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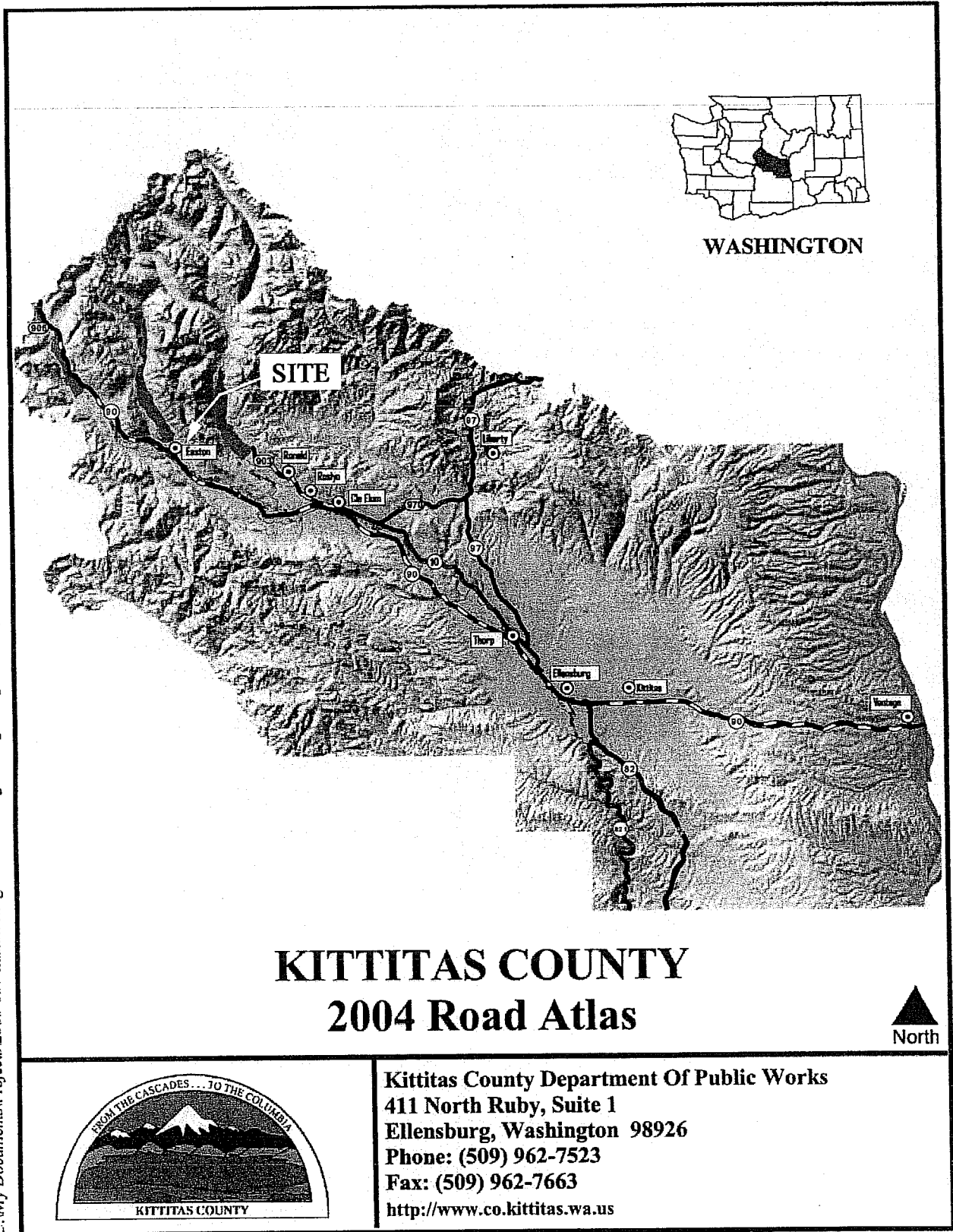
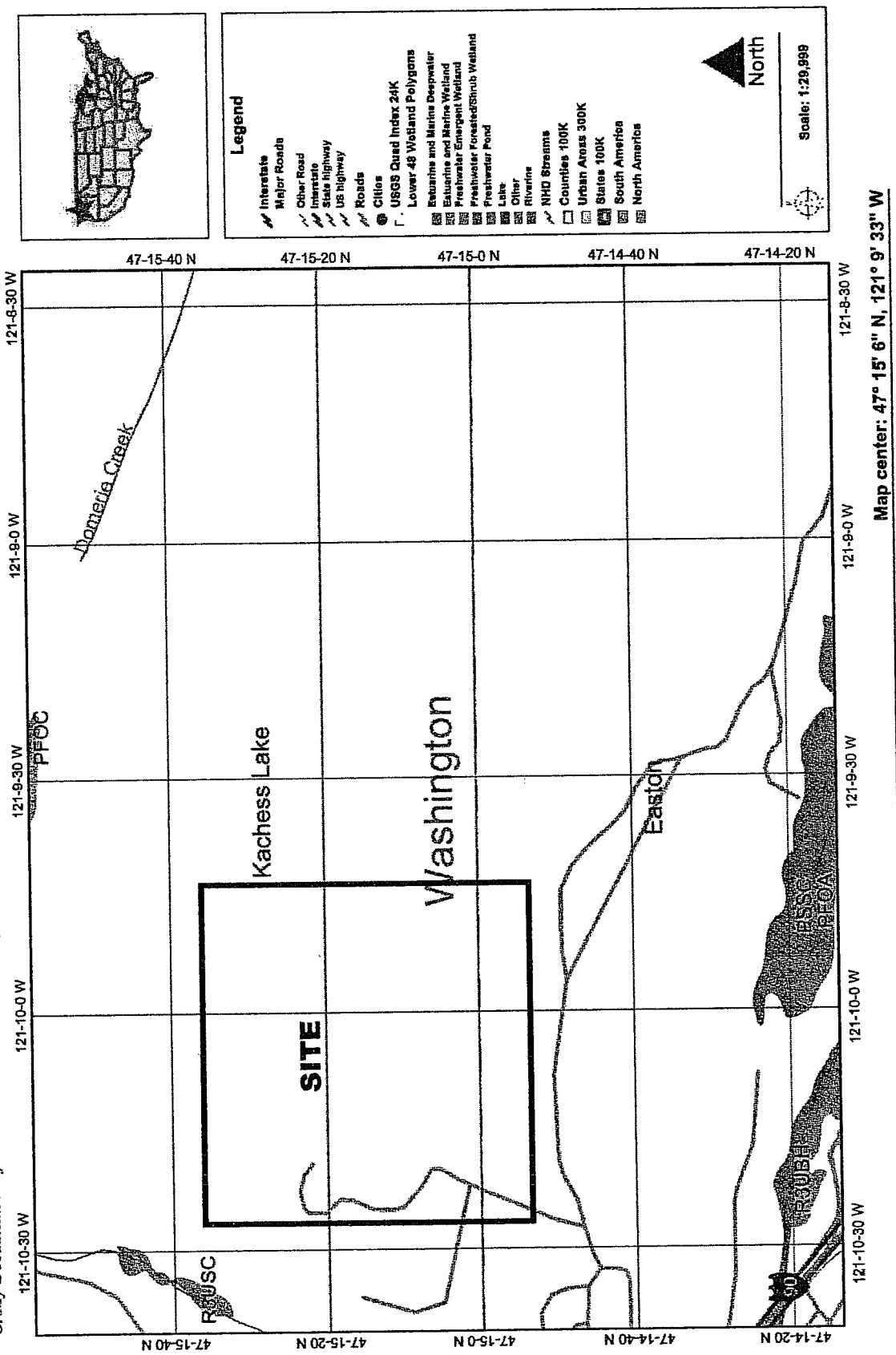


