for Furry Lane as it traverses the Petro Stopping Center may extinguish. Restoration of this easement would require an acquisition.

6. DISPLACEMENT –RELOCATIONS

The following are potential displacement-relocations of residents and three businesses by the two proposed alternatives. The displacements are exactly the same for both alternatives. Final determination of displacement impacts on some sites will not be possible until a full appraisal can be completed on the individual properties at the time of right of way acquisition.

On the west side of I-5, impacts from both alternatives would cause displacement of one business and residents of two homes. There were two mobile food vendors located on properties along OR 99 at the time of the field inspections. If the vendors are located in the impacted areas when the acquisition process begins, they would be required to move, and they may be eligible for relocation benefits.

The two residential displacement-relocations are occupants of homes in a modest price range that can be difficult to find. In the current buyers' market, there were 15 listings of homes in this price range in the Phoenix, Talent, and south Medford area. Relocation of the occupants of these two residences may possibly entail "Housing of Last Resort" benefits. Housing of Last Resort refers to a special category of residential relocations requiring utilization of atypical alternatives.

Fern Valley Thru	N. Phoenix Thru
2 residential relocations	2 residential relocations
1 business relocation	1 business relocation
2 potential business relocations	2 potential business relocations

6.1 DISPLACEMENT-RELOCATION PROJECTIONS

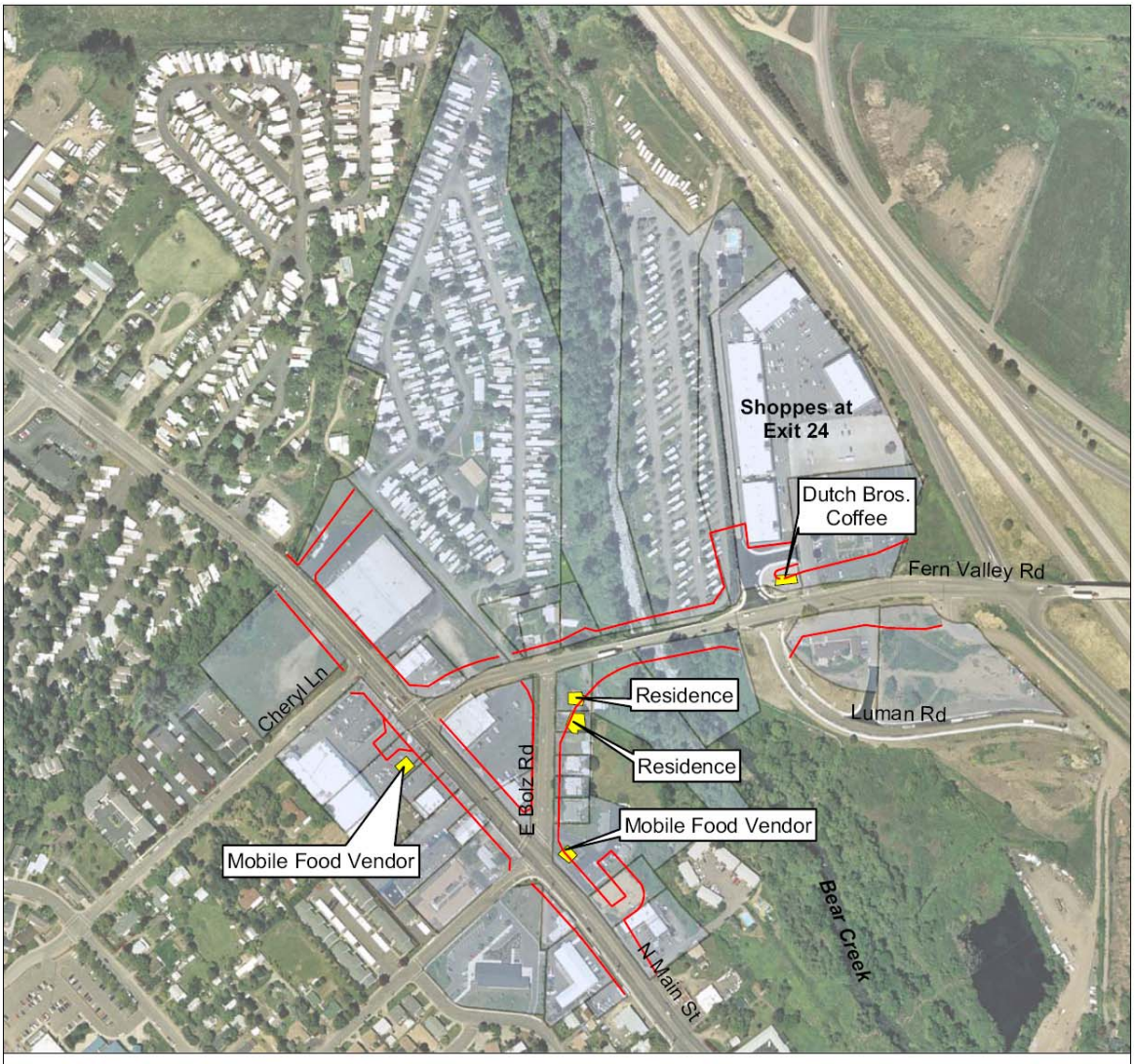
Residential housing in the Rogue Valley is tight in the modest price range of the impacted residences, but current listings of homes that are available indicate that there may be an adequate supply. The right of way relocation program would assure that comparable or better housing is available to the displacees before they would be required to move. The business that would be displaced, and the two that could potentially be displaced, are located on pad sites on larger properties. There appears to be adequate vacant land and/or other pad sites available for replacement sites for these three businesses. Figures 4 through 6 show the right of way lines for the alternatives and the associated displacements.

