Oregon
Theodore R. Kulongoski, Governor

Department of Land Conservation and Development
635 Capitol Street NE, Suite 150
Salem, Oregon 97301-2524
Phone: (503) 373-0050
First Floor/Coastal Fax: (503) 378-6033
Second Floor/Director's Office: (503) 378-5518
Web Address: http://www.oregon.gov/LCD

NOTICE OF ADOPTED AMENDMENT

April 19, 2006

TO: Subscribers to Notice of Adopted Plan
or Land Use Regulation Amendments

FROM: Mara Ulloa, Plan Amendment Program Specialist

SUBJECT: Umatilla County Plan Amendment
DLCD File Number 004-03

The Department of Land Conservation and Development (DLCD) received the attached notice of adoption. Due to the size of amended material submitted, a complete copy has not been attached. A copy of the adopted plan amendment is available for review at the DLCD office in Salem and the local government office.

Appeal Procedures*

DLCD ACKNOWLEDGMENT or DEADLINE TO APPEAL: May 4, 2006

This amendment was submitted to DLCD for review 45 days prior to adoption. Pursuant to ORS 197.830 (2)(b) only persons who participated in the local government proceedings leading to adoption of the amendment are eligible to appeal this decision to the Land Use Board of Appeals (LUBA).

If you wish to appeal, you must file a notice of intent to appeal with the Land Use Board of Appeals (LUBA) no later than 21 days from the date the decision was mailed to you by the local government. If you have questions, check with the local government to determine the appeal deadline. Copies of the notice of intent to appeal must be served upon the local government and others who received written notice of the final decision from the local government. The notice of intent to appeal must be served and filed in the form and manner prescribed by LUBA, (OAR Chapter 661, Division 10). Please call LUBA at 503-373-1265, if you have questions about appeal procedures.

*<u>NOTE:</u> **THE APPEAL DEADLINE IS BASED UPON THE DATE THE DECISION WAS MAILED BY LOCAL GOVERNMENT. A DECISION MAY HAVE BEEN MAILED TO YOU ON A DIFFERENT DATE THAN IT WAS MAILED TO DLCD. AS A RESULT YOUR APPEAL DEADLINE MAY BE EARLIER THAN THE ABOVE DATE SPECIFIED.**

Cc: Doug White, DLCD Community Services Specialist
Bob Cortright, DLCD Transportation & Growth Management Coordinator
Tamra Mabbott, Umatilla County

<paa> ya

FORM 2

D L C D NOTICE OF ADOPTION

This form **must be mailed** to DLCD **within 5 working days after the final decision**
per ORS 197.610, OAR Chapter 660 - Division 18

(See reverse side for submittal requirements)

DEPT OF

APR 17 2006

LAND CONSERVATION AND DEVELOPMENT

Jurisdiction: Umatilla County Local File No.: none
(If no number, use none)

Date of Adoption: 1-12-04 Date Mailed: 4-13-06 (mailed in 2 parcels)
(Must be filled in) (Date mailed or sent to DLCD)

Date the Notice of Proposed Amendment was mailed to DLCD: 5-12-2003

✓ Comprehensive Plan Text Amendment
___ Comprehensive Plan Map Amendment
___ Land Use Regulation Amendment
___ Zoning Map Amendment
___ New Land Use Regulation
___ Other: _____
(Please Specify Type of Action)

Summarize the adopted amendment. Do not use technical terms. Do not write "See Attached."

Comp Plan Amendment and TSP amendment to include The Westland Road/I-84/I-82 Interchange Area Plan
Transportation

Describe how the adopted amendment differs from the proposed amendment. If it is the same, write "Same." If you did not give notice for the proposed amendment, write "N/A."

Plan Map Changed from: N/A to N/A

Zone Map Changed from: N/A to N/A

Location: I-84/Westland Rd interchange Acres Involved: approx. 640 acres

Specify Density: Previous: N/A New: N/A

Applicable Statewide Planning Goals: 1, 2, 12, 9

Was an Exception Adopted? Yes: ___ No: ✓

DLCD File No.: 004-03 (12881)

Did the Department of Land Conservation and Development receive a notice of Proposed Amendment **FORTY FIVE (45) days prior to the first evidentiary hearing**. Yes: ✓ No: ____

If no, do the Statewide Planning Goals apply. Yes: ___ No: ____

If no, did The Emergency Circumstances Require immediate adoption. Yes: ___ No: ____

Affected State or Federal Agencies, Local Governments or Special Districts: ODOT, Umatilla County

Local Contact: Tamra Mabbott Area Code + Phone Number: 541-278-6246

Address: 216 SE 4th ST.

City: Pendleton OR Zip Code+4: 97801

ADOPTION SUBMITTAL REQUIREMENTS

This form **must be mailed** to DLCD **within 5 working days after the final decision**
per ORS 197.610, OAR Chapter 660 - Division 18.

1. Send this Form and **TWO (2) Copies** of the Adopted Amendment to:

ATTENTION: PLAN AMENDMENT SPECIALIST
DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT
635 CAPITOL STREET NE, SUITE 150
SALEM, OREGON 97301-2540

2. Submit **TWO (2) copies** the adopted material, if copies are bounded please submit **TWO (2) complete copies** of documents and maps.

3. Please Note: Adopted materials must be sent to DLCD not later than **FIVE (5) working days** following the date of the final decision on the amendment.

4. Submittal of of this Notice of Adoption must include the text of the amendment plus adopted findings and supplementary information.

5. The deadline to appeal will be extended if you submit this notice of adoption within five working days of the final decision. Appeals to LUBA may be filed within **TWENTY-ONE (21) days** of the date, the "Notice of Adoption" is sent to DLCD.

6. In addition to sending the "Notice of Adoption" to DLCD, you must notify persons who participated in the local hearing and requested notice of the final decision.

7. **Need More Copies?** You can copy this form on to 8-1/2x11 green paper only ; or call the DLCD Office at (503) 373-0050; or Fax your request to:(503) 378-5518; or Email your request to Larry.French@state.or.us - ATTENTION: PLAN AMENDMENT SPECIALIST.

THE BOARD OF COMMISSIONERS OF UMATILLA COUNTY

STATE OF OREGON

In the Matter of Amending	)	
Umatilla County Transportation	)	ORDINANCE NO. 2003-09
System Plan and Comprehensive	)	
Plan for Westland Road/I-84/	)	
I-82 Interchange Area	)	

WHEREAS pursuant to Chapter 660, Division 12, of the Oregon Administrative Rules, and specifically OAR 660-12-0045, Umatilla County, as part of its Comprehensive Plan, adopted by Ordinance No. 2003-03, a Transportation System Plan for Umatilla County; and

WHEREAS the Umatilla County Transportation System Plan ("TSP") is to guide the management of existing transportation facilities and the design and the implementation of future facilities for the next 20 years; and

WHEREAS Umatilla County identified the area of Westland Road/I-84/I-82 for further study and transportation planning;

WHEREAS Umatilla County received a Transportation and Growth Management (TGM) Grant to complete a transportation plan study and proposal for the Westland Road/I-84/I-82 interchange area; and

WHEREAS input from the property owners in the study area, local stakeholders, members of the Planning Commission and Board of Commissioners, was requested and received, in a study and plan for the area; and

WHEREAS the study resulted in a proposed amendment to the TSP to include the Westland Road/I-84/I-82 Interchange Area Transportation Plan to address traffic impacts, access management issues and potential transportation infrastructure investment requirements created by existing and future land use developments within the area bordered by the Westland Road/Agnew Road intersection on the north, the Umatilla River and Cottonwood Bend Road to the east, Noble Road on the south and I-82 on the west, encompassing an area of approximately 640 acres; and

WHEREAS the Westland Road/I-84/I-82 Interchange Area Transportation Plan was presented at a workshop before the

Umatilla County Planning Commission on May 29, 2003, and public hearings before the Planning Commission were held on June 26, 2003, and August 28, 2003; and

WHEREAS the Umatilla County Planning Commission recommended to the Board of Commissioners approval of the study and amendment to the TSP and the Comprehensive Plan; and

WHEREAS on June 30, 2003, a public hearing was held by the Board of Commissioners to hear the Westland Road/I-84/I-82 Interchange Area Transportation Plan and to consider the amendment to the TSP, and the hearing was continued to September 22, 2003, December 3, 2003, and January 12, 2004; and

WHEREAS on January 12, 2004, the Board of Commissioners closed public testimony and voted to accept the Umatilla County Westland Road/I-84/I-82 Interchange Area Transportation Plan prepared by H. Lee & Associates, dated August 28, 2003, identified as Exhibit 53, with two changes; and

WHEREAS a change to the Plan to allow for an exception area to the TSP standards for the area North of the intersection was accepted by the Board of Commissioner on a 3-0 vote, to incorporate the proposed Petro/Kittleson Plan outlined in Figure 13 of Exhibit 62, with an added east entrance at the Truck/light industrial area access; and

WHEREAS a change to the Plan to allow for a hardship variance to the TSP standards for the area South of the intersection was accepted by the Board of Commissioner on a 2-1 vote, to incorporate the Kittleson proposal outlined in Figure 1C of Exhibit 59.

NOW, THEREFORE the Board of Commissioners of Umatilla County ordains as follows:

1. The Westland Road/I-84/I-82 Interchange Area Transportation Plan is accepted and adopted, and the Umatilla County Transportation System Plan and the Umatilla County Comprehensive Plan are amended to include the Interchange Area Transportation Plan. A copy of the Interchange Area Transportation Plan is attached to this ordinance and incorporated by this reference.

2. At such time as a development agreement is executed with the property owner, outlining improvements and responsibilities (including realigned Livestock Road), the Umatilla County

Transportation System Plan and the Umatilla County Comprehensive Plan will be amended to provide an exception to the Westland Area Plan north of I-84 to allow for local access improvements outlined in Figure 13 of Exhibit 62, with additional access on east to be granted at industrial area access.

3. A hardship variance to the TSP standards for the area South of the intersection is granted, to incorporate the Kittleson proposal outlined in Figure 1C of Exhibit 59.

DATED this 12th day of January, 2004.

UMATILLA COUNTY BOARD OF COMMISSIONERS

Dennis D. Doherty, Chair

Emile M. Holeman, Commissioner

William S. Hansell, Commissioner

BOARD OF COMMISSIONERS UMATILLA COUNTY STATE OF OREGON

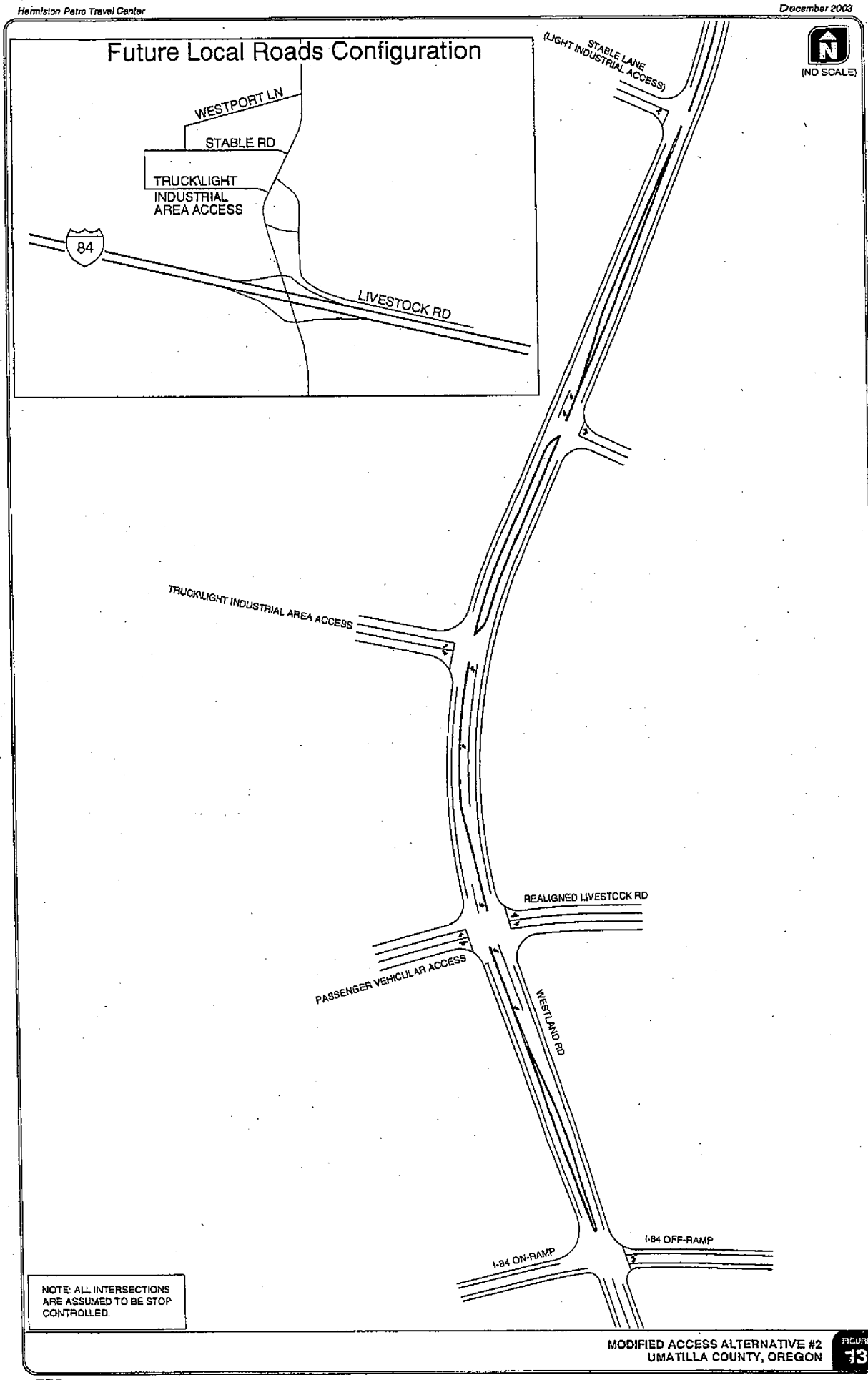
ATTEST:
OFFICE OF COUNTY RECORDS

Records Officer

UMATILLA COUNTY STATE OF OREGON

Hermiston Petro Travel Center

December 2003



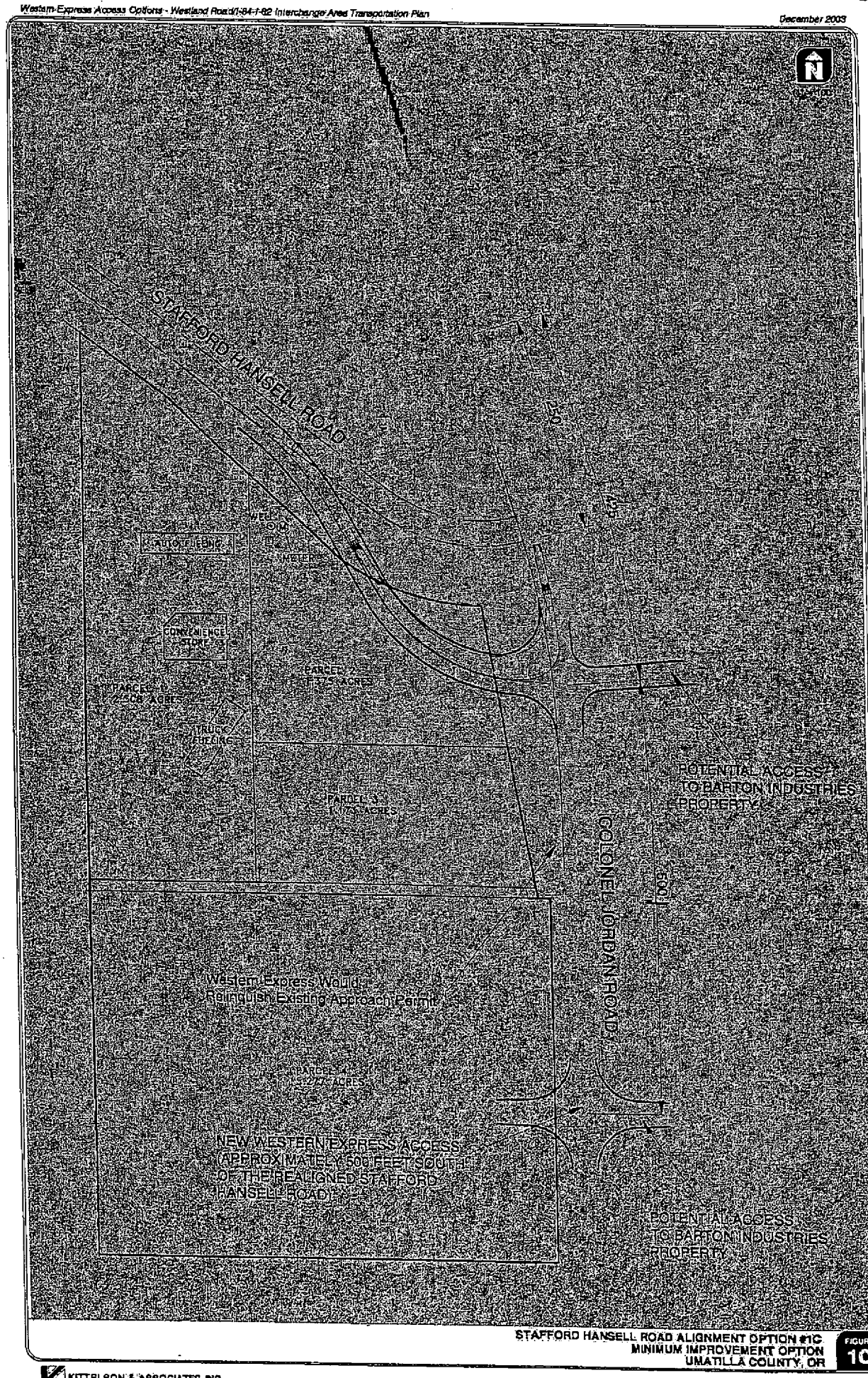
MODIFIED ACCESS ALTERNATIVE #2
UMATILLA COUNTY, OREGON

FIGURE 13

map-DOU-4839

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING / TRAFFIC ENGINEERING

Exhibit 39



STAFFORD HANSELL ROAD ALIGNMENT OPTION #1C
MINIMUM IMPROVEMENT OPTION
UMATILLA COUNTY, OR

FIGURE 1C

KITTELSON & ASSOCIATES, INC.

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road TAC and Management Team
From: Hann Lee, H. Lee & Associates

Subject: Background Information Technical Memorandum

Existing Access Spacing Standards from 2002 Umatilla County TSP

There are three relevant access spacing standards in developing the local street network and access management plan. The first standard is the spacing between a freeway ramp junction with a local cross street and the first full public access. The standard adopted in the 2002 Umatilla County Transportation System Plan is 1,320 foot spacing between a freeway ramp intersection with a local cross street and the first full access. This spacing standard is also consistent with the 1999 Oregon Highway Plan.

The second access spacing standard to consider in the development of the local street network and access management plan is the minimum public street to public street spacing standard. The 2002 Umatilla County Transportation System Plan requires that the minimum spacing standard between public roads on a designated rural collector arterial is 500 feet.

The third and final access spacing standard to consider is the minimum driveway spacing standard. The 2002 Umatilla County Transportation System Plan defines minimum driveway spacing on a rural collector arterial at 250 feet.

ODOT Access Management Policy – OAR 734-051-0200

ODOT's access management policy is contained within OAR 734-051. Specific sections relating to interchange access management are OAR 734-51—0200 (Interchange Access Management Area Spacing Standards for Approaches), OAR 734-51-0320 (Requests for Deviations to Access Management Standards), OAR-051-0330 (Process Requests for Deviations), and OAR 734-51-0340 (Deviation Limits for Spacing of Approaches within an Interchange Access).

Since the Westland Road and Lamb Road are solely under the jurisdiction of Umatilla County, ODOT's interchange access management standards and policies under OAR 734-051 are not applicable or enforceable by ODOT. Umatilla County may at its discretion decide to voluntarily implement these standards and policies.

The transportation system plan elements produced included the following:

- Street system plan for a network of arterials, collectors, and local streets
- Bicycle and pedestrian plan and integrate with the parks plan/dream trails map
- Public transportation plan
- Air, rail, water, and gas pipeline plan
- Policies and land use regulations for implementing the TSP
- Transportation system and demand management plan
- Transportation financing plan

Oregon Highway Plan (1999)

The 1999 Oregon Highway Plan (OHP) was adopted by the Oregon Transportation Commission on March 18, 1999. It applies the general directives specified in the 1992 Oregon Transportation Plan. The general directives of the 1992 Oregon Transportation Plan called for a transportation system marked by modal balance, efficiency, accessibility, environmental responsibility, connectivity among places, connectivity among modes and carriers, safety, and financial stability. The 1999 OHP applies the 1992 Oregon Transportation Plan general directives by emphasizing on:

- Efficient management of the system to increase safety, preserve the system and extend its capacity;
- Increased partnerships, particularly with regional and local governments;
- Links between land use and transportation;
- Access management;
- Links with other transportation modes; and
- Environmental and scenic resources

There are several policies within the 1999 OHP that local jurisdictions are required to be consistent with in their transportation system plans. Specifically, the OHP states:

> "Local and regional jurisdictions must be consistent with Policies 1A, State Highway Classification System; 1B, Land Use and Transportation; 1C, State Highway Freight System; 1D, Scenic Byways; 1F, Highway Mobility Standards; 1G, Major Investments; 2G, Rail and Highway Compatibility; 3A-E, Access Management; 4A, Efficiency of Freight Movement; 4D, Transportation and Demand Management; and the Investment Policy in their local and regional plans when planning for state highway facilities within their jurisdiction."

roadway is being utilized. The *1999 Oregon Highway Plan* indicates that for state highways on the NHS system such as I-82 and I-84, the maximum acceptable v/c is 0.70 within unincorporated areas.

For unsignalized intersections, the *1999 OHP* sets the following standard:

> At unsignalized intersections and road approaches, the volume-to-capacity ratios in Table 3-4 shall not be exceeded for either of the state highway approaches that are not stopped. Approaches at which traffic must stop, or otherwise yield the right-of-way, shall be operated to maintain safe operation of the intersection and all of its approaches and shall not exceed the volume-to-capacity ratios for District/Local Interest Roads standard inside of urban growth boundaries.[3]

Table 3-4
Maximum Volume-to-Capacity Ratios for Peak Hour Operating Conditions Through a Planning Horizon for State Highway Sections Located Outside the Portland Metropolitan Area Urban Growth Boundary

Highway	Land Use Type/Speed Limits					
	Inside Urban Growth Boundary				Outside Urban Growth Boundary	
	STAs	MPO	Non-MPO outside of STAs where non-freeway speed limit <45 mph	Non-MPO where non-freeway speed limit >=45 mph	Unincorporated Communities	Rural Lands
Interstate Highways and Statewide (NHS) Expressways	N/A	0.80	0.70	0.70	0.70	0.70
Statewide (NHS) Freight Routes	0.85	0.80	0.75	0.70	0.70	0.70
Statewide (NHS) Non-Freight Routes and Regional or District Expressways	0.90	0.85	0.80	0.75	0.75	0.70
Regional Highways	0.95	0.85	0.80	0.75	0.75	0.70
District/Local Interest Roads	0.95	0.90	0.85	0.80	0.80	0.75

Source: 1999 Oregon Highway Plan (OHP)
Interstates and Expressways shall not be identified as Special Transportation Areas (STAs)
For the purpose of this mobility policy of volume-to-capacity ratio standards, the peak hour shall be the 30th highest annual hour. This approximates weekday peak hour traffic in larger urban areas.

[3] *1999 Oregon Highway Plan*, Oregon Department of Transportation – Transportation Development Division, Planning Section, March 1999, page 68.

- Evaluating the impacts on state highways of amendments to transportation plans, acknowledged comprehensive plans and land use regulations pursuant to the Transportation Planning Rule (OAR 660-12-060); and

- Guiding operations decisions such as managing access and traffic control systems to maintain acceptable highway performance.

Umatilla County Zoning Code

There are five zoning designations within the study area. These designations are EFU, TC, LI, AB, and RR. Each of these zoning designations is defined below:

EFU – Exclusive Farm Use: The purposes of the EFU, Exclusive Farm Use Zone, are to preserve and maintain agricultural lands for farm use, including range and grazing uses, consistent with existing and future needs for agricultural products, forest and open spaces; to conserve and protect scenic resources; to maintain and improve the quality of air, water and land resources of the county and to establish criteria and standards for farm uses and related and supportive uses which are deemed appropriate. It is also the purpose of this use zone to provide the automatic farm use valuation for farms which qualify under the provisions of O.R.S. Chapter 308.

TC – Tourist Commercial: The TC Tourist Commercial Zone is designed to serve the traveling public along major corridors or at appropriate recreational locations. Facilities may include service station, eating establishments or over-night accommodation. The TC Zone is appropriate along major interstate interchange as discussed in the Comprehensive Plan.

LI – Light Industrial: The LI Light Industrial Zone is designed to provide areas for industrial use that are less intensive than heavy industrial uses, and are less offensive to adjacent land uses, and are compatible with certain commercial uses. It is designed to help the county expand and diversify its economic base. The LI Zone is appropriate for areas near major transportation facilities which are generally suited for industry and include highways, railroads, and waterways.

AB – Agribusiness: The Agribusiness Zone is designed to provide areas of certain types of agriculturally oriented businesses and services which may not otherwise need to be located in more intensive commercial or industrial areas. It may be appropriate for storage, handling or processing of agricultural products, or provide area for agriculturally oriented businesses which require larger areas.

TASK 2.1
DAILY TRAFFIC COUNTS

Agnew Road - North of Westland Road
2003 Weekday Average

Time Beginning	Southbound Cars	Southbound Trucks	Southbound Total	Northbound Cars	Northbound Trucks	Northbound Total	Total Both Directions
12:00 AM	1	1	2	0	0	0	2
1:00 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	1	1	1
3:00 AM	1	0	1	1	0	1	2
4:00 AM	0	0	0	1	0	1	1
5:00 AM	2	0	2	4	0	4	6
6:00 AM	1	1	2	12	1	13	15
7:00 AM	2	4	6	7	0	7	13
8:00 AM	10	1	11	6	2	8	19
9:00 AM	5	0	5	7	4	11	16
10:00 AM	2	0	2	6	1	7	9
11:00 AM	7	1	8	4	0	4	12
12:00 PM	11	1	12	12	2	14	26
1:00 PM	5	1	6	10	1	11	17
2:00 PM	12	2	14	5	1	6	20
3:00 PM	7	2	9	13	1	14	23
4:00 PM	11	2	13	10	2	12	25
5:00 PM	17	4	21	6	2	8	29
6:00 PM	10	2	12	10	4	14	26
7:00 PM	6	0	6	4	2	6	12
8:00 PM	4	0	4	4	0	4	8
9:00 PM	2	1	3	0	0	0	3
10:00 PM	1	1	2	4	1	5	7
11:00 PM	4	0	4	0	0	0	4
Total	121	24	145	126	25	151	**296**

Cottonwood Road - South of Westland Road
2003 Weekday Average

	Southbound			Northbound			Total
Time Beginning	Cars	Trucks	Total	Cars	Trucks	Total	Both Directions
12:00 AM	2	1	3	0	0	0	3
1:00 AM	1	0	1	0	0	0	1
2:00 AM	0	0	0	0	2	2	2
3:00 AM	0	0	0	0	0	0	0
4:00 AM	2	1	3	0	1	1	4
5:00 AM	5	0	5	5	0	5	10
6:00 AM	4	2	6	12	1	13	19
7:00 AM	12	1	13	6	2	8	21
8:00 AM	4	6	10	4	1	5	15
9:00 AM	7	1	8	6	0	6	14
10:00 AM	11	1	12	5	1	6	18
11:00 AM	8	1	9	7	2	9	18
12:00 PM	6	0	6	5	1	6	12
1:00 PM	2	2	4	6	5	11	15
2:00 PM	16	2	18	14	7	21	39
3:00 PM	10	1	11	4	0	4	15
4:00 PM	8	0	8	6	2	8	16
5:00 PM	10	1	11	5	2	7	18
6:00 PM	10	2	12	6	0	6	18
7:00 PM	6	1	7	1	1	2	9
8:00 PM	4	1	5	1	1	2	7
9:00 PM	1	0	1	2	1	3	4
10:00 PM	7	1	8	8	0	8	16
11:00 PM	4	0	4	1	0	1	5
Total	140	25	165	104	30	134	**299**

I-82 Southbound Off Ramp - To Lamb Road
2003 Weekday Average

	Southbound						Total
Time Beginning	Cars	Trucks	Total	Cars	Trucks	Total	Both Directions
12:00 AM	4	5	9	0	0	0	9
1:00 AM	0	1	1	0	0	0	1
2:00 AM	1	4	5	0	0	0	5
3:00 AM	8	0	8	0	0	0	8
4:00 AM	37	5	42	0	0	0	42
5:00 AM	98	5	103	0	0	0	103
6:00 AM	188	22	210	0	0	0	210
7:00 AM	36	6	42	0	0	0	42
8:00 AM	14	7	21	0	0	0	21
9:00 AM	12	10	22	0	0	0	22
10:00 AM	6	8	14	0	0	0	14
11:00 AM	7	2	9	0	0	0	9
12:00 PM	11	5	16	0	0	0	16
1:00 PM	18	16	34	0	0	0	34
2:00 PM	34	5	39	0	0	0	39
3:00 PM	14	4	18	0	0	0	18
4:00 PM	33	10	43	0	0	0	43
5:00 PM	7	6	13	0	0	0	13
6:00 PM	5	6	11	0	0	0	11
7:00 PM	2	6	8	0	0	0	8
8:00 PM	1	5	6	0	0	0	6
9:00 PM	2	6	8	0	0	0	8
10:00 PM	22	6	28	0	0	0	28
11:00 PM	10	4	14	0	0	0	14
Total	570	154	724	0	0	0	**724**

I-84 Eastbound Off Ramp - To Westland Road
2003 Weekday Average

Time Beginning	Eastbound Cars	Eastbound Trucks	Eastbound Total	Cars	Trucks	Total	Total Both Directions
12:00 AM	10	13	23	0	0	0	23
1:00 AM	4	12	16	0	0	0	16
2:00 AM	6	8	14	0	0	0	14
3:00 AM	4	2	6	0	0	0	6
4:00 AM	6	7	13	0	0	0	13
5:00 AM	7	1	8	0	0	0	8
6:00 AM	12	13	25	0	0	0	25
7:00 AM	17	5	22	0	0	0	22
8:00 AM	11	11	22	0	0	0	22
9:00 AM	17	22	39	0	0	0	39
10:00 AM	19	17	36	0	0	0	36
11:00 AM	35	23	58	0	0	0	58
12:00 PM	23	22	45	0	0	0	45
1:00 PM	35	12	47	0	0	0	47
2:00 PM	29	12	41	0	0	0	41
3:00 PM	33	11	44	0	0	0	44
4:00 PM	35	16	51	0	0	0	51
5:00 PM	37	16	53	0	0	0	53
6:00 PM	23	12	35	0	0	0	35
7:00 PM	7	8	15	0	0	0	15
8:00 PM	8	7	15	0	0	0	15
9:00 PM	12	10	22	0	0	0	22
10:00 PM	11	11	22	0	0	0	22
11:00 PM	2	6	8	0	0	0	8
Total	403	277	680	0	0	0	**680**

I-84 Westbound Off Ramp - To Westland Road
2003 Weekday Average

Time Beginning	Westbound Cars	Westbound Trucks	Westbound Total	Cars	Trucks	Total	Total Both Directions
12:00 AM	2	7	9	0	0	0	9
1:00 AM	1	1	2	0	0	0	2
2:00 AM	1	2	3	0	0	0	3
3:00 AM	1	0	1	0	0	0	1
4:00 AM	6	6	12	0	0	0	12
5:00 AM	10	13	23	0	0	0	23
6:00 AM	33	11	44	0	0	0	44
7:00 AM	23	12	35	0	0	0	35
8:00 AM	18	18	36	0	0	0	36
9:00 AM	16	6	22	0	0	0	22
10:00 AM	18	22	40	0	0	0	40
11:00 AM	13	16	29	0	0	0	29
12:00 PM	31	18	49	0	0	0	49
1:00 PM	29	16	45	0	0	0	45
2:00 PM	34	12	46	0	0	0	46
3:00 PM	23	16	39	0	0	0	39
4:00 PM	33	25	58	0	0	0	58
5:00 PM	14	11	25	0	0	0	25
6:00 PM	12	8	20	0	0	0	20
7:00 PM	5	11	16	0	0	0	16
8:00 PM	7	4	11	0	0	0	11
9:00 PM	7	5	12	0	0	0	12
10:00 PM	17	11	28	0	0	0	28
11:00 PM	5	2	7	0	0	0	7
Total	359	253	612	0	0	0	**612**

Lamb Road - East of I-82
2003 Weekday Average

	Westbound			Eastbound			Total
Time Beginning	Cars	Trucks	Total	Cars	Trucks	Total	Both Directions
12:00 AM	7	2	9	16	13	29	38
1:00 AM	5	1	6	7	6	13	19
2:00 AM	2	2	4	1	6	7	11
3:00 AM	17	10	27	17	1	18	45
4:00 AM	34	14	48	6	4	10	58
5:00 AM	127	12	139	42	6	48	187
6:00 AM	246	18	264	51	14	65	329
7:00 AM	87	11	98	75	8	83	181
8:00 AM	46	13	59	70	22	92	151
9:00 AM	60	10	70	64	18	82	152
10:00 AM	59	13	72	49	20	69	141
11:00 AM	71	22	93	69	11	80	173
12:00 PM	67	12	79	71	8	79	158
1:00 PM	75	19	94	90	24	114	208
2:00 PM	89	20	109	104	18	122	231
3:00 PM	87	17	104	134	17	151	255
4:00 PM	119	13	132	214	23	237	369
5:00 PM	82	11	93	206	20	226	319
6:00 PM	77	6	83	75	10	85	168
7:00 PM	37	12	49	40	6	46	95
8:00 PM	37	8	45	33	7	40	85
9:00 PM	31	4	35	31	8	39	74
10:00 PM	41	6	47	35	5	40	87
11:00 PM	31	1	32	43	8	51	83
Total	1534	257	1791	1543	283	1826	**3617**

Livestock Road - West of Westland Road
2003 Weekday Average

	Eastbound			Westbound			Total
Time Beginning	Cars	Trucks	Total	Cars	Trucks	Total	Both Directions
12:00 AM	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0
5:00 AM	0	0	0	1	0	1	1
6:00 AM	2	0	2	0	0	0	2
7:00 AM	7	6	13	0	5	5	18
8:00 AM	8	13	21	6	6	12	33
9:00 AM	16	16	32	10	8	18	50
10:00 AM	33	24	57	14	12	26	83
11:00 AM	35	25	60	10	2	12	72
12:00 PM	20	17	37	18	16	34	71
1:00 PM	20	2	22	14	6	20	42
2:00 PM	7	4	11	39	13	52	63
3:00 PM	7	5	12	36	24	60	72
4:00 PM	8	5	13	17	19	36	49
5:00 PM	5	7	12	6	5	11	23
6:00 PM	4	1	5	7	5	12	17
7:00 PM	1	0	1	1	1	2	3
8:00 PM	0	0	0	2	0	2	2
9:00 PM	0	0	0	0	0	0	0
10:00 PM	1	0	1	1	1	2	3
11:00 PM	2	2	4	1	1	2	6
Total	176	127	303	183	124	307	**610**

Stafford Hansell Road - West of Col Jordan Road
2003 Weekday Average

Time Beginning	Westbound			Eastbound			Total Both Directions
	Cars	Trucks	Total	Cars	Trucks	Total	
12:00 AM	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0
7:00 AM	1	0	1	1	0	1	2
8:00 AM	1	4	5	1	1	2	7
9:00 AM	1	1	2	1	0	1	3
10:00 AM	1	1	2	0	2	2	4
11:00 AM	0	0	0	0	1	1	1
12:00 PM	1	0	1	0	1	1	2
1:00 PM	5	0	5	2	0	2	7
2:00 PM	4	0	4	0	1	1	5
3:00 PM	1	0	1	1	1	2	3
4:00 PM	0	0	0	0	1	1	1
5:00 PM	0	0	0	0	0	0	0
6:00 PM	1	0	1	0	0	0	1
7:00 PM	0	0	0	0	0	0	0
8:00 PM	1	0	1	1	0	1	2
9:00 PM	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0
Total	17	6	23	7	8	15	**38**

Westland Road - North of Agnew Road
2003 Weekday Average

Time Beginning	Northbound			Southbound			Total Both Directions
	Cars	Trucks	Total	Cars	Trucks	Total	
12:00 AM	23	5	28	14	4	18	46
1:00 AM	13	6	19	6	2	8	27
2:00 AM	10	0	10	5	1	6	16
3:00 AM	25	4	29	13	2	15	44
4:00 AM	13	1	14	41	4	45	59
5:00 AM	37	4	41	135	17	152	193
6:00 AM	52	10	62	380	30	410	472
7:00 AM	165	14	179	119	19	138	317
8:00 AM	96	22	118	87	22	109	227
9:00 AM	94	22	116	94	11	105	221
10:00 AM	93	19	112	82	16	98	210
11:00 AM	118	22	140	89	20	109	249
12:00 PM	118	14	132	122	24	146	278
1:00 PM	106	19	125	110	22	132	257
2:00 PM	140	20	160	216	25	241	401
3:00 PM	286	37	323	123	18	141	464
4:00 PM	229	27	256	158	24	182	438
5:00 PM	276	23	299	118	25	143	442
6:00 PM	135	5	140	112	6	118	258
7:00 PM	70	6	76	65	8	73	149
8:00 PM	66	8	74	55	5	60	134
9:00 PM	36	4	40	53	2	55	95
10:00 PM	34	5	39	127	5	132	171
11:00 PM	96	5	101	31	4	35	136
Total	2331	302	2633	2355	316	2671	**5304**

Westland Road - North of Livestock Road
2003 Weekday Average

Time Beginning	Southbound			Northbound			Total Both Directions
	Cars	Trucks	Total	Cars	Trucks	Total	
12:00 AM	1	4	5	4	6	10	15
1:00 AM	0	5	5	1	4	5	10
2:00 AM	1	4	5	2	1	3	8
3:00 AM	2	6	8	0	0	0	8
4:00 AM	4	1	5	7	5	12	17
5:00 AM	16	7	23	12	4	16	39
6:00 AM	27	6	33	40	8	48	81
7:00 AM	45	11	56	25	5	30	86
8:00 AM	33	10	43	18	11	29	72
9:00 AM	37	14	51	20	10	30	81
10:00 AM	31	12	43	24	7	31	74
11:00 AM	43	17	60	37	13	50	110
12:00 PM	34	10	44	42	14	56	100
1:00 PM	43	17	60	46	12	58	118
2:00 PM	37	17	54	71	16	87	141
3:00 PM	55	7	62	61	13	74	136
4:00 PM	39	19	58	53	18	71	129
5:00 PM	33	8	41	35	6	41	82
6:00 PM	17	5	22	22	8	30	52
7:00 PM	7	5	12	5	5	10	22
8:00 PM	14	11	25	11	2	13	38
9:00 PM	11	6	17	7	1	8	25
10:00 PM	12	0	12	23	1	24	36
11:00 PM	23	5	28	1	5	6	34
Total	565	207	772	567	175	742	**1514**

Westland Road - South of Livestock Road
2003 Weekday Average

	Southbound			Northbound			Total
Time Beginning	Cars	Trucks	Total	Cars	Trucks	Total	Both Directions
12:00 AM	2	1	3	4	7	11	14
1:00 AM	0	5	5	0	2	2	7
2:00 AM	2	5	7	2	1	3	10
3:00 AM	1	5	6	1	1	2	8
4:00 AM	4	1	5	6	4	10	15
5:00 AM	19	11	30	14	5	19	49
6:00 AM	20	6	26	35	13	48	74
7:00 AM	41	18	59	27	10	37	96
8:00 AM	16	18	34	13	23	36	70
9:00 AM	31	20	51	28	19	47	98
10:00 AM	33	18	51	34	30	64	115
11:00 AM	27	11	38	51	31	82	120
12:00 PM	33	22	55	40	24	64	119
1:00 PM	36	24	60	46	18	64	124
2:00 PM	47	30	77	42	23	65	142
3:00 PM	54	19	73	40	16	56	129
4:00 PM	53	28	81	30	22	52	133
5:00 PM	27	17	44	39	10	49	93
6:00 PM	17	8	25	18	8	26	51
7:00 PM	5	6	11	6	6	12	23
8:00 PM	14	12	26	6	4	10	36
9:00 PM	12	5	17	8	1	9	26
10:00 PM	14	2	16	20	5	25	41
11:00 PM	23	2	25	5	5	10	35
Total	531	294	825	515	288	803	**1628**

TASK 2.2
P.M. PEAK HOUR TRAFFIC COUNTS

Intersection: Westland Road/Stafford Hansell Road

PM Peak Hour Turning Movement Volumes

Count Date: January 23, 2003

	SB				WB				NB				EB				
Time	SBR	SBT	SBL	Trucks	WBR	WBT	WBL	Trucks	NBR	NBT	NBL	Trucks	EBR	EBT	EBL	Trucks	Total
15 Minute Totals																	
4:00 - 4:15 PM	0	12	0	0	0	0	0	0	0	7	0	0	0	4	0	0	23
4:15 - 4:30 PM	0	11	0	0	0	0	0	0	0	11	0	0	0	5	0	0	27
4:30 - 4:45 PM	0	17	0	0	0	0	0	0	0	1	0	0	0	9	0	0	27
4:45 - 5:00 PM	0	18	0	0	0	0	0	0	0	9	0	0	0	12	0	0	39
5:00 - 5:15 PM	0	10	0	0	0	0	0	0	0	5	0	0	0	9	0	0	24
5:15 - 5:30 PM	0	13	0	0	0	0	0	0	0	7	0	0	0	4	0	0	24
5:30 - 5:45 PM	0	10	0	0	0	0	0	0	0	8	0	0	0	11	0	0	29
5:45 - 6:00 PM	0	11	0	0	0	0	0	0	0	3	0	0	0	8	0	0	22
Hourly Total by 15 minutes																	
4:00 - 5:00 PM	0	58	0	0	0	0	0	0	0	28	0	0	0	30	0	0	116
4:15 - 5:15 PM	0	56	0	0	0	0	0	0	0	26	0	0	0	35	0	0	117
4:30 - 5:30 PM	0	58	0	0	0	0	0	0	0	22	0	0	0	34	0	0	114
4:45 - 5:45 PM	0	51	0	0	0	0	0	0	0	29	0	0	0	36	0	0	116
5:00 - 6:00 PM	0	44	0	0	0	0	0	0	0	23	0	0	0	32	0	0	99
Peak Hour 4:15 - 5:15 PM	0	56	0	0	0	0	0	0	0	26	0	0	0	35	0	0	117
Peak Hour Factor		0.78				0.00				0.59				0.73			
Percent Trucks		0%				0%				0%				0%			

Intersection: Westland Road/I-84 EB Ramps

PM Peak Hour Turning Movement Volumes

Count Date: January 23, 2003

	SB				WB				NB				EB				
Time	SBR	SBT	SBL	Trucks	WBR	WBT	WBL	Trucks	NBR	NBT	NBL	Trucks	EBR	EBT	EBL	Trucks	Total
15 Minute Totals																	
4:00 - 4:15 PM	0	7	5	0	0	0	0	0	3	13	0	0	5	0	6	0	39
4:15 - 4:30 PM	0	12	3	0	0	0	0	0	9	12	0	0	6	0	3	0	45
4:30 - 4:45 PM	0	9	6	0	0	0	0	0	9	9	0	0	13	0	2	0	48
4:45 - 5:00 PM	0	15	4	0	0	0	0	0	9	2	0	0	5	0	0	0	35
5:00 - 5:15 PM	0	8	4	0	0	0	0	0	6	14	0	0	7	0	6	0	45
5:15 - 5:30 PM	0	3	5	0	0	0	0	0	3	3	0	0	7	0	3	0	24
5:30 - 5:45 PM	0	7	3	0	0	0	0	0	3	10	0	0	7	0	1	0	31
5:45 - 6:00 PM	0	1	4	0	0	0	0	0	6	10	0	0	9	0	2	0	32
Hourly Total by 15 minutes																	
4:00 - 5:00 PM	0	43	18	0	0	0	0	0	30	36	0	0	29	0	11	0	167
4:15 - 5:15 PM	0	44	17	0	0	0	0	0	33	37	0	0	31	0	11	0	173
4:30 - 5:30 PM	0	35	19	0	0	0	0	0	27	28	0	0	32	0	11	0	152
4:45 - 5:45 PM	0	33	16	0	0	0	0	0	21	29	0	0	26	0	10	0	135
5:00 - 6:00 PM	0	19	16	0	0	0	0	0	18	37	0	0	30	0	12	0	132
Peak Hour 4:15 - 5:15 PM	0	44	17	0	0	0	0	0	33	37	0	0	31	0	11	0	173
Peak Hour Factor		0.80				0.00				0.83				0.70			
Percent Trucks		0%				0%				0%				0%			

Intersection: Westland Road/I-84 WB Ramps

PM Peak Hour Turning Movement Volumes

Count Date: January 21, 2003

	SB				WB				NB				EB				
Time	SBR	SBT	SBL	Trucks	WBR	WBT	WBL	Trucks	NBR	NBT	NBL	Trucks	EBR	EBT	EBL	Trucks	Total
15 Minute Totals																	
4:00 - 4:15 PM	7	10	0	0	6	0	2	0	0	8	9	0	0	0	0	0	42
4:15 - 4:30 PM	9	10	0	0	7	0	5	0	0	11	3	0	0	0	0	0	45
4:30 - 4:45 PM	7	12	0	0	8	0	6	0	0	7	6	0	0	0	0	0	46
4:45 - 5:00 PM	1	7	0	0	5	0	7	0	0	1	2	0	0	0	0	0	23
5:00 - 5:15 PM	2	13	0	0	3	0	4	0	0	8	5	0	0	0	0	0	35
5:15 - 5:30 PM	4	6	0	0	3	0	1	0	0	7	4	0	0	0	0	0	25
5:30 - 5:45 PM	2	7	0	0	3	0	2	0	0	4	4	0	0	0	0	0	22
5:45 - 6:00 PM	3	5	0	0	2	0	0	0	0	3	6	0	0	0	0	0	19
Hourly Total by 15 minutes																	
4:00 - 5:00 PM	24	39	0	0	26	0	20	0	0	27	20	0	0	0	0	0	156
4:15 - 5:15 PM	19	42	0	0	23	0	22	0	0	27	16	0	0	0	0	0	149
4:30 - 5:30 PM	14	38	0	0	19	0	18	0	0	23	17	0	0	0	0	0	129
4:45 - 5:45 PM	9	33	0	0	14	0	14	0	0	20	15	0	0	0	0	0	105
5:00 - 6:00 PM	11	31	0	0	11	0	7	0	0	22	19	0	0	0	0	0	101
Peak Hour 4:00 - 5:00 PM	24	39	0	0	26	0	20	0	0	27	20	0	0	0	0	0	156
Peak Hour Factor		0.83				0.82				0.69				0.00			
Percent Trucks		0%				0%				0%				0%			

Intersection: Westland Road/Livestock Road

PM Peak Hour Turning Movement Volumes

Count Date: January 21, 2003

	SB				WB				NB				EB				
Time	SBR	SBT	SBL	Trucks	WBR	WBT	WBL	Trucks	NBR	NBT	NBL	Trucks	EBR	EBT	EBL	Trucks	Total
15 Minute Totals																	
4:00 - 4:15 PM	0	10	0	0	0	0	0	0	0	6	0	0	0	0	0	0	16
4:15 - 4:30 PM	0	3	0	0	1	0	1	0	1	12	0	0	0	0	0	0	18
4:30 - 4:45 PM	0	13	1	0	2	0	0	0	0	13	0	0	0	0	0	0	29
4:45 - 5:00 PM	0	7	0	0	2	0	0	0	0	8	0	0	0	0	0	0	17
5:00 - 5:15 PM	0	9	0	0	0	0	1	0	1	5	0	0	0	0	0	0	16
5:15 - 5:30 PM	0	5	0	0	0	0	0	0	0	11	0	0	0	0	0	0	16
5:30 - 5:45 PM	0	11	0	0	0	0	0	0	0	9	0	0	0	0	0	0	20
5:45 - 6:00 PM	0	7	0	0	0	0	1	0	0	2	0	0	0	0	0	0	10
Hourly Total by 15 minutes																	
4:00 - 5:00 PM	0	33	1	0	5	0	1	0	1	39	0	0	0	0	0	0	80
4:15 - 5:15 PM	0	32	1	0	5	0	2	0	2	38	0	0	0	0	0	0	80
4:30 - 5:30 PM	0	34	1	0	4	0	1	0	1	37	0	0	0	0	0	0	78
4:45 - 5:45 PM	0	32	0	0	2	0	1	0	1	33	0	0	0	0	0	0	69
5:00 - 6:00 PM	0	32	0	0	0	0	2	0	1	27	0	0	0	0	0	0	62
Peak Hour 4:00 - 5:00 PM	0	33	1	0	5	0	1	0	1	39	0	0	0	0	0	0	80
Peak Hour Factor		0.61				0.75				0.77				0.00			
Percent Trucks		0%				0%				0%				0%			

Intersection: Westland Road/Lamb Road/Walker Road

PM Peak Hour Turning Movement Volumes

Count Date: January 23, 2003

	SB				WB				NB				EB				
Time	SBR	SBT	SBL	Trucks	WBR	WBT	WBL	Trucks	NBR	NBT	NBL	Trucks	EBR	EBT	EBL	Trucks	Total
15 Minute Totals																	
4:00 - 4:15 PM	2	0	1	0	0	17	8	0	11	0	7	0	1	25	0	0	72
4:15 - 4:30 PM	0	0	0	0	0	34	17	0	8	0	3	0	2	31	0	0	95
4:30 - 4:45 PM	0	1	0	0	1	20	12	0	11	1	7	0	5	53	0	0	111
4:45 - 5:00 PM	0	0	1	0	0	24	7	0	18	1	2	0	0	48	2	0	103
5:00 - 5:15 PM	0	2	0	0	0	16	6	0	17	2	3	0	3	62	0	0	111
5:15 - 5:30 PM	0	1	0	0	0	27	12	0	9	1	1	0	0	61	0	0	112
5:30 - 5:45 PM	2	1	0	0	0	17	8	0	14	0	1	0	1	49	0	0	93
5:45 - 6:00 PM	0	0	0	0	1	14	7	0	5	0	0	0	0	28	2	0	57
Hourly Total by 15 minutes																	
4:00 - 5:00 PM	2	1	2	0	1	95	44	0	48	2	19	0	8	157	2	0	381
4:15 - 5:15 PM	0	3	1	0	1	94	42	0	54	4	15	0	10	194	2	0	420
4:30 - 5:30 PM	0	4	1	0	1	87	37	0	55	5	13	0	8	224	2	0	437
4:45 - 5:45 PM	2	4	1	0	0	84	33	0	58	4	7	0	4	220	2	0	419
5:00 - 6:00 PM	2	4	0	0	1	74	33	0	45	3	5	0	4	200	2	0	373
Peak Hour 4:30 - 5:30 PM	0	4	1	0	1	87	37	0	55	5	13	0	8	224	2	0	437
Peak Hour Factor		0.63				0.80				0.83				0.90			
Percent Trucks		0%				0%				0%				0%			

Intersection: Lamb Road/I-82 NB Ramps

PM Peak Hour Turning Movement Volumes

Count Date: January 22, 2003

	SB				WB				NB				EB				
Time	SBR	SBT	SBL	Trucks	WBR	WBT	WBL	Trucks	NBR	NBT	NBL	Trucks	EBR	EBT	EBL	Trucks	Total
15 Minute Totals																	
4:00 - 4:15 PM	0	0	0	0	3	20	0	1	21	0	4	0	0	2	1	0	51
4:15 - 4:30 PM	0	0	0	0	2	35	0	0	38	0	6	0	0	8	7	0	96
4:30 - 4:45 PM	0	0	0	0	4	24	0	0	25	0	0	0	0	21	29	0	103
4:45 - 5:00 PM	0	0	0	0	3	28	0	0	22	0	2	0	0	11	20	0	86
5:00 - 5:15 PM	0	0	0	0	2	17	0	0	45	0	2	0	0	26	24	0	116
5:15 - 5:30 PM	0	0	0	0	2	14	0	0	34	0	0	0	0	17	29	0	96
5:30 - 5:45 PM	0	0	0	0	2	10	0	0	32	0	1	0	0	42	65	0	152
5:45 - 6:00 PM	0	0	0	0	2	19	0	0	22	0	1	0	0	9	9	0	62
Hourly Total by 15 minutes																	
4:00 - 5:00 PM	0	0	0	0	12	107	0	1	106	0	12	0	0	42	57	0	336
4:15 - 5:15 PM	0	0	0	0	11	104	0	0	130	0	10	0	0	66	80	0	401
4:30 - 5:30 PM	0	0	0	0	11	83	0	0	126	0	4	0	0	75	102	0	401
4:45 - 5:45 PM	0	0	0	0	9	69	0	0	133	0	5	0	0	96	138	0	450
5:00 - 6:00 PM	0	0	0	0	8	60	0	0	133	0	4	0	0	94	127	0	426
Peak Hour 4:45 - 5:45 PM	0	0	0	0	9	69	0	0	133	0	5	0	0	96	138	0	450
Peak Hour Factor		0.00				0.63				0.73				0.55			
Percent Trucks		0%				0%				0%				0%			

Intersection: Lamb Road/I-82 SB Ramps

PM Peak Hour Turning Movement Volumes

Count Date: January 22, 2003

	SB				WB				NB				EB				
Time	SBR	SBT	SBL	Trucks	WBR	WBT	WBL	Trucks	NBR	NBT	NBL	Trucks	EBR	EBT	EBL	Trucks	Total
15 Minute Totals																	
4:00 - 4:15 PM	0	0	4	0	0	12	23	0	0	0	0	0	3	10	0	0	52
4:15 - 4:30 PM	4	1	4	0	0	7	24	0	0	0	0	0	5	22	0	0	67
4:30 - 4:45 PM	10	0	2	0	0	1	25	0	0	0	0	0	14	51	0	0	103
4:45 - 5:00 PM	1	0	2	0	0	4	26	0	0	0	0	0	1	29	0	0	63
5:00 - 5:15 PM	0	0	2	0	0	3	9	0	0	0	0	0	7	43	0	0	64
5:15 - 5:30 PM	0	0	2	0	0	1	11	0	0	0	0	0	21	70	0	0	105
5:30 - 5:45 PM	5	0	2	0	0	1	12	0	0	0	0	0	22	64	0	0	106
5:45 - 6:00 PM	0	0	1	0	1	0	17	0	0	0	0	0	6	19	0	0	44
Hourly Total by 15 minutes																	
4:00 - 5:00 PM	15	1	12	0	0	24	98	0	0	0	0	0	23	112	0	0	285
4:15 - 5:15 PM	15	1	10	0	0	15	84	0	0	0	0	0	27	145	0	0	297
4:30 - 5:30 PM	11	0	8	0	0	9	71	0	0	0	0	0	43	193	0	0	335
4:45 - 5:45 PM	6	0	8	0	0	9	58	0	0	0	0	0	51	206	0	0	338
5:00 - 6:00 PM	5	0	7	0	1	5	49	0	0	0	0	0	56	196	0	0	319
Peak Hour 4:45 - 5:45 PM	6	0	8	0	0	9	58	0	0	0	0	0	51	206	0	0	338
Peak Hour Factor		0.50				0.56				0.00				0.71			
Percent Trucks		0%				0%				0%				0%			

TASK 2.3
FIELD DATA IN TABULAR FORM

Street Inventory

Street Segment	Road Width	Posted Speed	Number of Lanes	Shoulders (yes/no)	Shoulder Width	Pavement Condition	Right-of-Way	Classification	Owner-ship
Colonel Jordan Road									
Noble Rd to Stafford Hansel Rd	28'	None	2	No	NA	Gravel	60'	Local	County
Stafford Hansel Rd to I-84	29'	None	2	Yes	2-4	Poor	60'	Local	County
Westland Road									
I-84 to Union Pacific Railroad	29'	None	2	Yes	2-4	Poor	60'	Rural Major Collector	County
Union Pacific Railroad to Agnew Rd	29'	None	2	Yes	2-4	Poor to Fair	60'	Rural Major Collector	County
Stafford Hansel Road									
wstern terminus to Colonel Jordan Rd	22'	None	2	Yes	3-4'	Fair	70'	Local	County
Livestock Road									
Westland Rd to Cottonwood Bend Rd	23'	None	2	No	NA	Gravel	40'	Local	County
Lamb Road									
I-82 to Westland Rd	32'	None	2	Yes	0-2'	Poor to Fair	150'+	Rural Major Collector	County
Walker Road									
Westland Rd to Westland Canal	19-22'	None	2	No	NA	Gravel	40'	Local	County
Generation Road									
Lamb Road to terminus	26'	None	2	No	NA	Fair–Gravel	60'	Local	Rural/Private
Cottonwood Bend Road									
Westland Rd to southern terminus	24'	None	2	Yes	0-2'	Poor	40'	Local	County

Tax Lot #	Map #	Account #	Last	First	Middle Initial	Street Address	City	State	ZIP	Zone	Acres	Total Value (Land)	Total Value (Structures)	Total Value
01400	4N2700-00	116880	BOUNDS	ROGER	S	PO BOX 148	HERMISTON	OR	97838	EFU	65.50	31,000.00	0.00	31,000.00
01403	4N2700-00	117884	PETRO STOPPING CENTERS LP			6080 SURETY DR	EL PASO	TX	79905	LI,TC	81.14	822,050.00	103,160.00	925,210.00
01417	4N2700-00	149114	MEDELEZ TRUCKING LLC			1186 E PUNKIN CTR RD	HERMISTON	OR	97838	LI	7.62	254,120.00	332,730.00	586,850.00
01418	4N2700-00	156881	MEDELEZ TRUCKING LLC			1186 E PUNKIN CTR RD	HERMISTON	OR	97838	LI	4.05	126,360.00	0.00	126,360.00
01419	4N2700-00	156882	MEDELEZ TRUCKING LLC			1186 E PUNKIN CTR RD	HERMISTON	OR	97838	LI	3.29	114,510.00	0.00	114,510.00
01701	4N2700-00	142485	WESTERN IRRIGATION CO THE							EFU	13.00	11,700.00	0.00	11,700.00
02601	4N2700-00	116932	WESTERN INVESTMENTS INC			PO BOX 826	HERMISTON	OR	97838	TC	2.51	109,660.00	707,530.00	817,190.00
02606	4N2700-00	154553	WESTERN LAND & CATTLE INC			PO BOX 826	HERMISTON	OR	97838	TC	1.38	86,530.00	0.00	86,530.00
02607	4N2700-00	154554	WESTERN LAND & CATTLE INC			PO BOX 826	HERMISTON	OR	97838	TC	1.17	76,740.00	0.00	76,740.00
02604	4N2700-00	116938	WESTERN INVESTMENTS INC			PO BOX 826	HERMISTON	OR	97838	TC	5.28	148,100.00	0.00	148,100.00
00100	4N2725-A0	145211	UMATILLA ELECTRIC CO-OP ASSN			PO BOX 1148	HERMISTON	OR	97838	LI	3.30	41,280.00	0.00	41,280.00
00200	4N2725-A0	116888	FIRST OREGON LAND CORP			7500 OLD GEORGTOWN RD	BETHESDA	MD	20814	TC,LI	39.36	456,590.00	320.00	456,910.00
00201	4N2725-A0	149516	LAMB	ROBERT	R	PO BOX 843	JOSEPH	OR	97846	LI	4.35	185,580.00	631,520.00	817,100.00
00202	4N2725-A0	157926	FIRST OREGON LAND CORP			7500 OLD GEORGTOWN RD	BETHESDA	MD	20814	LI,TC	31.03	475,350.00	0.00	475,350.00
00400	4N2725-A0	144879	H-4 FARMS INC			PO BOX 110	HERMISTON	OR	97838	LI	1.34	54,230.00	285,630.00	339,860.00
00500	4N2725-A0	147610	UMATILLA PORT OF	C/O AMERICAN ONION INC, AG	ATTN: TAX DEPT	28790 WESTPORT LN	HERMISTON	OR	97838	LI	9.04	185,040.00	713,960.00	899,000.00
00501	4N2725-A0	153927	HAMMELL TRANSPORT SERVICE INC			PO BOX 189	HERMISTON	OR	97838	LI	5.00	149,710.00	252,970.00	402,680.00
00502	4N2725-A0	153928	UMATILLA PORT OF			PO BOX 879	UMITILLA	OR	97882	LI	15.82	230,890.00	0.00	230,890.00
00503	4N2725-A0	156439	UMATILLA PORT OF			PO BOX 879	UMITILLA	OR	97882	LI	7.64	163,780.00	0.00	163,780.00
00600	4N2725-A0	143635	BT PROPERTY LLC		ATTN: TAX DEPT	PO BOX 28606	ATLANTA	GA	30359	LI	15.85	257,320.00	1,362,350.00	1,619,670.00
00700	4N2725-A0	149098	BOUNDS	ROGER	S	PO BOX 148	HERMISTON	OR	97838	LI	4.38	137,880.00	0.00	137,880.00
02206	4N28C0-00	118203	LAMB-WESTERN INC			PO BOX C-1900	TRI CITIES	WA	99302	LI	85.99	308,410.00	35,256,820.00	35,565,230.00
02210	4N28C0-00	139646	UMATILLA ELECTRIC CO-OP ASSN			PO BOX 1148	HERMISTON	OR	97838	LI	0.52	17,610.00	0.00	17,610.00
02216	4N28C0-00	139645	LAMB-WESTERN INC			PO BOX C-1900	TRI CITIES	WA	99302	LI	0.50	6,330.00	0.00	6,330.00
02218	4N28C0-00	118206	BEATRICE PUBLIC REFRIG SER INC	C/O AMERICOLD CORP OFFICES		PO BOX 42165	HOUSTON	TX	77242	LI	12.40	122,920.00	2,578,030.00	2,700,950.00
02219	4N28C0-00	139644	UMATILLA ELECTRIC CO-OP ASSN			PO BOX 1148	HERMISTON	OR	97838	LI	0.77	22,180.00	0.00	22,180.00
02220	4N28C0-00	151029	HERMISTON GENERATION CO & PACIFICORP			825 NE MULTNOMAH	PORTLAND	OR	97239	LI	12.94	600,000.00	0.00	600,000.00
02700	4N28C0-00	118213	SMITH	DEAN & CONNIE		29224 BLOOM RD	HERMISTON	OR	97838	RR-4	7.09	117,340.00	62,750.00	180,090.00
02701	4N28C0-00	146967	CALLAHAN	GERALD & SUSAN	M & E	PO BOX 931	HERMISTON	OR	97838	RR-4	3.95	69,530.00	53,470.00	123,000.00
02703	4N28C0-00	147745	LOWRANCE	WILLIAM & LORETTA	D & E	29278 BLOOM RD	HERMISTON	OR	97838	RR-4	4.17	76,860.00	65,060.00	141,920.00
02704	4N28C0-00	147746	MIDDLETON	ROBERT & CAROL	L & R	29270 BLOOM RD	HERMISTON	OR	97838	RR-4	4.22	77,570.00	120,060.00	197,630.00
02900	4N28C0-00	118215	HERMISTON GENERATING GO LP			78145 WESTLAND RD	HERMISTON	OR	97838	LI	1.98	62,490.00	75,430.00	137,920.00
02903	4N28C0-00	118216	BISHOP	KAREN		28875 BRIDGE RD	HERMISTON	OR	97838	LI	1.27	54,720.00	0.00	54,720.00
03000	4N28C0-00	118218	COOK	LAQUITA	J	2152 HAW CREEK CIRCLE	EMMET	ID	83617	LI	12.30	122,440.00	0.00	122,440.00
03002	4N28C0-00	118219	HERMISTON GENERATING CO & PACIFICORP			78145 WESTLAND RD	HERMISTON	OR	97838	LI	1.93	62,560.00	0.00	62,560.00
03100	4N28C0-00	118220	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	14.04	3,630.00	0.00	3,630.00
03200	4N28C0-00	118221	HERMISTON GENERATING CO & PACIFICORP			78145 WESTLAND RD	HERMISTON	OR	97838	LI	5.11	94,210.00	20,070.00	114,280.00
03300	4N28C0-00	118222	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	14.51	2,340.00	0.00	2,340.00
03400	4N28C0-00	118223	NORTHWEST LIVESTOCK COMM	C/O MILLER GARY		PO BOX 134	HERMISTON	OR	97838	A-B	32.93	501,450.00	114,690.00	616,140.00
03490	4N28C0-00	118225	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	27.00	3,070.00	250.00	3,320.00
03492	4N28C0-00	118226	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	2.00	960.00	0.00	960.00
03500	4N28C0-00	118227	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU,LI	5.97	1,940.00	0.00	1,940.00
03501	4N28C0-00	118228	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	0.57	5,050.00	36,940.00	41,990.00
03502	4N28C0-00	118229	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	LI	0.50	25,300.00	0.00	25,300.00
03503	4N28C0-00	118230	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	75.25	36,510.00	66,700.00	103,210.00
03505	4N28C0-00	118231	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	155.87	65,800.00	3,780.00	69,580.00
03506	4N28C0-00	144903	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	7.00	2,660.00	0.00	2,660.00
03507	4N28C0-00	152309	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	35.38	13,970.00	0.00	13,970.00
06400	4N28C0-00	118286	BARTON PROPERTIES INC			1390 SW 11TH	HERMISTON	OR	97838	TC,EFU,LI	116.61	61,820.00	2,870.00	64,690.00
06402	4N28C0-00	118287	BARTON	RICHARD	R	77609 COL JORDAN RD	HERMISTON	OR	97838	LI	7.33	123,800.00	209,950.00	333,750.00
00500	4N2819-A0	122142	GASS	MARGARET	A	26400 WILLARD RD	BEND	OR	97701	LI,EFU-40	54.25	12,570.00	0.00	12,570.00
00502	4N2819-A0	122157	RUSSELL	RICHARD & DORENE	A	C/O SANEZ REYES JR & SELMA, AG PO BOX 359	HERMISTON	OR	97838	LI	1.17	57,500.00	83,450.00	140,950.00
00503	4N2819-A0	139253	RUSSELL	RICHARD & DORENE	A	C/O SANEZ REYES JR & SELMA, AG PO BOX 359	HERMISTON	OR	97838	LI	0.83	34,680.00	12,090.00	46,770.00
00504	4N2819-A0	139254	RUSSELL	RICHARD & DORENE	A	C/O SANEZ REYES JR & SELMA, AG PO BOX 359	HERMISTON	OR	97838	LI	1.14	40,300.00	0.00	40,300.00
00600	4N2819-A0	122158	FLORES	PEDRO & RAFAELA		PO BOX 923	UMATILLA	OR	97882	RR-4		38,590.00	98,210.00	136,800.00
00601	4N2819-A0	122160	RIMBEY	ADRION	T	78470 AGNEW RD	HERMISTON	OR	97838	RR-4		37,480.00	60,230.00	97,710.00
00700	4N2819-A0	122162	WATKINS	WILLIAM & LAVANDA	F	78486 S AGNEW RD	HERMISTON	OR	97838	RR-4		44,470.00	43,730.00	88,200.00
00800	4N2819-A0	122164	DAREY	MARVIN & IRENE	E & A	78522 AGNEW RD	HERMISTON	OR	97838	RR-4		46,170.00	51,110.00	97,280.00
00900	4N2819-A0	122165	RODRIGUEZ	PIOQUINTO & VICTORIA		78528 AGNEW RD	HERMISTON	OR	97838	RR-4		45,510.00	50,530.00	96,040.00
01000	4N2819-A0	122167	HAWLEY	LEO 2ND & PENNY	R & S	78544 AGNEW RD	HERMISTON	OR	97838	RR-4		444,470.00	67,120.00	511,590.00
01100	4N2819-A0	122168	CHAFFEE ETAL	RONALD	D	78566 AGNEW RD	HERMISTON	OR	97838	RR-4		42,770.00	39,530.00	82,300.00
01200	4N2819-A0	122170	HATCH	JULIE	A	78582 AGNEW RD	HERMISTON	OR	97838	RR-4		46,170.00	60,300.00	106,470.00
01300	4N2819-A0	122171	MOORE	GERALD & JOAN	A & A	78598 AGNEW RD	HERMISTON	OR	97838	RR-4		40,910.00	50,370.00	91,280.00
01400	4N2819-A0	122173	POLLOCK	SAMUEL & TRACEY	L & A	78614 AGNEW RD	HERMISTON	OR	97838	RR-4		46,170.00	49,220.00	95,390.00
01500	4N2819-A0	122174	CLARK	WILBURN & TREVA		2207 JACINTO RD	BOONEVILLE	MS	38829	RR-4		46,170.00	58,400.00	104,570.00
01600	4N2819-A0	122176	FORDICE	WILLARD & JUDY	K	78642 AGNEW RD	HERMISTON	OR	97838	RR-4		37,510.00	52,440.00	89,950.00
01700	4N2819-A0	122177	GASS	MARGRET	A	26400 WILLARD RD	BEND	OR	97701	RR-4		58,470.00	0.00	58,470.00
01703	4N2819-A0	148698	WHITTLE	BOB & CARMEN	A & M	PO BOX 829	HERMISTON	OR	97838	LI	1.10	388,880.00	9,000.00	397,880.00
00100	4N2819-D0	122179	TOMPKINS	STEVEN & APRIL	M & M	78368 AGNEW RD	HERMISTON	OR	97838	RR-4		56,750.00	60,040.00	116,790.00
00200	4N2819-D0	122180	MARLOW	JOHN & KRYSTA	V & J	78390 AGNEW RD	HERMISTON	OR	97838	RR-4		44,470.00	56,340.00	100,810.00
00300	4N2819-D0	112181	LEAL	ROSENDO & ADOLFO		PO BOX 1334	HERMISTON	OR	97838	RR-4		44,470.00	61,470.00	105,940.00
00400	4N2819-D0	122183	SEARLE	EDDIE & PATIENCE	S & S	78408 S AGNEW RD	HERMISTON	OR	97838	RR-4		34,200.00	26,950.00	61,150.00
00500	4N2819-D0	122186	CRAFTON	VANCE & DEBBIE	J & D	78430 S AGNEW RD	HERMISTON	OR	97838	RR-4		35,430.00	50,460.00	85,890.00
00600	4N2819-D0	122187	SWEEK	CURTIS & KATHLEEN		78444 AGNEW RD	HERMISTON	OR	97838	RR-4		35,430.00	62,770.00	98,200.00
00700	4N2819-D0	122189	HUMBERT	NED	E	78462 AGNEW RD	HERMISTON	OR	97838	RR-4		31,710.00	68,470.00	100,180.00
00800	4N2819-D0	122190	GASS	MARGARET	A	26400 WILLARD RD	BEND	OR	97701	LI,EFU-40	67.02	20,090.00	280.00	20,370.00
00900	4N2819-D0	146968	TOMPSON	JAMES	F	PO BOX 1096	BEMIDJI	MN	56619	RR-4	4.08	70,460.00	24,060.00	94,520.00
00901	4N2819-D0	152145	MCCOMBS	RICHARD	A	29870 BLOOM RD	HERMISTON	OR	97838	RR-4	4.11	70,870.00	91,490.00	162,360.00

TASK 2.4
ACCIDENT ANALYSIS

Crash Summary at Intersections

	Average Annual Accidents				
Intersection	PDO	Injury	Fatalities	Total	Acc/mev
Westland/Lamb Walker	0.6	0.0	0.0	0.6	0.31
Westland/Cottonwood Bend	0.0	0.2	0.0	0.2	0.10
Lamb/I-82 SB Ramps	0.4	0.4	0.0	0.8	0.50

Crash Summary Along Mid-Block Roadway Sections

Roadway Section	Average Annual Accidents PDO	Injury	Fatalities	Total	Acc/mev
Westland Road					
Stafford Hansell to Walker/Lamb	0.2	0.0	0.0	0.2	0.36
Walker/Lamb to Agnew	0.4	0.4	0.0	0.8	0.41
Lamb Rd					
I-82 Ramps to Walker/Lamb	0.2	0.0	0.0	0.2	0.26

TASK 2.5
LOS AND V/C ANALYSIS

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Lamb Rd/I-82 NB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*4/17/2003*	Analysis Year	*Year 2003 - Existing*
Analysis Time Period	*PM Peak*		

Project Description *Year 2003 - Existing*

East/West Street: *Lamb Road*	North/South Street: *I-82 Northbound Ramps*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*166*	*116*	*0*	*0*	*83*	*11*
Peak-Hour Factor, PHF	*0.55*	*0.55*	*0.71*	*0.56*	*0.63*	*0.63*
Hourly Flow Rate, HFR	*301*	*210*	*0*	*0*	*131*	*17*
Percent Heavy Vehicles	*7*	--	--	*9*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*6*	*0*	*160*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.73*	*1.00*	*0.73*	*0.50*	*1.00*	*0.50*
Hourly Flow Rate, HFR	*8*	*0*	*219*	*0*	*0*	*0*
Percent Heavy Vehicles	*10*	*0*	*10*	*29*	*0*	*29*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*			*LR*				
v (vph)	*301*			*227*				
C (m) (vph)	*1403*			*739*				
v/c	*0.21*			*0.31*				
95% queue length	*0.81*			*1.30*				
Control Delay	*8.3*			*12.0*				
LOS	*A*			*B*				
Approach Delay	--	--		*12.0*				
Approach LOS	--	--		*B*				

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*JSB*
Agency/Co.	*H. Lee & Associates*
Date Performed	*4/17/2003*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*Lamb Rd/I-82 SB Ramps*
Jurisdiction	*Umatilla County, OR*
Analysis Year	*Year 2003 - Existing*

Project Description *Year 2003 - Existing*

East/West Street: *Lamb Road* | North/South Street: *I-82 Southbound Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*270*	*61*	*76*	*13*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.71*	*0.71*	*0.56*	*0.56*	*1.00*
Hourly Flow Rate, HFR	*0*	*380*	*85*	*135*	*23*	*0*
Percent Heavy Vehicles	*0*	--	--	*9*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*12*	*0*	*7*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.50*	*1.00*	*0.50*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*24*	*0*	*14*
Percent Heavy Vehicles	*0*	*0*	*0*	*29*	*0*	*29*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*					*LR*	
v (vph)		*135*					*38*	
C (m) (vph)		*1061*					*419*	
v/c		*0.13*					*0.09*	
95% queue length		*0.44*					*0.30*	
Control Delay		*8.9*					*14.4*	
LOS		*A*					*B*	
Approach Delay	--	--				*14.4*		
Approach LOS	--	--				*B*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Westland Rd/I-84 EB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*4/17/2003*	Analysis Year	*Year 2003 - Existing*
Analysis Time Period	*PM Peak*		
Project Description	*Year 2003 - Existing*		
East/West Street:	*I-84 Eastbound Ramps*	North/South Street:	*Westland Rd*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*43*	*40*	*20*	*51*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.83*	*0.83*	*0.80*	*0.80*	*1.00*
Hourly Flow Rate, HFR	*0*	*51*	*48*	*24*	*63*	*0*
Percent Heavy Vehicles	*7*	--	--	*41*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*13*	*0*	*37*
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*0.70*	*1.00*	*0.70*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*18*	*0*	*52*
Percent Heavy Vehicles	*50*	*0*	*50*	*43*	*0*	*43*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*					*LR*	
v (vph)		*24*					*70*	
C (m) (vph)		*1282*					*839*	
v/c		*0.02*					*0.08*	
95% queue length		*0.06*					*0.27*	
Control Delay		*7.9*					*9.7*	
LOS		*A*					*A*	
Approach Delay	--	--					*9.7*	
Approach LOS	--	--					*A*	

>

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Westland Rd/I-84 WB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*4/17/2003*	Analysis Year	*Year 2003 - Existing*
Analysis Time Period	*PM Peak*		
Project Description	*Year 2003 - Existing*		
East/West Street:	*I-84 Westbound Ramps*	North/South Street:	*Westland Rd*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*24*	*33*	*0*	*0*	*47*	*29*
Peak-Hour Factor, PHF	*0.69*	*0.69*	*0.77*	*0.61*	*0.83*	*0.83*
Hourly Flow Rate, HFR	*34*	*47*	*0*	*0*	*56*	*34*
Percent Heavy Vehicles	*30*	--	--	*50*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*24*	*0*	*31*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.82*	*1.00*	*0.82*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*29*	*0*	*37*	*0*	*0*	*0*
Percent Heavy Vehicles	*31*	*0*	*31*	*7*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*			*LR*				
v (vph)	*34*			*66*				
C (m) (vph)	*1346*			*831*				
v/c	*0.03*			*0.08*				
95% queue length	*0.08*			*0.26*				
Control Delay	*7.7*			*9.7*				
LOS	*A*			*A*				
Approach Delay	--	--		*9.7*				
Approach LOS	--	--		*A*				

>

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*JSB*
Agency/Co.	*H. Lee & Associates*
Date Performed	*4/17/2003*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*Westland Rd/Lamb Rd/Walker*
Jurisdiction	*Umatilla County, OR*
Analysis Year	*Year 2003 - Existing*

Project Description *Year 2003 - Existing*

East/West Street: *Lamb Road/Westland Rd* | North/South Street: *Westland Rd/Walker Rd*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*2*	*270*	*10*	*45*	*105*	*1*
Peak-Hour Factor, PHF	*0.55*	*0.55*	*0.71*	*0.56*	*0.63*	*0.63*
Hourly Flow Rate, HFR	*3*	*490*	*14*	*80*	*166*	*1*
Percent Heavy Vehicles	*7*	--	--	*7*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*16*	*6*	*66*	*0*	*5*	*1*
Peak-Hour Factor, PHF	*0.73*	*1.00*	*0.73*	*0.50*	*1.00*	*0.50*
Hourly Flow Rate, HFR	*21*	*6*	*90*	*0*	*5*	*2*
Percent Heavy Vehicles	*7*	*7*	*7*	*20*	*20*	*20*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*3*	*80*		*117*			*7*	
C (m) (vph)	*1381*	*1035*		*444*			*323*	
v/c	*0.00*	*0.08*		*0.26*			*0.02*	
95% queue length	*0.01*	*0.25*		*1.05*			*0.07*	
Control Delay	*7.6*	*8.8*		*16.0*			*16.4*	
LOS	*A*	*A*		*C*			*C*	
Approach Delay	--	--	*16.0*			*16.4*		
Approach LOS	--	--	*C*			*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Westland Rd/Livestock Rd*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*4/17/2003*	Analysis Year	*Year 2003 - Existing*
Analysis Time Period	*PM Peak*		
Project Description	*Year 2003 - Existing*		
East/West Street:	*Livestock Road*	North/South Street:	*Westland Rd*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*61*	*2*	*1*	*73*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.77*	*0.77*	*0.61*	*0.61*	*1.00*
Hourly Flow Rate, HFR	*0*	*79*	*2*	*1*	*119*	*0*
Percent Heavy Vehicles	*7*	--	--	*50*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*2*	*0*	*6*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*2*	*0*	*8*	*0*	*0*	*0*
Percent Heavy Vehicles	*50*	*0*	*50*	*7*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
v (vph)		*1*		*10*				
C (m) (vph)		*1262*		*821*				
v/c		*0.00*		*0.01*				
95% queue length		*0.00*		*0.04*				
Control Delay		*7.9*		*9.4*				
LOS		*A*		*A*				
Approach Delay	--	--		*9.4*				
Approach LOS	--	--		*A*				

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Westland Rd/Stafford Hansell*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*4/17/2003*	Analysis Year	*Year 2003 - Existing*
Analysis Time Period	*PM Peak*		

Project Description	*Year 2003 - Existing*
East/West Street: *Stafford-Hansell Road*	North/South Street: *Westland Rd*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*2*	*39*	*0*	*0*	*67*	*21*
Peak-Hour Factor, PHF	*0.80*	*0.80*	*0.77*	*0.61*	*0.78*	*0.78*
Hourly Flow Rate, HFR	*2*	*48*	*0*	*0*	*85*	*26*
Percent Heavy Vehicles	*20*	--	--	*50*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*44*	*0*	*4*
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*0.73*	*1.00*	*0.73*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*60*	*0*	*5*
Percent Heavy Vehicles	*50*	*0*	*50*	*20*	*0*	*20*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

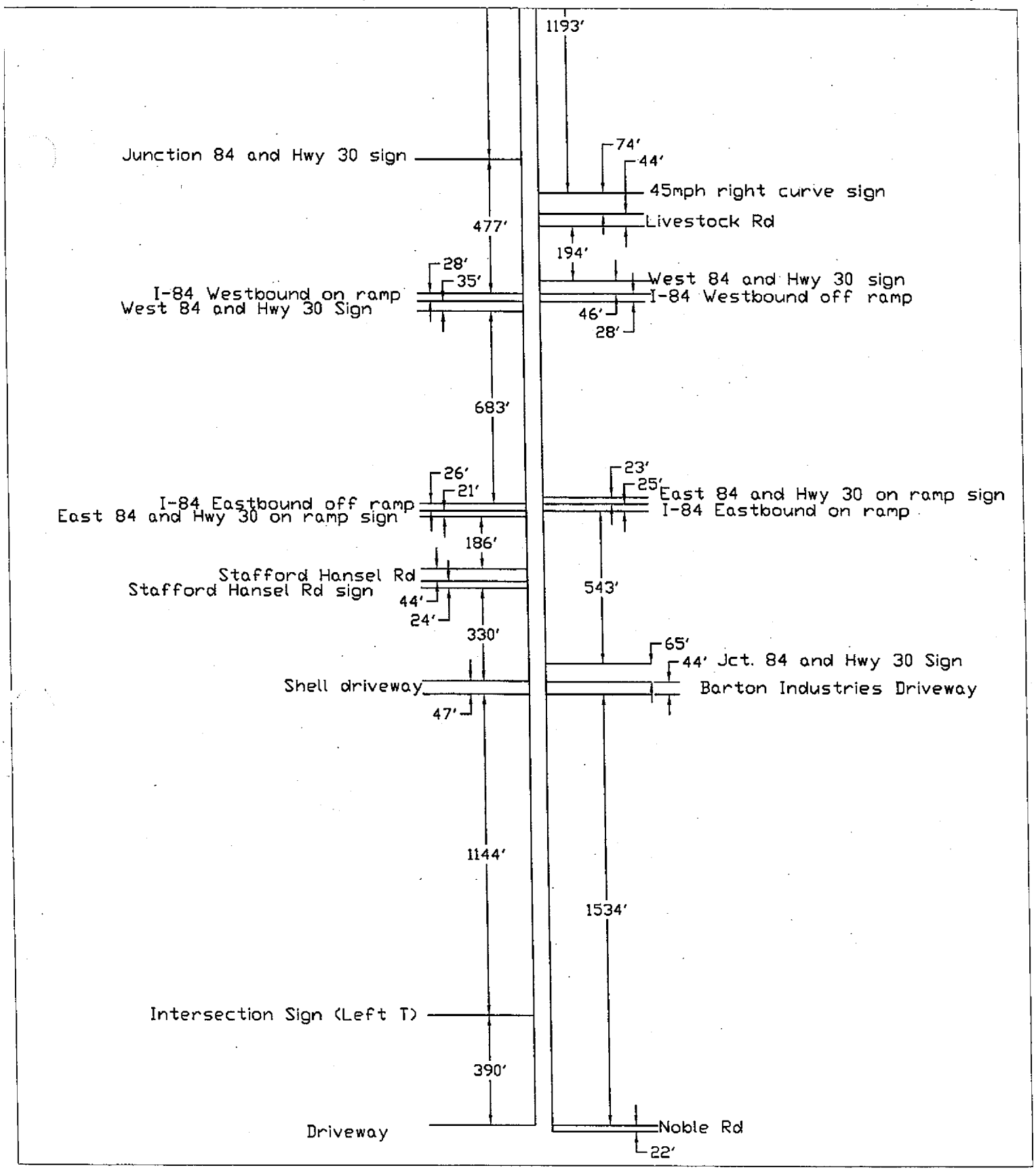
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*2*						*65*	
C (m) (vph)	*1374*						*808*	
v/c	*0.00*						*0.08*	
95% queue length	*0.00*						*0.26*	
Control Delay	*7.6*						*9.8*	
LOS	*A*						*A*	
Approach Delay	--	--				*9.8*		
Approach LOS	--	--				*A*		

>

TASK 2.6
DRIVEWAY INVENTORY - TABULAR FORM

Westland Road Driveway Inventory Table

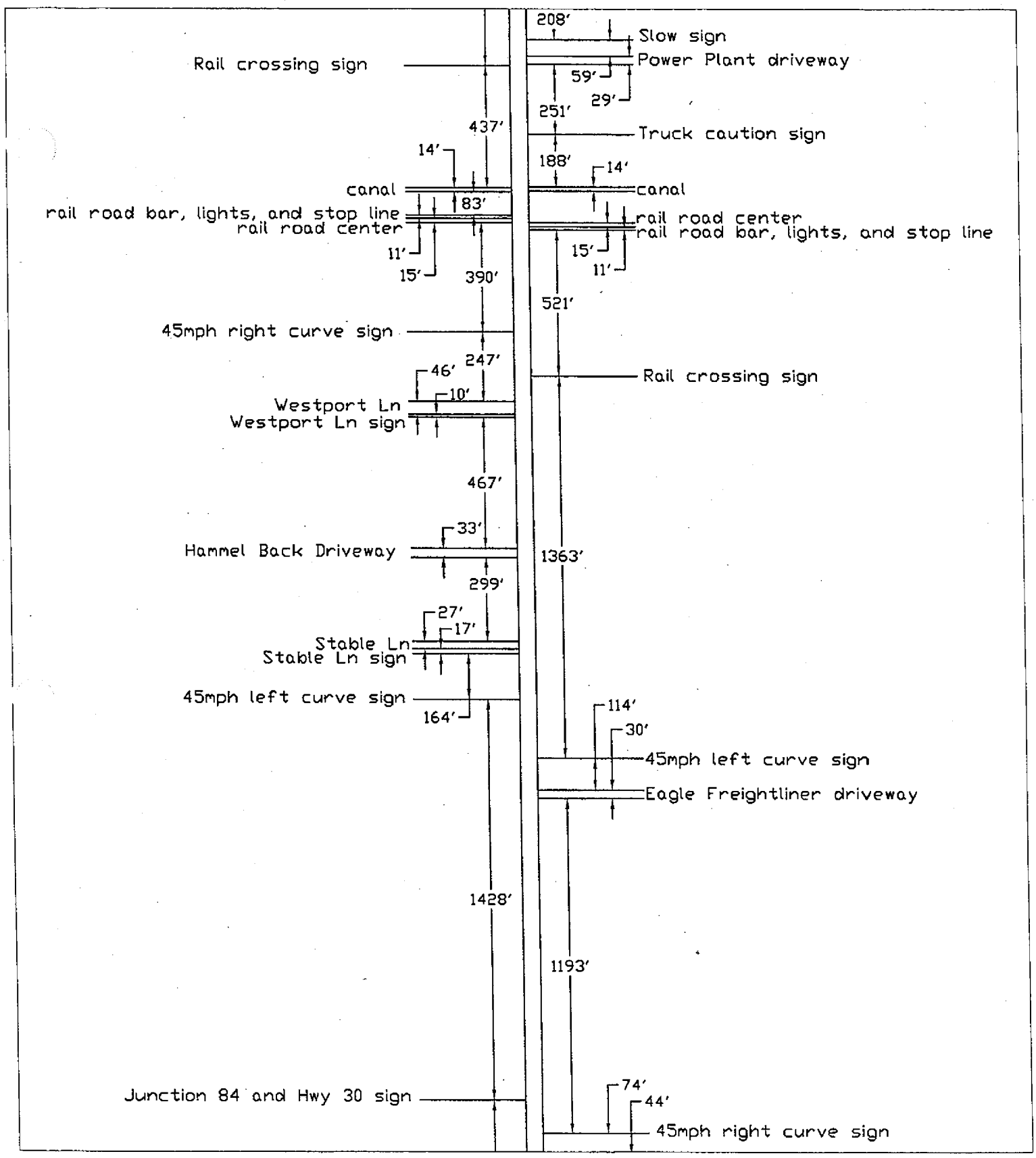
Street Segment	Location	Driveway Width (ft)
Westland Road		
Noble Road to Stafford Hansell Road – block length: 1,935 feet		
Agriculture Field – east side	1,247 to 1,263 feet from Noble Road	16
Shell Truck Stop – west side	1,534 to 1,581 feet from Noble Road	47
Barton Industries – east side	1,534 to 1,578 feet from Noble Road	44
Livestock Road to Street to Stable Road – block length: 1,800 feet		
Frieghtliner – east side	1,267 to 1,297 feet from Livestock Road	30
Stable Road to Westport Lane – block length: 809 feet		
American Onion – west side	299 to 332 feet from Stable Road	33
Westport Lane to Railroad Tracks – block length: 611 feet		
Railroad Access – west side	371 to 383 feet from railroad tracks	12
Railroad Tracks to Lamb Road – block length: 1,360 feet		
Canal Access – both sides	140 to 152 feet from railroad tracks	12
Power Plant – east side	565 to 624 feet from railroad tracks	59
Americold/Lamb Weston – east side	832 to 860 feet from railroad tracks	28
Canal Access – both sides	1,117 to 1,137 feet from railroad tracks	20
Field Access – west side	1,217 to 1,242 feet from railroad tracks	25
Lamb Road to Cottonwood Bend Road – block length: 3,556 feet		
Terra Poma Land Company – west side	1,789 to 1,812 feet from Walker Road	32
Canal Access – west side	1,757 to 1,773 feet from Walker Road	20
Lamb Weston – east side	1,812 to 1872 feet from Walker Road	60
Cottonwood Bend Road to Agnew Road – block length: 3,788 feet		
Home – west side	1,531 to 1,555 feet from Cottonwood Bend Rd	24
Utilities Access – west side	1,767 to 1,789 feet from Cottonwood Bend Rd	22
Home & Kaybe Orchards – west side	2,151 to 2,198 feet from Cottonwood Bend Rd	47
Home – east side	2,598 to 2,785 feet from Cottonwood Bend Rd	187
Kaybe Orchards - west side	2,727 to 2,767 feet from Cottonwood Bend Rd	40
Columbia Basin Sheds – east side	3,011 to 3,053 feet from Cottonwood Bend Rd	42
Home – west side	3,162 to 3,186 feet from Cottonwood Bend Rd	24
Home – west side	3,364 to 3,392 feet from Cottonwood Bend Rd	28



Westland Road Interchange Transportation Plan

Figure 1
Westland Road Driveway Inventory

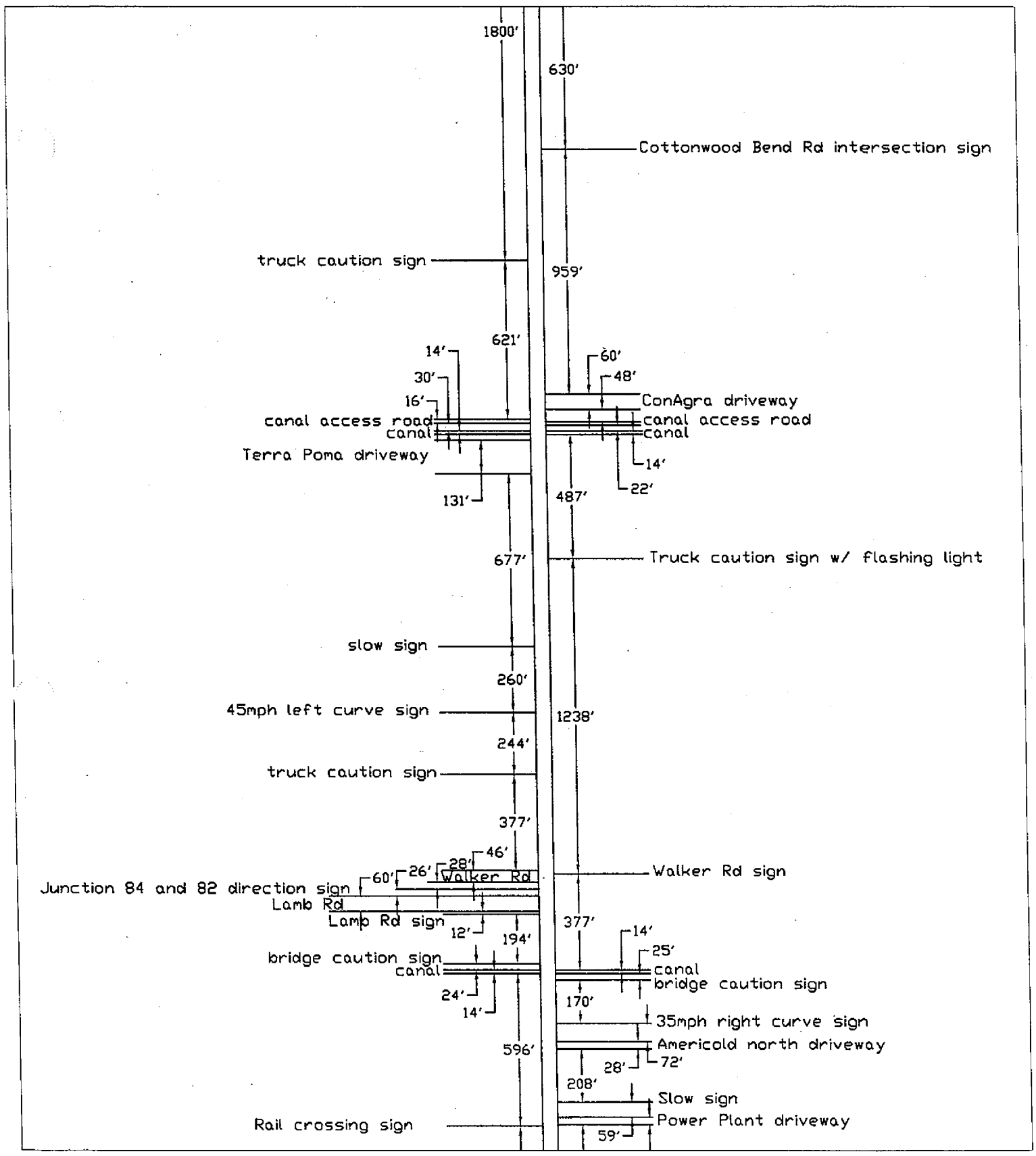
NOT TO SCALE



Westland Road Interchange Transportation Plan

Figure 2
Westland Road Driveway Inventory

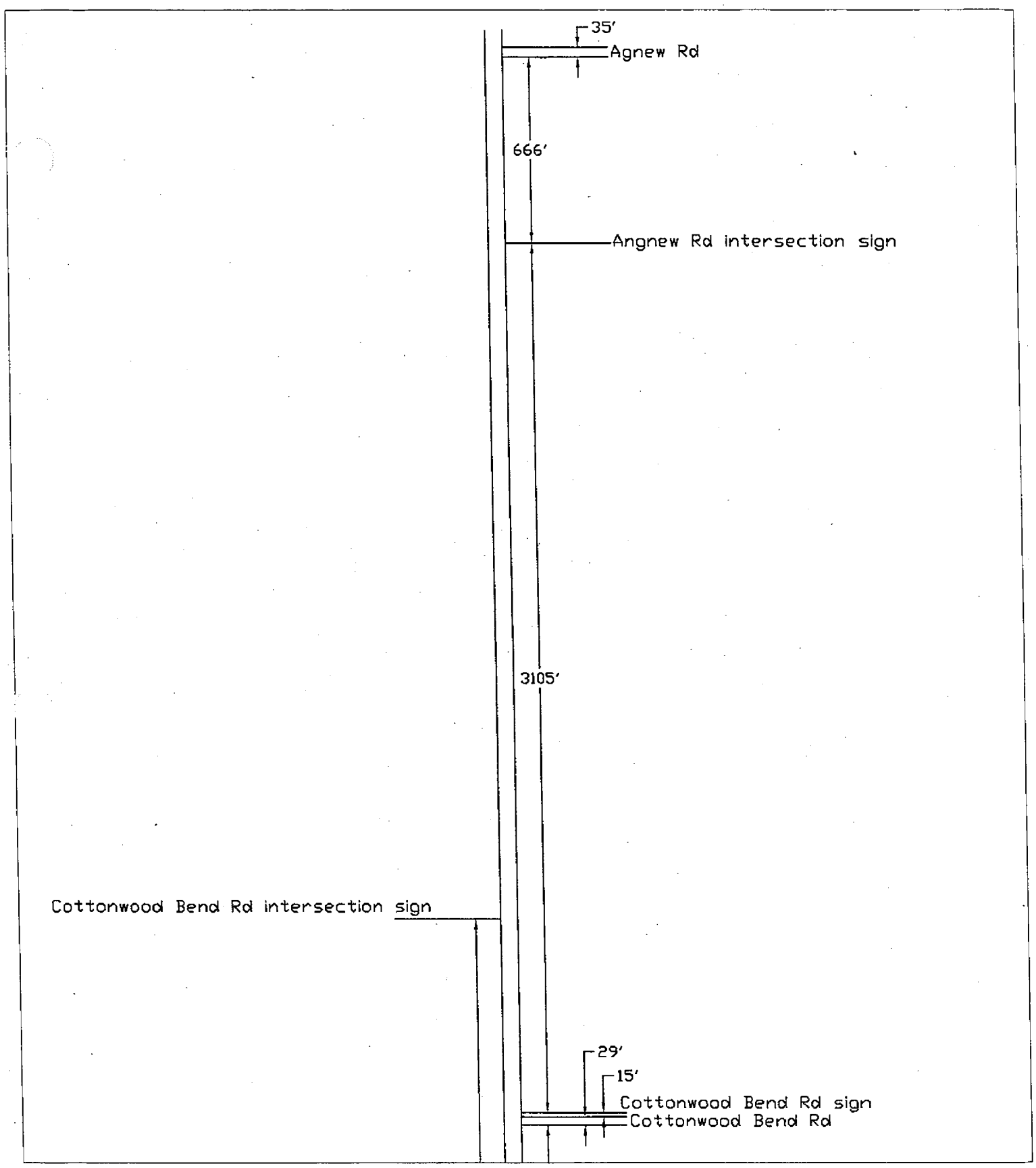
NOT TO SCALE



Westland Road Interchange Transportation Plan

Figure 3
Westland Road Driveway Inventory

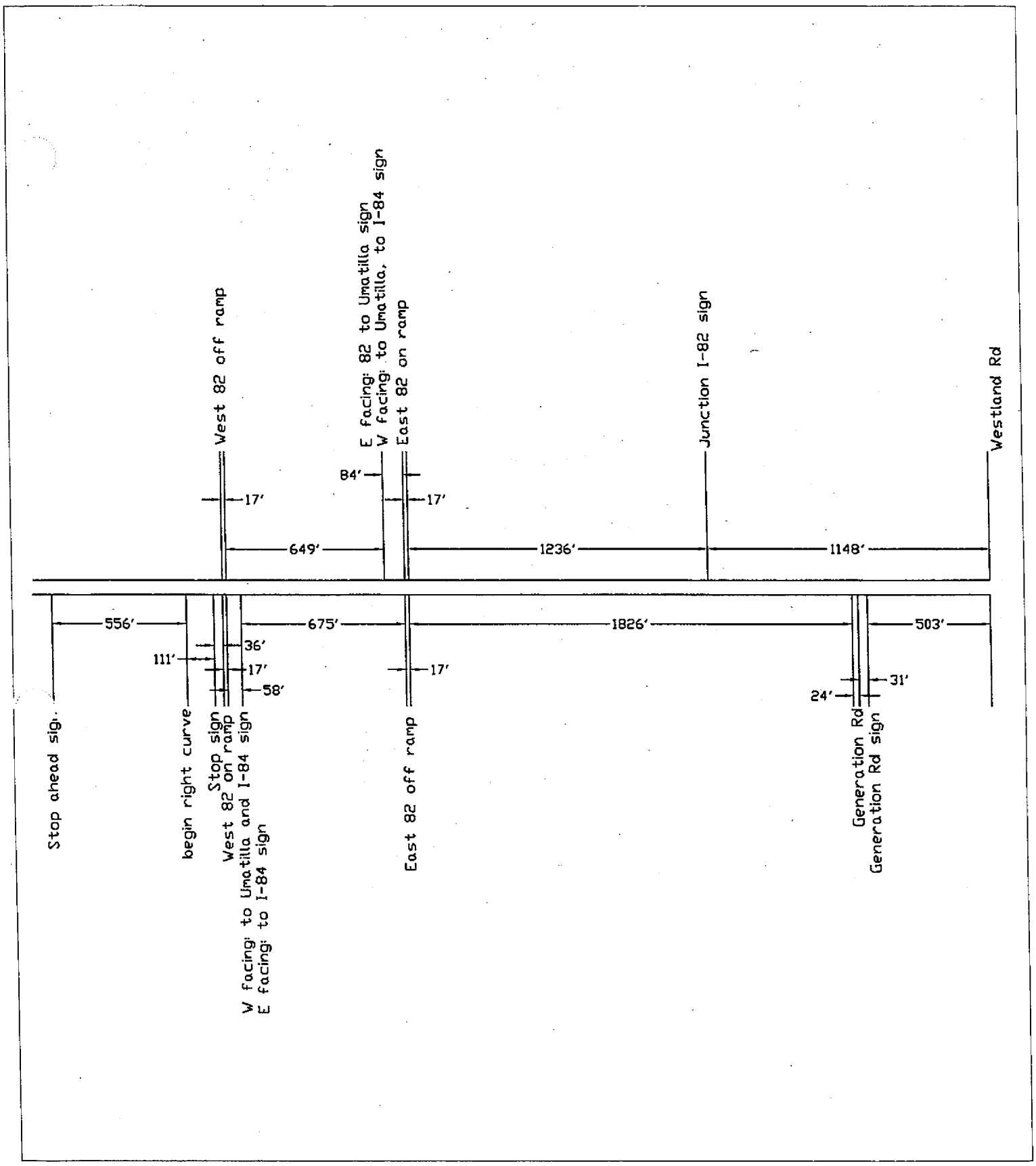
NOT TO SCALE



Westland Road Interchange Transportation Plan

Figure 4
Westland Road Driveway Inventory

NOT TO SCALE

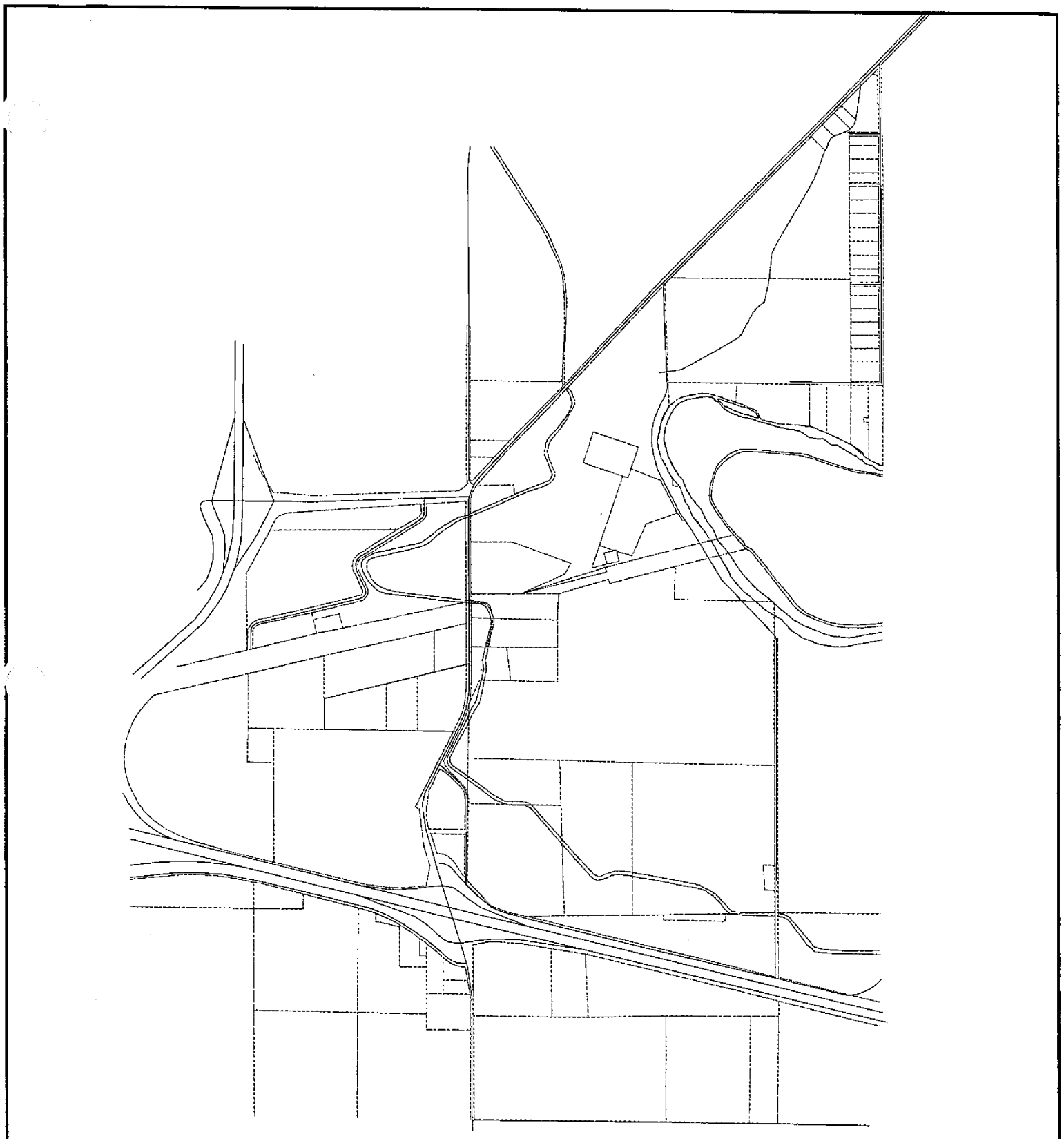


Westland Road Interchange Transportation Plan

Figure 5
Lamb Road Driveway Inventory

NOT TO SCALE

TASK 2.7
BASE MAP IN ARC VIEW FORMAT

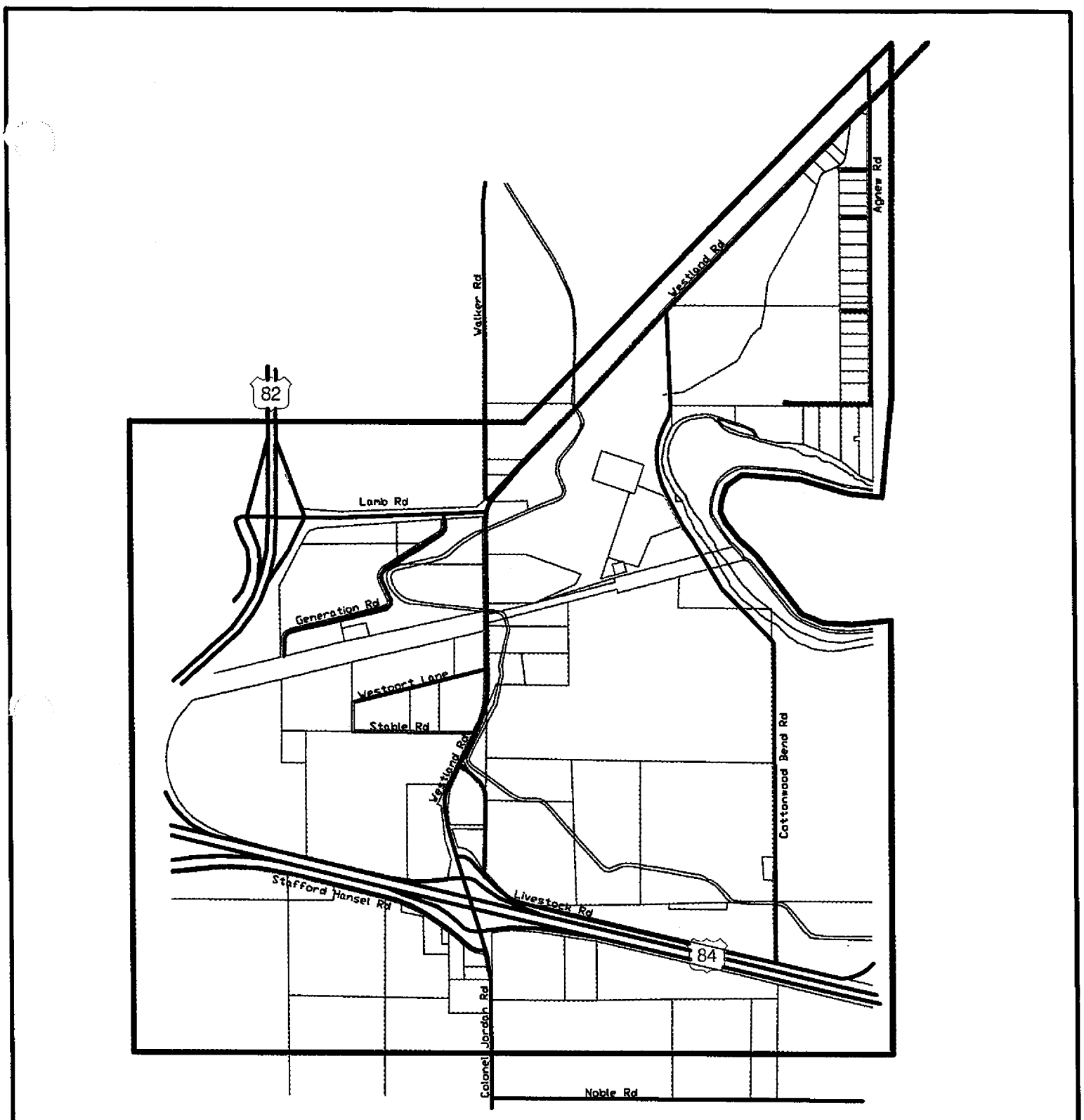


Westland Road/I-84/I-82 Interchange Area
Transportation Plan

Figure 1-1
Study Area

N

TASK 2.8
EXISTING INVENTORY FIGURES



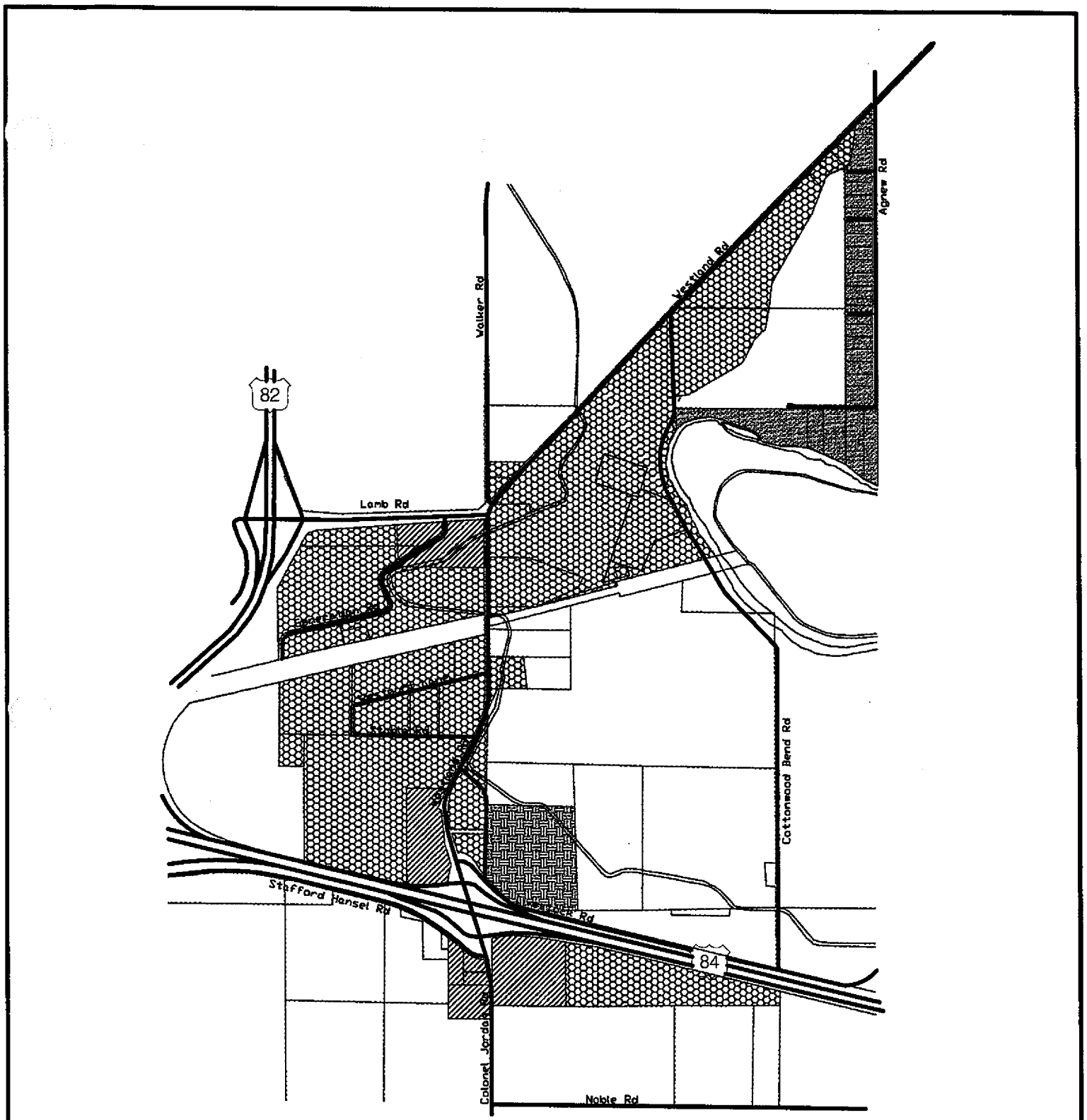
Westland Road Interchange Area Transportation Plan

Figure 1-1
Study Area

LEGEND

Study Area

NOT TO SCALE

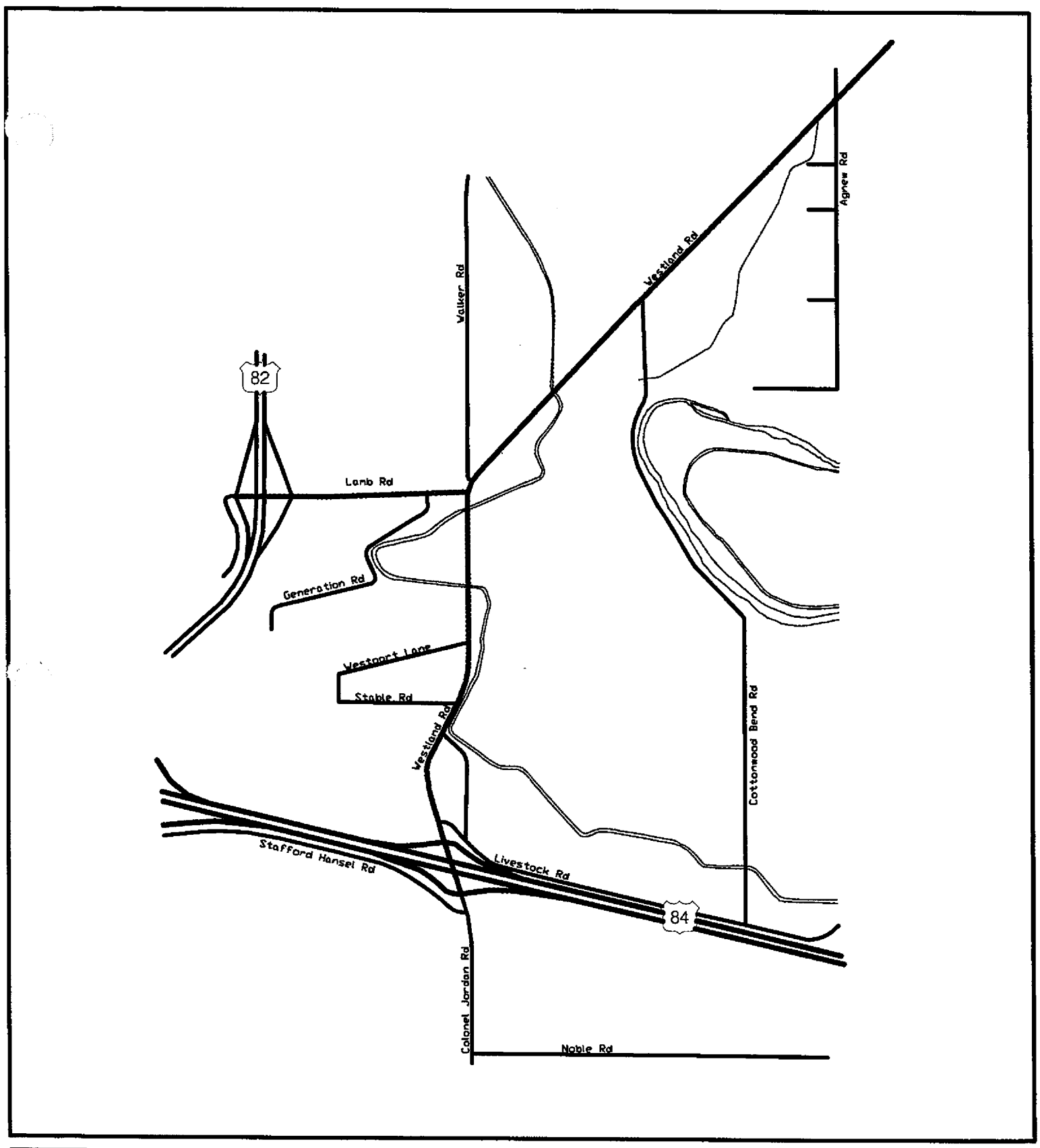


Westland Road Interchange Area Transportation Plan

LEGEND
- Tourist Commercial Zoning
- Industrial Zoning
- Rural Residential Zoning
- Agribusiness Zoning
- Exclusive Farm Use

NOT TO SCALE

Figure 1-2
Study Area Zone Map

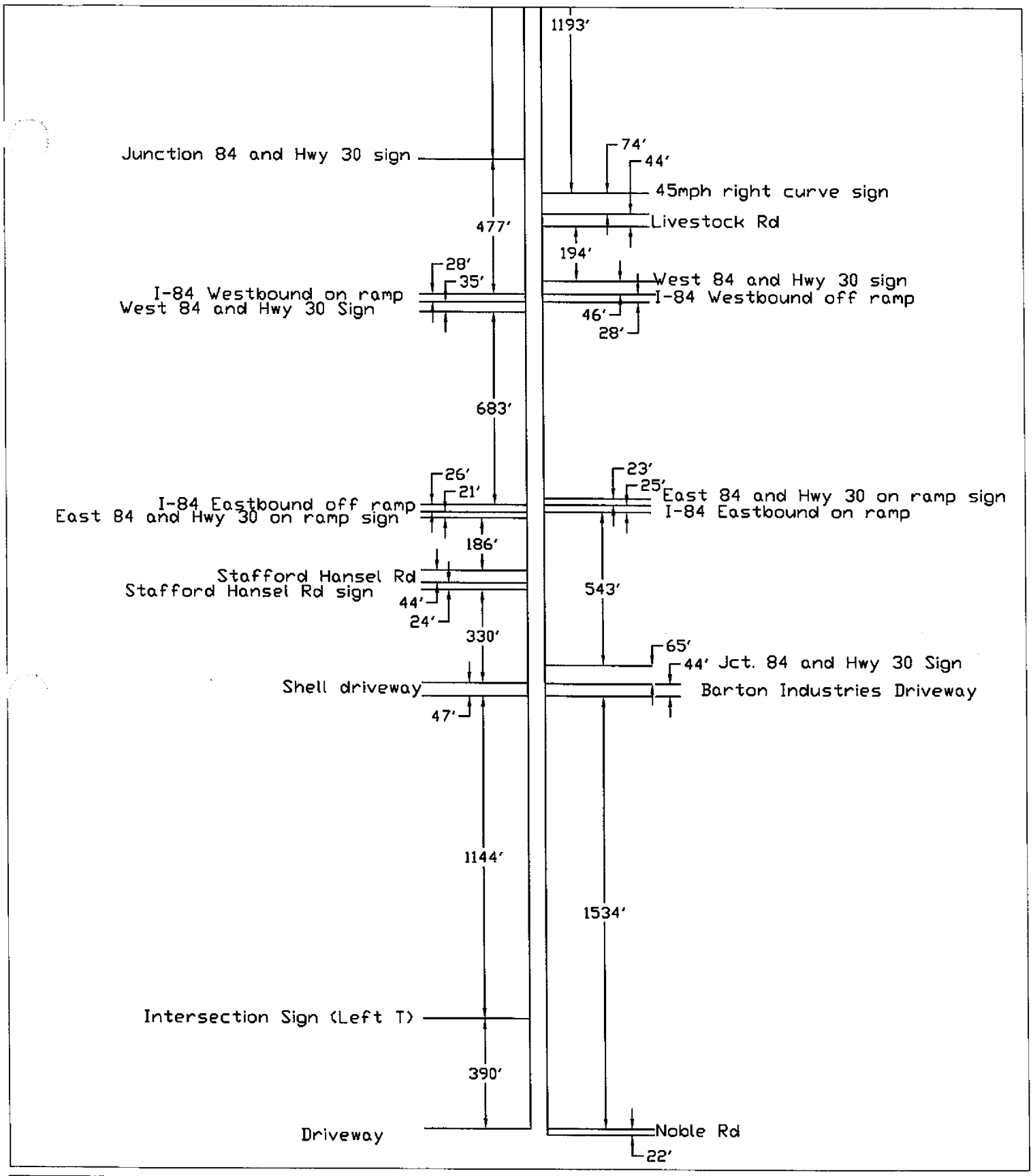


Westland Road Interchange Area Transportation Plan

LEGEND
- Interstate
- Rural Major Collector
- Local Street

NOT TO SCALE

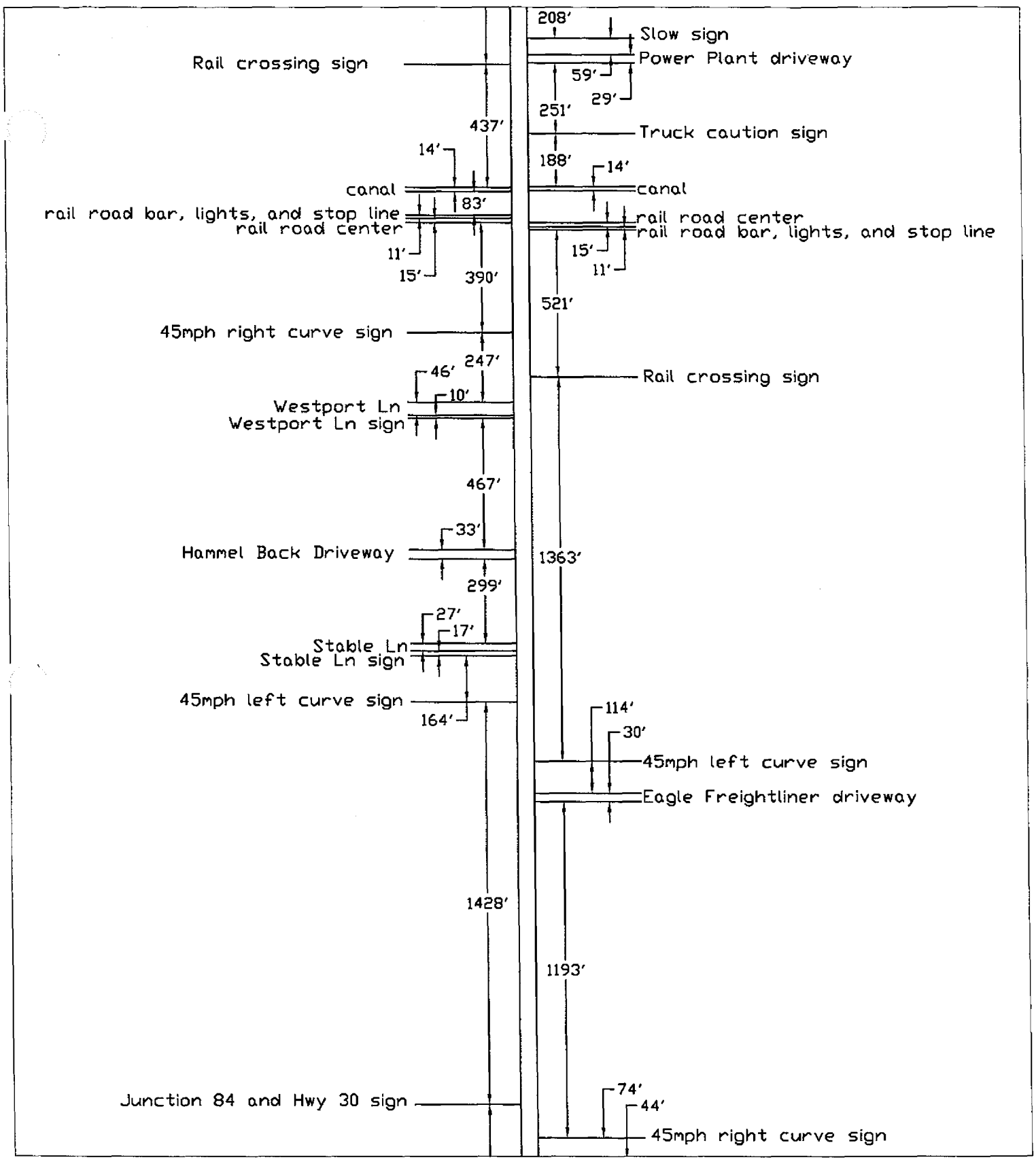
Figure 3-1
Roadway Classification



Westland Road Interchange Transportation Plan

Figure 3-2
Westland Road Driveway Inventory

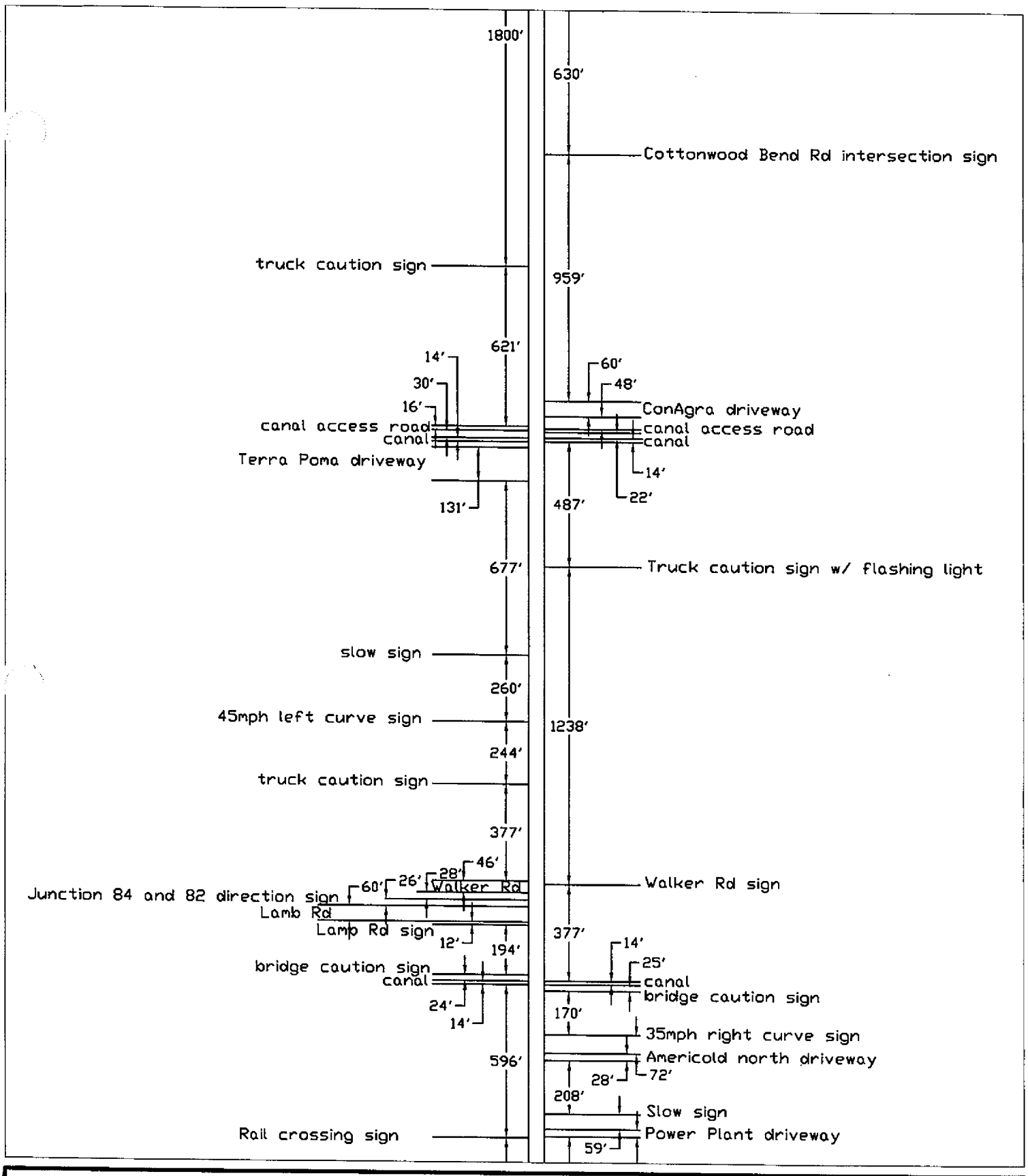
NOT TO SCALE



Westland Road Interchange Transportation Plan

Figure 3-3
Westland Road Driveway Inventory

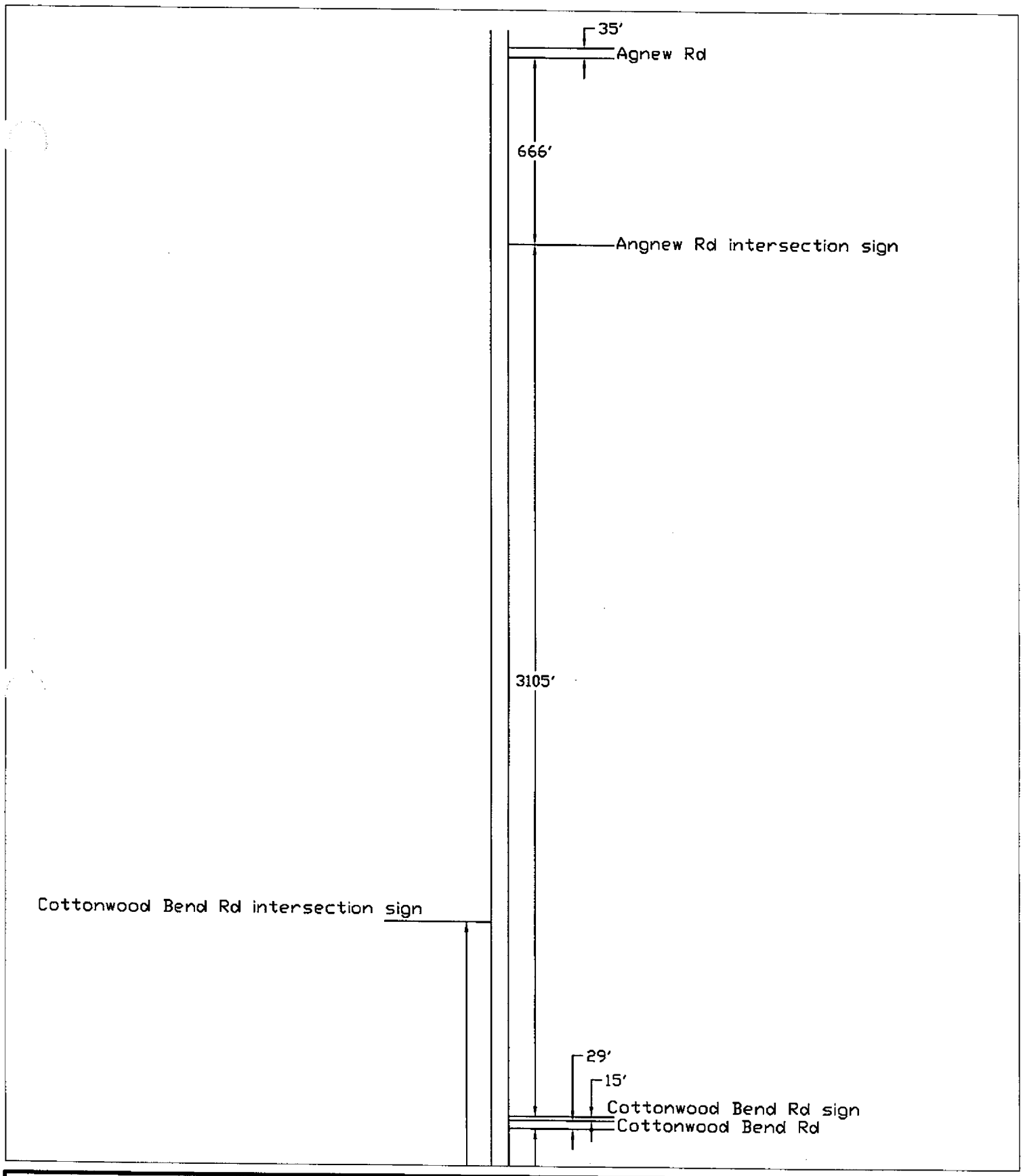
NOT TO SCALE



Westland Road Interchange Transportation Plan

Figure 3-4
Westland Road Driveway Inventory

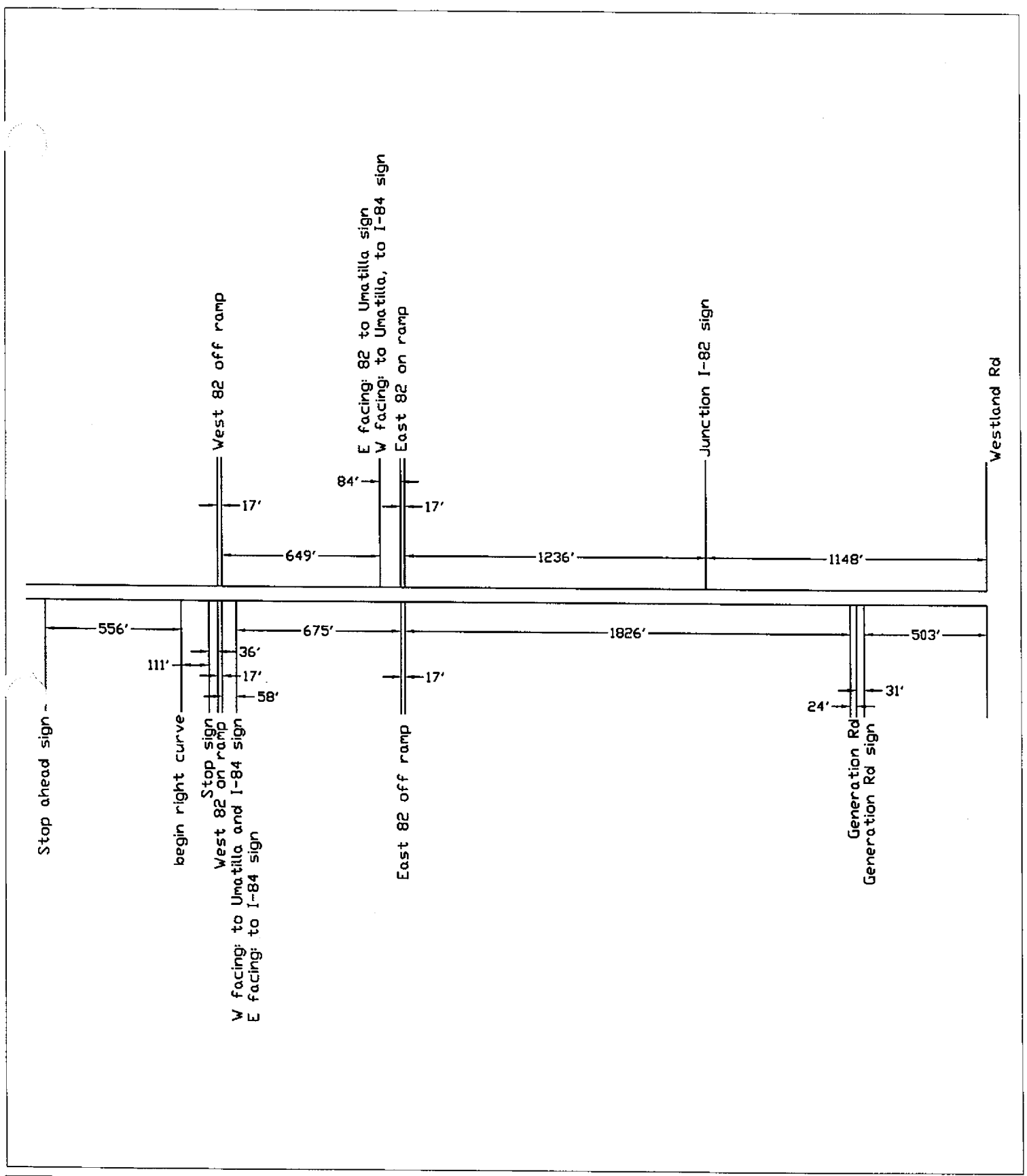
NOT TO SCALE



Westland Road Interchange Transportation Plan

igure 3-5
Westland Road Driveway Inventory

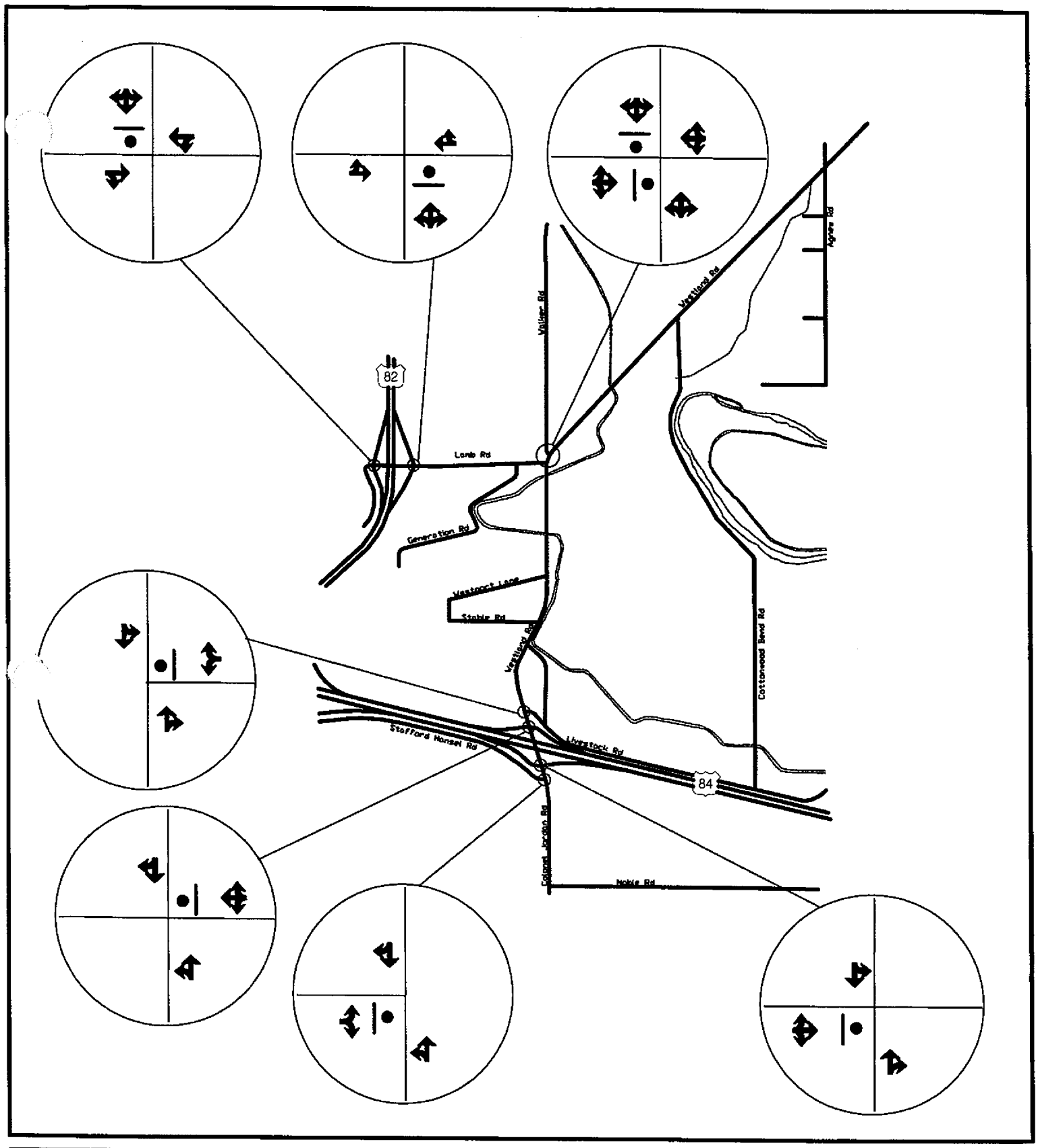
NOT TO SCALE



Westland Road Interchange Transportation Plan

Figure 3-6
Lamb Road Driveway Inventory

NOT TO SCALE

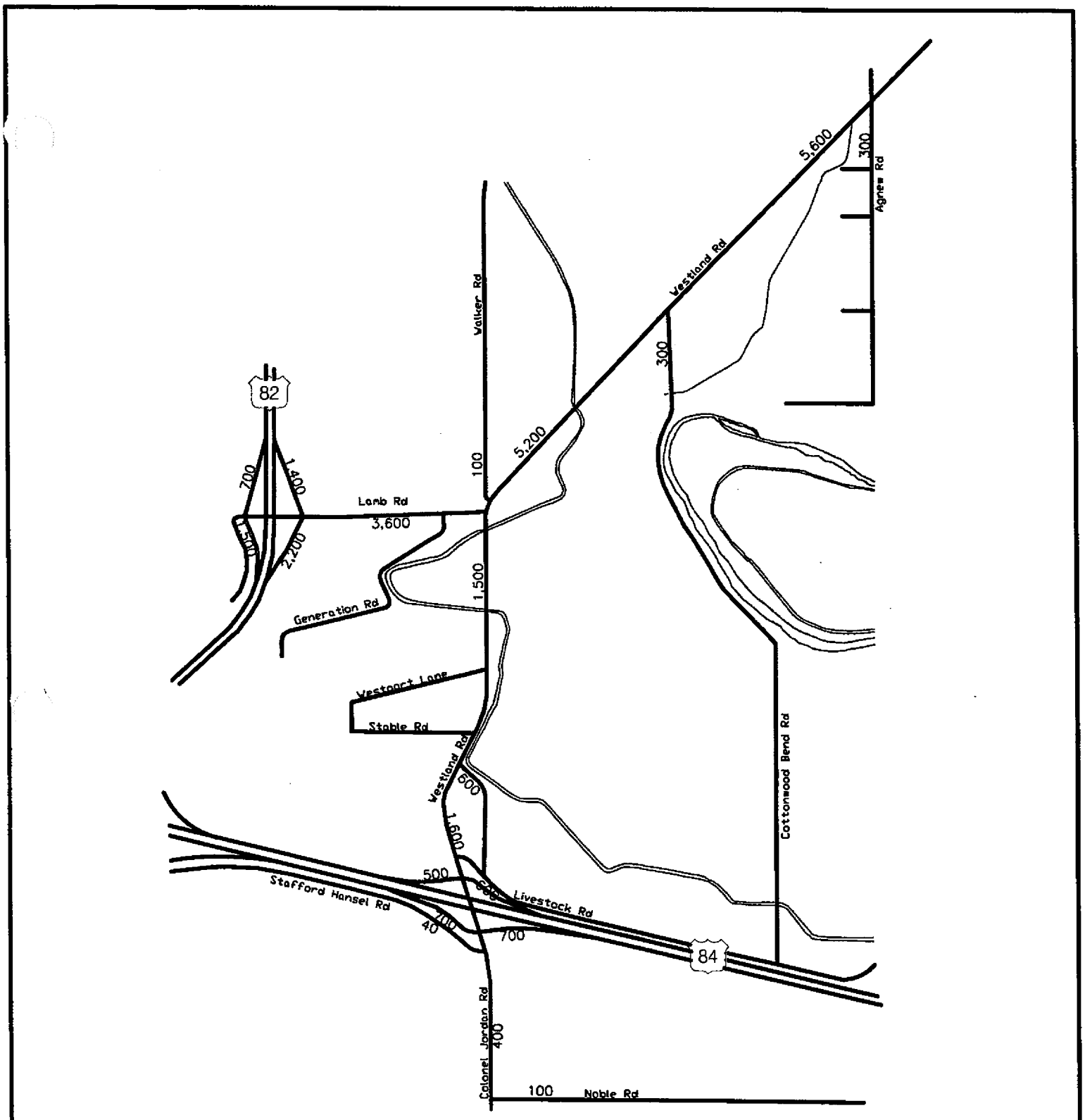


Westland Road Interchange Area Transportation Plan

Figure 3-7
Intersection Lane Configurations and Traffic Control

LEGEND
- Lane Usage
- Traffic Signal
- Stop Sign

NOT TO SCALE

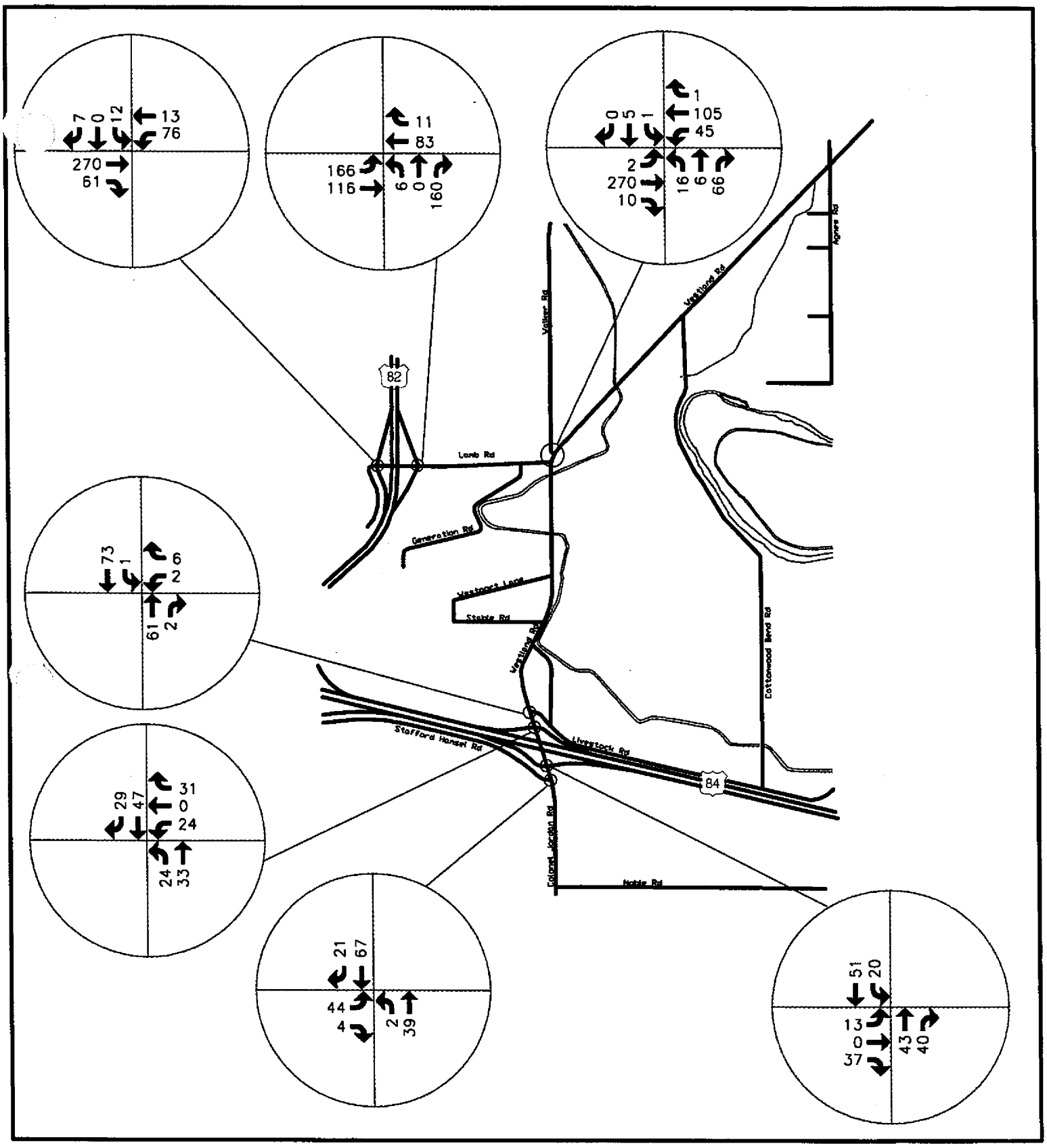


Westland Road Interchange Area Transportation Plan

Figure 3-8
2003 Existing Daily Traffic Counts

LEGEND
100 Average Daily Traffic Volume

NOT TO SCALE



Westland Road Interchange Area Transportation Plan

LEGEND

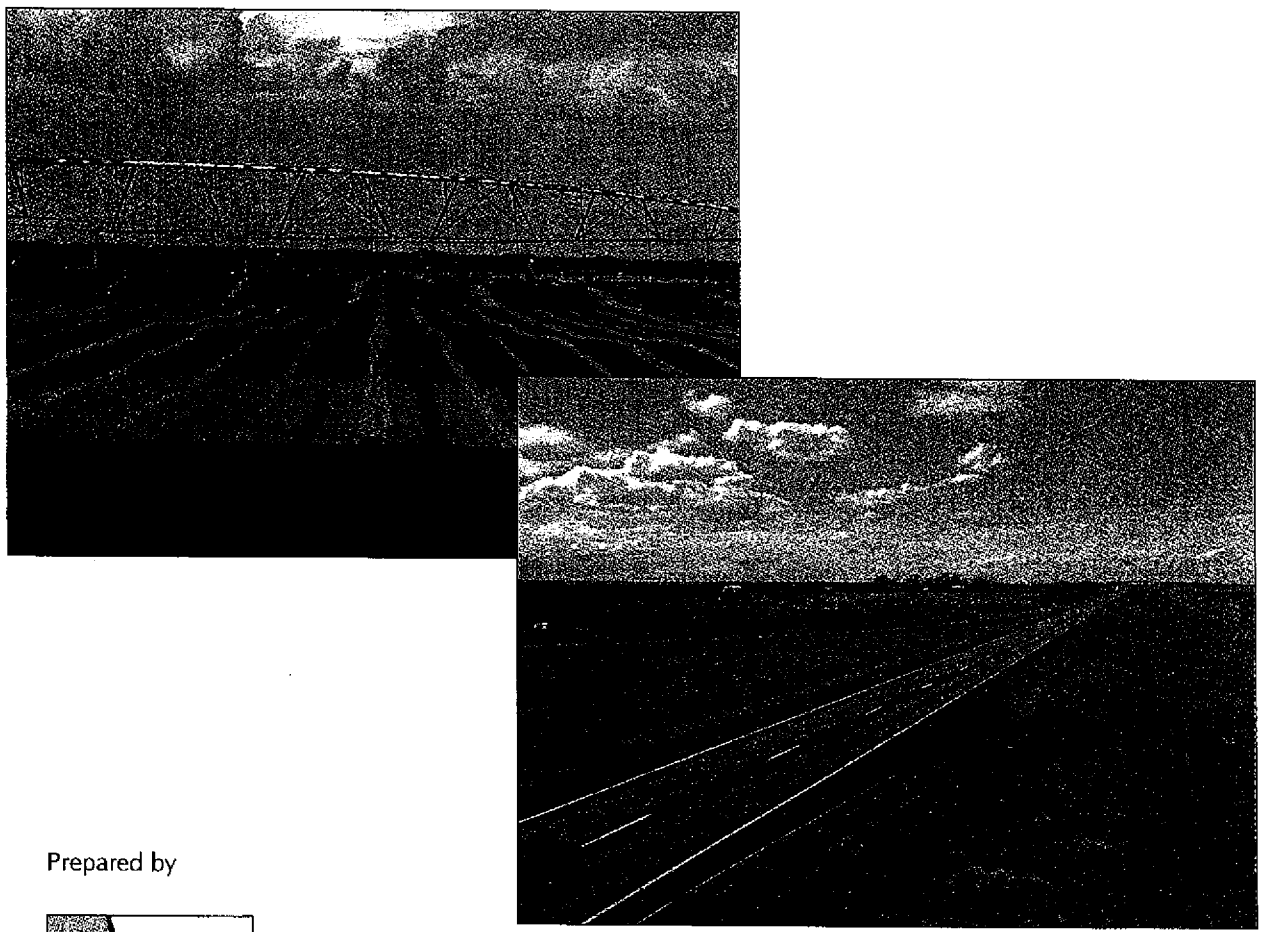
15 P.M. Peak Hour Traffic Volume

NOT TO SCALE

Figure 3-9
2003 Existing P.M. Peak Hour Traffic Volumes

TASK 2.9
ENVIRONMENTAL REVIEW

Environmental Site Assessment for the Westland Road/I-84/I-82 Interchange Area Transportation Plan, Umatilla County



Prepared by

NRPS SM

June 18, 2003

Environmental Site Assessment for the Westland Road/I-84/I-82 Interchange Area Transportation Plan, Umatilla County

Prepared for:

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APPENDICES

1.0 INTRODUCTION

1.1 BACKGROUND

This environmental site assessment supplements work completed by H. Lee & Associates on the Umatilla County, Westland Road/I-84/I-82 Interchange Area Transportation Plan for the Oregon Department of Transportation (ODOT). The study identifies potential traffic impacts at several sites resulting from the expansion. Some of these locations also present possible environmental concerns: Westland Road/I-84 Interchange, NW Livestock Road (No. 1328) at Westland Road, Lamb Road/I-82 Interchange, Lamb Road (No. 1232) at Westland Road, and Cottonwood Bend Road (No. 1327). Later site-planning efforts will handle traffic impacts created within the individual sites. This report evaluates the potential impacts to fish, wildlife, and plant species listed as endangered or threatened under the federal Endangered Species Act (ESA), and associated mitigation efforts from expansion of the sites. The report also address, in detail, necessary permit issues, and preliminary hazardous materials (HazMat) concerns.

Development occurs in the Interchange Area as industries seek locations for facility expansion, and tourist/commercial businesses look for opportunities related to high volumes of traffic on the I-84 and I-82 freeways and Westland Road. Sight distance concerns exist at the freeway ramps and overpass. Existing accesses fail to meet recommended access management standards for freeway interchanges.

This project will result in a transportation plan for the Westland Road/I-84/I-82 interchange area, that includes an access management plan for Lamb and Westland Roads; traffic analysis and as well as plans for improvements to existing roads and intersections; and a local street network Master Plan for the interchange area.

This analysis includes a cursory environmental assessment only intended to identify significant environmental issues that may conflict with the planned build out of the area. The analysis uses existing data and data collected for this project, the results of a field visit to relevant sites, potential permit issues, and environmental impacts to define the order and magnitude of environmental issues to be addressed in future planning, permitting, and construction processes for the proposed project.

2.0 EVALUATION METHODS

2.1 METHODOLOGY

Collection of baseline environmental data began with contacting local representatives of the U.S. Fish and Wildlife Service (USFWS), Oregon Department of Fish and Wildlife (ODFW), U.S. Bureau of Land Management (BLM), U.S. Army Corps of Engineers (USACE), and Oregon Division of State Lands (DSL), for their preliminary concerns, and to obtain a list of federally listed and/or proposed threatened and endangered species in the vicinity of the project alternatives.

Natural Resource Planning Services, Inc. (NRPS) used the existing data presented by the agencies and natural history information from the Oregon Natural Heritage Information Center (ONHIC 2003), to evaluate the potential presence of endangered species (plants and invertebrates), fish and fish habitat for all potential stream crossings, wetlands, and other natural resources protected by federal, state, county, and/or municipal statutes.

NRPS biologists completed a site visit at the project sites on April 1, 2003, as well as a cursory review of the entire Interchange Area in order to develop the current baseline environmental conditions. The site visit included pre-determined impact sites sited to determine site-specific impacts. These areas included: Westland Road/I-84 Interchange, NW Livestock Road (No. 1328) at Westland Road, Lamb Road/I-82 Interchange, Lamb Road (No. 1232) at Westland Road, and Cottonwood Bend Road (No. 1327).

Factors considered in evaluating project impacts included habitat components in the project vicinity, the abundance and distribution of habitat, the removal and/or modification of specific habitat components upon which the species of interest depend, distribution and abundance (if known), of the species of interest the possibility of direct impact to fish, wildlife or plant species, the degree of impact to habitat, and the potential for mitigation. NRPS used the methods outlined in "*Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale*" (National Marine Fisheries Service [NMFS] 1996) to analyze the potential for project impacts to water quality and in-stream and riparian habitat quantity and quality. This environmental site assessment determined the value of the site environmental baseline, discussed the effects of the proposed action the proposed action would affect the environmental baseline, and used that information to arrive at a determination of effect.

3.0 SITE ASSESSMENT EVALUATIONS

Background and Setting

The Columbia Basin comprises a large basin between the Rocky Mountains and the Cascades. Flood basalt originating in the eastern side of the region created the flat dissected topography. Channeled scablands, glacial deposits, and rolling hills covered in loess are all prominent features in the region (Oregon Progress Board [OPB] 2000). The scour and deposition associated with mega-flood events (Missoula floods) created the existing channel scablands. These range from coulee miles wide and hundreds of feet deep, to deep, scoured depressions. Basalt flows dominate the rock formations in the region, but in areas of erosion have exposed baked soils, ash tuffs, and lake deposits between and below the flows. Soils in the region consist of mostly warm and dry (mesic and arid). Soil texture ranges from course to silty. Streams have a moderate to low gradient, with low density within watersheds. Perennial streams originate in the Blue Mountains, but many streams flow intermittently (OPB 2000).

The Columbia Plateau contains a rich agricultural region, a major supplier of wheat to the world. This Ecoregion has undergone extensive changes over the last 150 years; with over 85 percent of its native plant communities converted to dry land wheat or irrigated agriculture (OPB 2000). Ninety-eight percent of the land in the Ecoregion remains in private hands. Conversion from prairie to farmland changed much of the natural function of the landscape. As a result, the streams and rivers of the Basin, that formerly supported one of the largest anadromous fisheries in the world, have suffered significant impacts from dam construction; preventing fish passage and flooding aquatic habitats, and by water withdrawals for agricultural purposes (Kagan 2000). Terrestrial ecosystems have undergone similar changes that have resulted in loss of habitat, habitat fragmentation, and reduction in the quality of habitats for a number of species. In addition, the continued introduction of new non-native species threatens the remaining native vegetation in the basin (Dryness 1973).

Project Area

The project area presents an example of the extensive changes that have occurred throughout the basin. It is primarily privately owned agriculture and industrial land (approximately 95 percent of land cover in the project area). Uses include: food and produce processing, electricity production from natural gas, a cattle auction yard and stable, grazing, and grain production. Remnant parcels of native vegetation exist but comprise less than 5 percent of the total project area.

Soil

Quincy loamy fine sand dominates the area soil types (Natural Resource Conservation Service [NRCS] 1998). Found on strath terraces of the Columbia River, this deep, excessively drained soil forms in gravelly alluvium mantled by eolian sand, at elevations of 300 to 1,100 feet. The average annual precipitation is 8 to 10 inches, the average annual air temperature is 52 to 54 degrees F, and the average frost-free period is 160 to 190 days (NRCS 1998). As a result of the rapid permeability this Quincy soil, and slow runoff, the hazard of water erosion remains slight. This soil type does have a high hazard of soil blowing and/or dusting. The main environmental limitations consist of this high hazard of soil blowing, low rainfall, and rapid permeability.

Irrigated crops such as Irish potatoes, small grain, and corn for grain and silage comprise most of the agriculture for this unit. Other uses include pasture, home site development, and rangeland. Plant establishment remains difficult in areas where the surface layer removal has exposed the gravelly substratum (NRCS 1998). When used as a base for roads and streets, mixing the upper part of the soil with the underlying sand and gravel increase its strength and stability (NRCS 1998).

Vegetation

Vegetation in the area typifies a dry eastern environment. The project area and surroundings present a mixture of shrub steppe and agriculture, pasture and mixed environs, with the later of the two predominating in the project area. The low- to mid-elevations (<6,000 ft [1,830 m]) throughout both states (Washington and Oregon) contain a wide distribution of the agricultural habitat; most abundant in broad river valleys throughout both states and on gentle rolling terrain east of the Cascades (Northwest Habitat Institute [NHI] 2002).

Agricultural habitat occurs within a matrix of other habitat types at low- to mid-elevations, including Eastside grasslands, Shrub-steppe, Westside Lowlands Conifer-Deciduous Forest and other low- to mid-elevation forest and woodland habitats (NHI 2002). This habitat often dominates the landscape in flat or gently rolling terrain. Unlike other habitat types, regular landscape patterns (squares, rectangles, and circles) and straight borders resulting from ownership boundaries and multiple crops within a region characterize the shape of agricultural habitat. Aerial photography interpretation confirms the presence of these mosaics within and adjacent to the project area (Microsoft 2003).

Natural fires no longer occur within this habitat, except for unimproved pastures and modified grasslands, where fire-return intervals can resemble those of native grassland habitats. Management practices disrupt natural succession and stand dynamics in most of the agricultural habitats. Abandoned eastside agricultural habitats may convert to other habitats, mostly grassland and shrub habitats from the surrounding native habitats (NHI 2002).

Remnant parcels of historic vegetation, predominantly either Shrub Steppe or Eastside (Interior) riparian vegetation type, exist in the project area. Basin big sagebrush shrub-steppe occurs along stream channels, in valley bottoms and flats throughout eastern Oregon and Washington. Wyoming sagebrush shrub-steppe comprises the most widespread habitat in eastern Oregon and eastern Washington, occurring throughout the Columbia Plateau and the northern Great Basin (NHI 2002). Generally, dry, hot environments in the Pacific Northwest typify this assemblage type, although variants also occur in cool, moist areas with some snow accumulation in climatically dry mountains. Habitat typically exists on deep alluvial, loess, silty or sandy-silty soils, stony flats, ridges, mountain slopes, and slopes of lakebeds with ash or pumice soils (NHI 2002).

In the project area, the primary land use in the shrub-steppe habitats consists of grazing, although much conversion to irrigation or dry land agriculture has also occurred. Characteristic, and dominant, mid-tall shrubs in the shrub-steppe habitat include all three subspecies of big sagebrush, basin (*Artemisia tridentata* ssp. *tridentata*), Wyoming (*A. t.* ssp. *wyomingensis*) or mountain (*A. t.* ssp. *vaseyana*), antelope bitterbrush (*Purshia tridentata*), and two shorter sagebrushes, silver (*A. cana*) and three-tip (*A. tripartita*; Kagan 2000). More than half of the Pacific Northwest shrub-steppe habitat community types listed

in the National Vegetation Classification are considered imperiled or critically imperiled (NHI 2002). A similar situation exists in the project area.

Eastside Riparian habitats dominated by woody plants also exist throughout eastern Oregon and eastern Washington. Eastside riparian habitats occur along streams, seeps, and lakes within the Eastside Mixed Conifer Forest, Ponderosa Pine Forest and Woodlands, Western Juniper and Mountain Mahogany Woodlands, and part of the Shrub-steppe habitat (NHI 2002). Black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), quaking aspen (*P. tremuloides*), white alder (*Alnus rhombifolia*), willow (*Salix sp.*) dominate the woody plant species in the project area (Kagan 2000). Management effects on woody riparian vegetation can be obvious (e.g., removal of vegetation by dam construction, roads, logging) or subtle (e.g., removing beavers from a watershed, removing large woody debris, or construction of a weir dam for fish habitat). In general, excessive livestock or native ungulate use leads to less woody cover and constrains the width and diversity of the riparian area.

Aquatic Resources

The Umatilla River and its associated irrigation canal (Westland A Canal) form the only aquatic resource in the project area. The Umatilla River Basin, located in the northeastern part of Oregon, in the Middle Columbia Basin, occupies approximately 2,500 square miles. The Umatilla River originates in the conifer forests of the Blue Mountains at over 6,000 feet elevation and flows west, and then northwest through the semi-arid shrub steppe of the Deschutes-Umatilla plateau, entering the Columbia river at an elevation of 270 feet above sea level (Oregon Department of Environmental Quality [DEQ] 2001). This confluence occurs at the town of Umatilla, Oregon, about 300 miles upstream from the Pacific Ocean.

Most of the basin area, including the Blue Mountain uplands, slopes gently. The narrow and steep-walled valleys of the Umatilla River drainage incise the expansive plateaus, steppes and rolling hills (DEQ 2001). The Umatilla River main stem begins at the confluence of its North and South Forks, 90 miles from the mouth. It has eight major tributaries: the North and South Forks of the Umatilla River and Meacham Creek in the upper Basin; Wildhorse, Tutuilla, McKay and Birch Creeks in the mid Basin; and Butter Creek in the lower Basin. Channelization and/or leveeing have affected much of the mainstem and major tributaries. Agricultural and rangelands comprise more than 80 percent of the Basin area with the remainder consisting of roughly 15 percent forest and 3 percent urban and developed area (Kagan 2000).

Episodic hydrographs (graph of flow against time) characterize stream flow in the Basin, with high flow occurring regularly during rainstorms and snowmelt conditions (DEQ 2001). Steep-sided canyons, relatively impervious basalt bedrock, and diminished vegetation contribute to poor ground water recharge and rapid runoff (NRCS 1998). Summer steelhead, chinook and coho salmon were abundant in the Umatilla River prior to the 1900's.

The Umatilla River in the project area makes the 303d list for turbidity, pH, toxics, habitat modification, sedimentation, temperature, bacteria, and flow modification (DEQ 2002).

ESA Listed Species

The ONHIC (2003) listed only the Middle Columbia River Steelhead (U.S. Department of Commerce [USDC] 1999) as occurring in the project area. Bull trout, listed in 1998, also occur in the Umatilla River, but in the headwater systems of the river (U.S. Department of Interior [USDI] 1998). The Washington Ground Squirrel also occurs in the project area. This species appears on the federal lists as a species of concern and is listed by the state as endangered (ONHIC 2003).

Middle Columbia River Steelhead (*Oncorhynchus mykiss*)

Two runs of steelhead (a winter and a summer run) exist in the area. Winter steelhead return to their natal stream in the late fall or winter and spawn by May. Summer steelhead migrate to their native stream during spring and summer, and spawn the following spring. Eggs are laid in gravel in a depression made by the female. Fry emerge from the gravel four to eight weeks later and spend 1 to 4 years in freshwater before migrating to the ocean (DSL 2000).

Most middle Columbia River steelhead smolt at two years and spend 1 to 2 years in salt water prior to re-entering fresh water, where they remain up to a year before spawning. Fish spending two years in salt water dominate the summer steelhead runs in this area. Runs in most other rivers in this region contain roughly equal amounts of one and two year fish (USDC 1996).

Proposed critical habitat for the Middle Columbia River Evolutionarily Significant Unit (ESU) includes river substrate and the adjacent riparian zone for all river reaches accessible to listed steelhead in Columbia River tributaries (except the Snake River) between Mosier Creek in Oregon and the Yakima River in Washington (inclusive). The habitat determination also includes river reaches and estuarine areas in the Columbia River from a straight line connecting the west end of the Clatsop jetty (south jetty, Oregon side) and the west end of the Peacock jetty (north jetty, Washington side) upstream to the Yakima River. The determination excludes areas above specific dams or above longstanding, naturally impassable barriers (i.e., natural waterfalls in existence for at least several hundred years).

Major river basins containing spawning and rearing habitat for this ESU encompass approximately 26,739 square miles in Oregon and Washington. The following Oregon counties lie partially or wholly within these basins: Baker, Clackamas, Crook, Gilliam, Grant, Harney, Hood River, Jefferson, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler.

Bull Trout (*Salvelinus confluentus*)

In Oregon, bull trout existed historically in the Willamette River and major tributaries on the west side of the Oregon Cascades, the Columbia and Snake rivers and major tributaries east of the Cascades, and in streams of the Klamath Basin (DSL 2000). Presently, most bull trout populations remain confined to headwater areas of tributaries to the Columbia, Snake, and Klamath rivers. Major tributary basins containing bull trout populations include the Willamette, Hood, Deschutes, John Day, and Umatilla (Columbia River tributaries), and the Owyhee/Malheur, Burnt/Powder, and Grande Ronde/Imnaha Basins (Snake River tributaries). Of these eight major basins, only one, the Grande Ronde, contains potentially stable population of large fluvial migratory bull trout, with them virtually eliminated from the remaining 7, including the majority of the mainstem Columbia River (DSL 2000).

Bull trout belong to the genus containing *char.* Resembling dolly varden char *(Salvelinus malma)* and native to the Pacific Northwest, bull trout populations exhibit four distinct life history forms: resident, fluvial, adfluvial, and anadromous (DSL 2000). Resident bull trout spend their entire life cycle in the same (or nearby) streams in which they were hatched. Fluvial and adfluvial populations spawn in tributary streams where the young rear from one to four years before migrating to either a lake (adfluvial) or a river (fluvial) where they grow to maturity (USDI 1998). Anadromous fish spawn in tributary streams, with major growth and maturation occurring in salt water.

Fisheries biologists consider bull trout as habitat specialists, especially with regard to preferred conditions for reproduction. While using only a small fraction of available stream habitat within a drainage or subbasin for spawning and rearing, much more extensive areas comprise foraging habitat, or seasonally as migration corridors to other waters. Habitat components appearing to influence bull trout distribution and abundance includes water temperature, cover channel form and stability, valley form, spawning and rearing substrates, and migratory corridors (USDI 1998c).

Bull trout depend on cool water, and inhabit shaded, overhanging banks or spring outflows during the summer (DSL 2000). They spawn in clean gravel beds that provide protection and aeration for developing eggs. Bull trout distribution has undergone an estimated 40 to 60 percent reduction since pre-settlement times. The local extirpations, habitat degradation, and isolating factors causing this decline have also left a highly fragmented present day distribution. Resident bull trout presently exist as isolated remnant populations in the headwaters of rivers that once supported larger, more fecund migratory forms. These remnant populations have a low likelihood of persistence (USDI 1998). Many populations and life history forms of bull trout have been extirpated entirely (DSL 2000).

Washington Ground Squirrel (*Spermophilus washingtoni*)

This small mammal is restricted to sagebrush and high quality bunchgrass habitats at low elevations in the Umatilla Basin in Oregon, and the Columbia Basin in Washington. It is listed as endangered (on January 21, 2000) by ODFW and is a Federal Species of Concern for the USFWS, currently undergoing review. The lower Umatilla Basin currently supports the only viable populations of this species in Oregon, with little protection elsewhere (Kagan 2000).

3.1 WESTLAND ROAD I-84/I-82 INTERCHANGE AREA

Background and Setting

This study assesses the traffic impacts created by the expansion at several sites. Some of these locations presenting possible environmental concerns include: Westland Road/I-84 Interchange, NW Livestock Road (No. 1328) at Westland Road, Lamb Road/I-82 Interchange, and Lamb Road (No. 1232) at Westland Road. Each individual site presently has varied levels of environmental impact, but all are considered as disturbed. Pockets of native shrub steppe vegetation exist in all areas, but are both disturbed and over-run by non-native vegetation.

None of the individual sites has a waterway, wetland or areas identified as "waters of the state" as designated by the DSL (2000). The Umatilla River, while located in the eastern edge of the project area, will not suffer any impacts from the expansion of the Interchange Areas. Expansion to Cottonwood Road, along the eastern edge of the project area could result in impacts to the Umatilla River, due to the increase in impervious surface and additional stormwater concerns.

The expansion of the sites produces minimal impacts to fish, wildlife, and plant species listed as endangered or threatened under the ESA, and associated mitigation, based upon the absence of ESA listed species known to exist in the Umatilla River (ONHIC 2003). However, the Umatilla River Watershed, with known presence of the Middle Columbia River Steelhead ESU, contains all the expansions so impacts could possibly occur.

Because of each site's environmental and development similarities, preliminary impacts are the same. Due to the similarities and preliminary nature of this report, impacts at each site are discussed as one. Each individual site would have impacts that would need to be addressed when development occurs.

Photodocumentation of each individual site is provided in Appendix A.

Proposed Action

Presently, development occurs in the Interchange Area as industries seek locations for expanding facilities, and tourist/commercial businesses look for opportunities related to high volumes of traffic on the I-84 and I-82 freeways and Westland Road. The Umatilla County-proposed Enterprise Zone encompasses the Interchange Area, which would allow for tax deferment, and potentially accelerate development. Sight distance concerns exist at the freeway ramps and overpass. Presently, accesses fail to meet recommended access management standards for freeway interchanges.

At each site, increased site distances to meet standards would only occur as a result of new development. This would necessitate additional fill and stabilization, resulting in potential impacts to ESA related species in the area from increases in impervious surface resulting in increased stormwater runoff and likely increased contaminants. The amount of fill and vegetation removal necessary for the proposed actions will likely require mitigation to fulfill ODOT requirements.

The assessment of impacts associated with the proposed development requires the determination of an action area. NMFS regulations define an action area as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The proposed action would require an action area extending to 0.25 miles (0.4 kilometers) outward from the point of construction (at each location), to respond to wildlife noise concerns from standard construction equipment. Present records show ESA listed plant species in the project area but if surveys identify any in the areas of concern, their action area would extend only to point locations of impact.

ESA Species Impact

The proposed action areas contain only a single ESA listed species, the Middle Columbia River Steelhead ESU (ONHIC 2003). The project area lies within the Umatilla River Watershed, which supports a population of this ESU, listed as threatened under the ESA. Currently, stormwater generated by the roadways is treated by roadside infiltration. Piping and discharging stormwater to the Umatilla River would impact steelhead and require consultation with the NMFS under Section 7 of the ESA. Infiltration or other means of on-site treatment of stormwater reduces the possibility of required consultation. Proximity of the new impervious surface or its resultant impacts to the original high water mark of the Umatilla River, may also initiate consultation with NMFS (a concern along Cottonwood Bend Road).

Despite its existence in the area, Washington ground squirrel as yet requires no Federal consultation, as it is only listed by the state (ONHIC 2003).

Permit Issues

Preliminary investigations and the field visit to the site determined that, as a result of no direct impacts to "Waters of the State" as designated by the DSL (Oregon Watershed Enhancement Board [OWEB] 1999) the proposed project area will require no wetland permits. The project will need to verify this through wetland delineations and determinations on a site-by-site bases, and submission to DSL during the preliminary development stages of the project.

If the wetland determinations and delineations at each site determine that wetland impacts will occur, and/or the amount of fill required for the proposed project will exceed 50 cubic yards, this will necessitate the completion of a Removal-Fill Permit for the DSL and/or a 404 permit for the USACE (DSL 2000). Resultant mitigation would require a 1 to 1 ratio or greater, based on the determined value of this site to the surrounding environments.

The proposed developments include no direct release of stormwater into a waterway, eliminating permits required from the DEQ under Section 401 of the Clean Water Act (OWEB 1999).

If the project uses no Federal funds, or requires no Federal permits or other actions, no federal regulation would occur. Control would then fall to local governments. This would not affect any requirements ODOT would place on the project based on design and impact. Construction on a public road requires ODOT approval (OWEB 1999).

If water storage is required on site during development phases a Water Storage Permit will be required from the Oregon Water Resource Department (OWRD; OWEB 1999).

Conclusion

The project design should minimize any additional impervious surface or fill required, and, to the furthest extent, the removal of any vegetation or large trees, as this will require additional mitigation. Additional impervious surface changes groundwater recharge in the area, requiring treatment and detention of runoff from all new impervious surface to ensure maintenance of water quality and quantity. The project should attempt to minimize vegetation removal as stated above, to reduce potential mitigation. Possible on-site mitigation could include restoration of the native shrub steppe environment, through the preservation of open space, restoration of existing patches an/or re-seeding of native seed sources.

Based on the proposed design this project should have minimal adverse site impacts and require minimal federal inclusion.

4.0 HAZARDOUS MATERIAL ISSUES

A NRPS biologist performed a preliminary HazMat investigation at the site during field visits and subsequent on-line research of the development site (DEQ 2003). The following HazMat issues exist within the project area:

- Big River Packing, L.L.C. (78008 Westland Road, Hermiston 97838): Water Discharge Permit.
- Hermiston Generating Company, L.P. (78145 Westland Road, Hermiston 97838): Air Discharge Permit and Water Discharge Permit.
- United Parcel Service, Inc. (1644 Westland Road, Hermiston 97838): Hazardous Waste and Water Discharge Permit.
- Oregon Bushops Central Storehouse (455 E Feedville Road, Hermiston 97838): Leaking UST.
- Lamb-Weston, Inc. (78153 Westland Road, Hermiston 97838): Air Discharge Permit, Hazardous Waste, and Water Discharge Permit.

Other HazMat issues not accounted for by the protocols of the preliminary investigation might exist in the project area. This issue requires a more in-depth assessment at each site location.

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Appendix A

Photodocumentation

Westland Road/I-84 Interchange Area

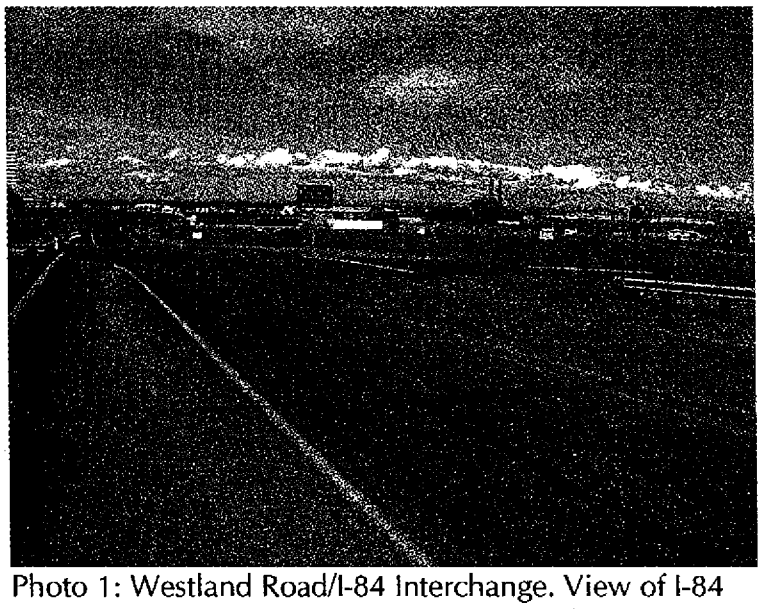

Photo 1: Westland Road/I-84 Interchange. View of I-84 westbound traffic on and off ramps at Westland (View, North).

Photo 2: Westland Road/I-84 undeveloped area of Westland Road on-ramp to I-84 W (View, West).

Photo 3: Westland Road/I-84 Interchange. View of I-84 eastbound traffic on and off ramps at Westland (View, South).

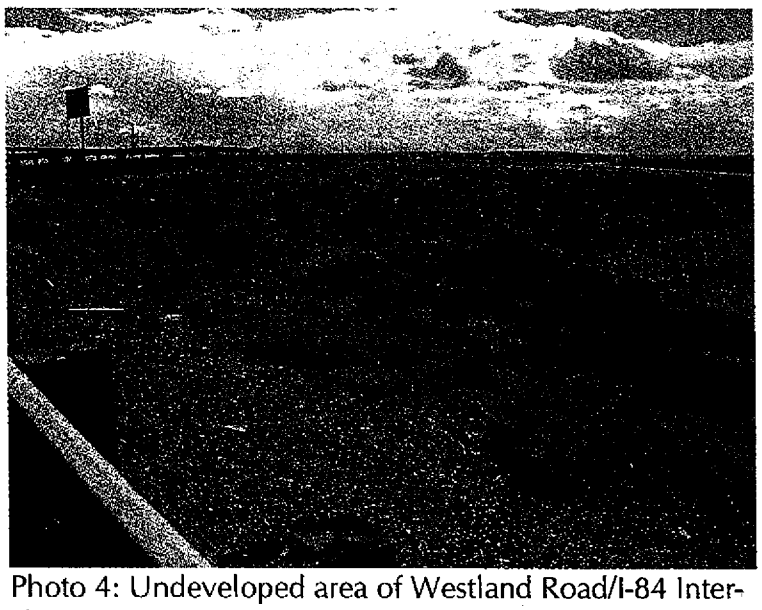

Photo 4: Undeveloped area of Westland Road/I-84 Interchange Area. Off-ramp of Westland Road to Eastbound I-84 traffic (View, Southwest).

NW Livestock Road (No. 1328) at Westland Road

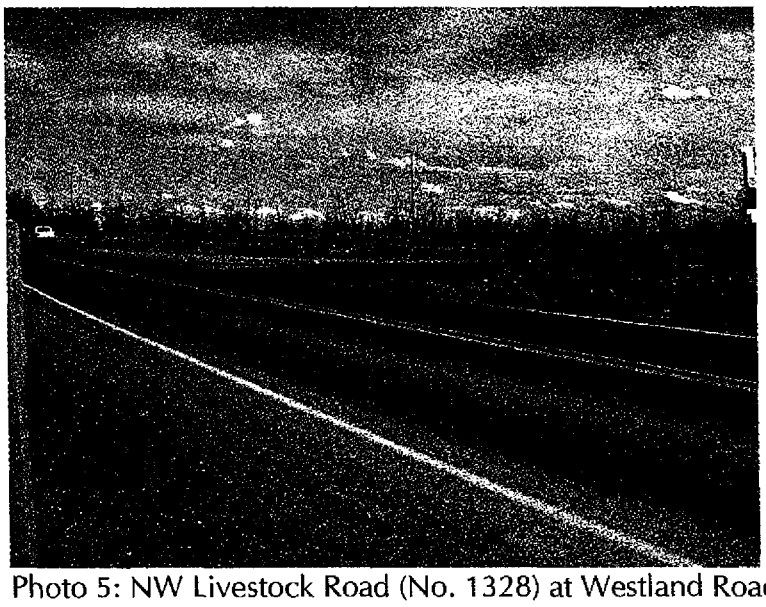

Photo 5: NW Livestock Road (No. 1328) at Westland Road.
Livestock enters the photo from the right (View, Northeast).

Photo 6: NW Livestock Road (No. 1328) at Westland Road.
Livestock enters the photo from the left (View, Southeast).

Photo 7: NW Livestock Road (No. 1328) at Westland Road. Westland Road is in the background (View, Northeast).

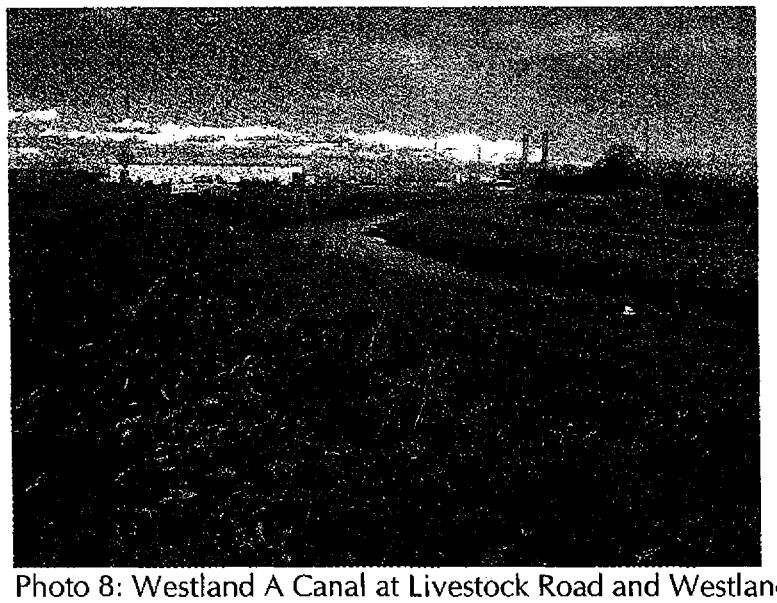

Photo 8: Westland A Canal at Livestock Road and Westland Road Interchange Area (View, Northwest).

Lamb Road/I-82 Interchange

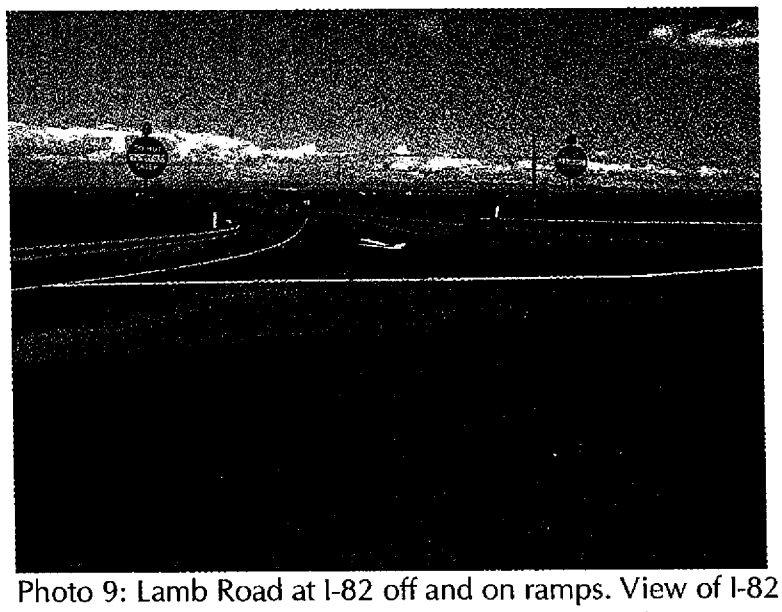

Photo 9: Lamb Road at I-82 off and on ramps. View of I-82 Southbound off ramp at Lamb Road (View, Northeast).

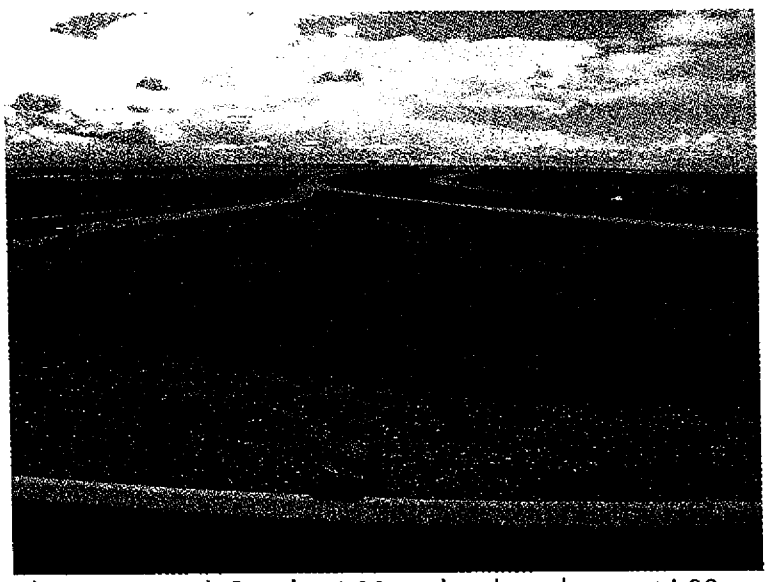

Photo 10: Lamb Road at I-82 undeveloped area at I-82 northbound off ramp (View, Southeast).

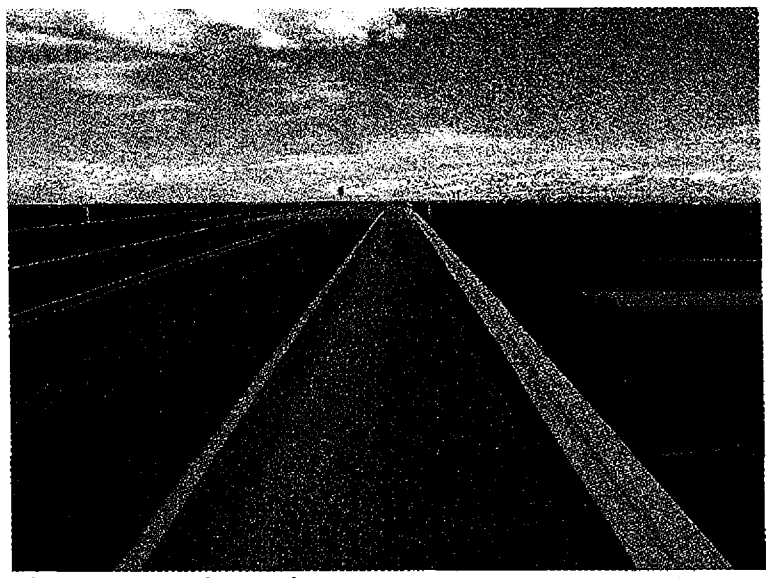

Photo 11: Lamb Road at I-82 overpass (View, West).

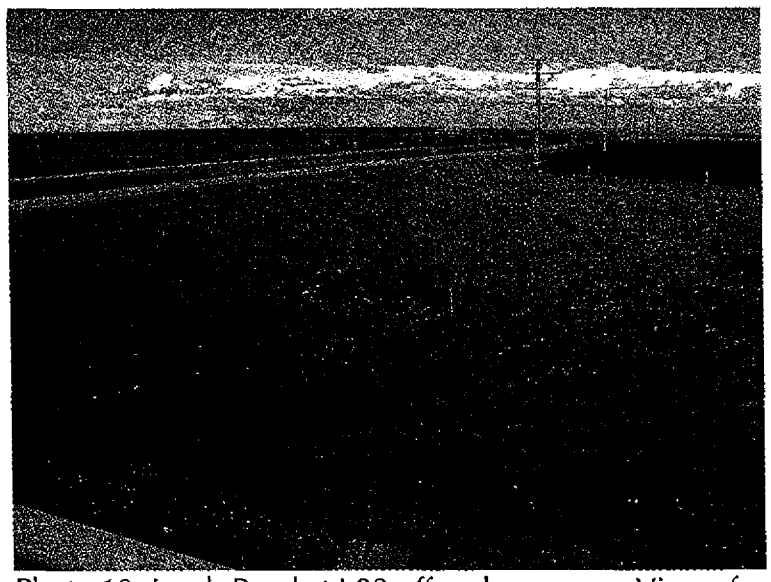

Photo 12: Lamb Road at I-82 off and on ramps. View of I-82 Southbound on ramp at Lamb Road (View, Northeast).