Business Displacement-Relocation Projections

The following is a list of potential business displacements, which are the same for both alternatives, based on the current project alternatives mapping:

Fern Valley Thru & N. Phoenix Thru

- Dutch Bros. coffee located on The Shoppes at Exit 24 shopping center
- An RV selling tacos on the lot at the NE corner of E. Bolz Rd. & OR 99
- An RV selling Mexican food on Ray's Market parking lot just south of the main entrance along OR 99



Right of Way Impacts: West of Interchange (Both Build Alternatives)

Figure 4

April 2008

LEGEND

ROW Line
Fern Valley Thru Alternative

Potentially Impacted Parcels

Source: ODOT
URS Corporation

N

Fern Valley Interchange

Feet
0 200 400 600

Right of Way Impacts:
East of Interchange
Fern Valley Thru Alternative

Figure 5
April 2008

Oregon Department of Transportation

K:\Fern_Valley_MXD\aTech Report Maps\ROW Map_East_FVT_041608.mxd

This figure reflects conceptual design, and is subject to change. As the project is refined, some changes may occur.

LEGEND

ROW Line
N. Phoenix Thru Alternative

Potentially Impacted Parcels

Source: ODOT
URS Corporation

N

Fern Valley Interchange

Feet
0 200 400 600

Right of Way Impacts:
East of Interchange
N. Phoenix Thru Alternative

Figure 6
April 2008

Oregon Department of Transportation

K:\Fern_Valley_MXDs\Tech Report Maps\ROW Map_East_NPT_041608.mxd

This figure reflects conceptual design, and is subject to change. As the project is refined, some changes may occur.

7. RIGHT OF WAY COST ESTIMATES

Potential project impacts were analyzed based on aerial alternative design mapping. Right of way land costs were estimated using local real estate market data and assessor's records. A visual inspection was completed in the field to aid in determination of project impacts on individual parcels. The numbers given include not only a preliminary estimate of costs for real estate acquisition compensation, but also rough estimates of relocation, demolition, personnel and legal and incidental expenses. All estimates of real estate value have been prepared based on the premise that the property being purchased is free of contamination. If the project proceeds to right of way acquisition, and contamination is discovered on any of the properties, it would be dealt with at that time.

It is assumed that the proposed improvements would be constructed sometime during 2012 or later. Due to unknowns regarding future market prices and inflation factors, all values are estimated in terms of today's dollar value. No attempt was made to adjust for unknown future market inflation or deflation rates.

The estimates are based on the assumption that the City of Phoenix will not require businesses to replace impacted landscaping or parking that had been required at the time of development if replacement would cause additional damage to the property.

Right of way impacts due to utility and drainage impacts were not addressed as design is not yet at that level. Additional impacts to properties as a result of utility or drainage issues would necessarily increase projected estimated costs. The estimated costs do not include any specific acquisition for wetland mitigation or water quality treatments.

Projected Right of Way Cost Estimates

Fern Valley Thru - $11,822,189

N. Phoenix Thru - $10,072,301

8. CONCLUSIONS AND RECOMMENDATIONS

On a project of this size and complexity, a minimum of two years should be allowed for right of way acquisition. The time frame should start when the acquisition descriptions are provided to the right of way staff as time consuming appraisal and relocation work is involved.

Utility work phasing would rely on right of way acquisitions and relocations being completed prior to utilities being able to relocate their facilities in advance of the construction work. It is recommended that a project timeline be laid out, reviewed and coordinated with all technical resources prior to selection of a let date. A poor early estimate of timeline and coordination of phasing for right of way and utilities could increase costs and cause lengthy delays in project letting.

Any Intergovernmental Agreement with local government agencies should also be in place prior to the commencement of the project.