Lamb Road (No. 1232) at Westland Road

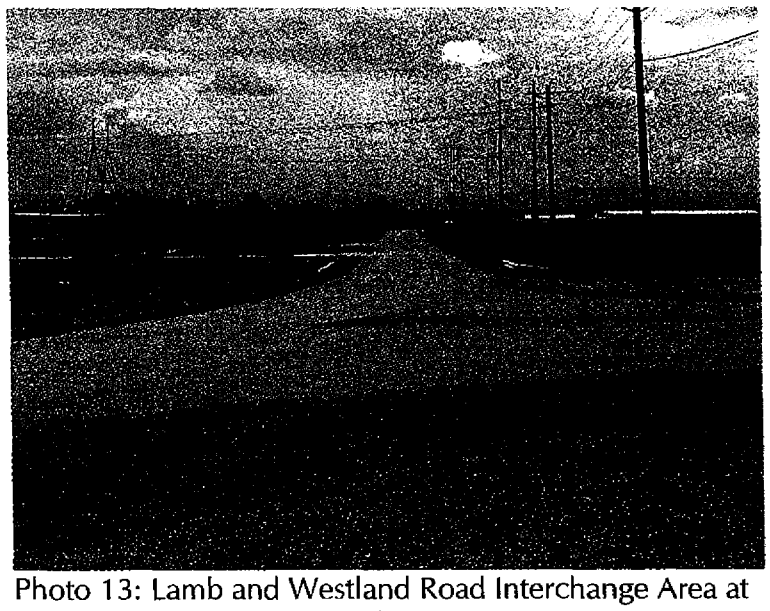

Photo 13: Lamb and Westland Road Interchange Area at Walker Road entrance. Lamb Road enters from the right (View, South).

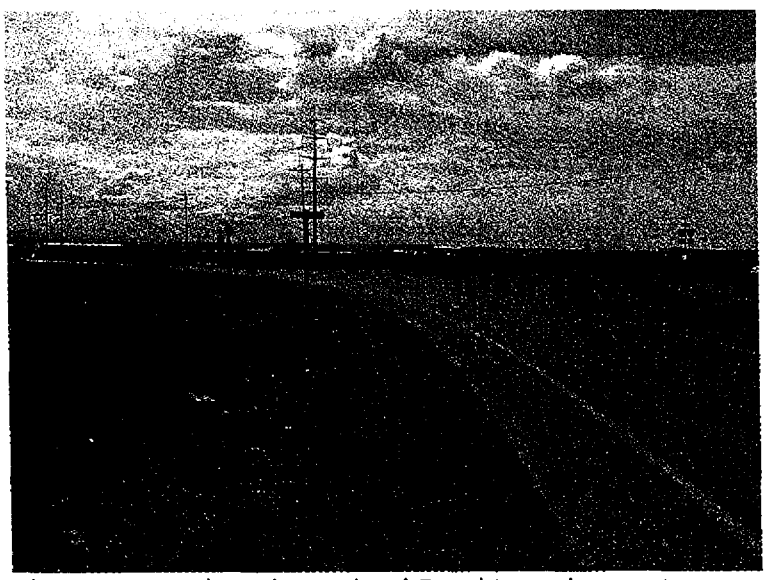

Photo 14: Lamb and Westland Road Interchange Area. View of Westland Road at Walker Road entrance (View, Southwest).

Photo 15: Lamb Road and Westland Road Interchange Area at Lamb Road entrance from the left. Westland Road is the through road on the right side of photo (View, North).

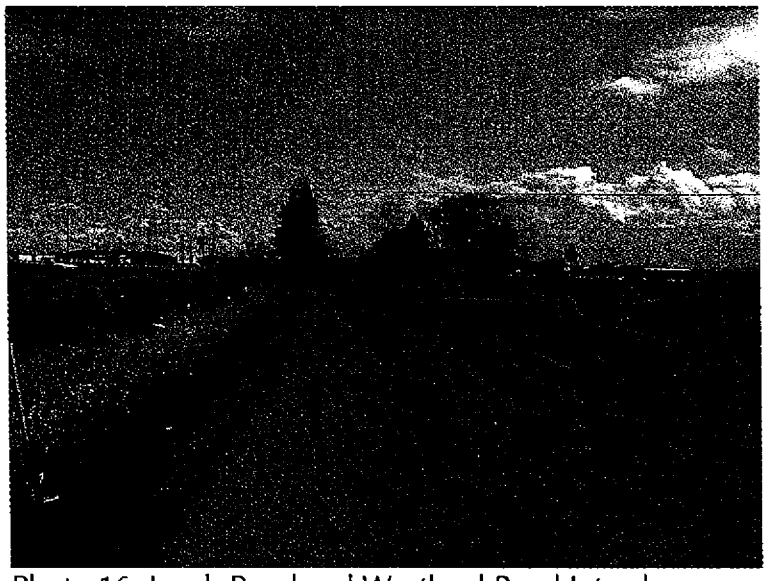

Photo 16: Lamb Road and Westland Road Interchange Area on Lamb Road (View, East).

Cottonwood Bend Road (No. 1327)

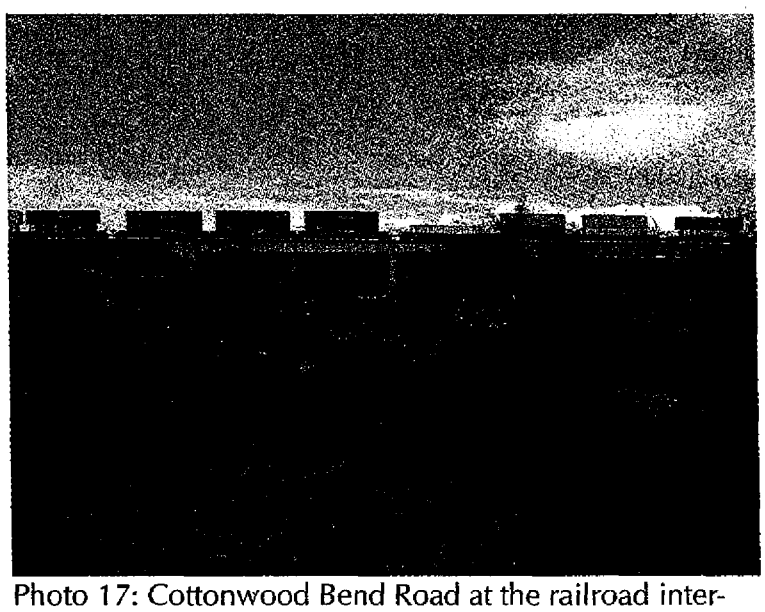

Photo 17: Cottonwood Bend Road at the railroad intersection along the Umatilla River. Cottonwood Bend is currently un-paved (View, North).

Photo 18: Cottonwood Bend Road at the railroad intersection. Adjacent pastureland west of Cottonwood Bend Road (View, North).

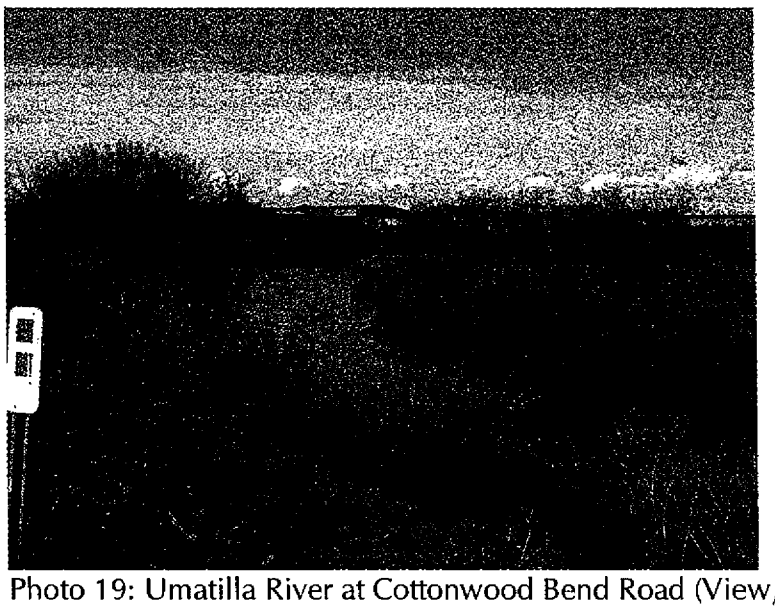

Photo 19: Umatilla River at Cottonwood Bend Road (View, North).

TASK 2.10
TECH MEMO FOR INVENTORY WORK

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road TAC and Management Team
From: Hann Lee, H. Lee & Associates

Subject: Existing Land Use and Transportation Inventory

This memorandum summarizes the land use and transportation inventory collected for the Westland Road study area.

SECTION ONE – PLANNING AREA

1.1. Study Area

The study area boundaries of the Westland Road/I-82/I-84 Interchange Area Transportation Plan are shown in Figure 1-1. The Westland Road/Agnew Road intersection marks the most northern area of the study area. The eastern study boundary is the Umatilla River and Cottonwood Bend Road. The southern boundary is Noble Road south of I-84. And finally, the western boundary is I-82. The major area of focus within these boundaries is the land that is zoned commercial and industrial. The study area is approximately 640 acres.

Major uses within the study area are listed below. The land uses within the study area are spaced sporadically and are not generally land intensive.

- Shell Truck Stop
- Barton Industries
- Freightliner Truck Shop
- Lamb Weston
- Natural Gas Power Generator
- Kaybe Orchards
- American Onion

Transportation facilities within the study area are limited and rural in nature. The major roadway is Westland Road, which bisects the center of the study area. Westland Road provides access to I-84 to the south and Hermiston to the east. Lamb Road provides the study area access to the Umatilla Army Depot and I-82. The remainder of the roadways within the study area provides local access to adjacent properties.

1.2. Study Area Zoning

There area five major types of zoning designations within the study area boundaries. These zoning designations are commercial, industrial, rural residential (RR-4), exclusive farm use (EFU), and agribusiness.

The commercially zoned property within the study area is in two general areas. The first commercially zoned area is south of Lamb Road between I-82 and Walker Road. The second commercial area within the study area is around the Westland Road interchange at I-84. There are three parcels south of I-84 immediately adjacent to the freeway and one parcel to on the northwest quadrant of the Westland Road/I-84 interchange. The commercially zoned property within the study area is approximately 100 acres. Only one of the commercially zoned properties within the study area actually has an existing use on it. The parcel on the southwest quadrant of the I-84 interchange with Colonel Jordan Road has a Shell truck stop.

There are three distinct industrial zoned areas within the study area. The first area is the most northern area of the study area that is bounded by Westland Road to the north and west, the Westland Canal and Cottonwood Bend Road to the east, the Union Pacific Railroad to the south, and Walker Road/Westland Road to the west. The second distinct industrial area is bounded by Lamb Road to the north, I-84 to the south, east of I-82 to the east, and Westland Road to the west. The third industrially zoned area within the study area is south of I-84 and east of Colonel Jordan Road. The industrial property within the study area is comprised of over 400 acres.

1.3. Tax Parcel Information

County assessor data for each tax parcel in the study area was collected from Umatilla County. This information is summarized in Table 1-1.

SECTION 2 – PROJECT GOALS

The goals below are derived from the project scope of work and are only intended to guide the study process.

- Goal 1 – Balance land use and transportation planning to develop an interchange plan that can achieve acceptable traffic operations along the areas transportation system and provide for safe access to adjacent land uses.

- Goal 2 – Maximize transportation management techniques in the study area to mitigate future traffic impacts generated by future developments and to minimize the necessary transportation infrastructure investment.

- Goal 3 – Solicit significant public input throughout the study process to assure ownership of the plan by study area stakeholders, property owners, and public.

- Goal 4 – Develop a comprehensive list of deficiencies in the project area that should be addressed by the study.

Table 1-1. County Assessor Data by Tax Lot

Tax Lot #	Map #	Account #	Last	First	Middle Initial	Street Address	City	State	ZIP	Zone	Acres	Total Value (Land)	Total Value (Structures)	Total Value
01400	4N2700-00	116880	BOUNDS	ROGER	S	PO BOX 148	HERMISTON	OR	97838	EFU	65.50	31,000.00	0.00	31,000.00
01403	4N2700-00	117884	PETRO STOPPING CENTERS LP			6080 SURETY DR	EL PASO	TX	79905	LI,TC	81.14	822,050.00	103,160.00	925,210.00
01417	4N2700-00	149114	MEDELEZ TRUCKING LLC			1186 E PUNKIN CTR RD	HERMISTON	OR	97838	LI	7.62	254,120.00	332,730.00	586,850.00
01418	4N2700-00	156881	MEDELEZ TRUCKING LLC			1186 E PUNKIN CTR RD	HERMISTON	OR	97838	LI	4.05	126,360.00	0.00	126,360.00
01419	4N2700-00	156882	MEDELEZ TRUCKING LLC			1186 E PUNKIN CTR RD	HERMISTON	OR	97838	LI	3.29	114,510.00	0.00	114,510.00
01701	4N2700-00	142485	WESTERN IRRIGATION CO THE							EFU	13.00	11,700.00	0.00	11,700.00
02601	4N2700-00	116932	WESTERN INVESTMENTS INC			PO BOX 826	HERMISTON	OR	97838	TC	2.51	109,660.00	707,530.00	817,190.00
02606	4N2700-00	154553	WESTERN LAND & CATTLE INC			PO BOX 826	HERMISTON	OR	97838	TC	1.38	86,530.00	0.00	86,530.00
02607	4N2700-00	154554	WESTERN LAND & CATTLE INC			PO BOX 826	HERMISTON	OR	97838	TC	1.17	76,740.00	0.00	76,740.00
02604	4N2700-00	116938	WESTERN INVESTMENTS INC			PO BOX 826	HERMISTON	OR	97838	TC	5.28	148,100.00	0.00	148,100.00
00100	4N2725-A0	145211	UMATILLA ELECTRIC CO-OP ASSN			PO BOX 1148	HERMISTON	OR	97838	LI	3.30	41,280.00	0.00	41,280.00
00200	4N2725-A0	116888	FIRST OREGON LAND CORP			7500 OLD GEORGTOWN RD	BETHESDA	MD	20814	TC,LI	39.36	456,590.00	320.00	456,910.00
00201	4N2725-A0	149516	LAMB	ROBERT	R	PO BOX 843	JOSEPH	OR	97846	LI	4.35	185,580.00	631,520.00	817,100.00
00202	4N2725-A0	157926	FIRST OREGON LAND CORP			7500 OLD GEORGTOWN RD	BETHESDA	MD	20814	LI,TC	31.03	475,350.00	0.00	475,350.00
00400	4N2725-A0	144879	H-4 FARMS INC			PO BOX 110	HERMISTON	OR	97838	LI	1.34	54,230.00	285,630.00	339,860.00
00500	4N2725-A0	147610	UMATILLA PORT OF	C/O AMERICAN ONION INC, AG	ATTN: TAX DEPT	28790 WESTPORT LN	HERMISTON	OR	97838	LI	9.04	185,040.00	713,960.00	899,000.00
00501	4N2725-A0	153927	HAMMELL TRANSPORT SERVICE INC			PO BOX 189	HERMISTON	OR	97838	LI	5.00	149,710.00	252,970.00	402,680.00
00502	4N2725-A0	153928	UMATILLA PORT OF			PO BOX 879	UMITILLA	OR	97882	LI	15.82	230,890.00	0.00	230,890.00
00503	4N2725-A0	156439	UMATILLA PORT OF			PO BOX 879	UMITILLA	OR	97882	LI	7.64	163,780.00	0.00	163,780.00
00600	4N2725-A0	143635	BT PROPERTY LLC		ATTN: TAX DEPT	PO BOX 28606	ATLANTA	GA	30359	LI	15.85	257,320.00	1,362,350.00	1,619,670.00
00700	4N2725-A0	149098	BOUNDS	ROGER	S	PO BOX 148	HERMISTON	OR	97838	LI	4.38	137,880.00	0.00	137,880.00
02206	4N28C0-00	118203	LAMB-WESTERN INC			PO BOX C-1900	TRI CITIES	WA	99302	LI	85.99	308,410.00	35,256,820.00	35,565,230.00
02210	4N28C0-00	139646	UMATILLA ELECTRIC CO-OP ASSN			PO BOX 1148	HERMISTON	OR	97838	LI	0.52	17,610.00	0.00	17,610.00
02216	4N28C0-00	139645	LAMB-WESTERN INC			PO BOX C-1900	TRI CITIES	WA	99302	LI	0.50	6,330.00	0.00	6,330.00
02218	4N28C0-00	118206	BEATRICE PUBLIC REFRIG SER INC	C/O AMERICOLD CORP OFFICES		PO BOX 42165	HOUSTON	TX	77242	LI	12.40	122,920.00	2,578,030.00	2,700,950.00
02219	4N28C0-00	139644	UMATILLA ELECTRIC CO-OP ASSN			PO BOX 1148	HERMISTON	OR	97838	LI	0.77	22,180.00	0.00	22,180.00
02220	4N28C0-00	151029	HERMISTON GENERATION CO & PACIFICORP			825 NE MULTNOMAH	PORTLAND	OR	97239	LI	12.94	600,000.00	0.00	600,000.00
02700	4N28C0-00	118213	SMITH	DEAN & CONNIE		29224 BLOOM RD	HERMISTON	OR	97838	RR-4	7.09	117,340.00	62,750.00	180,090.00
02701	4N28C0-00	146967	CALLAHAN	GERALD & SUSAN	M & E	PO BOX 931	HERMISTON	OR	97838	RR-4	3.95	69,530.00	53,470.00	123,000.00
02703	4N28C0-00	147745	LOWRANCE	WILLIAM & LORETTA	D & E	29278 BLOOM RD	HERMISTON	OR	97838	RR-4	4.17	76,860.00	65,060.00	141,920.00
02704	4N28C0-00	147746	MIDDLETON	ROBERT & CAROL	L & R	29270 BLOOM RD	HERMISTON	OR	97838	RR-4	4.22	77,570.00	120,060.00	197,630.00
02900	4N28C0-00	118215	HERMISTON GENERATING GO LP			78145 WESTLAND RD	HERMISTON	OR	97838	LI	1.98	62,490.00	75,430.00	137,920.00
02903	4N28C0-00	118216	BISHOP	KAREN		28875 BRIDGE RD	HERMISTON	OR	97838	LI	1.27	54,720.00	0.00	54,720.00
03000	4N28C0-00	118218	COOK	LAQUITA	J	2152 HAW CREEK CIRCLE	EMMET	ID	83617	LI	12.30	122,440.00	0.00	122,440.00
03002	4N28C0-00	118219	HERMISTON GENERATING CO & PACIFICORP			78145 WESTLAND RD	HERMISTON	OR	97838	LI	1.93	62,560.00	0.00	62,560.00
03100	4N28C0-00	118220	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	14.04	3,630.00	0.00	3,630.00
03200	4N28C0-00	118221	HERMISTON GENERATING CO & PACIFICORP			78145 WESTLAND RD	HERMISTON	OR	97838	LI	5.11	94,210.00	20,070.00	114,280.00
03300	4N28C0-00	118222	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	14.51	2,340.00	0.00	2,340.00
03400	4N28C0-00	118223	NORTHWEST LIVESTOCK COMM	C/O MILLER GARY		PO BOX 134	HERMISTON	OR	97838	A-B	32.93	501,450.00	114,690.00	616,140.00
03490	4N28C0-00	118225	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	27.00	3,070.00	250.00	3,320.00
03492	4N28C0-00	118226	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	2.00	960.00	0.00	960.00
03500	4N28C0-00	118227	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU,LI	5.97	1,940.00	0.00	1,940.00
03501	4N28C0-00	118228	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	0.57	5,050.00	36,940.00	41,990.00
03502	4N28C0-00	118229	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	LI	0.50	25,300.00	0.00	25,300.00
03503	4N28C0-00	118230	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	75.25	36,510.00	66,700.00	103,210.00
03505	4N28C0-00	118231	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	155.87	65,800.00	3,780.00	69,580.00
03506	4N28C0-00	144903	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	7.00	2,660.00	0.00	2,660.00
03507	4N28C0-00	152309	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	35.38	13,970.00	0.00	13,970.00
06400	4N28C0-00	118286	BARTON PROPERTIES INC			1390 SW 11TH	HERMISTON	OR	97838	TC,EFU,LI	116.61	61,820.00	2,870.00	64,690.00
06402	4N28C0-00	118287	BARTON	RICHARD	R	77609 COL JORDAN RD	HERMISTON	OR	97838	LI	7.33	123,800.00	209,950.00	333,750.00
00500	4N2819-A0	122142	GASS	MARGARET	A	26400 WILLARD RD	BEND	OR	97701	LI,EFU-40	54.25	12,570.00	0.00	12,570.00
00502	4N2819-A0	122157	RUSSELL	RICHARD & DORENE	A	C/O SANEZ REYES JR & SELMA, AG PO BOX 359	HERMISTON	OR	97838	LI	1.17	57,500.00	83,450.00	140,950.00
00503	4N2819-A0	139253	RUSSELL	RICHARD & DORENE	A	C/O SANEZ REYES JR & SELMA, AG PO BOX 359	HERMISTON	OR	97838	LI	0.83	34,680.00	12,090.00	46,770.00
00504	4N2819-A0	139254	RUSSELL	RICHARD & DORENE	A	C/O SANEZ REYES JR & SELMA, AG PO BOX 359	HERMISTON	OR	97838	LI	1.14	40,300.00	0.00	40,300.00
00600	4N2819-A0	122158	FLORES	PEDRO & RAFAELA		PO BOX 923	UMATILLA	OR	97882	RR-4		38,590.00	98,210.00	136,800.00
00601	4N2819-A0	122160	RIMBEY	ADRION	T	78470 AGNEW RD	HERMISTON	OR	97838	RR-4		37,480.00	60,230.00	97,710.00
00700	4N2819-A0	122162	WATKINS	WILLIAM & LAVANDA	F	78486 S AGNEW RD	HERMISTON	OR	97838	RR-4		44,470.00	43,730.00	88,200.00
00800	4N2819-A0	122164	DAREY	MARVIN & IRENE	E & A	78522 AGNEW RD	HERMISTON	OR	97838	RR-4		46,170.00	51,110.00	97,280.00
00900	4N2819-A0	122165	RODRIGUEZ	PIOQUINTO & VICTORIA		78528 AGNEW RD	HERMISTON	OR	97838	RR-4		45,510.00	50,530.00	96,040.00
01000	4N2819-A0	122167	HAWLEY	LEO 2ND & PENNY	R & S	78544 AGNEW RD	HERMISTON	OR	97838	RR-4		444,470.00	67,120.00	511,590.00
01100	4N2819-A0	122168	CHAFFEE ETAL	RONALD	D	78566 AGNEW RD	HERMISTON	OR	97838	RR-4		42,770.00	39,530.00	82,300.00
01200	4N2819-A0	122170	HATCH	JULIE	A	78582 AGNEW RD	HERMISTON	OR	97838	RR-4		46,170.00	60,300.00	106,470.00
01300	4N2819-A0	122171	MOORE	GERALD & JOAN	A & A	78598 AGNEW RD	HERMISTON	OR	97838	RR-4		40,910.00	50,370.00	91,280.00
01400	4N2819-A0	122173	POLLOCK	SAMUEL & TRACEY	L & A	78614 AGNEW RD	HERMISTON	OR	97838	RR-4		46,170.00	49,220.00	95,390.00
01500	4N2819-A0	122174	CLARK	WILBURN & TREVA		2207 JACINTO RD	BOONEVILLE	MS	38829	RR-4		46,170.00	58,400.00	104,570.00
01600	4N2819-A0	122176	FORDICE	WILLARD & JUDY	K	78642 AGNEW RD	HERMISTON	OR	97838	RR-4		37,510.00	52,440.00	89,950.00
01700	4N2819-A0	122177	GASS	MARGRET	A	26400 WILLARD RD	BEND	OR	97701	RR-4		58,470.00	0.00	58,470.00
01703	4N2819-A0	148698	WHITTLE	BOB & CARMEN	A & M	PO BOX 829	HERMISTON	OR	97838	LI	1.10	388,880.00	9,000.00	397,880.00
00100	4N2819-D0	122179	TOMPKINS	STEVEN & APRIL	M & M	78368 AGNEW RD	HERMISTON	OR	97838	RR-4		56,750.00	60,040.00	116,790.00
00200	4N2819-D0	122180	MARLOW	JOHN & KRYSTA	V & J	78390 AGNEW RD	HERMISTON	OR	97838	RR-4		44,470.00	56,340.00	100,810.00
00300	4N2819-D0	112181	LEAL	ROSENDO & ADOLFO		PO BOX 1334	HERMISTON	OR	97838	RR-4		44,470.00	61,470.00	105,940.00
00400	4N2819-D0	122183	SEARLE	EDDIE & PATIENCE	S & S	78408 S AGNEW RD	HERMISTON	OR	97838	RR-4		34,200.00	26,950.00	61,150.00
00500	4N2819-D0	122186	CRAFTON	VANCE & DEBBIE	J & D	78430 S AGNEW RD	HERMISTON	OR	97838	RR-4		35,430.00	50,460.00	85,890.00
00600	4N2819-D0	122187	SWEEK	CURTIS & KATHLEEN		78444 AGNEW RD	HERMISTON	OR	97838	RR-4		35,430.00	62,770.00	98,200.00
00700	4N2819-D0	122189	HUMBERT	NED	E	78462 AGNEW RD	HERMISTON	OR	97838	RR-4		31,710.00	68,470.00	100,180.00
00800	4N2819-D0	122190	GASS	MARGARET	A	26400 WILLARD RD	BEND	OR	97701	LI,EFU-40	67.02	20,090.00	280.00	20,370.00
00900	4N2819-D0	146968	TOMPSON	JAMES	F	PO BOX 1096	BEMIDJI	MN	56619	RR-4	4.08	70,460.00	24,060.00	94,520.00
00901	4N2819-D0	152145	MCCOMBS	RICHARD	A	29870 BLOOM RD	HERMISTON	OR	97838	RR-4	4.11	70,870.00	91,490.00	162,360.00

- Goal 5 – Develop future improvement alternatives that address short and long term capacity deficiencies, connectivity, and safety around the two study interchanges and study area roadways and intersections.

- Goal 6 - Develop conceptual 20-year land use plans in the study area to support the traffic forecasting task and to develop a basis for a sensitivity analysis for the range of traffic impacts that could occur in the study area.

SECTION 3 – EXISTING CONDITIONS

3.1. Introduction

This section describes existing conditions in the Westland Road/I-84/I-82 Interchange Area Transportation Plan related to its transportation system. The section reviews past plans and studies and inventories existing transportation conditions. This will be used as a foundation for identifying short-term transportation improvement needs and developing and evaluating longer-term transportation system alternatives.

3.2. Road Classification and Characteristics

The roadway functional classifications were obtained from ODOT's Oregon Transportation Map for Umatilla County. This map is typically coordinated between the State of Oregon and Umatilla County to coordinate classifications of roadways between jurisdictions.

As shown on Figure 3-1, there are only three functional classifications of roadways within the study area: interstate, rural major collector, and local street.

The remainder of this section describes the major roadways within the study area.

I-84, known as the Old Oregon Trail and ODOT Highway Number 6, is classified in the 1999 Oregon Highway Plan as an interstate highway. It is on the NHS system and is classified as a freight route. I-84 provides east-west access through Umatilla County and extends into the adjacent counties of Morrow to the west and Union to the east. The posted speed limit is 65 mph for passenger vehicles and 55 mph for large trucks. I-84 is a four-lane divided highway with two travel lanes in each direction.

I-82, known as McNary Highway and ODOT Highway Number 70, is classified in the 1999 Oregon Highway Plan as an interstate highway. It is also on the NHS system and is classified as a freight route. I-82 is a four-lane divided highway with two travel lanes in each direction. The posted speed limit is 65 mph for passenger vehicles and 55 mph for large trucks. I-84 is oriented north-south and provides a connection from the Oregon-Washington state line to I-84.

Westland Road is a two-lane rural major collector. The roadway has two-to-four foot shoulders. There is no posted speed limit on Westland Road. Westland Road has an interchange with I-84 and connects I-84 with Hermiston. This access into Hermiston from I-84 is only a secondary access into Hermiston from I-84.

Lamb Road is a two-lane rural major collector. It has no shoulders to shoulder two feet in width. There is no posted speed limit on Lamb Road. Lamb Road provides access from the Umatilla Army Depot to Westland Road. Lamb Road also has an interchange with I-82.

The remainder of the study area roadways is all local streets with two travel lanes. The function of these local roadways is typically local access to adjacent parcels.

Table 3-1 provides a summary of the physical roadway characteristics. This street inventory contains roadway width, posted speed limit, number of travel lanes, shoulder width, and pavement condition.

Table 3-1. Street Inventory

Street Segment	Road Width	Posted Speed	Number of Lanes	Shoulders (yes/no)	Shoulder Width	Pavement Condition
Colonel Jordan Road						
Noble Rd to Stafford Hansel Rd	28'	None	2	No	NA	Gravel
Stafford Hansel Rd to I-84	29'	None	2	Yes	2-4	Poor
Westland Road						
I-84 to Union Pacific Railroad	29'	None	2	Yes	2-4	Poor
Union Pacific Railroad to Agnew Rd	29'	None	2	Yes	2-4	Poor to Fair
Stafford Hansel Road						
Western terminus to Colonel Jordan Rd	22'	None	2	Yes	3-4'	Fair
Livestock Road						
Westland Rd to Cottonwood Bend Rd	23'	None	2	No	NA	Gravel
Lamb Road						
I-82 to Westland Rd	32'	None	2	Yes	0-2'	Poor to Fair
Walker Road						
Westland Rd to Westland Canal	19-22'	None	2	No	NA	Gravel
Cottonwood Bend Road						
Westland Rd to southern terminus	24'	None	2	Yes	0-2'	Poor

3.3 Driveway Location Survey

A driveway survey along Westland Road was conducted. This survey is summarized in Table 3-2. The driveway survey was depicted in figures. Figures 3-2 through 3-7 show the driveways in relation to public streets and other significant landmarks in the study area.

Table 3-2. Westland Road Driveway Inventory

Street Segment	Location	Driveway Width (ft)
Westland Road		
Noble Road to Stafford Hansel Road – block length: 1,935 feet		
Agriculture Field – east side	1,247 to 1,263 feet from Noble Road	16
Shell Truck Stop – west side	1,534 to 1,581 feet from Noble Road	47
Barton Industries – east side	1,534 to 1,578 feet from Noble Road	44
Livestock Road to Street to Stable Road – block length: 1,800 feet		
Freightliner – east side	1,267 to 1,297 feet from Livestock Road	30
Stable Road to Westport Lane – block length: 809 feet		
American Onion – west side	299 to 332 feet from Stable Road	33
Westport Lane to Railroad Tracks – block length: 611 feet		
Railroad Access – west side	371 to 383 feet from railroad tracks	12
Railroad Tracks to Lamb Road – block length: 1,360 feet		
Canal Access – both sides	140 to 152 feet from railroad tracks	12
Power Plant – east side	565 to 624 feet from railroad tracks	59
Americold/Lamb Weston – east side	832 to 860 feet from railroad tracks	28
Canal Access – both sides	1,117 to 1,137 feet from railroad tracks	20
Field Access – west side	1,217 to 1,242 feet from railroad tracks	25
Lamb Road to Cottonwood Bend Road – block length: 3,556 feet		
Terra Poma Land Company – west side	1,789 to 1,812 feet from Walker Road	32
Canal Access – west side	1,757 to 1,773 feet from Walker Road	20
Lamb Weston – east side	1,812 to 1872 feet from Walker Road	60
Cottonwood Bend Road to Agnew Road – block length: 3,788 feet		
Home – west side	1,531 to 1,555 feet from Cottonwood Bend Rd	24
Utilities Access – west side	1,767 to 1,789 feet from Cottonwood Bend Rd	22
Home & Kaybe Orchards – west side	2,151 to 2,198 feet from Cottonwood Bend Rd	47
Home – east side	2,598 to 2,785 feet from Cottonwood Bend Rd	187
Kaybe Orchards - west side	2,727 to 2,767 feet from Cottonwood Bend Rd	40
Columbia Basin Sheds – east side	3,011 to 3,053 feet from Cottonwood Bend Rd	42
Home – west side	3,162 to 3,186 feet from Cottonwood Bend Rd	24
Home – west side	3,364 to 3,392 feet from Cottonwood Bend Rd	28

3.4. Bridges

The Oregon Department of Transportation maintains an up to date inventory and appraisal of Oregon bridges. Part of this inventory involves the evaluation of three mutually exclusive elements of bridges. One element identifies which bridges are structurally deficient. This is determined based on the condition rating for the deck, superstructure, substructure, or culvert and retaining walls. It may also be based on the appraisal rating of the structural condition or waterway adequacy. Another element identifies which bridges are functionally obsolete. This element is determined based on the appraisal rating for the deck geometry, underclearances, approach roadway alignment, structural condition, or waterway adequacy. The third element summarizes the sufficiency ratings for all bridges. The sufficiency rating is a complex formula which takes into account four separate factors to obtain a numeric value rating the ability of a

bridge to service demand. The scale ranges from 0 to 100 with higher ratings indicating optimal conditions and lower ratings indicating insufficiency. Bridges with ratings under 55 may be nearing a structurally deficient condition. In more general terms, a rating under 55 may indicate that significant maintenance is needed or that replacement should be planned. The exception to this are bridges that were built to a much older standard that are in good condition but do not meet today's design standards. These types of bridges can rate fairly low and under 55. The important factor here is that there are no structural integrity issues and loading problems that limit the type of vehicle and weight can cross the structure.

There are two bridges owned by ODOT within the study area. These bridges are the interchange over crossings at the two interchanges at Lamb Road and Westland Road. Based on a review of the Umatilla County Transportation System Plan, these bridges are not defined as structurally deficient, functionally obsolete, nor have a sufficiency rating of less than 55.

There are three bridges along Westland Road which cross the Westland Canal. These bridge numbers are 304, 305, and 306. Based on information in the Umatilla County Transportation System Plan, these bridges are not defined as structurally deficient, functionally obsolete, nor have a sufficiency rating of less than 55.

3.5. Intersection Traffic Control, Lane Channelization, and Interchange Ramps Areas

Figure 3-8 shows the intersection lane geometry and traffic control at the following seven study area intersections:

- Lamb Road/I-82 Southbound Ramps
- Lamb Road/I-82 Northbound Ramps
- Westland Road/Lamb Road/Walker Road
- Westland Road/Livestock Road
- Westland Road/I-84 Westbound Ramps
- Westland Road/I-84 Eastbound Ramps
- Westland Road/Stafford Hansel Road

A qualitative visual evaluation of the Westland Road / I-84 and Lamb Road / I-82 Interchanges was made to assess their existing conditions. This visual evaluation was made from a representative from Sturtevant, Golemo, and Associates, a sub-consultant to H. Lee & Associates. The goal of the evaluation was to compare the existing conditions of the interchanges to the current ODOT interchange design standards. In addition, several rough measurements were made using a measuring wheel. Parcel maps, aerial photography, and USGS maps were also referenced. Detailed topographic information was not available for this study and all measurements are approximate. The 2002 ODOT Highway Design Manual was referenced in addition to AASHTO's "A Policy on Geometric Design of Highways and Streets – 2001". Several design elements were evaluated including; interchange spacing, design speed, typical section, horizontal alignment, vertical alignment, super-elevation, terminal

channelization, access control, lane balance, weaving sections, and frontage roads. Not all of these elements will be discussed below and the narrative is focused on elements that visually vary from the current design standards. Both interchanges are diamond type interchanges and the cross street passes over the freeway. The freeways are both four lane facilities with auxiliary or weaving lanes where noted. The cross streets are both two lane facilities with no right or left turn channelization. Based on current traffic conditions, channelization doesn't appear to be warranted at this time, but may be considered if traffic increases on the cross street. All of the ramps are single lane ramps and they all appear to have adequate lane and shoulder widths. The freeways are currently marked with 65 mph speed limit signs and the ramps are marked with 45 mph speed limits. Design speeds are assumed to be 70 mph (110 km/hr) and 45mph (70 km/hr) respectively. The terrain in the study area is relatively flat.[1]

Westland Road intersects I-84 at an angle of approximately 60 degrees, which skews some of the components of this diamond interchange. This causes the NE and SW quadrant ramp to have sharper radius exit and entrance curves than typical 90 degree crossings. However the acceleration and deceleration lengths appear to be lengthened to compensate for the additional speed reductions required to safely navigate the sharper curves. All legs appear to have adequate acceleration and deceleration lengths, which are provided using tapers and parallel auxiliary lanes. This interchange is located about 1 mile (1.6 km) East of the I-84 / I-82 interchange. This is significantly lower than the 5 km urban and 10 km rural recommended spacing shown in table 9-2 of the ODOT Highway design Manual. However, an additional auxiliary or weaving lane exists between the interchanges. Weaving lanes are commonly used when spacing standards cannot be met. They provide additional capacity between the interchanges but may also present special design problems due to the concentrated lane changing maneuvers of merging and diverging traffic. The intersection of Westland Road and Stafford Hansel Road is less than 250 feet (76 meters) from the south on and off ramps. This is significantly lower than the 400 m recommended access control area listed in the ODOT Highway design Manual. The intersection of Westland Road and Livestock Road is also less than 300 feet (91 meters) from the north on and off ramps. The ODOT manual also recommends 60 meters or greater clearance between the bridge structure and the intersection of the off ramp and cross road to provide adequate sight distance. The westbound off ramp in the NE quadrant is approximately 160 ft. (49 m). Due to the bridge vertical curvature, sight distance appears to be limited at this location. Without detailed horizontal and vertical data the sight distance cannot be verified and is based on visual observation.[1]

The interchange at Lamb Road and I-82 appears to be a standard diamond intersection with a few exceptions. Lamb Road intersects I-82 at approximately 90 degrees. There are not any frontage roads or other intersections near the ramps and there appears to be adequate spacing between the ramps and the structure. Sight distance doesn't appear to be significantly limited at the intersection with the exception to the sharp curves on Lamb road West of the interchange approaching the military depot. Although the acceleration and deceleration lengths appear to meet requirements, the parallel auxiliary lanes on the off ramps are very short or nonexistent.

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[1] From memo by Sturtevant, Golemo, & Associates on Westland Road Railroad Crossing, June 22, 2003.

There is not much merging area for vehicles entering traffic. This interchange is located about 3.1 miles (5 km) North of the I-84 / I-82 interchange. This is meets the 5 km urban but not the 10 km rural recommended spacing shown in table 9-2 of the ODOT Highway design Manual.[2]

3.6. Traffic Volumes

3.6.1. Daily Traffic Volumes

Figure 3-3 shows the current study area daily traffic volumes. These traffic volumes were from traffic counts performed by H. Lee & Associates in January 2003 and were adjusted seasonally based on factors available from ODOT. As shown in this map, the most significant traffic volumes are along Lamb Road and Westland Road north of Lamb Road. The traffic volume on Lamb Road east of the I-82 interchange is 3,600 vehicles per day. North of Lamb Road, the traffic volumes on Westland Road range from 5,200 to 5,600. South of Lamb Road, the traffic volumes on Westland Road diminish to 1,500 to 1,600 vehicles a day. The remainder of the streets in the study area has volumes in the range of several hundred vehicles per day.

3.6.2. Intersection P.M. Peak Hour Traffic Volumes

P.M. peak hour turning movement counts at the seven study area intersections were counted by H. Lee & Associates in January 2003. These traffic volumes were adjusted seasonally based on factors available from the ODOT traffic count program. The P.M. peak hour turning movement counts are summarized in Figure 3-4.

3.6.3. Truck Traffic Volumes

Truck traffic volumes were collected with the average daily traffic counts. These truck volumes are summarized in Table 3-3. Table 3-3 contains total number of daily number of trucks, total daily traffic volume, daily truck percentage, P.M. peak hour number of trucks, total P.M. peak hour traffic volume, and P.M. peak hour truck percentage.

As shown in Table 3-3, the daily truck percentage along the city's truck route ranges from 11.7 percent to 42.6 percent. In general, the higher traffic volumes are along the roadways with lower traffic volumes that provide local access to heavy truck generators. The lower truck percentages are generally on the roadways with the higher daily traffic counts over 1,000 vehicles per day.

Table 3-3 also summarizes the P.M. peak hour truck volumes. The P.M. peak hour truck percentage ranged from 9.8 percent to 49.0 percent. These P.M. peak hour truck percentages are very similar to the daily truck percentages.

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[2] From memo by Sturtevant, Golemo, & Associates on Westland Road Railroad Crossing, June 22, 2003.

Table 3-3. Truck Volume Summary

Location	Daily Number of Trucks	Daily Traffic Volume	Daily Truck Percentage	P.M. Peak Hour Number of Trucks	P.M. Peak Hour Traffic Volume	P.M. Peak Hour Truck Percentage
I-82 SB Off-Ramp at Lamb Rd	154	724	21.3%	10	43	23.3%
I-82 NB On-Ramp at Lamb Rd	165	1,406	11.7%	13	153	8.5%
I-82 SB On-Ramp at Lamb Rd	213	1,460	14.6%	18	145	12.4%
I-82 NB Off-Ramp at Lamb Rd	563	2.219	25.4%	25	170	14.7%
I-84 WB Off-Ramp at Westland Rd	254	612	41.3%	25	58	43.1%
I-84 EB On-Ramp at Westland Rd	262	659	39.8%	16	59	27.1%
I-84 WB On-Ramp at Westland Rd	232	545	42.6%	20	56	35.7%
I-84 EB Off-Ramp to Westland Rd	277	680	40.7%	16	53	30.2%
Westland Rd north of Cottonwood Bend Rd	599	5,607	11.8%	50	435	11.5%
Westland Rd south of Cottonwood Bend Rd	1,106	5,161	21.4%	243	669	36.3%
Westland Rd north of Livestock Rd	384	1,514	25.2%	37	129	28.7%
Westland Rd south of Livestock Rd	582	1,628	35.7%	50	133	37.6%
Col Jordan Rd north of Noble Rd	124	402	30.8%	14	32	43.8%
Walker Rd north of Lamb Rd	16	113	14.2%	3	11	27.3%
Lamb Rd east of I-82	540	3,617	14.9%	36	369	9.8%
Agnew Rd east of Westland Rd	49	296	16.6%	6	29	20.7%
Cottonwood Bend Rd east of Westland Rd	55	299	18.4%	3	18	16.7%
Livestock Rd west of east of Westland Rd	251	610	41.1%	24	49	49.0%
Stafford Hansel Rd west of Col Jordan Rd	14	38	36.8%	1	1	100%
Noble Rd east of Col Jordan Rd	22	110	20.0%	1	10	10%

3.7. Intersection Levels of Service and V/C Ratio Analysis

Intersection capacity was measured by the following two methodologies: level of service (LOS) and volume to capacity (v/c) ratio. Level of service to measure the performance at an intersection is the standard practice in the transportation planning and traffic engineering profession. This concept was developed by the Transportation Research Board (TRB). *Special Report 209*[3], also known as the *Highway Capacity Manual*, documents the level of service analysis methodology. The Highway Capacity Manual measures level of service on a scale of LOS A to LOS F. LOS A means that drivers experience no delay or relatively low amounts of delay while traveling through an intersection; while LOS F means that drivers experience a great deal of delay while traveling through an intersection. Typically, most jurisdictions set their level of service standard at LOS D since LOS E denotes that the intersection capacity is being met and LOS F means that conditions beyond the existing intersection capacity are occurring. When LOS F conditions occur, they indicate that it would take motorists multiple signal cycles or a great deal of delay to travel through an intersection. The level of service standard is typically set at LOS D for signalized intersections and LOS E for unsignalized intersections if the intersection does not meet traffic signal warrants.

The Oregon Department of Transportation bases its traffic operation standards based on volume to capacity (v/c) ratio and not level of service. For ODOT facilities, each type of facility has its own standard. Table 3-4 summarizes the v/c standard by ODOT facility type. The standard documented in Table 3-4 is from the *1999 Oregon Highway Plan*.[4]

The v/c ratio is a measure of the percentage of used capacity on the roadway. A value of 0.00 indicates no traffic on the roadway, and a value of 1.00 indicates that the entire capacity of the roadway is being utilized. The *1999 Oregon Highway Plan* indicates that for state highways on the NHS system such as I-82 and I-84, the maximum acceptable v/c is 0.70 within unincorporated areas.

For unsignalized intersections, the *1999 OHP* sets the following standard:

> At unsignalized intersections and road approaches, the volume-to-capacity ratios in Table 3-4 shall not be exceeded for either of the state highway approaches that are not stopped. Approaches at which traffic must stop, or otherwise yield the right-of-way, shall be operated to maintain safe operation of the intersection and all of its approaches and shall not exceed the volume-to-capacity ratios for District/Local Interest Roads standard inside of urban growth boundaries.[5]

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[3] *Highway Capacity Manual, Special Report 209*, Third Edition; Transportation Research Board, National Research Council; Washington, D.C. 1998.
[4] *1999 Oregon Highway Plan*, Oregon Department of Transportation – Transportation Development Division, Planning Section, March 1999.
[5] *1999 Oregon Highway Plan*, Oregon Department of Transportation – Transportation Development Division, Planning Section, March 1999, page 68.

Table 3-4
Maximum Volume-to-Capacity Ratios for Peak Hour Operating Conditions Through a Planning Horizon for State Highway Sections Located Outside the Portland Metropolitan Area Urban Growth Boundary

	Land Use Type/Speed Limits					
	Inside Urban Growth Boundary				Outside Urban Growth Boundary	
Highway	STAs	MPO	Non-MPO outside of STAs where non-freeway speed limit <45 mph	Non-MPO where non-freeway speed limit >=45 mph	Unincorporated Communities	Rural Lands
Interstate Highways and Statewide (NHS) Expressways	N/A	0.80	0.70	0.70	0.70	0.70
Statewide (NHS) Freight Routes	0.85	0.80	0.75	0.70	0.70	0.70
Statewide (NHS) Non-Freight Routes and Regional or District Expressways	0.90	0.85	0.80	0.75	0.75	0.70
Regional Highways	0.95	0.85	0.80	0.75	0.75	0.70
District/Local Interest Roads	0.95	0.90	0.85	0.80	0.80	0.75

Source: 1999 Oregon Highway Plan (OHP)
Interstates and Expressways shall not be identified as Special Transportation Areas (STAs)
For the purpose of this mobility policy of volume-to-capacity ratio standards, the peak hour shall be the 30th highest annual hour. This approximates weekday peak hour traffic in larger urban areas.

There are no unsignalized intersections within ODOT's jurisdiction in the study area. The interchange ramps at Westland Road and Lamb Road are classified as interchange ramps to define v/c standard and not unsignalized intersection.

For signalized intersections, the *1999 OHP* sets the following standard:

> At signalized intersections other than crossroads of freeway ramps, the total volume-to-capacity ratio for the intersection considering all critical movements shall not exceed the volume-to-capacity ratios in Table 3-3. Where two state highways of different classifications intersect, the lower of the volume-to-capacity ratios in the table shall apply. Where a state highway intersects with a local road or street, the volume to capacity ratio for the state highway shall apply.[6]

There are no signalized intersections within ODOT's jurisdiction in the study area.

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[6] *1999 Oregon Highway Plan*, Oregon Department of Transportation – Transportation Development Division, Planning Section, March 1999, page 68.

The interchange ramps with I-82 at Lamb Road and I-84 at Westland Road would fall under the following *1999 OHP* standard:

> ...The primary cause of traffic queuing at freeway off-ramps is inadequate capacity at the intersections of the freeway ramps with the crossroad. These intersections are referred to as ramp terminals. In many instances where ramp terminals connect with another state highway, the volume to capacity standard for the connecting highway will generally be adequate to avoid traffic backups onto the freeway. However, in some instances where the crossroad is another state highway or a local road, the standards will not be sufficient to avoid this problem. Therefore, the maximum volume to capacity ratio for the ramp terminals of interchange ramps shall be the smaller of the values of the volume to capacity ratio for the crossroad, or 0.85.[7]

Based on the ramp terminal standard above, the interchange ramp intersections at Lamb Road and Westland Road have a maximum v/c standard of 0.85 for all intersection approaches.

The 1999 OHP specifies that the v/c ratio mobility standards shall be used for the following:

- Identifying state highway mobility performance expectations for planning and plan implementation.

- Evaluating the impacts on state highways of amendments to transportation plans, acknowledged comprehensive plans and land use regulations pursuant to the Transportation Planning Rule (OAR 660-12-060); and

- Guiding operations decisions such as managing access and traffic control systems to maintain acceptable highway performance.

The level of service and v/c analysis performed for this study for the typical weekday p.m. peak hour revealed that traffic operations at the major intersections in the study area are acceptable. Table 3-5 summarizes the level of service at the study area intersections. The level of service table summary is sectioned into two categories: ODOT ramp terminal intersections, and Umatilla County unsignalized intersections. Each of these categories of intersections has a different performance standard.

All of the study area intersections are operating at LOS C or better and a v/c within the maximum standard of 0.85.

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[7] *1999 Oregon Highway Plan*, Oregon Department of Transportation – Transportation Development Division, Planning Section, March 1999, page 68.

Table 3-5. Year 2003 Existing Levels of Service and V/C Ratio

	PM Peak Hour		
ODOT Unsignalized Intersection	LOS	Average Delay (sec)	V/C Ratio
Lamb Road/I-82 Southbound Ramps			
Westbound Left	A	8.9	0.13
Southbound Approach	B	14.4	0.09
Lamb Road/I-82 Southbound Ramps			
Eastbound Left	A	8.3	0.21
Northbound Approach	B	12.0	0.31
Westland Road/I-84 Westbound Ramps			
Westbound Approach	A	9.7	0.08
Northbound Left	A	7.7	0.03
Westland Road/I-84 Eastbound Ramps			
Eastbound Approach	A	9.7	0.08
Southbound Left	A	7.9	0.02
County Unsignalized Intersection			
Westland Road/Lamb Road/Walker Road			
Eastbound Left	A	7.6	0.01
Westbound Left	A	8.8	0.08
Northbound Approach	C	15.9	0.26
Southbound Approach	C	20.7	0.03
Westland Road/Livestock Road			
Westbound Approach	A	9.4	0.01
Southbound Left	A	7.9	0.01
Westland Road/Stafford-Hansel Road			
Eastbound Approach	A	9.8	0.01
Northbound Left	A	7.6	0.08

3.8. Crash Analysis

Crash data was obtained from the Oregon Department of Transportation for the period between January 1, 1997 and December 31, 2001. The crash data summarized are only reported crashes and there may be other crashes that occurred that was not reported. The data available includes total crashes, crashes by severity (i.e. fatal, injury or property damage only). The intersection crash data is summarized in Table 3-6 and the mid-block crash data is summarized in Table 3-7. These tables only contain crashes by severity type, crashes per year, and crash rates (crashes per million vehicle

miles traveled and crashes per million entering vehicles). Since the crash data is given as an average over a five year period, the data is shown in fractions of a crash to the nearest hundredth.

Table 3-6. Intersection Crash Summary

Intersection	Average Annual Accidents				Crashes per million entering vehicles
	Property Damage Only	Injury	Fatal	Total	
Westland Rd/Lamb Rd/Walker Rd	0.6	0.0	0.00	0.6	0.31
Westland Rd/Cottonwood Bend Rd	0.0	0.2	0.00	0.2	0.10
Lamb Rd/I-82 Southbound Ramps	0.4	0.4	0.00	0.8	0.50

Table 3-7. Mid-Block Crash Summary

Roadway Section	Average Annual Accidents				Crashes per million vehicle miles
	Property Damage Only	Injury	Fatal	Total	
Westland Rd					
Stafford Hansel Rd to Walker/Lamb Rd	0.2	0.0	0.0	0.2	0.36
Walker/Lamb Rd to Agnew Rd	0.4	0.4	0.0	0.8	0.41
Lamb Rd					
I-82 Ramps to Walker/Lamb Rd	0.2	0.0	0.0	0.2	0.26

To evaluate intersection crashes, two factors were considered. First, an acceptable intersection crash rate standard is typically 1.00 crashes per million entering vehicles. However, the crashes per year should also be considered as secondary criteria for a high crash location in conjunction with this crash rate standard because the crash rate does not always indicate that there is a crash issue. The crash rate can be skewed by low traffic volumes where one crash is weighted highly in the crash rate formula. Therefore, a secondary measure of five crashes per year was also used in evaluating intersection locations for high crashes. The five crashes per year secondary threshold was used because it is the threshold for one of the traffic signal warrants. If an unsignalized intersection has five or more crashes per year, the Manual on Uniform Traffic Control Devices (MUTCD),[8] allows the intersection for consideration of signalization. Based on the criteria above and the crash rates shown in Table 3-6, there are no intersections that have crash rates over 1.00 crashes per million entering vehicles.

The criteria typically used for high mid-block crash locations are the state average. Based on ODOT's most recent statewide crash report,[9] the 2000 average statewide crash rate for urban non-freeway state facilities is 2.90 crashes per million vehicle miles traveled. Since the mid-block crash

[8] Manual on Uniform Traffic Control Devices (MUTCD), U.S. Department of Transportation, Federal Highway Administration, 1988 Edition, page 4C-6.
[9] 2000 State Highway Crash Rate Tables, ODOT, Transportation Development Division, October 2001.

rate can be skewed high by a short mid-block section and low traffic volumes, a secondary measure was also used to evaluate for high mid-block crash locations. As with the intersection crash analysis, five crashes per year was used as a secondary threshold. As shown in Table 3-7, all of the mid-block locations have crash rates much lower than the state-wide average for urban, non-freeway state facilities. Therefore, none of the mid-block locations can be considered as high crash locations.

Since there are no high crash locations within the study area, further analysis was not conducted with crash collision type.

3.9. Existing Study Area Traffic Problems

Neither the level of service or v/c ratio analysis shows operational problems in the study area. Based on discussions with local representatives and field observations, although there are no calculated traffic operations problems, there are several deficient traffic condition within the study area. First, both the Lamb Road interchange with I-82 and the Westland Road interchange with I-84 are rural freeway interchanges with constrained geometrics. The geometric constraints include narrow bridge width and steep vertical curves over the freeway. Both interchanges would be considered sub-standard compared to ODOT's current interchange standard with a freeway.

Through input from the first project Public Open House, an existing traffic deficiency was identified at the Union Pacific Railroad crossing with Westland Road. Future plans should consider improving this deficient condition at the at-grate railroad crossing with Westland Road.

The most awkward traffic deficiency within the study area is the odd intersection configuration at the Westland Road/Lamb Road/Walker Road intersection. The Lamb Road and Walker Road approaches of this intersection come together at a right angle and are the eastbound and southbound approaches of the intersection. Westland Road makes up the northbound and southwest bound approaches. The Walker Road approach enters the intersection at an offset and is not paved. Although the Westland Road approaches have the right-of-way, the eastbound Lamb Road approach also has similar traffic volumes.

The final major existing traffic deficiency is the distance between the Westland Road/I-84 Eastbound off-ramp and Westland Road/Stafford Hansel Road intersections. The ODOT spacing standard between a freeway terminal off-ramp and a local full access intersection is 1320 feet. These intersections are much closer apart and realignment and separation of these intersections should be considered in the future.

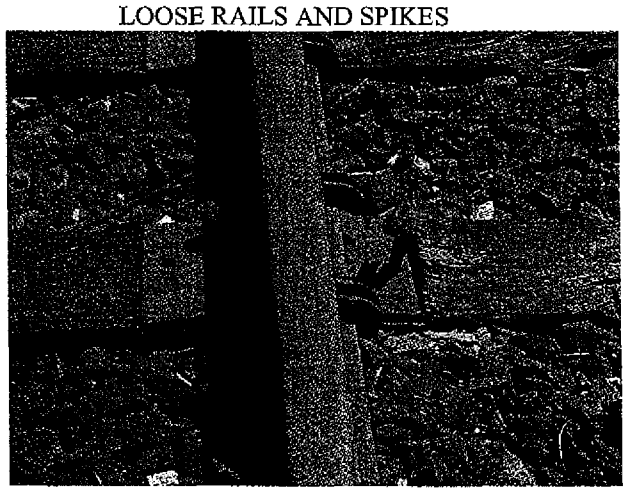
3.10. Rail Service/Roadway At-Grade Crossings

The Union Pacific Railroad bisects the study area just north of Westport Lane. One at-grade crossing with the Union Pacific Railroad exists just north of Westport Lane. More information regarding rail service exists in the Umatilla County Transportation System Plan.

A representative from Sturtevant, Golemo, and Associates conducted a site visit to visually evaluate the railroad crossing. The crossing is an at grade concrete crossing. There is a single track that is owned by Union Pacific. There are currently crossing gates and flashing lights in both directions. They appear to be in good shape and fully functional. A date stamp was found on the concrete crossing and it was installed in 1991 and was manufactured by the Fite Corporation. The crossing is a little rough and some of the concrete panels move when vehicles cross the tracks. In addition, the tracks have also worked loose and rattle. Several loose ties were observed and many of the spikes in the vicinity of the intersection are missing or loose (See picture below). The concrete appears to be in fairly good condition and no cracking was observed. Tightening down the panels and securing the rails would significantly improve the comfort of the crossing. However the condition of the ties under the crossing is unknown and securing the concrete panels and rails may involve repairing or replacing components of the rail.[10]

CROSSING GATES

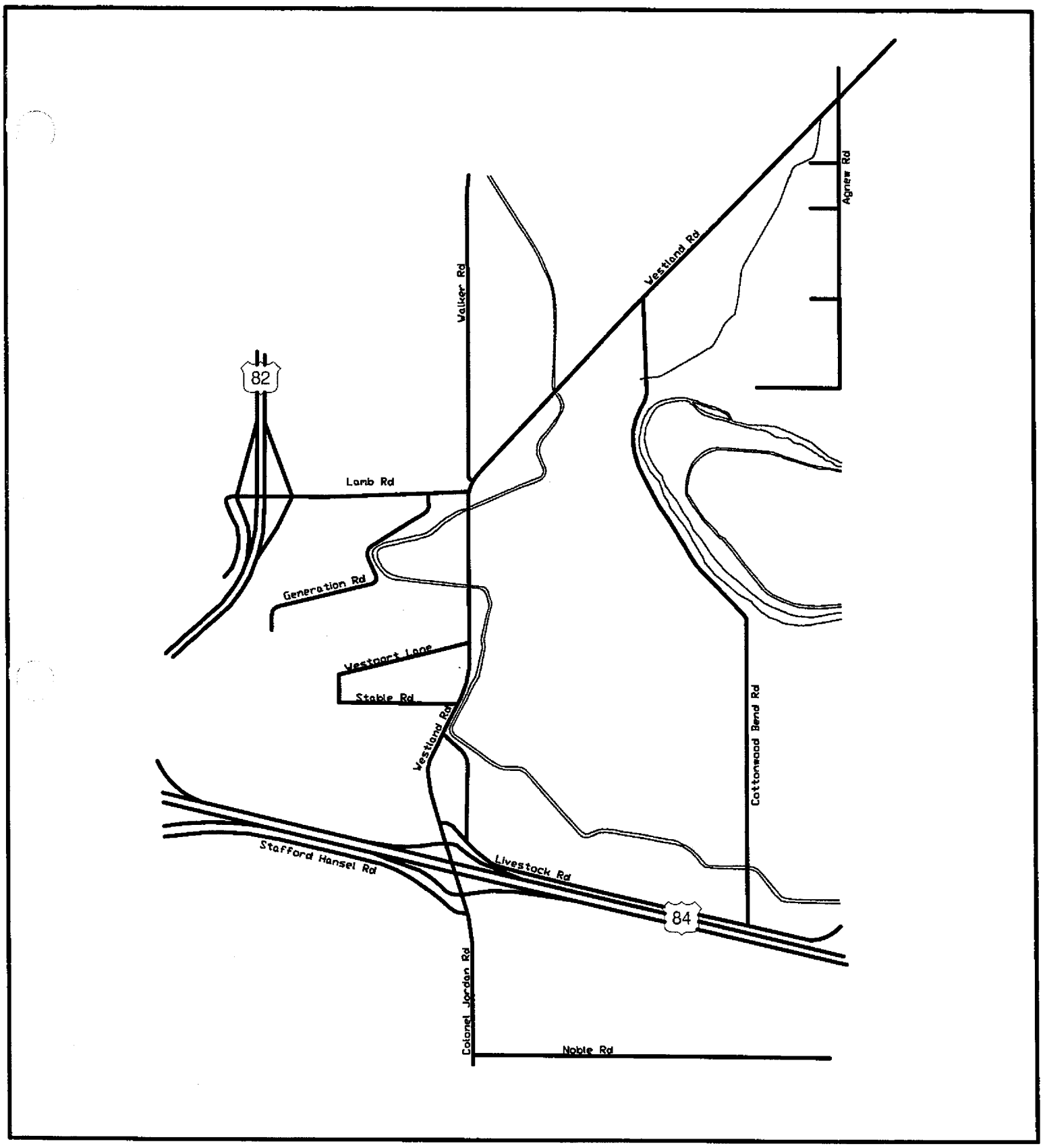
LOOSE RAILS AND SPIKES



3.10. AIR TRANSPORTATION

There are no airports near the study area.

[10] From memo by Sturtevant, Golemo, & Associates on Westland Road Railroad Crossing, June 22, 2003.



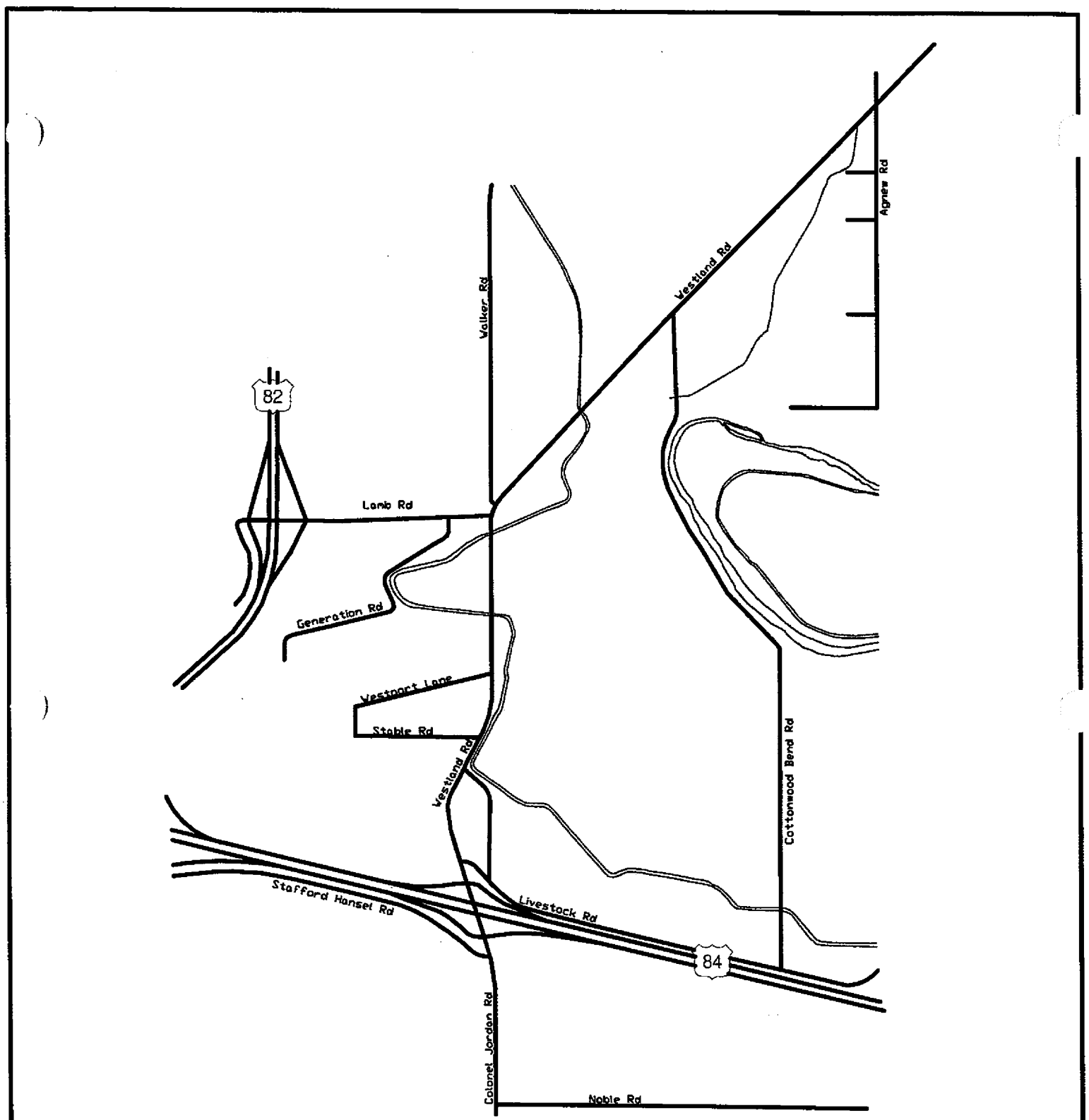
Westland Road Interchange Area Transportation Plan

Figure 1-1
Study Area

LEGEND

Study Area

NOT TO SCALE



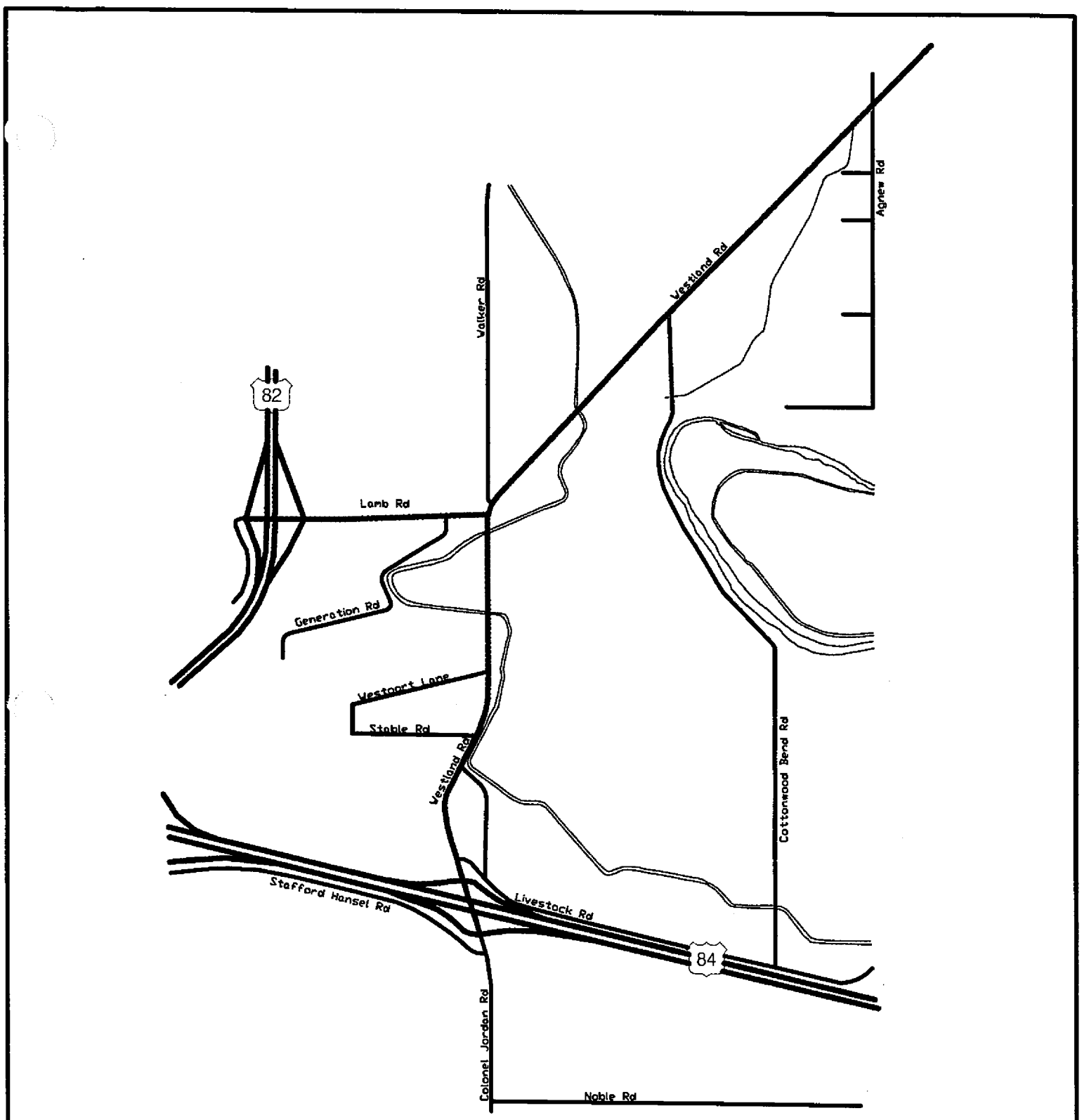
Westland Road Interchange Area Transportation Plan

Figure 1-2
Study Area Zone Map

LEGEND

- Tourist Commercial Zoning
- Industrial Zoning
- Rural Residential Zoning
- Agribusiness Zoning
- Exclusive Farm Use

NOT TO SCALE

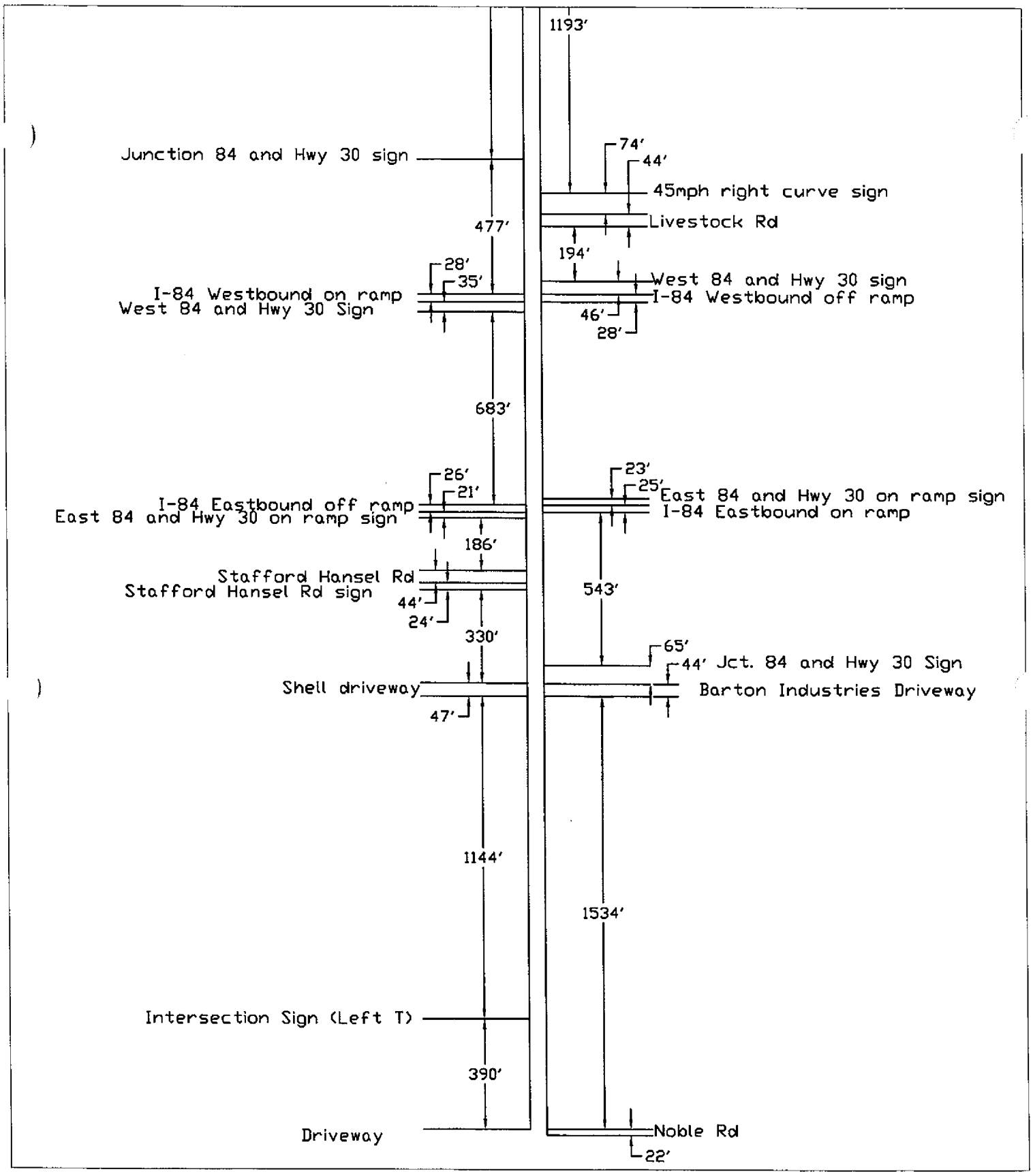


Westland Road Interchange Area Transportation Plan

LEGEND
- Interstate
- Rural Major Collector
- Local Street

NOT TO SCALE

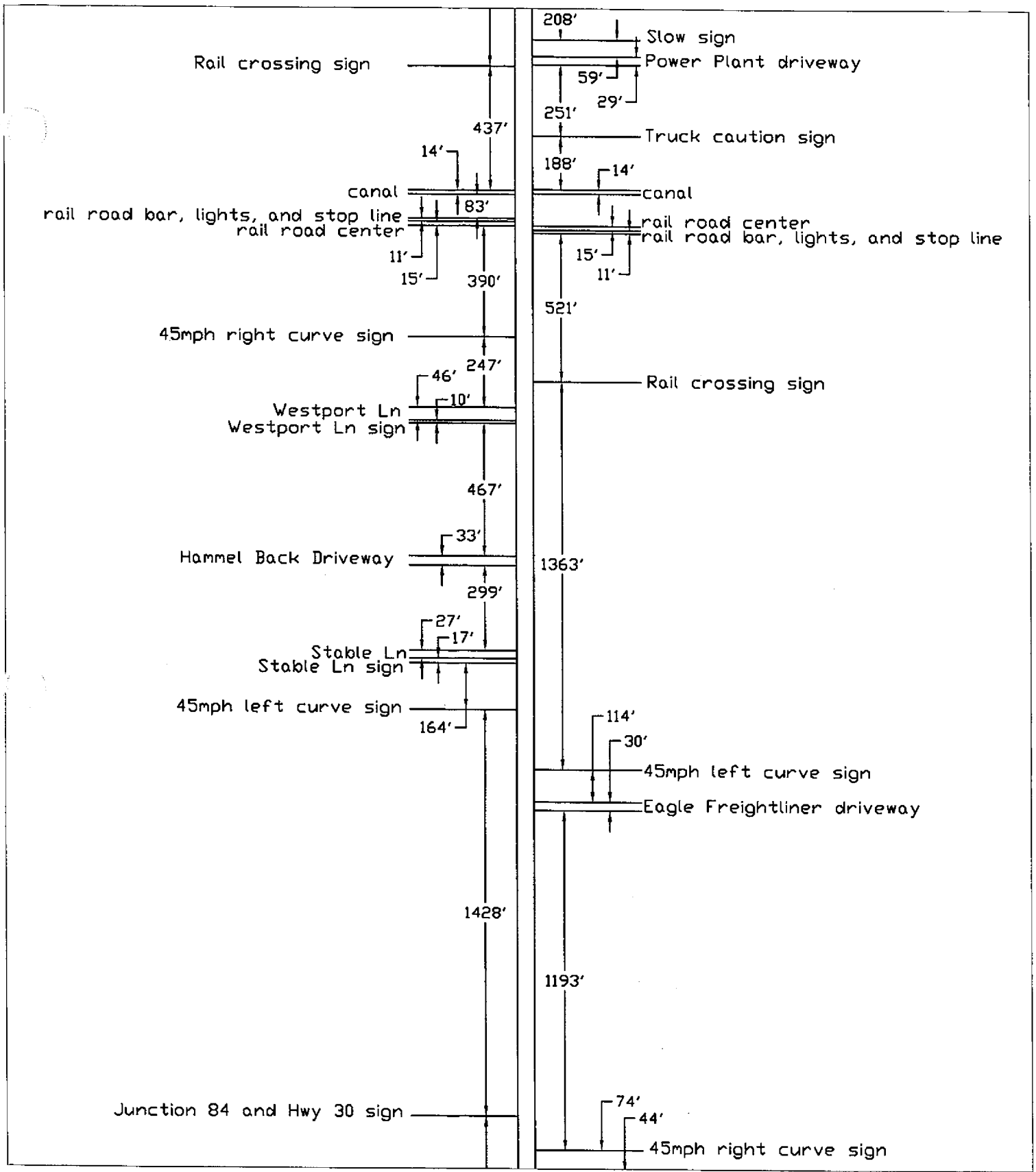
Figure 3-1
Roadway Classification



Westland Road Interchange Transportation Plan

Figure 3-2
Westland Road Driveway Inventory

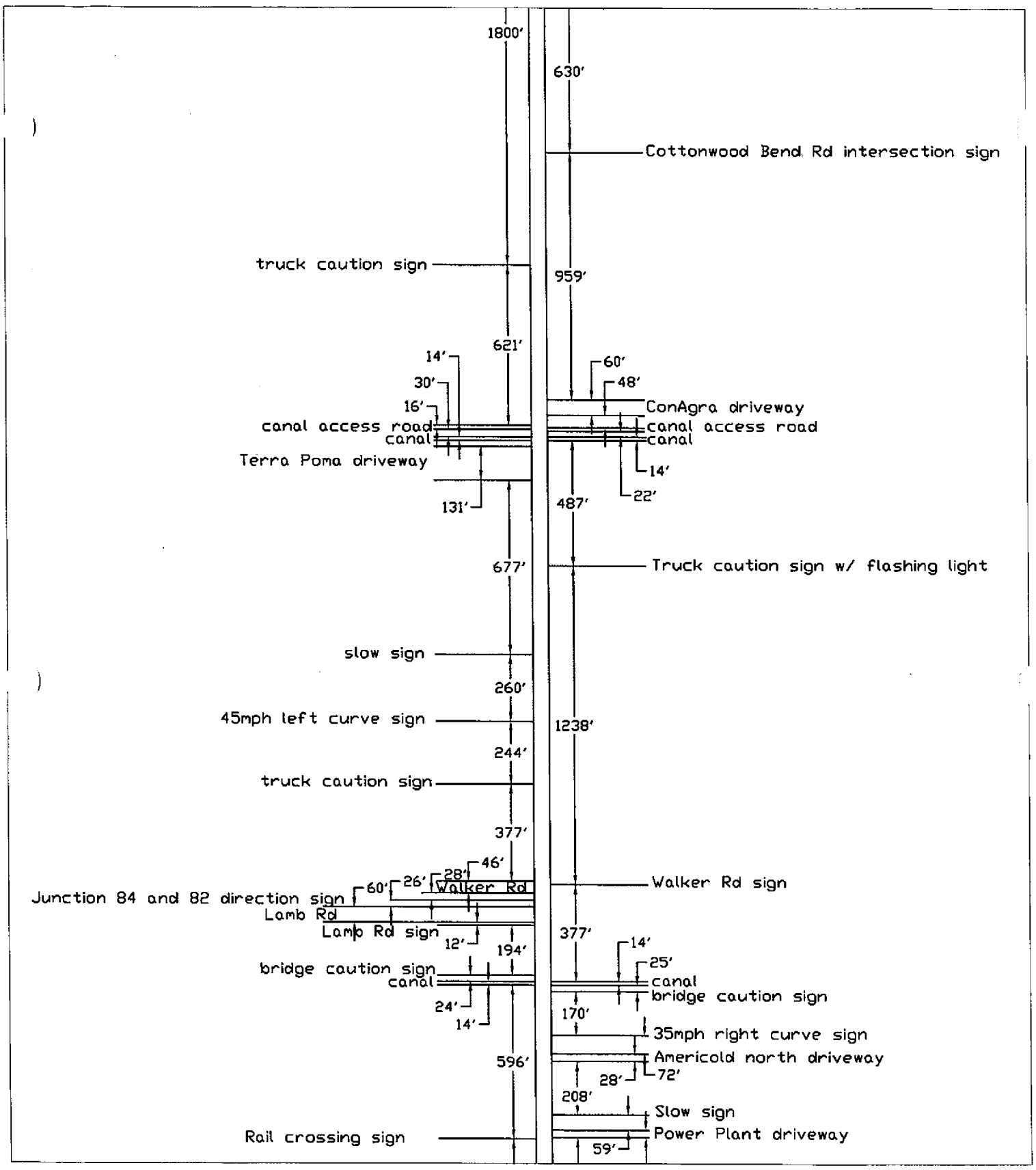
NOT TO SCALE



Westland Road Interchange Transportation Plan

Figure 3-3
Westland Road Driveway Inventory

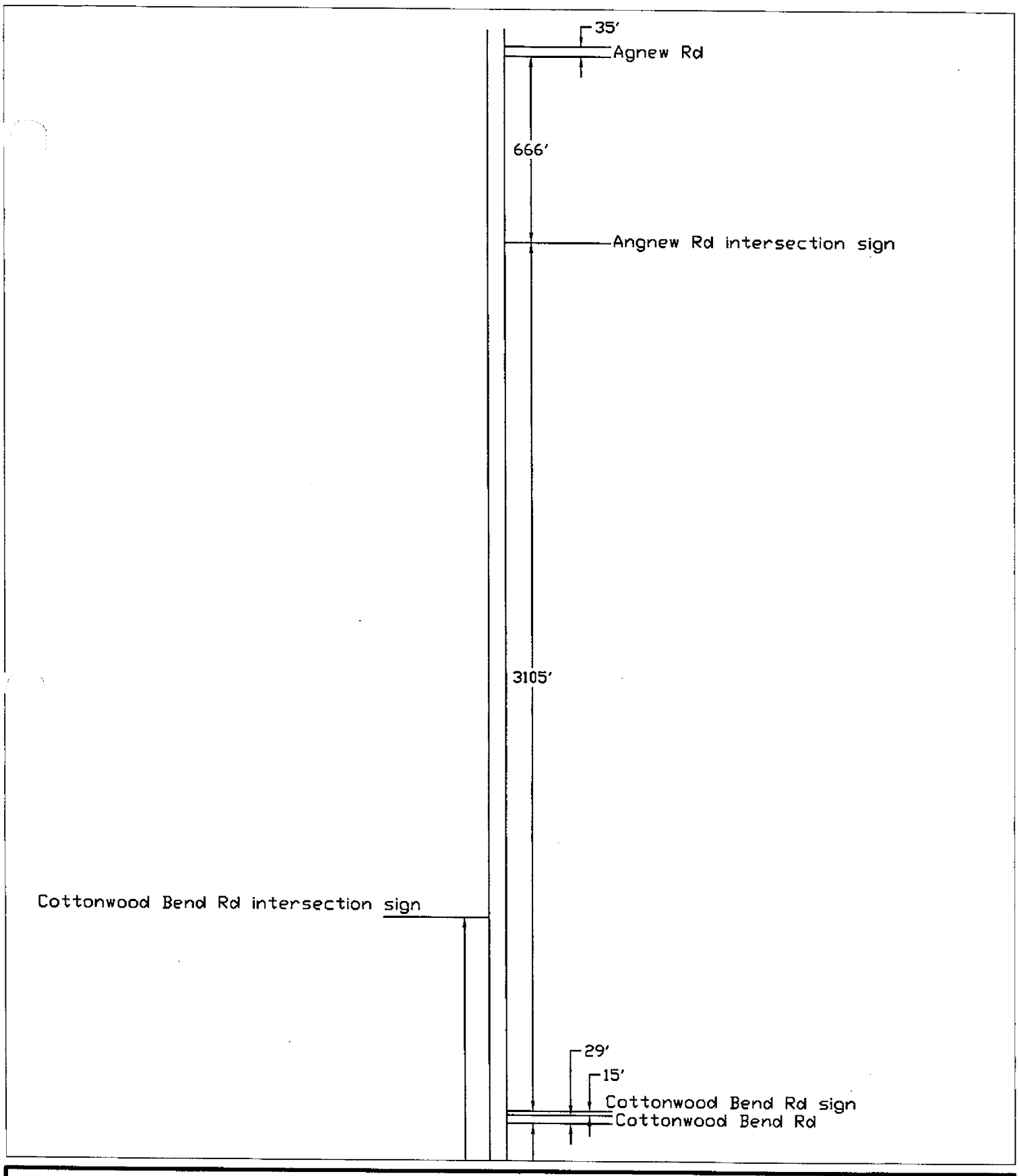
NOT TO SCALE



Westland Road Interchange Transportation Plan

Figure 3-4
Westland Road Driveway Inventory

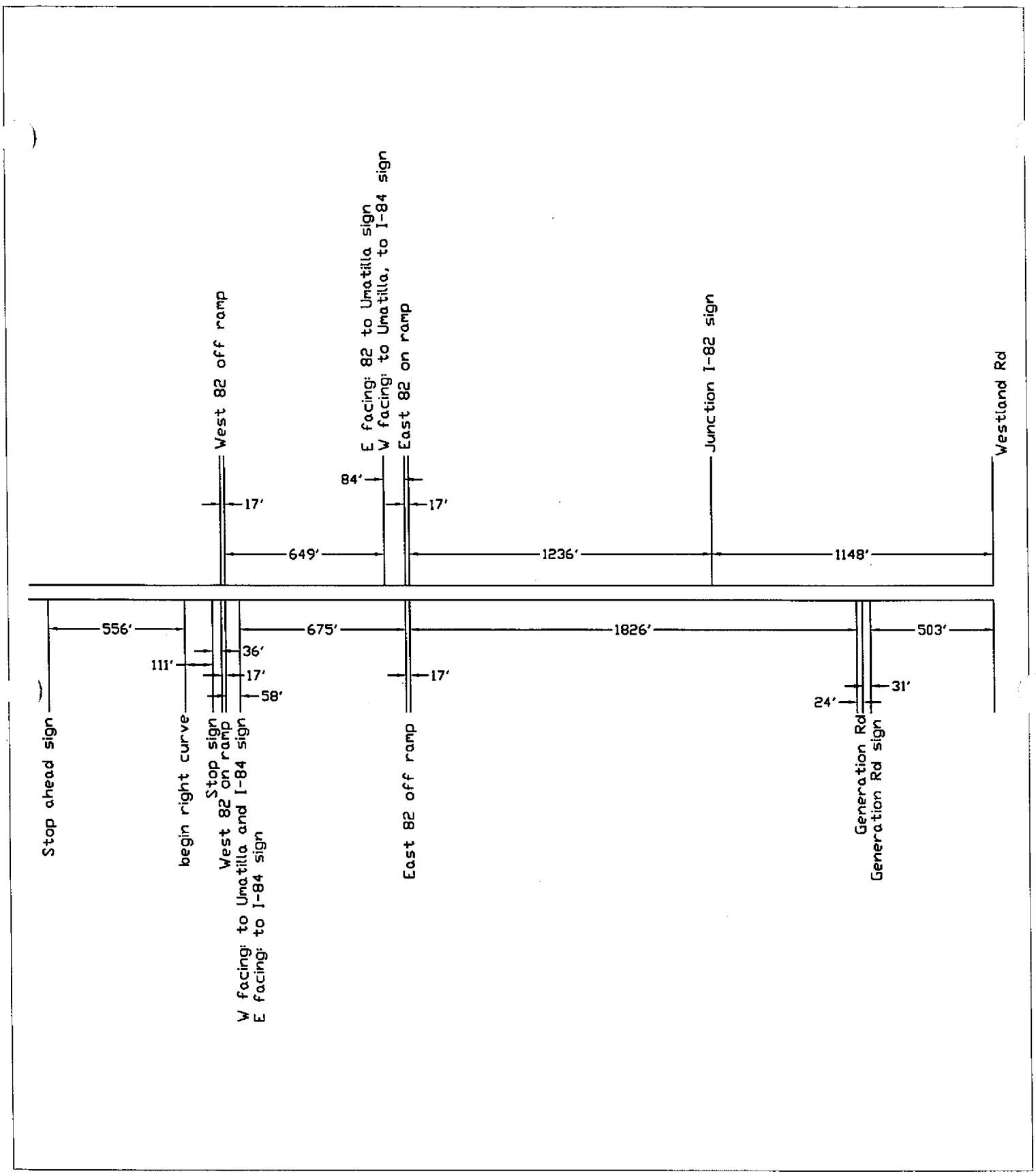
NOT TO SCALE



Westland Road Interchange Transportation Plan

Figure 3-5
Westland Road Driveway Inventory

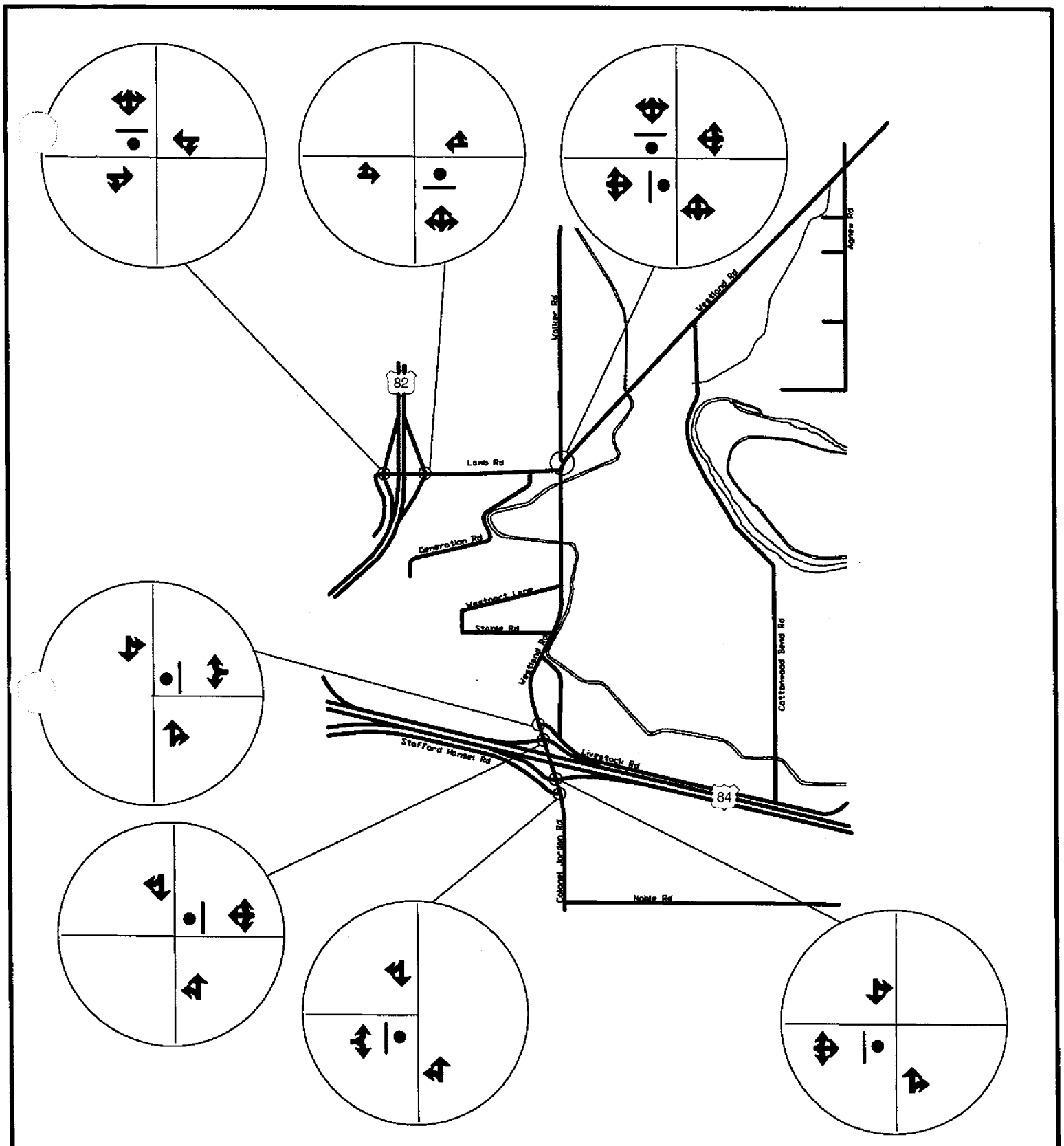
NOT TO SCALE



Westland Road Interchange Transportation Plan

Figure 3-6
Lamb Road Driveway Inventory

NOT TO SCALE

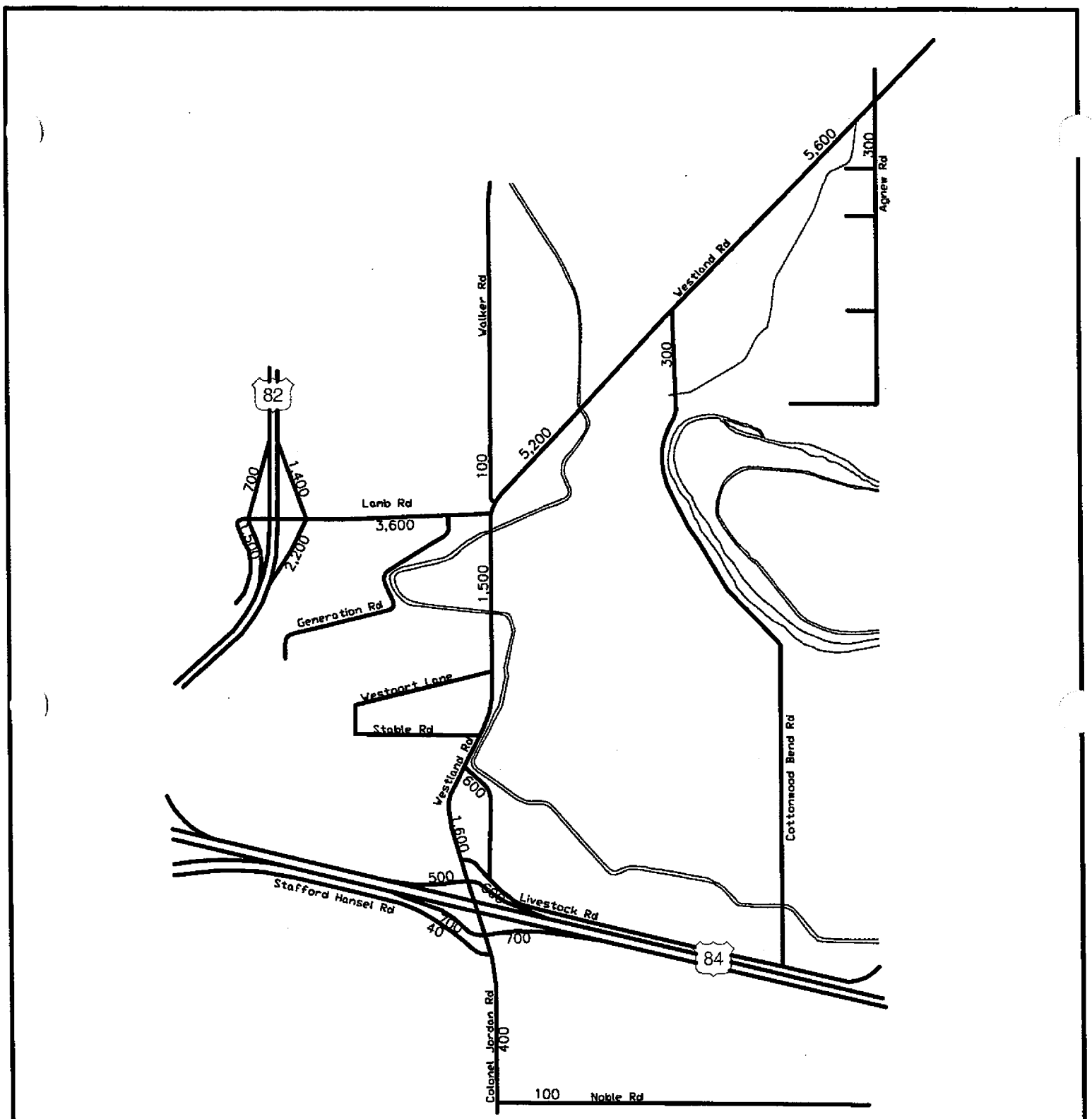


Westland Road Interchange Area Transportation Plan

Figure 3-7
Intersection Lane Configurations and Traffic Control

LEGEND
- Lane Usage
- Traffic Signal
- Stop Sign

NOT TO SCALE

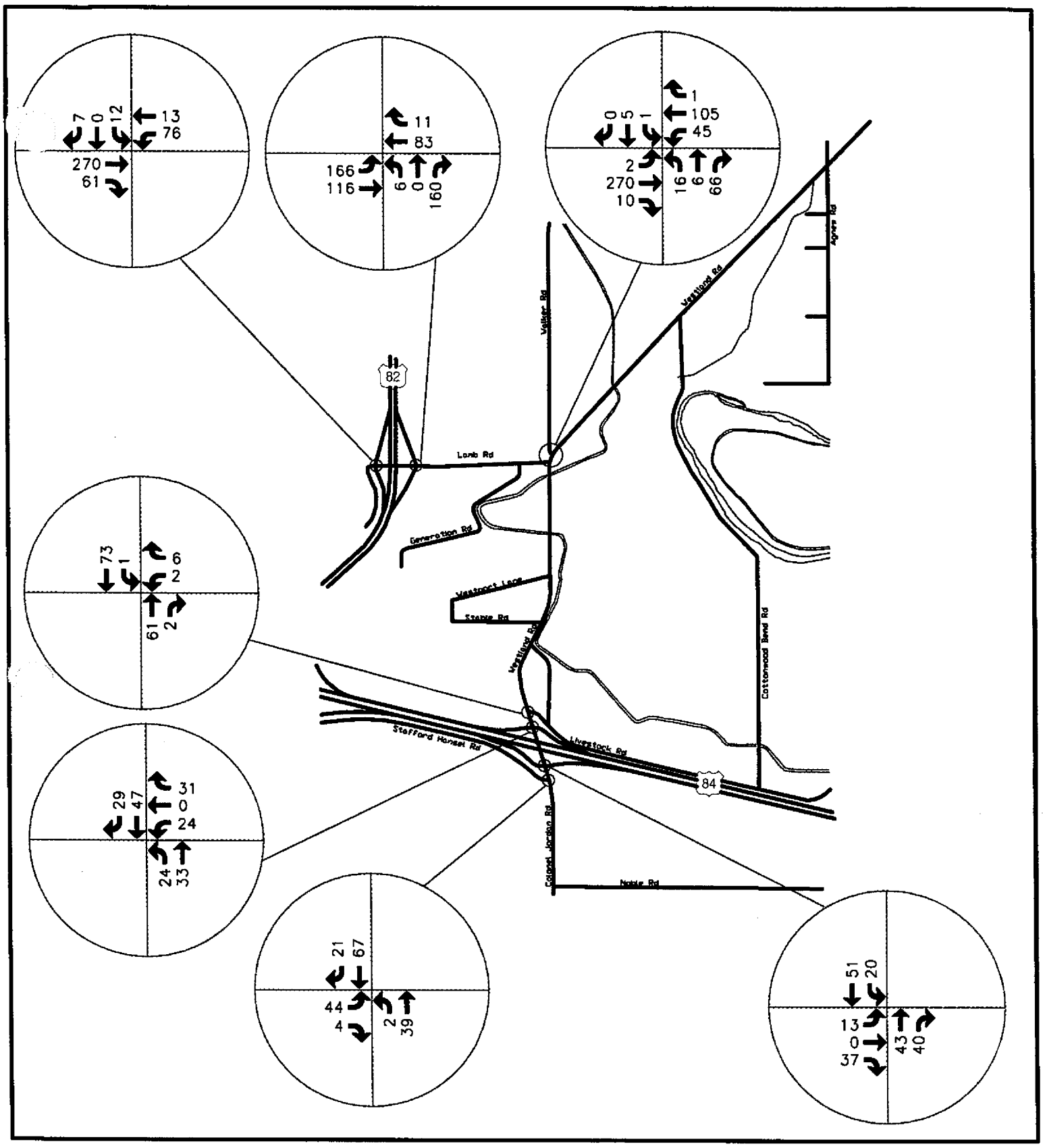


Westland Road Interchange Area Transportation Plan

Figure 3-8
2003 Existing Daily Traffic Counts

LEGEND
100 Average Daily Traffic Volume

NOT TO SCALE



Westland Road Interchange Area Transportation Plan

LEGEND

15 P.M. Peak Hour Traffic Volume

NOT TO SCALE

Figure 3-9
2003 Existing P.M. Peak Hour Traffic Volumes

TASK 2.11
GIS TRAINING

UMATILLA COUNTY
GIS TRAINING SYLABUS

I. Introduction

II. Data Set Included
- Parcel Data
- Roadway Inventory

III. General Overview of Basic Commands

IV. Getting and Using Attributes of Features

V. Map Display

VI. Printing

VII. Basic Training Exercises

ARCVIEW GIS TRAINING

Introduction

This document is not intended to be an exhaustive training manual geared toward developing proficiency with the software. Rather, the intent is to train Umatilla County staff in utilizing a basic GIS system that was developed for the Westland Road/I-84/I-82 Interchange Area Transportation Plan. The goal of the training is to simply have Umatilla County staff be able to load the developed file a database table into ArcView and to query it for specific information sought.

Description of Data

The data compiled are graphic files called shape files and a table of information attached to the shape files. The shape files are basically graphic files. Each type of graphic information has been combined into one shape file. The following shape files exist:

- Parcel boundaries for each tax lot
- Public Street
- Private Street
- Streams
- Irrigation Canals

Additional mapping can be added to this GIS system. The mapping was based on digitized parcel maps available from Umatilla County.

There is only one data table developed for this simple GIS system. It is a set of information for each parcel. The information was limited to what was available from the Umatilla County Assessor's Office and the information that may be useful to the project. The information included in this table is as follows:

- Umatilla County Assessor office reference number for the parcel
- Owner and address
- Map number
- Tax lot number
- Zone
- Area
- Land and Building Assessed Values

Additional data can easily be added for each parcel. Any new table of data must have the map number and lot number included for reference to be able to match correctly with the existing table of data and polygons coded to represent the parcels.

ArcView Training Overview

The first step in the training is to be able to open a project and add the appropriate shape files to it. The second step is to attach the table of data. The final step is to learn how to query the data and perform simple analysis functions.

Opening a Project

What is a project?

A project is simply all of the views, tables, charts, layouts, and scripts that is associated with a particular task. In our case a project is all the graphic files associated with the study area and the assessor data attached to the parcel graphic file. The project could later be expanded as more information was able. Or, the project could even be simplified with less information if that information is not longer needed.

Open the ArcView program.

A dialog box will be opened in the foreground with the title "Untitled." This box is untitled because the project is empty with nothing associated with it.

We will need to start creating our project. The first step will be to add themes to our views. There is a "Views" button in the dialog box below the title bar. Highlight the "Views" button. Next click on the new button above. A new view window should be opened that is empty. The main menu at the top of the page should now have some added choices to it. Click on the "View" menu and select "Add Theme." Go to the directory with your shape files. Double click on the shape file you want. The theme will appear in the grey area of the view window to the left. Click on the theme to the left and it will be displayed in the window. Add each theme in the same manner described above.

If you want to remove the theme from your view, then simply click on the theme icon in the left grey area (known as the table of contents).

Theme Table

When adding a theme, a theme attribute table is also added to the project. In this case, the only significant table of data is with the parcel boundary theme. It contains the assessor data described above.

The theme table is formatted in rows and columns similar to a spreadsheet. The rows and columns are called records and fields in ArcView. Since the records are linked to the feature they describe, they can be accessed by clicking on a feature in the view.

You can access the theme table by clicking on the "table" button in the view menu to the left. Use the scroll bars at the bottom of the table and to the right of the table to see the different areas of the table. You can also resize the window.

To see the attributes of a particular parcel, use the "Identify" tool. It should be in the upper left had corner in the second rows of icons. It has the symbol small "i" in a circle. Click on the parcel you are interested in obtaining data for. A dialog box should open with a table of information.

Selecting Map Features from a View

There are two basic ways to find features based on their attributes. First, the "Find" button can be used to find features one at a time. If more than one feature fits the criteria you are searching for, the "Find" feature will only match the first feature it finds. To find a group of features with the same attributes, you must use the "Query Builder."

To find a parcel based on an attribute in the table, use the "Find" button. It is in the first rows of icons about one third across from the left below the menu bar. The symbol of the "Find" button is a set of binoculars. A dialog box will appear prompting you to type the attribute parameter to search for a particular parcel. For example, you can type in the physical address. Hit "OK." ArcView will search for the first occurrence of what you typed and select it in the view you have open.

The Query Builder is a much more powerful way to search the GIS system. In the example above, it would return all the parcels with the search parameters you selected. For example, you could query for all the 5 acre and under parcels and the query builder would return all of parcels with that parameter.

To use the Query Builder, hit the Query Builder icon. It is the hammer with a question mark. It should be located in the first row of icons below the menu bar in the middle. A dialog box will appear after you hit the Query Builder icon. At the top of the dialog box, you should see the active theme which would be the parcel theme. In the upper left hand corner, all of the attributes of that theme should be listed. A set of search operators is to the right of the attributes list, and a list of values to input to the far right.

When you click on an attribute in the fields list, all of the values available for that attribute will appear in the values list to the right.

To build a query, first click on the attribute field you are interested in searching with. For example, if you want to search parcels by 5 acre parcels, click on the acres attribute field. If you are interested in exactly 5 acre parcels, click on an operator next. In this case, the operator will be the "equal" sign. Find "5" in the values table. Hit "New Set" to start the search. To further refine the search to 5 acre parcels with rural residential zoning, hit the zone field attribute, the equal sign, and the RR zoning in the values list. Then hit the "Select from Set" button in the

dialog box in the lower right hand corner. If you want to add to the returned set rather than further refine the search, simply re-query and hit the"Add to Set" button.

The returned parcels in the search will be highlighted in your active view screen. To see the values returned in the theme table, click on the "Open Theme Table" button. Remember this button is probably several windows back in your original project window. The values returned will be highlighted in the theme table at the top of the table.

Creating a Project

To save the information above in a "project," go to the file menu at the upper left hand corner of the window and "Save Project."

Note, a project file has the extension "apr."

TASK 3.1.1
CREATE A PROJECT MANAGEMENT TEAM AND DEVLEOP A PUBLIC INVOLVEMNT PROGRAM

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

MEMORANDUM

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

To: Westland Road Interchange Area Transportation Plan Management Team
From: Hann Lee, H. Lee & Associates

Subject: Public Involvement Program

Introduction

The public involvement program for the Westland Road/I-84/I-82 Interchange Area Transportation Plan is comprised of the following elements:

- Project Management Team
- Technical Advisory Committee
- Stakeholder Interviews
- Project Newsletters
- Public Survey
- Public Workshops

The remainder of this memo explains each component of the public involvement program

Project Management Team

The project management team is primarily comprised of the consultant project manager, Hann Lee of H. Lee & Associates; Cheryl Jarvis-Smith, ODOT Region 5 Grant Manager; and Dennis Olson, Umatilla County Planning Director. The main function of the project management team is to make administrative decisions in regard to the project schedule and management of the project. Responsibilities include setting meeting dates, arranging for meeting facilities, circulation of project material to stakeholders and project participants, developing meeting agendas, and troubleshooting project issues.

Technical Advisory Committee

The main purpose of the technical advisory committee (TAC) is to provide project input to the products developed. The TAC will review and comment on each interim product.

The TAC is comprised of a diverse group comprised of public agencies, elected officials, special stakeholders, and utility providers. A list of the TAC members is attached to this memorandum. Also attached to this memorandum is a copy of the TAC purpose and procedures.

Stakeholder Interviews

H. Lee & Associates will conduct up to 15 stakeholder interviews. These interviews are intended to identify project issues in the study area that need to be addressed in the development of the interchange area plan. Umatilla County will provide a list of stakeholders to interview.

The stakeholder interview questions are listed below:

1) What are the constraints to the development of the Westland Road interchange area?

2) How do you envision the Westland Road interchange area to develop over the next 20 years? What type of uses do you expect to develop in the area?

3) What are the transportation improvement needs in the area? What are the transportation problems in the area? Which are the most important?

4) What do you think are acceptable methods to pay for the necessary transportation and utility improvements needed in the area:
   a) The Umatilla County General Fund?
   b) Traffic Impact Fees?
   c) Local Improvement Districts?
   d) Urban Renewal Funds?
   e) ODOT?
   f) Other (such as…)?

Project Newsletters

Two project newsletters will be developed for the project. The first newsletter will be developed to introduce the project and to invite the public to the first public workshop. The second newsletter was used to share the major findings of the draft report and to invite the public to the planning commission and county commissioner hearings.

Public Survey

A public survey will be utilized with the general public and land owners within the study area to solicit input. The format will be split into a ranking of importance of issues within the study and a more general series of essay questions.

Public Workshops

There will be two public workshops. The first public workshop will be used to solicit public input as to the problems in the study area and issues that should be resolved. The second public workshop will be used to solicit input to alternatives developed to solve issues within the study area.

TASK 3.1.2
PROJECT MANAGEMENT MEETING #1

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Transportation Plan Management Team
From: Hann Lee, H. Lee & Associates

Subject: Management Team Meeting #1 – December 9, 2002

In attendance: Hann Lee, H. Lee & Associates, Cheryl Jarvis-Smith, ODOT, George Ruby, ODOT, and Dennis Olson, Umatilla County.

Management Team Meeting #1 was used to develop a list of count locations for both the manual turning movement counts and the daily machine counts; to set the agendas for future meetings; and to discuss significant project issues.

The intersection locations and daily machine count locations were identified by the Management Team members. The intersections to be counted are listed below:

1. Westland Rd / I-84 EB Ramps
2. Westland Rd / I-84 WB Ramps
3. Lamb Rd / I-82 NB Ramps
4. Lamb Rd / I-82 SB Ramps
5. Stafford Hansel Rd / Col. Jordon Rd
6. Walker / Lamb / Westland
7. NW Livestock Rd / Westland

The roadways to be counted by the machine counters are listed below:

1-4	Lamb Rd interchange ramps
5-8	Westland Rd interchange ramps
9	Lamb Rd w/o I-82 interchange
10	Lamb Rd e/o I-84 interchange
11	Col. Jordan s/0 I-84 interchange
12	Noble e/o Col. Jordan
13	Westland n/o I-84 interchange
14	Livestock Rd e/o Walker Rd
15	Westland Rd e/o Walker Rd
16	Stafford Hansel Rd w/o Col. Jordon
17	Westland Rd n/o Agnew Rd

18 Cottonwood s/o Westland Rd
19 Walker n/o Westland Rd
20 Col. Jordon s/o Stafford Hansel Rd
21 Westland s/o Agnew Rd

The agenda for future TAC meetings were discussed by the Management Team.

Management Team Meeting #2/TAC #2/Public Workshop #1
January 29, 2003 (1:00-2:30 pm, 2:30-4:30 pm, 6:00-8:00 pm)

TAC Agenda: traffic count maps, summarize background info, stakeholder interview results

Note: Industries should be added to the TAC.
Note: The newsletter should be mailed out January 13, 2003.
Note: IRZ Consultants have aerial photos. They are in Hermiston. The contact is Fred Zier.

Public Workshop Agenda
Project Goals – 15 min
Existing Conditions – 20 min
Project Issues – 30 min
Land Use "Visioning" – 1 hour

Management Team Meeting #3 and TAC #3
February 26, 2003 (1:00-2:30 pm and 2:30-4:30 pm)
Agenda – Discuss future traffic forecast and alternatives

Management Team Meeting #4/TAC #4/Public Workshop #2
March 27, 2003
Agenda: Refinement of alternatives with final products

Potential Planning Commission Workshop – April 24, 2003

Potential Planning Commission Hearing – May 29, 2003

Potential Board of Commissioners Hearing – June 4, 2003

The major discussion of the Management Team meeting was a discussion of the project issues within the study area. The remainder of this meeting summary highlights the most significant discussion points.

- Employees of the incinerator property use the I-82/Lamb Road interchange. There are approximately 300 cars per shift change that is generated by the incinerator operation. There are two shifts per day. A third shift per day is added when the operation is actually burning.

- SimPLOT also generates traffic in the area and has a shift change.

- The Umatilla Planning Commission sees the study area as a future industrial area. DLCD is not thrilled with this idea because the zoning is very broad.

- The County Commissioners are interested in the improvement of the Walker Rd/Lamb Rd/Westland Road intersection.

- It is important for any development activity to stay away from Agnew Road residential area since it not part of interchange area. The adjacent residents to Agnew Road may be interested in upgrading their road.

- The Port of Umatilla is in the process of siting industrial uses county-wide.

- There is a lack of water supply in the study area.

- Tom Kulman is the Region Traffic Engineer. He needs to be consulted throughout the project regarding access issues.

TASK 3.1.3
PROJECT MANAGEMENT MEETING #2

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Transportation Plan Management Team
From: Hann Lee, H. Lee & Associates

Subject: Management Team Meeting #2 – February 10, 2003

In attendance: Hann Lee, H. Lee & Associates, Bob Foster, Robert H. Foster Consultants, Cheryl Jarvis-Smith, ODOT, George Ruby, ODOT, Tamra Mabbott, Umatilla County, and Dennis Olson, Umatilla County.

Management Team Meeting #2 was used to prepare and set up for the first public open house/public workshop. Management team members helped the consultant team set up the room for the public open house/public workshop.

TASK 3.1.4
PROJECT MANAGEMENT MEETING #3

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Transportation Plan Management Team
From: Hann Lee, H. Lee & Associates

Subject: Management Team Meeting #3 – April 17, 2003

In attendance: Hann Lee, H. Lee & Associates, Bob Foster, Robert H. Foster Consultants, Cheryl Jarvis-Smith, ODOT, George Ruby, ODOT, Tamra Mabbott, Umatilla County, and Dennis Olson, Umatilla County.

Management Team Meeting #3 was used to prepare and set up for the TAC meeting presentation and the second public open house/public workshop. Management team members helped the consultant team set up the room for the presentations.

TASK 3.1.5
PROJECT MANAGEMENT MEETING #4

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Transportation Plan Management Team
From: Hann Lee, H. Lee & Associates

Subject: Management Team Meeting #4 – May 8, 2003

In attendance: Hann Lee, H. Lee & Associates, Cheryl Jarvis-Smith, ODOT, George Ruby, ODOT, Tamra Mabbott, Umatilla County, and Dennis Olson, Umatilla County.

Management Team Meeting #4 was used to prepare and set up for the TAC meeting presentation of the Draft Westland Road/I-84/I-82 Interchange Area Transportation Plan. Also, the project schedule and necessary adjustments to the workshop and hearings were discussed.

TASK 3.1.6
PROJECT MANAGEMENT MEETING #5

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Transportation Plan Management Team
From: Hann Lee, H. Lee & Associates

Subject: Management Team Meeting #5 – June 23, 2003

In attendance: Hann Lee, H. Lee & Associates, Bob Foster of Robert H. Foster Consultants, Julie Alford, Umatilla County, and Dennis Olson, Umatilla County.

Management Team Meeting #5 was used to discuss adjustments to the study area base map. In particular, tax lot boundaries were corrected based on information from Julie Alford of the Umatilla County Assessor's Office. Also discussed were zoning issues within the study area.

TASK 3.2.1
TAC MEETING #1

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

MEMORANDUM

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

To: Westland Road Interchange Area Transportation Plan Management Team and TAC
From: Hann Lee, H. Lee & Associates

Subject: TAC Meeting #1 - June 23, 2002

In attendance: see sign in sheet

TAC #1 Agenda

1. Introduction to Project
2. Technical Advisory Committee (TAC) Role and Responsibilities
3. Project Schedule
4. Public Involvement Plan
5. Project Goals and Objectives
6. Discussion of Project Issues

A brief introduction was given to the TAC members in attendance. With the introduction, the project schedule and scope of work was handed out and discussed.

After the brief project introduction, the TAC role and responsibilities were presented.

The draft project goals and objectives were presented to the TAC.

- Water and sewer limitation will limit the potential growth in the study area. A number of development proposals have not been able to develop due to these issues.

- Only a small amount of uses are on wells. These uses are existing single family uses. A domestic well generates about 25 gallons per minute. Everybody is on septic for sewer.

- Part of study area is under the City of Umatilla's Enterprise Zone.

- There is a contaminated plume north of the project study area.

- After the Depot is decommissioned, it reverts back to the local jurisdiction. This could be redeveloped into light industrial uses. This may take away from the potential to develop the existing industrial supply. When the redevelopment of the Depot occurs, it

should look at impacts to the Powerline Road interchange. Also, consideration should be given to connecting Powerline Road and Prindle Loop (Pumpkin Center) together.

- The Hermiston TSP is pursuing the Pumpkin Center improvements.
- Morrow County has looked into alternative access into the future Depot redevelopment. The Umatilla County TSP should coordinate with this effort.
- The Boardman Speedway may impact the study area. There are other traffic generators that may also impact the study area.
- Another interchange to access the Depot is not likely in the future. It would require a major deviation to the standards.
- 60 percent of motorists travel from east to west. The other 40 percent is from other directions.
- 65 percent of the traffic (from the speedway) is from the Washington side crossing the Columbia River.
- The speedway is planning 5 large events ad 7 minor events.
- The Tri-Cities are one hour from the speedway.
- An RV park with 5000 spaces is being planned at the speedway. This may impact the study area.
- ODOT has agreed with the speedway traffic study.
- There are lots of industrial sites in Umatilla County available for industrial development.
- A regional water supply should be considered. This would require a water treatment plant. The cost is roughly $1,000,000 per 1000 gallons/minute in addition to water rates.
- The study area may be ready for development.
- The study area is likely to be developed by non-water dependent uses.
- The best use for the study area may be drop-off and pick-up type distribution centers or unimproved site to store trailers.

- Highway retail is less likely due to the shortage of water in the area. Also, DLCD is not likely to support the concept of highway retail.

- Another power plant may be developed in the area. Hermiston may be interested in annexing if the revenue works out. This would result in a couple of dozen jobs. Three shifts at 10 jobs per shift is the likely type of employment generated.

- If the water supply issue is solved, then all of the land in the study area could develop quickly.

- The water supply is six miles away in Hermiston.

- If some of the EFU zoning could be converted, then some well water could be used to support development.

- An outlet mall could be a possibility in the study area if water could be brought into the study area.

- Water may be sold but it does not change the EFU zoning or use.

- Livestock generates traffic with 3-4 big sales and other smaller sales.

- The study should look at what potential development would do to the area.

- The Port of Umatilla looks at the Depot redevelopment as an economic development opportunity in cleaning the use up similar to Hanford.

- There is no siting for rail. The sites are not long enough for an intermodal facility. The at grade rail crossing at Westland Road is not very good.

- The Lamb-Weston driveway is near the railroad. It has three shifts per day. Hamil and UPS in the area also generate traffic.

- ODOT is not aware of any issues at the Lamb Road interchange. People use this interchange extensively because they don't need to cross the rail crossing on Westland Road.

- There is a vertical curve issue at the Westland Road interchange. This creates a sight distance issue for traffic turning onto Westland Road from the interchange ramps. ODOT has received complaints about the sight distance.

- The seasonal adjustment factor in the study area may be as high as 25 percent during harvest season. There is lots of ag land south of the study area along Colonel Jordan Road.

- The railroad carries about 40 trains a day. This could go up since there is a potential to double track the rail line over the Blue Mountains. There is a long spur to the Depot site.

- There is some talk between Umatilla County and ODOT about ODOT taking over Westland Road.

- The Tribe only wants to receive email for the transmittal of information.

UMATILLA COUNTY, WESTLAND ROAD/I-84/I-82 INTERCHANGE AREA TRANSPORTATION PLAN

Technical Advisory Committee Meeting #1
December 9, 2002

Attendance Sheet

	Name	To be added to the mailing list, please provide your address
1	Dennis Olson	County Planning
2	Hann Lee	H. Lee & Associates
3	Cheryl Jarvis-Smith	ODOT
4	George L. Ruby	ODOT Dist. 12 - Pendleton
5	Jon Barton	Barton Properties Harmiston
6	Lisa Breckenridge	Confederated Tribes of the Umatilla
7	Larry Clucas	City of Umatilla
8	Kasia Pierzga	East Oregonian kpierzga@eastoregonian.com
9	Virginia Miller	County Planning Virginia@oregontrail.net
10	Kim B. Puzey	Port of Umatilla
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TASK 3.2.2
TAC MEETING #2

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

MEMORANDUM

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

To: Westland Road Interchange Area Transportation Plan Management Team and TAC
From: Hann Lee, H. Lee & Associates

Subject: TAC Meeting #2 - February 10, 2003

In attendance: see sign in sheet – it is the same as the Public Open House #1 sign in sheet

TAC Meeting 2 and Public Open House #1 were conducted during the same day and were noticed together. The TAC meeting was attended by public agency staff and property owner stakeholders. Since the property owner stakeholders attended the TAC, the Public Open House information and agenda was discussed in the TAC.

In general the TAC was used to solicit comments and concerns in the study area. As with the previous TAC meeting, the major issues revolved around the lack of water and sewer utilities and the desire of EFU property owners to have the ability to rezone their properties.

The format for the meeting was to discuss major project issues from a series of maps. After a brief presentation by the consultant, the TAC attendees had a chance to write comments on post-it notes and to place their comments on the appropriate map theme.

UMATILLA COUNTY, WESTLAND ROAD/I-84/I-82 INTERCHANGE AREA TRANSPORTATION PLAN

Public Open House #1
February 10, 2003

Attendance Sheet

	Name	To be added to the mailing list, please provide your address
1	Bob Foster	491 Ash St. L.O. Or. 97034
2	ROGER BOUNDS	POBox 148 HERMISTON 97838
3	Dennis D. Doherty	Courthouse, Pendleton
4	Frank Nelsen	PO Box 705 Hermiston OR 9783
5	EMMETT WALKER	" "
6	KALVIN R. KEES	P.O. Box 705 Hermiston, OR 97838
7	Bob Barton	P.O. Box 4 Hermiston OR 97838
8	Rick Barton	77459 Col. Jordan Rd. Hermiston Or 97838
9	SUE DAGGETT	PORT OF UMATILLA Box 879 Umatilla 97882
10	Delbert Gehrke	28790 Westport Lane Hermiston OR 97838
11	George L. Ruby	PO Box 459 Pendleton Or. 97801
12	Cheryl Jarvis-Smith	3012 Island Ave, La Grande, OR 97850
13	Dennis Olson	
14	Hann. Lee	
15	Tamra Mabbott	Co Planner
16		
17		
18		
19		
20		

TASK 3.2.3
TAC MEETING #3

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Transportation Plan Management Team and TAC
From: Hann Lee, H. Lee & Associates

Subject: TAC Meeting #3 – April 17, 2003

In attendance: see sign in sheet

TAC MEETING #3 AGENDA

1. Project Status Report and Revised Schedule
2. Presentation of Existing Conditions
3. Presentation of Draft Alternatives
4. Discussion of Public Open House Meeting Format
5. Product Review Schedule
6. Next Meeting

The main focus of the TAC meeting was to discuss a technical memorandum summarizing the existing conditions and future forecast. Since many of the property owner stakeholders attended the TAC, the TAC and Public Open House #2 agendas were combined. The major finding of the technical memorandum was that there is a surplus of land in the study area beyond the 20-year land demand. Two traffic forecast scenarios were developed to determine the range of traffic impacts that could be expected in 20 years. Both the high and low growth scenarios yielded only a most amount of traffic impacts.

The only major traffic congestion problem identified was at the Westland Road/Lamb Road/Walker Road intersection. This intersection has an odd alignment and traffic control that yields poor traffic operations in the future. The need for realignment was identified.

Stakeholder Comments are listed below:

- Stakeholders did not like the 1320 foot spacing standard from the interchange ramps. They feel that this would impede economic development in the study area.

- There is a concern that realigning Lamb Road and the northern leg of Westland Road to have the traffic right-of-way would result in excessive speed.

- Some streetscape should be considered. Palm Springs was given as an example.

- Hermiston Issues

    - UGB very far away
    - City no problem with County development
    - City has problem with urban density in the county
    - City has 400 acres of industrial land available
    - Port of Umatilla has 600 acres of industrial land available
    - City services are approaching capacity but has enough to support its existing inventory

- Heavy freight uses would work in study area as well as intermodal w/ railroad

- System Development Charge code language should be considered and implemented

- An interim standard process should be developed

UMATILLA COUNTY, WESTLAND ROAD/I-84/I-82 INTERCHANGE AREA TRANSPORTATION PLAN

Technical Advisory Committee Meeting
April 17, 2003

Attendance Sheet

	Name	Please provide your email address
1	Ray and Jeanne Dorgatz	rajean@pocketmail.com
2	Myles H. Bartlett	
3	Bob Barton	barton@eoni.com
4	Kerri Beauchamp	UEC@ueinet.com
5	Kathrin Gaston	GARTONAR@UCI.NET
6	Eldon McDaniels	
7	David T. Gass	
8	Stan Gass	sgass@hotmail.com
9	Tamra Mabbott	Umatilla County Planning
10	Roger Bounds	(attended momentarily)
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TASK 3.2.4
TAC MEETING #4

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Transportation Plan Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: TAC Meeting #4 – May 8, 2003

In attendance: see sign in sheet

The main focus of he TAC meeting was to discuss the draft report. The draft report was circulated at the TAC meeting. Hann Lee of H. Lee & Associates made the presentation to the TAC and property stakeholders. The findings included that traffic congestion should not be a significant issue in 20 years, two alternative alignments were described to improve the geometric condition at the Westland Road/Lamb Road/Walker Road intersection, a rail crossing improvement at the Westland Road at-grad railroad crossing was described, and recommendations regarding the access standards were presented. The recommendation was to apply the 1320 foot spacing standard north of the Westland Road interchange. To the south of the Westland Road interchange, a deviation was proposed because the maximum lot depth was only 800 feet from the interchange ramp.

The property owner stakeholders with EFU property were very unhappy that the draft report would not be recommending any rezoning of property in the study area. Also, several stakeholders expressed continued concern over the application of the 1320 spacing standard from the interchange ramps.

MAY 8, 2003 TAC

Name	Address
Shelly Ingram	East Oregonian
Larric Bruce	Hermiston
Tamra Mabbott	216 SE. 4th St / Pendleton
BOB STAPLEFORD	UMCD - PWD
Virginia Miller	398 E Ridgeway
LUCY ZIEMER	76676 COLONEL JORDAN RD.
BUCK DUNLAM - UMATILLA ELECT.	750 W. ELM ST, HERMISTON, OR. 9783
GREG LINDEN	" " " " "
Jeanne and Ray Dargatz	810 NE Queens Ln, Hillsboro, OR 97124
Tricia Coe Western Investments	PO Box 826 Hermiston
Rich Barton	77609 Col Jordan Rd Herm
Bob Barton	P.O. Box 4 Hermiston
Cheryl Jarvis-Smith, ODOT	3012 Island Ave, LaGrande, OR 973
Dennis Olson	216 SE 4th, Pendleton
Commissioner Doherty	

TASK 3.2.5
TAC MEETING #5

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Transportation Plan Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: TAC Meeting #5 – July 30, 2003

In attendance: see sign in sheet

Note: This meeting was not invoiced since it did not occur prior to the end of the contract date, June 30, 2003.

The focus of this TAC meeting was to reach a compromise as to the access spacing that would be allowed both north and south of the Westland Road/I-84 interchange.

A compromise was reached north of the interchange. A full access public street would be allowed 885 feet north of the I-84 westbound ramps to service the Petro Stopping Center site. This access would add a northbound left turn and taper to Westland Road. A median is envisioned to be part of the design.

The other issue north of the Westland Road/I-84 interchange is that the northbound left turn lane median would block the left in and left out access into the Livestock Road agribusiness. These movements would have to use the frontage road parallel to Westland Road that intersects with Westland Road at the Freightliner access to the north. These movements will have to be signed properly to help motorists find the left in and left out access points. As for the right in and right out movements, they would continue to use Livestock Road until the time there is a redevelopment of the Livestock Road agribusiness use. At that time, the Livestock Road alignment will need to move to the north to the right of way that is currently available approximately 500 feet north of the existing Livestock Road alignment. The Petro Stopping Center would also be allowed a right in, right out driveway at this location on the other side of Westland Road.

After discussion with representatives of Western Investment and Barton Industries, an access management solution was developed south of the I-84 Westland Road interchange. The Barton's preferred that if only one access would be granted in the future for all access between their site and the Western Investment Shell Station, that the access be located at the south end of their property. This would put the access point approximately 800 feet south of the I-84 interchange ramps. In the future when the Barton Industries site redevelops, the existing driveway would

need to move to the south end of their property and extend eastward to provide access to their other two parcels. This street would need to be a public roadway. As for the Stafford Hansel alignment, at the time of redevelopment or additional development of the Western Investment site, Stafford Hansel Road would need to be realigned southward parallel to Colonel Jordan Road and curve eastward to meet the alignment of the future Barton Industries access at the south end of the Barton Industries parcel. The Western Investment representative agreed to forward this idea to the land owners and stated that she had no authority to agree or comment on this idea. However, she did not think that the existing site would be significantly impacted by this proposal.

TASK 3.3
TECH MEMO – GOALS AND OBJECTIVES

DRAFT GOALS

Westland Road Interchange Area Transportation Plan

Transportation Plan Display December 2002

Draft Transportation System Plan Goals

The goals below are derived from the project scope of work and are only intended as a beginning point for discussion of developing project goals.

- Goal 1 – Balance land use and transportation planning to develop an interchange plan that can achieve acceptable traffic operations along the areas transportation system and provide for safe access to adjacent land uses.

- Goal 2 – Maximize transportation management techniques in the study area to mitigate future traffic impacts generated by future developments and to minimize the necessary transportation infrastructure investment.

- Goal 3 – Solicit significant public input throughout the study process to assure ownership of the plan by study area stakeholders, property owners, and public.

- Goal 4 – Develop a comprehensive list of deficiencies in the project area that should be addressed by the study.

- Goal 5 – Develop future improvement alternatives that address short and long term capacity deficiencies, connectivity, and safety around the two study interchanges and study area roadways and intersections.

- Goal 6 - Develop conceptual 20-year land use plans in the study area to support the traffic forecasting task and to develop a basis for a sensitivity analysis for the range of traffic impacts that could occur in the study area.

TASK 3.4
STAKEHOLDER INTERVIEWS

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: Summary of Stakeholder Interviews

Introduction

As part of the Public Involvement Strategy for the Westland Road Interchange Area Management Plan, interviews were conducted with stakeholder representatives. Since a significant amount of stakeholder input was already collected at the first Management Team and TAC meeting as well as the first Public Open House, only a limited number of stakeholders were interviewed. As will be shown, the stakeholder interview input is very redundant with other public input already collected.

The stakeholders interviewed were as follows:

- Larry Clucas – City Administrator for the City of Umatilla
- Clint Spenser – City Planner for the City of Hermiston
- Sue Daggett – Port of Umatilla

In addition, input from the following property owners were also included in this summary:

- Stan Gas
- Roger Bounds
- Ray Dartgatz

The stakeholder interview questions are listed below:

1) What are the constraints to the development of the Westland Road interchange area?

2) How do you envision the Westland Road interchange area to develop over the next 20 years? What type of uses do you expect to develop in the area?

3) What are the transportation improvement needs in the area? What are the transportation problems in the area? Which are the most important?

4) What do you think are acceptable methods to pay for the necessary transportation and utility improvements needed in the area:
   a) The Umatilla County General Fund?
   b) Traffic Impact Fees?
   c) Local Improvement Districts?
   d) Urban Renewal Funds?
   e) ODOT?
   f) Other (such as…)?

Interview Responses

The major issues identified in the study area were the lack of water and sewer services. In conjunction with this, the area is within the critical ground water area.

Transportation issues did not rank highly for issues within the study area. The transportation issues that did come up were the intersection of Westland Road/Lamb Road/Walker Road, poor signage, truck turning radii problems at intersections, closely spaced intersections adjacent to the Westland Road/I-84 interchange ramps, and Lamb Road to Westland Road into Hermiston.

Most of the stakeholders agreed that the most likely development in the study area would be non-water intensive uses. These uses would most likely be warehousing and trucking oriented. Other uses could include travel oriented retail services in the tourist commercial zoning, agricultural related uses, truck stop, and another gas powered generator. It should be mentioned that property owners of EFU land in the study area were interested in rezoning their properties to either Light Industrial or Tourist Commercial designations.

With regard to acceptable methods to pay for local transportation improvements, responses were fairly consistent with state and federal funding being mentioned the most. The justification for this funding is that the I-84/I-82 alignment is the reason for the need for transportation improvements. Other revenue source mentioned was that the improvements should be related to developer impacts.

TASK 3.5.1
PUBIC SURVEY MAILING

UMATILLA COUNTY WESTLAND ROAD/I-84/I-82 INTERCHANGE AREA TRANSPORTATION PLAN

Umatilla County and Oregon Department of Transportation Region 5

Public Questionnaire — January/February 2003

Please complete the following questionnaire and return it in the self-addressed and stamped envelope provided.

Identify the issues that are critical transportation concerns in your opinion.	least important 1	2	3	4	most important 5
Improvements to the Westland Road interchange					
Improvements to the Lamb Road interchange					
Facilitating truck movements in area					
Target area for significant future highway commerical development					
Target area for significant future industrial and/or employment generators					
Create pedestrian facilities in study area					
Roadway and intersection improvements					
Minimize growth in area so no future transportation improvements are needed in the study area					

What are the other issues the interchange plan should address?

Where are the specific locations of problems that should be addressed?

Optional - If you would like to be added to our project mailing list, please write your name and address below.

Other Comments

What are the other issues the interchange plan should address?

Where are the specific locations of problems that should be addressed?

Optional - If you would like to be added to our project mailing list, please fill in your name and addrress below.

Name
Address

Other Comments

TASK 3.5.2
PUBLIC SURVEY SUMMARY

WESTLAND ROAD/I-84/I-82 INTERCHANGE AREA TRANSPORTATION PLAN
SUMMARY OF PUBLIC OPINION SURVEY

Introduction

As part of the Public Involvement Strategy for the Westland Road/I-84/I-82 Interchange Area Transportation Plan the Public Opinion Survey has been summarized. A total of 24 surveys were collected from those that were distributed.

The questionnaire contained five (5) topics including:

1. Issues that are critical transportation concerns.
2. Other issues the interchange plan should address.
3. Specific locations of problems that should be addressed.
4. Optional inclusion on project mailing list.
5. Other comments.

Issues That Are Critical Transportation Concerns

Table 1a contains a summary of the rankings of critical transportation concerns from the public survey. Table 1b summarizes the raw scores of the critical concerns ranking. Respondents rated the eight (8) critical issues from one (least important) to five (most important). These issues were scored and ranked. The score was developed by multiplying the number of responses for each rating by the rating (1, 2, 3, 4 or 5), summed and then divided by the number of total responses (in this case, 24 responses). As seen in Table 1a, scores ranged from a high of 3.38 to a low of 1.38.

Roadway and intersection improvements were the greatest concern. Facilitating truck movement in the area and improvements to the Westland Road and Lamb Road interchanges were of significant concern. Creating pedestrian facilities and minimizing growth in the area to eliminate transportation improvements were of least concern.

Other Issues the Transportation Plan Should Address

Table 2 lists other issues and comments that the respondents felt the transportation plan should address. The major transportation issues mentioned by the survey respondents are listed below:

- Realigning Westland Rd/Lamb Rd intersection and make Lamb to Westland the through movement
- Proper zoning for likely use (eliminate EFU zoning).
- Access/Frontage road that serves western areas and gets across railroad tracks
- Narrow bridges over irrigation ditches.
- Railroad crossings.

- Additional railroad spurs to facilitate intermodal transport
- Improvements to allow better traffic from I-84 to Hermiston
- Traffic signals & Traffic Congestion
- Land use zoning of surrounding area
- Railroad impact on Westland Rd traffic
- Need to consider availability of infrastructure when reviewing land development potential.
- Need to address timing of roadway improvements relative to development
- Access management
- lane widths
- Overall safety

Specific Locations of Problems That Should Be Addressed

The specific locations that were mentioned by questionnaire respondents are summarized below by specific intersection and roadway locations. The following roadways were mentioned as having safety issues:

- Westland Road/Lamb Road/Walker Road
- I-82 Interchange ramps.
- Lamb Road/Western Truck & Plant entrance.
- Westland Road/Livestock Road
- Westland Road railroad crossing
- Access to NW Livestock Rd
- I-84 interchange ramps, overpass and county roads north and south of interchange

Other Comments

The following other comments were made related to transportation improvements:

- Realign Livestock Road and Stafford Hansell Road away from I-84 interchange ramps
- Interested in future access to Westland Road interchange via Livestock Road

Table 1a
Results of Westland Road/I-84/I-82 Interchange Area Transportation Plan Issues Questionnaire

Critical Transportation Concerns	least important 1	2	3	4	most important 5	Total Responses	Score	Rank
Improvements to Westland Road Interchange	2	1	5	7	6	21	3.21	3
Improvements to Lamb Road Interchange	3	1	4	6	7	21	3.17	4
Facilitating truck movement in area	-	2	6	7	6	21	3.33	2
Target area for significant future highway commercial development	4	3	4	7	4	22	2.92	6
Target area for significant industrial and/or employment generators	4	-	5	8	4	21	2.96	5
Create pedestrian facilities in study area	10	5	2	2	1	20	1.63	7
Roadway and intersection improvements	1	2	4	6	8	21	3.38	1
Minimize growth in area so no future transportation improvements are needed in the study area	13	4	1	1	1	20	1.38	8

Table 1b
Results of Westland Road/I-84/I-82 Interchange Area Transportation Plan Issues Questionnai

Respondent	Westland Road Int Improvements	Lamb Road Int Improvements	Facilitating Truck Movements	Target area for Highway Commercial Develop	Target area for Ind or Employment Develop	Create Ped Facilities	Roadway and intersection improvements	Minimize Growth in Area
1		5					5	
2	3	1	3	1	3	2	4	1
3	3	4	4	5	5	1		1
4	4	3	4	4	4	4	4	2
5		5	3	2	3		5	1
6	3	4	5	3	4	1	4	2
7	5	3	5	5	5	2	3	1
8	5	5	5	5	5	1	5	1
9	5	5	5	5	5	1	5	1
10	4	5	4	3	4	3	4	2
11	4			4			4	
12	1	3	3	4	4	1	2	1
13	4	4	4	4	3	2	3	1
14	5	5	5	1	1	1	5	3
15	2		2	2	1	5	1	4
16	4	4	4	4	4	2	3	1
17	4	4	5	3	3	1	5	1
18	5	4	4	2	4	2		1
19	3	1	3	1	1	1	3	2
20								
21	1	1	2	1	1	1	2	5
22	4	2	4	4	4	3	5	1
23	3	3	3	4	4	4	4	1
24	5	5	3	3	3	1	5	

Table 2

Other Issues from the Westland Road/I-84/I-82 Interchange Area Transportation Plan Questionnaire

Respondent	Other Issues	Specific Locations	Other Comments
1		A dangerous intersection exists where I-82 drivers access Westland Road. It's on a curve and people pull out in front of you	
2	Realigning Westland Rd/Lamb Rd intersection and make Lamb to Westland the through	Keep access away from interchange ramps.	Realign Livestock Rd and Stafford Hansell Rd away from I-84 interchange ramps
3	Proper zoning for likely use (eliminate EFU zoning). Access/Frontage road that serves western areas and gets across railroad tracks		
4			
5			
6	Narrow bridges over irrigation ditches. Lack of fresh water and sewage infrastructure. Railroad crossings. Additional railroad spurs to facilitate intermodal transport	Westland Rd/Lamb Rd/Walker Rd intersection. Lamb Rd/Western Truck & Plant entrance.	
7			
8			
9	Improvements to allow better traffic from I-84 to Hermiston		
10		Westland Rd/Lamb Rd/Walker Rd & Westland Rd/Livestock Rd	
11			Interested in future access to Westland Road interchange via Livestock Rd

Table 2

Other Issues from the Westland Road/I-84/I-82 Interchange Area Transportation Plan Questionnaire

Respondent	Other Issues	Specific Locations	Other Comments
12			
13	Water and Wastewater issues	Whole area	
14	Traffic signals & Traffic Congestion	Lamb Rd/Westland Rd	
15	Lamb Rd/Walker Rd/Westland Rd intersection needs to be redesigned and rebuilt	Improve Westland Road railroad crossing, improve access to NW Livestock Rd	
16	Land use zoning of surrounding area	Land east of NW Livestock Rd	
17	Railroad impact on Westland Rd traffic	Lamb Rd/Westland Rd	
18	Need to consider availability of infrastructure when reviewing land development potential. Need to address timing of roadway improvements relative to development	I-84 interchange and overpass and access plan for county roads north and south of interchange	
19			
20			
21			
22		Safety issue with traffic turning left from Lamb Rd to Westland Rd	
23			
24	Interior access, Access management, lane widths, safety	Safe connection of Walker to Westland,	

TASK 3.6.1
PROJECT NEWSLETTER #1

UMATILLA COUNTY WESTLAND ROAD/I-84/I-82 INTERCHANGE AREA TRANSPORTATION PLAN

Umatilla County and Oregon Department of Transportation Region 5

Newsletter #1 January 2003

What is the Westland Road/I-84/I-82 Interchange Area Transportation Plan?

Umatilla County and the Oregon Department of Transportation (ODOT) have recently begun a project to develop an interchange area transportation plan for the Westland Road area. A consultant team, led by H. Lee & Associates, has been hired to conduct the study. The intent of the study is to properly plan for necessary transportation improvements and management strategies to maintain acceptable traffic operations at the Westland Road and Lamb Road interchanges when future development occurs.

Development pressure has been increasing in the Westland Road/I-84/I-82 interchange area as industries seek locations for expanding facilities and tourist/commercial businesses look to capture opportunities related to high traffic volumes on I-84 and I-82. Also, Umatilla County's proposed Enterprise Zone which encompasses the study area may potentially accelerate development due to tax deferment benefits.

Study Area

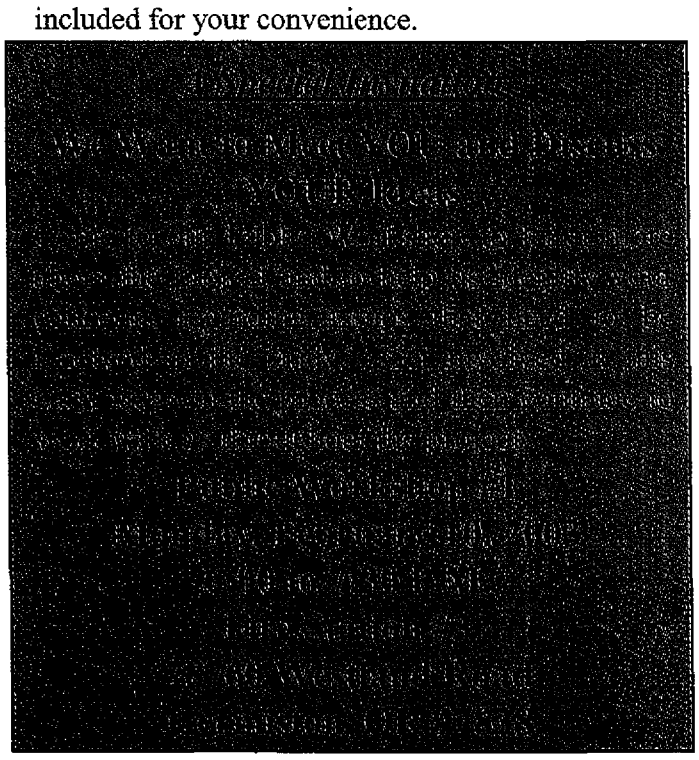
The Westland Road/I-84/I-82 interchange area is approximately 640 acres and is located in northwest Umatilla County. The major roadways in the study area are:

- Westland Road from I-84 to Agnew Road
- Lamb Road from I-82 to Westland Road
- NW Livestock Road
- Cottonwood Bend Road
- Stafford Hansell Road
- Colonel Jordan Road

How Can I Get Involved?

Your input is very important in developing the interchange area transportation plan. Public input is a key component in this study. Through the study process, the consultant team will provide opportunities for the public to be involved in the development of the plan. Two public workshops, a public survey, and stakeholder interviews will be used to solicit public input. Stakeholders are also a part of a committee that meets monthly on this project. To be placed on the newsletter mailing list, contact H. Lee & Associates at (800) 354-2687.

Below is an invitation to attend the first public workshop. Also, attached to this newsletter is a questionnaire soliciting your input to be returned to Umatilla County by February 28, 2003. A self addressed envelope for the survey has been included for your convenience.



TASK 3.6.2
PROJECT NEWSLETTER #2

UMATILLA COUNTY WESTLAND ROAD/I-84/I-82 INTERCHANGE AREA TRANSPORTATION PLAN

Umatilla County and Oregon Department of Transportation Region 5

Newsletter #2 Spring/Summer 2003

Draft Westland Road/I-84/I-82 Interchange Area Transportation Plan

A Draft Westland Road/I-84/I-82 Interchange Area Transportation Plan has been produced and ready for review. Also, ordinances to adopt the plan as an amendment to the Umatilla County Transportation System Plan has also been prepared. These documents are available to the public upon request by calling H. Lee & Associates at (800) 354-2687.

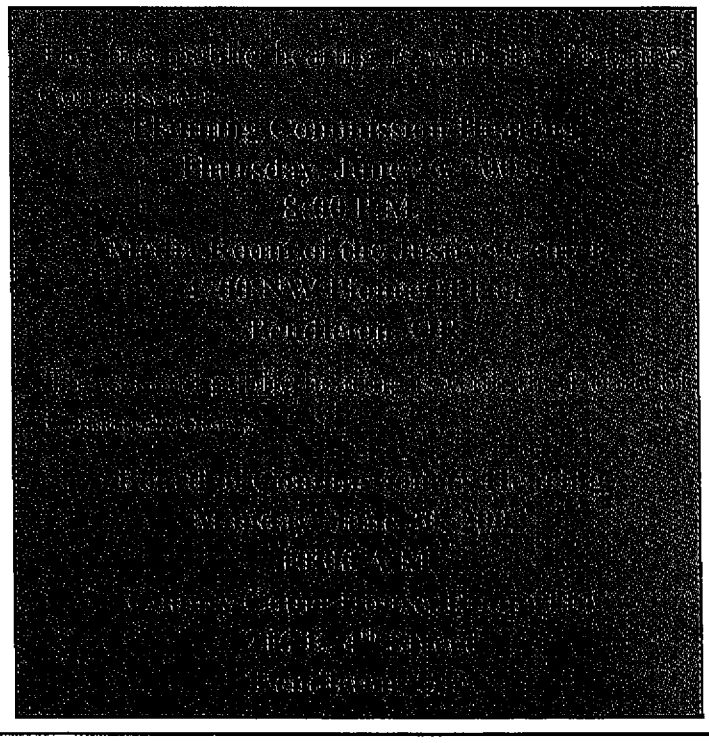
Major Findings

The major findings are as follows:

- The Westland Road/Lamb Road/Walker Road intersection will need to be realigned by 2023.
- The existing study area with its commercial and industrial zoning has well in excess of over 20-years of developable lands and therefore no rezoning of EFU is being recommended.
- The Westland Road railroad crossing north of Westport Lane needs to be improved.
- Westland Road is almost at existing standards. By overlaying both the non-paved shoulders and roadway in the next scheduled maintenance, Westland Road can be improved to the rural major collector standard of 32 feet.
- A local street and an access management plan has been developed around the Westland Road and Lamb Road interchanges to protect the interchange areas from local accesses to close to the interchange. The current standards in the Umatilla County Transportation System Plan currently calls for a minimum spacing of 1320 feet from the interchange ramps. This plan reinforces this standard by creating a local street and access management plan how this standard can be achieved.

How Can I Get Involved?

Your input is very important in developing the interchange area transportation plan. Public input is a key component in this study. We have two hearing scheduled below to obtain public input. Based on this public input and review by the Umatilla County Planning Commission and Board of Commissioners, the plan and implementing ordinances will be modified. Once all comments are addressed, adoption of these documents will be sought.



TASK 3.7.1
PUBLIC WORKSHOP #1

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: Public Workshop Summary #1 – February 10, 2003

Introduction

The first Pubic Open House for the Westland Road Interchange Area Management Plan occurred on February 10, 2003. The purpose of the meeting was to solicit input from stakeholders in the study area. The agenda for the meeting is listed below.

Public Open House Agenda

1. Sign In and Meeting Agency Staff and Consultants
2. Introduction to Project
3. Group Map Exercise – Post-it Notes on Map with Comments
4. Group Summary of Major Issues
5. Closing Remarks

Summary of Mapping Input

Four maps were displayed at the Public Open House. These maps were labeled zoning issues, traffic/congestion issues, safety issues, and other issues. The purpose of these maps was for the public to use post-it notes to write their comments and issues down and place them on the appropriate map. Below is a list of comments that were recorded on the maps.

Zoning Map

- The tourist commercial property in the northwest quadrant of the I-84/Westland Road interchange should be considered for rezoning to light industrial.

- The area between Noble Road and the three Barton tax lots should be considered for rezoning from EFU to light industrial.

- Roger Bound's property adjacent to the northeast quadrant of the I-82/I-84 interchange should be considered for rezoning from EFU to light industrial.

- The tourist commercial property in the southwest quadrant of the Westland Road/Lamb Road intersection may be the site of a second gas power generator. Therefore, it should be concerned to be rezoned from tourist commercial to light industrial.

Traffic/Congestion Issues

- Freeway access should be considered at Bridge Road.
- A plan should be designed to include connectivity among various uses.
- Seasonal truck traffic impacts Walker Road. During peak times, approximately 200 trucks turn from Walker Road to Lamb Road or Westland Road.
- Interior roadways should be designed to accommodate larger parcels.
- The peak hour of congestion is seasonal traffic generated by agricultural uses.
- The roadway and intersections should be designed with trucks in mind. Wider lanes and longer turning radii are needed.
- The curve is too sharp for truck traffic at Westland Road and Cottonwood Bend Road.
- The northern Lamb-Weston driveway averages 125 trucks per day. This increases to over 500 trucks per day from September through November.
- The Lamb-Weston site generates daily traffic from 450 employees.
- Stafford Hansel Road should be improved to current county standards.
- A northbound left turn lane at the Westland Road/I-84 Westbound Ramp intersection should be considered.
- Stafford Hansel Road is too close to the freeway ramps.
- There are traffic congestion issues at the following intersections: Westland Road/Lamb Rd/Walker Road, Westland Road/southern Lamb Weston driveway, Westland Road/northern Lamb Weston driveway.

Safety Issues

- Intersections with safety concerns include the following: Westland Road/Lamb Road/Walker Road, Westland Road/Cottonwood Bend Road, Westland Road/southern Lamb Weston driveway, and Westland Road/northern Lamb Weston driveway.

- Westland Road should be widened to three lanes for its entire length.

- There is a narrow bridge in the vicinity of Westland Road and the northern Lamb Weston Driveway.

- There is a potential accident problem along Westland Road where traffic from Lamb Road enters. Many close calls were observed.

- The intersection Westland Road and Lamb Road should be fixed. Increased turning radii and a potential for a traffic light should be considered as potential improvements.

- The right-of-way at the Westland Road/Lamb Road intersection should be changed to make Lamb Road and the north leg of Westland Road the through movement. The south leg of Westland Road should be stopped.

- The Westland Road railroad crossing should be fixed to accommodate truck movement.

- The westbound on-ramp at the Westland Road/I-84 interchange should be fixed.

- Stafford Hansel Road should be routed around the Western Express (Shell Truck Stop) to provide more distance between it and the I-84 Eastbound off/on ramps.

- The Livestock Road connection to Westland Road should eventually be eliminated. There is a sight distance problem at this intersection.

Other Issues

- Additional industrial zoning should be considered for property west of Walker Road and north of Lamb Road.

- Better signage should be added to the study area. The signs should be readable at night and be reflective.

- Driveways along Westland Road should be consolidated. Access onto Westland Road should be minimized. What type of incentives could be given to achieve this?

- The Westland Road/Lamb Road/Walker Road intersection needs to be improved.
- Street signs need to be added at Westland Road/Agnew Road and Westland Road/Cottonwood Bend Road.
- Additional future Umatilla Army Depot access along I-82 should be considered.
- What funding mechanisms are there to pay for potential improvements in the study area?
- The Westland Road at-grade railroad crossing should be rebuilt.
- How are water and sewer issues going to be dealt with in the study area?
- EFU zoning around the Westland Road interchange area should be abandoned. Rezoning of adjacent EFU land to tourist commercial or light industrial should be considered.
- Access to the industrial areas adjacent to Westland Road is a concern.
- Stafford Hansel Road should be extended to connect with the Umatilla Army Depot exit on I-84.
- There is a southbound on-ramp merge issue with the I-82 southbound on-ramp at Lamb Road.

Group Summary of Major Issues

- Minimize railroad crossings
- Farmers south of I-84 use Westland Road to access Hermiston – transportation facilities need to accommodate farmers to Hermiston
- Need to balance rural residential and industrial uses. Safety regarding mixing these uses is a big concern.
- With the future conversion of the Umatilla Army Depot to domestic use, more industrial land may not be needed.
- For industrial park uses, 10 to 15 acres are needed to support regional users such as Roadway and Conway.
- Larger industrial uses such as a distribution center may need between 10 and 100 acres for their operation.

- Since the study area is a crossroads between I-82 and I-84, it may be an ideal location for a northwest distribution center.
- There are water and sewer limitations in the study area.
- Tourist commercial zoning should be downplayed in the study area.
- The development of an office park concept with industrial/flex space may work in the area.
- There is a crime and security issue in the area.
- The study area is in a critical groundwater area.

UMATILLA COUNTY, WESTLAND ROAD/I-84/I-82 INTERCHANGE AREA TRANSPORTATION PLAN

Public Open House #1
February 10, 2003

Attendance Sheet

	Name	To be added to the mailing list, please provide your address
1	Bob Foster	491 Ash St. L.O. Or. 97034
2	ROGER BOUNDS	POBox 148 HERMISTON 97838
3	Dennis D. Doherty	Courthouse, Pendleton
4	Frank Nelsen	PO Box 705 Hermiston OR 9783
5	Emmett WALKER	" "
6	KALVIN R. KEES	P.O. Box 705 Hermiston, OR 97838
7	Bob Barton	P.O. Box 4 Hermiston OR 97838
8	Rich Barton	77659 Col. Jordan Rd. Hermiston Or 97838
9	SUE DAGGETT	PORT OF UMATILLA Box 879 Umatilla 97882
10	Delbert Gehrke	28790 Westport Lane Hermiston OR 97838
11	George L. Ruby	PO Box 459 Pendleton Or. 97801
12	Cheryl Jarvis-Smith	2012 Island Ave, La Grande OR 97850
13	Dennis Olsen	
14	Hann. Lee	
15	Tamra Mabbott	Co Planner
16		
17		
18		
19		
20		

TASK 3.7.2
PUBLIC WORKSHOP #2

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: Public Workshop Summary #2 – April 17, 2003

Introduction

The second Pubic Open House for the Westland Road Interchange Area Management Plan occurred on April 17, 2003. The purpose of the meeting was to present the existing conditions and draft alternatives. The agenda for the meeting is listed below.

Public Open House Agenda

1. Sign In and Meeting Agency Staff and Consultants – 7:00 – 7:30 P.M.
2. Presentation of Existing Conditions and Draft Alternatives – 7:30 – 8:00 P.M.
3. Group Exercise Commenting on Existing Conditions and Draft Alternatives
4. Group Discussion Summarizing Public Input
5. Closing Remarks and Discussion of Project Schedule and Future Meeting Dates

The Public Open House #2 was not well attended. Most of the stakeholders attended the TAC meeting earlier that day and opted not to attend the Public Open House since the same material was to be presented.

Summary

The main focus of the Public Open House was to discuss a technical memorandum summarizing the existing conditions and future forecast. The major finding of the technical memorandum was that there is a surplus of land in the study area beyond the 20-year land demand. Two traffic forecast scenarios were developed to determine the range of traffic impacts that could be expected in 20 years. Both the high and low growth scenarios yielded only a most amount of traffic impacts.

The only major traffic congestion problem identified was at the Westland Road/Lamb Road/Walker Road intersection. This intersection has an odd alignment and traffic control that yields poor traffic operations in the future. The need for realignment was identified.

Stakeholder Comments are listed below:

- Stakeholders did not like the 1320 foot spacing standard from the interchange ramps. They feel that this would impede economic development in the study area.

- There is a concern that realigning Lamb Road and the northern leg of Westland Road to have the traffic right-of-way would result in excessive speed.

- Some streetscape should be considered. Palm Springs was given as an example.
- Hermiston Issues

    - UGB very far away
    - City no problem with County development
    - City has problem with urban density in the county
    - City has 400 acres of industrial land available
    - Port of Umatilla has 600 acres of industrial land available
    - City services are approaching capacity but has enough to support its existing inventory

- Heavy freight uses would work in study area as well as intermodal w/ railroad

- System Development Charge code language should be considered and implemented

- An interim standard process should be developed

UMATILLA COUNTY, WESTLAND ROAD/I-84/I-82 INTERCHANGE AREA TRANSPORTATION PLAN

Public Open House #2
April 17, 2003

Attendance Sheet

	Name	To be added to the mailing list, please provide your address
1	CLINT SPENCER CITY of HERMISTON	180 NE 2ND ST HERMISTON (ALREADY ON LIST)
2	Ray and Jeanne Dargatz	
3	Bob Barton	~~PO~~
4	KALVIN R. KEYS	P.O. Box 705 Hermiston
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TASK 4.1
DEMOGRAPHIC REPORT

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: Land Inventory and Demographic Report

LAND INVENTORY

The study area zoning was identified based on information obtained from Umatilla County. Attachment 1 shows the zoning within the project study area.

There area five major types of zoning designations within the study area boundaries. These zoning designations are commercial, industrial, rural residential (RR-4), exclusive farm use (EFU), and agribusiness.

The commercially zoned property within the study area is in two general areas. The first commercially zoned area is south of Lamb Road between I-82 and Walker Road. It is approximately 14.3 acres. The second commercial area within the study area is around the Westland Road interchange at I-84. There are five parcels south of I-84 immediately adjacent to the freeway and one parcel in the northwest quadrant of the Westland Road/I-84 interchange. Four of the five commercially zoned properties south of I-84 is the Western Express/Shell Truck Stop, which is approximately 10.2 acres. The fifth parcel south of I-84 is owned by the Barton's and is approximately 18.6 acres. The one parcel in the northwest quadrant of the Westland Road/I-84 interchange is the proposed Petro Stopping Center site and is approximately 13.6 acres. The total amount of tourist commercial zoned property within the study area is 56.7 acres.

There are three distinct industrial zoned areas within the study area. The first area is the most northern area of the study area that is bounded by Westland Road to the north and west, the Westland Canal and Cottonwood Bend Road to the east, the Union Pacific Railroad to the south, and Walker Road/Westland Road to the west. The second distinct industrial area is bounded by Lamb Road to the north, I-84 to the south, east of I-82 to the east, and Westland Road to the west. The third industrially zoned area within the study area is south of I-84 and east of Colonel Jordan Road. The industrially zoned property within the study area is comprised of approximately 515 acres.

There is a limited amount of rural residential land within the study area. The rural residential area is located along the west side of Agnew Road south of Westland Road. At the Umatilla River, this area extends west of Agnew Road to form a reverse 'L".

An approximately 33 acre parcel at the northeast quadrant of the Westland Road interchange with I-84 is zoned agribusiness.

The remainder of the zoning within the study is exclusive farm use (EFU). Property owners of EFU land adjacent to Stafford Hansel Road; between I-82, I-84, and the existing industrially zoned properties, and east of Westland Road and south of the Union Pacific Railroad have all expressed an interest in having their properties rezoned to either commercial or industrial zoning.

Specific information available from the Umatilla County Assessor's Office for each parcel within the study area is defined in Attachment 2.

EXISTING USE OF PROPERTY WITHIN STUDY AREA

A qualitative field evaluation was made of the existing uses within the study area. The major uses in the study are listed below:

- Shell Truck Stop
- Barton Industries
- Freightliner Truck Shop
- Lamb Weston
- Natural Gas Power Generator
- Kaybe Orchards
- American Onion

The land uses within the study area are spaced sporadically and are not generally land intensive. Most of the existing land uses have a significant potential for expansion on-site or redevelopment.

DEMOGRAPHIC INFORMATION

The population information for Umatilla County is summarized in Table 1. Based on a comparison of 1990 and 2000 population in Umatilla County, the entire county's population grew by 19.1 percent. This translates to an annual population growth rate of 0.88 percent for both the incorporated and unincorporated areas. The unincorporated areas of the county grew by 15.3 percent from 1990 to 2000. The unincorporated area annual population growth rate from 1990 to 2000 was 0.72 percent. Both the average county and unincorporated area growth rates are very low. This trend indicates slow growth. However, certain areas of Umatilla County grew at a much higher rate such as the City of Umatilla and Hermiston. This indicates that although much of Umatilla County's growth between 1990 and 2000 was relatively stagnant, significant growth in pockets of the county can grow significantly if the right conditions exist.

The most recent employment projections available are from the Office of Economic Analysis (OEA), State of Oregon. The OEA data is from 1997. Updated employment forecasts are expected sometime this year. Table 2 summarizes the OEA employment projections for Umatilla County.

Table 1. 1990 and 2000 Population of Umatilla County

Area	1990 Population	2000 Population	Percent Change Between 1990 and 2000
Umatilla County	59,249	70,548	19.1%
Adams	223	297	33.2%
Athena	997	1,221	22.5%
Echo	499	650	30.3%
Helix	150	183	22.0%
Hermiston	10,040	13,154	31.0%
Milton-Freewater	5,533	6,470	16.9%
Pendleton	15,126	16,354	8.1%
Pilot Rock	1,478	1,532	3.7%
Stanfield	1,568	1,979	26.2%
Ukiah	250	255	2.0%
Umatilla	3,046	4,978	63.4%
Weston	606	717	18.3%
Unincorporated	19,733	22,758	15.3%

Source: 2000 US Census

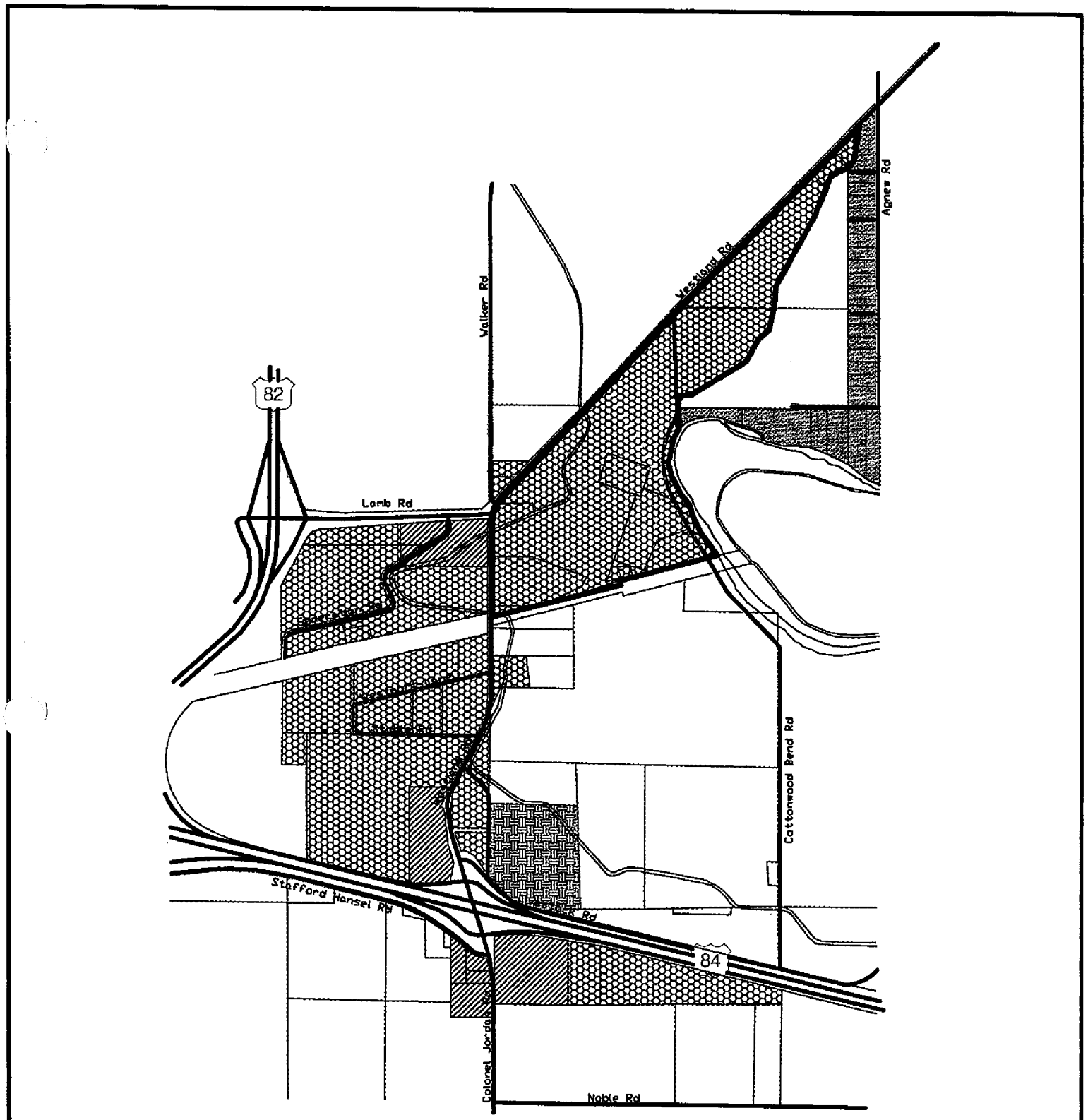
Table 2. 2000 to 2020 Employment Forecast

Area	1990 Employment	2000 Employment	2020 Employment	2000 to 2020 Employment Annual Growth Rate
Umatilla County	21,060	26,313	29,766	0.62

Source: Office of Economic Analysis, State of Oregon

Based on the OEA employment projections from 2000 to 2020, Umatilla County is expected to have an annual employment growth of only 0.62 percent. This correlates at almost a similar rate as the population growth rate. Based on the OEA employment projections, Umatilla County is only expected to have modest increases in future employment.

Between 2000 and 2020, Umatilla County is expected to generate 3,453 new jobs. It is likely that most of the employment growth will occur within the urban areas of the larger cities within Umatilla County such as Hermiston, Milton-Freewater, Umatilla, and Pendleton. The unincorporated county areas are not expected to significantly compete with urban areas for job creation because of limited utilities and amenities available in the unincorporated areas.



Westland Road Interchange Area Transportation Plan

Attachment 1
Study Area Zone Map

LEGEND
- Tourist Commercial Zoning
- Industrial Zoning
- Rural Residential Zoning
- Agribusiness Zoning
- Exclusive Farm Use

NOT TO SCALE

Attachment 2. County Assessor Data by Tax Lot

Tax Lot #	Map #	Account #	Last	First	Middle Initial	Street Address	City	State	ZIP	Zone	Acres	Total Value (Land)	Total Value (Structures)	Total Value
01400	4N2700-00	116880	BOUNDS	ROGER	S	PO BOX 148	HERMISTON	OR	97838	EFU	65.50	31,000.00	0.00	31,000.00
01403	4N2700-00	117884	PETRO STOPPING CENTERS LP			6080 SURETY DR	EL PASO	TX	79905	LI,TC	81.14	822,050.00	103,160.00	925,210.00
01417	4N2700-00	149114	MEDELEZ TRUCKING LLC			1186 E PUNKIN CTR RD	HERMISTON	OR	97838	LI	7.62	254,120.00	332,730.00	586,850.00
01418	4N2700-00	156881	MEDELEZ TRUCKING LLC			1186 E PUNKIN CTR RD	HERMISTON	OR	97838	LI	4.05	126,360.00	0.00	126,360.00
01419	4N2700-00	156882	MEDELEZ TRUCKING LLC			1186 E PUNKIN CTR RD	HERMISTON	OR	97838	LI	3.29	114,510.00	0.00	114,510.00
01701	4N2700-00	142485	WESTERN IRRIGATION CO THE							EFU	13.00	11,700.00	0.00	11,700.00
02601	4N2700-00	116932	WESTERN INVESTMENTS INC			PO BOX 826	HERMISTON	OR	97838	TC	2.51	109,660.00	707,530.00	817,190.00
02606	4N2700-00	154553	WESTERN LAND & CATTLE INC			PO BOX 826	HERMISTON	OR	97838	TC	1.38	86,530.00	0.00	86,530.00
02607	4N2700-00	154554	WESTERN LAND & CATTLE INC			PO BOX 826	HERMISTON	OR	97838	TC	1.17	76,740.00	0.00	76,740.00
02604	4N2700-00	116938	WESTERN INVESTMENTS INC			PO BOX 826	HERMISTON	OR	97838	TC	5.28	148,100.00	0.00	148,100.00
00100	4N2725-A0	145211	UMATILLA ELECTRIC CO-OP ASSN			PO BOX 1148	HERMISTON	OR	97838	LI	3.30	41,280.00	0.00	41,280.00
00200	4N2725-A0	116888	FIRST OREGON LAND CORP			7500 OLD GEORGTOWN RD	BETHESDA	MD	20814	TC,LI	39.36	456,590.00	320.00	456,910.00
00201	4N2725-A0	149516	LAMB	ROBERT	R	PO BOX 843	JOSEPH	OR	97846	LI	4.35	185,580.00	631,520.00	817,100.00
00202	4N2725-A0	157926	FIRST OREGON LAND CORP			7500 OLD GEORGTOWN RD	BETHESDA	MD	20814	LI,TC	31.03	475,350.00	0.00	475,350.00
00400	4N2725-A0	144879	H-4 FARMS INC			PO BOX 110	HERMISTON	OR	97838	LI	1.34	54,230.00	285,630.00	339,860.00
00500	4N2725-A0	147610	UMATILLA PORT OF	C/O AMERICAN ONION INC, AG	ATTN: TAX DEPT	28790 WESTPORT LN	HERMISTON	OR	97838	LI	9.04	185,040.00	713,960.00	899,000.00
00501	4N2725-A0	153927	HAMMELL TRANSPORT SERVICE INC			PO BOX 189	HERMISTON	OR	97838	LI	5.00	149,710.00	252,970.00	402,680.00
00502	4N2725-A0	153928	UMATILLA PORT OF			PO BOX 879	UMITILLA	OR	97882	LI	15.82	230,890.00	0.00	230,890.00
00503	4N2725-A0	156439	UMATILLA PORT OF			PO BOX 879	UMITILLA	OR	97882	LI	7.64	163,780.00	0.00	163,780.00
00600	4N2725-A0	143635	BT PROPERTY LLC		ATTN: TAX DEPT	PO BOX 28606	ATLANTA	GA	30359	LI	15.85	257,320.00	1,362,350.00	1,619,670.00
00700	4N2725-A0	149098	BOUNDS	ROGER	S	PO BOX 148	HERMISTON	OR	97838	LI	4.38	137,880.00	0.00	137,880.00
02206	4N28C0-00	118203	LAMB-WESTERN INC			PO BOX C-1900	TRI CITIES	WA	99302	LI	85.99	308,410.00	35,256,820.00	35,565,230.00
02210	4N28C0-00	139646	UMATILLA ELECTRIC CO-OP ASSN			PO BOX 1148	HERMISTON	OR	97838	LI	0.52	17,610.00	0.00	17,610.00
02216	4N28C0-00	139645	LAMB-WESTERN INC			PO BOX C-1900	TRI CITIES	WA	99302	LI	0.50	6,330.00	0.00	6,330.00
02218	4N28C0-00	118206	BEATRICE PUBLIC REFRIG SER INC	C/O AMERICOLD CORP OFFICES		PO BOX 42165	HOUSTON	TX	77242	LI	12.40	122,920.00	2,578,030.00	2,700,950.00
02219	4N28C0-00	139644	UMATILLA ELECTRIC CO-OP ASSN			PO BOX 1148	HERMISTON	OR	97838	LI	0.77	22,180.00	0.00	22,180.00
02220	4N28C0-00	151029	HERMISTON GENERATION CO & PACIFICORP			825 NE MULTNOMAH	PORTLAND	OR	97239	LI	12.94	600,000.00	0.00	600,000.00
02700	4N28C0-00	118213	SMITH	DEAN & CONNIE		29224 BLOOM RD	HERMISTON	OR	97838	RR-4	7.09	117,340.00	62,750.00	180,090.00
02701	4N28C0-00	146967	CALLAHAN	GERALD & SUSAN	M & E	PO BOX 931	HERMISTON	OR	97838	RR-4	3.95	69,530.00	53,470.00	123,000.00
02703	4N28C0-00	147745	LOWRANCE	WILLIAM & LORETTA	D & E	29278 BLOOM RD	HERMISTON	OR	97838	RR-4	4.17	76,860.00	65,060.00	141,920.00
02704	4N28C0-00	147746	MIDDLETON	ROBERT & CAROL	L & R	29270 BLOOM RD	HERMISTON	OR	97838	RR-4	4.22	77,570.00	120,060.00	197,630.00
02900	4N28C0-00	118215	HERMISTON GENERATING GO LP			78145 WESTLAND RD	HERMISTON	OR	97838	LI	1.98	62,490.00	75,430.00	137,920.00
02903	4N28C0-00	118216	BISHOP	KAREN		28875 BRIDGE RD	HERMISTON	OR	97838	LI	1.27	54,720.00	0.00	54,720.00
03000	4N28C0-00	118218	COOK	LAQUITA	J	2152 HAW CREEK CIRCLE	EMMET	ID	83617	LI	12.30	122,440.00	0.00	122,440.00
03002	4N28C0-00	118219	HERMISTON GENERATING CO & PACIFICORP			78145 WESTLAND RD	HERMISTON	OR	97838	LI	1.93	62,560.00	0.00	62,560.00
03100	4N28C0-00	118220	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	14.04	3,630.00	0.00	3,630.00
03200	4N28C0-00	118221	HERMISTON GENERATING CO & PACIFICORP			78145 WESTLAND RD	HERMISTON	OR	97838	LI	5.11	94,210.00	20,070.00	114,280.00
03300	4N28C0-00	118222	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	14.51	2,340.00	0.00	2,340.00
03400	4N28C0-00	118223	NORTHWEST LIVESTOCK COMM	C/O MILLER GARY		PO BOX 134	HERMISTON	OR	97838	A-B	32.93	501,450.00	114,690.00	616,140.00
03490	4N28C0-00	118225	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	27.00	3,070.00	250.00	3,320.00
03492	4N28C0-00	118226	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	2.00	960.00	0.00	960.00
03500	4N28C0-00	118227	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU,LI	5.97	1,940.00	0.00	1,940.00
03501	4N28C0-00	118228	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	0.57	5,050.00	36,940.00	41,990.00
03502	4N28C0-00	118229	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	LI	0.50	25,300.00	0.00	25,300.00
03503	4N28C0-00	118230	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	75.25	36,510.00	66,700.00	103,210.00
03505	4N28C0-00	118231	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	155.87	65,800.00	3,780.00	69,580.00
03506	4N28C0-00	144903	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	7.00	2,660.00	0.00	2,660.00
03507	4N28C0-00	152309	GASS	HOWARD	S	C/O JANET M SEVERSON 205 NE 4TH ST	HERMISTON	OR	97838	EFU	35.38	13,970.00	0.00	13,970.00
06400	4N28C0-00	118286	BARTON PROPERTIES INC			1390 SW 11TH	HERMISTON	OR	97838	TC,EFU,LI	116.61	61,820.00	2,870.00	64,690.00
06402	4N28C0-00	118287	BARTON	RICHARD	R	77609 COL JORDAN RD	HERMISTON	OR	97838	LI	7.33	123,800.00	209,950.00	333,750.00
00500	4N2819-A0	122142	GASS	MARGARET	A	26400 WILLARD RD	BEND	OR	97701	LI,EFU-40	54.25	12,570.00	0.00	12,570.00
00502	4N2819-A0	122157	RUSSELL	RICHARD & DORENE	A	C/O SANEZ REYES JR & SELMA, AG PO BOX 359	HERMISTON	OR	97838	LI	1.17	57,500.00	83,450.00	140,950.00
00503	4N2819-A0	139253	RUSSELL	RICHARD & DORENE	A	C/O SANEZ REYES JR & SELMA, AG PO BOX 359	HERMISTON	OR	97838	LI	0.83	34,680.00	12,090.00	46,770.00
00504	4N2819-A0	139254	RUSSELL	RICHARD & DORENE	A	C/O SANEZ REYES JR & SELMA, AG PO BOX 359	HERMISTON	OR	97838	LI	1.14	40,300.00	0.00	40,300.00
00600	4N2819-A0	122158	FLORES	PEDRO & RAFAELA		PO BOX 923	UMATILLA	OR	97882	RR-4		38,590.00	98,210.00	136,800.00
00601	4N2819-A0	122160	RIMBEY	ADRION	T	78470 AGNEW RD	HERMISTON	OR	97838	RR-4		37,480.00	60,230.00	97,710.00
00700	4N2819-A0	122162	WATKINS	WILLIAM & LAVANDA	F	78486 S AGNEW RD	HERMISTON	OR	97838	RR-4		44,470.00	43,730.00	88,200.00
00800	4N2819-A0	122164	DAREY	MARVIN & IRENE	E & A	78522 AGNEW RD	HERMISTON	OR	97838	RR-4		46,170.00	51,110.00	97,280.00
00900	4N2819-A0	122165	RODRIGUEZ	PIOQUINTO & VICTORIA		78528 AGNEW RD	HERMISTON	OR	97838	RR-4		45,510.00	50,530.00	96,040.00
01000	4N2819-A0	122167	HAWLEY	LEO 2ND & PENNY	R & S	78544 AGNEW RD	HERMISTON	OR	97838	RR-4		444,470.00	67,120.00	511,590.00
01100	4N2819-A0	122168	CHAFFEE ETAL	RONALD	D	78566 AGNEW RD	HERMISTON	OR	97838	RR-4		42,770.00	39,530.00	82,300.00
01200	4N2819-A0	122170	HATCH	JULIE	A	78582 AGNEW RD	HERMISTON	OR	97838	RR-4		46,170.00	60,300.00	106,470.00
01300	4N2819-A0	122171	MOORE	GERALD & JOAN	A & A	78598 AGNEW RD	HERMISTON	OR	97838	RR-4		40,910.00	50,370.00	91,280.00
01400	4N2819-A0	122173	POLLOCK	SAMUEL & TRACEY	L & A	78614 AGNEW RD	HERMISTON	OR	97838	RR-4		46,170.00	49,220.00	95,390.00
01500	4N2819-A0	122174	CLARK	WILBURN & TREVA		2207 JACINTO RD	BOONEVILLE	MS	38829	RR-4		46,170.00	58,400.00	104,570.00
01600	4N2819-A0	122176	FORDICE	WILLARD & JUDY	K	78642 AGNEW RD	HERMISTON	OR	97838	RR-4		37,510.00	52,440.00	89,950.00
01700	4N2819-A0	122177	GASS	MARGRET	A	26400 WILLARD RD	BEND	OR	97701	RR-4		58,470.00	0.00	58,470.00
01703	4N2819-A0	148698	WHITTLE	BOB & CARMEN	A & M	PO BOX 829	HERMISTON	OR	97838	LI	1.10	388,880.00	9,000.00	397,880.00
00100	4N2819-D0	122179	TOMPKINS	STEVEN & APRIL	M & M	78368 AGNEW RD	HERMISTON	OR	97838	RR-4		56,750.00	60,040.00	116,790.00
00200	4N2819-D0	122180	MARLOW	JOHN & KRYSTA	V & J	78390 AGNEW RD	HERMISTON	OR	97838	RR-4		44,470.00	56,340.00	100,810.00
00300	4N2819-D0	112181	LEAL	ROSENDO & ADOLFO		PO BOX 1334	HERMISTON	OR	97838	RR-4		44,470.00	61,470.00	105,940.00
00400	4N2819-D0	122183	SEARLE	EDDIE & PATIENCE	S & S	78408 S AGNEW RD	HERMISTON	OR	97838	RR-4		34,200.00	26,950.00	61,150.00
00500	4N2819-D0	122186	CRAFTON	VANCE & DEBBIE	J & D	78430 S AGNEW RD	HERMISTON	OR	97838	RR-4		35,430.00	50,460.00	85,890.00
00600	4N2819-D0	122187	SWEEK	CURTIS & KATHLEEN		78444 AGNEW RD	HERMISTON	OR	97838	RR-4		35,430.00	62,770.00	98,200.00
00700	4N2819-D0	122189	HUMBERT	NED	E	78462 AGNEW RD	HERMISTON	OR	97838	RR-4		31,710.00	68,470.00	100,180.00
00800	4N2819-D0	122190	GASS	MARGARET	A	26400 WILLARD RD	BEND	OR	97701	LI,EFU-40	67.02	20,090.00	280.00	20,370.00
00900	4N2819-D0	146968	TOMPSON	JAMES	F	PO BOX 1096	BEMIDJI	MN	56619	RR-4	4.08	70,460.00	24,060.00	94,520.00
00901	4N2819-D0	152145	MCCOMBS	RICHARD	A	29870 BLOOM RD	HERMISTON	OR	97838	RR-4	4.11	70,870.00	91,490.00	162,360.00

TASK 4.2
LAND USE DISCUSSION REGARDING FUTURE DEVELOPMENT SUMMARIZED IN A TECHNICAL MEMORANDUM

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

MEMORANDUM

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: Future Development Potential Report

INTRODUCTION

To develop the range of potential future development in the study area, two growth scenarios were developed. A low scenario was developed that reflected the historical trend of development. In addition, a high scenario was developed that reflected an aggressive level of development within the study area.

LOW GROWTH SCENARIO

A low traffic forecast scenario consistent with the Office of Economic Analysis employment projections was developed as the conservative end of what could be expected to develop in the Westland Road/I-84/I-82 Interchange Area. The low traffic forecast was derived by first applying a background growth factor of 1.5 percent per year to the 2003 P.M. peak hour turning movement counts for 20 years to account for unforeseen traffic growth and through traffic volumes traveling through the study area. This annual background growth factor was derived from historical traffic count data available on a nearby facility (US 395 at the south city limits of Stanfield) with similar characteristics as Westland Road. The second step of the low traffic forecast was to account for the cumulative impacts of future industrial and commercial land within the study area.

The amount of future industrial and commercial land assumed to be developed in 2023 under the low traffic forecast scenario was based on applying the 0.62 percent annual employment growth rate for Umatilla County. This rate was derived from the most recent Office of Economic Analysis data. The only issue to resolve to apply the 0.62 percent annual employment growth rate is the existing employment count within the study area. Based on the aggregate daily local side street traffic volumes, local development in the study area generates roughly 1,613 daily traffic volumes. Assuming that the general type of existing development corresponds with the characteristic of warehouse development, the ITE Trip Generation daily warehouse trip generation rate for employees (3.89 daily trips per employee) was used to divide into the 1,613 daily trips to derive the estimated number of existing employees in the study area. This exercise resulted in an estimate of 414 existing employees.

Applying the 0.62 percent annual employment growth rate to the existing number of employees in the study area results in an estimate of 468 total employees in the study area by 2023. This results in a net increase of 54 new employees. Based on the daily warehouse trip generation rate for employees (3.89 daily trips per employee), the additional employees would generate 212 new daily trips. These new daily trips were converted to square footage of new warehouse development by dividing the daily trips by the daily square footage ITE Trip Generation rate for warehouse (4.96 daily trips per 1,000 square feet of warehouse). This results in approximately 43,000 gross square feet of new warehouse space by 2023. The 43,000 was rounded up to 50,000 gross square feet to develop the cumulative analysis.

There are three vacant commercial properties within the study area. To forecast build out conditions in 2023, it was assumed that each commercial site would build out at a maximum of 5,000 square feet of commercial/retail space. A total of 15,000 square feet was assumed to be developed by 2023 within the study area. With the limited base to attract patrons, 15,000 square feet of commercial/retail development seems more than reasonable.

Attachment 1 shows the assumed distribution of growth of new warehouse and commercial uses in the study area for the low growth scenario.

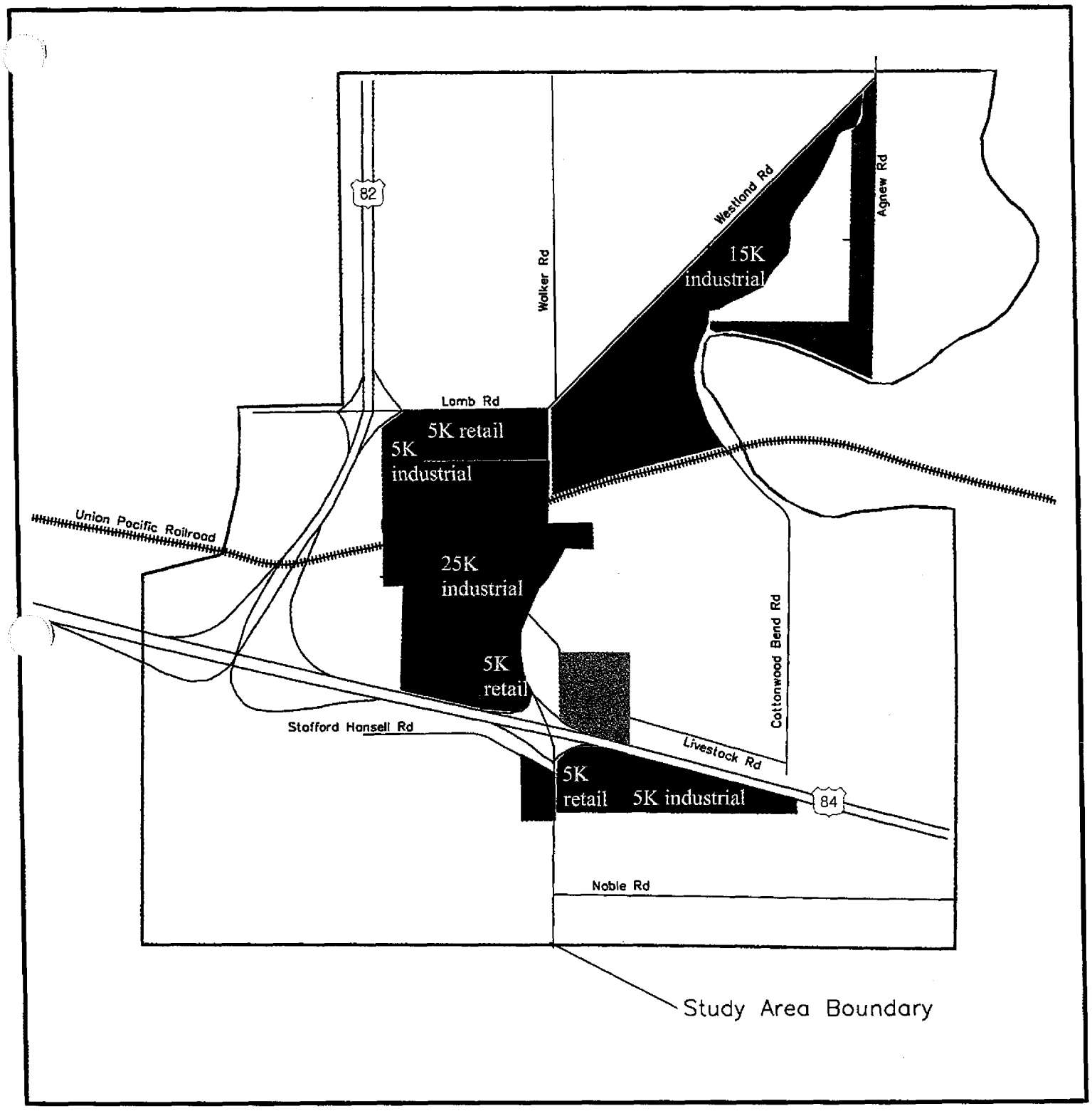
HIGH GROWTH SCENARIO

The study area is approximately 640 acres and has a significant potential for development. There are approximately 57 acres of commercially zoned land and 515 acres of light industrial zoned land. Based on field reconnaissance and inspection of an aerial photo of the study area, well over half of the land within the study area is available for development, increase in density, or redevelopment. Many of the large parcels with existing development are underutilized and could easily be expanded. Some transitionary uses such as agricultural storage sheds are prime for redevelopment should demand for a more intensive use materializes. Based on the available industrial land, it is not likely that the study area industrial land could be built out by 2023.

To conduct the high forecast scenario, 1,000,000 square feet of warehouse development was assumed. Based on a building floor area to gross site area ratio of 25 percent, this corresponds to a build out of approximately 18 percent of the available industrial land or approximately 92 acres of development. It should be noted that 1,000,000 square feet of future warehouse development corresponds to an increase of 1,275 new employees in the study area. The 1,275 increase in employees is approximately 37 percent of the total 20-year OEA employment forecast for Umatilla County. Based on the new employee count as it compares with the OEA employment forecast, the high traffic volume forecast is definitely on the very high end of forecasts for the study area.

As for the commercially zoned land, the high traffic forecast scenario doubled the future commercial development from the low traffic forecast scenario. So, under the high traffic forecast scenario, 30,000 square feet of commercial development was assumed to occur within the study area by 2023.

Attachment 2 shows the assumed distribution of growth of new warehouse and commercial uses in the study area for the high growth scenario.



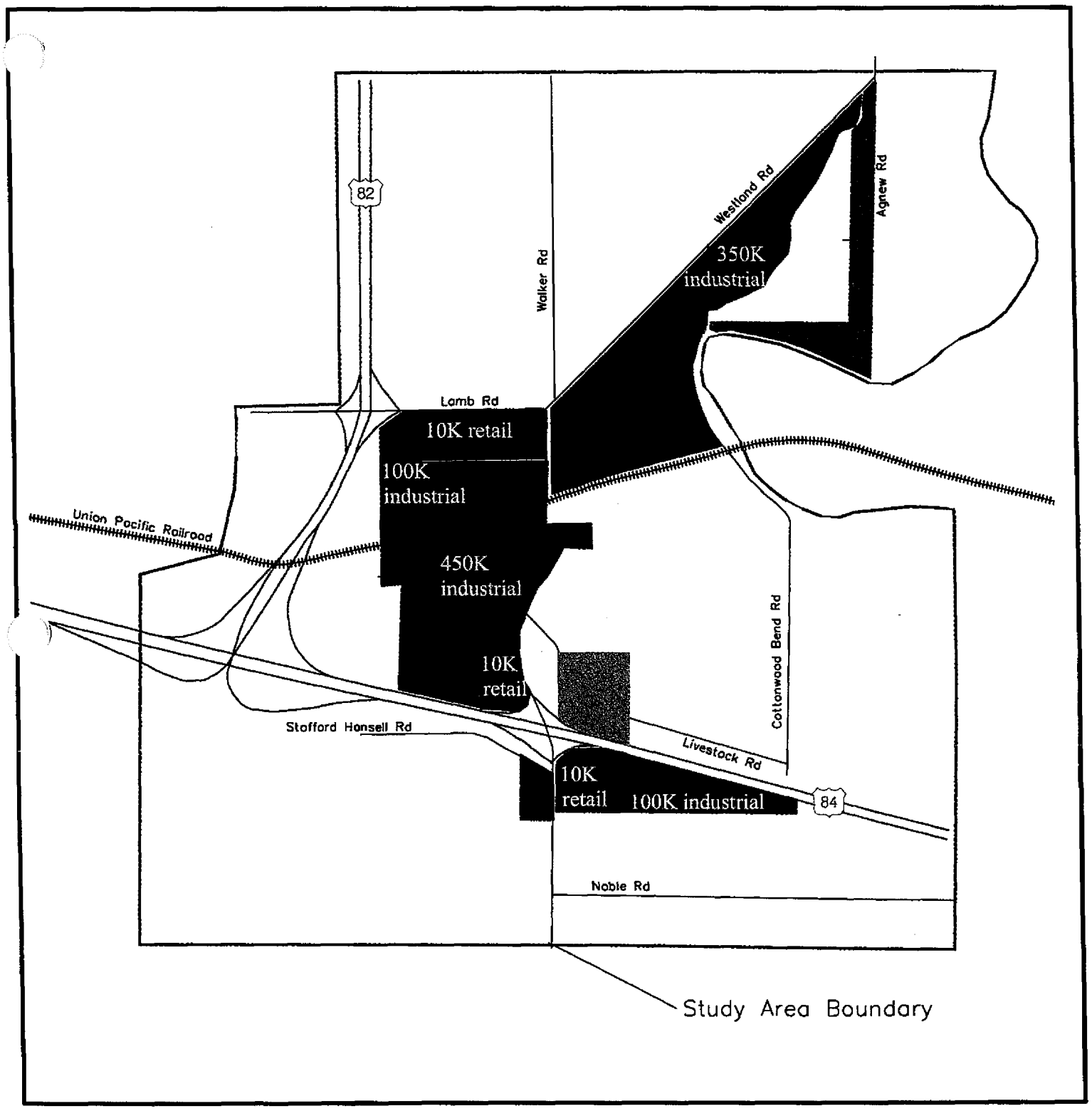
Westland Road Interchange Transportation Plan

Attachment 1
Future Land Use Growth Assumptions
for Low Traffic Forecast

LEGEND

- Commercial Zoning
- Industrial Zoning
- Rural Residential
- Agribusiness Zoning
- Exclusive Farm Use
- Study Area

NOT TO SCALE



Westland Road Interchange Transportation Plan

Attachment 2
Future Land Use Growth Assumptions
for High Traffic Forecast

LEGEND

- Commercial Zoning
- Industrial Zoning
- Rural Residential
- Agribusiness Zoning
- Exclusive Farm Use
- Study Area

NOT TO SCALE

TASK 4.3
EVALUATE DIFFERENCES IN FORECAST METHODOLOGIES

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

MEMORANDUM

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Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: Evaluation of Differences in Forecast Methodologies

TYPES OF TRAFFIC FORECAST METHODOLOGIES

Based on ODOT's 2001 Transportation System Planning Guidelines[1], there are four approved methodologies to forecast future traffic volumes. These methodologies are described below:

- Level 1 – Trending Forecast
  The trending forecast is based on historical traffic counts in the study area. The methodology requires existing traffic counts as well as 20-year old historical traffic counts to establish a growth rate. This methodology is typically employed in areas where traffic patterns are simple and that have low to moderate growth. It is the simplest methodology used to project future traffic volumes.

- Level 2 – Cumulative Analysis
  The cumulative analysis uses historical trending information as well as an examination of future development. This analysis requires a good understanding of development trends in the study area. Based on the understanding of future development, each area of projected development is assigned a trip making characteristic and those trips are manually assigned to the street network. The cumulative analysis methodology is typically used small cities where traffic patterns are not complex. This methodology is also best employed where significant shifting of traffic is not expected between alternatives since the difference in how the traffic patterns would change is to be done manually.

- Level 3 – Transportation Model
  A transportation model is a very sophisticated methodology in forecasting future traffic volumes. It requires a significant amount of traffic and land use data as well as specialized software. Transportation models are typically developed where there is a need to study complex alternatives that can affect traffic patterns significantly. Transportation models are good to compare alternatives to each other since they

[1] 2001 Transportation System Planning Guidelines, Oregon Department of Transportation, Transportation Development Division, May 2001.

effectively show the difference in travel behavior between alternatives. This forecast methodology is beyond the scope of this study process.

- Level 4 – Regional Transportation Model
  A regional transportation model is developed in a similar manner as the Level 3, Transportation Model except that it involves a larger study area. The study area in a regional model encompasses several urban areas as well as rural areas. It is typically employed at the Metropolitan Planning Organization (MPO) level. This forecast methodology is beyond the scope of this study process.

TYPES OF TRAFFIC FORECAST METHODOLOGIES EMPLOYED BY PREVIOUS STUDIES

Two other traffic studies have been completed in the area recently. The first study is the 2002 Umatilla County Transportation System Plan. The other traffic study completed was the Westland Road Developments Traffic Impact Study performed by Access Engineering in September 22, 2000.

The traffic projections in the 2002 Umatilla County Transportation System Plan were based on a Level 1 trending analysis. This is the simplest method of travel demand forecasting and is typically employed in rural areas. Umatilla County is mostly rural in nature and this type of analysis would be most relevant in most parts of the county.

The Westland Road Developments Traffic Impact Study is based on a Level 2 cumulative analysis. This traffic study analyzes the impacts of future developments in the Westland Road interchange area. Travel forecasts conducted in traffic studies to assess development impacts are typically Level 2 cumulative analyses.

TRAFFIC FORECAST METHODOLOGY USED FOR WESTLAND ROAD INTERCHANGE AREA STUDY

The 20-year, 2023 P.M. peak hour traffic volumes were the basis for the future alternatives analysis. Several methodology options were available to project the 2023 traffic volumes. Twenty-year historical traffic counts were available along I-82 and I-84 adjacent to the study area. Since I-82 and I-84 are regionally facilities with a wide influence area, this data does not correlate well with the profile of the study area. The study area is not regionally impacted and is mostly influenced by local conditions within the study area. Therefore, the regional historical growth factor methodology to project the study area traffic volumes was not employed.

The next methodology considered is referred by ODOT as a Level 2, Cumulative Analysis. This methodology considers background traffic growth from derived growth factors as well as considers the cumulative traffic impacts of future land developments. Since the regional growth factors were not representative of growth conditions in the study area and a more complex traffic forecast methodology such as a travel demand model is beyond the scope of the study, a Level 2, Cumulative Analysis was conducted to estimate the 2023 traffic volumes in the study area.

A 1.5 percent per year background growth factor was applied to the 2003 existing traffic volumes to account for unforeseen traffic growth and through traffic volumes traveling through the study area. This annual background growth factor was derived from historical traffic count data available on a nearby facility (US 395 at the south city limits of Stanfield) with similar characteristics as Westland Road. In addition, the cumulative impact of developing industrial and commercial land within the study area was added. Only two types of zoning with the potential for future development exist in the study area. These zoning types are industrial and commercial.

TASK 4.4
IDENTIFY EXISTING PLANNED IMPROVEMENTS IN THE AREA

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

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MEMORANDUM

To: Westland Road Interchange Area Management Team and TAC

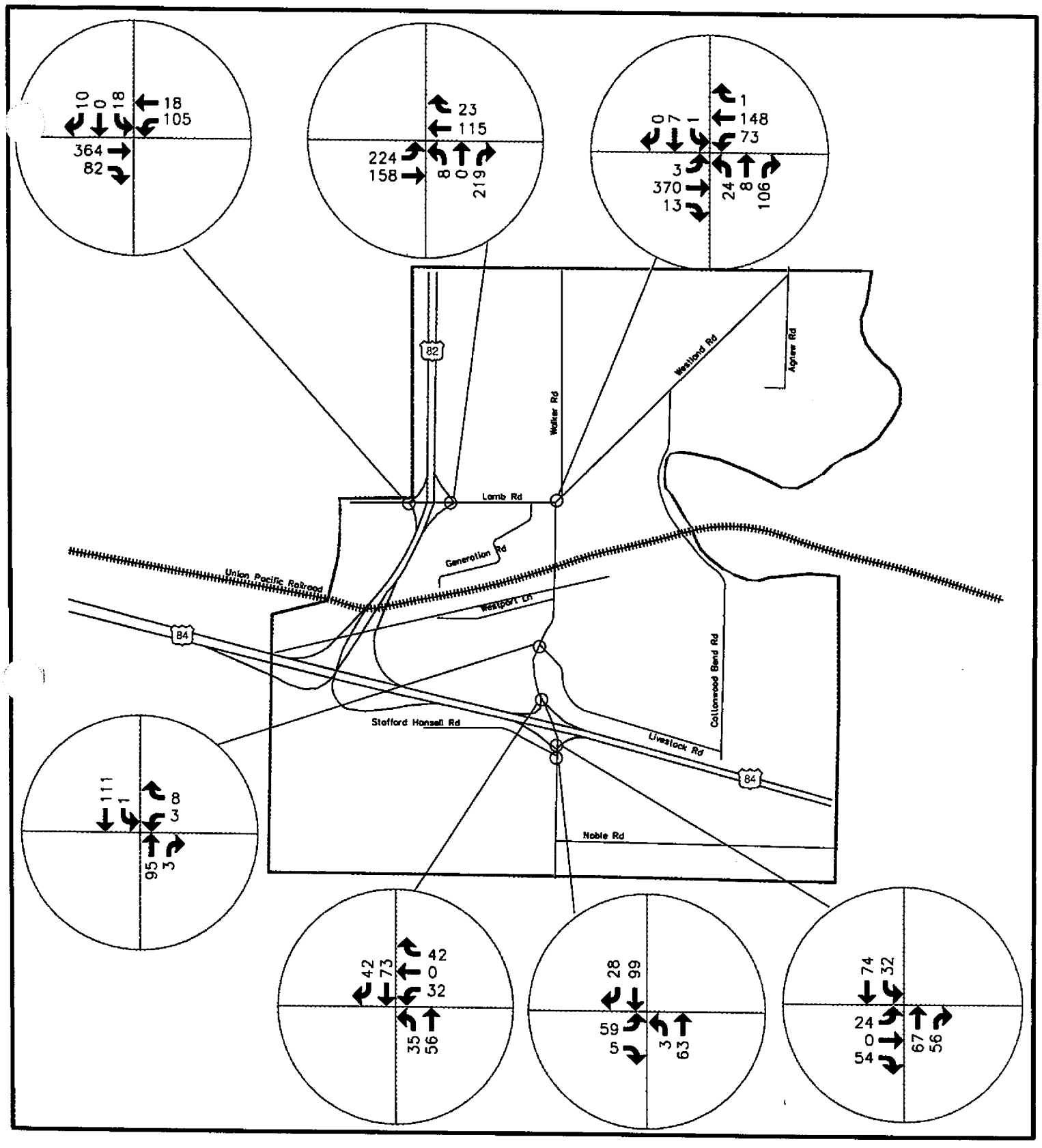
From: Hann Lee, H. Lee & Associates

Subject: Existing Planned Improvements in Study Area

Only one existing planned improvement is planned in the study area based on a review of the 2002 Umatilla County Transportation System Plan. This improvement is described below:

- Project #8 – Westland Road/Lamb Road/Walker Road
  The improvement description is to "align and reconstruct the intersection." The projected cost is $250,000.

TASK 4.5
PRODUCE 20-YEAR TRAVEL DEMAND FORECAST



Westland Road Interchange Transportation Plan

Figure 4-2
2023 P.M. Peak Hour Traffic Volumes
for Low Traffic Forecast

LEGEND
15 P.M. Peak Hour Traffic Volume

NOT TO SCALE

TASK 4.6
LEVEL OF SERVICE AND V/C ANALYSIS FOR 20-YEAR FORECAST

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Col Jordan/Stafford Hansell*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*5/7/2003*	Analysis Year	*Year 2023 - Low Density Alt*
Analysis Time Period	*PM Peak*		
Project Description	*Year 2023 - Low Density Alt*		
East/West Street:	*Stafford-Hansell Road*	North/South Street:	*Col Jordan Road*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*3*	*63*	*0*	*0*	*99*	*28*
Peak-Hour Factor, PHF	*0.59*	*0.59*	*0.80*	*0.78*	*0.78*	*0.78*
Hourly Flow Rate, HFR	*5*	*106*	*0*	*0*	*126*	*35*
Percent Heavy Vehicles	*20*	--	--	*20*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*59*	*0*	*5*
Peak-Hour Factor, PHF	*0.75*	*0.75*	*0.75*	*0.73*	*0.73*	*0.73*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*80*	*0*	*6*
Percent Heavy Vehicles	*20*	*20*	*20*	*20*	*20*	*20*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*5*						*86*	
C (m) (vph)	*1316*						*699*	
v/c	*0.00*						*0.12*	
95% queue length	*0.01*						*0.42*	
Control Delay	*7.7*						*10.9*	
LOS	*A*						*B*	
Approach Delay	--	--				*10.9*		
Approach LOS	--	--				*B*		

>

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Westland Rd/I-84 EB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*5/7/2003*	Analysis Year	*Year 2023 - Low Density Alt*
Analysis Time Period	*PM Peak*		
Project Description	*Year 2023 - Low Density Alt*		
East/West Street:	*I-84 Eastbound Ramps*	North/South Street:	*Westland Rd*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*67*	*56*	*32*	*74*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.83*	*0.83*	*0.80*	*0.80*	*1.00*
Hourly Flow Rate, HFR	*0*	*80*	*67*	*39*	*92*	*0*
Percent Heavy Vehicles	*7*	--	--	*41*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*24*	*0*	*54*
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*0.70*	*1.00*	*0.70*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*34*	*0*	*77*
Percent Heavy Vehicles	*50*	*0*	*50*	*43*	*0*	*43*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*					*LR*	
v (vph)		*39*					*111*	
C (m) (vph)		*1228*					*765*	
v/c		*0.03*					*0.15*	
95% queue length		*0.10*					*0.51*	
Control Delay		*8.0*					*10.5*	
LOS		*A*					*B*	
Approach Delay	--	--				*10.5*		
Approach LOS	--	--				*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Westland Rd/I-84 WB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*5/7/2003*	Analysis Year	*Year 2023 - Low Density Alt*
Analysis Time Period	*PM Peak*		
Project Description	*Year 2023 - Low Density Alt*		
East/West Street:	*I-84 Westbound Ramps*	North/South Street:	*Westland Rd*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*35*	*56*	*0*	*0*	*73*	*42*
Peak-Hour Factor, PHF	*0.69*	*0.69*	*0.77*	*0.61*	*0.83*	*0.83*
Hourly Flow Rate, HFR	*50*	*81*	*0*	*0*	*87*	*50*
Percent Heavy Vehicles	*30*	--	--	*50*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*32*	*0*	*42*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.82*	*1.00*	*0.82*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*39*	*0*	*51*	*0*	*0*	*0*
Percent Heavy Vehicles	*31*	*0*	*31*	*7*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*			*LR*				
v (vph)	*50*			*90*				
C (m) (vph)	*1292*			*752*				
v/c	*0.04*			*0.12*				
95% queue length	*0.12*			*0.41*				
Control Delay	*7.9*			*10.4*				
LOS	*A*			*B*				
Approach Delay	--	--	*10.4*					
Approach LOS	--	--	*B*					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Westland Rd/Livestock Rd*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*5/7/2003*	Analysis Year	*Year 2023 - Low Density Alt*
Analysis Time Period	*PM Peak*		
Project Description	*Year 2023 - Low Density Alt*		
East/West Street:	*Livestock Road*	North/South Street:	*Westland Rd*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*95*	*3*	*1*	*111*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.77*	*0.77*	*0.61*	*0.61*	*1.00*
Hourly Flow Rate, HFR	*0*	*123*	*3*	*1*	*181*	*0*
Percent Heavy Vehicles	*7*	--	--	*50*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*3*	*0*	*8*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*4*	*0*	*10*	*0*	*0*	*0*
Percent Heavy Vehicles	*50*	*0*	*50*	*7*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
v (vph)		*1*		*14*				
C (m) (vph)		*1211*		*736*				
v/c		*0.00*		*0.02*				
95% queue length		*0.00*		*0.06*				
Control Delay		*8.0*		*10.0-*				
LOS		*A*		*A*				
Approach Delay	--	--	*10.0-*					
Approach LOS	--	--	*A*					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*JSB*
Agency/Co.	*H. Lee & Associates*
Date Performed	*5/7/2003*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*Westland Rd/Lamb Rd/Walker*
Jurisdiction	*Umatilla County, OR*
Analysis Year	*Year 2023 - Low Density Alt*

Project Description *Year 2023 - Low Density Alt (EB & NB Legs switched)*

East/West Street: *Lamb Road/Westland Rd*

North/South Street: *Westland Rd/Walker Rd*

Intersection Orientation: *East-West*

Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*32*	*0*	*106*	*73*	*148*	*1*
Peak-Hour Factor, PHF	*0.83*	*0.83*	*0.83*	*0.80*	*0.80*	*0.80*
Hourly Flow Rate, HFR	*38*	*0*	*127*	*91*	*184*	*1*
Percent Heavy Vehicles	*7*	--	--	*7*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*3*	*370*	*13*	*1*	*7*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.63*	*0.63*	*0.63*
Hourly Flow Rate, HFR	*3*	*411*	*14*	*1*	*11*	*0*
Percent Heavy Vehicles	*7*	*7*	*7*	*20*	*20*	*20*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*38*	*91*		*428*			*12*	
C (m) (vph)	*1360*	*1429*		*423*			*145*	
v/c	*0.03*	*0.06*		*1.01*			*0.08*	
95% queue length	*0.09*	*0.20*		*12.99*			*0.27*	
Control Delay	*7.7*	*7.7*		*78.5*			*32.1*	
LOS	*A*	*A*		*F*			*D*	
Approach Delay	--	--	*78.5*			*32.1*		
Approach LOS	--	--	*F*			*D*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Lamb Rd/I-82 NB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*5/7/2003*	Analysis Year	*Year 2023 - Low Density Alt*
Analysis Time Period	*PM Peak*		

Project Description *Year 2023 - Low Density Alt*

East/West Street: *Lamb Road* | North/South Street: *I-82 Northbound Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*224*	*158*	*0*	*0*	*115*	*23*
Peak-Hour Factor, PHF	*0.55*	*0.55*	*0.71*	*0.56*	*0.63*	*0.63*
Hourly Flow Rate, HFR	*407*	*287*	*0*	*0*	*182*	*36*
Percent Heavy Vehicles	*7*	--	--	*9*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*8*	*0*	*219*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.73*	*1.00*	*0.73*	*0.50*	*1.00*	*0.50*
Hourly Flow Rate, HFR	*10*	*0*	*299*	*0*	*0*	*0*
Percent Heavy Vehicles	*10*	*0*	*10*	*29*	*0*	*29*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*			*LR*				
v (vph)	*407*			*309*				
C (m) (vph)	*1322*			*627*				
v/c	*0.31*			*0.49*				
95% queue length	*1.32*			*2.73*				
Control Delay	*8.9*			*16.2*				
LOS	*A*			*C*				
Approach Delay	--	--	*16.2*					
Approach LOS	--	--	*C*					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Lamb Rd/I-82 SB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*5/7/2003*	Analysis Year	*Year 2023 - Low Density Alt*
Analysis Time Period	*PM Peak*		

Project Description *Year 2023 - Low Density Alt*

East/West Street: *Lamb Road* | North/South Street: *I-82 Southbound Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

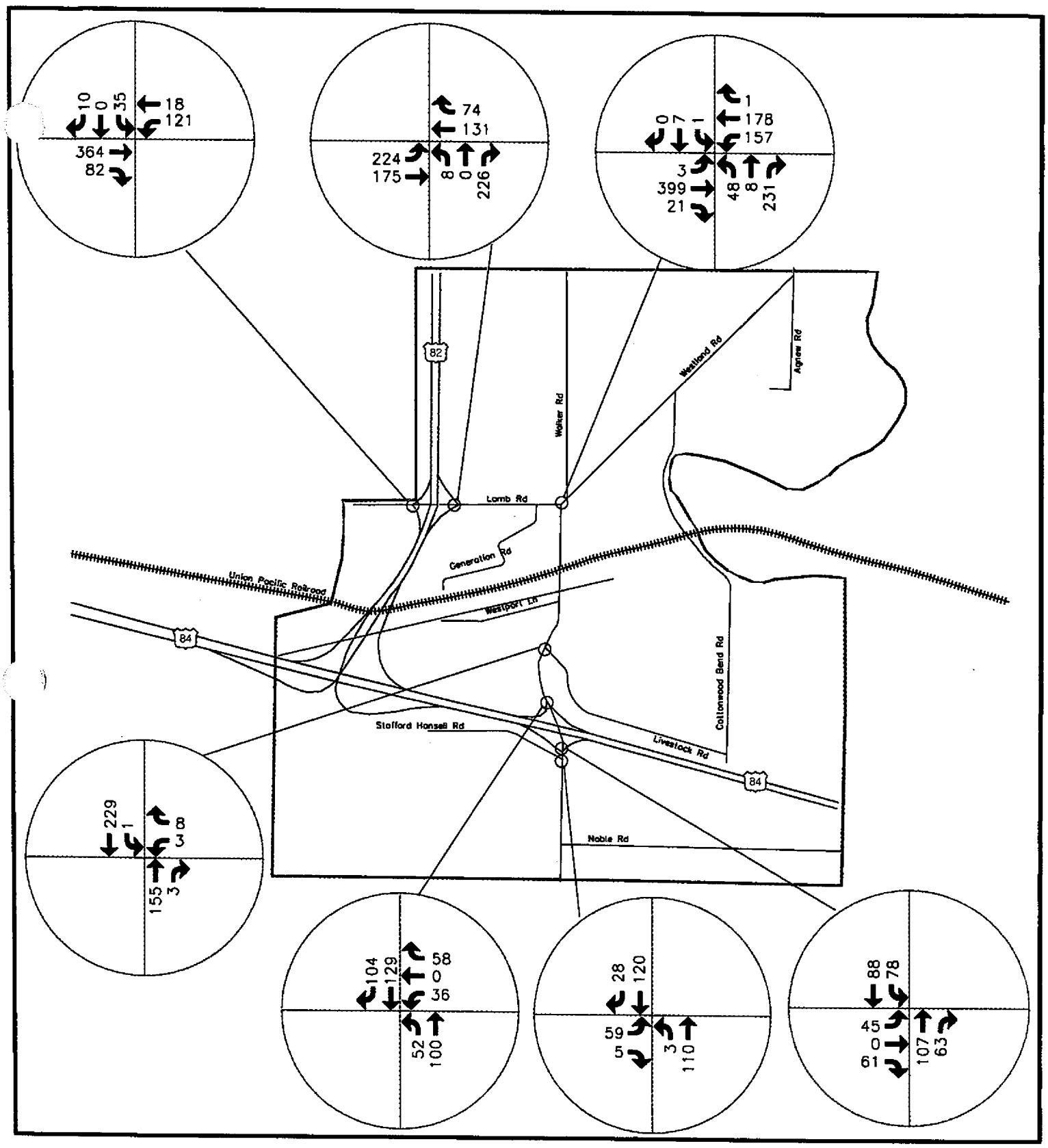
Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*364*	*82*	*105*	*18*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.71*	*0.71*	*0.56*	*0.56*	*1.00*
Hourly Flow Rate, HFR	*0*	*512*	*115*	*187*	*32*	*0*
Percent Heavy Vehicles	*0*	--	--	*9*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*18*	*0*	*10*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.50*	*1.00*	*0.50*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*36*	*0*	*20*
Percent Heavy Vehicles	*0*	*0*	*0*	*29*	*0*	*29*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*					*LR*	
v (vph)		*187*					*56*	
C (m) (vph)		*922*					*277*	
v/c		*0.20*					*0.20*	
95% queue length		*0.76*					*0.74*	
Control Delay		*9.9*					*21.3*	
LOS		*A*					*C*	
Approach Delay	--	--				*21.3*		
Approach LOS	--	--				*C*		

TASK 4.7
CONDUCT SENSITIVITY ANALYSIS FOR TRAFFIC FORECAST



Westland Road Interchange Transportation Plan

Figure 4-4
2023 P.M. Peak Hour Traffic Volumes
for High Traffic Forecast

LEGEND
15 P.M. Peak Hour Traffic Volume

NOT TO SCALE

Table 4-6. Year 2023 Future High Density Build Level of Service and V/C Ratio

ODOT Unsignalized Intersection	PM Peak Hour		
	LOS	Average Delay (sec)	V/C Ratio
Lamb Road/I-82 Southbound Ramps			
Westbound Left	B	10.1	0.23
Southbound Approach	D	33.5	0.42
Lamb Road/I-82 Southbound Ramps			
Eastbound Left	A	9.5	0.34
Northbound Approach	C	17.0	0.52
Westland Road/I-84 Westbound Ramps			
Westbound Approach	B	12.0	0.18
Northbound Left	A	8.4	0.07
Westland Road/I-84 Eastbound Ramps			
Eastbound Approach	B	12.8	0.25
Southbound Left	A	8.4	0.08
County Unsignalized Intersection			
Westland Road/Lamb Road/Walker Road			
Eastbound Left	A	7.9	0.01
Westbound Left	B	11.5	0.34
Northbound Approach	F	>100	>1.00
Southbound Approach	F	>100	>1.00
Westland Road/Livestock Road			
Westbound Approach	B	11.2	0.07
Southbound Left	A	8.2	0.01
Westland Road/Stafford-Hansell Road			
Eastbound Approach	B	11.4	0.13
Northbound Left	A	7.8	0.01

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Col Jordan/Stafford Hansell*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*5/7/2003*	Analysis Year	*Year 2023 - High Density Alt*
Analysis Time Period	*PM Peak*		
Project Description	*Year 2023 - High Density Alt*		
East/West Street:	*Stafford-Hansell Road*	North/South Street:	*Col Jordan Road*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*3*	*110*	*0*	*0*	*120*	*28*
Peak-Hour Factor, PHF	*0.59*	*0.59*	*0.80*	*0.78*	*0.78*	*0.78*
Hourly Flow Rate, HFR	*5*	*186*	*0*	*0*	*153*	*35*
Percent Heavy Vehicles	*20*	--	--	*20*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*59*	*0*	*5*
Peak-Hour Factor, PHF	*0.75*	*0.75*	*0.75*	*0.73*	*0.73*	*0.73*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*80*	*0*	*6*
Percent Heavy Vehicles	*20*	*20*	*20*	*20*	*20*	*20*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*5*						*86*	
C (m) (vph)	*1285*						*609*	
v/c	*0.00*						*0.14*	
95% queue length	*0.01*						*0.49*	
Control Delay	*7.8*						*11.9*	
LOS	*A*						*B*	
Approach Delay	--	--					*11.9*	
Approach LOS	--	--					*B*	

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Westland Rd/I-84 EB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*5/7/2003*	Analysis Year	*Year 2023 - High Density Alt*
Analysis Time Period	*PM Peak*		

Project Description	*Year 2023 - High Density Alt*
East/West Street: *I-84 Eastbound Ramps*	North/South Street: *Westland Rd*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*107*	*63*	*78*	*88*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.83*	*0.83*	*0.80*	*0.80*	*1.00*
Hourly Flow Rate, HFR	*0*	*128*	*75*	*97*	*109*	*0*
Percent Heavy Vehicles	*7*	--	--	*41*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*45*	*0*	*61*
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*0.70*	*1.00*	*0.70*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*64*	*0*	*87*
Percent Heavy Vehicles	*50*	*0*	*50*	*43*	*0*	*43*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*					*LR*	
v (vph)		*97*					*151*	
C (m) (vph)		*1167*					*612*	
v/c		*0.08*					*0.25*	
95% queue length		*0.27*					*0.97*	
Control Delay		*8.4*					*12.8*	
LOS		*A*					*B*	
Approach Delay	--	--				*12.8*		
Approach LOS	--	--				*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Westland Rd/I-84 WB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*5/7/2003*	Analysis Year	*Year 2023 - High Density Alt*
Analysis Time Period	*PM Peak*		
Project Description	*Year 2023 - High Density Alt*		
East/West Street:	*I-84 Westbound Ramps*	North/South Street:	*Westland Rd*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*52*	*100*	*0*	*0*	*129*	*104*
Peak-Hour Factor, PHF	*0.69*	*0.69*	*0.77*	*0.61*	*0.83*	*0.83*
Hourly Flow Rate, HFR	*75*	*144*	*0*	*0*	*155*	*125*
Percent Heavy Vehicles	*30*	--	--	*50*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*36*	*0*	*58*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.82*	*1.00*	*0.82*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*43*	*0*	*70*	*0*	*0*	*0*
Percent Heavy Vehicles	*31*	*0*	*31*	*7*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*			*LR*				
v (vph)	*75*			*113*				
C (m) (vph)	*1138*			*624*				
v/c	*0.07*			*0.18*				
95% queue length	*0.21*			*0.66*				
Control Delay	*8.4*			*12.0*				
LOS	*A*			*B*				
Approach Delay	--	--	*12.0*					
Approach LOS	--	--	*B*					

>

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Westland Rd/Livestock Rd*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*5/7/2003*	Analysis Year	*Year 2023 - High Density Alt*
Analysis Time Period	*PM Peak*		
Project Description	*Year 2023 - High Density Alt*		
East/West Street:	*Livestock Road*	North/South Street:	*Westland Rd*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*155*	*3*	*1*	*229*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.77*	*0.77*	*0.61*	*0.61*	*1.00*
Hourly Flow Rate, HFR	*0*	*201*	*3*	*1*	*375*	*0*
Percent Heavy Vehicles	*7*	--	--	*50*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*3*	*0*	*8*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*4*	*0*	*10*	*0*	*0*	*0*
Percent Heavy Vehicles	*50*	*0*	*50*	*7*	*0*	*0*
Percent Grade (%)	*0*			*0*		
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
v (vph)		*1*		*14*				
C (m) (vph)		*1127*		*595*				
v/c		*0.00*		*0.02*				
95% queue length		*0.00*		*0.07*				
Control Delay		*8.2*		*11.2*				
LOS		*A*		*B*				
Approach Delay	--	--	*11.2*					
Approach LOS	--	--	*B*					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*JSB*
Agency/Co.	*H. Lee & Associates*
Date Performed	*5/7/2003*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*Westland Rd/Lamb Rd/Walker*
Jurisdiction	*Umatilla County, OR*
Analysis Year	*Year 2023 - High Density Alt*

Project Description *Year 2023 - High Density Alt (EB & NB legs switched)*

East/West Street: *Lamb Road/Westland Rd* | North/South Street: *Westland Rd/Walker Rd*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*56*	*0*	*231*	*157*	*178*	*1*
Peak-Hour Factor, PHF	*0.83*	*0.83*	*0.83*	*0.80*	*0.80*	*0.80*
Hourly Flow Rate, HFR	*67*	*0*	*278*	*196*	*222*	*1*
Percent Heavy Vehicles	*7*	--	--	*7*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*3*	*399*	*21*	*1*	*7*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.63*	*0.63*	*0.63*
Hourly Flow Rate, HFR	*3*	*443*	*23*	*1*	*11*	*0*
Percent Heavy Vehicles	*7*	*7*	*7*	*20*	*20*	*20*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*67*	*196*		*469*			*12*	
C (m) (vph)	*1317*	*1257*		*221*			*0*	
v/c	*0.05*	*0.16*		*2.12*				
95% queue length	*0.16*	*0.55*		*35.90*				
Control Delay	*7.9*	*8.4*		*555.4*				
LOS	*A*	*A*		*F*			*F*	
Approach Delay	--	--	*555.4*					
Approach LOS	--	--	*F*					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*JSB*
Agency/Co.	*H. Lee & Associates*
Date Performed	*5/7/2003*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*Lamb Rd/I-82 NB Ramps*
Jurisdiction	*Umatilla County, OR*
Analysis Year	*Year 2023 - High Density Alt*

Project Description *Year 2023 - High Density Alt*

East/West Street: *Lamb Road* | North/South Street: *I-82 Northbound Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*224*	*158*	*0*	*0*	*131*	*74*
Peak-Hour Factor, PHF	*0.55*	*0.55*	*0.71*	*0.56*	*0.63*	*0.63*
Hourly Flow Rate, HFR	*407*	*287*	*0*	*0*	*207*	*117*
Percent Heavy Vehicles	*7*	--	--	*9*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*8*	*0*	*226*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.73*	*1.00*	*0.73*	*0.50*	*1.00*	*0.50*
Hourly Flow Rate, HFR	*10*	*0*	*309*	*0*	*0*	*0*
Percent Heavy Vehicles	*10*	*0*	*10*	*29*	*0*	*29*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*			*LR*				
v (vph)	*407*			*319*				
C (m) (vph)	*1208*			*615*				
v/c	*0.34*			*0.52*				
95% queue length	*1.50*			*2.99*				
Control Delay	*9.5*			*17.0*				
LOS	*A*			*C*				
Approach Delay	--	--		*17.0*				
Approach LOS	--	--		*C*				

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Lamb Rd/I-82 SB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*5/7/2003*	Analysis Year	*Year 2023 - High Density Alt*
Analysis Time Period	*PM Peak*		

Project Description *Year 2023 - High Density Alt*

East/West Street: *Lamb Road*	North/South Street: *I-82 Southbound Ramps*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*364*	*82*	*121*	*18*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.71*	*0.71*	*0.56*	*0.56*	*1.00*
Hourly Flow Rate, HFR	*0*	*512*	*115*	*216*	*32*	*0*
Percent Heavy Vehicles	*0*	--	--	*9*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*35*	*0*	*10*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.50*	*1.00*	*0.50*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*70*	*0*	*20*
Percent Heavy Vehicles	*0*	*0*	*0*	*29*	*0*	*29*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*					*LR*	
v (vph)		*216*					*90*	
C (m) (vph)		*922*					*214*	
v/c		*0.23*					*0.42*	
95% queue length		*0.91*					*1.94*	
Control Delay		*10.1*					*33.5*	
LOS		*B*					*D*	
Approach Delay	--	--				*33.5*		
Approach LOS	--	--				*D*		

TASK 4.8
IDENTIFY FUTURE TRANSPORTATION DEFICIENCIES

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: Future Transportation Deficiencies

WESTLAND RD/LAMB RD/WALKER RD EXISTING ALIGNMENT

The Westland Road/Lamb Road/Walker Road intersection is awkwardly aligned and the travel right-of-way is given to the minor traffic movements. The awkwardness of the intersection alignment is how Walker Road enters the intersection at an offset just north of the main intersection. In addition, the condition of the main travel right-of-way being along the Westland Road alignment rather than the main movement of Lamb Road to and from the north leg of Westland Road adds to the awkwardness of the Westland Road/Lamb Road/Walker Road intersection.

STAFFORD HANSELL ROAD REALIGNMENT

The Stafford Hansel Road spacing from the I-84 Eastbound Ramps interchange with Westland Road is well below the ideal intersection spacing standard of 1,320 feet of an interchange ramp.

RAILROAD CROSSING AT WESTLAND ROAD NORTH OF WESTPORT LN

Public comments received mentioned the at-grade railroad crossing at Westland Road north of Westport Lane is deficient. Vehicles crossing the railroad crossing at any significant speed complain about the roughness of the crossing.

WIDENING WESTLAND ROAD TO CURRENT ROADWAY STANDARDS

Based on the roadway inventory, the pavement section of Westland Road is 29 feet wide with two to four foot shoulders. Including the shoulder width, Westland Road ranges from 31 to 33 feet wide. The newly adopted road standard in the Umatilla County Transportation System Plan for rural major collector arterials such as Westland Road is 24 feet for the travel lanes plus paved four foot shoulders for a total pavement width of 32 feet. The existing roadway width with the

shoulders is wide enough to meet the new standards. Next time Westland Road receives an overlay, the roadway should be paved to meet the new rural major collector standard of 32 feet.

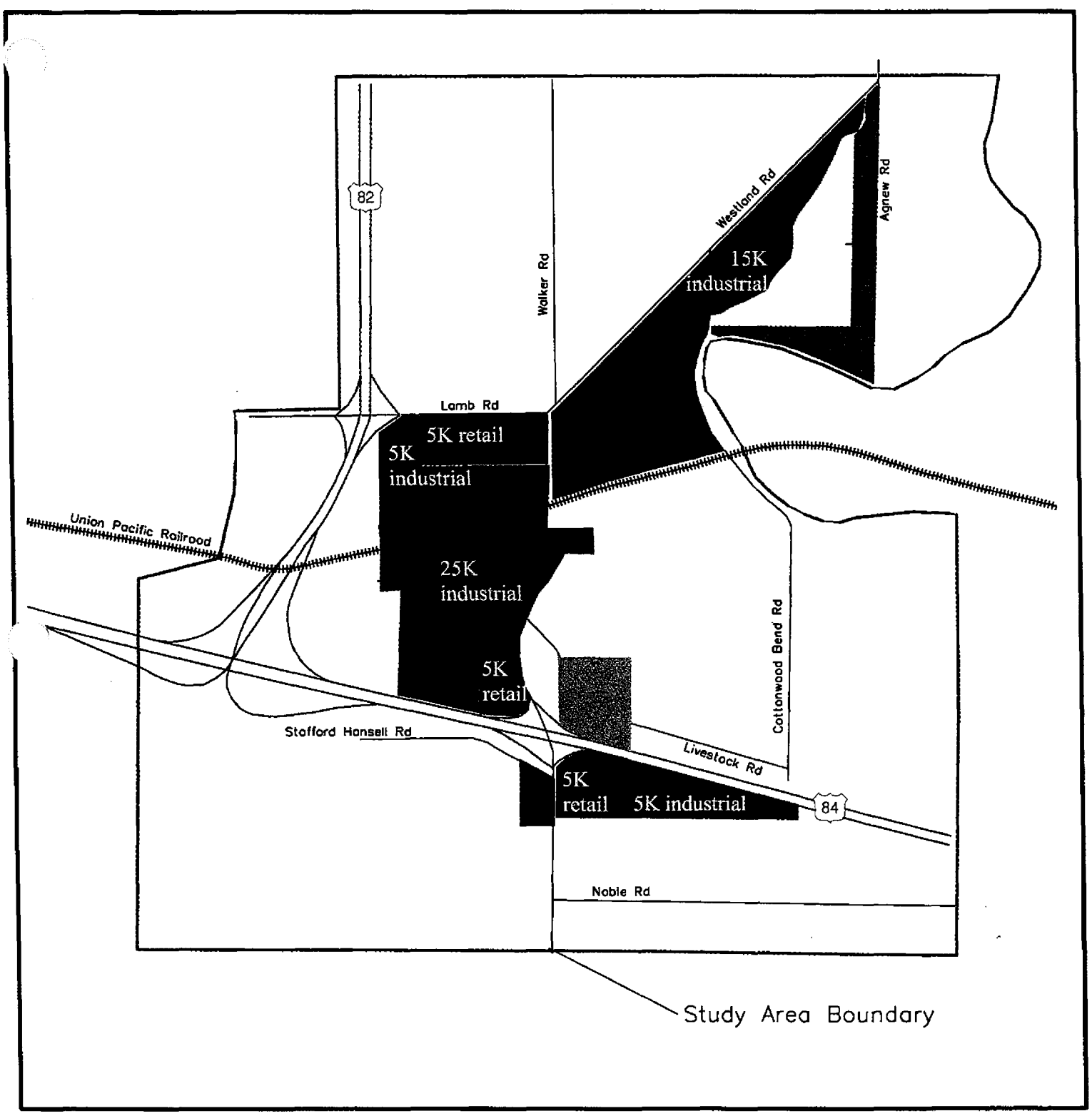
CURVE ALONG THE SOUTH END OF WESTLAND ROAD

Between I-84 interchange ramps and Livestock Road, there is a curve along Westland Road that may restrict sight distance for certain parcels in this vicinity.

REZONING

Several property owners within the study area would like to have their properties rezoned from EFU to LI (light industrial) or TC (tourist commercial). Their issue is that their property has little to no value as EFU (exclusive farm use) and should be rezoned to a more applicable zoning.

TASK 4.9
PRODUCE APPROPRIATE MAPS FOR REPORT

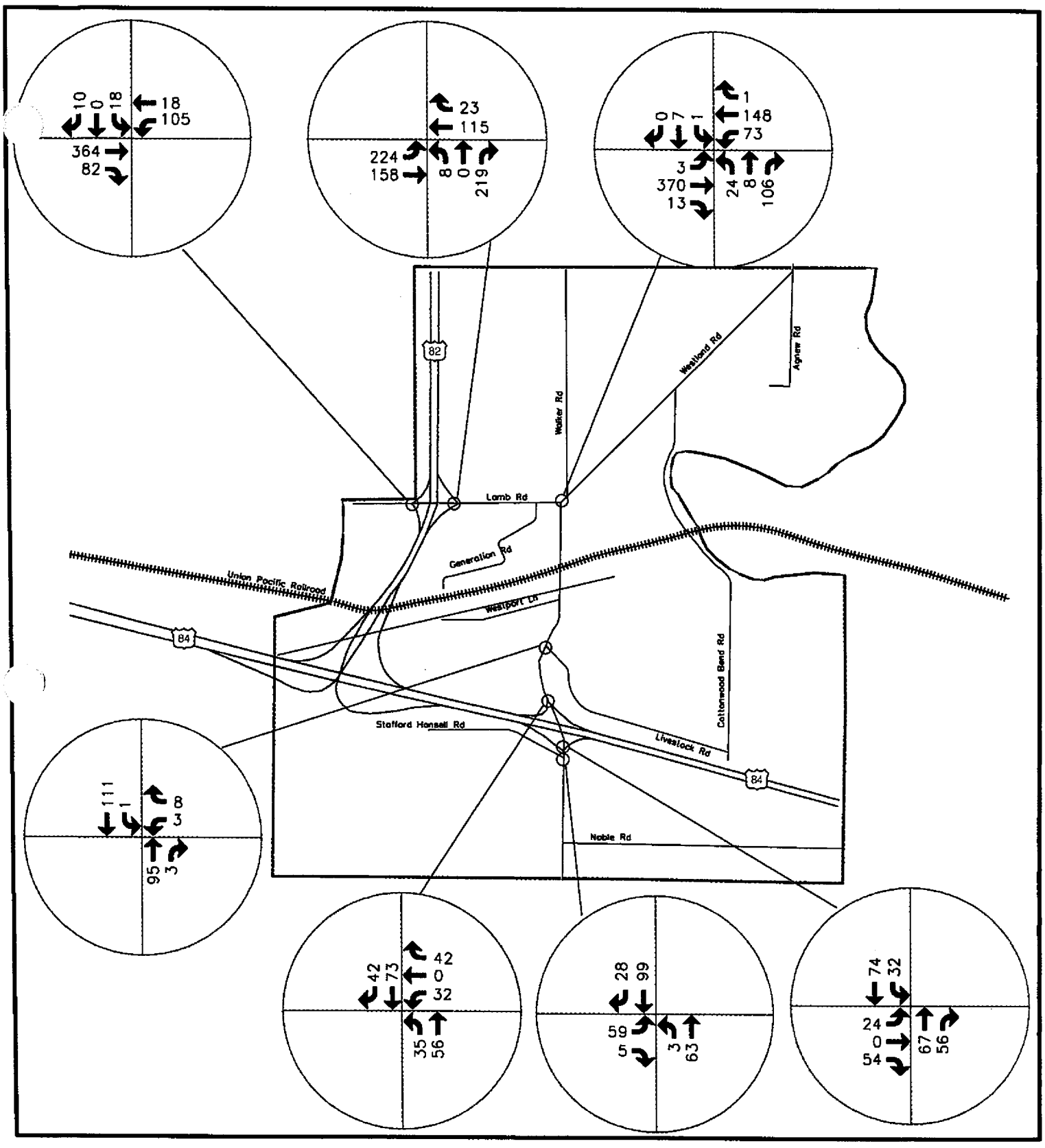


Westland Road Interchange Transportation Plan

Figure 4-1
Future Land Use Growth Assumptions
for Low Traffic Forecast

LEGEND
- Commercial Zoning
- Industrial Zoning
- Rural Residential
- Agribusiness Zoning
- Exclusive Farm Use
- Study Area

NOT TO SCALE

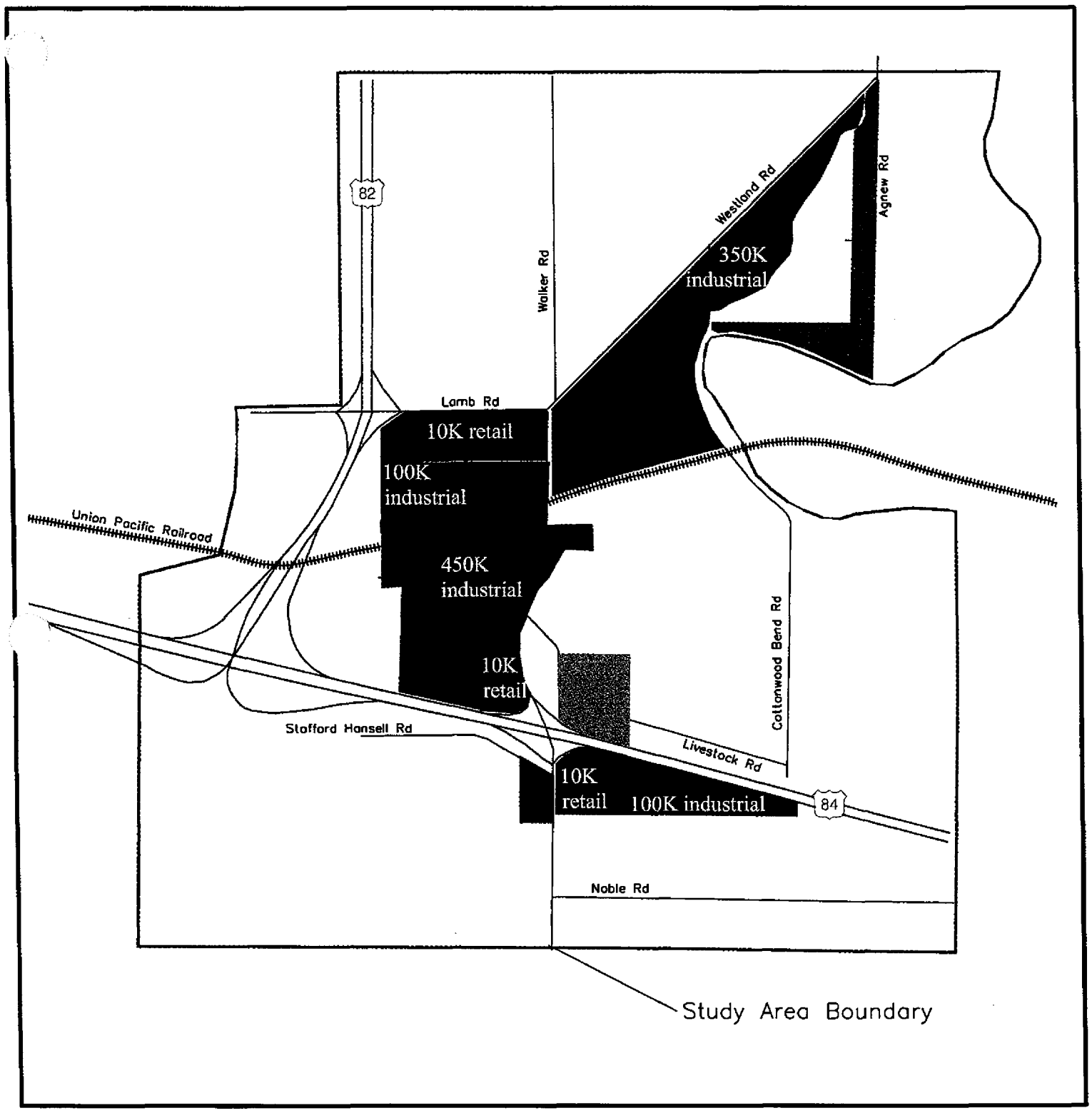


Westland Road Interchange Transportation Plan

Figure 4-2
2023 P.M. Peak Hour Traffic Volumes
for Low Traffic Forecast

LEGEND
15 P.M. Peak Hour Traffic Volume

NOT TO SCALE

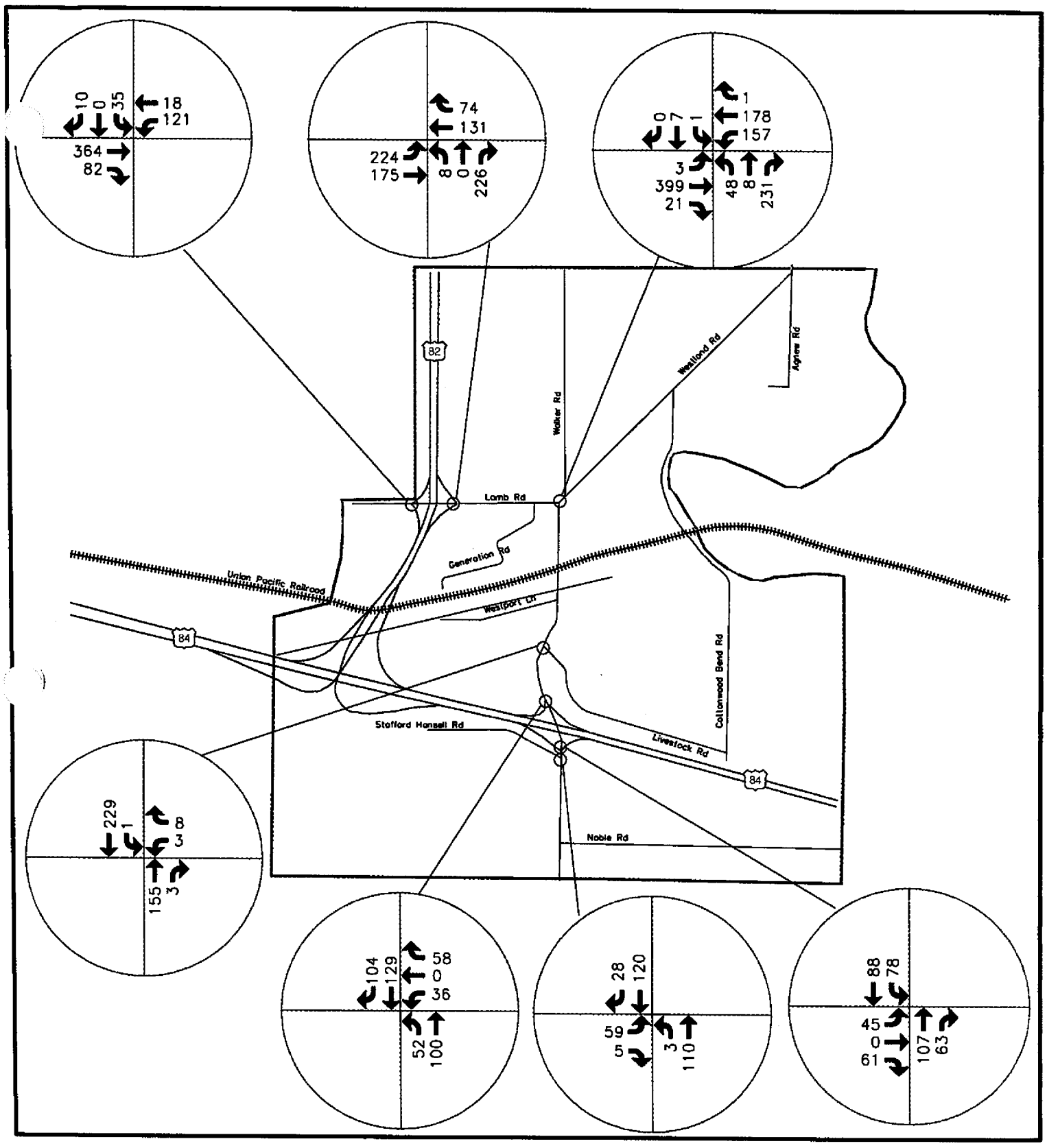


Westland Road Interchange Transportation Plan

Figure 4-3
Future Land Use Growth Assumptions
for High Traffic Forecast

LEGEND
- Commercial Zoning
- Industrial Zoning
- Rural Residential
- Agribusiness Zoning
- Exclusive Farm Use
- Study Area

NOT TO SCALE



Westland Road Interchange Transportation Plan

Figure 4-4
2023 P.M. Peak Hour Traffic Volumes
for High Traffic Forecast

LEGEND
15 P.M. Peak Hour Traffic Volume

NOT TO SCALE

TASK 4.10
PRODUCE FUTURE CONDITIONS
TECHNICAL MEMORANDUM

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

MEMORANDUM

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: Future Conditions Technical Memorandum

TRAFFIC FORECAST METHODOLOGY

Based on ODOT's 2001 Transportation System Planning Guidelines[1], there are four approved methodologies to forecast future traffic volumes. These methodologies are described below:

- Level 1 – Trending Forecast
  The trending forecast is based on historical traffic counts in the study area. The methodology requires existing traffic counts as well as 20-year old historical traffic counts to establish a growth rate. This methodology is typically employed in areas where traffic patterns are simple and that have low to moderate growth. It is the simplest methodology used to project future traffic volumes.

- Level 2 – Cumulative Analysis
  The cumulative analysis uses historical trending information as well as an examination of future development. This analysis requires a good understanding of development trends in the study area. Based on the understanding of future development, each area of projected development is assigned a trip making characteristic and those trips are manually assigned to the street network. The cumulative analysis methodology is typically used small cities where traffic patterns are not complex. This methodology is also best employed where significant shifting of traffic is not expected between alternatives since the difference in how the traffic patterns would change is to be done manually.

- Level 3 – Transportation Model
  A transportation model is a very sophisticated methodology in forecasting future traffic volumes. It requires a significant amount of traffic and land use data as well as specialized software. Transportation models are typically developed where there is a need to study complex alternatives that can affect traffic patterns significantly. Transportation models are good to compare alternatives to each other since they

[1] 2001 Transportation System Planning Guidelines, Oregon Department of Transportation, Transportation Development Division, May 2001.

effectively show the difference in travel behavior between alternatives. This forecast methodology is beyond the scope of this study process.

- Level 4 – Regional Transportation Model
  A regional transportation model is developed in a similar manner as the Level 3, Transportation Model except that it involves a larger study area. The study area in a regional model encompasses several urban areas as well as rural areas. It is typically employed at the Metropolitan Planning Organization (MPO) level. This forecast methodology is beyond the scope of this study process.

Several methodology options were available to project the 2023 traffic volumes. Twenty-year historical traffic counts were available along I-82 and I-84 adjacent to the study area. Since I-82 and I-84 are regionally facilities with a wide influence area, this data does not correlate well with the profile of the study area. The study area is not regionally impacted and is mostly influenced by local conditions within the study area. Therefore, the regional historical growth factor methodology to project the study area traffic volumes was not employed.

The next methodology considered is referred by ODOT as a Level 2, Cumulative Analysis. This methodology considers background traffic growth from derived growth factors as well as considers the cumulative traffic impacts of future land developments. Since the regional growth factors were not representative of growth conditions in the study area and a more complex traffic forecast methodology such as a travel demand model is beyond the scope of the study, a Level 2, Cumulative Analysis was conducted to estimate the 2023 traffic volumes in the study area.

A 1.5 percent per year background growth factor was applied to the 2003 existing traffic volumes to account for unforeseen traffic growth and through traffic volumes traveling through the study area. This annual background growth factor was derived from historical traffic count data available on a nearby facility (US 395 at the south city limits of Stanfield) with similar characteristics as Westland Road. In addition, the cumulative impact of developing industrial and commercial land within the study area was added. Only two types of zoning with the potential for future development exist in the study area. These zoning types are industrial and commercial.

DEMOGRAPHIC INFORMATION

The population information for Umatilla County is summarized in Table 1. Based on a comparison of 1990 and 2000 population in Umatilla County, the entire county's population grew by 19.1 percent. This translates to an annual population growth rate of 0.88 percent for both the incorporated and unincorporated areas. The unincorporated areas of the county grew by 15.3 percent from 1990 to 2000. The unincorporated area annual population growth rate from 1990 to 2000 was 0.72 percent. Both the average county and unincorporated area growth rates

are very low. This trend indicates slow growth. However, certain areas of Umatilla County grew at a much higher rate such as the City of Umatilla and Hermiston. This indicates that although much of Umatilla County's growth between 1990 and 2000 was relatively stagnant, significant growth in pockets of the county can grow significantly if the right conditions exist.

The most recent employment projections available are from the Office of Economic Analysis (OEA), State of Oregon. The OEA data is from 1997. Updated employment forecasts are expected sometime this year. Table 2 summarizes the OEA employment projections for Umatilla County.

Table 1. 1990 and 2000 Population of Umatilla County

Area	1990 Population	2000 Population	Percent Change Between 1990 and 2000
Umatilla County	59,249	70,548	19.1%
Adams	223	297	33.2%
Athena	997	1,221	22.5%
Echo	499	650	30.3%
Helix	150	183	22.0%
Hermiston	10,040	13,154	31.0%
Milton-Freewater	5,533	6,470	16.9%
Pendleton	15,126	16,354	8.1%
Pilot Rock	1,478	1,532	3.7%
Stanfield	1,568	1,979	26.2%
Ukiah	250	255	2.0%
Umatilla	3,046	4,978	63.4%
Weston	606	717	18.3%
Unincorporated	19,733	22,758	15.3%

Source: 2000 US Census

Based on the OEA employment projections from 2000 to 2020, Umatilla County is expected to have an annual employment growth of only 0.62 percent. This correlates at almost a similar rate as the population growth rate. Based on the OEA employment projections, Umatilla County is only expected to have modest increases in future employment.

Table 2. 2000 to 2020 Employment Forecast

Area	1990 Employment	2000 Employment	2020 Employment	2000 to 2020 Employment Annual Growth Rate
Umatilla County	21,060	26,313	29,766	0.62

Source: Office of Economic Analysis, State of Oregon

Between 2000 and 2020, Umatilla County is expected to generate 3,453 new jobs. It is likely that most of the employment growth with occur within the urban areas of the larger cities within Umatilla County such as Hermiston, Milton-Freewater, Umatilla, and Pendleton. The unincorporated county areas are not expected to significantly compete with urban areas for job creation because of limited utilities and amenities available in the unincorporated areas.

LOW TRAFFIC FORECAST SCENARIO

A low traffic forecast scenario consistent with the Office of Economic Analysis employment projections was developed as the conservative end of what could be expected to develop in the Westland Road/I-84/I-82 Interchange Area. The low traffic forecast was derived by first applying a background growth factor of 1.5 percent per year to the 2003 P.M. peak hour turning movement counts for 20 years to account for unforeseen traffic growth and through traffic volumes traveling through the study area. This annual background growth factor was derived from historical traffic count data available on a nearby facility (US 395 at the south city limits of Stanfield) with similar characteristics as Westland Road. The second step of the low traffic forecast was to account for the cumulative impacts of future industrial and commercial land within the study area.

The amount of future industrial and commercial land assumed to be developed in 2023 under the low traffic forecast scenario was based on applying the 0.62 percent annual employment growth rate for Umatilla County. This rate was derived from the most recent Office of Economic Analysis data. The only issue to resolve to apply the 0.62 percent annual employment growth rate is the existing employment count within the study area. Based on the aggregate daily local side street traffic volumes, local development in the study area generates roughly 1,613 daily traffic volumes. Assuming that the general type of existing development corresponds with the characteristic of warehouse development, the ITE Trip Generation daily warehouse trip generation rate for employees (3.89 daily trips per employee) was used to divide into the 1,613 daily trips to derive the estimated number of existing employees in the study area. This exercise resulted in an estimate of 414 existing employees.

Applying the 0.62 percent annual employment growth rate to the existing number of employees in the study area results in an estimate of 468 total employees in the study area by 2023. This results in a net increase of 54 new employees. Based on the daily warehouse trip generation rate for employees (3.89 daily trips per employee), the additional employees would generate 212 new daily trips. These new daily trips were converted to square footage of new warehouse development by dividing the daily trips by the daily square footage ITE Trip Generation rate for warehouse (4.96 daily trips per 1,000 square feet of warehouse). This results in approximately 43,000 gross square feet of new warehouse space by 2023. The 43,000 was rounded up to 50,000 gross square feet to develop the cumulative analysis. Attachment 1 shows the assumed distribution of growth of new warehouse use in the study area.

There are three vacant commercial properties within the study area. To forecast build out conditions in 2023, it was assumed that each commercial site would build out at a maximum of 5,000 square feet of commercial/retail space. A total of 15,000 square feet was assumed to be developed by 2023 within the study area. With the limited base to attract patrons, 15,000 square feet of commercial/retail development seems more than reasonable.

The trip generation rates for industrial and commercial uses used in the low traffic forecast are summarized in Table 3.

Table 3. Trip Generation for the Westland Road Interchange Area – Low Density

		Average	AM Peak			PM Peak		
Land Use	**Amount**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Warehouse – ITE Code 150								
Rate per 1,000 s.f.		4.96	0.37	0.08	0.45	0.12	0.39	0.51
Trips	50,000 s.f.	248	19	4	23	6	20	26
Shopping Center – ITE Code 820								
Rate per 1,000 s.f.		42.92	0.63	0.40	1.03	1.80	1.94	3.74
Trips	15,000 s.f.	644	9	6	15	27	29	56
Total New Trips in Study Area		892	28	10	38	33	49	82

The low traffic forecast, 2023 P.M. peak hour traffic volumes are shown in Attachment 2. Based on the forecasted 2023 traffic volumes for the low density scenario, levels of service and v/c ratio analyses were conducted at the study area intersections. This analysis is summarized in Table 4.

As shown in Table 4, all of the study area intersections are projected to operate at acceptable levels of service and v/c ratios with the exception of the Lamb Road/Walker Road/Westland Road intersection. The southbound movement of this intersection is projected to operate at LOS E with a v/c ratio of 0.24.

Table 4-4. Year 2023 Future Low Density Build Level of Service and V/C Ratio

	PM Peak Hour		
ODOT Unsignalized Intersection	LOS	Average Delay (sec)	V/C Ratio
Lamb Road/I-82 Southbound Ramps			
Westbound Left	A	9.9	0.20
Southbound Approach	C	21.3	0.20
Lamb Road/I-82 Southbound Ramps			
Eastbound Left	A	8.9	0.31
Northbound Approach	C	16.2	0.49
Westland Road/I-84 Westbound Ramps			
Westbound Approach	B	10.4	0.12
Northbound Left	A	7.9	0.04
Westland Road/I-84 Eastbound Ramps			
Eastbound Approach	B	10.5	0.15
Southbound Left	A	8.0	0.03
County Unsignalized Intersection			
Westland Road/Lamb Road/Walker Road			
Eastbound Left	A	7.8	0.01
Westbound Left	A	9.8	0.15
Northbound Approach	D	34.8	0.62
Southbound Approach	E	38.0	0.24
Westland Road/Livestock Road			
Westbound Approach	A	10.0	0.02
Southbound Left	A	8.0	0.01
Westland Road/Stafford-Hansel Road			
Eastbound Approach	B	10.6	0.12
Northbound Left	A	7.7	0.01

HIGH FORECAST SCENARIO

The study area is approximately 640 acres and has a significant potential for development. There are approximately 100 acres of commercially zoned land and over 400 acres of industrial zoned land. Based on field reconnaissance and inspection of an aerial photo of the study area, well over half of the land within the study area is available for development, increase in density, or redevelopment. Many of the large parcels with existing development are underutilized and could easily be expanded. Some transitionary uses such as agricultural storage sheds are prime for redevelopment should demand for a more intensive use materializes. Based on the available industrial land, it is not likely that the study area industrial land could be built out by 2023.

To conduct the high forecast scenario, 1,000,000 square feet of warehouse development was assumed. Based on a building floor area to gross site area ratio of 25 percent, this corresponds to a build out of approximately 18 percent of the available industrial land or approximately 92 acres of development. It should be noted that 1,000,000 square feet of future warehouse development corresponds to an increase of 1,275 new employees in the study area. The 1,275 increase in employees is approximately 37 percent of the total 20-year OEA employment forecast for Umatilla County. Based on the new employee count as it compares with the OEA employment forecast, the high traffic volume forecast is definitely on the very high end of forecasts for the study area.

As for the commercially zoned land, the high traffic forecast scenario doubled the future commercial development from the low traffic forecast scenario. So, under the high traffic forecast scenario, 30,000 square feet of commercial development was assumed to occur within the study area by 2023.

Based on 30,000 square feet of commercial space and 1,000,000 square feet of warehouse space, trip generation was developed and is summarized in Table 5.

Table 4-5. Trip Generation for the Westland Road Interchange Area – High Density

		Average	AM Peak			PM Peak		
Land Use	**Amount**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Warehouse – ITE Code 150								
Rate per 1,000 s.f.		4.96	0.37	0.08	0.45	0.12	0.39	0.51
Trips	100,000 s.f.	4,960	370	80	450	120	390	510
Shopping Center – ITE Code 820								
Rate per 1,000 s.f.		42.92	0.63	0.40	1.03	1.80	1.94	3.74
Trips	30,000 s.f.	1,288	19	12	31	54	58	112
Total New Trips in Study Area		**6,248**	**389**	**92**	**481**	**174**	**448**	**622**

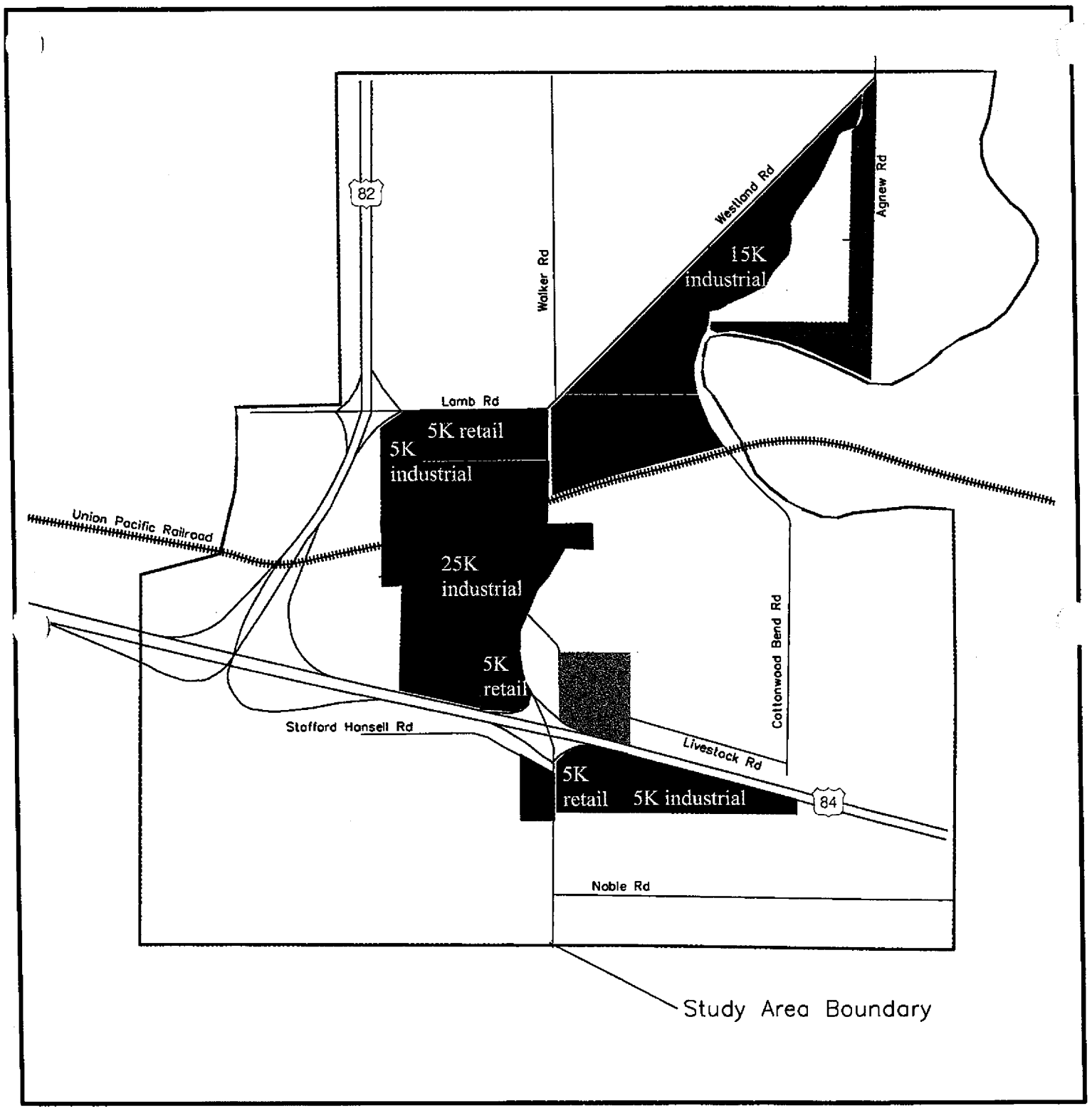
These trips were then assigned to the study area roadway network to project 2023 high traffic volume forecast. The spatial distribution of future developments is shown in Attachment 3. The result of this 2023 high traffic forecast is shown in Attachment 4. Based on the forecasted 2023 traffic volumes for the high density scenario, levels of service and v/c ratio analyses were conducted at the study area intersections. This analysis is summarized in Table 6.

Table 4-6. Year 2023 Future High Density Build Level of Service and V/C Ratio

	PM Peak Hour		
ODOT Unsignalized Intersection	LOS	Average Delay (sec)	V/C Ratio
Lamb Road/I-82 Southbound Ramps			
Westbound Left	B	10.1	0.23
Southbound Approach	D	33.5	0.42
Lamb Road/I-82 Southbound Ramps			
Eastbound Left	A	9.5	0.34
Northbound Approach	C	17.0	0.52
Westland Road/I-84 Westbound Ramps			
Westbound Approach	B	12.0	0.18
Northbound Left	A	8.4	0.07
Westland Road/I-84 Eastbound Ramps			
Eastbound Approach	B	12.8	0.25
Southbound Left	A	8.4	0.08
County Unsignalized Intersection			
Westland Road/Lamb Road/Walker Road			
Eastbound Left	A	7.9	0.01
Westbound Left	B	11.5	0.34
Northbound Approach	F	>100	>1.00
Southbound Approach	F	>100	>1.00
Westland Road/Livestock Road			
Westbound Approach	B	11.2	0.07
Southbound Left	A	8.2	0.01
Westland Road/Stafford-Hansel Road			
Eastbound Approach	B	11.4	0.13
Northbound Left	A	7.8	0.01

As shown in Table 6, all of the study area intersections are projected to operate at acceptable levels of service and v/c ratios with the exception of the Lamb Road/Walker Road/Westland Road intersection. The northbound and southbound movements of this intersection are projected to operate at LOS F with a v/c ratio of over 1.00.

All of the ramp terminal intersections at Westland Road and Lamb Road are projected to operate well within the maximum v/c standard of 0.85. The worst v/c ratio at the ramp terminal intersections is 0.34 in the 2023 high forecast scenario.



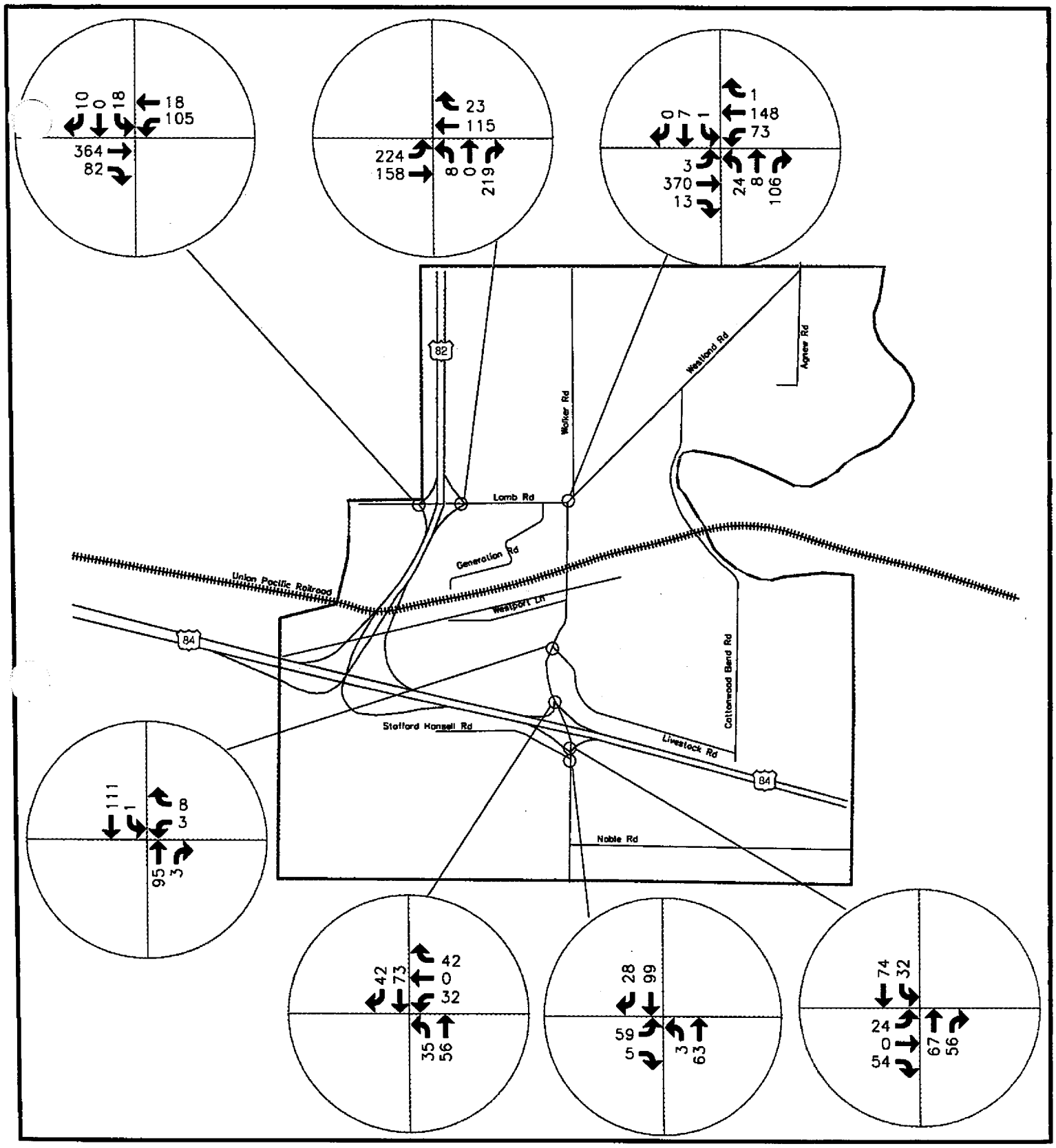
Westland Road Interchange Transportation Plan

Attachment 1
Future Land Use Growth Assumptions
for Low Traffic Forecast

LEGEND

- Commercial Zoning
- Industrial Zoning
- Rural Residential
- Agribusiness Zoning
- Exclusive Farm Use
- Study Area

NOT TO SCALE

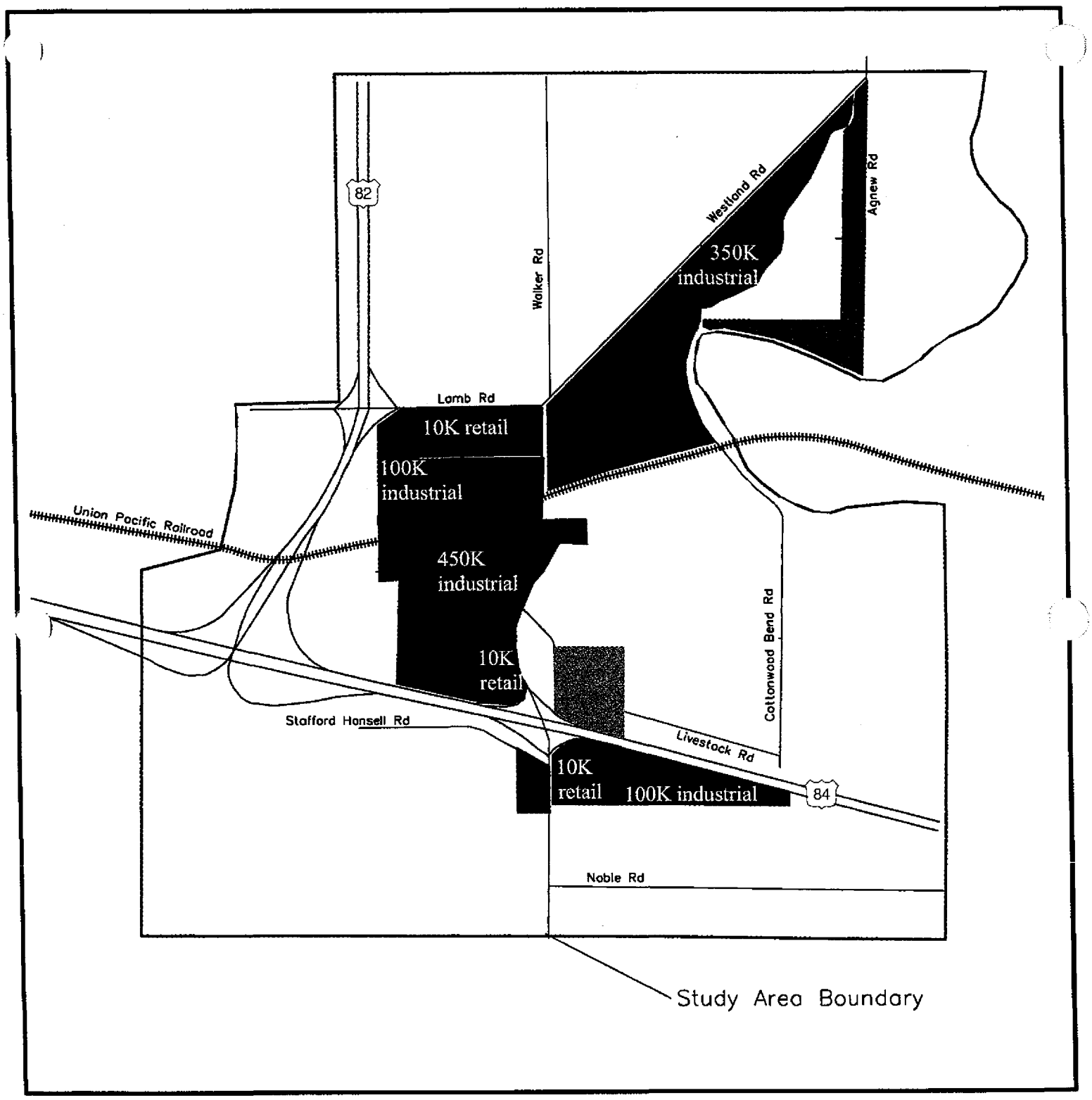


Westland Road Interchange Transportation Plan

Attachment 2
2023 P.M. Peak Hour Traffic Volumes
for Low Traffic Forecast

LEGEND
15 P.M. Peak Hour Traffic Volume

NOT TO SCALE



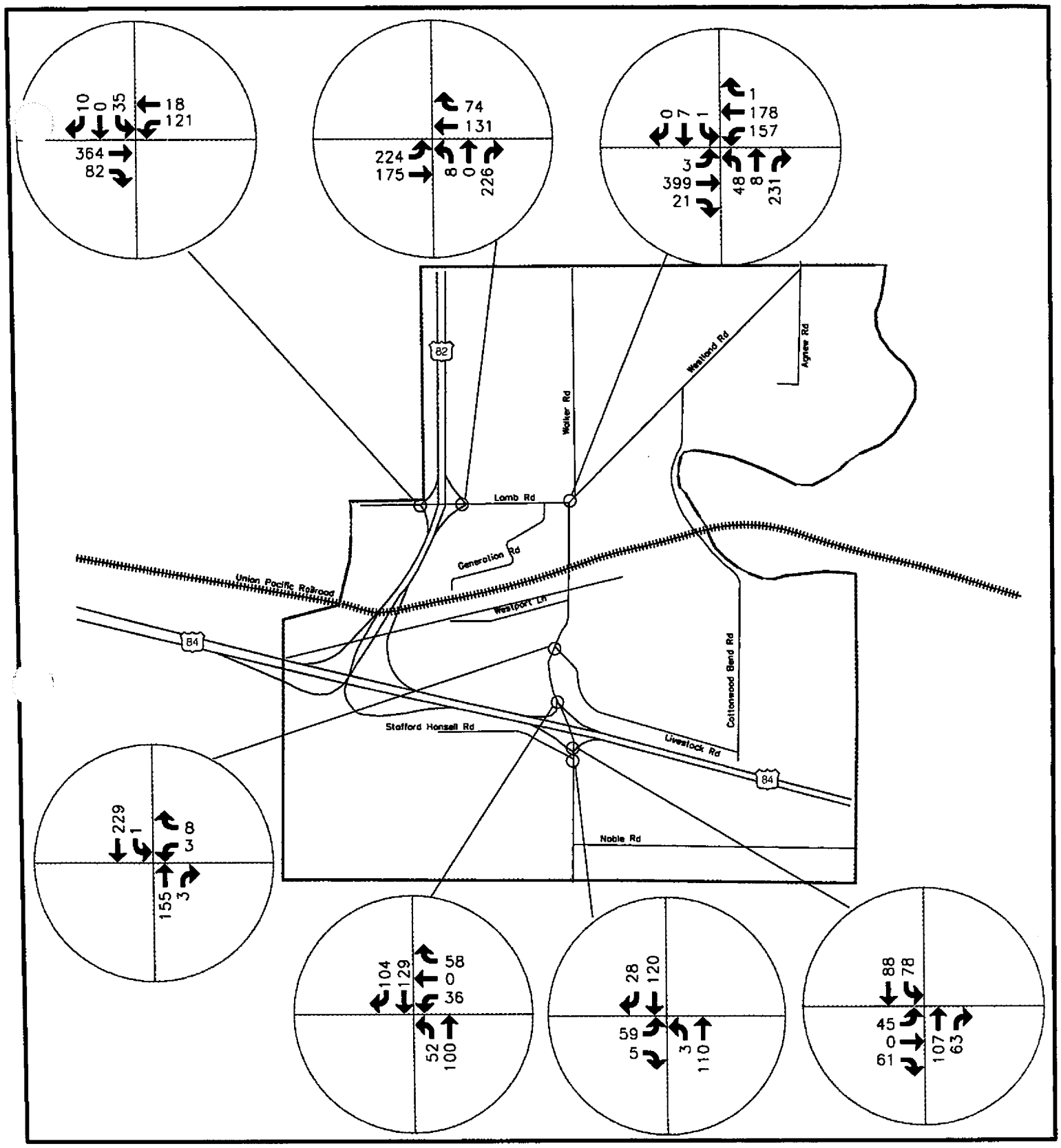
Westland Road Interchange Transportation Plan

Attachment 3
Future Land Use Growth Assumptions
for High Traffic Forecast

LEGEND

- Commercial Zoning
- Industrial Zoning
- Rural Residential
- Agribusiness Zoning
- Exclusive Farm Use
- Study Area

NOT TO SCALE



Westland Road Interchange Transportation Plan

Attachment 4
2023 P.M. Peak Hour Traffic Volumes
for High Traffic Forecast

LEGEND
15 P.M. Peak Hour Traffic Volume

NOT TO SCALE

TASK 5.1
DEVELOP AND EVALUATE FUTURE ALTERNATIVES

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

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MEMORANDUM

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: Future Improvement Alternatives

WESTLAND RD/LAMB RD/WALKER RD REALIGNMENT

To mitigate the awkward intersection and poor levels of service of the Westland Road/Lamb Road/Walker Road intersection, two alternative intersection realignments were considered. The first realignment alternative involves realigning Walker Road away from the Lamb Road/Westland Road intersection. Under this improvement alternative, Walker Road would be aligned directly across Generation Road. Lamb Road would then "T" into Westland Road at a right angle. Westland Road would remain with the traffic right-of-way. The only draw back of this improvement is that it does not address to mitigate the heavy left turn movement from Lamb Road eastbound to Westland Road northbound. In the 2023 High Traffic Forecast Scenario, this intersection would meet signal warrants. The estimated planning cost estimate for this improvement is $250,000.

The second improvement alternative to mitigate the awkward intersection levels of service of the Westland Road/Lamb Road/Walker Road intersection would be to first realign the west leg of Lamb Road and the north leg of Westland Road as a continuous curve with the traffic right-of-way. Walker Road would then be realigned at a right angle to the west with the new Lamb Road/Westland Road alignment. The south leg of Westland Road would be reconstructed to the west with the intersection created by Walker Road. Generation Road would then be realigned to intersect with Walker Road to minimize conflicts with the major thoroughfare of Lamb Road/Westland Road. The planning cost estimate for this project is $500,000. Attachment 1 illustrates the two Westland Road/Lamb Road/Walker Road realignment options.

STAFFORD HANSELL ROAD REALIGNMENT

Stafford Hansel Road is well under the ideal intersection spacing standard of 1,320 feet of an interchange ramp. Since the traffic volumes at the Westland Road interchange with I-84 and the intersection of Colonel Jordan Road and Stafford Hansel Road are relatively low with good v/c ratios in the 2023 forecast scenarios, no realignment is being recommended. However, if the traffic volumes for the 2023 High Traffic Forecast Scenario are exceeded, then the realignment of Stafford Hansel Road should be reevaluated.

RAILROAD CROSSING AT WESTLAND ROAD NORTH OF WESTPORT LN

Public comments received mentioned the need to upgrade and improve the railroad crossing at Westland Road north of Westport Lane. Upgrades to railroad crossings are typically very expensive. The estimated cost of upgrading and improving the railroad crossing is between $500,000 and $1,000,000.

WIDENING WESTLAND ROAD TO CURRENT ROADWAY STANDARDS

Based on the roadway inventory, the pavement section of Westland Road is 29 feet wide with two to four foot shoulders. Including the shoulder width, Westland Road ranges from 31 to 33 feet wide. The newly adopted road standard in the Umatilla County Transportation System Plan for rural major collector arterials such as Westland Road is 24 feet for the travel lanes plus paved four foot shoulders for a total pavement width of 32 feet. The existing roadway width with the shoulders is wide enough to meet the new standards. Next time Westland Road receives an overlay, the roadway should be paved to meet the new rural major collector standard of 32 feet.

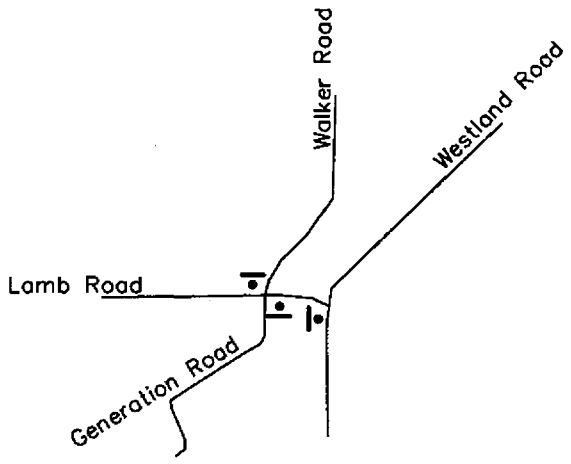
CURVE ALONG THE SOUTH END OF WESTLAND ROAD

Between I-84 interchange ramps and Livestock Road, there is a curve along Westland Road that may restrict sight distance for certain parcels in this vicinity. Since the additional future traffic volumes are only anticipated to increase moderately, it is not recommended to invest in the realignment of e Westland Road to straighten the curve. Instead, future development should look to create an east-west local access road north of Livestock Road at a point on Westland Road where sight distance is not restricted. This east-west road could provide sufficient access to most of the properties between the Union Pacific Railroad and I-84.

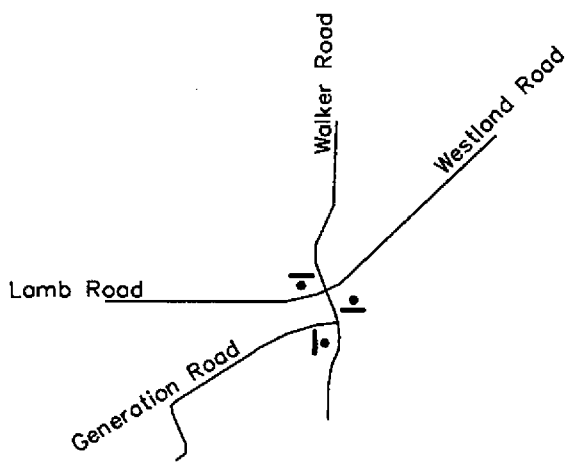
REZONING

Rezoning of additional properties is not recommended at this time because of the enormous development potential of the existing commercial and industrial properties within the study area. Rezoning EFU (exclusive farm use) land would require a goal exception. Based on the current land supply in the study area, unincorporated Umatilla County, and adjacent cities, it is not likely that any attempts for a goal exception to rezone EFU would succeed or be technically justified.

Alternative 1



Alternative 2



Westland Road Interchange Transportation Plan

Attachment 1
Westland Road/Lamb Road/Walker Road
Realignment Options

NOT TO SCALE

TASK 5.2
EVALUATE TSM STRATEGIES

H. Lee & Associates
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MEMORANDUM

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: TSM Measures

INTRODUCTION

Due to limited congestion problems and limited existing and future utilization of roadway capacity, the need for the implementation of TSM measures is limited.

RIDE SHARING PROGRAM

Some years ago ODOT has approached employers in this area to develop a ride share program. However, due to the limited number of employees in the study area and long and varying commute patterns of employees, the ride share program was not well received.

WESTLAND ROAD MEDIAN

At the time of development of the Petro Stopping Center, it is anticipated that through the developed access management plan and local street network plan that Westland Road from the I-84 Westbound Ramps to the main full access intersection servicing the Petro Stopping Center that a median would be installed. This measure will help preserve capacity through the north end of the interchange area. The access management plan and local street network plan also allows a right in, right out driveway on both sides of Westland Road approximately 500 feet from the interchange ramps to facilitate local access.

SIGNAGE

During the public involvement process, it was mentioned that better signage in the study area was needed. Based on the field inventory and site visits, it was observed that signage does exist in the area. However, the location, condition, and size of the existing signage are not always effective. Signage is typically a maintenance issue and not covered in this type of plan.

However, to facilitate the maintenance and better use of signs in the area, the discussion below establishes some standards and conventions of sign location and installation.

First, the location of signage should be such as to allow motorists adequate time to react to the signage and make proper decisions. For example, due to the rural nature of the area and the situation of many items such as signage to blend into the background unnoticed, signage should give adequate warning to the motorist before needing to make a decision and should be of maximum size recommended by the Manual of Uniform Traffic Control Devices or ODOT Sign Policy and Guidelines. Warning signs should be installed prior to stop signs and cross-street signs. Typically for an un-posted facility with a 50 mph speed limit, a warning sign associated with a stopping condition should be installed 375 from the point of interest.

The most typical advance warning signs that would be used in the study area would be a stop ahead sign known as a W3-1a sign, side road sign known as a W2-2 or W2-3 sign with a supplemental street name sign, a cross road known as a W2-1 sign with a supplemental street name sign. The supplemental street name sign may have standard lettering from 4 to 9 inches. Other warning signs that could be placed in the study include railroad crossing and fire station warning signs. The typical sizes of these warning signs range from 36 to 48 inches. Due to the vastness of the study area it may be desirable to use 48 inch warning signs. It is suggested that through the maintenance process of the Umatilla County Public Works Department that the signage within the study area be upgraded and replaced.

Upgrade of guide signs to the interstate can be coordinated with ODOT as to the type, location, and size of these signs.

TASK 5.3
EVALUATE CURRENT ZONING BUILD OUT WITH 20-YEAR TRAFFIC FORECAST

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MEMORANDUM

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: Maximum Zoning Build Out Travel Forecast Scenario

To study the maximum potential impact of the full development of the study area, every vacant or under utilized parcel within the study area was assumed with a future build out assumption. This condition was well developed in the Westland Road Developments Traffic Impact Analysis conducted by Access Engineering in September 22, 2000. H. Lee & Associates updated this analysis by using current 2003 turning movement traffic volumes as a baseline. The trips generated by future development in the study area as identified by the Access Engineering study was then added to the 2003 existing baseline traffic counts to derive the 2023 full study area build out traffic volumes. These traffic volumes are shown in Attachment 1.

Based on the forecasted 2023 traffic volumes for the maximum study area build out scenario, levels of service and v/c ratio analyses were conducted at the study area intersections. This analysis is summarized in Table 1.

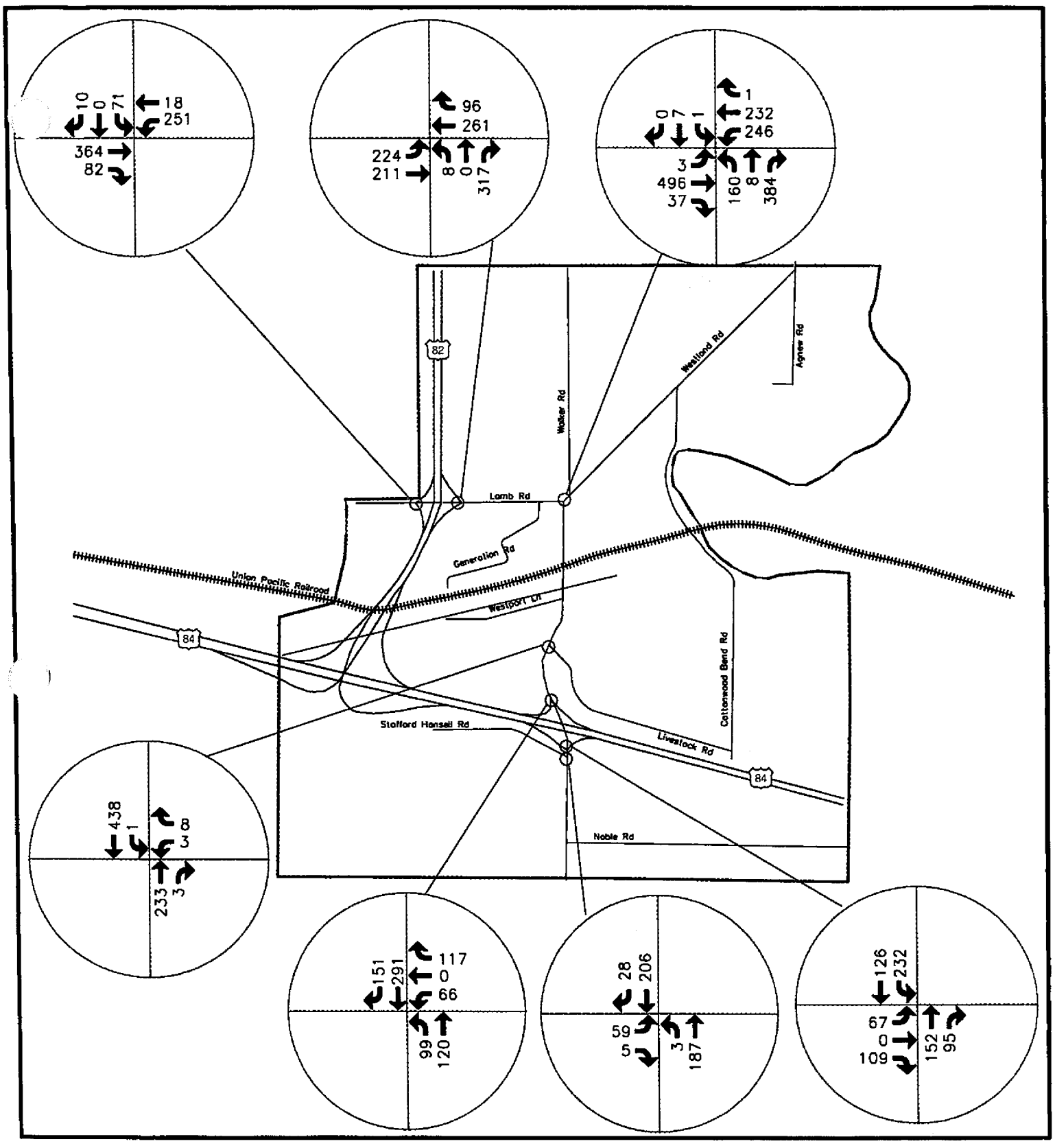
As shown in Table 1, all of the study area intersections are projected to operate at acceptable levels of service and v/c ratios with the exception of the Lamb Road/Walker Road/Westland Road intersection. The southbound movement of this intersection is projected to operate at LOS F with a v/c ratio of over 1.00.

It should be noted that the southbound approach of the Lamb Road/I-84 Southbound Ramps intersection is projected to operate at LOS F. However, since this is an ODOT intersection, the standard is based on v/c ratio. The v/c ratio of this movement is only 0.65 and is within the allowable v/c ratio standard.

Even the maximum study area build out scenario indicates that the roadways within the study area should be adequate to serve all future development. The only exception to this is the need to improve the alignment of the Westland Road/Lamb Road/Walker Road intersection.

Table 1. Year 2023 Future Access Engineering Alternative Level of Service and V/C Ratio Summary

	PM Peak Hour		
ODOT Unsignalized Intersection	LOS	Average Delay (sec)	V/C Ratio
Lamb Road/I-82 Southbound Ramps			
Westbound Left	B	10.5	0.32
Southbound Approach	F	60.0	0.65
Lamb Road/I-82 Southbound Ramps			
Eastbound Left	B	10.3	0.37
Northbound Approach	D	29.3	0.75
Westland Road/I-84 Westbound Ramps			
Westbound Approach	C	22.3	0.52
Northbound Left	A	9.7	0.16
Westland Road/I-84 Eastbound Ramps			
Eastbound Approach	D	33.9	0.65
Southbound Left	A	9.6	0.27
County Unsignalized Intersection			
Westland Road/Lamb Road/Walker Road			
Eastbound Approach	F	>100	>1.00
Westbound Left	A	9.7	0.29
Northbound Left	A	8.5	0.16
Southbound Approach	F	>100	>1.00
Westland Road/Livestock Road			
Westbound Approach	B	14.2	0.11
Southbound Left	A	8.5	0.01
Col Jordan Road/Stafford-Hansel Road			
Eastbound Approach	C	15.1	0.20
Northbound Left	A	8.1	0.01



Westland Road Interchange Transportation Plan

Attachment 1
2023 P.M. Peak Hour Traffic Volumes
for Maximum Study Area Build Out

LEGEND
15 P.M. Peak Hour Traffic Volume

NOT TO SCALE

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Col Jordan/Stafford Hansell*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*6/27/2003*	Analysis Year	*Year 2023 - Access Eng Alt*
Analysis Time Period	*PM Peak*		
Project Description	*Year 2023 - Access Eng Alt*		
East/West Street:	*Stafford-Hansell Road*	North/South Street:	*Col Jordan Road*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*3*	*187*	*0*	*0*	*206*	*28*
Peak-Hour Factor, PHF	*0.59*	*0.59*	*0.80*	*0.78*	*0.78*	*0.78*
Hourly Flow Rate, HFR	*5*	*316*	*0*	*0*	*264*	*35*
Percent Heavy Vehicles	*20*	--	--	*20*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*59*	*0*	*5*
Peak-Hour Factor, PHF	*0.75*	*0.75*	*0.75*	*0.73*	*0.73*	*0.73*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*80*	*0*	*6*
Percent Heavy Vehicles	*20*	*20*	*20*	*20*	*20*	*20*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
v (vph)	*5*						*86*	
C (m) (vph)	*1166*						*441*	
v/c	*0.00*						*0.20*	
95% queue length	*0.01*						*0.72*	
Control Delay	*8.1*						*15.1*	
LOS	*A*						*C*	
Approach Delay	--	--				*15.1*		
Approach LOS	--	--				*C*		

>

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Westland Rd/I-84 EB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*6/27/2003*	Analysis Year	*Year 2023 - Access Eng Alt*
Analysis Time Period	*PM Peak*		

Project Description *Year 2023 - Access Eng Alt*

East/West Street: *I-84 Eastbound Ramps* | North/South Street: *Westland Rd*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*152*	*95*	*232*	*126*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.83*	*0.83*	*0.80*	*0.80*	*1.00*
Hourly Flow Rate, HFR	*0*	*183*	*114*	*289*	*157*	*0*
Percent Heavy Vehicles	*7*	--	--	*41*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*67*	*0*	*109*
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*0.80*	*1.00*	*0.80*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*83*	*0*	*136*
Percent Heavy Vehicles	*50*	*0*	*50*	*43*	*0*	*43*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*					*LR*	
v (vph)		*289*					*219*	
C (m) (vph)		*1072*					*335*	
v/c		*0.27*					*0.65*	
95% queue length		*1.10*					*4.36*	
Control Delay		*9.6*					*33.9*	
LOS		*A*					*D*	
Approach Delay	--	--				*33.9*		
Approach LOS	--	--				*D*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Westland Rd/I-84 WB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*6/27/2003*	Analysis Year	*Year 2023 - Access Eng Alt*
Analysis Time Period	*PM Peak*		
Project Description	*Year 2023 - Access Eng Alt*		
East/West Street:	*I-84 Westbound Ramps*	North/South Street:	*Westland Rd*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*99*	*120*	*0*	*0*	*291*	*151*
Peak-Hour Factor, PHF	*0.69*	*0.69*	*0.77*	*0.61*	*0.83*	*0.83*
Hourly Flow Rate, HFR	*143*	*173*	*0*	*0*	*350*	*181*
Percent Heavy Vehicles	*30*	--	--	*50*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*66*	*0*	*117*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.82*	*1.00*	*0.82*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*80*	*0*	*142*	*0*	*0*	*0*
Percent Heavy Vehicles	*31*	*0*	*31*	*7*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*			*LR*				
v (vph)	*143*			*222*				
C (m) (vph)	*909*			*426*				
v/c	*0.16*			*0.52*				
95% queue length	*0.56*			*2.93*				
Control Delay	*9.7*			*22.3*				
LOS	*A*			*C*				
Approach Delay	--	--	*22.3*					
Approach LOS	--	--	*C*					

>

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Westland Rd/Livestock Rd*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*6/27/2003*	Analysis Year	*Year 2023 - Access Eng Alt*
Analysis Time Period	*PM Peak*		

Project Description	*Year 2023 - Access Eng Alt*
East/West Street:	*Livestock Road*
Intersection Orientation:	*North-South*
North/South Street:	*Westland Rd*
Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*233*	*3*	*1*	*438*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.77*	*0.77*	*0.61*	*0.61*	*1.00*
Hourly Flow Rate, HFR	*0*	*302*	*3*	*1*	*718*	*0*
Percent Heavy Vehicles	*7*	--	--	*50*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*3*	*0*	*8*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR	*4*	*0*	*10*	*0*	*0*	*0*
Percent Heavy Vehicles	*50*	*0*	*50*	*7*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
v (vph)		*1*		*14*				
C (m) (vph)		*1027*		*406*				
v/c		*0.00*		*0.03*				
95% queue length		*0.00*		*0.11*				
Control Delay		*8.5*		*14.2*				
LOS		*A*		*B*				
Approach Delay	--	--	*14.2*					
Approach LOS	--	--	*B*					

>

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*JSB*
Agency/Co.	*H. Lee & Associates*
Date Performed	*6/27/2003*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*Westland Rd/Lamb Rd/Walker*
Jurisdiction	*Umatilla County, OR*
Analysis Year	*Year 2023 - Access Eng Alt*

Project Description *Year 2023 - Access Eng Alt (EB & NB legs switched)*

East/West Street: *Lamb Road/Westland Rd* | North/South Street: *Westland Rd/Walker Rd*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*168*	*0*	*384*	*246*	*232*	*1*
Peak-Hour Factor, PHF	*0.83*	*0.83*	*0.83*	*0.80*	*0.80*	*0.80*
Hourly Flow Rate, HFR	*202*	*0*	*462*	*307*	*289*	*1*
Percent Heavy Vehicles	*7*	--	--	*7*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*3*	*496*	*37*	*1*	*7*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.63*	*0.63*	*0.63*
Hourly Flow Rate, HFR	*3*	*551*	*41*	*1*	*11*	*0*
Percent Heavy Vehicles	*7*	*7*	*7*	*20*	*20*	*20*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*202*	*307*		*595*			*12*	
C (m) (vph)	*1244*	*1073*		*62*			*0*	
v/c	*0.16*	*0.29*		*9.60*				
95% queue length	*0.58*	*1.19*		*69.82*				
Control Delay	*8.5*	*9.7*						
LOS	*A*	*A*		*F*			*F*	
Approach Delay	--	--						
Approach LOS	--	--		*F*				

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Lamb Rd/I-82 NB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*6/27/2003*	Analysis Year	*Year 2023 - Access Eng Alt*
Analysis Time Period	*PM Peak*		

Project Description *Year 2023 - Access Eng Alt*

East/West Street: *Lamb Road* | North/South Street: *I-82 Northbound Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*224*	*211*	*0*	*0*	*261*	*96*
Peak-Hour Factor, PHF	*0.55*	*0.55*	*0.71*	*0.56*	*0.80*	*0.80*
Hourly Flow Rate, HFR	*407*	*383*	*0*	*0*	*326*	*119*
Percent Heavy Vehicles	*7*	--	--	*9*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*8*	*0*	*317*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.73*	*1.00*	*0.80*	*0.50*	*1.00*	*0.50*
Hourly Flow Rate, HFR	*10*	*0*	*396*	*0*	*0*	*0*
Percent Heavy Vehicles	*10*	*0*	*10*	*29*	*0*	*29*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*			*LR*				
v (vph)	*407*			*406*				
C (m) (vph)	*1089*			*539*				
v/c	*0.37*			*0.75*				
95% queue length	*1.75*			*6.57*				
Control Delay	*10.3*			*29.3*				
LOS	*B*			*D*				
Approach Delay	--	--	*29.3*					
Approach LOS	--	--	*D*					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*JSB*	Intersection	*Lamb Rd/I-82 SB Ramps*
Agency/Co.	*H. Lee & Associates*	Jurisdiction	*Umatilla County, OR*
Date Performed	*6/27/2003*	Analysis Year	*Year 2023 - Access Eng Alt*
Analysis Time Period	*PM Peak*		

Project Description *Year 2023 - Access Eng Alt*

East/West Street: *Lamb Road* | North/South Street: *I-82 Southbound Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*364*	*82*	*251*	*18*	*0*
Peak-Hour Factor, PHF	*1.00*	*0.80*	*0.71*	*0.80*	*0.56*	*1.00*
Hourly Flow Rate, HFR	*0*	*454*	*115*	*313*	*32*	*0*
Percent Heavy Vehicles	*0*	--	--	*9*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*0*	*0*	*0*	*71*	*0*	*10*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.80*	*1.00*	*0.50*
Hourly Flow Rate, HFR	*0*	*0*	*0*	*88*	*0*	*20*
Percent Heavy Vehicles	*0*	*0*	*0*	*8*	*0*	*29*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*					*LR*	
v (vph)		*313*					*108*	
C (m) (vph)		*969*					*166*	
v/c		*0.32*					*0.65*	
95% queue length		*1.41*					*3.70*	
Control Delay		*10.5*					*60.0*	
LOS		*B*					*F*	
Approach Delay	--	--				*60.0*		
Approach LOS	--	--				*F*		

TASK 5.4
EVALUATE ALTERNATIVES TO PROTECT RESOURCE LAND AROUND INTERCHANGE

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: Protection of Resource Land around the Interchanges

Based on the low and high travel forecast scenario, it is very clear that the study area has well in excess of a 20-year buildable land supply. In conjunction with limited water and sewer availability and the impending critical groundwater ordinance that will affect this area, development potential is the study area is limited. Therefore, there is no threat of encroachment of adjacent competing uses or rezone potential of the EFU resource lands within the study area and around the Westland Road and Lamb Road interchanges.

TASK 5.5
DEVELOP AND EVALUATE IMPROVEMENTS TO EXISTING FACILITIES

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Transportation Plan Management Team and TAC

From: Hann Lee, H. Lee & Associates

Date: June 26, 2003

Subject: Local Street Network and Access Management Plan

Introduction

The purpose of the development of a local street network and access management plan in the Westland Road/I-84/I-82 interchange area is to predefine the location of the local streets and driveways in relation to the two rural collector streets, Westland Road and Lamb Road.

The local street network and access management plan was developed by using Policy 3C of the 1999 Oregon Highway Plan; OAR 734-051-0200, Interchange Access Management Area Spacing Standards for Approaches; and the access spacing standards in the adopted 2002 Umatilla County Transportation System Plan as guidelines. Policy 3C is attached for reference under Attachment 1. OAR 734-051-0200 is attached for reference as Attachment 2.

Existing Access Spacing Standards

There are three relevant access spacing standards in developing the local street network and access management plan. The first standard is the spacing between a freeway ramp junction with a local cross street and the first full public access. The standard adopted in the 2002 Umatilla County Transportation System Plan is 1,320 foot spacing between a freeway ramp intersection with a local cross street and the first full access. This spacing standard is also consistent with the 1999 Oregon Highway Plan.

The second access spacing standard to consider in the development of the local street network and access management plan is the minimum public street to public street spacing standard. The 2002 Umatilla County Transportation System Plan requires that the minimum spacing standard between public roads on a designated rural collector arterial is 500 feet.

The third and final access spacing standard to consider is the minimum driveway spacing standard. The 2002 Umatilla County Transportation System Plan defines minimum driveway spacing on a rural collector arterial at 250 feet.

Existing Accesses on Westland Road south of I-84

Along Westland Road/Colonel Jordan Road, south of I-84 there are two public streets and three driveways within the study area. The two public streets are Stafford Hansell Road and Noble Road. Stafford Hansell Road is less than 200 feet from the I-84 Eastbound Ramp intersection with Westland Road/Colonel Jordan Road. Noble Road is more than 2,000 feet from the I-84 Eastbound Ramp intersection with Westland Road/Colonel Jordan Road.

The Shell Gas Station and Truck Stop and Barton Industries driveways are across from each other along Westland Road/Colonel Jordan Road and approximately 308 feet south of the I-84 Eastbound Ramp intersection. The only other driveway between Stafford Hansell Road and Noble Road is an agricultural driveway to a field approximately 300 feet south of the Shell and Barton Industries driveways.

There are several substandard conditions along Westland Road/Colonel Jordan Road south of I-84. First, Stafford Hansell Road does not meet the minimum spacing standard between an interchange ramp and the first full access public street. The adopted Umatilla County Transportation System Plan standard is 1,320 feet, which is also consistent with the 1999 Oregon Highway Plan. Based on the 1,320 foot spacing standard, none of the driveways meet the current standard either.

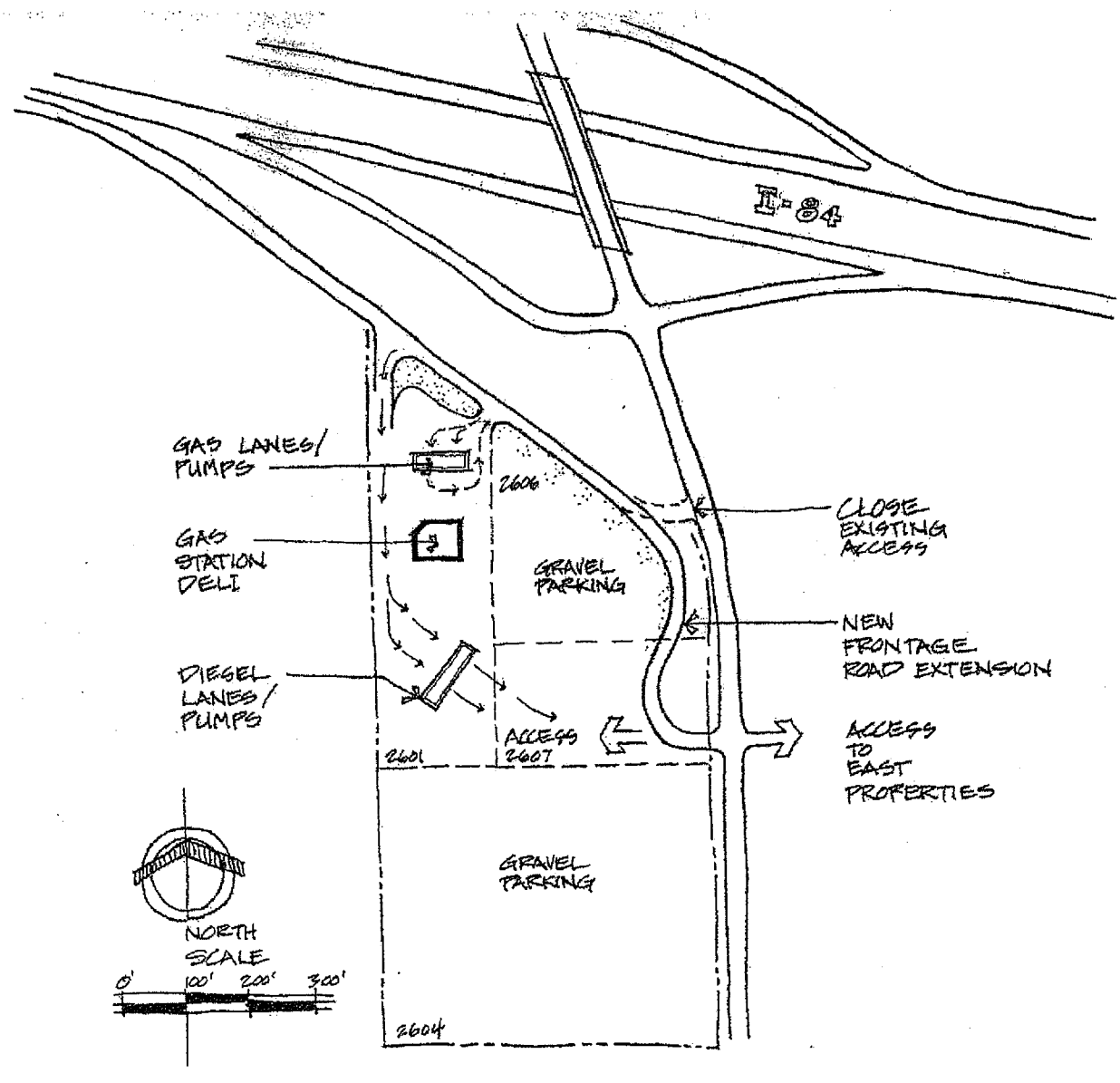
Proposed Future Accesses on Westland Road south of I-84

Based on OAR 734-051-0200(2) Retroactive Application, since the Westland Road/I-84 interchange existed prior to the adoption of the OAR and Umatilla County Transportation System Plan, the current standards do not apply until the adjacent property redevelops. Redevelopment is possible only along the areas that are currently zoned commercial or industrial south of I-84. Even at the time of redevelopment, the subject parcels cannot meet the minimum 1,320 foot spacing requirement from the I-84 Eastbound Ramp intersection since the parcel length are less than 900 feet. Therefore, based on OAR 734-051-0200(10) Deviations, a reasonable compromise to the standard will be sought.

One of the purposes of this plan is to develop a future access plan that would be implemented at the time of redevelopment. By creating this plan in advance of development or redevelopment, the interchange area can be protected and any deviations to the standards pre-approved through the adoption of the local street network and access management plan.

The most logical access management principal to guide the development of future access along Westland Road/Colonel Jordan Road south of I-84 is to consolidated driveways on both sides of the roadway and to make sure that driveways are across from each other. The Shell Gas Station/Truck Stop driveway is already along the southern parcel boundary and cannot be moved further south. It is 558 feet from the I-84 Eastbound Ramp intersection. This is the most logical location to consolidate accesses of the Shell Gas Station/Truck Stop, Barton Industries, and

Stafford Hansell Road at the existing location of the Shell/Barton Industries driveway. Although the spacing does not come close to the 1,320 foot spacing standard, it does significantly improve safety and the interaction between the I-84 Eastbound Ramp and Stafford Hansel Road traffic. Also, physical dimension constraints of the parcels in question dictate that this is the most that can logically be done to improve the access spacing issues. Since the traffic volumes on Westland Road/Colonel Jordan Road south of I-84 are relatively low compared to the rest of the study area, the compromised spacing standards are not likely to generate any operational or safety problems. The figure on the next page illustrates this future access concept.



Existing Accesses on Westland Road north of I-84 and south of the Union Pacific Railroad

Livestock Road is the only street or driveway that encroaches on the minimum access spacing standard from an interchange ramp. Livestock Road is less than 200 feet from the I-84 Westbound Ramp intersection with Westland Road.

The next access north of Livestock Road along Westland Road is the public street serving Freightliner. This street is approximately 1425 feet from the I-84 Westbound Ramp intersection with Westland Road. It meets the minimum spacing requirement of 1,320 feet from the interchange ramp intersection.

Stable Road is the next street north of Freightliner. It serves as an access to property along the west side of Westland Road and is approximately 480 feet north of the Freightliner access. The minimum spacing standard between public streets is 500 feet.

American Onion has a driveway about 250 feet north of Stable Road and 450 feet south of Westport Lane. This driveway meets the minimum driveway spacing standard of 250 feet from both the north and south directions.

Westport Lane is north of Stable Road approximately 700-750 feet to the north. The minimum 500 foot spacing standard between local streets is met between Westport Lane and Stable Road.

The Shell Gas Station and Truck Stop and Barton Industries driveways are across from each other along Westland Road/Colonel Jordan Road and approximately 308 feet south of the I-84 Eastbound Ramp intersection. The only other driveway between Stafford Hansell Road and Noble Road is an agricultural driveway to a field approximately 300 feet south of the Shell and Barton Industries driveways.

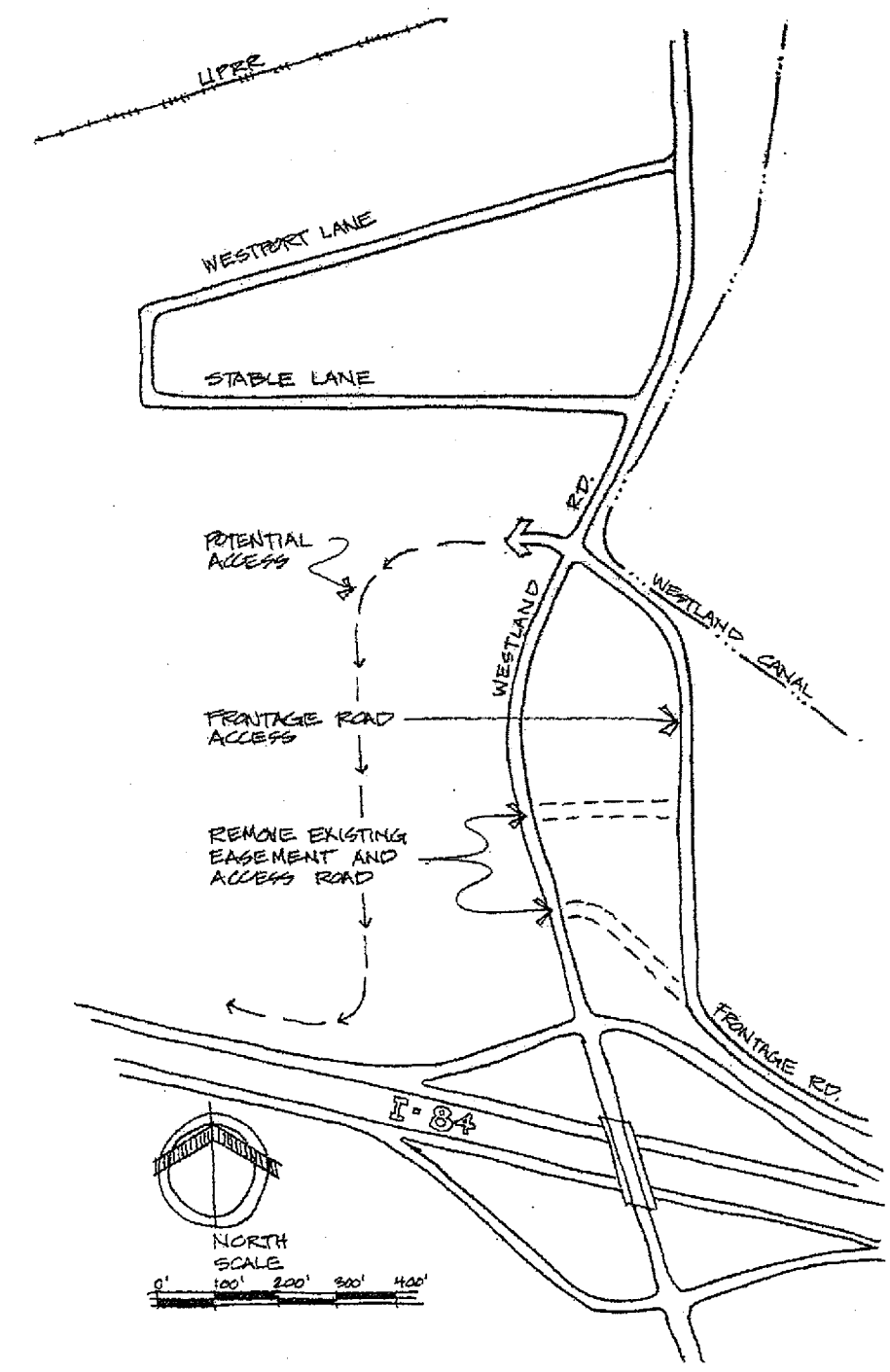
A Union Pacific Railroad access street exists on the west side of Westland Road approximately 370 feet north of Westport Lane. It meets all access spacing standards.

Proposed Future Accesses on Westland Road north of I-84 and south of the Union Pacific Railroad

All of the access spacing standards are met in the section of Westland Road between I–84 and the Union Pacific Railroad with the exception of Livestock Road and an existing right-of-way or easement just north of Livestock Road. To mitigate the poor access spacing between Livestock Road and the I-84 Westbound Ramp intersection, it is proposed that Livestock Road be abandoned. An existing frontage road exists parallel to Westland Road that Livestock Road can be realigned to. This existing frontage road eventually connects to Westland Road at the Freightliner access. Access to the west side of Westland Road can be provided by extending this frontage road across Westland Road.

Stable Road and Westport Lane should eventually be looped to provide better local access and circulation.

The figure below illustrates the future access concepts described above.



Existing Accesses on Westland Road north of the Union Pacific Railroad to Agnew Road

The section of Westland Road north of Union Pacific Road to Agnew Road meets all the existing spacing standard requirements with the exception of the potato shed driveway that is approximately 135 feet south of the Westland Road/Lamb Road/Walker Road intersection. The main access to the potato sheds are from Generation Road and the driveway on Westland Road is a secondary access. It is not likely that both the primary Generation Road access and Westland Road driveway are necessary to serve the potato sheds. Therefore, it is recommended that the potato shed driveway on Westland Road be eliminated.

Existing Accesses on Lamb Road between I-82 and Westland Road

There is only one access point on Lamb Road between I-82 and Westland Road. This access point is Generation Road. Generation Road is approximately 475 feet west of the Westland Road/Lamb Road/Walker Road intersection. This spacing is just shy of the 500 foot minimum spacing standard between local access streets. Since the spacing is almost 500 feet, and there are no operation issues that have been identified, it is recommended that Generation Road remains in its present location.

Attachment 1
1999 Oregon Highway Plan Policy 3C

Policy 3C: Interchange Access Management Areas[1]

It is the policy of the State of Oregon to plan for and manage grade-separated interchange areas to ensure safe and efficient operation between connecting roadways.

Action 3C1

Develop interchange area management plans to protect the function of interchanges to provide safe and efficient operations between connecting roadways and to minimize the need for major improvements of existing interchanges.

Action 3C.2

To improve an existing interchange or construct a new interchange:

- The interchange access management spacing standards are shown in Tables 16-19 in Appendix C;

- These standards do not retroactively apply to interchanges existing prior to adoption of this Oregon Highway Plan, except or until any redevelopment, change of use, or highway construction, reconstruction or modernization project affecting these existing interchanges occur. It is the goal at that time to meet the appropriate spacing standards, if possible, but, at the very least, to improve the current conditions by moving in the direction of the spacing standards;

- Necessary supporting improvements, such as roadway networks, channelization, medians and access control n the interchange management area must be identified in the local comprehensive plan and committed with an identified funding source, or must be in place;

- Access to cross streets shall be consistent with established standards for a distance on either side of the ramp connections so as to reduce conflicts and manage ramp operations. The Interchange Access Management Spacing Standards supercede the Access Management Classification and Spacing Standards (Policy 3A), unless the latter distance standards are greater (see Appendix C);

- Where possible, interchanges on Freeways and Expressways shall connect to state highways, major or minor arterials;

- Interchanges on Statewide, Regional or District Highways may connect to state highways, major or minor arterials, other county or city roads, or private roads, as appropriate;

- The design of urban interchanges must consider the need for transit and park-and-ride facilities, along with the interchange's effect on pedestrian and bicycle traffic, and

[1] 1999 Oregon Highway Plan, Oregon Department of Transportation, Transportation Development Division, Planning Section, 1999, pages 102-104.

- When possible, access control shall be purchased on crossroads for a minimum distance of 1320 feet (400 meters) from a ramp intersection or the end of a free flow ramp terminal merge lane taper.

Action 3C3

Establish criteria for when deviations to the interchange access management spacing standards may be considered. The kinds of considerations likely to be included area:

- Location of existing parallel roadways (e.g., Highways 99W or 99E which are parallel Interstate 5);
- Use of traffic controls;
- Potential queuing, increased delays and safety impacts; and
- Possible use of non traversible medians for right-in/right-out movements.

Action 3C4

When new approach roads or intersections are planned or constructed near existing interchanges, property is redeveloped or there is a change of use, wherever possible, the following access spacing and operation standards should be applied within the Interchange Access Management Area (measurements are from ramp intersection or the end of a free flow ramp terminal merge lane taper).

- Approach roads on the crossroads at no closer than 750 feet (230 meters), and between 750 feet (230 meters) and 1320 feet (400 meters), shall be limited to right-in/right-out. This may require construction of a nontraversible median or a median barrier.
- The first full intersection on a crossroad should be no closer than 1320 feet (400 meters).

Action 3C.5

As opportunities arise, rights of access shall be purchased on crossroads around existing interchanges. Whenever possible, this protective buying should be for a distance of 1320 feet (400 meters) on the crossroads.

Action 3C.6

Plan for and operate traffic controls within the Interchange Access Management Area with a priority of moving traffic off the main highway, freeway or Expressway and away from the interchange area. Within the Interchange Access Management Area, priority shall be given to operating signals for the safe and efficient operation of the interchange.

Action 3C.7

Use grade-separated crossings without connecting ramps to provide crossing corridors that relieve traffic crossing demands through interchanges.

Attachment 2
OAR 734-051-0200 Interchange Access Management Area Spacing Standards for Approaches

OAR 734-051-0200 Interchange Access Management Area Spacing Standards for Approaches

OAR 734-051-0200(1) Policy

Rule

It is the policy of the State of Oregon to plan for and manage grade-separated interchange areas to ensure safe and efficient operation between connecting roadways.

Facts

Operation between connecting roadways

- Safety
- Efficiency

Findings

Finding	Determination
The State of Oregon will be able to plan for and manage the interchange area to ensure safe and efficient operation between connecting roadways.	This criteria is met.
The State of Oregon will not be able to plan for and manage the interchange area to ensure safe and efficient operation between connecting roadways.	This criteria is not met.

OAR 734-051-0200(2) Retroactive Application

Rule

These standards do not retroactively apply to interchanges existing prior to adoption of this rule, except or until any redevelopment, change of use, or highway or interchange construction projects, highway or any other roadway project as determined by the Region Manager, such as preservation, safety and operation projects that affect curb placement or sidewalks, which affect these existing interchanges occurs.

Facts

- Redevelopment or change of use
- Highway or interchange construction project
- Effect on the existing interchange

Findings

Finding	Determination
The interchange did not yet exist prior to adoption of OAR 734-051	These standards do apply.
The interchange existed prior to adoption of OAR 734-051, AND The property is redeveloping or changing its use; AND The change affects the existing interchange.	These standards do apply.
The interchange existed prior to adoption of OAR 734-051, AND A highway or interchange construction project, highway or any other roadway project as determined by the Region Manager, such as preservation, safety and operation projects that affect curb placement or sidewalks is occuring; AND The change affects the existing interchange.	These standards do apply.
All other cases	These standards do not apply.

OAR 734-051-0200(3) Improve Current Conditions

Rule

It is the goal at the time of any redevelopment, change of use, or highway or Interchange construction projects, highway or interchange modernization projects, or any other roadway project as determined by the Region Manager, such as preservation, safety and operation projects that affect curb placement or sidewalks, to meet the appropriate spacing standards, but at the very least, to improve the current conditions by moving in the direction of the spacing standards to approve deviations in those circumstances as part of a project development construction plan or a mitigation plan.

Facts

Application Type
- Redevelopment
- Change of Use
- Highway or interchange construction project
- Highway or interchange modernization project
- Other roadway project as determined by the Region Manager
  - Preservation
  - Safety and operation projects
  - Affect curb placement or sidewalks

Spacing Standards
- Meeting the appropriate spacing standards
- Improvement in the current conditions
  - Movement in the direction of the spacing standards
  - Project development construction plan
  - Mitigation plan

Findings

Finding	Determination
The application is not for a redevelopment, change of use, or highway or interchange construction projects, highway or interchange modernization projects, or any other roadway project as determined by the Region Manager, such as preservation, safety and operation projects that affect curb placement or sidewalks	This criteria is not applicable.

The application is for a redevelopment, change of use, or highway or interchange construction projects, highway or interchange modernization projects, or any other roadway project as determined by the Region Manager, such as preservation, safety and operation projects that affect curb placement or sidewalks; AND the appropriate spacing standards are met	This criteria is met.
The application is for a redevelopment, change of use, or highway or interchange construction projects, highway or interchange modernization projects, or any other roadway project as determined by the Region Manager, such as preservation, safety and operation projects that affect curb placement or sidewalks; AND the current conditions will be improved by moving in the direction of the spacing standards	This criteria is met.
All other cases	This criteria is not met.

OAR 734-051-0200(4) Interchange Area Management Plans

Rule

Interchange area management plans describe the roadway network, right-of-way, access control, and land parcels in the analysis area of an existing or planned interchange. An interchange area management plan is required for any new interchange or significant modifications to an existing interchange. Both the Department and local governmental agencies are encouraged to develop interchange area management plans with the goal to protect the function of interchanges by maximizing the capacity of the interchanges for safe movement from the mainline facility, to provide safe and efficient operations between connecting roadways and to minimize the need for major improvements of existing interchanges. Also see Access Management Plans, as set forth in OAR 734-051-0360, and Project Development, as set forth in OAR 734-051-0370

Facts

Interchange area management plan
Description of the
- roadway network
- right-of-way
- Access Control
- Land parcels

Analysis area
Existing or planned interchange
New interchange
Significant modifications to existing interchange
Capacity of the interchange for safe movement from the mainline facility
Operations between connecting roadways
Need for major improvements

See OAR

- OAR 734-051-0360 (Access Management Plans)
- OAR 734-051-0370 (Project Development)

Findings

Finding	Determination
The application is for a new interchange	An interchange area management plan is required
The application is for significant modifications to an existing interchange	An interchange area management plan is required
All other cases	An interchange area management plan is not required

Findings

Finding	Determination
The interchange area management plan describes the roadway network, right-of-way, access control, and land parcels in the analysis area, AND protects the function of the interchange by maximizing the capacity of the interchange for safe movement from the mainline facility, provides safe and efficient operations between connecting roadways and minimizes the need for major improvements of existing interchanges	This criteria is met
All other cases	This criteria is not met.

Rule

(a) Should be developed in coordination with the affected local government;

Facts

- Affected local government
- Coordination in development of the interchange area management plan

Findings

Finding	Determination
The interchange area management plan was developed in coordination with the affected local government	This criteria is met
The interchange area management plan was not developed in coordination with the affected local government	Findings should be provided regarding justification for not meeting the criteria in this case
All other cases	This criteria is not applicable

Rule

(b) Should be performed in concert with transportation system plans, corridor plans and local comprehensive plans;

Facts

Performance in concert with plans

- Transportation system plan
- Corridor plans
- Comprehensive plan

Findings

Finding	Determination
The interchange area management plan was performed in concert with transportation system plans, corridor plans and local comprehensive plans	This criteria is met
The interchange area management plan was not performed in concert with transportation system plans, corridor plans and local comprehensive plans	Findings should be provided regarding justification for not meeting the criteria in this case
All other cases	This criteria is not applicable

Rule

(c) Shall be in conformance with transportation system plans, corridor plans and local comprehensive plans;

Facts

Conformance with plans

- Transportation system plan
- Corridor plans
- Comprehensive plan

Findings

Finding	Determination
The interchange area management plan conforms with transportation system plans, corridor plans and local comprehensive plans	This criteria is met
All other cases	This criteria is not met

Rule

(d) Should contain short, medium and long-range actions to improve operations and safety in the interchange area;

Facts

Actions to improve operations and safety in the interchange area

- Short
- Medium
- Long Range

Findings

Finding	Determination
The interchange area management plan contained short, medium and long-range actions to improve operations and safety in the interchange area	This criteria is met
The interchange area management plan did not contain short, medium and long-range actions to improve operations and safety in the interchange area	Findings should be provided regarding justification for not meeting the criteria in this case
All other cases	This criteria is not applicable

Rule

(e) Should be developed no later than the time the interchange is designed or being redesigned; and

Facts

- Date interchange area management plan developed
- Date the interchange is designed or being redesigned

Findings

Finding	Determination
The interchange area management plan was developed at or prior to the time the interchange is designed or being redesigned	This criteria is met
The interchange area management plan was developed after the time the interchange is designed or being redesigned	Findings should be provided regarding justification for not meeting the criteria in this case
All other cases	This criteria is not applicable

Rule

(f) Shall include current and future traffic volumes and flows, roadway geometry, traffic control devices, current and planned land uses and zoning, and the location of all current and planned approaches. The study area shall be sufficient to provide adequate assurance of the safe operation of the facility through the design traffic forecast period, typically 20 years. Interchange area management plans shall contain short, medium and long-range actions to improve operations and attain spacing standards, and such actions shall address roadway improvement actions, including local street network improvements and construction as well as driveway consolidations and shared approaches.

Facts

Current and Future

- Traffic volumes and flows
- Roadway geometry
- Traffic control devices
- Land Uses
- Zoning
- Location of Approaches

Study Area

- Design traffic forecast period
- Adequacy to ensure safe operation of the facility

Actions (short, medium and long-range)

- To improve operations
- To attain spacing standards
- Roadway improvement actions
- Local street network improvements and construction
- Driveway consolidations
- Shared approaches

Findings

Finding	Determination

The interchange area management plan included current and future traffic volumes and flows, roadway geometry, traffic control devices, current and planned land uses and zoning, and the location of all current and planned approaches; AND Was sufficient to provide adequate assurance of the safe operation of the facility through the design traffic forecast period; AND Contains short, medium and long-range actions to improve operations and attain spacing standards; AND such actions addressed roadway improvement actions, including local street network improvements and construction as well as driveway consolidations and shared approaches.	This criteria is met
All other cases	This criteria is not met

OAR 734-051-0200(5) Existing Interchanges

Rule

To maximize the operational life and preserve and improve safety of existing interchanges not scheduled for significant improvements, the Department will work with local governments to prioritize the development of interchange area management plans for these interchanges. Priority shall be placed on those facilities on the Interstate system with cross roads carrying high volumes or providing important statewide or regional connectivity. The interchange area management plan shall identify opportunities to improve operations and safety commensurate with the intensity of development, Recognizing the importance of maximizing opportunities for improvement when roadway work is contemplated or properties develop or redevelop.

Facts

Schedule of significant improvements
Prioritization of development of interchange area management plan

- Cross road volume
- Connectivity

Opportunities to improve operations and safety
Intensity of development
Potential for maximizing opportunities for improvement when

- roadway work is contemplated
- properties develop or redevelop

Findings

Finding	Determination
The interchange is an existing interchange not scheduled for significant improvements	The Department will work with local governments to prioritize the development of interchange area management plans for these interchanges
All other cases	This criteria is not met

Findings

Finding	Determination

The facility is on the Interstate system AND The cross road carries high volumes ORor providing important statewide or regional connectivity. The interchange area management plan shall identify opportunities to improve operations and safety commensurate with the intensity of development, Recognizing the importance of maximizing opportunities for improvement when roadway work is contemplated or properties develop or redevelop.	Priority shall be placed on this facility
The facility is on the Interstate system AND The cross road provides important statewide or regional connectivity	
All other cases	This criteria is not met

Findings

Finding	Determination
The interchange area management plan identifies opportunities to improve operations and safety commensurate with the intensity of development, Recognizing the importance of maximizing opportunities for improvement when roadway work is contemplated or properties develop or redevelop.	This criteria is met
All other cases	This criteria is not met

OAR 734-051-0200(6) Refinement Plans and TSP's

Rule

Where interchange area management plans are included in refinement plans and transportation system plans, they shall be consistent with the spacing standards provided in this rule, or with the deviation limits as set forth in OAR 734-051-0340.

Facts

- Refinement plan
- Transportation system plan
- Consistency with the spacing standards provided in this rule
- Consistency with the deviation limits as set forth in OAR 734-051-0340.

Findings

Finding	Determination
The interchange area management plan is included in refinement plans and transportation system plans, AND Is consistent with the spacing standards provided in this rule, or with the deviation limits as set forth in OAR 734-051-0340.	This criteria is met
The interchange area management plan is not included in refinement plans and transportation system plans	This criteria is not applicable.
All other cases	This criteria is not met

OAR 734-051-0200(7) Interchange Spacing Standards

Rule

The interchange access management spacing standards to be applied to improvement of an existing interchange, construction of a new interchange, or a request for a new approach within the area of an existing interchange are shown in **Tables 6, 7, 8 and 9. Tables 6, 7, 8 and 9** and **Figures 1, 2, 3 and 4, Measurement of Spacing Standards**, are hereby adopted and made a part of this rule.

Facts

- Existing interchange
  - Interchange Improvement
  - Request for a new approach
- New interchange construction
- Applicable spacing standards from Tables 6, 7, 8 and 9. Tables 6, 7, 8 and 9 and Figures 1, 2, 3 and 4, Measurement of Spacing Standards

Findings

Finding	Determination
The application involves improvement of an existing interchange; OR Construction of a new interchange; OR a request for a new approach within the area of an existing interchange	This criteria is applicable.
All other cases	This criteria is not applicable

Findings

Finding	Determination
The criteria is applicable, AND The applicable spacing standards have been identified from **Tables 6, 7, 8 and 9. Tables 6, 7, 8 and 9** and **Figures 1, 2, 3 and 4, Measurement of Spacing Standards**	This criteria is met.
All other cases	This criteria is not met.

OAR 734-051-0200(8) Acquiring Access Rights on Crossroads

Rule

As opportunities arise, access rights shall be acquired on crossroads around new and existing interchanges. Whenever possible, this protective acquisition should be for a distance of 1320 feet (400 meters) on the crossroads.

Facts

- Crossroad access rights over distance of 1320 feet (400 meters)
  - Existing
  - Opportunities to acquire

Findings

Finding	Determination
An opportunity exists to acquire access rights	Access rights shall be acquired.
All other cases	This criteria is not applicable.

OAR 734-051-0200(9) Interchange Traffic Controls

Rule

The Department shall plan for and operate traffic controls within the Interchange Access Management Area with a priority of moving traffic off the main highway, freeway or Expressway and away from the interchange area. Within the Interchange Access Management Area, priority shall be given to operating signals for the safe and efficient operation of the interchange.

Facts

Movement of traffic off the main highway, freeway or Expressway and away from the interchange area
- Traffic controls
- Plans
- Operation

Signal operation
- Safety
- Efficiency

Findings

Finding	Determination
The Department is planning for and operating traffic controls within the Interchange Access Management Area with a priority of moving traffic off the main highway, freeway or Expressway and away from the interchange area; AND Within the Interchange Access Management Area, priority is given to operating signals for the safe and efficient operation of the interchange	This criteria is met.
All other cases	This criteria is not met.

OAR 734-051-0200(10) Deviations

Rule

Deviations to the interchange access management spacing standards are set forth in OAR 734-051-0320 through 734-051-0340.

See OAR

OAR 734-051-0320 through 734-051-0340

Findings

Finding	Determination
The interchange access management spacing standards are met	This criteria is not applicable.
The interchange access management spacing standards are not met	This criteria is applicable. Findings are required for OAR 734-051-0320 through 734-051-0340.

OAR 734-051-0320 Requests for Deviations to Access Management Standards

OAR 734-051-0320(1) General Policy

Rule

Pursuant to OAR 734-051-0050 (General Policy), the Department shall manage access to the highway facilities of the state to the degree necessary to maintain functional use, highway safety, and the preservation of public investment consistent with the 1999 Oregon Highway Plan and adopted local comprehensive plans. Notwithstanding the above, it is the policy of the State of Oregon to allow deviations from adopted access spacing standards when circumstances make allowing a deviation necessary and the deviation is compatible with safe and efficient operation of state highways.

Facts

- Is the deviation necessary? (Yes or No), state reasons
- Is the deviation compatible with safe and efficient operation of state highways? (Yes or No), state reasons

Findings

Finding	Determination
Allowing the deviation is necessary; AND The deviation is compatible with safe and efficient operation of state highways	The deviation from adopted access spacing standards is allowed
All other cases	The deviation from adopted access spacing standards is not allowed

OAR 734-051-0320(2) When a Deviation May be Requested

Rule

A deviation may be requested when an application does not meet the access management standards, and the criteria for safety set forth in OAR 734-051-0080(3), is not compromised:

Facts

- Does the application meet the access management standards? (Yes or No), state reasons
- Is the criteria for safety set forth in OAR 734-051-0080(3) compromised? (Yes or No), state reasons

Findings

Finding	Determination
The application does not meet the access management standards, AND The criteria for safety set forth in OAR 734-051-0080(3), is not compromised	The deviation may be requested
All other cases	The deviation may not be requested

OAR 734-051-0320(2)(a) Minor Deviation

Rule

(a) The request for a minor deviation shall be included as part of the initial application for an approach, as set forth in OAR 734-051-0130; and

Facts

- Is the request for a minor deviation? (Yes or No)
- Was the request included as part of the initial application for an approach, as set forth in OAR 734-051-0130? (Yes or No)

Findings

Finding	Determination
The request is for a minor deviation; AND The request for a minor deviation was included as part of the initial application for an approach, as set forth in OAR 734-051-0130	This criteria is met.
The request is not for a minor deviation	This criteria is not applicable.
All other cases	This criteria is not met.

OAR 734-051-0320(2)(b) Major Deviation

Rule

(b) The request for a major deviation shall be included as part of the supplemental documentation required to complete the application process, as set forth in OAR 734-051-0140.

Facts

- Is the request for a major deviation? (Yes or No)
- Was the request included as part of the supplemental documentation? (Yes or No)

Findings

Finding	Determination
The request is for a major deviation; AND The request for a major deviation was included as part of the supplemental documentation required to complete the application process, as set forth in OAR 734-051-0140	This criteria is met.
The request is not for a major deviation	This criteria is not applicable.
All other cases	This criteria is not met.

Rule

Additional documentation, including but not limited to the following, also may be required:
(A) A Transportation Impact Study, as set forth in OAR 734-051-0180, to demonstrate how long-term safety and operational impacts can be adequately mitigated; and

Facts

- Was a TIS required?
- If required, was a TIS submitted?
- Was the TIS in accordance with OAR 734-051-0180, to demonstrate how long-term safety and operational impacts can be adequately mitigated? (Yes or No); if not, state reasons

See OAR

OAR 734-051-0180

Findings

Finding	Determination
A TIS was not required	This criteria is not applicable.
A TIS was required and was provided as set forth in OAR 734-051-0180 (list author, title, date)	This criteria is met.
A TIS was required but was not provided as set forth in OAR 734-051-0180	This criteria is not met.

Rule

(B) An Access Management Plan, as set forth in OAR 734-051-0210(4), and approved by the Department, that outlines long-term access management objectives, standards, and processes necessary to obtain the objectives.

Facts

- Was an Access Management Plan required? (Yes or No)
- Was an Access Management Plan provided as set forth in OAR 734-051-0210(4)? (Yes or No)
- Was the Access Management Plan approved by the Department?

See OAR OAR 734-051-0210(4)

Findings

Finding	Determination
An Access Management Plan was not required	This criteria is not applicable.
An Access Management Plan was required AND was provided as set forth in as set forth in OAR 734-051-0210(4) (list author, title, date) AND was approved by the Department	This criteria is met.
All other cases	This criteria is not met.

OAR 734-051-0320(3) Landlocked Parcel

Rule

A request for either a minor or major deviation shall be approved by the Region Manager when the deviation would allow an approach to a parcel that has an existing right of access, but would be landlocked by denial of a Permit to Operate, Maintain and Use an Approach, as long as an approach can be allowed without causing any significant safety or traffic operation problems.

Facts

- Right of Access?
- Landlocked by denial of a permit?
- Can approach be allowed without causing any significant safety or traffic operation problems?
- Minor or major deviation requested?

Findings

Finding	Determination
The subject property has a right of access; AND Ther parcel would be landlocked by denial of a permit; AND The approach can be allowed without causing any significant safety or traffic operation problems	The request for either a major or minor deviation shall be approved by the Region Manager
All other cases	This criteria is not met

OAR 734-051-0320(4) Deviation Criteria

Rule

A request for a minor deviation shall be approved by the Region Manager, and a request for a major deviation may be approved by the Region Manager, where the deviation would not result in significant safety or traffic operation problems, and if one or more of the following conditions exist:

Facts

- Minor or major deviation?
- Would the deviation result in significant safety or traffic operation problems?
- Do one or more of the conditions as set forth in OAR 734-051-0320 (4) a-h exist?

Findings

Finding	Determination
The request is for a minor deviation; AND The deviation would not result in significant safety or traffic operation problems AND One or more of the conditions as set forth in OAR 734-051-0320 (4) a-h exist	The request for a minor deviation shall be approved by the Region Manager
The request is for a major deviation; AND The deviation would not result in significant safety or traffic operation problems AND One or more of the conditions as set forth in OAR 734-051-0320 (4) a-h exist	The request for a major deviation may be approved by the Region Manager
All other cases	This criteria is not met

OAR 734-051-0320(4)(a) Safety or Operation Problem

Rule

Strict application of the access management standards would result in a safety or traffic operation problem;

Facts

- Can standards be met?
- Would strict application of the access management standards result in a safety or traffic operation problem?

Findings

Finding	Determination
Strict application of the access management standards would result in a safety or traffic operation problem;	This criteria is met
Standards cannot be met	This criteria is not met
All other cases	This criteria is not met

OAR 734-051-0320(4)(b) Existing Public Approaches

Rule

(b) Existing public approaches cannot be moved due to excessive cost, topography, or environmental concerns;

Facts

- Note existing public approaches
- Evaluate potential to move considering
  - cost estimate
  - topography, or
  - environmental concerns

Findings

Finding	Determination
There are no existing public approaches that could be moved	This criteria is not applicable
There are existing public approaches that could be moved, AND The existing public approaches cannot be moved due to either excessive cost, OR topography, OR Environmental concerns	This criteria is met
All other cases	This criteria is not met

OAR 734-051-0320(4)(c) Existing Private Approaches

Rule

Where the applicant provides joint access serving two or more properties or has shown efforts to work with adjacent property owners to improve existing conditions and shows that existing private approaches cannot be closed, relocated, or shared due to existing development patterns, topography or lack of existing alternate roadway system;

Facts

- Is joint access serving two or more properties provided? Identify tax lots and easements
- Identify future development joint access
- Has applicant has shown efforts to work with adjacent property owners to improve existing conditions? What is their willingness regarding joint access?
- Has applicant shown that existing private approaches cannot be
  - closed,
  - relocated, or
  - shared
- due to existing
  - development patterns,
  - topography or
  - lack of existing alternate roadway system

Findings

Finding	Determination
The applicant provides joint access serving two or more properties, OR The applicant has shown efforts to work with adjacent property owners to improve existing conditions AND shows that existing private approaches cannot be closed, relocated, or shared due to existing development patterns, topography or lack of existing alternate roadway system	This criteria is met
All other cases	This criteria is not met

OAR 734-051-0320(4)(d) Development Patterns and Land Holdings

Rule

Where the applicant has shown efforts to work with adjacent property owners to improve existing conditions and shows that existing development patterns or land holdings make it impossible to meet the spacing standards;

Facts

- Has the applicant shown efforts to work with adjacent property owners to improve existing conditions?
- Has the applicant shown that existing
  - development patterns (such as building footprints and lot shapes or partitioning) or
  - land holdings
- make it impossible to meet the spacing standards?; state reasons

Findings

Finding	Determination
The applicant has shown efforts to work with adjacent property owners to improve existing conditions, AND shows that existing development patterns or land holdings make it impossible to meet the spacing standards	This criteria is met
All other cases	This criteria is not met

OAR 734-051-0320(4)(e) Alternate Roadway System

Rule

Establishing an alternate roadway system is not practical or cost effective

Facts

- Establishing an alternate roadway system is not
  - practical (considerations include topography, building footprints, willingness of property owners, etc.) or
  - cost effective

Findings

Finding	Determination
Establishing an alternate roadway system is not practical, or Is not cost effective	This criteria is met
All other cases	This criteria is not met

OAR 734-051-0320(4)(f) Unrelocatable Control Points

Rule

The proposed deviation results from the existence of unrelocatable control points such as bridges, waterways, parks, historic or archaeological areas, cemeteries, or other unique natural features;

Facts

- Does the proposed deviation result from the existence of unrelocatable control points such as
  - Bridges (or abutments),
  - Waterways (or wetlands),
  - parks,
  - historic or archaeological areas,
  - cemeteries, or
  - other unique natural features;

Findings

Finding	Determination
There are such control points, AND The control points are unrelocatable AND the proposed deviation result from the existence of the unrelocatable control points	This criteria is met
There are no such control points, OR They are relocatable	This criteria is not applicable
All other cases	This criteria is not met

OAR 734-051-0320(4)(g) Improves Traffic Safety or Operations

Rule

The proposed deviation improves traffic safety or operations; or

Facts

- Safety issues identified from OAR 734-051-0080(3)
- Operations issues

See OAR

OAR 734-051-0080(3)

Findings

Finding	Determination
The proposed deviation improves traffic safety OR Operations	This criteria is met
All other cases	This criteria is not met

OAR 734-051-0320(4)(h) Other Conditions

Rule

Any other conditions deemed appropriate by the Region Manager.

Facts

- Identify other conditions deemed appropriate by the Region Manager, such as
  - Separation of traffic types

Findings

Finding	Determination
Other condition(s) were deemed appropriate by the Region Manager, AND The other condition(s) were met	This criteria is met
All other cases	This criteria is not met

OAR 734-051-0320(5) Mitigation Measures

Rule

In approving a request for deviation, the applicant may propose and the Region Manager may approve, or the Region Manager may propose and require one or more mitigation measures as set forth in OAR 734-051-0210.

Facts

- Mitigation measures proposed by applicant and approved by the Region Manager
- Mitigation measures proposed and required by the Region Manager

See OAR

OAR 734-051-0210

Findings

Finding	Determination
Mitigation measures were identified and required by the Region Manager (list).	Applicant shall comply with all mitigation measures
No mitigation measures were identified.	This criteria is not applicable

OAR 734-051-0320(6) Deviation Shall Not Be Approved

Rule

A request for either a minor or major deviation shall not be approved by the Region Manager under the following conditions:

(a) The access management standards can be met and application of the standards would not result in a safety or traffic operation problem, but the result would be higher site development costs;

Facts

- Can the access management standards be met? (Yes or No)
- Safety issues identified from OAR 734-051-0080(3)
- Operations issues
- Would application of the standards would result in a safety or traffic operation problem? (Yes or No)
- Would the result be higher site development costs? (Yes or No)

Findings

Finding	Determination
The access management standards can be met, AND Application of the standards would not result in a safety or traffic operation problem, but the result would be higher site development costs	The request for deviation shall not be approved
All other cases	This criteria is not applicable

Rule (cont.)

(b) Options for meeting access management standards have not been considered or addressed;

Facts

- Options for meeting access management standards (list)
- Have those options been considered or addressed? (Yes or No)

Findings

Finding	Determination

Options for meeting access management standards have not been considered or addressed (list)	The request for deviation shall not be approved
All other cases	This criteria is not applicable

Rule (cont.)

(c) The deviation is requested because of a hardship which is self created, including:

(A) Conditions created by the proposed building footprint or location, or on-site parking or circulation; or
(B) Conditions created by the owner's lease arrangements or other voluntary legal obligations; or

Facts

Is the deviation requested because of a hardship? (Yes or No)
Is the hardship self created? (Yes or No)

- Were conditions created by the proposed
  - Building footprint
  - building location
  - on-site parking
  - circulation
- Were conditions created by the owner's
  - lease arrangements
  - other voluntary legal obligations
- Any other self created conditions (list)

Findings

Finding	Determination
The deviation is requested because of a hardship, AND The hardship is self created (state reason)	The request for deviation shall not be approved
All other cases	This criteria is not met

Rule

(d) The proposed deviation would result in significant safety or traffic operation problems.

Facts

- Significant safety problems resulting from the deviation, identified from OAR 734-051-0080(3)
- Significant traffic operation problems resulting from the deviation

Findings

Finding	Determination
The proposed deviation would result in significant safety problems OR traffic operation problems	The request for deviation shall not be approved
All other cases	This criteria is not met

OAR 734-051-0330 Processing Requests for Deviations

OAR 734-051-0330(1),(2) Region Manager and Technical Advisory Committee

Rule

(1) The Region Manager shall review and make a determination to approve or deny all requests for deviations from access management standards.
(2) Use of a Technical Advisory Committee:
(a) The Region Manager may enlist the aid of a Technical Advisory Committee to review submitted documentation of a request for a minor deviation;
(b) The Region Manager shall enlist the aid of a Technical Advisory Committee to review submitted documentation of a request for a major deviation; and
(c) Members of the Technical Advisory Committee shall have expertise in access management policies and roadway design standards, shall include at least one Oregon Registered Professional Engineer with expertise in traffic, and may include central office Personnel with access management experience for statewide consistency, and technical Persons who are not Department employees (i.e., city or county technical staff, or private Consultants).

Facts

- Type of deviation, minor or major
- TAC members
- TAC documentation

Findings

Finding	Determination
The request is for a minor deviation and a TAC was not utilized	This criteria is not applicable.
The request is for a minor deviation and a TAC was utilized (note members and TAC documentation)	This criteria is met.
The request is for a major deviation and a TAC (note members and TAC documentation) was utilized as required	This criteria is met.
All other cases	This criteria is not met.

OAR 734-051-0330(3) Documentation

Rule

All determinations by the Region Manager shall be documented with written findings and can require conditions, limitations, or mitigation, according to the provisions of OAR 734-051-0210. All specific limitations or conditions shall be incorporated into the conditions of the Construction Permit and the Permit to Operate, Maintain and Use an Approach, as appropriate.

Facts

- TAC documentation, title, author, date
- Determinations by the Region Manager documentation title, author, date
- Conditions, limitations, or mitigation

Findings

Finding	Determination
The TAC (if formed) was documented and All determinations by the Region Manager were documented	This criteria is met.
All other cases	This criteria is not met.

OAR 734-051-0330(4) Minor Deviation

Rule

Denial of a deviation request may be appealed, as a part of the appeal on the whole application, through the appeal process set forth in OAR 734-051-0390 or 734-051-0400.

Facts

- Is the deviation denied

Findings

Finding	Determination
The deviation is denied	The denial of this deviation request may be appealed, as a part of the appeal on the whole application, through the appeal process set forth in OAR 734-051-0390 or 734-051-0400.
The deviation is not denied	This criteria is not applicable.

OAR 734-051-0340 Deviation Limits for Spacing of Approaches within an Interchange Access Management Area

OAR 734-051-0340(1) New Approaches

Rule

Deviation requests for new approaches within an Interchange Access Management Area shall be:

(a) Major deviations; or
(b) Minor deviations, only if the request includes combining or closing other approaches in a plan to work towards meeting spacing standards.

Facts

- New approach?
- Identify interchange management area and location of the approach
- If minor deviation, list other approaches to be combined or closed

Findings

Finding	Determination
The requested approach is not a new approach, OR Is not within an interchange Access Management Area	This criteria is not applicable
The requested approach is a new approach, AND Is within an interchange Access Management Area, AND Is a major deviation	This criteria is met
The requested approach is a new approach, AND Is within an interchange Access Management Area, AND Is a minor deviation, AND the request includes combining or closing other approaches in a plan to work towards meeting spacing standards.	This criteria is met
All other cases	This criteria is not met

OAR 734-051-0340(2) Modifications to Existing Approaches

Rule

(2) Deviation requests for modifications to existing approaches shall be minor deviations.

Facts

- Existing approach?
- Proposed modifications to the existing approach

Findings

Finding	Determination
The requested approach is not an existing approach, OR The request is not for the purpose of modifying the existing approach	This criteria is not applicable
The requested approach is an existing approach, AND The request is for the purpose of modifying the existing approach	The deviation request shall be a minor deviation
All other cases	This criteria is not met

OAR 734-051-0350 Minor Deviation Limits for Approach Spacing

Rule

The Access Management Spacing Standard Minor Deviation Limits for both private and public approaches for the access management classifications set forth in OAR 734- 051-0190 are shown in **Tables 10, 11, 12, 13, 14 and 15** hereby adopted and made a part of this rule. Any request to deviate beyond these limits is considered a major deviation. The Access Management Spacing Standards for both private and public approaches are shown in **Tables 2, 3, 4 and 5** adopted in OAR 734-051-0190.

Facts

- Minor deviation limit from **Tables 10, 11, 12, 13, 14 or 15**
- Spacing standard from **Tables 2, 3, 4 or 5**
- Requested spacing

Findings

Finding	Determination
The requested spacing is less than the spacing standard, AND The requested spacing is greater than the minor deviation limit	The request is considered a minor deviation
The requested spacing is less than the spacing standard, AND The requested spacing is equal to or less than the minor deviation limit	The request is considered a major deviation

Attachment 3
Driveway Inventory Table

Driveway Inventory Table

Street Segment	Location	Driveway Width (feet)
Col Jordan Road/Westland Road		
Noble Road to Stafford Hansell Road		
AG Field Driveway	1,320 to 1,336 feet from Noble Road	16
Truck Stop Driveway	1,607 to 1,638 feet from Noble Road	31
Barton Industries Driveway	1,607 to 1,668 feet from Noble Road	61
Westland Road		
Livestock Road to Street to Starole Road		
Frieght Liner Driveway	1,253 to 1,291 feet from Livestock Road	38
Driveway		
Starole Road to Westport Lane		
American Onion Driveway	472 to 502 feet from Westport Lane	30
Westport Lane to Railroad Tracks		
Old Tavern Driveway	0 to 176 feet from Westport Lane	176
Railroad Access Driveway	60 to 80 feet from Railroad Tracks	20
Railroad Tracks to Lamb Road		
Railroad Access Driveway	60 to 80 feet from Railroad tracks	20
Railroad Access Driveway	160 to 178 feet from Railroad tracks	18
Railroad Access Driveway	160 to 116 feet from Railroad tracks	16
Hermiston Gen Plant Driveway	528 to 588 feet from Railroad tracks	68
Americold/Lamb Weston Drwy	828 to 588 feet from Railroad tracks	60
Irrigation Canal Access	401 to 421 feet from Lamb Road	20
Irrigation Canal Access	223 to 244 feet from Lamb Road	21
Field Access	135 to 160 feet from Lamb Road	25
Lamb Road to Canal Bridge		
Terra Poma Land Driveway	South of Canal Bridge	26
Canal Bridge to Cottonwood Bend Road		
Lamb Weston Driveway	30 to 158 feet north of Canal Bridge	128
Cottonwood Bend Road to Agnew Road		
Home Driveway	2,174 to 2,150 feet from Agnew Road	24
Utilities Access Driveway	1,938 to 1,916 feet from Agnew Road	22
Home & Kaybe Orchards Drwy	1,554 to 1,507 feet from Agnew Road	47
Home & Shop Driveway	1,107 to 920 feet from Agnew Road	187
Home & Kaybe Orchards Drwy	978 to 936 feet from Agnew Road	40
Columbia Basin Sheds Driveway	694 to 652 feet from Agnew Road	42
Home Driveway	543 to 519 feet from Agnew Road	24
Home Driveway	341 to 313 feet from Agnew Road	28

OAR 734-051-0340(3) Mitigation

Rule

(3) Both sections (1) and (2) of this rule may require mitigation, as set forth in OAR 734-051-0210, as a condition of deviation approval.

Facts

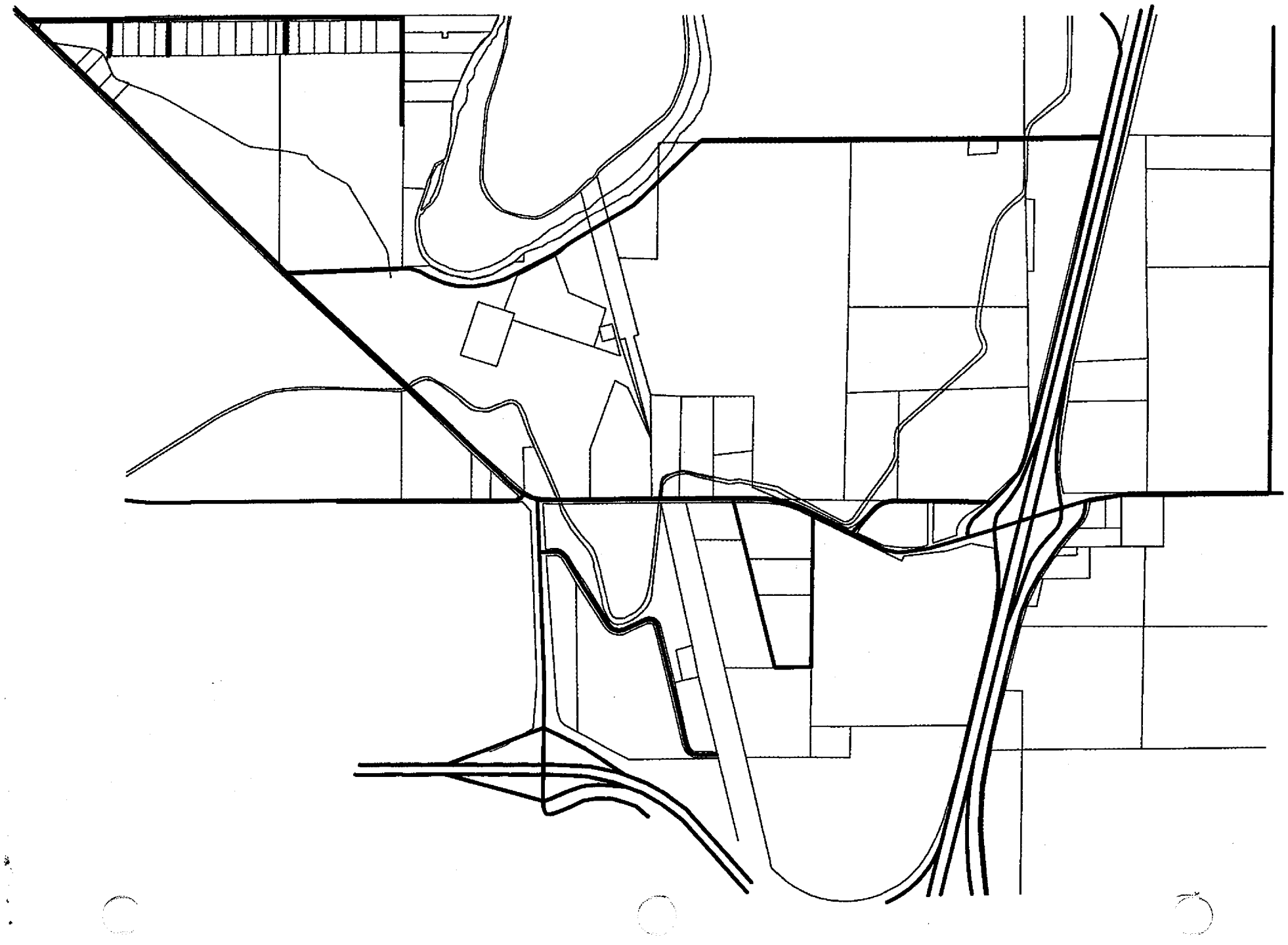
- Mitigation measures proposed by applicant and approved by the Region Manager
- Mitigation measures proposed and required by the Region Manager

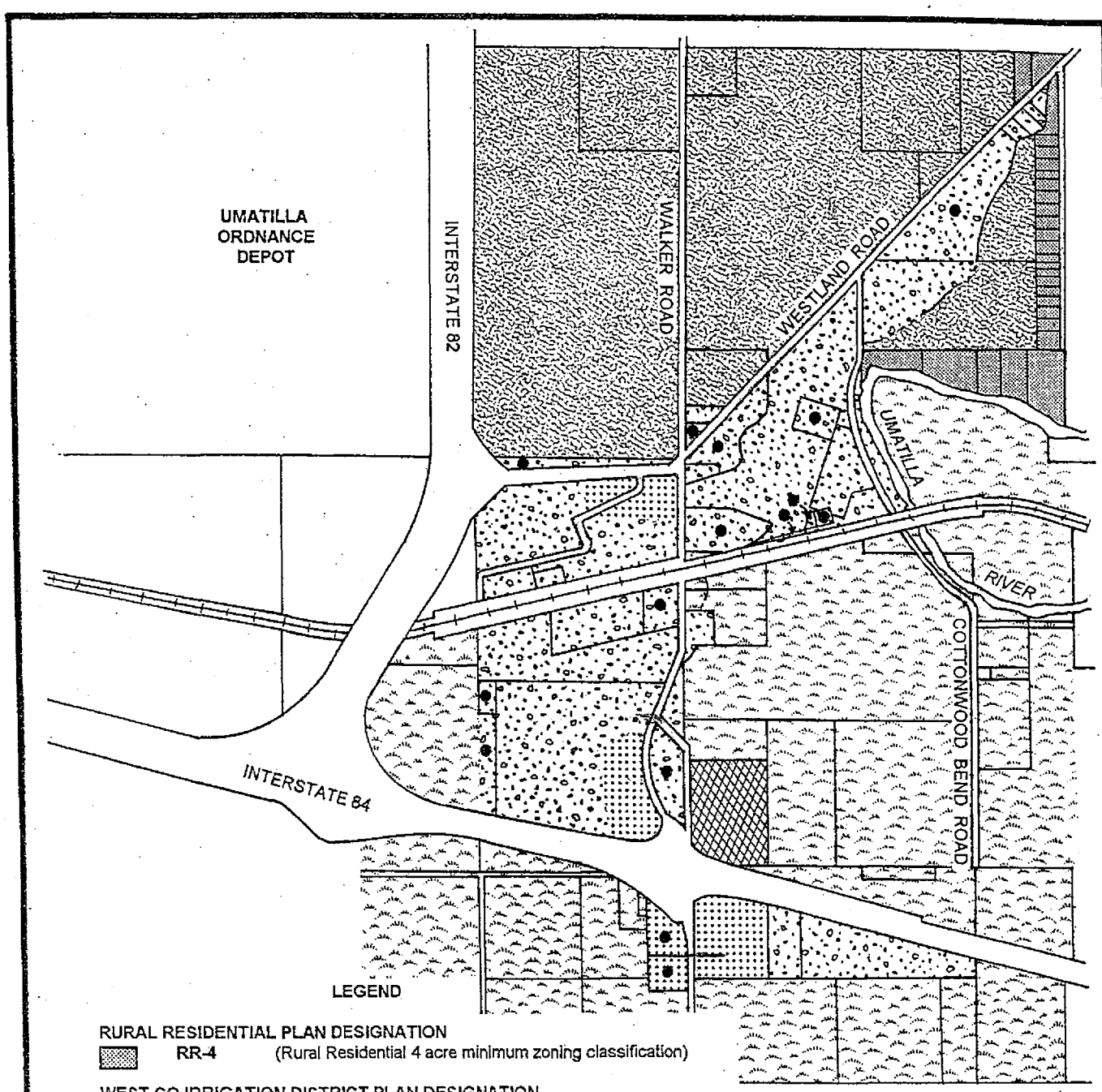
See OAR

OAR 734-051-0210

Findings

Finding	Determination
Mitigation measures were identified and required by the Region Manager (list).	Applicant shall comply with all mitigation measures
No mitigation measures were identified.	This criteria is not applicable





LEGEND

RURAL RESIDENTIAL PLAN DESIGNATION
RR-4 (Rural Residential 4 acre minimum zoning classification)

WEST CO IRRIGATION DISTRICT PLAN DESIGNATION
EFU-40 (Exclusive Farm Use 40 acre minimum zoning classification)

NORTH & SOUTH COUNTY AGRICULTURAL PLAN DESIGNATION
EFU (Exclusive Farm Use 160 acre minimum zoning classification)

INDUSTRIAL PLAN DESIGNATION
LI (Light Industrial zoning classification)

COMMERCIAL PLAN DESIGNATION
TC (Tourist Commercial zoning classification)

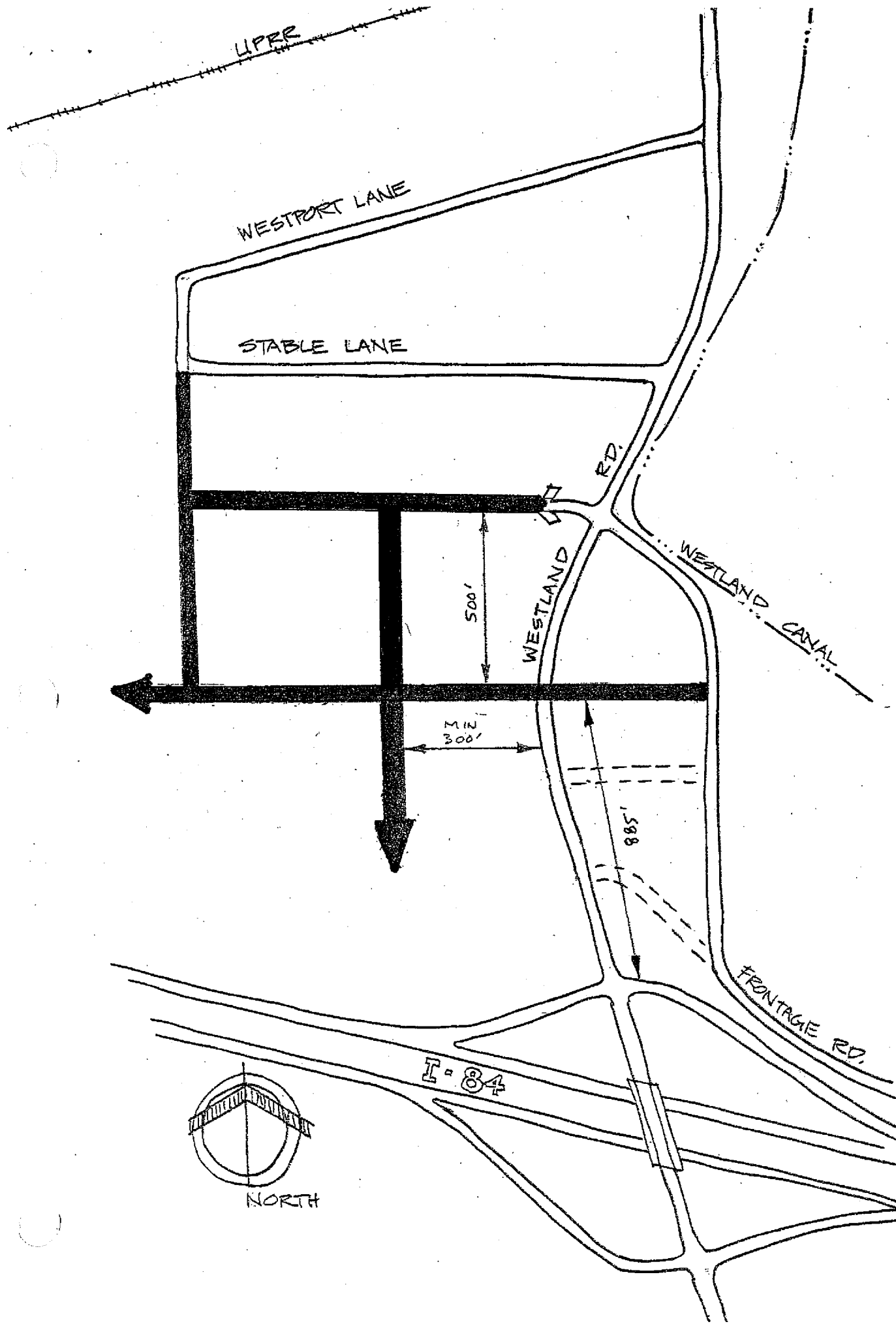
AGRIBUSINESS PLAN DESIGNATION
AB (Agribusiness zoning classification)

VACANT

0 1000 2000
SCALE IN FEET

1995

DEVELOPED & COMMITTED COMMERCIAL & INDUSTRIAL LAND WESTLAND INTERCHANGE


UPRR
WESTPORT LANE
STABLE LANE
WESTLAND RD.
WESTLAND CANAL
500'
MIN. 300'
985'
FRONTAGE RD.
I-84
NORTH

MAXIMUM STORAGE CALCULATION

MAX LEFT TURN INTO PETRO SITE : 132
(FROM ACCESS ENGR STUDY)

AVERAGE VEH/MINUTE : 2.2

90% QUEUE
ASSUME TO BE 2.5X AVERAGE 2.5 x 2.2 = 5.5
ROUND TO 6.0

FROM TRUCK PERCENT DATA,
TRUCKS ARE UPWARDS OF 40%
OF TOTAL VEHICLES ⟶ 2.4 TRUCKS
ROUND TO 3

REMAINING 90% QUEUE, CARS ⟶ 3

STORAGE REQUIREMENT

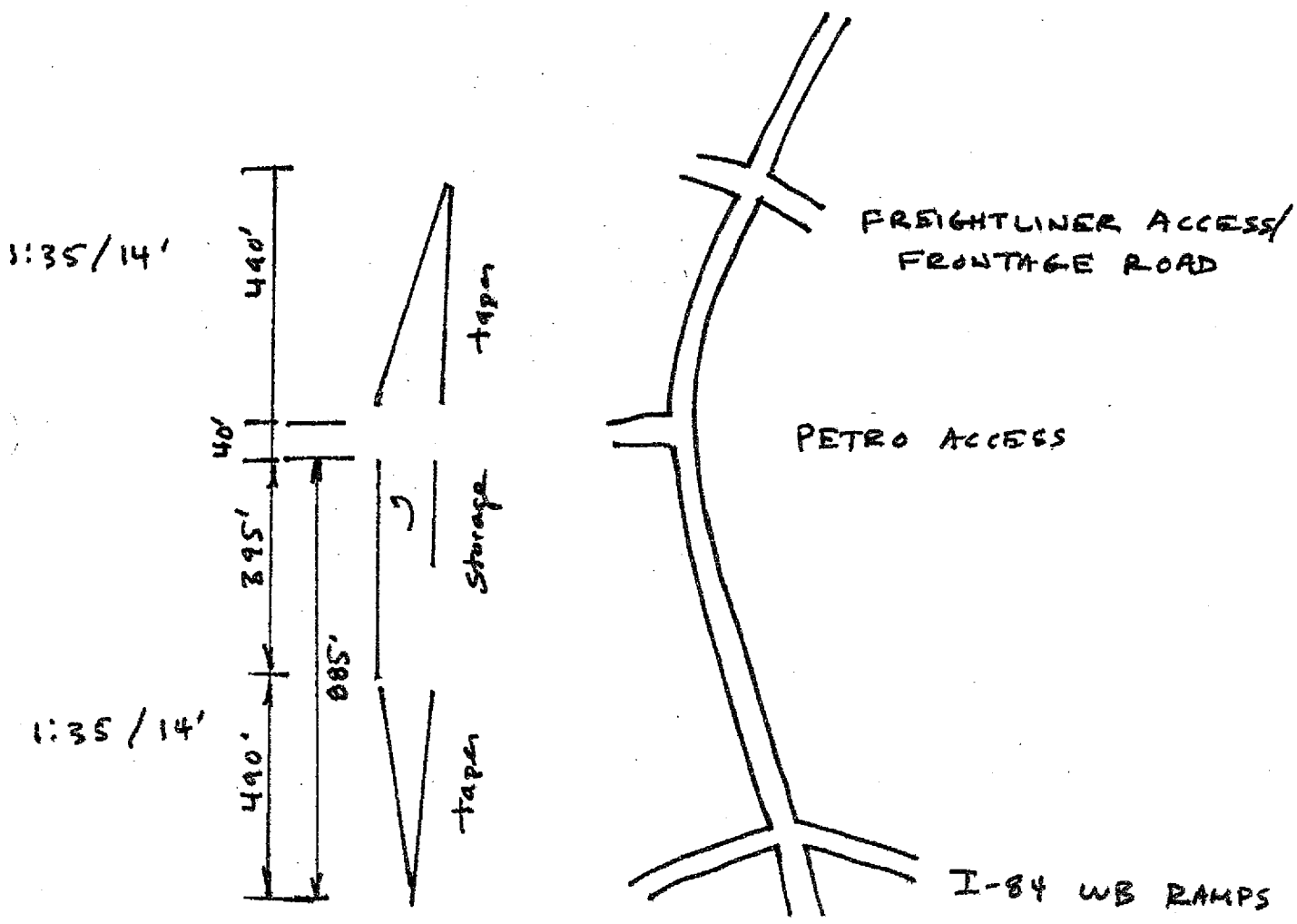
CARS - 25' PER VEHICLE
25 x 3 ⟶ 75'

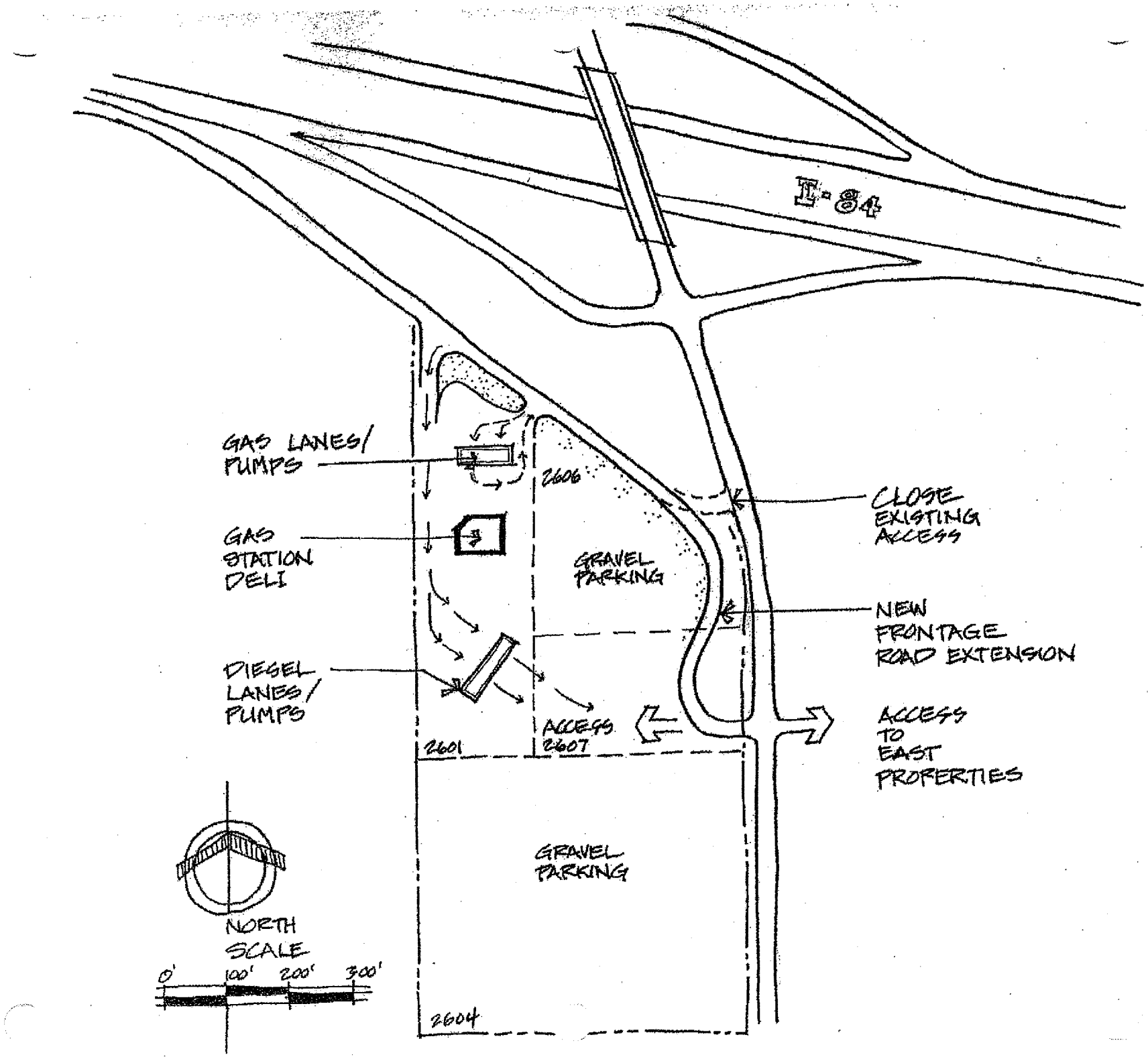
TRUCKS - WORST CASE
2 TRIPLES - 125' PER VEHICLE ⟶ 250
1 SEMI - 70' PER VEHICLE ⟶ 70

TOTAL 395'

TAPER 1:35

AGREED UPON AS REASONABLE WITH REGION TRAFFIC ENGINEER




I-84
GAS LANES/ PUMPS
GAS STATION DELI
DIESEL LANES/ PUMPS
2606
2601
2607
2604
GRAVEL PARKING
GRAVEL PARKING
CLOSE EXISTING ACCESS
NEW FRONTAGE ROAD EXTENSION
ACCESS TO EAST PROPERTIES
ACCESS
NORTH
SCALE
0'
100'
200'
300'

TASK 5.6
DEFINE AND DISCUSS AIRPORT ISSUES AS THEY IMPACT THE STUDY AREA

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

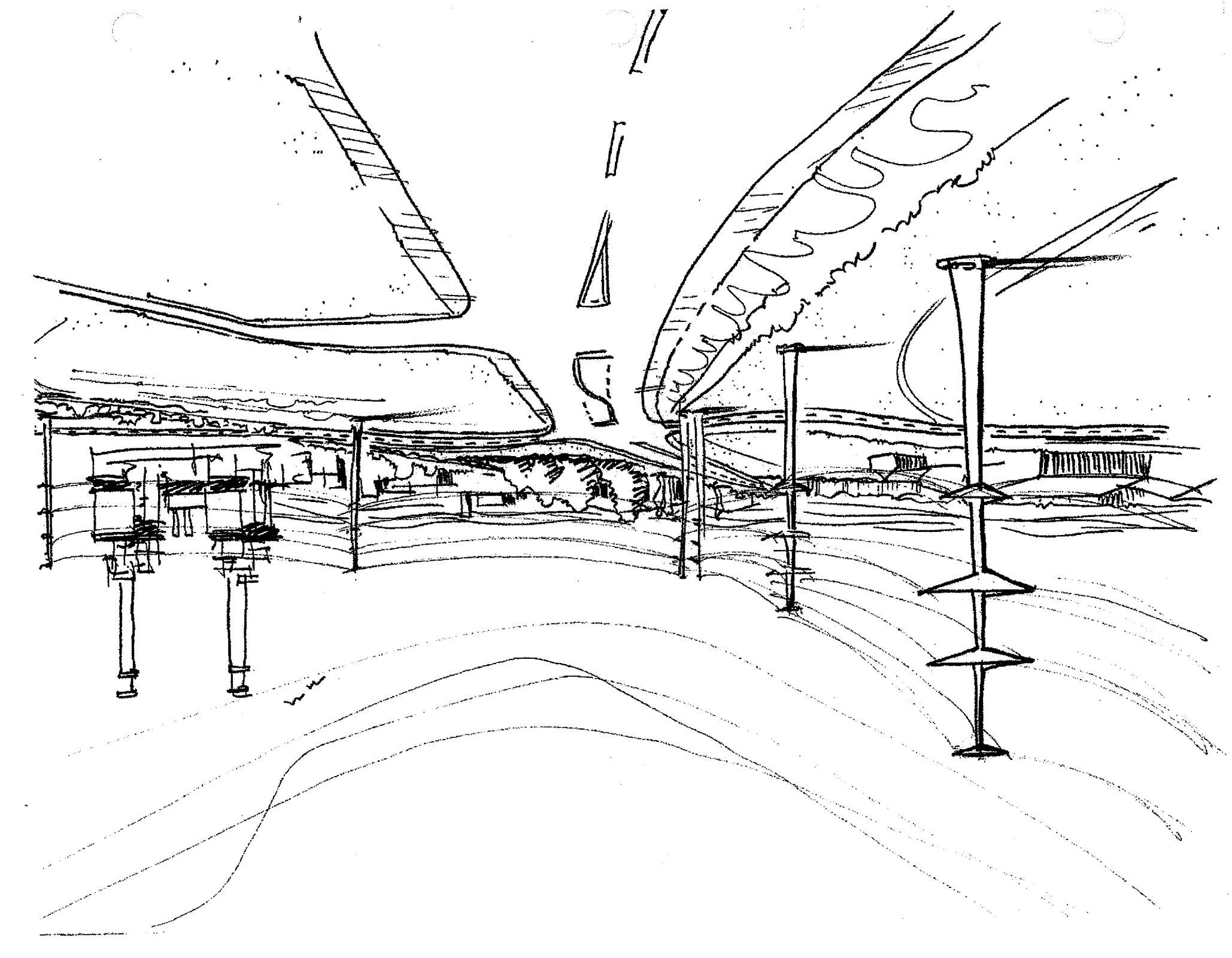
To: Westland Road Interchange Area Management Team and TAC

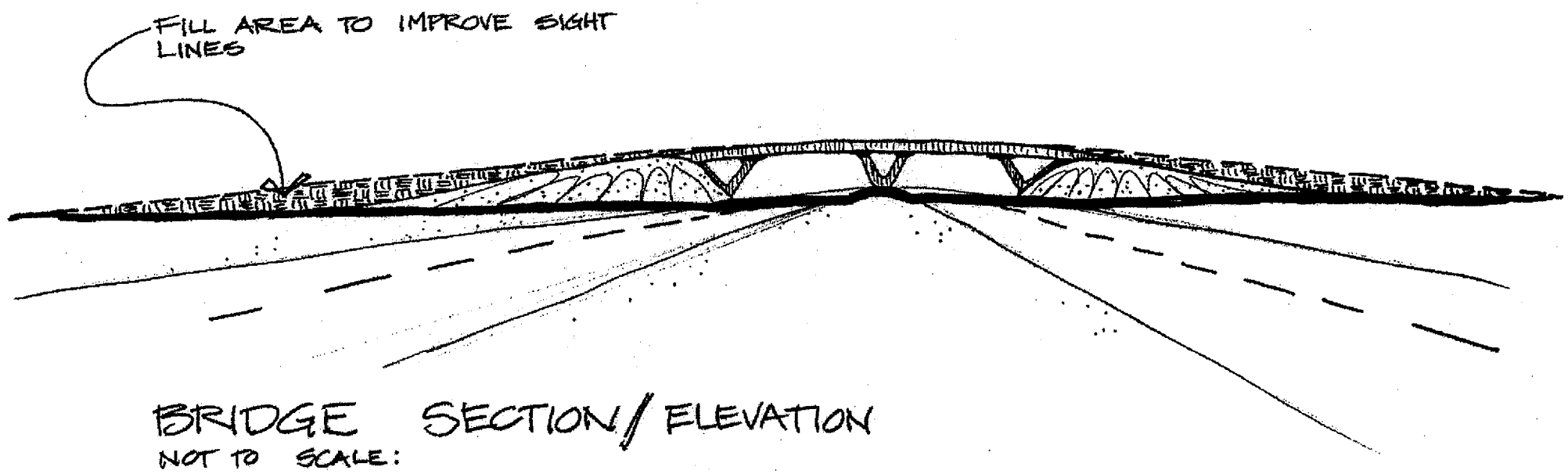
From: Hann Lee, H. Lee & Associates

Subject: Airport Issues within the Westland Road Interchange Plan Study Area

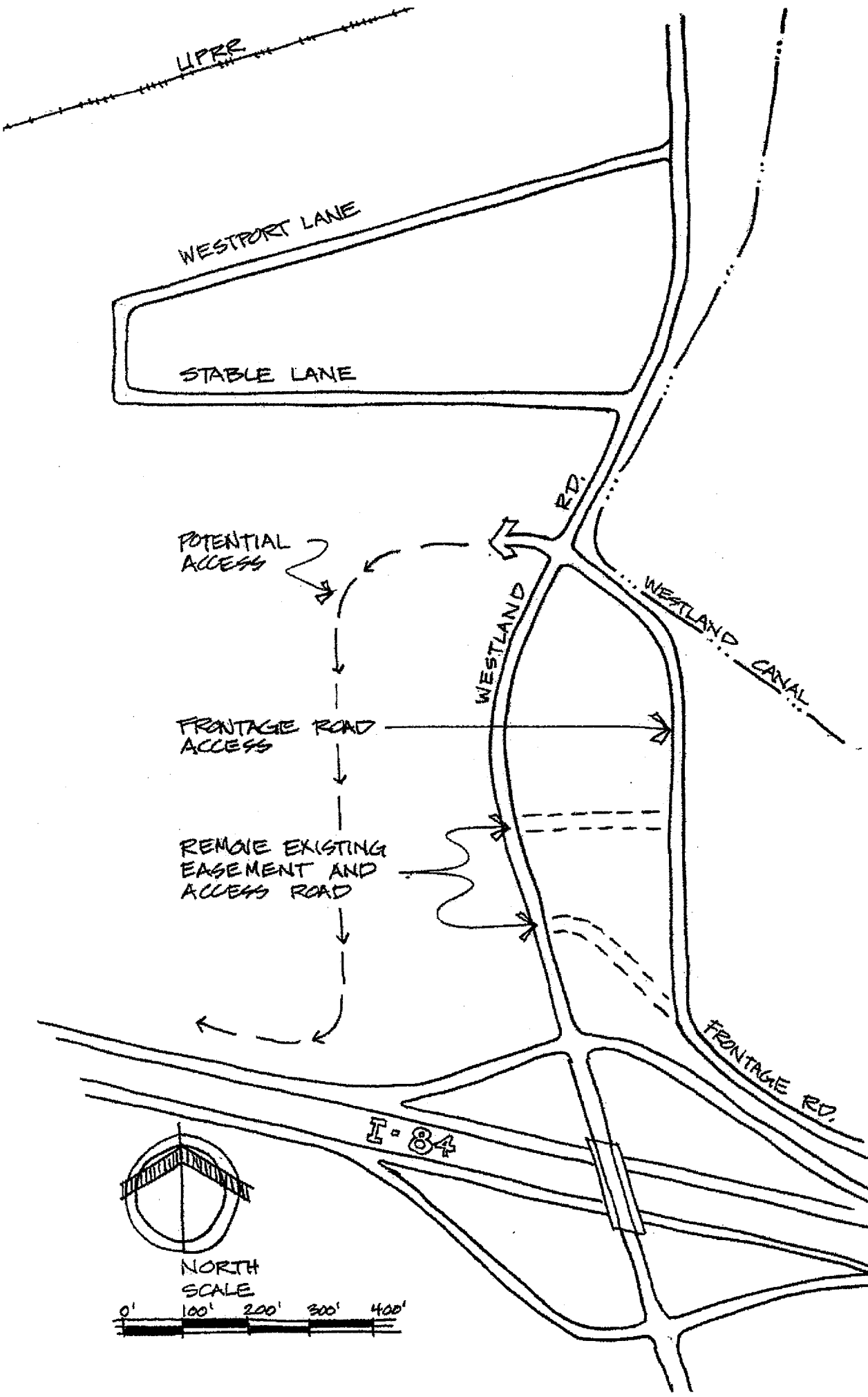
There are no airports within 14,000 feet of the study area that would trigger an amendment to a zone or the comprehensive plan. Since it is not applicable, no issues within OAR 660-013-0160(5) was addressed.

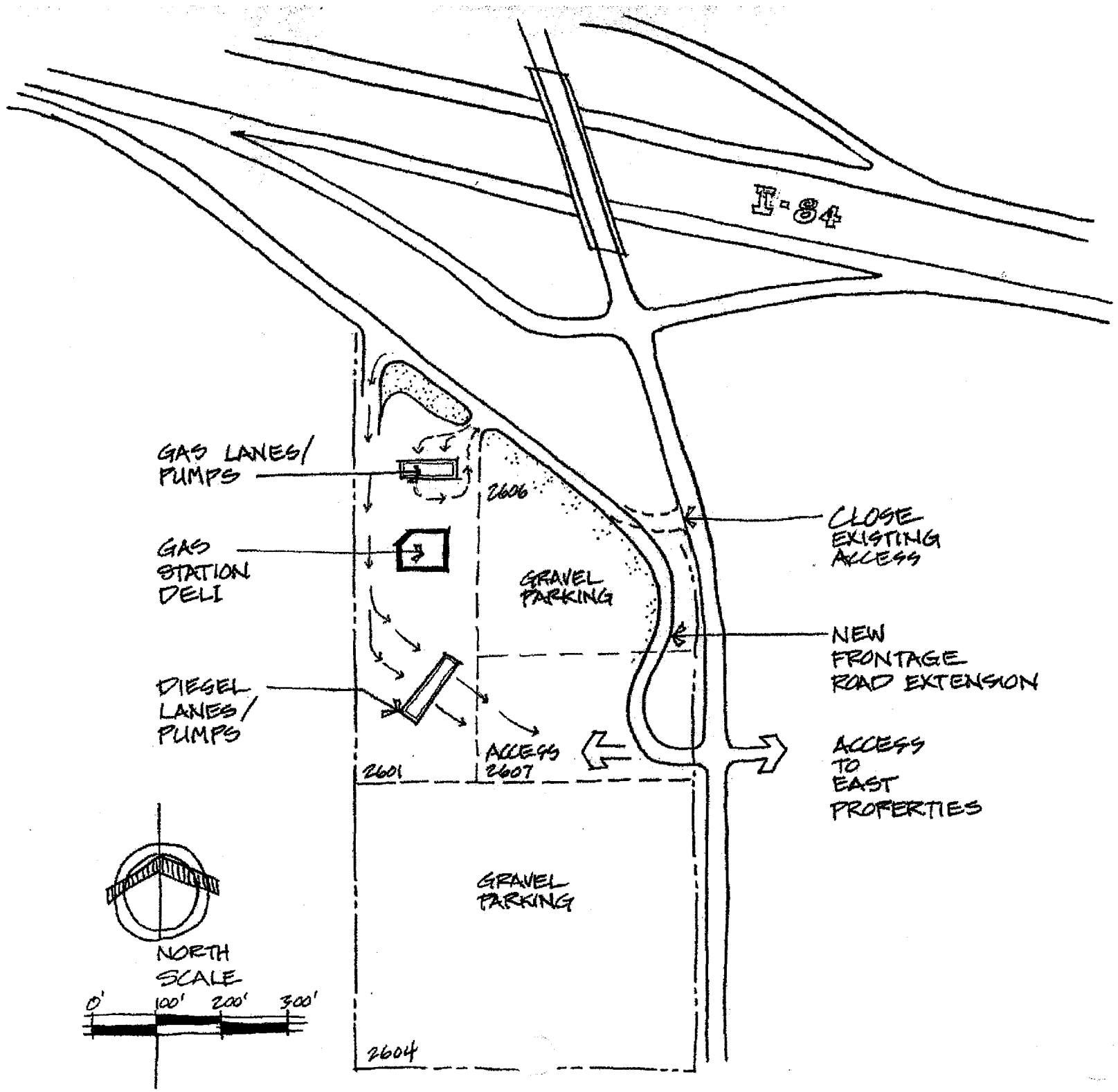
TASK 5.7
PRODUCE BIRDS-EYE AXONOMETRIC AND STREET LEVEL SCHEMATIC DRAWINGS OF ALTERNATIVES

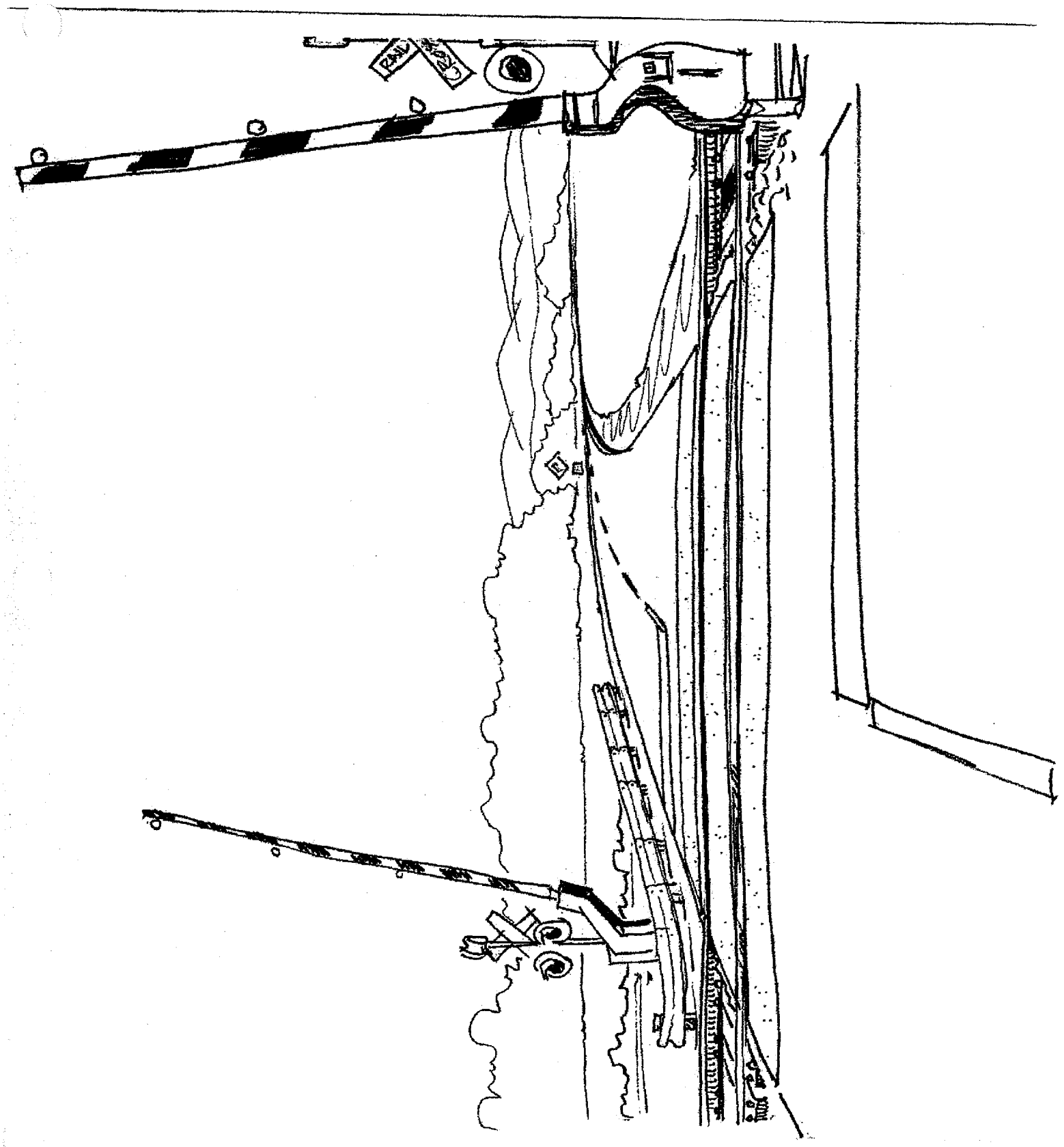


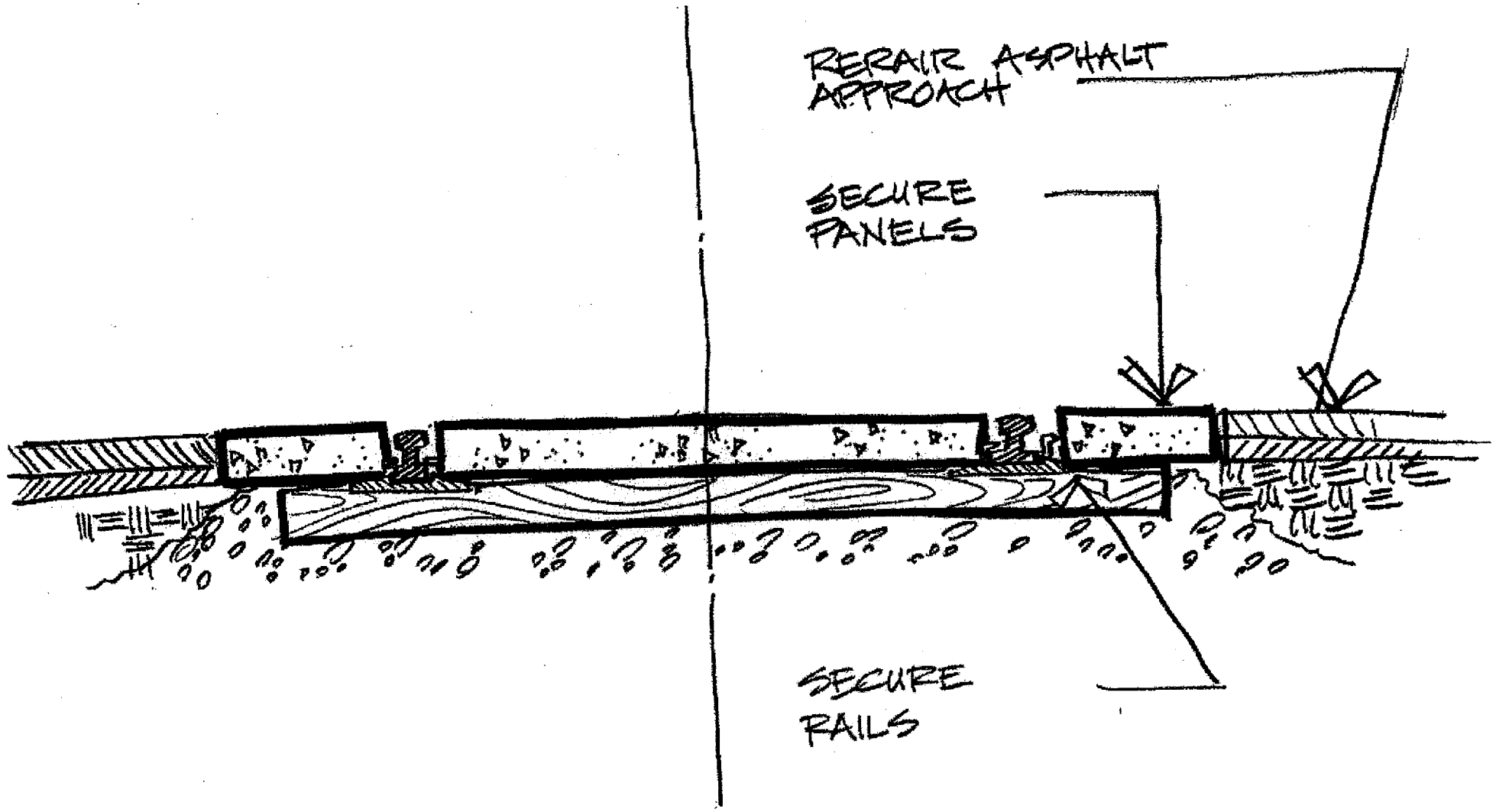


BRIDGE SECTION / ELEVATION
NOT TO SCALE:


UPRR
WESTPORT LANE
STABLE LANE
RD.
WESTLAND
WESTLAND CANAL
POTENTIAL ACCESS
FRONTAGE ROAD ACCESS
REMOVE EXISTING EASEMENT AND ACCESS ROAD
FRONTAGE RD.
I-84
NORTH
SCALE
0'
100'
200'
300'
400'

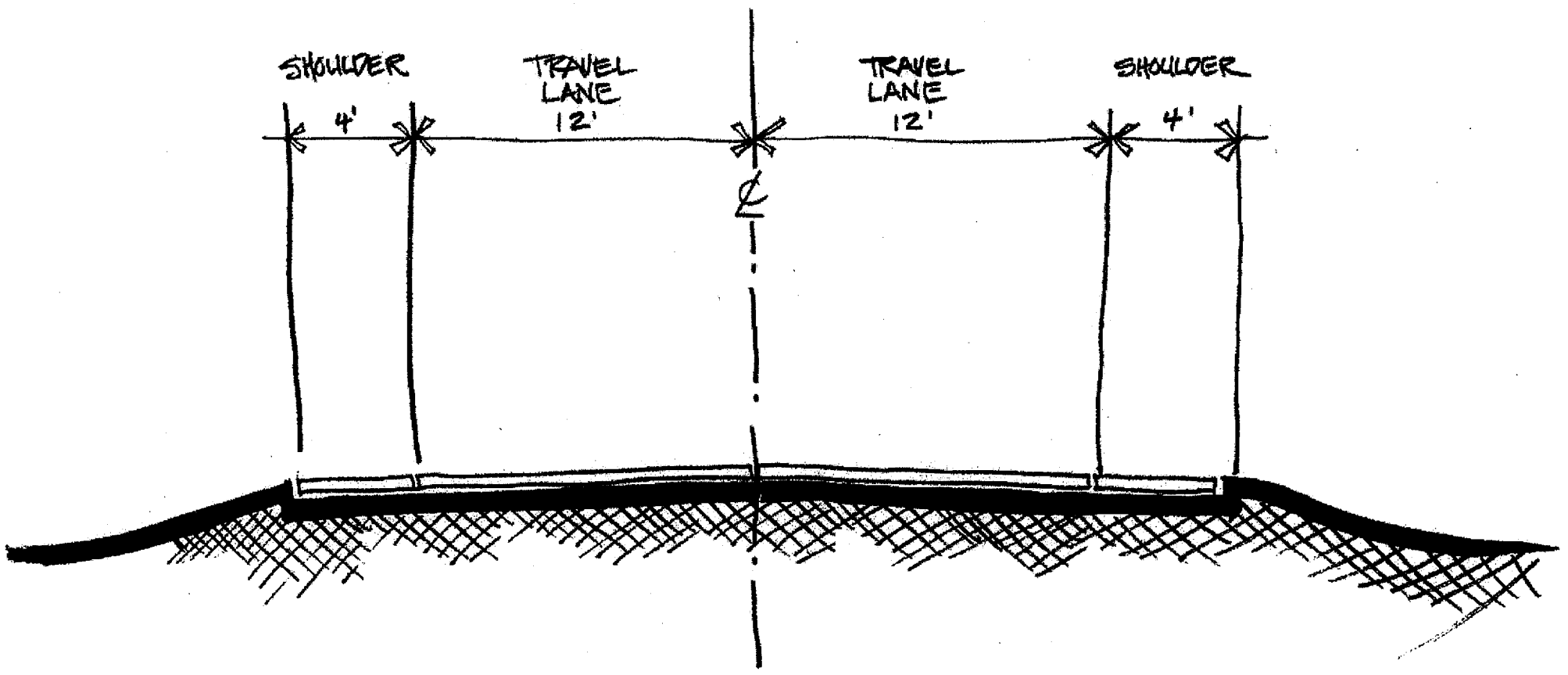

I-84
GAS LANES/
PUMPS
GAS
STATION
DELI
DIESEL
LANES/
PUMPS
2606
GRAVEL
PARKING
CLOSE
EXISTING
ACCESS
NEW
FRONTAGE
ROAD EXTENSION
ACCESS
2607
ACCESS
TO
EAST
PROPERTIES
2601
GRAVEL
PARKING
2604
NORTH
SCALE
0'
100'
200'
300'


RAIL



OPTION #1

ADD NEW STYLE CONCRETE & RUBBER CROSSING


SHOULDER
4'
TRAVEL LANE
12'
TRAVEL LANE
12'
SHOULDER
4'
℄

TASK 5.8
DEVELOP COST ESTIMATES FOR ALTERNATIVES

STURTEVANT, GOLEMO, & ASSOCIATES 2211 MAIN STREET
CIVIL ENGINEERING, LAND PLANNING, & DEVELOPMENT SERVICES VANCOUVER, WA, 98660
Phone (360)993-0911
Fax (360)993-0912

June 21, 2003

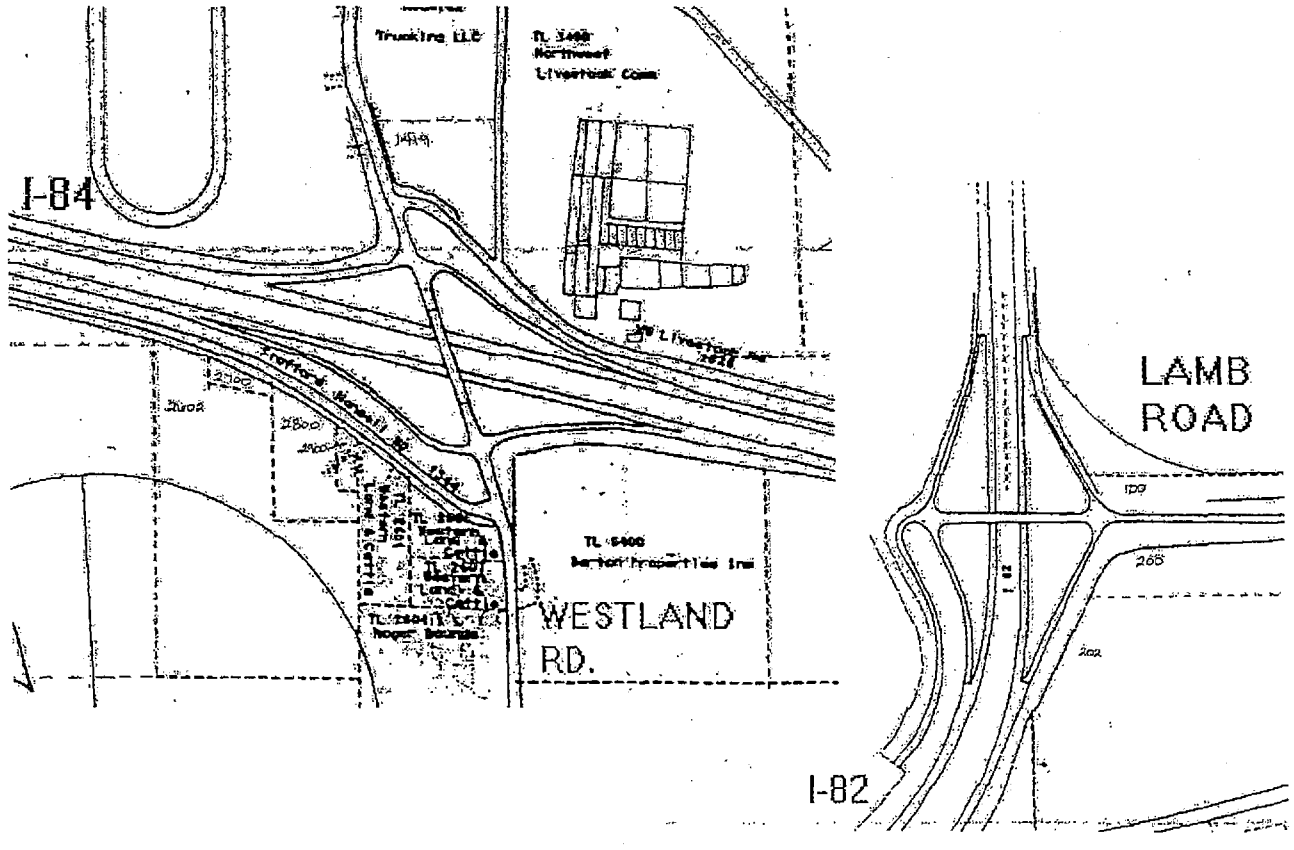
Subject: Umatilla County Westland Road / I-84 and Lamb Road / I-82 Interchanges

This objective of this narrative is to document the qualitative visual evaluation of the Westland Road / I-84 and Lamb Road / I-82 Interchanges in Umatilla County. A representative from Sturtevant, Golemo, and Associates conducted a site visit to visually evaluate the two study area interchanges. The goal of the evaluation was to compare the existing conditions of the interchanges to the current ODOT interchange design standards. In addition, several rough measurements were made using a measuring wheel. Parcel maps, aerial photography, and USGS maps were also referenced. Detailed topographic information was not available for this study and all measurements are approximate. The 2002 ODOT Highway Design Manual was referenced in addition to AASHTO's "A Policy on Geometric Design of Highways and Streets – 2001". Several design elements were evaluated including; interchange spacing, design speed, typical section, horizontal alignment, vertical alignment, superelevation, terminal channelization, access control, lane balance, weaving sections, and frontage roads. Not all of these elements will be discussed below and the narrative is focused on elements that visually vary from the current design standards. Both interchanges are diamond type interchanges and the cross street passes over the freeway. The freeways are both four lane facilities with auxiliary or weaving lanes where noted. The cross streets are both two lane facilities with no right or left turn channelization. Based on current traffic conditions, channelization doesn't appear to be warranted at this time, but may be considered if traffic increases on the cross street. All of the ramps are single lane ramps and they all appear to have adequate lane and shoulder widths. The freeways are currently marked with 65 MPH speed limit signs and the ramps are marked with 45 MPH speed limits. Design speeds are assumed to be 70 mph (110 km/hr) and 45mph (70 km/hr) respectively. The terrain in the study area is relatively flat.

Westland Road intersects I-84 at an angle of approximately 60 degrees, which skews some of the components of this diamond interchange. This causes the NE and SW quadrant ramp to have sharper radius exit and entrance curves than typical 90 degree crossings. However the acceleration and deceleration lengths appear to be lengthened to compensate for the additional speed reductions required to safely navigate the sharper curves. All legs appear to have adequate acceleration and deceleration lengths, which are provided using tapers and parallel auxiliary lanes. This interchange is located about 1 mile (1.6 km) East of the I-84 / I-82 interchange. This is significantly lower than the 5 km urban and 10 km rural recommended spacing shown in table 9-2 of the ODOT Highway design Manual. However, an additional auxiliary or weaving lane exists between the interchanges. Weaving lanes are commonly used when spacing standards cannot be met. They provide additional capacity between the interchanges but may also present

special design problems due to the concentrated lane changing maneuvers of merging and diverging traffic. The intersection of Westland Road and Stafford Hansel Road is less than 250 feet (76 meters) from the south on and off ramps. This is significantly lower than the 400 m recommended access control area listed in the ODOT Highway design Manual. The intersection of Westland Road and Livestock Road is also less than 300 feet (91 meters) from the north on and off ramps. The ODOT manual also recommends 60 meters or greater clearance between the bridge structure and the intersection of the off ramp and cross road to provide adequate sight distance. The westbound off ramp in the NE quadrant is approximately 160 ft. (49 m). Due to the bridge vertical curvature, sight distance appears to be limited at this location. Without detailed horizontal and vertical data the sight distance cannot be verified and is based on visual observation.

The interchange at Lamb Road and I-82 appears to be a standard diamond intersection with a few exceptions. Lamb Road intersects I-82 at approximately 90 degrees. There are not any frontage roads or other intersections near the ramps and there appears to be adequate spacing between the ramps and the structure. Sight distance doesn't appear to be significantly limited at the intersection with the exception to the sharp curves on Lamb road West of the interchange approaching the military depot. Although the acceleration and deceleration lengths appear to meet requirements, the parallel auxiliary lanes on the off ramps are very short or nonexistent. There is not much merging area for vehicles entering traffic. This interchange is located about 3.1 miles (5 km) North of the I-84 / I-82 interchange. This is meets the 5 km urban but not the 10 km rural recommended spacing shown in table 9-2 of the ODOT Highway design Manual.

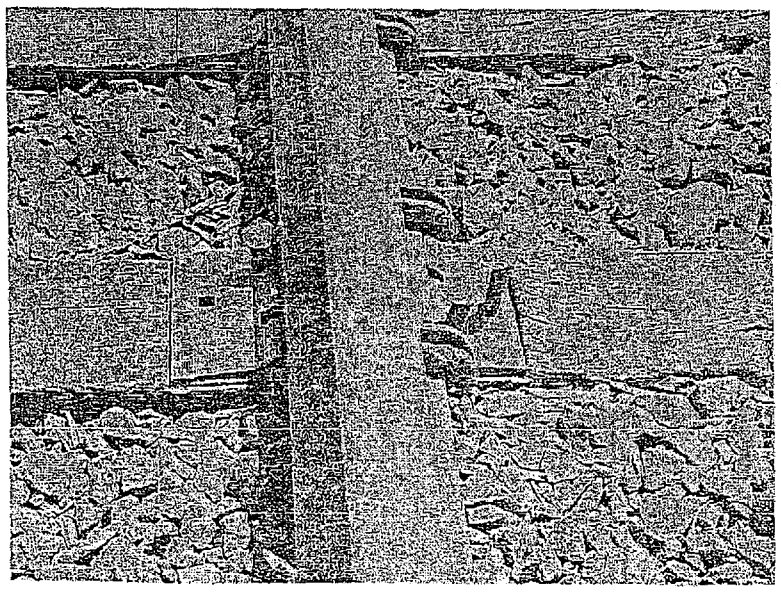


STURTEVANT, GOLEMO, & ASSOCIATES 2211 MAIN STREET
CIVIL ENGINEERING, LAND PLANNING, & DEVELOPMENT SERVICES VANCOUVER, WA, 98660
Phone (360)993-0911
Fax (360)993-0912

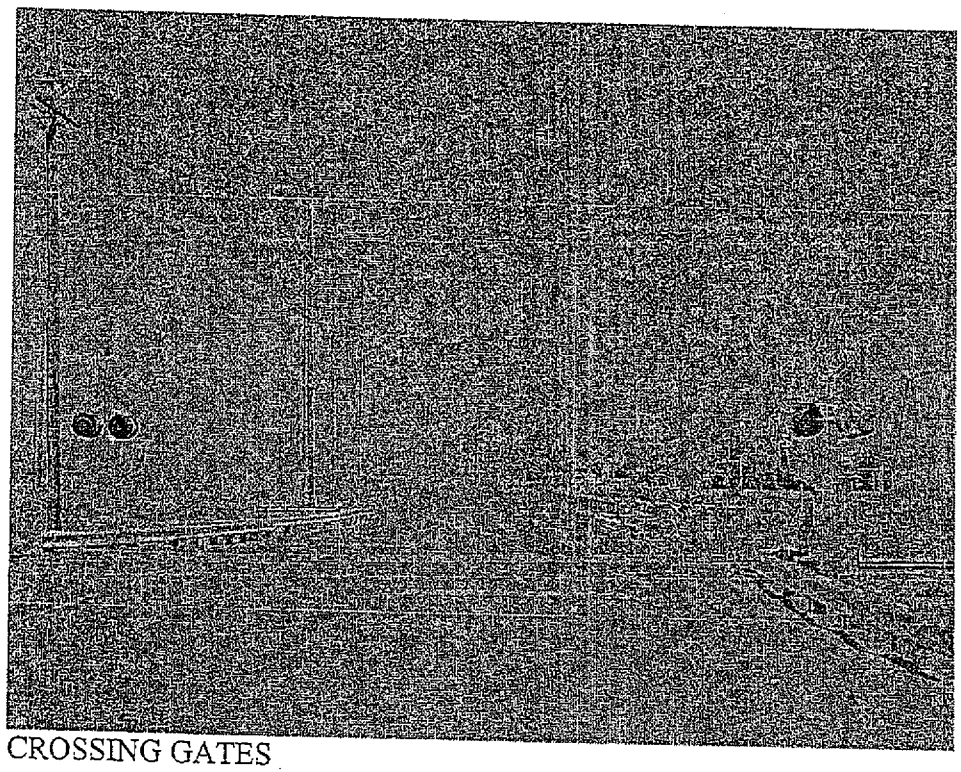
June 21, 2003

Subject: Umatilla County Westland Road Railroad Crossing

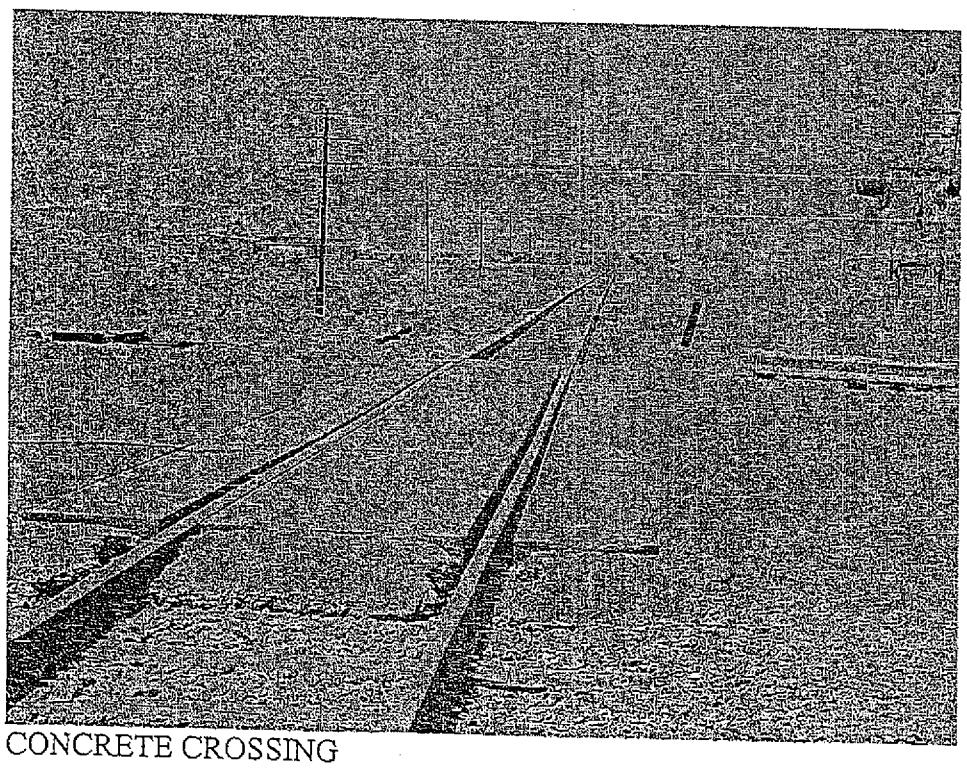
This objective of this narrative is to document the qualitative visual evaluation of the Westland Road railroad crossing located approximately ¾ of a mile north of I-84 in Umatilla County. A representative from Sturtevant, Golemo, and Associates conducted a site visit to visually evaluate the railroad crossing. The crossing is an at grade concrete crossing. There is a single track that is owned by Union Pacific. There are currently crossing gates and flashing lights in both directions. They appear to be in good shape and fully functional. A date stamp was found on the concrete crossing and it was installed in 1991 and was manufactured by the Fite Corporation. The crossing is a little rough and some of the concrete panels move when vehicles cross the tracks. In addition, the tracks have also worked loose and rattle. Several loose ties were observed and many of the spikes in the vicinity of the intersection are missing or loose (See picture below). The concrete appears to be in fairly good condition and no cracking was observed. Tightening down the panels and securing the rails would significantly improve the comfort of the crossing. However the condition of the ties under the crossing is unknown and securing the concrete panels and rails may involve repairing or replacing components of the rail. The work associated with this work is estimated to be between $30,000 and $100,000 depending on the amount of rail work required. As a second option, the crossing could be updated and replaced by a newer style crossing made of concrete and rubber, which would further improve the comfort of the crossing. The newer style crossing would have rubber Flangeway filler that fills in the gaps at the track providing a smoother crossing surface. It would also have a longer design life. This option would add approximately $25,000 to the range listed above for additional materials.



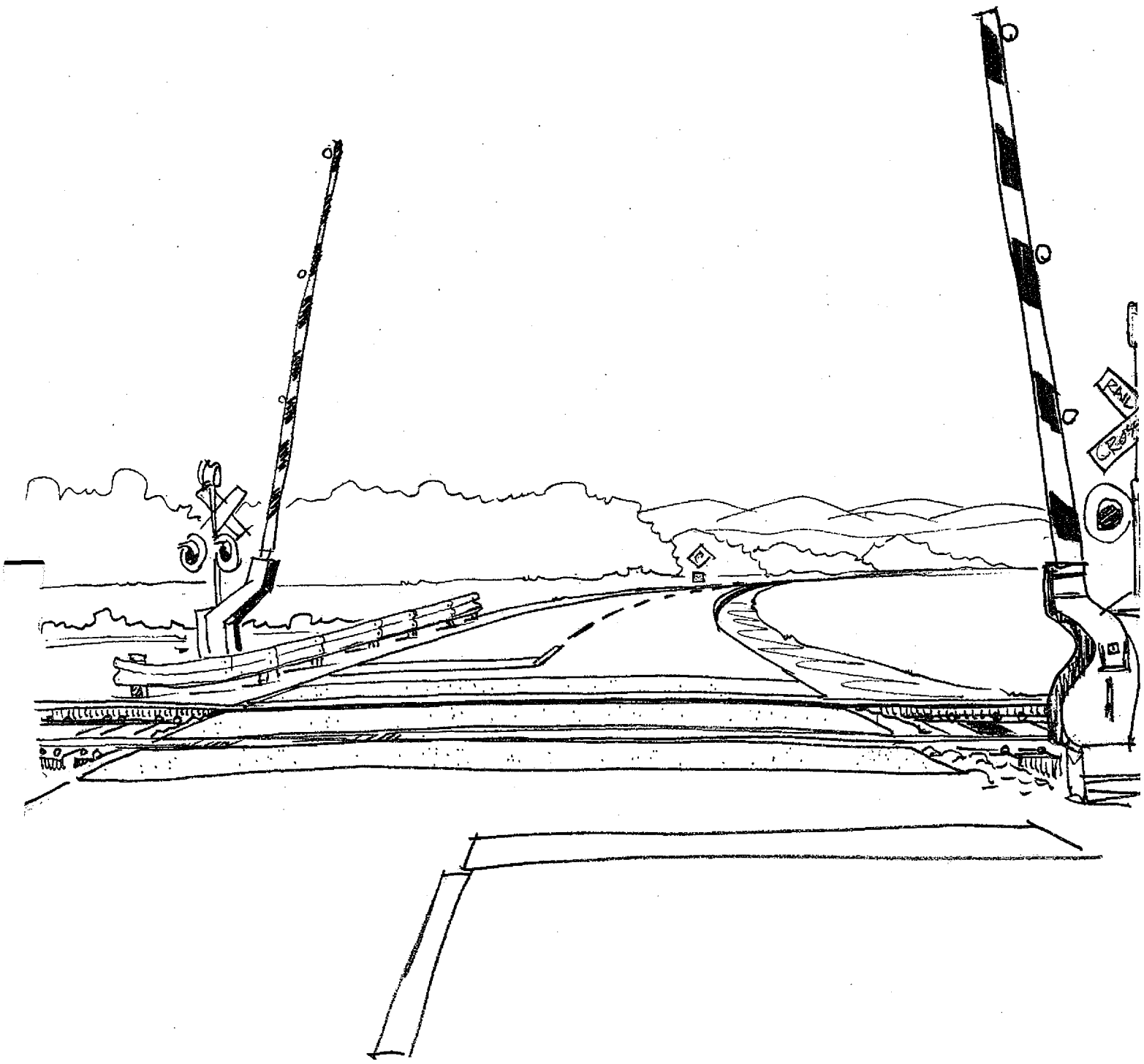
LOOSE RAILS AND SPIKES

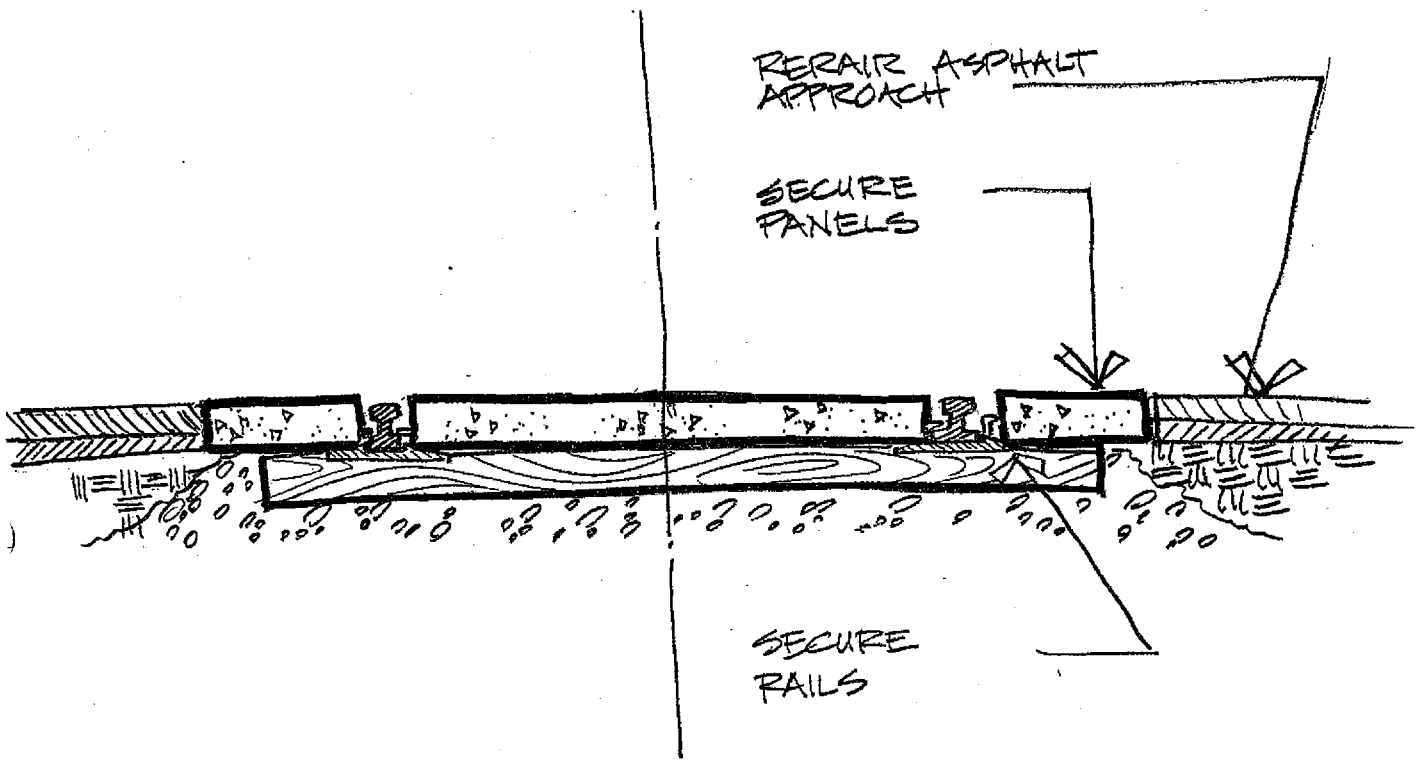


CROSSING GATES



CONCRETE CROSSING


RAIL
CROSS



OPTION :

ADD NEW STYLE CONCRETE & RUBBER CROSSING

OMNI GRADE CROSSING SYSTEMS

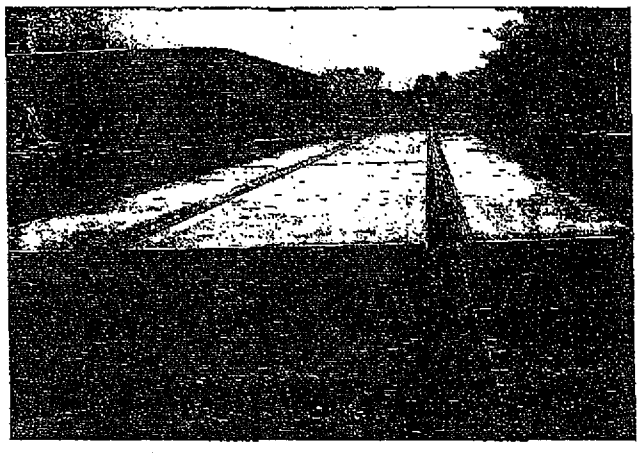
"The Only Grade Crossing Manufacturer With The Full Product Line"

OMNI Embedded Concrete-Rubber (ECR)

OMNI's Embedded Concrete-Rubber (ECR) grade crossing system is the latest generation of OMNI's patented single-component, concrete-rubber design. ECR is designed with the rubber flange seal molded into the face of the concrete panels.

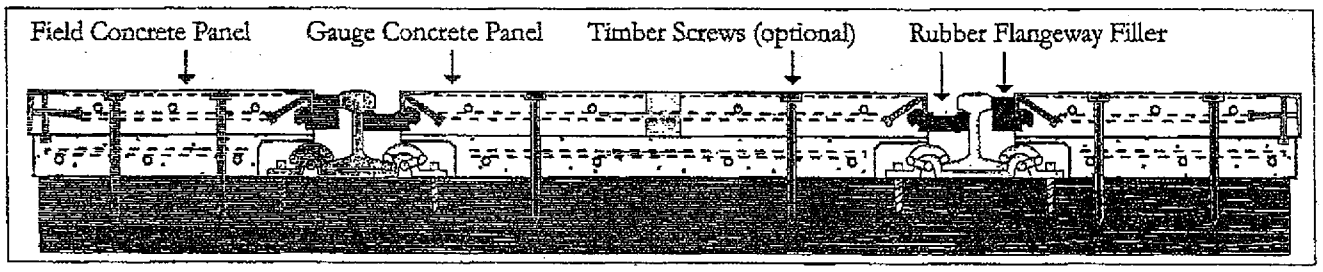
ECR is the fastest and easiest concrete crossing system to install because of its unique integrated concrete-rubber design.

As with all concrete systems, a well constructed foundation and track structure will ensure optimum life and performance. ECR is suitable for most traffic conditions.



OMNI Embedded Concrete-Rubber

Embedded Concrete-Rubber (ECR) Cross-Section Illustration



Embedded Concrete-Rubber (ECR) Specifications

Panel Lengths: 8 feet to 12 feet

Panel Heights:
Ranges from 7" to 8 1/4" in 1/4" increments

Gauge Panel Width: 51 inches

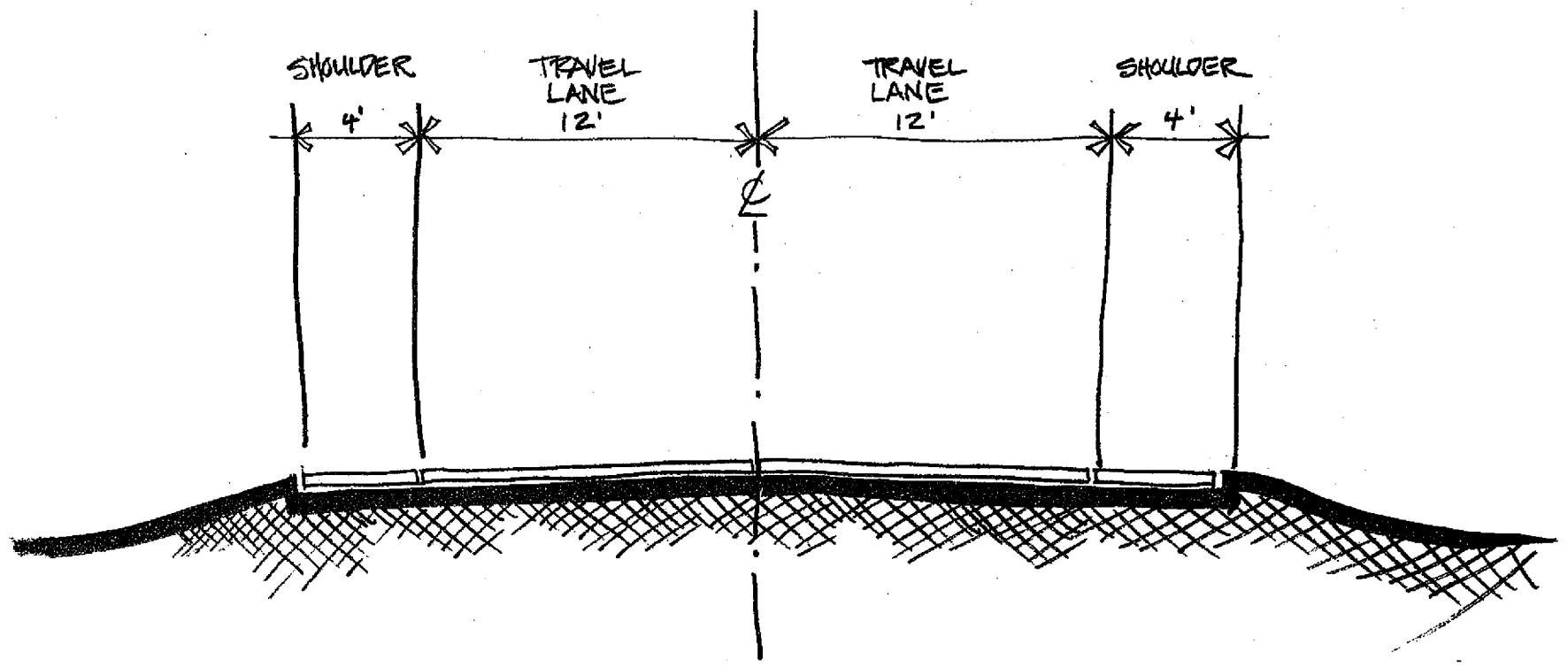
Field Panel Widths: 27 inches (10-foot tie)
21 inches (9-foot tie)

Concrete:
Compressive Strength: 6000 p.s.i. Min.
Percentage of Entrained Air: 6.0 percent ± 1%
Max. Water/Cement Ratio: 0.44 % (by weight)

Rebar:
ASTM A615 or A706 Gr.60 (Tied)
ASTM A706 Gr.60 (Welded)

Rubber:
Type: Virgin SBR
Tensile: 2,000 p.s.i.
Hardness: 65 ± 5 Durometer Shore A

975 SE Sandy Blvd., Portland, OR 97214 Phone: 503-230-8034 Fax: 503-230-9002


SHOULDER
4'
TRAVEL LANE 12'
TRAVEL LANE 12'
SHOULDER
4'
℄

STURTEVANT, GOLEMO, & ASSOCIATES
CIVIL ENGINEERING, LAND PLANNING, & DEVELOPMENT SERVICE
2211 MAIN STREET
VANCOUVER, WA, 98660

PRELIMINARY COST ESTIMATE
WESTLAND ROAD OVERLAY AND MINOR WIDENING

ITEM	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE		TOTAL
1.		L.S.	Mobilization		$	30,000.00
2.		L.S.	Crack Sealing and Minor Pavement		$	50,000.00
3.		L.S.	Pavement Grinding and Removal in Localized Areas		$	50,000.00
4.		L.S.	Temporary Traffic Control		$	20,000.00
8.	5,300	TONS	2" of Class "B" A.C. Pavement Overlay	$ 45.00	$	238,500.00
14.		L.S.	Adjust Existing Rims to F.G.		$	20,000.00
15.		L.S.	Pavement Markers & Paint Stripes		$	50,000.00
			SUB-TOTAL CONSTRUCTION		**$**	**458,500.00**
			DESIGN AND CONSTRUCTION MANAGEMENT (20%)		$	91,700.00
			CONTINGENCY (20%)		$	91,700.00
			TOTAL COST		**$**	**641,900.00**

NOTES:

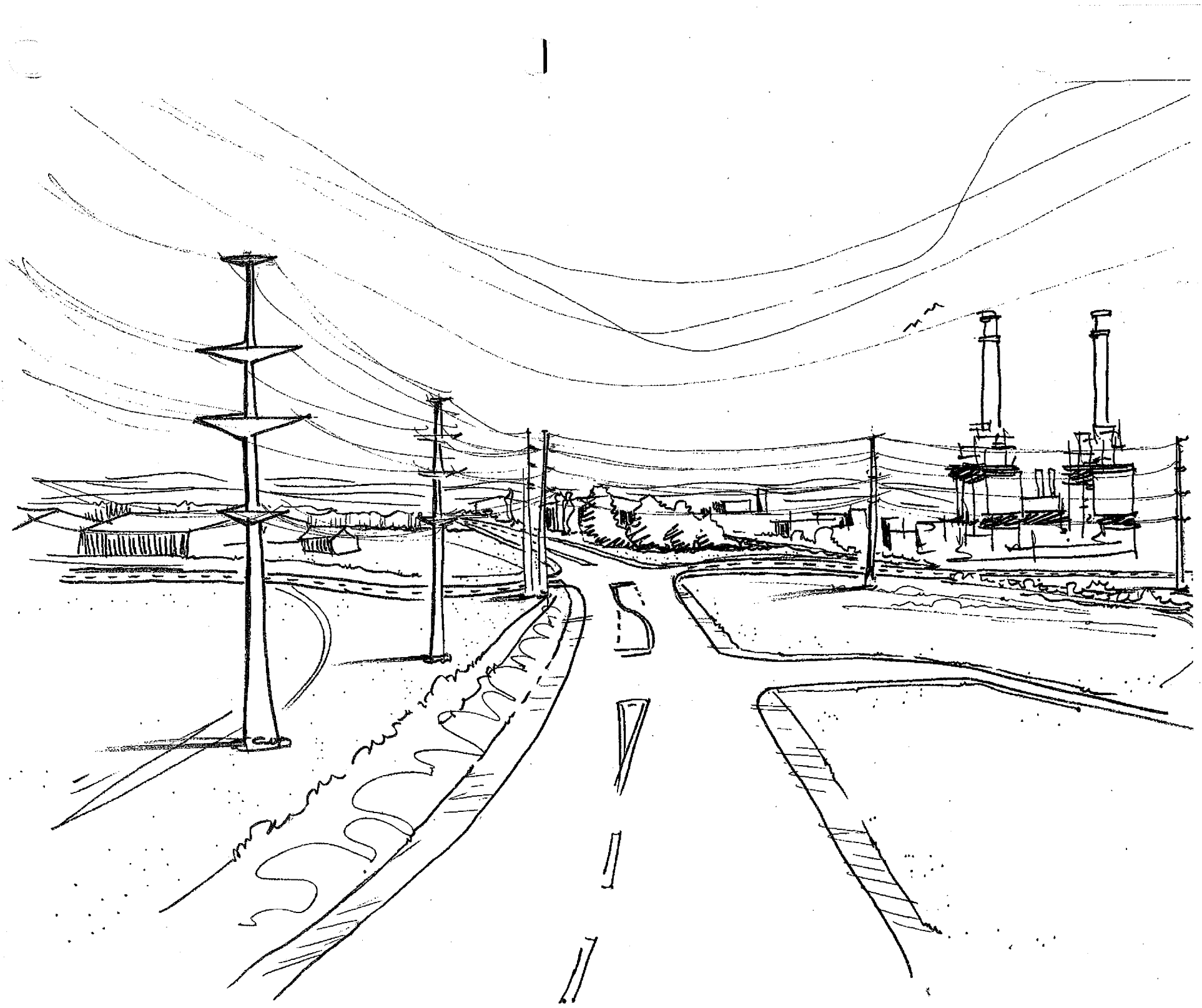
1. This estimate was prepared by Sturtevant, Golemo, & Associates, in June 2003 and is based upon USGS topographic Maps and aerial photographs.

2. Unit prices shown in this estimate are based upon current bid prices received by this office without increases for inflation. Totals are rounded to the nearest dollar.

3. The following items are not included in this estimate:
   a) Any landscaping costs
   b) Any power, telephone, cable T.V., or gas utility costs
   c) Any staking costs
   d) Soils engineering
   e) Traffic signals
   f) Wetland or other environmental permits

4. The street overlay thickness is assumed to be 2" AC and the pavement width is 32' for a length of approximately 13,000 LF from Stafford Hansell Road to Agnew Road.

5. This estimate does not include any costs for permanent storm water quality or quantity control measures and assumes this project will utilize the existing stormwater system.



STURTEVANT, GOLEMO, & ASSOCIATES
CIVIL ENGINEERING, LAND PLANNING, & DEVELOPMENT SERVICE
2211 MAIN STREET
VANCOUVER, WA, 98660

PRELIMINARY COST ESTIMATE
WESTLAND ROAD / LAMB ROAD INTERSECTION REDESIGN
ALTERNATE #1

ITEM	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL
1.		L.S.	Mobilization		$ 30,000.00
2.		L.S.	Clearing and Grubbing		$ 10,000.00
3.		L.S.	Erosion Control		$ 10,000.00
4.		L.S.	Temporary Traffic Control		$ 15,000.00
5.	2,600	C.Y.	Rough Grading and Excavation	$ 20.00	$ 52,000.00
6.	48,600	S.F.	Subgrade Preparation	$ 0.17	$ 8,262.00
7.	270	TONS	3 - 1/2" of Class "B" A.C. Pavement	$ 45.00	$ 12,150.00
8.	460	TONS	2" of Class "B" A.C. Pavement	$ 50.00	$ 23,000.00
9.	1,570	C.Y.	Base Rock	$ 26.50	$ 41,605.00
10.	120	L.F.	Sawcut Existing Pavement	$ 4.50	$ 540.00
11.	120	L.F.	12" Storm Culvert	$ 55.00	$ 6,600.00
12.		L.S.	Relocate Ex. Utility Poles and Boxes		$ 10,000.00
13.		L.S.	Relocate Ex. Street Signs		$ 2,500.00
14.		L.S.	Adjust Existing Rims to F.G.		$ 5,000.00
15.		L.S.	Pavement Markers & Paint Stripes		$ 20,000.00
			SUB-TOTAL CONSTRUCTION		**$ 246,657.00**
			DESIGN AND CONSTRUCTION MANAGEMENT (20%)		$ 49,331.40
			CONTINGENCY (20%)		$ 49,331.40
	2	ACRE	ESTIMATED RIGHT-OF-WAY	$ 30,000.00	$ 60,000.00
			TOTAL COST		**$ 405,319.80**

NOTES:

1. This estimate was prepared by Sturtevant, Golemo, & Associates, in June 2003 and is based upon USGS topographic Maps and aerial photographs.

2. Unit prices shown in this estimate are based upon current bid prices received by this office without increases for inflation. Totals are rounded to the nearest dollar.

3. The following items are not included in this estimate:
   a) Any landscaping costs
   b) Any power, telephone, cable T.V., or gas utility costs
   c) Any staking costs
   d) Soils engineering
   e) Traffic signals
   f) Wetland or other environmental permits

4. Street pavement sections are assumed to be 3-1/2" AC over 10" base rock for Westland Road and Lamb Road, and 2" AC over 10" base rock for Walker Road and Generation Road.

5. This estimate doesn't include any relocation of the large distribution power poles located in the vicinity of the project.

6. This estimate doesn't include any relocation of the irrigation ditches located in the vicinity of the project.

7. This estimate does not include any costs for permanent storm water quality or quantity control measures and assumes this project will utilize the existing stormwater system.

STURTEVANT, GOLEMO, & ASSOCIATES
CIVIL ENGINEERING, LAND PLANNING, & DEVELOPMENT SERVICE
2211 MAIN STREET
VANCOUVER, WA, 98660

PRELIMINARY COST ESTIMATE
WESTLAND ROAD / LAMB ROAD INTERSECTION REDESIGN
ALTERNATE #2

ITEM	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE		TOTAL
1.		L.S.	Mobilization		$	30,000.00
2.		L.S.	Clearing and Grubbing		$	15,000.00
3.		L.S.	Erosion Control		$	15,000.00
4.		L.S.	Temporary Traffic Control		$	20,000.00
5.	4,400	C.Y.	Rough Grading and Excavation	$ 20.00	$	88,000.00
6.	79,600	S.F.	Subgrade Preparation	$ 0.17	$	13,532.00
7.	1,075	TONS	3 - 1/2" of Class "B" A.C. Pavement	$ 45.00	$	48,375.00
8.	390	TONS	2" of Class "B" A.C. Pavement	$ 50.00	$	19,500.00
9.	2,470	C.Y.	Base Rock	$ 26.50	$	65,455.00
10.	160	L.F.	Sawcut Existing Pavement	$ 4.50	$	720.00
11.	160	L.F.	12" Storm Culvert	$ 55.00	$	8,800.00
12.		L.S.	Relocate Ex. Utility Poles and Boxes		$	15,000.00
13.		L.S.	Relocate Ex. Street Signs		$	2,500.00
14.		L.S.	Adjust Existing Rims to F.G.		$	5,000.00
15.		L.S.	Pavement Markers & Paint Stripes		$	25,000.00
			SUB-TOTAL CONSTRUCTION		**$**	**371,882.00**
			DESIGN AND CONSTRUCTION MANAGEMENT (20%)		$	74,376.40
			CONTINGENCY (20%)		$	74,376.40
	2	ACRE	ESTIMATED RIGHT-OF-WAY	$ 30,000.00	$	60,000.00
			TOTAL COST		**$**	**580,634.80**

NOTES:

1. This estimate was prepared by Sturtevant, Golemo, & Associates, in June 2003 and is based upon USGS topographic Maps and aerial photographs.

2. Unit prices shown in this estimate are based upon current bid prices received by this office without increases for inflation. Totals are rounded to the nearest dollar.

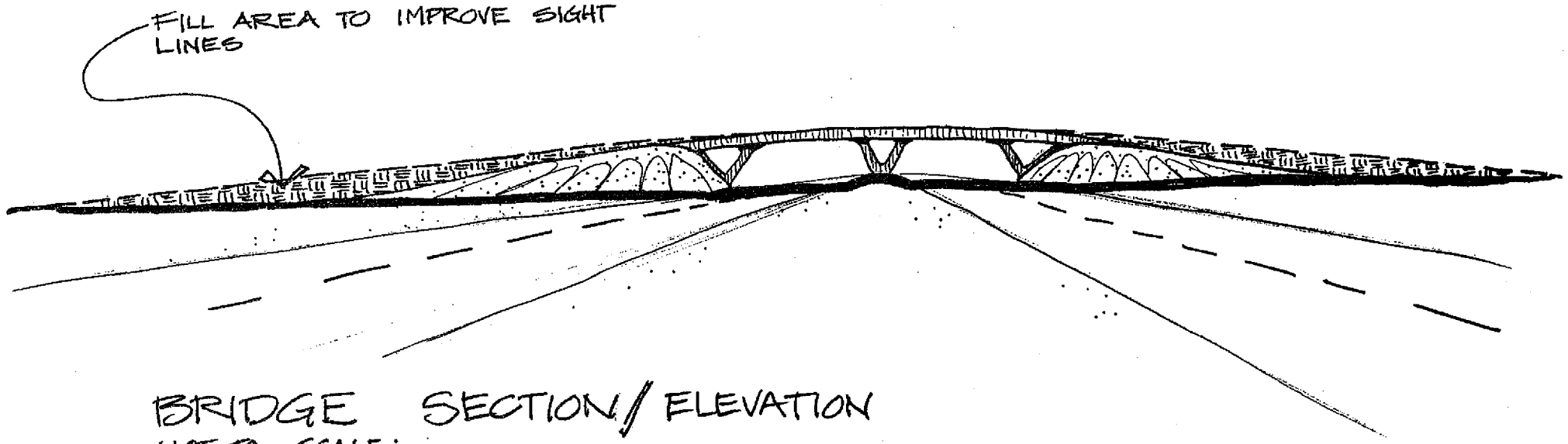
3. The following items are not included in this estimate:
   a) Any landscaping costs
   b) Any power, telephone, cable T.V., or gas utility costs
   c) Any staking costs
   d) Soils engineering
   e) Traffic signals
   f) Wetland or other environmental permits

4. Street pavement sections are assumed to be 3-1/2" AC over 10" base rock for Westland Road and Lamb Road, and 2" AC over 10" base rock for Walker Road and Generation Road.

5. This estimate doesn't include any relocation of the large distribution power poles located in the vicinity of the project.

6. This estimate doesn't include any relocation of the irrigation ditches located in the vicinity of the project.

7. This estimate does not include any costs for permanent storm water quality or quantity control measures and assumes this project will utilize the existing stormwater system.



BRIDGE SECTION // ELEVATION
NOT TO SCALE:

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Umatilla County Staff and TSP Reader

From: Hann Lee, H. Lee & Associates

Subject: Priority of Improvements

The priority of improvements is listed in Table 1 below with a brief project description and planning level cost estimate.

Table 1
Capital Improvement Cost – Street Improvements

Improvement Description	Cost
1. Upgrade existing signage in study area	$5,000
2. Westland Road At-Grade Railroad Crossing Rebuild - Tighten down existing panels, secure loose rails, and replace existing crossing with new concrete and rubber style crossing	$125,000[1]
3. Westland Road/Lamb Road/Walker Road Intersection Realignment – Realign intersection for Lamb Road and the north leg of Westland Road to have the travel right-of-way, realign Walker Road with the south leg of Westland Road, add left turn pockets to Lamb Road and north leg of Westland Road approaches	$590,000
4. Westland Road Overlay and Minor Widening – Overlay Westland Road from the I-84 Westbound Ramps to Agnew Road and minor widening and paving of shoulders to develop four foot paved shoulders on Westland Road	$642,000
Grand Total	**$1,362,000**

[1] This project cost estimate may actually be as low as $55,000, depending on the conditions of the ties under the crossing.

TASK 5.9
DEVELOP PRIORITIES FOR IMPROVEMENTS

TASK 5.10
PRODUCE TECH MEMO SUMMARIZING ALTERNATIVES AND EVALUATION PROCESS

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

MEMORANDUM

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

To: Umatilla County Staff and TSP Reader

From: Hann Lee, H. Lee & Associates

Subject: Recommended Improvements

The improvement alternatives were narrowed into four specific capital improvement projects. Each improvement is described, their location shown in Attachment 1, and their funding potential discussed.

UPGRADE EXISTING STREET SIGNAGE IN AREA

Although the replacement and installation of signs is typically considered a maintenance issues, a street sign upgrade, replace, and addition project was developed to give Umatilla County and option to implement this improvement in the short term as one project rather than replacing and adding signs incrementally.

The signage improvement project includes $5,000 to replace and add signs in the study area. This budget allows for 10 to 20 news signs in the study area to be installed. The primary funding source for the signage improvement is Umatilla County's responsibility. In addition, if some of the ODOT signs are worn out and in need of replacement, Umatilla County may request that those signs be replaced through ODOT's maintenance program.

The new signage should be larger for easier visibility in the study area. Typically, the maximum size of warning signs is 48 inches by 48 inches. Also, lettering on supplemental street signs on cross street warning signs or street signs should be larger as well in the neighborhood of 9 inch lettering. These signs should be reflectorized according to the ODOT Sign Policy and Guidelines for easy visibility at night.

RAILROAD CROSSING AT WESTLAND ROAD NORTH OF WESTPORT LANE

The Westland Road at-grade railroad crossing is a concrete crossing. Based on a qualitative visual evaluation, the railroad crossing is a little rough and some of the concrete panels move when vehicles cross the tracks. In addition, the tracks have also worked loose and rattle. Several loose ties were observed and many of the spikes in the vicinity of the intersection are missing. This improvement project would tighten down the panels, secure the rails, and replace the

crossing with a newer style concrete and rubber crossing to significantly improve the comfort of traveling over the crossing. In addition, since the condition under the crossing is unknown there is a possibility that securing the concrete panel and rail may involve repairing or replacing components of the rail. The cost of this improvement ranges from $55,000 to $125,000 depending on the actual condition of the existing crossing.

Funding for this project may be obtained from a variety of sources. First, since this crossing receives significant rail traffic from the Hinkle Rail Yards east of the study area, the Union Pacific Railroad may be approached for funding to maintain this crossing. Also, existing truck generators in the study area may be willing to voluntarily contribute toward the improvement if there are assurances from Umatilla County that they would fund the balance of the project and the truck generators experience immediate benefit of the improvement.

WESTLAND RD/LAMB RD/WALKER RD REALIGNMENT

The preferred Westland Road/Lamb Road/Walker Road realignment is to realign the west leg of Lamb Road and the north leg of Westland Road as a continuous curve with the traffic right-of-way. Walker Road and the south leg of Westland Road would be realigned to be at a right angle with Lamb Road. In addition left turn pockets would be added on Lamb Road and the north leg of Westland Road. The total cost for this improvement is $590,000.

Although this project is likely the sole responsibility of Umatilla County, the county may consider approaching ODOT for some funding. The rationale of approaching ODOT for some funding is that the Lamb Road/I-82 interchange acts as a by-pass over the Union Pacific Railroad and increases the traffic pressure at the Westland Road/Lamb Road/Walker Road intersection. This additional traffic is a significant reason why this improvement is needed.

WIDENING WESTLAND ROAD TO CURRENT ROADWAY STANDARDS

Based on the roadway inventory, the pavement section of Westland Road is 29 feet wide with two to four foot shoulders. Including the shoulder width, Westland Road ranges from 31 to 33 feet wide. The newly adopted road standard in the Umatilla County Transportation System Plan for rural major collector arterials such as Westland Road is 24 feet for the travel lanes plus paved four foot shoulders for a total pavement width of 32 feet. The existing roadway width with the paving the shoulders is wide enough to meet the new standards. Next time Westland Road receives an overlay, the roadway should be paved to meet the new rural major collector standard of 32 feet. The cost of the overlay project is $642,000.

The funding of this project is the sole responsibility of Umatilla County. However, there may be some bicycle funding that could be applied for to pave the gravel shoulders.

PRIORITY OF IMPROVMENTS

The priority of improvements is listed in Table 1 below with a brief project description and planning level cost estimate.

The priority of the improvements in Table 1 was based on developing short range projects first that had a high likelihood of funding. Project #1, the upgrade of signage in the study area, is very inexpensive and Umatilla County may have the ability to fund this improvement project immediately. The Westland Road At-Grad Railroad Crossing Rebuild is a very popular project among truck generators in the study area and may have the ability to be funded from private interests as well as Umatilla County, ODOT, and the Union Pacific Railroad. Therefore, it is prioritized as Project #2.

Mid-range to long range projects includes the Westland Road/Lamb Road/Walker Road Intersection Realignment and the Westland Road Overlay and Minor Widening. These projects are classified as mid-range to long range improvement projects due to their cost.

Table 1

Capital Improvement Cost – Street Improvements

Improvement Description	Cost
1. Upgrade existing signage in study area	$5,000
2. Westland Road At-Grade Railroad Crossing Rebuild - Tighten down existing panels, secure loose rails, and replace existing crossing with new concrete and rubber style crossing	$125,000[1]
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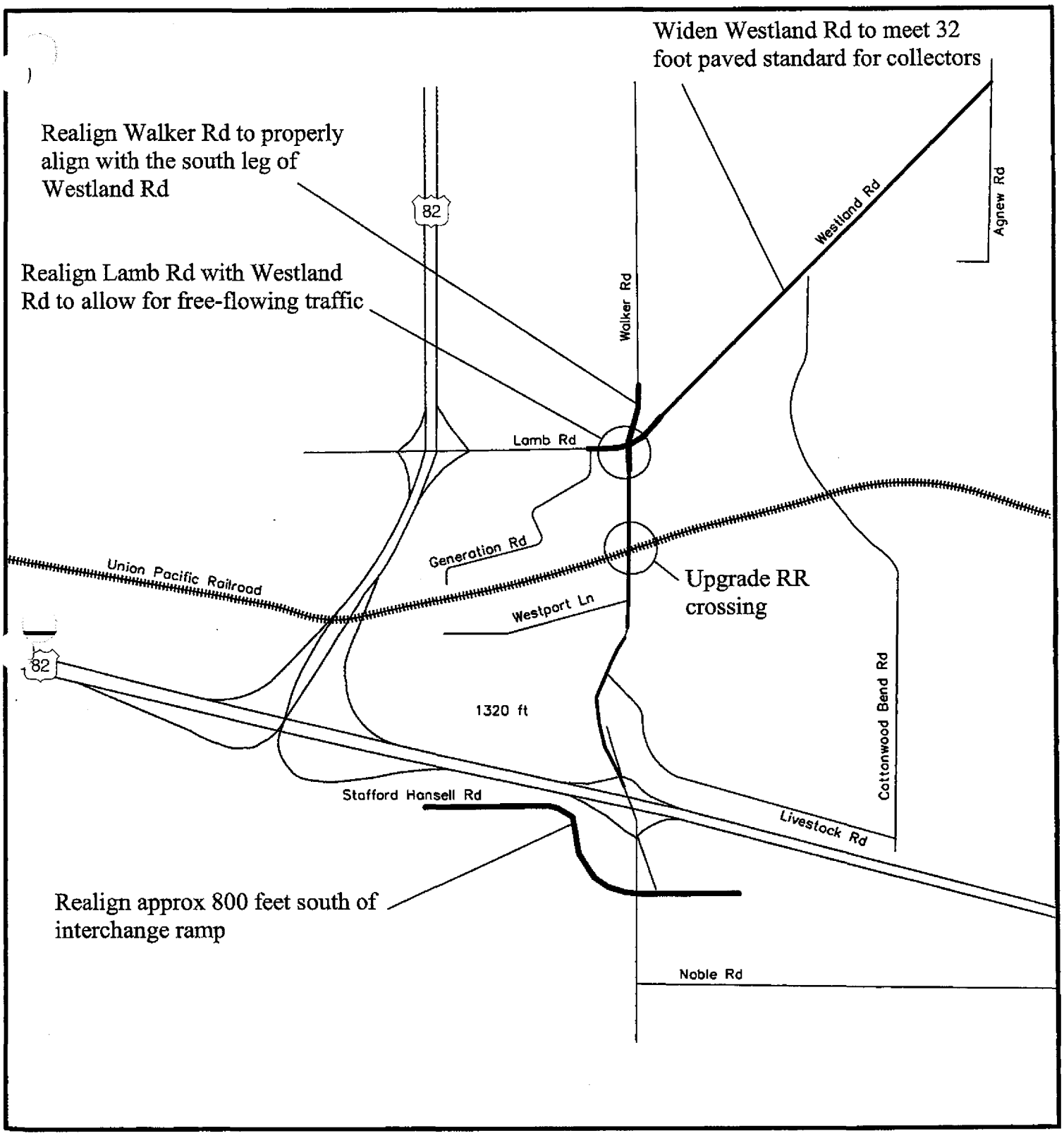
4. Westland Road Overlay and Minor Widening – Overlay Westland Road from the I-84 Westbound Ramps to Agnew Road and minor widening and paving of shoulders to develop four foot paved shoulders on Westland Road	$642,000
Grand Total	**$1,362,000**

[1] This project cost estimate may actually be as low as $55,000, depending on the conditions of the ties under the crossing.



Westland Road Interchange Transportation Plan

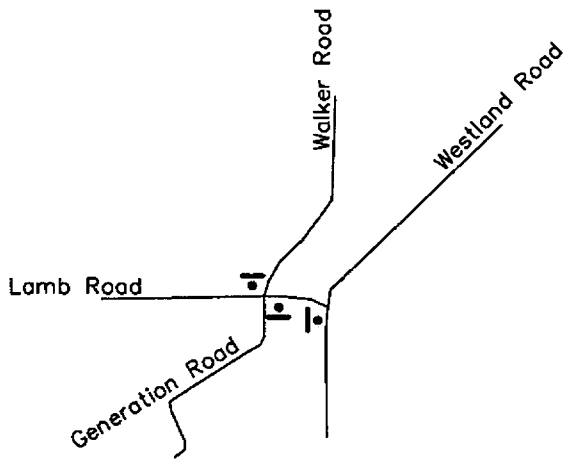
LEGEND
15/20 P.M. Peak Hour Traffic Volume

NOT TO SCALE

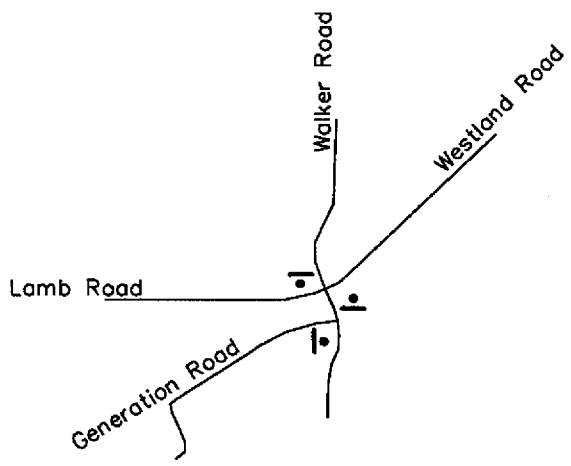
Attachment 1
Proposed Improvements

TASK 5.11
PRODUCE FIGURES ASSOCIATED WITH ALTERNATIVES

Alternative 1



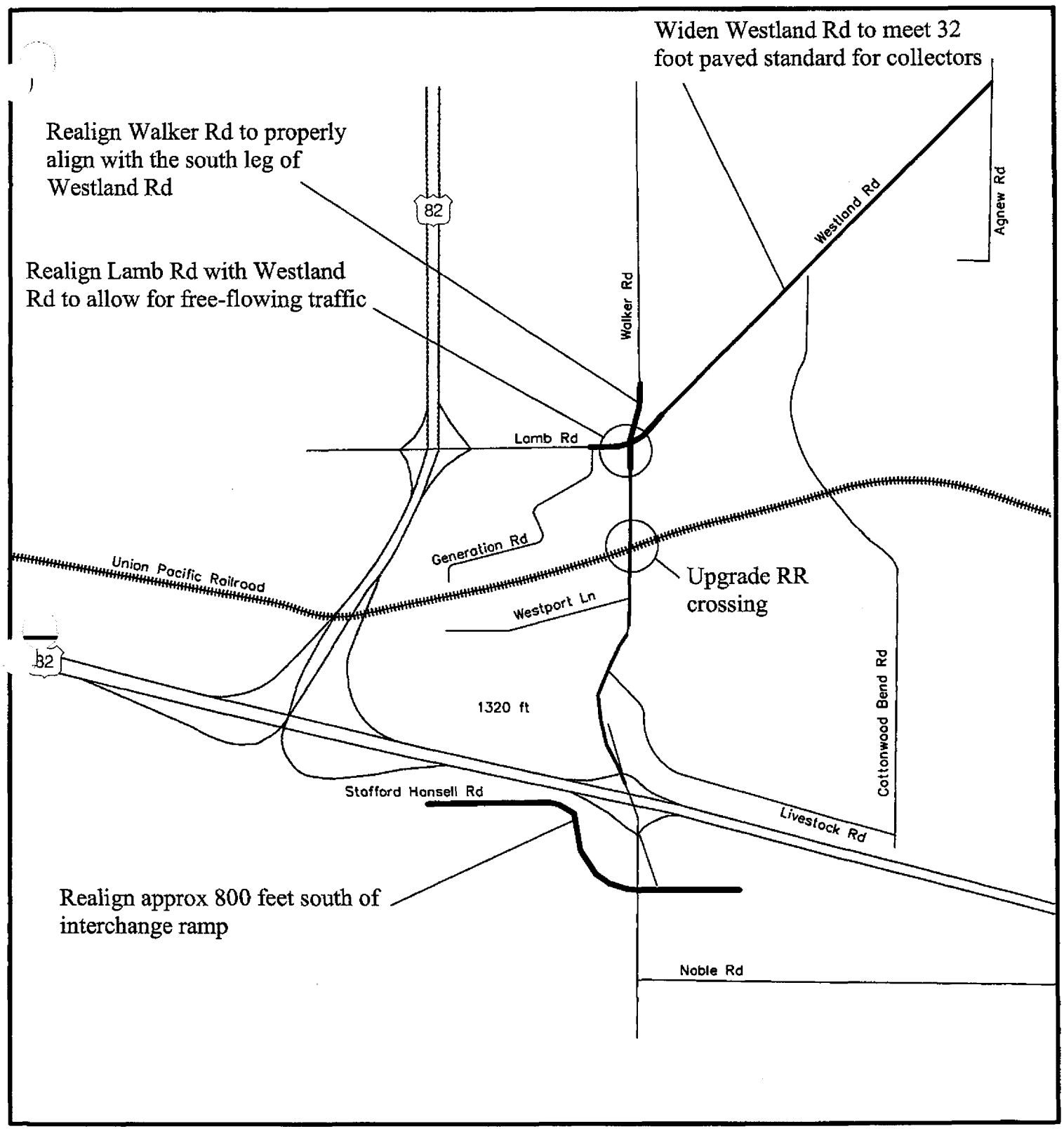
Alternative 2



Westland Road Interchange Transportation Plan

Figure 5-1
Westland Road/Lamb Road/Walker Road
Realignment Options

NOT TO SCALE



Westland Road Interchange Transportation Plan

LEGEND
15/20 P.M. Peak Hour Traffic Volume

NOT TO SCALE

Figure 5-2
Proposed Improvements

TASK 6.1
DEVELOP DRAFT PLAN WITH ASSOCIATED FIGURES

DRAFT

Umatilla County
Westland Road/I-84/I-82 Interchange
Area Transportation Plan

Prepared for

Umatilla County

Prepared by

H. Lee & Associates in Association

May 8, 2003

Section 1.0
Introduction

The purpose of the Umatilla County Westland Road/I-84/I-82 Interchange Area Transportation Plan is to supplement and refine the Umatilla County Transportation System Plan in the project planning area. The goal of the project is to develop a sub-area study that addresses the specific land use and transportation issues in the Westland Road/I-84/I-82 interchange area. The result of the project will be a list of transportation improvements needed to support the 20-year employment growth in the study area and land use policy recommendations.

Since the Umatilla County Westland Road/I-84/I-82 Interchange Area Transportation Plan is a refinement and amendment to the Umatilla County Transportation System Plan, the study follows the same state and federal regulations guiding the development of transportation system plans within Oregon. Specifically, the Westland Road/I-84/I-82 Interchange Area Transportation Plan was developed in compliance with requirements of the Transportation Equity Act for the 21st Century (TEA-21), Statewide Planning Goal 12, the Transportation Planning Rule (TPR – Oregon Administrative Rule (OAR) Chapter 660, Division 12), and Oregon Highway Plan (1999). The long-range planning is intended to serve as a guide for Umatilla County in managing their existing transportation facilities and developing future transportation facilities.

1.1. REQUIREMENTS

The TEA-21, Statewide Planning Goal 12, the Transportation Planning Rule, and Oregon Highway Plan (OHP) requirements guiding the development of the Umatilla County Westland Road/I-84/I-82 Interchange Area Transportation Plan are discussed below.

1.1.1. TEA-21

TEA-21 is federal legislation that was passed in 1998. It specifies requirements for statewide and metropolitan area planning. Although TEA-21 does not specify requirements for areas less than a population of 50,000, it is still relevant to the Umatilla County Westland Road/I-84/I-82 Interchange Area Transportation Plan since it defines how federal aid is dispersed for highway and transit projects. The planning requirements under TEA-21 parallel the requirements under the Transportation Planning Rule (TPR).

1.1.2. Goal 12

Oregon adopted 19 Statewide Planning Goals in the mid-1970s. These goals were to be implemented in each local jurisdiction's comprehensive plan. Goal 12 of the statewide planning goals related to transportation. The intent of Goal 12 is to "provide and encourage a safe,

convenient, and economic transportation system." It provides the following guidelines in creating a transportation element of a local jurisdiction's comprehensive plan:

> "A transportation plan shall (1) consider all modes of transportation including mass transit, air, water, pipeline, rail, highway, bicycle and pedestrians; (2) be based upon an inventory of local, regional and state transportation needs; (3) consider the differences in social consequences that would result from utilizing differing combinations of transportation modes; (4) avoid principal reliance upon any one mode of transportation; (5) minimize adverse social, economic and environmental impacts and costs; (6) conserve energy; (7) meet the needs of the transportation disadvantaged by improving transportation services; (8) facilitate the flow of goods and services so as to strengthen the local and regional economy; and (9) conform to local and regional comprehensive land use plans."

1.1.3. Transportation Planning Rule (TPR)

The Transportation Planning Rule (TPR) was developed by the Department of Land Conservation and Development (DLCD) and Oregon Department of Transportation (ODOT). It was adopted originally in April 1991 to implement Goal 12 of the Statewide Planning Goals.

The TPR requires that cities, counties, Metropolitan Planning Organizations (MPOs), and state agencies prepare and adopt transportation system plans. A transportation system plan is defined in the TPR as: "a plan for one or more transportation facilities that are planned, developed, operated and maintained in a coordinated manner to supply continuity of movement between modes, and within and between geographic and jurisdictional areas." The TPR encourages multi-modal transportation systems to reduce the dependence on auto traffic.

The transportation system plan elements produced included the following:

- Street system plan for a network of arterials, collectors, and local streets
- Bicycle and pedestrian plan and integrate with the parks plan/dream trails map
- Public transportation plan
- Air, rail, water, and gas pipeline plan
- Policies and land use regulations for implementing the TSP
- Transportation system and demand management plan
- Transportation financing plan

1.1.4. Oregon Highway Plan (1999)

The 1999 Oregon Highway Plan (OHP) was adopted by the Oregon Transportation Commission on March 18, 1999. It applies the general directives specified in the 1992 Oregon Transportation Plan. The general directives of the 1992 Oregon Transportation Plan called for a transportation system marked by modal balance, efficiency, accessibility, environmental responsibility,

connectivity among places, connectivity among modes and carriers, safety, and financial stability. The 1999 OHP applies the 1992 Oregon Transportation Plan general directives by emphasizing on:

- Efficient management of the system to increase safety, preserve the system and extend its capacity;
- Increased partnerships, particularly with regional and local governments;
- Links between land use and transportation;
- Access management;
- Links with other transportation modes; and
- Environmental and scenic resources

There are several policies within the 1999 OHP that local jurisdictions are required to be consistent with in their transportation system plans. Specifically, the OHP states:

> "Local and regional jurisdictions must be consistent with Policies 1A, State Highway Classification System; 1B, Land Use and Transportation; 1C, State Highway Freight System; 1D, Scenic Byways; 1F, Highway Mobility Standards; 1G, Major Investments; 2G, Rail and Highway Compatibility; 3A-E, Access Management; 4A, Efficiency of Freight Movement; 4D, Transportation and Demand Management; and the Investment Policy in their local and regional plans when planning for state highway facilities within their jurisdiction."

1.1.5. Other Plans

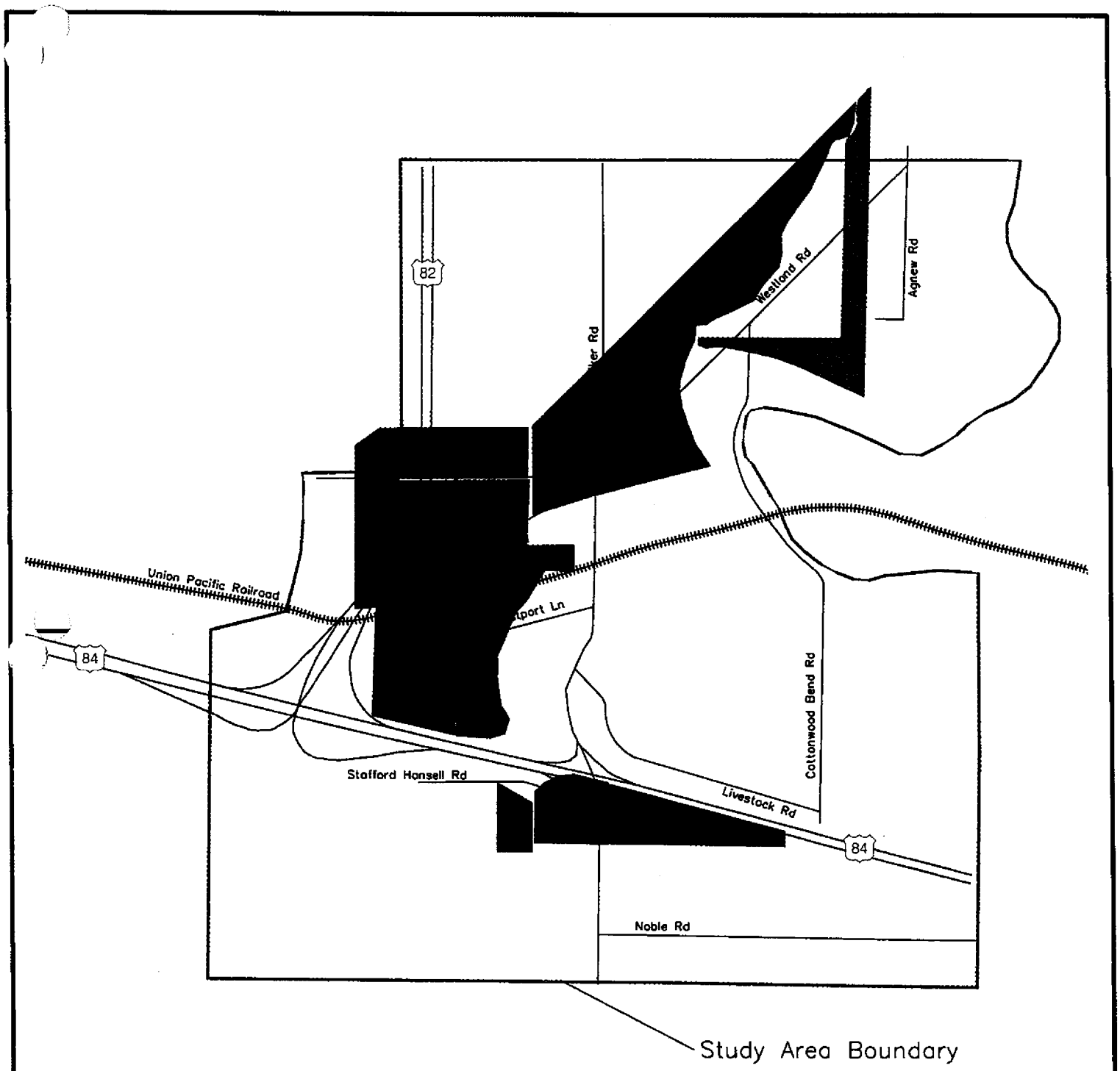
In addition to those specific requirements described above, coordination with other specific state plans is also required. These plans include:

- Oregon Bicycle and Pedestrian Plan, ODOT, June14, 1995
- Oregon Rail Freight Plan, ODOT, August 17, 1994
- Oregon Rail Passenger Policy and Plan, ODOT, 1992
- Oregon's Mobility Needs, Final Report, June 1999
- 1997 Oregon Public Transportation Plan, ODOT
- Freight Moves the Oregon Economy, ODOT, July 1999
- Umatilla County Transportation System Plan

1.2. PLANNING AREA

1.2.1. Study Area

The study area boundaries of the Westland Road/I-82/I-84 Interchange Area Transportation Plan are shown in Figure 1-1. The Westland Road/Agnew Road intersection marks the most northern area of the study area. The eastern study boundary is the Umatilla River and Cottonwood Bend



Westland Road Interchange Transportation Plan

LEGEND

Study Area

NOT TO SCALE

Figure 1-1
Study Area

Road. The southern boundary is Noble Road south of I-84. And finally, the western boundary is I-82. The major area of focus within these boundaries is the land that is zoned commercial and industrial. The study area is approximately 640 acres.

Major uses within the study area are listed below. The land uses within the study area are spaced sporadically and are not generally land intensive.

- Shell Truck Stop
- Barton Industries
- Freightliner Truck Shop
- Lamb Weston
- Natural Gas Power Generator
- Kaybe Orchards
- American Onion

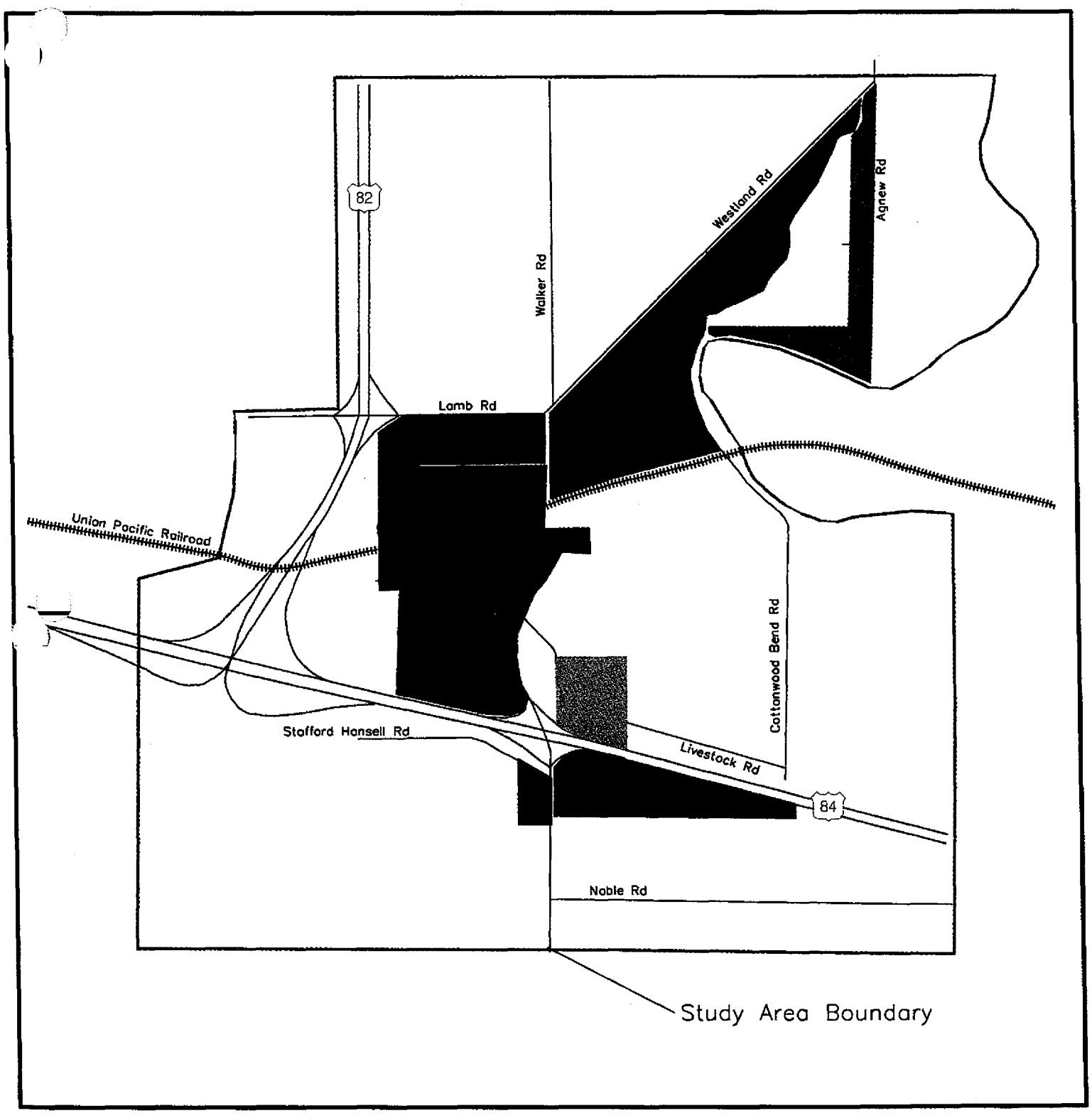
Transportation facilities within the study area are limited and rural in nature. The major roadway is Westland Road, which bisects the center of the study area. Westland Road provides access to I-84 to the south and Hermiston to the east. Lamb Road provides the study area access to the Umatilla Army Depot and I-82. The remainder of the roadways within the study area provides local access to adjacent properties.

1.2.2. Study Area Zoning

There area five major types of zoning designations within the study area boundaries. These zoning designations are commercial, industrial, rural residential (RR-4), exclusive farm use (EFU), and agribusiness.

The commercially zoned property within the study area is in two general areas. The first commercially zoned area is south of Lamb Road between I-82 and Walker Road. The second commercial area within the study area is around the Westland Road interchange at I-84. There are three parcels south of I-84 immediately adjacent to the freeway and one parcel to on the northwest quadrant of the Westland Road/I-84 interchange. The commercially zoned property within the study area is approximately 100 acres. Only one of the commercially zoned properties within the study area actually has an existing use on it. The parcel on the southwest quadrant of the I-84 interchange with Colonel Jordan Road has a Shell truck stop.

There are three distinct industrial zoned areas within the study area. The first area is the most northern area of the study area that is bounded by Westland Road to the north and west, the Westland Canal and Cottonwood Bend Road to the east, the Union Pacific Railroad to the south, and Walker Road/Westland Road to the west. The second distinct industrial area is bounded by Lamb Road to the north, I-84 to the south, east of I-82 to the east, and Westland Road to the west. The third industrially zoned area within the study area is south of I-84 and east of Colonel Jordan Road. The industrially zoned property within the study area is comprised of over 400 acres.



Westland Road Interchange Transportation Plan

LEGEND

- Commercial Zoning
- Industrial Zoning
- Rural Residential
- Agribusiness Zoning
- Exclusive Farm Use
- Study Area

NOT TO SCALE

Figure 1-2
Study Area Zone Map

There is a limited amount of rural residential land within the study area. The rural residential area is located along the west side of Agnew Road south of Westland Road. At the Umatilla River, this area extends west of Agnew Road to form a reverse 'L".

An approximately 33 acre parcel at the northeast quadrant of the Westland Road interchange with I-84 is zoned agribusiness.

The remainder of the zoning within the study is exclusive farm use (EFU). Property owners of EFU land adjacent to Stafford Hansel Road; between I-82, I-84, and the existing industrially zoned properties, and east of Westland Road and south of the Union Pacific Railroad have all expressed an interest in having their properties rezoned to either commercial or industrial zoning. Rezone issues will be discussed in the Future Traffic Forecast section of this report.

1.2.3. Street System

The roadways within the study area fall under the jurisdiction of Umatilla County. Two rural major collectors exist in the study area. These rural major collectors are Lamb Road and Westland Road. Both of these roadways have interchanges with the interstate system. Lamb Road has an interchange to provide access to I-82. Westland Road has an interchange to provide access to I-84. Lamb Road connects to Westland Road and Westland Road provides access into the City of Hermiston to the east. The remaining roadways within the study area are local streets providing access to adjacent parcels.

1.3 PLANNING PROCESS

The interchange area transportation plan (TSP) was developed through a series of technical exercises and input from the public, citizen advisory committee, and technical advisory committee. The key elements of the process to develop the plan are listed below.

- Define project goals
- Review of existing plans and policies
- Solicit public involvement and input
- Conduct an existing inventory and condition analysis
- Project future traffic volumes
- Define deficiencies and needs
- Develop transportation improvement projects

1.4. OTHER PLANNING CONSIDERATIONS

Environmental conditions have a potentially significant impact to the development of new transportation infrastructure. TPR requirement OAR 660-012-0035 (3) (c) states that "the transportation system shall minimize adverse economic, social, environmental and energy

consequences." In the development of transportation improvements, a cursory look at environmental impacts was conducted from existing sources and known environmental issues by the Umatilla County staff. The goal in the cursory environmental analysis was to minimize environmental impacts by any proposed transportation improvement.

Section 2.0
Goals

The goals below are derived from the project scope of work and are only intended to guide the study process.

- Goal 1 – Balance land use and transportation planning to develop an interchange plan that can achieve acceptable traffic operations along the areas transportation system and provide for safe access to adjacent land uses.

- Goal 2 – Maximize transportation management techniques in the study area to mitigate future traffic impacts generated by future developments and to minimize the necessary transportation infrastructure investment.

- Goal 3 – Solicit significant public input throughout the study process to assure ownership of the plan by study area stakeholders, property owners, and public.

- Goal 4 – Develop a comprehensive list of deficiencies in the project area that should be addressed by the study.

- Goal 5 – Develop future improvement alternatives that address short and long term capacity deficiencies, connectivity, and safety around the two study interchanges and study area roadways and intersections.

- Goal 6 - Develop conceptual 20-year land use plans in the study area to support the traffic forecasting task and to develop a basis for a sensitivity analysis for the range of traffic impacts that could occur in the study area.

In addition to the goals above, Policy 3C, Interchange Access Management Areas, in the 1999 Oregon Highway Plan (OHP) the primary policy directive that created the context for the project. This 1999 OHP policy is the primary tool used by ODOT to managing interchange areas within the state.

Policy 3C: Interchange Access Management Areas[1]

It is the policy of the State of Oregon to plan for and manage grade-separated interchange areas to ensure safe and efficient operation between connecting roadways.

Action 3C1

Develop interchange area management plans to protect the function of interchanges to provide safe and efficient operations between connecting roadways and to minimize the need for major improvements of existing interchanges.

Action 3C.2

To improve an existing interchange or construct a new interchange:

- The interchange access management spacing standards are shown in Tables 16-19 in Appendix C;

- These standards do not retroactively apply to interchanges existing prior to adoption of this Oregon Highway Plan, except or until any redevelopment, change of use, or highway construction, reconstruction or modernization project affecting these existing interchanges occur. It is the goal at that time to meet the appropriate spacing standards, if possible, but, at the very least, to improve the current conditions by moving in the direction of the spacing standards;

- Necessary supporting improvements, such as roadway networks, channelization, medians and access control n the interchange management area must be identified in the local comprehensive plan and committed with an identified funding source, or must be in place;

- Access to cross streets shall be consistent with established standards for a distance on either side of the ramp connections so as to reduce conflicts and manage ramp operations. The Interchange Access Management Spacing Standards supercede the Access Management Classification and Spacing Standards (Policy 3A), unless the latter distance standards are greater (see Appendix C);

- Where possible, interchanges on Freeways and Expressways shall connect to state highways, major or minor arterials;

- Interchanges on Statewide, Regional or District Highways may connect to state highways, major or minor arterials, other county or city roads, or private roads, as

[1] 1999 Oregon Highway Plan, Oregon Department of Transportation, Transportation Development Division, Planning Section, 1999, pages 102-104.

appropriate;

- The design of urban interchanges must consider the need for transit and park-and-ride facilities, along with the interchange's effect on pedestrian and bicycle traffic, and

- When possible, access control shall be purchased on crossroads for a minimum distance of 1320 feet (400 meters) from a ramp intersection or the end of a free flow ramp terminal merge lane taper.

Action 3C3

Establish criteria for when deviations to the interchange access management spacing standards may be considered. The kinds of considerations likely to be included area:

- Location of existing parallel roadways (e.g., Highways 99W or 99E which are parallel Interstate 5);

- Use of traffic controls;

- Potential queuing, increased delays and safety impacts; and

- Possible use of non traversible medians for right-in/right-out movements.

Action 3C4

When new approach roads or intersections are planned or constructed near existing interchanges, property is redeveloped or there is a change of use, wherever possible, the following access spacing and operation standards should be applied within the Interchange Access Management Area (measurements are from ramp intersection or the end of a free flow ramp terminal merge lane taper).

- Approach roads on the crossroads at no closer than 750 feet (230 meters), and between 750 feet (230 meters) and 1320 feet (400 meters), shall be limited to right-in/right-out. This may require construction of a nontraversible median or a median barrier.

- The first full intersection on a crossroad should be no closer than 1320 feet (400 meters).

Action 3C.5

As opportunities arise, rights of access shall be purchased on crossroads around existing interchanges. Whenever possible, this protective buying should be for a distance of 1320 feet (400 meters) on the crossroads.

Action 3C.6

Plan for and operate traffic controls within the Interchange Access Management Area with a priority of moving traffic off the main highway, freeway or Expressway and away from the interchange area. Within the Interchange Access Management Area, priority shall be given to operating signals for the safe and efficient operation of the interchange.

Action 3C.7

Use grade-separated crossings without connecting ramps to provide crossing corridors that relieve traffic crossing demands through interchanges.

Section 3.0
Existing Conditions

3.1. INTRODUCTION

This section describes existing conditions in the Westland Road/I-84/I-82 Interchange Area Transportation Plan related to its transportation system. The section reviews past plans and studies and inventories existing transportation conditions. This will be used as a foundation for identifying short-term transportation improvement needs and developing and evaluating longer-term transportation system alternatives.

3.2. ROAD CLASSIFICATION AND CHARACTERISTICS

The roadway functional classifications were obtained from ODOT's Oregon Transportation Map for Umatilla County. This map is typically coordinated between the State of Oregon and Umatilla County to coordinate classifications of roadways between jurisdictions.

As shown on Figure 3-1, there are only three functional classifications of roadways within the study area: interstate, rural major collector, and local street.

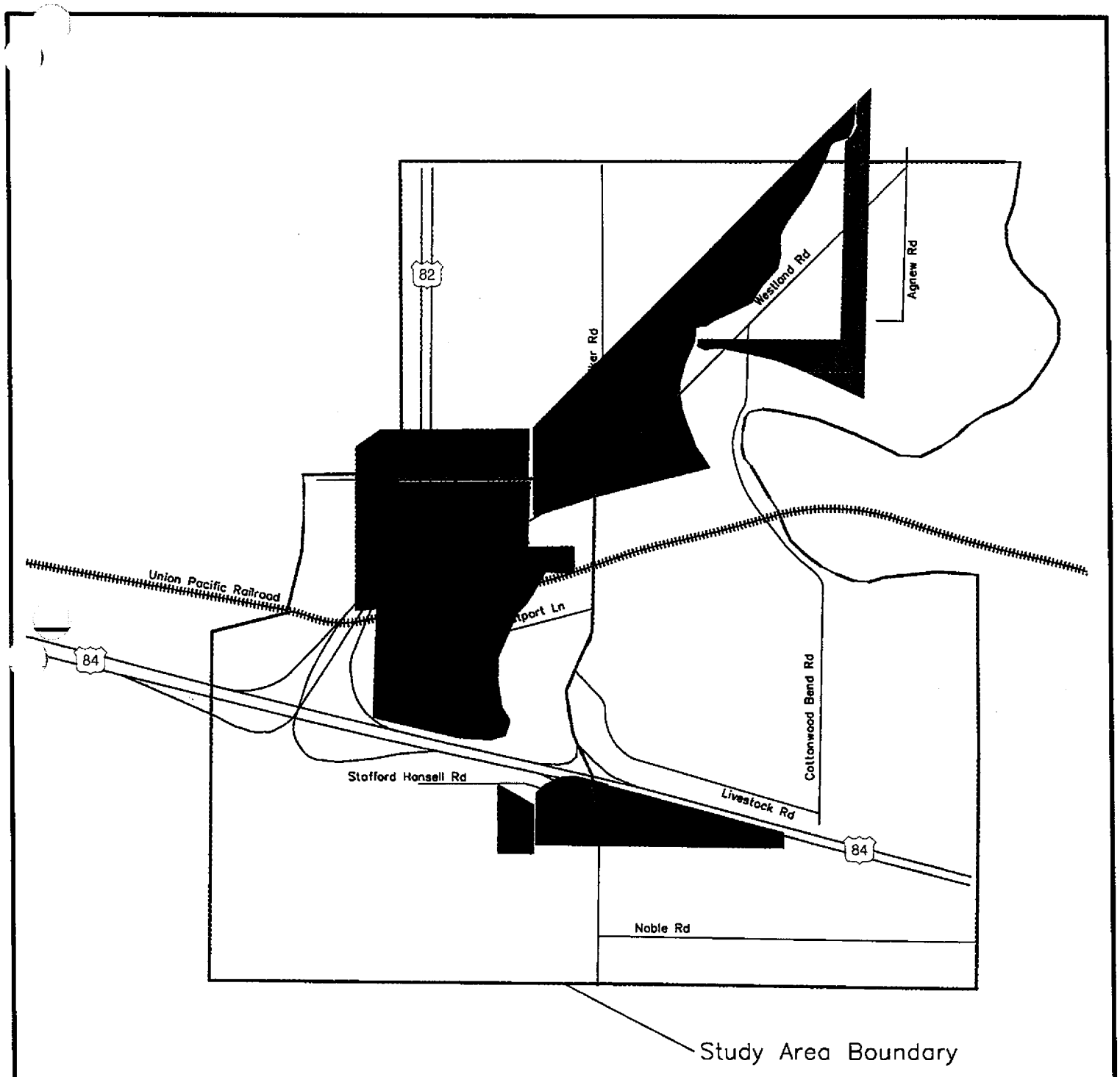
The remainder of this section describes the major roadways within the study area.

I-84, known as the Old Oregon Trail and ODOT Highway Number 6, is classified in the 1999 Oregon Highway Plan as an interstate highway. It is on the NHS system and is classified as a freight route. I-84 provides east-west access through Umatilla County and extends into the adjacent counties of Morrow to the west and Union to the east. The posted speed limit is 65 mph for passenger vehicles and 55 mph for large trucks. I-84 is a four-lane divided highway with two travel lanes in each direction.

I-82, known as McNary Highway and ODOT Highway Number 70, is classified in the 1999 Oregon Highway Plan as an interstate highway. It is also on the NHS system and is classified as a freight route. I-82 is a four-lane divided highway with two travel lanes in each direction. The posted speed limit is 65 mph for passenger vehicles and 55 mph for large trucks. I-84 is oriented north-south and provides a connection from the Oregon-Washington state line to I-84.

Westland Road is a two-lane rural major collector. The roadway has two-to-four foot shoulders. There is no posted speed limit on Westland Road. Westland Road has an interchange with I-84 and connects I-84 with Hermiston. This access into Hermiston from I-84 is only a secondary access into Hermiston from I-84.

Lamb Road is a two-lane rural major collector. It has no shoulders to shoulder two feet in width. There is no posted speed limit on Lamb Road. Lamb Road provides access from the Umatilla Army Depot to Westland Road. Lamb Road also has an interchange with I-82.



Westland Road Interchange Transportation Plan

Figure 3-1
Roadway Classification

LEGEND
- Study Area
- Interstate
- Rural Major Collector
- Local Street

NOT TO SCALE

The remainder of the study area roadways are all local streets with two travel lanes. The function of these local roadways are typically local access to adjacent parcels.

Table 3-1 provides a summary of the physical roadway characteristics. This street inventory contains roadway width, posted speed limit, number of travel lanes, shoulder width, and pavement condition.

Table 3-1. Street Inventory

Street Segment	Road Width	Posted Speed	Number of Lanes	Shoulders (yes/no)	Shoulder Width	Pavement Condition
Colonel Jordan Road						
Noble Rd to Stafford Hansel Rd	28'	None	2	No	NA	Gravel
Stafford Hansel Rd to I-84	29'	None	2	Yes	2-4	Poor
Westland Road						
I-84 to Union Pacific Railroad	29'	None	2	Yes	2-4	Poor
Union Pacific Railroad to Agnew Rd	29'	None	2	Yes	2-4	Poor to Fair
Stafford Hansel Road						
Western terminus to Colonel Jordan Rd	22'	None	2	Yes	3-4'	Fair
Livestock Road						
Westland Rd to Cottonwood Bend Rd	23'	None	2	No	NA	Gravel
Lamb Road						
I-82 to Westland Rd	32'	None	2	Yes	0-2'	Poor to Fair
Walker Road						
Westland Rd to Westland Canal	19-22'	None	2	No	NA	Gravel
Cottonwood Bend Road						
Westland Rd to southern terminus	24'	None	2	Yes	0-2'	Poor

3.3 DRIVEWAY LOCATON SURVEY

A driveway survey along Westland Road from Stanford Hansell Road to Agnew Road. This driveway survey was conducted

3.4. BRIDGES

The Oregon Department of Transportation maintains an up to date inventory and appraisal of Oregon bridges. Part of this inventory involves the evaluation of three mutually exclusive elements of bridges. One element identifies which bridges are structurally deficient. This is determined based on the condition rating for the deck, superstructure, substructure, or culvert and retaining walls. It may also be based on the appraisal rating of the structural condition or waterway adequacy. Another element identifies which bridges are functionally obsolete. This

element is determined based on the appraisal rating for the deck geometry, underclearances, approach roadway alignment, structural condition, or waterway adequacy. The third element summarizes the sufficiency ratings for all bridges. The sufficiency rating is a complex formula which takes into account four separate factors to obtain a numeric value rating the ability of a bridge to service demand. The scale ranges from 0 to 100 with higher ratings indicating optimal conditions and lower ratings indicating insufficiency. Bridges with ratings under 55 may be nearing a structurally deficient condition. In more general terms, a rating under 55 may indicate that significant maintenance is needed or that replacement should be planned. The exception to this are bridges that were built to a much older standard that are in good condition but do not meet today's design standards. These types of bridges can rate fairly low and under 55. The important factor here is that there are no structural integrity issues and loading problems that limit the type of vehicle and weight can cross the structure.

There are two bridges owned by ODOT within the study area. These bridges are the interchange overcrossings at the two interchanges at Lamb Road and Westland Road. Based on a review of the Umatilla County Transportation System Plan, these bridges are not defined as structurally deficient, functionally obsolete, nor have a sufficiency rating of less than 55.

There are three bridges along Westland Road which cross the Westland Canal. These bridge numbers are 304, 305, and 306. Based on information in the Umatilla County Transportation System Plan, these bridges are not defined as structurally deficient, functionally obsolete, nor have a sufficiency rating of less than 55.

3.5. INTERSECTION TRAFFIC CONTROL AND LANE CHANNELIZATION

Figure 3-2 shows the intersection lane geometry and traffic control at the following seven study area intersections:

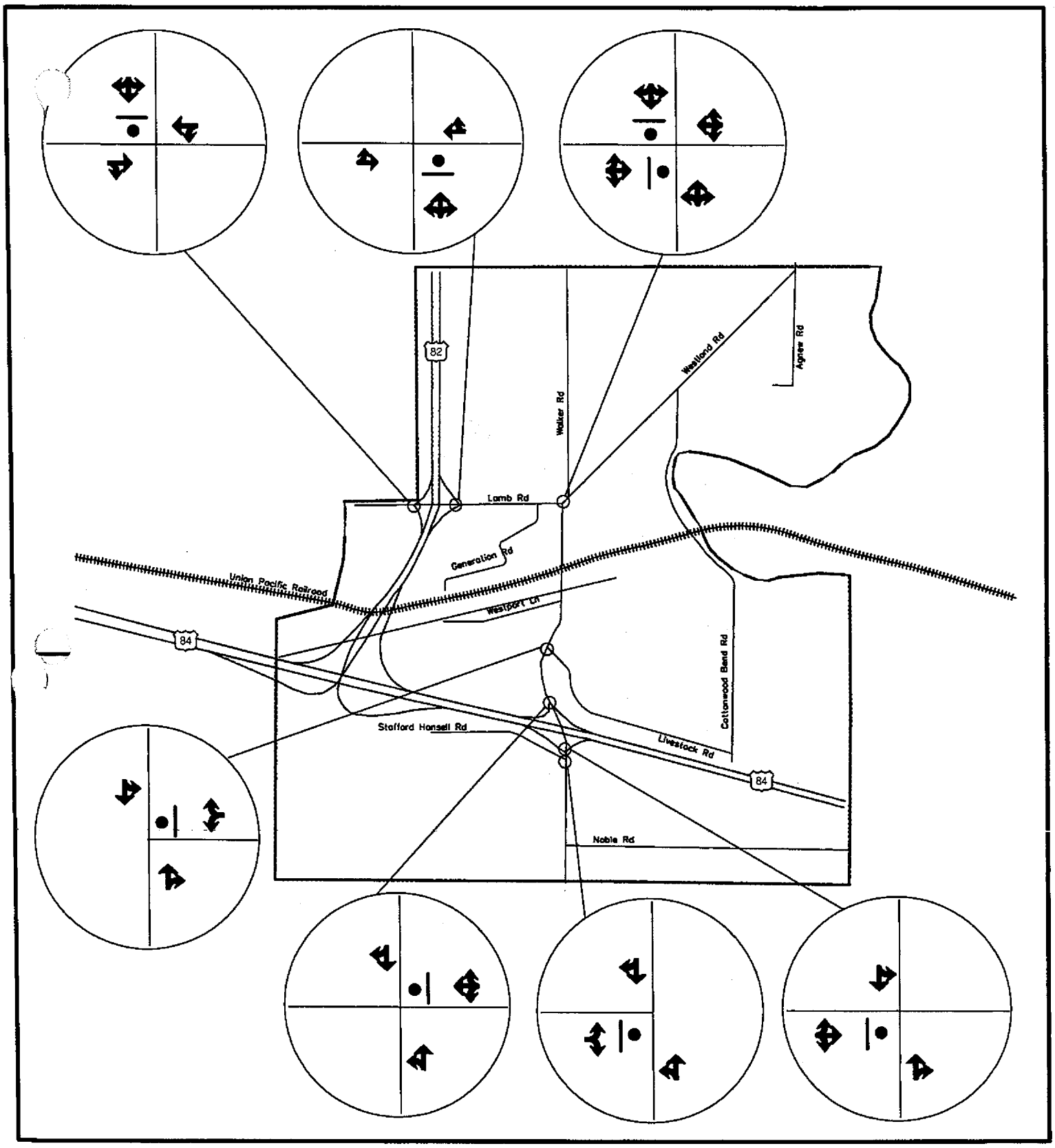
- Lamb Road/I-82 Southbound Ramps
- Lamb Road/I-82 Northbound Ramps
- Westland Road/Lamb Road/Walker Road
- Westland Road/Livestock Road
- Westland Road/I-84 Westbound Ramps
- Westland Road/I-84 Eastbound Ramps
- Westland Road/Stafford Hansell Road

3.6. TRAFFIC VOLUMES

3.6.1. Daily Traffic Volumes

Figure 3-3 shows the current daily (24-hour) traffic volumes on study area roadways. These traffic volumes were taken from traffic counts performed by H. Lee & Associates in January 2003 and were adjusted seasonally based on factors available from the ODOT traffic count

program. The seasonal factors used to adjust the existing traffic volumes are documented in the appendix. As shown in Figure 3-3, the most significant traffic volumes are along Lamb Road and Westland Road north of Lamb Road. The traffic volume on Lamb Road east of the I-82 interchange is 3,600 vehicles per day. North of Lamb Road, the traffic volumes on Westland Road range from 5,200 to 5,600. South of Lamb Road, the traffic volumes on Westland Road diminish to 1,500 to 1,600 vehicles a day. The remainder of the streets in the study area have volumes in the range of several hundred vehicles per day.

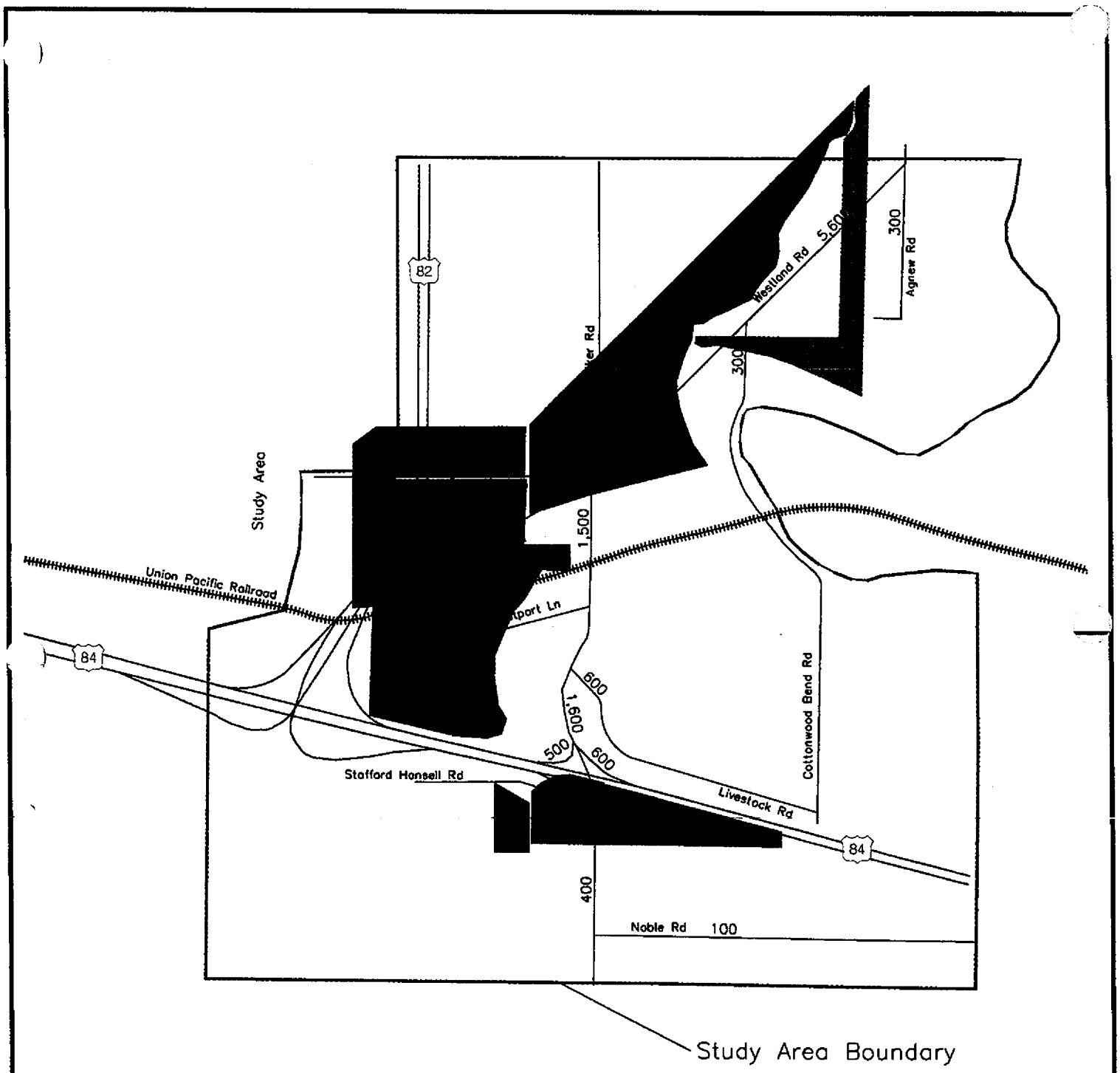


Westland Road Interchange Transportation Plan

LEGEND
- Lane Usage
- Traffic Signal
- Stop Sign

NOT TO SCALE

Figure 3-2
Intersection Lane Configurations and Traffic Control



Westland Road Interchange Transportation Plan

LEGEND

Study Area

Average Daily Traffic Volume

NOT TO SCALE

Figure 3-3
2003 Existing Daily Traffic Counts

3.6.2. Intersection P.M. Peak Hour Traffic Volumes

P.M. peak hour turning movement counts at the seven study area intersections were counted by H. Lee & Associates in January 2003. These traffic volumes were adjusted seasonally based on factors available from the ODOT traffic count program. The P.M. peak hour turning movement counts are summarized in Figure 3-4.

3.6.3. Truck Traffic Volumes

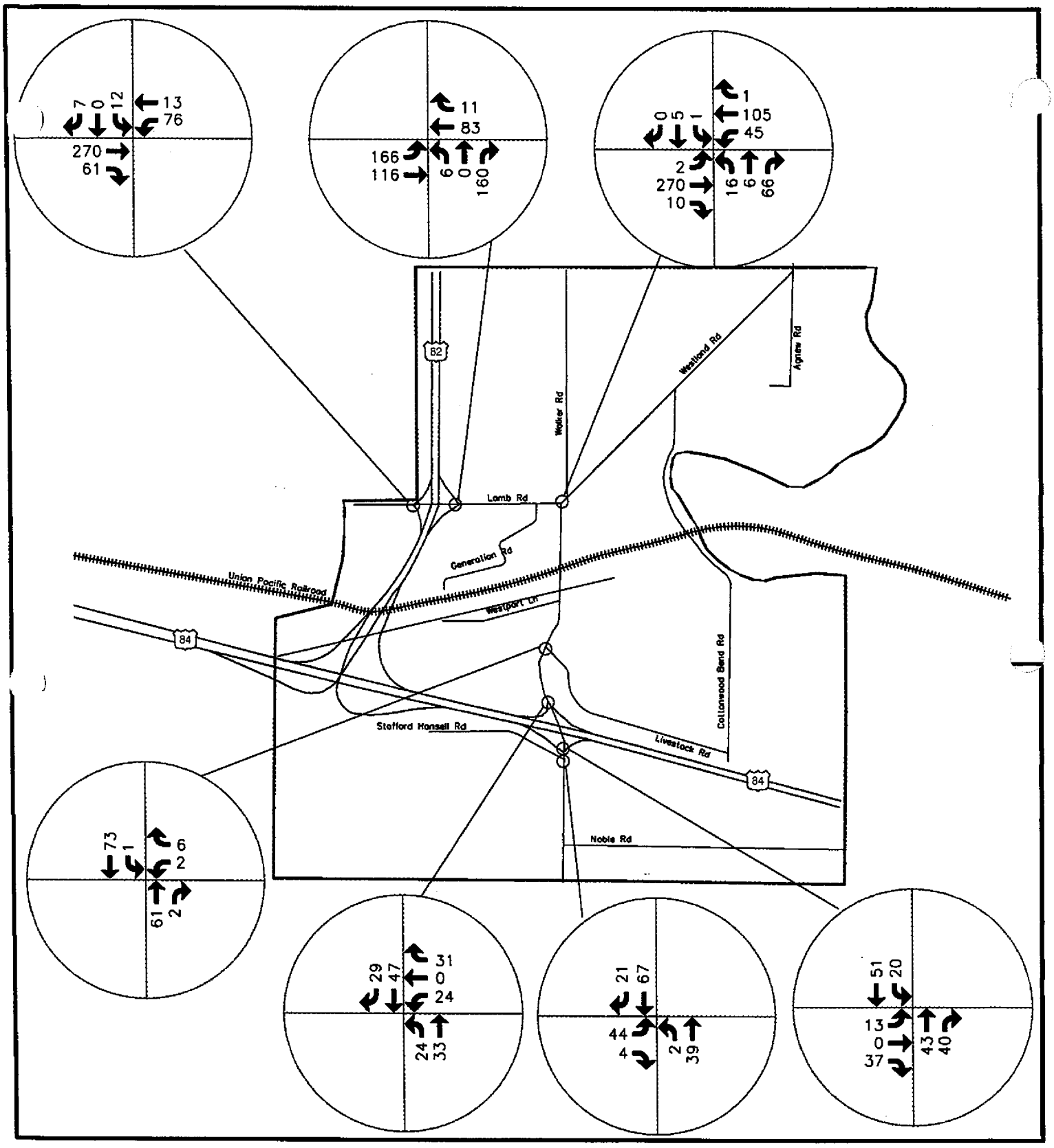
Truck traffic volumes were collected with the average daily traffic counts. These truck volumes are summarized in Table 3-2. Table 3-2 contains total number of daily number of trucks, total daily traffic volume, daily truck percentage, P.M. peak hour number of trucks, total P.M. peak hour traffic volume, and P.M. peak hour truck percentage.

As shown in Table 3-2, the daily truck percentage along the city's truck route ranges from 11.7 percent to 42.6 percent. In general, the higher traffic volumes are along the roadways with lower traffic volumes that provide local access to heavy truck generators. The lower truck percentages are generally on the roadways with the higher daily traffic counts over 1,000 vehicles per day.

Table 3-2 also summarizes the P.M. peak hour truck volumes. The P.M. peak hour truck percentage ranged from 9.8 percent to 49.0 percent. These P.M. peak hour truck percentages are very similar to the daily truck percentages.

Table 3-2. Truck Volume Summary

Location	Daily Number of Trucks	Daily Traffic Volume	Daily Truck Percentage	P.M. Peak Hour Number of Trucks	P.M. Peak Hour Traffic Volume	P.M. Peak Hour Truck Percentage
I-82 SB Off-Ramp at Lamb Rd	154	724	21.3%	10	43	23.3%
I-82 NB On-Ramp at Lamb Rd	165	1,406	11.7%	13	153	8.5%
I-82 SB On-Ramp at Lamb Rd	213	1,460	14.6%	18	145	12.4%
I-82 NB Off-Ramp at Lamb Rd	563	2.219	25.4%	25	170	14.7%
I-84 WB Off-Ramp at Westland Rd	254	612	41.3%	25	58	43.1%
I-84 EB On-Ramp at Westland Rd	262	659	39.8%	16	59	27.1%
I-84 WB On-Ramp at Westland Rd	232	545	42.6%	20	56	35.7%
I-84 EB Off-Ramp to Westland Rd	277	680	40.7%	16	53	30.2%



Westland Road Interchange Transportation Plan

LEGEND

15 P.M. Peak Hour Traffic Volume

NOT TO SCALE

Figure 3-4
Existing P.M. Peak Hour Traffic Volumes

Table 3-2. Truck Volume Summary Continued

Location	Daily Number of Trucks	Daily Traffic Volume	Daily Truck Percentage	P.M. Peak Hour Number of Trucks	P.M. Peak Hour Traffic Volume	P.M. Peak Hour Truck Percentage
Westland Rd north of Cottonwood Bend Rd	599	5,607	11.8%	50	435	11.5%
Westland Rd south of Cottonwood Bend Rd	1,106	5,161	21.4%	243	669	36.3%
Westland Rd north of Livestock Rd	384	1,514	25.2%	37	129	28.7%
Westland Rd south of Livestock Rd	582	1,628	35.7%	50	133	37.6%
Col Jordan Rd north of Noble Rd	124	402	30.8%	14	32	43.8%
Walker Rd north of Lamb Rd	16	113	14.2%	3	11	27.3%
Lamb Rd east of I-82	540	3,617	14.9%	36	369	9.8%
Agnew Rd east of Westland Rd	49	296	16.6%	6	29	20.7%
Cottonwood Bend Rd east of Westland Rd	55	299	18.4%	3	18	16.7%
Livestock Rd west of east of Westland Rd	251	610	41.1%	24	49	49.0%
Stafford Hansell Rd west of Col Jordan Rd	14	38	36.8%	1	1	100%
Noble Rd east of Col Jordan Rd	22	110	20.0%	1	10	10%

3.7. INTERSECTION LEVELS OF SERVICE AND V/C RATIO ANALYSIS

Intersection capacity was measured by the following two methodologies: level of service (LOS) and volume to capacity (v/c) ratio. Level of service to measure the performance at an intersection is the standard practice in the transportation planning and traffic engineering profession. This concept was developed by the Transportation Research Board (TRB). *Special Report 209*[1], also known as the *Highway Capacity Manual*, documents the level of service analysis methodology. The Highway Capacity Manual measures level of service on a scale of LOS A to LOS F. LOS A means that drivers experience no delay or relatively low amounts of

[1] *Highway Capacity Manual, Special Report 209*, Third Edition; Transportation Research Board, National Research Council; Washington, D.C. 1998.

delay while traveling through an intersection; while LOS F means that drivers experience a great deal of delay while traveling through an intersection. Typically, most jurisdictions set their level of service standard at LOS D since LOS E denotes that the intersection capacity is being met and LOS F means that conditions beyond the existing intersection capacity are occurring. When LOS F conditions occur, they indicate that it would take motorists multiple signal cycles or a great deal of delay to travel through an intersection. The level of service standard is typically set at LOS D for signalized intersections and LOS E for unsignalized intersections if the intersection does not meet traffic signal warrants.

The Oregon Department of Transportation bases its traffic operation standards based on volume to capacity (v/c) ratio and not level of service. For ODOT facilities, each type of facility has its own standard. Table 3-3 summarizes the v/c standard by ODOT facility type. The standard documented in Table 3-3 is from the *1999 Oregon Highway Plan*.[2]

Table 3-3
Maximum Volume-to-Capacity Ratios for Peak Hour Operating Conditions Through a Planning Horizon for State Highway Sections Located Outside the Portland Metropolitan Area Urban Growth Boundary

	Land Use Type/Speed Limits					
	Inside Urban Growth Boundary				Outside Urban Growth Boundary	
Highway	STAs	MPO	Non-MPO outside of STAs where non-freeway speed limit <45 mph	Non-MPO where non-freeway speed limit >=45 mph	Unincorporated Communities	Rural Lands
Interstate Highways and Statewide (NHS) Expressways	N/A	0.80	0.70	0.70	0.70	0.70
Statewide (NHS) Freight Routes	0.85	0.80	0.75	0.70	0.70	0.70
Statewide (NHS) Non-Freight Routes and Regional or District Expressways	0.90	0.85	0.80	0.75	0.75	0.70
Regional Highways	0.95	0.85	0.80	0.75	0.75	0.70
District/Local Interest Roads	0.95	0.90	0.85	0.80	0.80	0.75

Source: 1999 Oregon Highway Plan (OHP)
Interstates and Expressways shall not be identified as Special Transportation Areas (STAs)
For the purpose of this mobility policy of volume-to-capacity ratio standards, the peak hour shall be the 30th highest annual hour. This approximates weekday peak hour traffic in larger urban areas.

[2] *1999 Oregon Highway Plan*, Oregon Department of Transportation – Transportation Development Division, Planning Section, March 1999.

The v/c ratio is a measure of the percentage of used capacity on the roadway. A value of 0.00 indicates no traffic on the roadway, and a value of 1.00 indicates that the entire capacity of the roadway is being utilized. The *1999 Oregon Highway Plan* indicates that for state highways on the NHS system such as I-82 and I-84, the maximum acceptable v/c is 0.70 within unincorporated areas.

For unsignalized intersections, the *1999 OHP* sets the following standard:

> At unsignalized intersections and road approaches, the volume-to-capacity ratios in Table 3-3 shall not be exceeded for either of the state highway approaches that are not stopped. Approaches at which traffic must stop, or otherwise yield the right-of-way, shall be operated to maintain safe operation of the intersection and all of its approaches and shall not exceed the volume-to-capacity ratios for District/Local Interest Roads standard inside of urban growth boundaries.[3]

There are no unsignalized intersections within ODOT's jurisdiction in the study area. The interchange ramps at Westland Road and Lamb Road are classified as interchange ramps to define v/c standard and not unsignalized intersection.

For signalized intersections, the *1999 OHP* sets the following standard:

> At signalized intersections other than crossroads of freeway ramps, the total volume-to-capacity ratio for the intersection considering all critical movements shall not exceed the volume-to-capacity ratios in Table 4-5. Where two state highways of different classifications intersect, the lower of the volume-to-capacity ratios in the table shall apply. Where a state highway intersects with a local road or street, the volume to capacity ratio for the state highway shall apply.[4]

There are no signalized intersections within ODOT's jurisdiction in the study area.

The interchange ramps with I-82 at Lamb Road and I-84 at Westland Road would fall under the following *1999 OHP* standard:

> ...The primary cause of traffic queuing at freeway off-ramps is inadequate capacity at the intersections of the freeway ramps with the crossroad. These intersections are referred to as ramp terminals. In many instances where ramp terminals connect with another state highway, the volume to capacity standard for the connecting highway will generally be adequate to avoid traffic backups onto the freeway. However, in some instances where the crossroad is another state highway or a local road, the standards will not be sufficient

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[3] *1999 Oregon Highway Plan*, Oregon Department of Transportation – Transportation Development Division, Planning Section, March 1999, page 68.

[4] *1999 Oregon Highway Plan*, Oregon Department of Transportation – Transportation Development Division, Planning Section, March 1999, page 68.

to avoid this problem. Therefore, the maximum volume to capacity ratio for the ramp terminals of interchange ramps shall be the smaller of the values of the volume to capacity ratio for the crossroad, or 0.85.[5]

Based on the ramp terminal standard above, the interchange ramp intersections at Lamb Road and Westland Road have a maximum v/c standard of 0.85 for all intersection approaches.

The 1999 OHP specifies that the v/c ratio mobility standards shall be used for the following:

- Identifying state highway mobility performance expectations for planning and plan implementation.
- Evaluating the impacts on state highways of amendments to transportation plans, acknowledged comprehensive plans and land use regulations pursuant to the Transportation Planning Rule (OAR 660-12-060); and
- Guiding operations decisions such as managing access and traffic control systems to maintain acceptable highway performance.

The level of service and v/c analysis performed for this study for the typical weekday p.m. peak hour revealed that traffic operations at the major intersections in the study area are acceptable. Table 3-4 summarizes the level of service at the study area intersections. The level of service table summary is sectioned into two categories: ODOT ramp terminal intersections, and Umatilla County unsignalized intersections. Each of these categories of intersections has a different performance standard.

All of the study area intersections are operating at LOS C or better and a v/c within the maximum standard of 0.85.

3.8. EXISTING STUDY AREA TRAFFIC PROBLEMS

Neither the level of service or v/c ratio analysis shows operational problems in the study area. Based on discussions with local representatives and field observations, although there are no calculated traffic operations problems, there are several deficient traffic condition within the study area. First, both the Lamb Road interchange with I-82 and the Westland Road interchange with I-84 are rural freeway interchanges with constrained geometrics. The geometric constraints include narrow bridge width and steep vertical curves over the freeway. Both interchanges would be considered sub-standard compared to ODOT's current interchange standard with a freeway.

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[5] *1999 Oregon Highway Plan*, Oregon Department of Transportation – Transportation Development Division, Planning Section, March 1999, page 68.

Table 3-4. Year 2003 Existing Levels of Service and V/C Ratio

ODOT Unsignalized Intersection	PM Peak Hour		
	LOS	Average Delay (sec)	V/C Ratio
Lamb Road/I-82 Southbound Ramps			
Westbound Left	A	8.9	0.13
Southbound Approach	B	14.4	0.09
Lamb Road/I-82 Southbound Ramps			
Eastbound Left	A	8.3	0.21
Northbound Approach	B	12.0	0.31
Westland Road/I-84 Westbound Ramps			
Westbound Approach	A	9.7	0.08
Northbound Left	A	7.7	0.03
Westland Road/I-84 Eastbound Ramps			
Eastbound Approach	A	9.7	0.08
Southbound Left	A	7.9	0.02
County Unsignalized Intersection			
Westland Road/Lamb Road/Walker Road			
Eastbound Left	A	7.6	0.01
Westbound Left	A	8.8	0.08
Northbound Approach	C	15.9	0.26
Southbound Approach	C	20.7	0.03
Westland Road/Livestock Road			
Westbound Approach	A	9.4	0.01
Southbound Left	A	7.9	0.01
Westland Road/Stafford-Hansell Road			
Eastbound Approach	A	9.8	0.01
Northbound Left	A	7.6	0.08

Through input from the first project Public Open House, an existing traffic deficiency was identified at the Union Pacific Railroad crossing with Westland Road. Future plans should consider improving this deficient condition at the at-grate railroad crossing with Westland Road.

The most awkward traffic deficiency within the study area is the odd intersection configuration at the Westland Road/Lamb Road/Walker Road intersection. The Lamb Road and Walker Road approaches of this intersection come together at a right angle and are the eastbound and southbound approaches of the intersection. Westland Road makes up the northbound and

southwestbound approaches. The Walker Road approach enters the intersection at an offset and is not paved. Although the Westland Road approaches have the right-of-way, the eastbound Lamb Road approach also has similar traffic volumes.

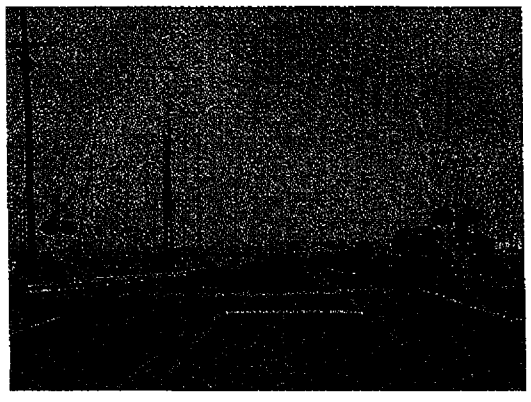
The final major existing traffic deficiency is the distance between the Westland Road/I-84 Eastbound off-ramp and Westland Road/Stafford Hansell Road intersections. The ODOT spacing standard between a freeway terminal off-ramp and a local full access intersection is 1320 feet. These intersections are much closer apart and realignment and separation of these intersections should be considered in the future.

3.9. RAIL SERVICE/ROADWAY GRADE CROSSINGS

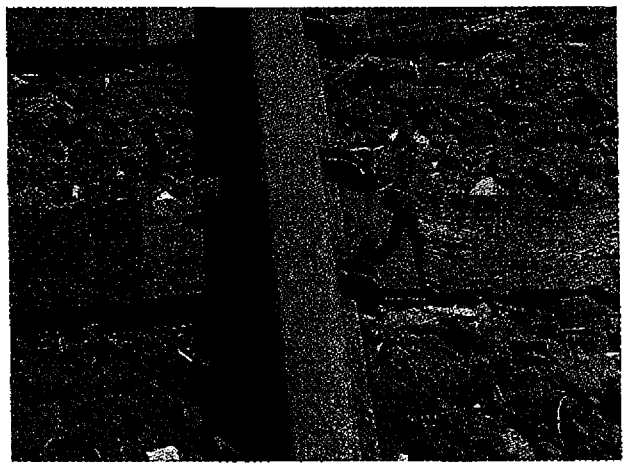
The Union Pacific Railroad bisects the study area just north of Westport Lane. One at-grade crossing with the Union Pacific Railroad exists just north of Westport Lane. More information regarding rail service exists in the Umatilla County Transportation System Plan.

A representative from Sturtevant, Golemo, and Associates conducted a site visit to visually evaluate the railroad crossing. The crossing is an at grade concrete crossing. There is a single track that is owned by Union Pacific. There are currently crossing gates and flashing lights in both directions. They appear to be in good shape and fully functional. A date stamp was found on the concrete crossing and it was installed in 1991 and was manufactured by the Fite Corporation. The crossing is a little rough and some of the concrete panels move when vehicles cross the tracks. In addition, the tracks have also worked loose and rattle. Several loose ties were observed and many of the spikes in the vicinity of the intersection are missing or loose (See picture below). The concrete appears to be in fairly good condition and no cracking was observed. Tightening down the panels and securing the rails would significantly improve the comfort of the crossing. However the condition of the ties under the crossing is unknown and securing the concrete panels and rails may involve repairing or replacing components of the rail.[6]

CROSSING GATES



LOOSE RAILS AND SPIKES



[6] From memo by Sturtevant, Golemo, & Associates on Westland Road Railroad Crossing, June 22, 2003.

3.10. AIR TRANSPORTATION

There are no airports near the study area.

Section 4.0
Traffic Forecast

4.1. TRAFFIC FORECAST METHODOLOGY

Based on ODOT's 2001 Transportation System Planning Guidelines[1], there are four approved methodologies to forecast future traffic volumes. These methodologies are described below:

- Level 1 – Trending Forecast
  The trending forecast is based on historical traffic counts in the study area. The methodology requires existing traffic counts as well as 20-year old historical traffic counts to establish a growth rate. This methodology is typically employed in areas where traffic patterns are simple and that have low to moderate growth. It is the simplest methodology used to project future traffic volumes.

- Level 2 – Cumulative Analysis
  The cumulative analysis uses historical trending information as well as an examination of future development. This analysis requires a good understanding of development trends in the study area. Based on the understanding of future development, each area of projected development is assigned a trip making characteristic and those trips are manually assigned to the street network. The cumulative analysis methodology is typically used small cities where traffic patterns are not complex. This methodology is also best employed where significant shifting of traffic is not expected between alternatives since the difference in how the traffic patterns would change is to be done manually.

- Level 3 – Transportation Model
  A transportation model is a very sophisticated methodology in forecasting future traffic volumes. It requires a significant amount of traffic and land use data as well as specialized software. Transportation models are typically developed where there is a need to study complex alternatives that can affect traffic patterns significantly. Transportation models are good to compare alternatives to each other since they effectively show the difference in travel behavior between alternatives. This forecast methodology is beyond the scope of this study process.

- Level 4 – Regional Transportation Model
  A regional transportation model is developed in a similar manner as the Level 3, Transportation Model except that it involves a larger study area. The study area in a regional model encompasses several urban areas as well as rural areas. It is typically employed at the Metropolitan Planning Organization (MPO) level. This forecast methodology is beyond the scope of this study process.

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[1] 2001 Transportation System Planning Guidelines, Oregon Department of Transportation, Transportation Development Division, May 2001.

The 20-year, 2023 P.M. peak hour traffic volumes were the basis for the future alternatives analysis for mitigating the conditions listed above. Several methodology options were available to project the 2023 traffic volumes. Twenty-year historical traffic counts were available along I-82 and I-84 adjacent to the study area. Since I-82 and I-84 are regionally facilities with a wide influence area, this data does not correlate well with the profile of the study area. The study area is not regionally impacted and is mostly influenced by local conditions within the study area. Therefore, the regional historical growth factor methodology to project the study area traffic volumes was not employed.

The next methodology considered is referred by ODOT as a Level 2, Cumulative Analysis. This methodology considers background traffic growth from derived growth factors as well as considers the cumulative traffic impacts of future land developments. Since the regional growth factors were not representative of growth conditions in the study area and a more complex traffic forecast methodology such as a travel demand model is beyond the scope of the study, a Level 2, Cumulative Analysis was conducted to estimate the 2023 traffic volumes in the study area.

A 1.5 percent per year background growth factor was applied to the 2003 existing traffic volumes to account for unforeseen traffic growth and through traffic volumes traveling through the study area. This annual background growth factor was derived from historical traffic count data available on a nearby facility (US 395 at the south city limits of Stanfield) with similar characteristics as Westland Road. In addition, the cumulative impacts of developing industrial and commercial land within the study area was added. Only two types of zoning with the potential for future development exist in the study area. These zoning types are industrial and commercial.

4.2. DEMOGRAPHIC INFORMATION

The population information for Umatilla County is summarized in Table 4-1. Based on a comparison of 1990 and 2000 population in Umatilla County, the entire county's population grew by 19.1 percent. This translates to an annual population growth rate of 0.88 percent for both the incorporated and unincorporated areas. The unincorporated areas of the county grew by 15.3 percent from 1990 to 2000. The unincorporated area annual population growth rate from 1990 to 2000 was 0.72 percent. Both the average county and unincorporated area growth rates are very low. This trend indicates slow growth. However, certain areas of Umatilla County grew at a much higher rate such as the City of Umatilla and Hermiston. This indicates that although much of Umatilla County's growth between 1990 and 2000 was relatively stagnant, significant growth in pockets of the county can grow significantly if the right conditions exist.

The most recent employment projections available are from the Office of Economic Analysis (OEA), State of Oregon. The OEA data is from 1997. Updated employment forecasts are expected sometime this year. Table 4-2 summarizes the OEA employment projections for Umatilla County.

Table 4-1. 1990 and 2000 Population of Umatilla County

Area	1990 Population	2000 Population	Percent Change Between 1990 and 2000
Umatilla County	59,249	70,548	19.1%
Adams	223	297	33.2%
Athena	997	1,221	22.5%
Echo	499	650	30.3%
Helix	150	183	22.0%
Hermiston	10,040	13,154	31.0%
Milton-Freewater	5,533	6,470	16.9%
Pendleton	15,126	16,354	8.1%
Pilot Rock	1,478	1,532	3.7%
Stanfield	1,568	1,979	26.2%
Ukiah	250	255	2.0%
Umatilla	3,046	4,978	63.4%
Weston	606	717	18.3%
Unincorporated	19,733	22,758	15.3%

Source: 2000 US Census

Table 4-2. 2000 to 2020 Employment Forecast

Area	1990 Employment	2000 Employment	2020 Employment	2000 to 2020 Employment Annual Growth Rate
Umatilla County	21,060	26,313	29,766	0.62

Source: Office of Economic Analysis, State of Oregon

Based on the OEA employment projections from 2000 to 2020, Umatilla County is expected to have an annual employment growth of only 0.62 percent. This correlates at almost a similar rate as the population growth rate. Based on the OEA employment projections, Umatilla County is only expected to have modest increases in future employment.

Between 2000 and 2020, Umatilla County is expected to generate 3,453 new jobs. It is likely that most of the employment growth with occur within the urban areas of the larger cities within Umatilla County such as Hermiston, Milton-Freewater, Umatilla, and Pendleton. The unincorporated county areas are not expected to significantly compete with urban areas for job creation because of limited utilities and amenities available in the unincorporated areas.

4.3. LOW TRAFFIC FORECAST SCENARIO

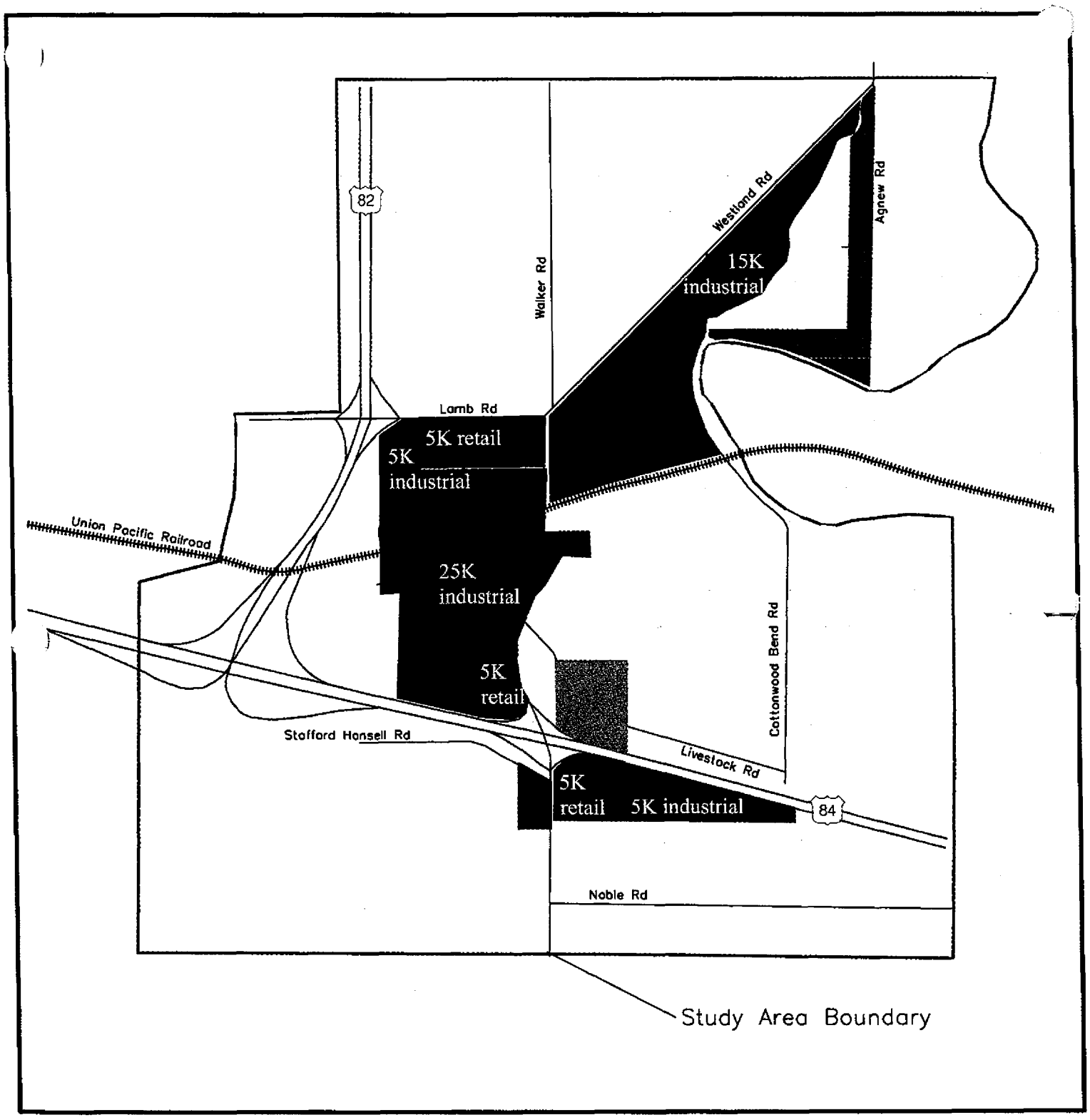
A low traffic forecast scenario consistent with the Office of Economic Analysis employment projections was developed as the conservative end of what could be expected to develop in the Westland Road/I-84/I-82 Interchange Area. The low traffic forecast was derived by first applying a background growth factor of 1.5 percent per year to the 2003 P.M. peak hour turning movement counts for 20 years to account for unforeseen traffic growth and through traffic volumes traveling through the study area. This annual background growth factor was derived from historical traffic count data available on a nearby facility (US 395 at the south city limits of Stanfield) with similar characteristics as Westland Road. The second step of the low traffic forecast was to account for the cumulative impacts of future industrial and commercial land within the study area.

The amount of future industrial and commercial land assumed to be developed in 2023 under the low traffic forecast scenario was based on applying the 0.62 percent annual employment growth rate for Umatilla County. This rate was derived from the most recent Office of Economic Analysis data. The only issue to resolve to apply the 0.62 percent annual employment growth rate is the existing employment count within the study area. Based on the aggregate daily local side street traffic volumes, local development in the study area generates roughly 1,613 daily traffic volumes. Assuming that the general type of existing development corresponds with the characteristic of warehouse development, the ITE Trip Generation daily warehouse trip generation rate for employees (3.89 daily trips per employee) was used to divide into the 1,613 daily trips to derive the estimated number of existing employees in the study area. This exercise resulted in an estimate of 414 existing employees.

Applying the 0.62 percent annual employment growth rate to the existing number of employees in the study area results in an estimate of 468 total employees in the study area by 2023. This results in a net increase of 54 new employees. Based on the daily warehouse trip generation rate for employees (3.89 daily trips per employee), the additional employees would generate 212 new daily trips. These new daily trips were converted to square footage of new warehouse development by dividing the daily trips by the daily square footage ITE Trip Generation rate for warehouse (4.96 daily trips per 1,000 square feet of warehouse). This results in approximately 43,000 gross square feet of new warehouse space by 2023. The 43,000 was rounded up to 50,000 gross square feet to develop the cumulative analysis. Figure 4-1 shows the assumed distribution of growth of new warehouse use in the study area.

There are three vacant commercial properties within the study area. To forecast build out conditions in 2023, it was assumed that each commercial site would build out at a maximum of 5,000 square feet of commercial/retail space. A total of 15,000 square feet was assumed to be developed by 2023 within the study area. With the limited base to attract patrons, 15,000 square feet of commercial/retail development seems more than reasonable.

The trip generation rates for industrial and commercial uses used in the low traffic forecast are summarized in Table 4-3.



Westland Road Interchange Transportation Plan

Figure 4-1
Future Land Use Growth Assumptions
for Low Traffic Forecast

LEGEND
- Commercial Zoning
- Industrial Zoning
- Rural Residential
- Agribusiness Zoning
- Exclusive Farm Use
- Study Area

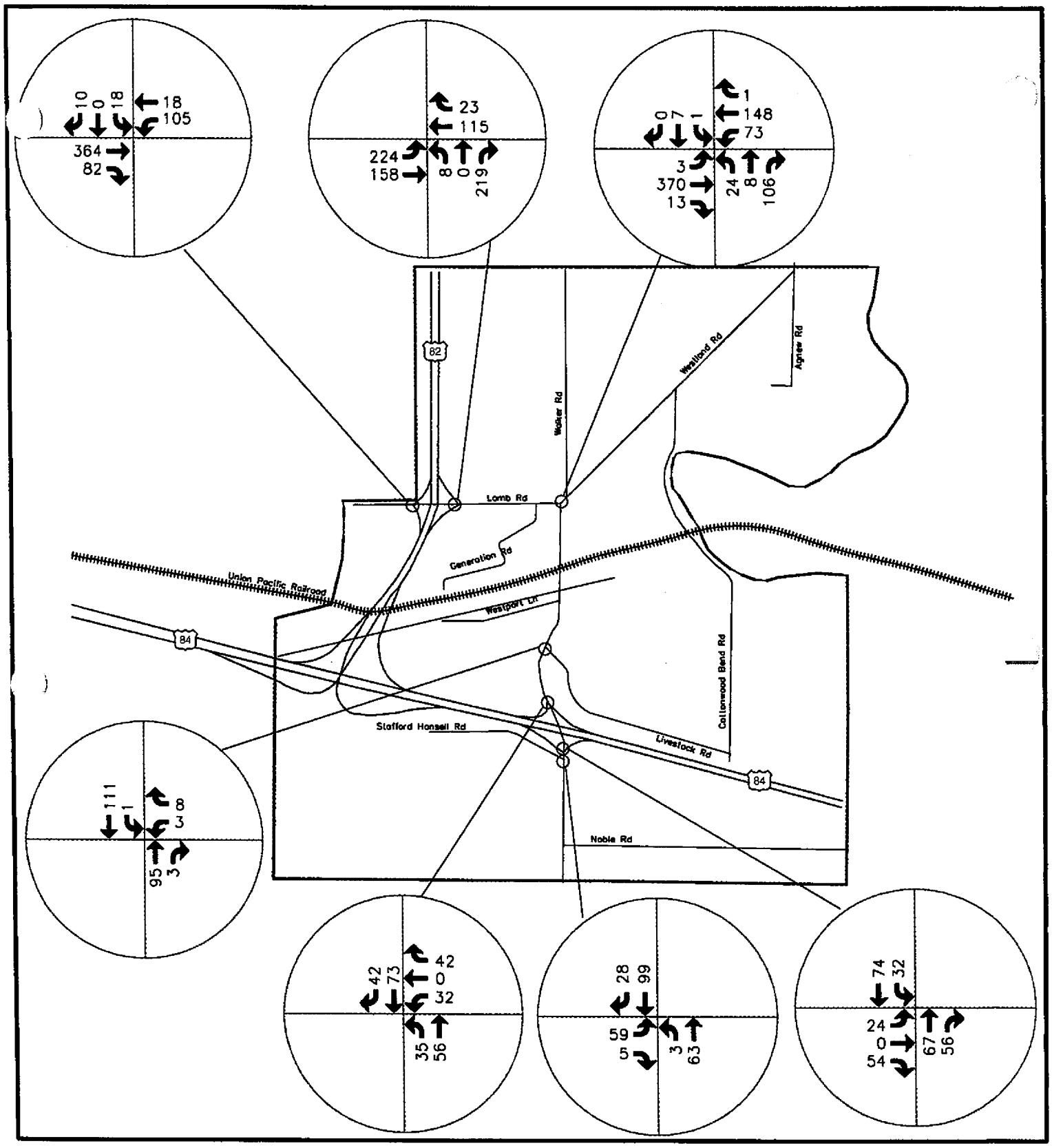
NOT TO SCALE

Table 4-3. Trip Generation for the Westland Road Interchange Area – Low Density

		Average	AM Peak			PM Peak		
Land Use	**Amount**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Warehouse – ITE Code 150								
Rate per 1,000 s.f.		4.96	0.37	0.08	0.45	0.12	0.39	0.51
Trips	50,000 s.f.	248	19	4	23	6	20	26
Shopping Center – ITE Code 820								
Rate per 1,000 s.f.		42.92	0.63	0.40	1.03	1.80	1.94	3.74
Trips	15,000 s.f.	644	9	6	15	27	29	56
Total New Trips in Study Area		892	28	10	38	33	49	82

The low traffic forecast, 2023 P.M. peak hour traffic volumes are shown in Figure 4-2. Based on the forecasted 2023 traffic volumes for the low density scenario, levels of service and v/c ratio analyses were conducted at the study area intersections. This analysis is summarized in Table 4-4.

As shown in Table 4-4, all of the study area intersections are projected to operate at acceptable levels of service and v/c ratios with the exception of the Lamb Road/Walker Road/Westland Road intersection. The southbound movement of this intersection is projected to operate at LOS E with a v/c ratio of 0.24.



Westland Road Interchange Transportation Plan

Figure 4-2
2023 P.M. Peak Hour Traffic Volumes
for Low Traffic Forecast

LEGEND
15 P.M. Peak Hour Traffic Volume

NOT TO SCALE

Table 4-4. Year 2023 Future Low Density Build Level of Service and V/C Ratio

ODOT Unsignalized Intersection	PM Peak Hour		
	LOS	Average Delay (sec)	V/C Ratio
Lamb Road/I-82 Southbound Ramps			
Westbound Left	A	9.9	0.20
Southbound Approach	C	21.3	0.20
Lamb Road/I-82 Southbound Ramps			
Eastbound Left	A	8.9	0.31
Northbound Approach	C	16.2	0.49
Westland Road/I-84 Westbound Ramps			
Westbound Approach	B	10.4	0.12
Northbound Left	A	7.9	0.04
Westland Road/I-84 Eastbound Ramps			
Eastbound Approach	B	10.5	0.15
Southbound Left	A	8.0	0.03
County Unsignalized Intersection			
Westland Road/Lamb Road/Walker Road			
Eastbound Left	A	7.8	0.01
Westbound Left	A	9.8	0.15
Northbound Approach	D	34.8	0.62
Southbound Approach	E	38.0	0.24
Westland Road/Livestock Road			
Westbound Approach	A	10.0	0.02
Southbound Left	A	8.0	0.01
Westland Road/Stafford-Hansell Road			
Eastbound Approach	B	10.6	0.12
Northbound Left	A	7.7	0.01

4.4. HIGH FORECAST SCENARIO

The study area is approximately 640 acres and has a significant potential for development. There are approximately 100 acres of commercially zoned land and over 400 acres of industrial zoned land. Based on field reconnaissance and inspection of an aerial photo of the study area, well over half of the land within the study area is available for development, increase in density, or redevelopment. Many of the large parcels with existing development are underutilized and could easily be expanded. Some transitionary uses such as agricultural storage sheds are prime for

redevelopment should demand for a more intensive use materialize. Based on the available industrial land, it is not likely that the study area industrial land could be built out by 2023.

To conduct the high forecast scenario, 1,000,000 square feet of warehouse development was assumed. Based on a building floor area to gross site area ratio of 25 percent, this corresponds to a build out of approximately 23 percent of the available industrial land or approximately 92 acres of development. It should be noted that 1,000,000 square feet of future warehouse development corresponds to an increase of 1,275 new employees in the study area. The 1,275 increase in employees is approximately 37 percent of the total 20-year OEA employment forecast for Umatilla County. Based on the new employee count as it compares with the OEA employment forecast, the high traffic volume forecast is definitely on the very high end of forecasts for the study area.

As for the commercially zoned land, the high traffic forecast scenario doubled the future commercial development from the low traffic forecast scenario. So, under the high traffic forecast scenario, 30,000 square feet of commercial development was assumed to occur within the study area by 2023.

Based on 30,000 square feet of commercial space and 1,000,000 square feet of warehouse space, trip generation was developed and is summarized in Table 4-5

These trips were then assigned to the study area roadway network to project 2023 high traffic volume forecast. The spatial distribution of future developments is shown in Figure 4-3. The result of this 2023 high traffic forecast are shown in Figure 4-4. Based on the forecasted 2023 traffic volumes for the high density scenario, levels of service and v/c ratio analyses were conducted at the study area intersections. This analysis is summarized in Table 4-6.

Table 4-5. Trip Generation for the Westland Road Interchange Area – High Density

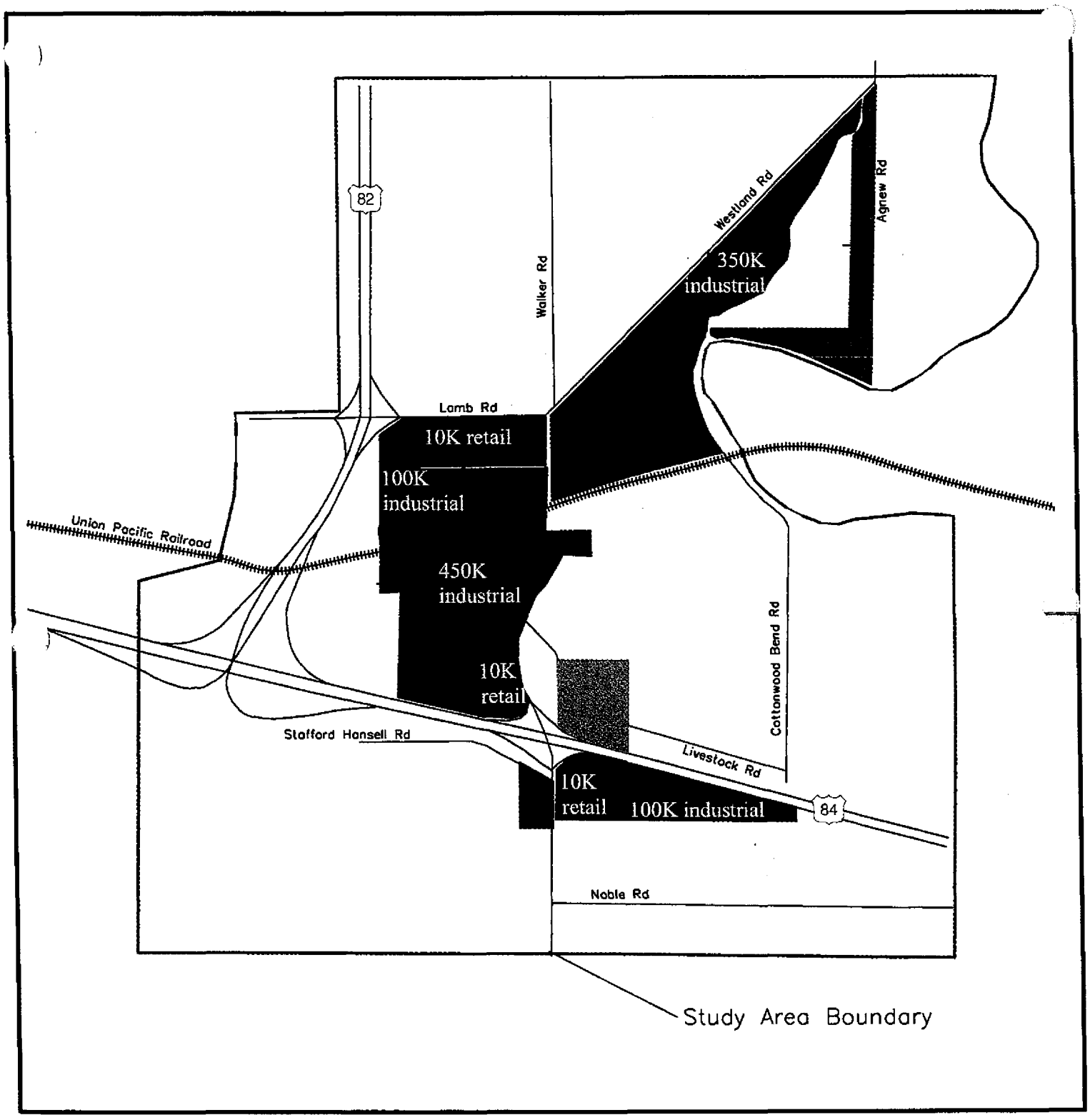
		Average	AM Peak			PM Peak		
Land Use	**Amount**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Warehouse – ITE Code 150								
Rate per 1,000 s.f.		4.96	0.37	0.08	0.45	0.12	0.39	0.51
Trips	100,000 s.f.	4,960	370	80	450	120	390	510
Shopping Center – ITE Code 820								
Rate per 1,000 s.f.		42.92	0.63	0.40	1.03	1.80	1.94	3.74
Trips	30,000 s.f.	1,288	19	12	31	54	58	112
Total New Trips in Study Area		6,248	389	92	481	174	448	622

Table 4-6. Year 2023 Future High Density Build Level of Service and V/C Ratio

	PM Peak Hour		
ODOT Unsignalized Intersection	LOS	Average Delay (sec)	V/C Ratio
Lamb Road/I-82 Southbound Ramps			
Westbound Left	B	10.1	0.23
Southbound Approach	D	33.5	0.42
Lamb Road/I-82 Southbound Ramps			
Eastbound Left	A	9.5	0.34
Northbound Approach	C	17.0	0.52
Westland Road/I-84 Westbound Ramps			
Westbound Approach	B	12.0	0.18
Northbound Left	A	8.4	0.07
Westland Road/I-84 Eastbound Ramps			
Eastbound Approach	B	12.8	0.25
Southbound Left	A	8.4	0.08
County Unsignalized Intersection			
Westland Road/Lamb Road/Walker Road			
Eastbound Left	A	7.9	0.01
Westbound Left	B	11.5	0.34
Northbound Approach	F	>100	>1.00
Southbound Approach	F	>100	>1.00
Westland Road/Livestock Road			
Westbound Approach	B	11.2	0.07
Southbound Left	A	8.2	0.01
Westland Road/Stafford-Hansell Road			
Eastbound Approach	B	11.4	0.13
Northbound Left	A	7.8	0.01

As shown in Table 4-4, all of the study area intersections are projected to operate at acceptable levels of service and v/c ratios with the exception of the Lamb Road/Walker Road/Westland Road intersection. The northbound and southbound movements of this intersection are projected to operate at LOS F with a v/c ratio of over 1.00.

All of the ramp terminal intersections at Westland Road and Lamb Road are projected to operate well within the maximum v/c standard of 0.85. The worst v/c ratio at the ramp terminal intersections is 0.34 in the 2023 high forecast scenario.

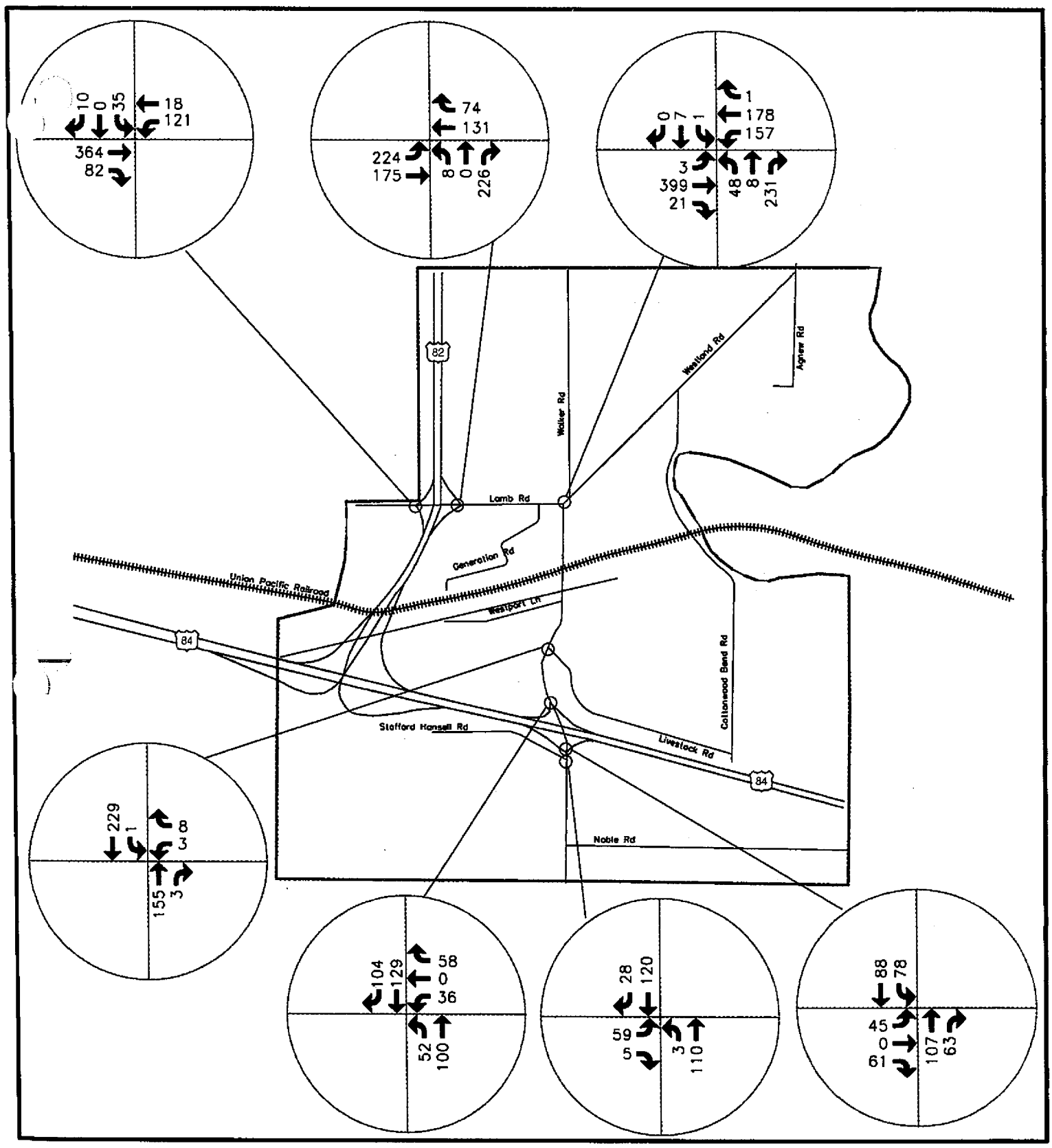


Westland Road Interchange Transportation Plan

Figure 4-3
Future Land Use Growth Assumptions
for High Traffic Forecast

LEGEND
- Commercial Zoning
- Industrial Zoning
- Rural Residential
- Agribusiness Zoning
- Exclusive Farm Use
- Study Area

NOT TO SCALE



Westland Road Interchange Transportation Plan

Figure 4-4
2023 P.M. Peak Hour Traffic Volumes
for High Traffic Forecast

LEGEND
15 P.M. Peak Hour Traffic Volume

NOT TO SCALE

Section 5.0
Improvements

5.1. WESTLAND RD/LAMB RD/WALKER RD REALIGNMENT

To mitigate the awkward intersection and poor levels of service of the Westland Road/Lamb Road/Walker Road intersection, two alternative intersection realignments were considered. The first realignment alternative involves realigning Walker Road away from the Lamb Road/Westland Road intersection. Under this improvement alternative, Walker Road would be aligned directly across Generation Road. Lamb Road would then "T" into Westland Road at a right angle. Westland Road would remain with the traffic right-of-way. The only draw back of this improvement is that it does not address to mitigate the heavy left turn movement from Lamb Road eastbound to Westland Road northbound. In the 2023 High Traffic Forecast Scenario, this intersection would meet signal warrants. The estimated planning cost estimate for this improvement is $250,000.

The second improvement alternative to mitigate the awkward intersection levels of service of the Westland Road/Lamb Road/Walker Road intersection would be to first realign the west leg of Lamb Road and the north leg of Westland Road as a continuous curve with the traffic right-of-way. Walker Road would then be realigned at a right angle to the west with the new Lamb Road/Westland Road alignment. The south leg of Westland Road would be reconstructed to the west with the intersection created by Walker Road. Generation Road would then be realigned to intersect with Walker Road to minimize conflicts with the major thoroughfare of Lamb Road/Westland Road. The planning cost estimate for this project is $500,000. Figure 5-1 illustrates the two Westland Road/Lamb Road/Walker Road realignment options.

5.2. STAFFORD HANSELL ROAD REALIGNMENT

Stafford Hansel Road is well within the ideal intersection spacing standard of 1,320 feet of an interchange ramp. Since the traffic volumes at the Westland Road interchange with I-84 and the intersection of Colonel Jordan Road and Stafford Hansell Road are relatively low with good v/c ratios in the 2023 forecast scenarios, no realignment is being recommended. However, if the traffic volumes for the 2023 High Traffic Forecast Scenario is exceeded, then the realignment of Stafford Hansell Road should be reevaluated.

5.3. RAILROAD CROSSING AT WESTLAND ROAD NORTH OF WESTPORT LN

Public comments received mentioned the need to upgrade and improve the railroad crossing at Westland Road north of Westport Lane. Upgrades to railroad crossings are typically very expensive. The estimated cost of upgrading and improving the railroad crossing is between $500,000 and $1,000,000.

5.4 WIDENING WESTLAND ROAD TO CURRENT ROADWAY STANDARDS

Based on the roadway inventory, the pavement section of Westland Road is 29 feet wide with two to four foot shoulders. Including the shoulder width, Westland Road ranges from 31 to 33 feet wide. The newly adopted road standard in the Umatilla County Transportation System Plan for rural major collector arterials such as Westland Road is 24 feet for the travel lanes plus paved four foot shoulders for a total pavement width of 32 feet. The existing roadway width with the shoulders are wide enough to meet the new standards. Next time Westland Road receives an overlay, the roadway should be paved to meet the new rural major collector standard of 32 feet.

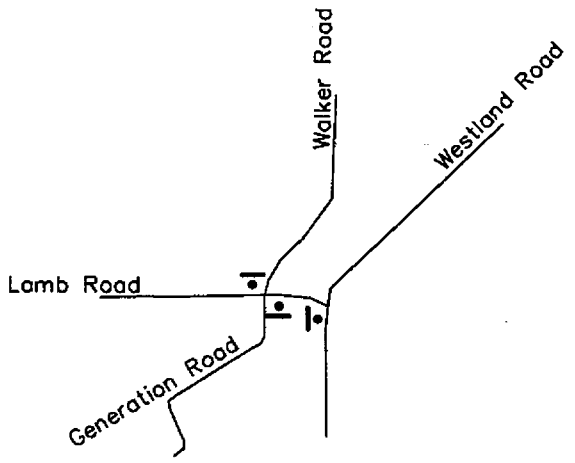
5.5 CURVE ALONG THE SOUTH END OF WESTLAND ROAD

Between I-84 interchange ramps and Livestock Road, there is a curve along Westland Road that may restrict sight distance for certain parcels in this vicinity. Since the additional future traffic volumes are only anticipated to increase moderately, it is not recommended to invest in the realignment of e Westland Road to straighten the curve. Instead, future development should look to create an east-west local access road north of Livestock Road at a point on Westland Road where sight distance is not restricted. This east-west road could provide sufficient access to most of the properties between the Union Pacific Railroad and I-84.

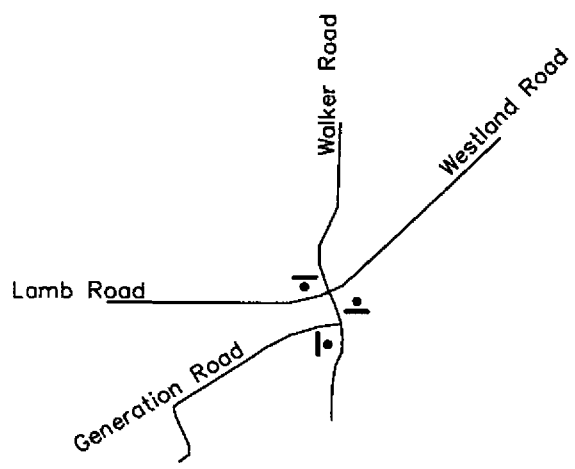
5.6 REZONING

Rezoning of additional properties is not recommended at this time because of the enormous development potential of the existing commercial and industrial properties within the study area. Rezoning EFU (exclusive farm use) land would require a goal exception. Based on the current land supply in the study area, unincorporated Umatilla County, and adjacent cities, it is not likely that any attempts for a goal exception to rezone EFU would succeed or be technically justified.

Alternative 1



Alternative 2



Westland Road Interchange Transportation Plan

Figure 5-1
Westland Road/Lamb Road/Walker Road
Realignment Options

NOT TO SCALE

TASK 6.2
PRODUCE DRAFT CODE PROVISIONS AND COMPREHENSIVE PLAN AMENDMENTS

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Umatilla County Staff and TSP Reader

From: Hann Lee, H. Lee & Associates

Subject: Draft Code and Comprehensive Plan Amendment

It should be noted that in both the code and comprehensive plan amendments, items are only being added. Therefore, there are no strikethrough changes. The additional code section to Section 152.018 is attached to this memo as Attachment A. The proposed language to amend the comprehensive plan and transportation system plan is listed below:

> "The 2002 Umatilla County Transportation System Plan which was developed and incorporated into the Comprehensive Plan through the periodic review process has been amended by the 2003 Umatilla County, Westland Road/I-84/I-82 Interchange Area Transportation Plan. See Attachment A. The Westland Road/I-84/I-82 Interchange Area Transportation Plan is a refinement study of the interchange area defined by the area within the vicinity of the I-82/Lamb Road and I-84/Westland Road interchanges. This plan merely adds to that defined in the 2002 Umatilla County Transportation System Plan.
>
> The attached errata sheet shall be added to the front of the 2002 Umatilla County Transportation System Plan indicating that a Refinement Study has been completed in the Westland Road Interchange Area and that plan supercedes any content in the TSP that refers to this area. This errata sheet is attached as Attachment B."

Attachment A

(I) Access Options

Vehicle access shall be provided based on the following criteria:

1) Access shall be provided from the lowest functional classification roadway. If an existing development redevelops and has access to both an arterial and a lower classified roadway, then the arterial driveway shall be closed and access shall be granted along the lower functional classification roadway.

2) Conditional access permits shall be given to developments that cannot meet current access spacing and access management standards as long as other standards such as sight distance and other geometric standards can be met. In conjunction with the conditional use permit, crossover easements shall be provided on all compatible parcels without topography and land use conflicts. The conditional access permit shall allow temporary access until it is possible to consolidate and share access points in such a manner to either improve toward the current standards or to meet the current access spacing standards. The following figure illustrates the concept of how the crossover easements eventually work toward meeting access spacing standards.

3) Adjacent non-residential parcels shall seek to share driveways along arterial, minor arterial, and collector roadways. As a condition of approval, cross-easements shall be granted to the adjacent non-residential parcel.

4) Residential subdivisions fronting an arterial, minor arterial, or collector roadway shall be required to provide access from secondary local streets for access to individual lots. When secondary local streets cannot be constructed due to topographic or physical constraints, access may be provided by consolidating driveways by clustering lots together. In this situation, the residential subdivision must still meet driveway spacing requirements.

5) A single-family residential lot may request up to two driveways on a local street. However, where two driveways are permitted for one single-family residential lot, a minimum separation of 50 feet shall be required. The 50 feet separation shall be measured from near edge to near edge.

6) The number of driveways allowed for non-residential uses along arterials, minor arterials, and collectors shall be based on the daily trip generation. One driveway shall be allowed for every 2,500 daily trips generated. A maximum of three driveways shall be allowed unless it is proven through a traffic impact study that this limitation creates a significant traffic operations hardship for on-site traffic. The primary criteria to allow more driveways will be a level of service analysis of the site accesses. If a development has a need for more than three access points, signalization of the main access shall be investigated as a potential option prior to allowing for more driveways.

7) Connectivity

(a) The street system of proposed subdivisions shall be designed to connect with existing, proposed, and planned streets outside of the subdivision.

(b) Wherever a proposed development abuts unplatted land developable land within the Urban Growth Boundary or a future development phase of the same development, street stubs shall be provided to provide access to abutting properties or to logically extend the street system into the surrounding area.

(c) Local residential access streets shall connect with surrounding streets to permit the convenient movement of traffic between residential neighborhoods and to facilitate

emergency access and evacuation. Connections shall be designed to avoid or minimize through traffic on local streets. Appropriate design and traffic calming measures are the preferred means of discouraging through traffic.

(d) Developers shall construct roadways within their development site to conform to the Future Local Street Plan in the transportation system plan or accompanying refinement plan for special areas or sub-areas.

(J). Development Review Procedure for Access Management

1) Applicants for Development Reviews impacting access shall submit a preliminary site plan that shows:

(a) Location of existing and proposed access point(s) on both sides of the road where applicable;

(b) Distances to neighboring constructed access points, median openings (where applicable), traffic signals (where applicable), intersections, and other transportation features on both sides of the property;

(c) Number and direction of lanes to be constructed on the driveway plus striping plans;

(d) All planned transportation features (such as sidewalks, bikeways, signs, signals, etc.);

2) Development Reviews shall address the following access criteria:

(a) Access shall be properly placed in relation to sight distance, driveway spacing, and other related considerations, including opportunities for joint and cross access.

(b) The road system shall provide adequate access to buildings for residents, visitors, deliveries, emergency vehicles, and garbage collection.

(c) The access shall be consistent with the access management standards adopted in the Transportation System Plan and any accompanying refinement plan for a specific area or sub-area.

3) Any application that involves access to the State Highway System shall be reviewed by the Oregon Department of Transportation for conformance with state access management standards. Any application that involves access to Marion County's roadway system shall be reviewed by Marion County staff for conformance with county access management standards.

Attachment B

Umatilla County Transportation System Plan Errata Sheet – June 30, 2003

The 2002 Umatilla County Transportation System Plan which was developed and incorporated into the Comprehensive Plan through the periodic review process has been amended by the 2003 Umatilla County, Westland Road/I-84/I-82 Interchange Area Transportation Plan. The Westland Road/I-84/I-82 Interchange Area Transportation Plan is a refinement study of the interchange area defined by the area within the vicinity of the I-82/Lamb Road and I-84/Westland Road interchanges. This plan merely adds to that defined in the 2002 Umatilla County Transportation System Plan and supercedes any content in the TSP that refers to this area.

TASK 6.3
DLCD 45-DAY NOTICE

FORM 1

D L C D NOTICE OF PROPOSED AMENDMENT

This form **must be received** by DLCD **at least 45 days prior to the first evidentiary hearing**
per ORS 197.610, OAR Chapter 660 - Division 18
and Senate Bill 543 and effective on June 30, 1999.
(See reverse side for submittal requirements)

Jurisdiction: Umatilla County Local File No.: _____
(If no number, use none)

Date of **First Evidentiary Hearing**: June 26, 2003 Date of Final Hearing: _____
(Must be filled in) (Must be filled in)

Date this proposal was sent or mailed: May 12, 2003
(Date mailed or sent to DLCD)

Has this proposal previously been submitted to DLCD? Yes: ____ No: X Date: _____

X Comprehensive Plan Text Amendment ___ Comprehensive Plan Map Amendment

___ Land Use Regulation Amendment ___ Zoning Map Amendment

___ New Land Use Regulation ___ Other: _____
(Please Specify Type of Action)

Briefly summarize the proposal. Do not use technical terms. Do not write "See Attached."

This proposal is an amendment to the adopted 2002 Umatilla County Transportation System Plan. The amendment refines transportation analysis conducted in the vicinity of the I-84/Westland Road and I-82/Lamb Road interchange areas. The amendment is primarily additional transportation improvements and policies.

Plan Map Changed from : _____ to _____

Zone Map Changed from: _____ to _____

Location: Umatilla County, I-84/Westland Rd, I-82/Lamb Rd Acres Involved: 640 acres

Specified Change in Density: Current: _____ Proposed: _____

Applicable Statewide Planning Goals: Goal 12 - Transportation

Is an Exception Proposed? Yes: ___ No: X

Affected State or Federal Agencies, Local Governments or Special Districts: ODOT and Umatilla County

Local Contact: Dennis Olson Area Code + Phone Number: 541-278-6246

Address: 216 SE 4th Street

City: Pendleton Zip Code + 4: 97801

DLCD No.: _____

SUBMITTAL REQUIREMENTS

TASK 6.4
ATTEND PLANNING COMMISSION HEARING

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

MEMORANDUM

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: June 27, 2003 Planning Commission Hearing

The June 27, 2003 Planning Commission Hearing was comprised of two parts. The first part involved Hann Lee of H. Lee & Associates presenting significant elements of the Westland Road Interchange Area Management Plan. These elements involved the finding that traffic congestion is not a significant concern in the 20 year horizon indicating that existing roadways can accommodate the 20 year traffic growth, a summary of proposed improvements and their cost, and the draft elements of the access management/local street network plan.

The second part of the hearing involved public testimony. The testimony centered around the access management/local street network plan. Objections were filed and recorded into the record. Hann Lee of H. Lee & Associates indicated that another TAC meeting with the property stakeholders would be met to resolve outstanding issues.

No action was taken by the Planning Commission. The hearing was to be extended until after another revision to the plan was made regarding the access management/local street network plan.

TASK 6.5
REVISE TSP, CODE, COMPREHENSIVE PLAN – FINAL AND PRODUCE 17 HARD COPIES AND ELECTRONIC COPIES

ORDINANCE NUMBER _____

AN ORDINANCE IN THE MATTER OF ADOPTING TEXT AMENDMENTS TO THE UMATILLA COUNTY TRANSPORATION SYSTEM PLAN WHICH IS PART OF THE COMPREHENSIVE PLAN BY ADOPTING THE UMATILLIA COUNTY, WESTLAND ROAD/I-84/I-82 INTERCHANGE AREA TRANSPORTATION PLAN.

WHEREAS, Umatilla County received a Transportation & Growth Management (TGM) Grant to complete the Umatilla County, Westland Road/I-84/I-82 Interchange Area Transportation Plan;

WHEREAS, all the property owners in the study area, local stakeholders, Planning Commission, and County Commissioners were all integrally involved in the public outreach program to solicit input into the study process throughout the duration of the project;

WHEREAS, notice to the public was advertised at least 10 days in advance of the final Planning Commission and County Commissioner Hearings public hearings listed below;

WHEREAS, a Strategic Plan Presentation was made to the Planning Commission on May 29, 2003 in which the public was also invited;

WHEREAS, a public hearing by the Planning Commission was held on June 26, 2003 to solicit public testimony;

WHEREAS, a public hearing by the Board of Commissioners was held on June 30, 2003 in which the public was also invited;

WHEREAS, a public hearing was held on _____ to deliberate and potentially make a decision to adopt the Umatilla County, Westland Road/I-84/I-82 Interchange Area Transportation Plan;

NOW THEREFORE, UMATILLA COUNTY, OREGON, ORDAINS AS FOLLOWS:

Article 1: Transportation System Plan Amendment

Section 1

The 2002 Umatilla County Transportation System Plan which was developed and incorporated into the Comprehensive Plan through the periodic review process has been amended by the 2003 Umatilla County, Westland Road/I-84/I-82 Interchange Area Transportation Plan. See Attachment A. The Westland Road/I-84/I-82 Interchange Area Transportation Plan is a refinement study of the interchange area defined by the area within the vicinity of the I-82/Lamb Road and I-84/Westland Road interchanges. This plan merely adds to that defined in the 2002 Umatilla County Transportation System Plan.

The attached errata sheet shall be added to the front of the 2002 Umatilla County Transportation System Plan indicating that a Refinement Study has been

completed in the Westland Road Interchange Area and that plan supercedes any content in the TSP that refers to this area. This errata sheet is attached as Attachment B.

Article 2: Umatilla Development Code Amendment

An additional Development Code section has been developed to address access management. This new Development Code section shall be known as Section 153. See Attachment B for this new Development Code Language.

PASSED AND ADOPTED this ___ day of _____ , by County Commissioner members voting therefore.

County Commissioner – Chair	County Recorder
County Commissioner	County Commissioner
County Commissioner	County Commissioner

Attachment A

Attachment B

Umatilla County Transportation System Plan Errata Sheet – June 30, 2003

The 2002 Umatilla County Transportation System Plan which was developed and incorporated into the Comprehensive Plan through the periodic review process has been amended by the 2003 Umatilla County, Westland Road/I-84/I-82 Interchange Area Transportation Plan. The Westland Road/I-84/I-82 Interchange Area Transportation Plan is a refinement study of the interchange area defined by the area within the vicinity of the I-82/Lamb Road and I-84/Westland Road interchanges. This plan merely adds to that defined in the 2002 Umatilla County Transportation System Plan and supercedes any content in the TSP that refers to this area.

Attachment C

152.018 ACCESS MANAGEMENT AND STREET CONNECTIVITY

(I) Access Options

Vehicle access shall be provided based on the following criteria:

1) Access shall be provided from the lowest functional classification roadway. If an existing development redevelops and has access to both an arterial and a lower classified roadway, then the arterial driveway shall be closed and access shall be granted along the lower functional classification roadway.

2) Conditional access permits shall be given to developments that cannot meet current access spacing and access management standards as long as other standards such as sight distance and other geometric standards can be met. In conjunction with the conditional use permit, crossover easements shall be provided on all compatible parcels without topography and land use conflicts. The conditional access permit shall allow temporary access until it is possible to consolidate and share access points in such a manner to either improve toward the current standards or to meet the current access spacing standards. The following figure illustrates the concept of how the crossover easements eventually work toward meeting access spacing standards.

3) Adjacent non-residential parcels shall seek to share driveways along arterial, minor arterial, and collector roadways. As a condition of approval, cross-easements shall be granted to the adjacent non-residential parcel.

4) Residential subdivisions fronting an arterial, minor arterial, or collector roadway shall be required to provide access from secondary local streets for access to individual lots. When secondary local streets cannot be constructed due to topographic or physical constraints, access may be provided by consolidating driveways by clustering lots together. In this situation, the residential subdivision must still meet driveway spacing requirements.

5) A single-family residential lot may request up to two driveways on a local street. However, where two driveways are permitted for one single-family residential lot, a minimum separation of 50 feet shall be required. The 50 feet separation shall be measured from near edge to near edge.

6) The number of driveways allowed for non-residential uses along arterials, minor arterials, and collectors shall be based on the daily trip generation. One driveway shall be allowed for every 2,500 daily trips generated. A maximum of three driveways shall be allowed unless it is proven through a traffic impact study that this limitation creates a significant traffic operations hardship for on-site traffic. The primary criteria to allow more driveways will be a level of service analysis of the site accesses. If a development has a need for more than three access points, signalization of the main access shall be investigated as a potential option prior to allowing for more driveways.

7) Connectivity

(a) The street system of proposed subdivisions shall be designed to connect with existing, proposed, and planned streets outside of the subdivision.

(b) Wherever a proposed development abuts unplatted land developable land within the Urban Growth Boundary or a future development phase of the same development, street stubs shall be provided to provide access to abutting properties or to logically extend the street system into the surrounding area.

(c) Local residential access streets shall connect with surrounding streets to permit the convenient movement of traffic between residential neighborhoods and to facilitate emergency access and evacuation. Connections shall be designed to avoid or minimize

through traffic on local streets. Appropriate design and traffic calming measures are the preferred means of discouraging through traffic.

(d) Developers shall construct roadways within their development site to conform to the Future Local Street Plan in the transportation system plan or accompanying refinement plan for special areas or sub-areas.

(J). Development Review Procedure for Access Management

1) Applicants for Development Reviews impacting access shall submit a preliminary site plan that shows:

(a) Location of existing and proposed access point(s) on both sides of the road where applicable;

(b) Distances to neighboring constructed access points, median openings (where applicable), traffic signals (where applicable), intersections, and other transportation features on both sides of the property;

(c) Number and direction of lanes to be constructed on the driveway plus striping plans;

(d) All planned transportation features (such as sidewalks, bikeways, signs, signals, etc.);

2) Development Reviews shall address the following access criteria:

(a) Access shall be properly placed in relation to sight distance, driveway spacing, and other related considerations, including opportunities for joint and cross access.

(b) The road system shall provide adequate access to buildings for residents, visitors, deliveries, emergency vehicles, and garbage collection.

(c) The access shall be consistent with the access management standards adopted in the Transportation System Plan and any accompanying refinement plan for a specific area or sub-area.

3) Any application that involves access to the State Highway System shall be reviewed by the Oregon Department of Transportation for conformance with state access management standards. Any application that involves access to Marion County's roadway system shall be reviewed by Marion County staff for conformance with county access management standards.

TASK 6.6
PREPARE FINDINGS REPORT AND ORDINANCE RECOMMENDATION

TASK 6.7
COUNTY COMMISSIONER HEARING

H. Lee & Associates
Traffic Engineering, Transportation Planning, and Intelligent Transportation Systems

MEMORANDUM

P.O. Box 1849
Vancouver, WA 98668
Phone: (360) 567-3002
Fax: (360) 567-3005

To: Westland Road Interchange Area Management Team and TAC

From: Hann Lee, H. Lee & Associates

Subject: June 30, 2003 Board of Commissioners Hearing

The June 30, 2003 Board of Commissioners Hearing was comprised of two parts. The first part involved Hann Lee of H. Lee & Associates presenting significant elements of the Westland Road Interchange Area Management Plan. These elements involved the finding that traffic congestion is not a significant concern in the 20 year horizon indicating that existing roadways can accommodate the 20 year traffic growth, a summary of proposed improvements and their cost, and the draft elements of the access management/local street network plan.

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