Figure 1. Location at the Marian Meadows Planned Unit Development site in Kittitas County, WA.



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Figure 2. United States Fish and Wildlife Service National Wetland Inventory (2004) mapping for the area containing the Marian Meadows Planned Unit Development site.

2703515

FOREST PRACTICE BASE MAP

TOWNSHIP 20 NORTH, RANGE 13 EAST (W.M.), SECTION 01
APPLICATION #

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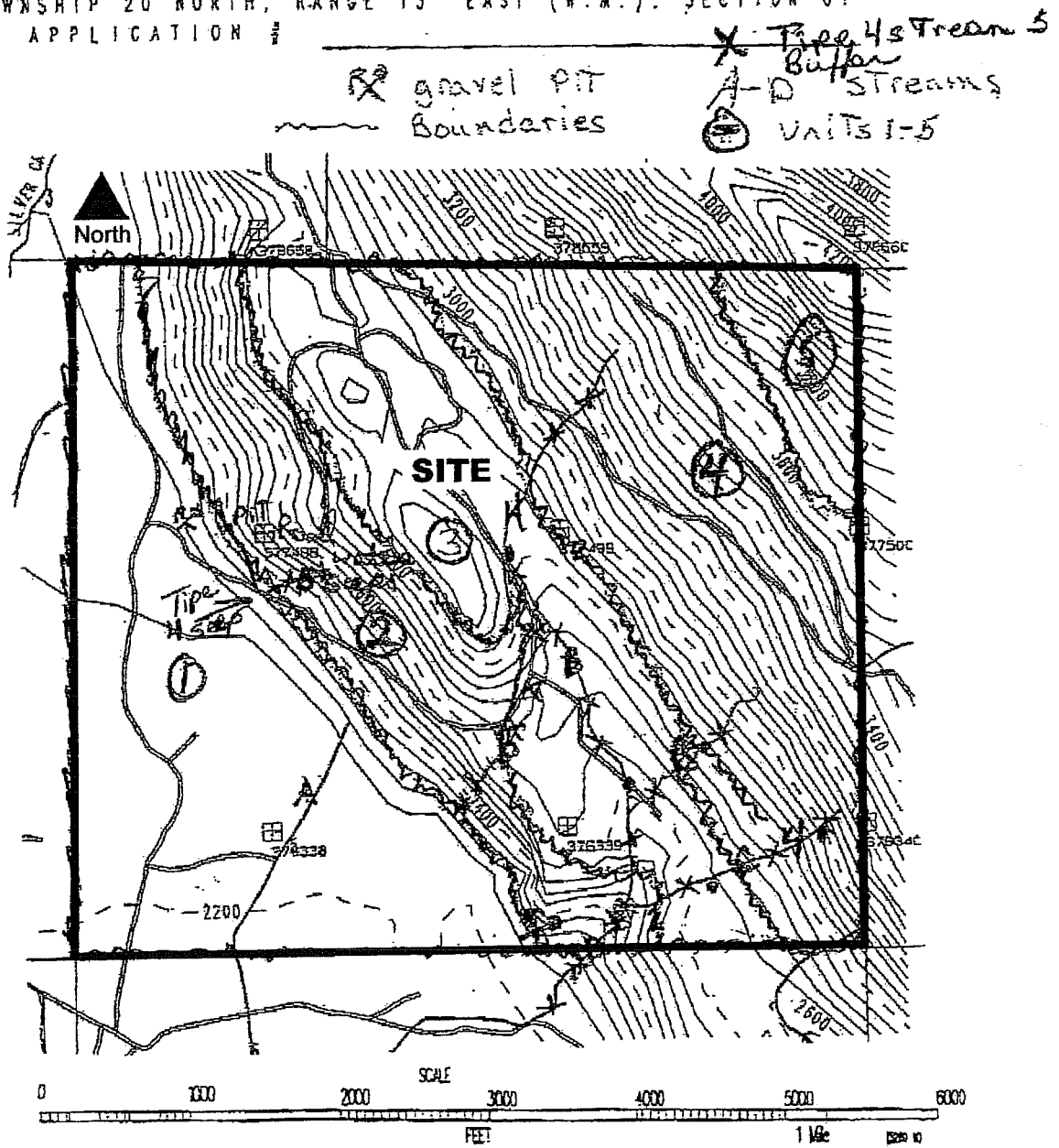
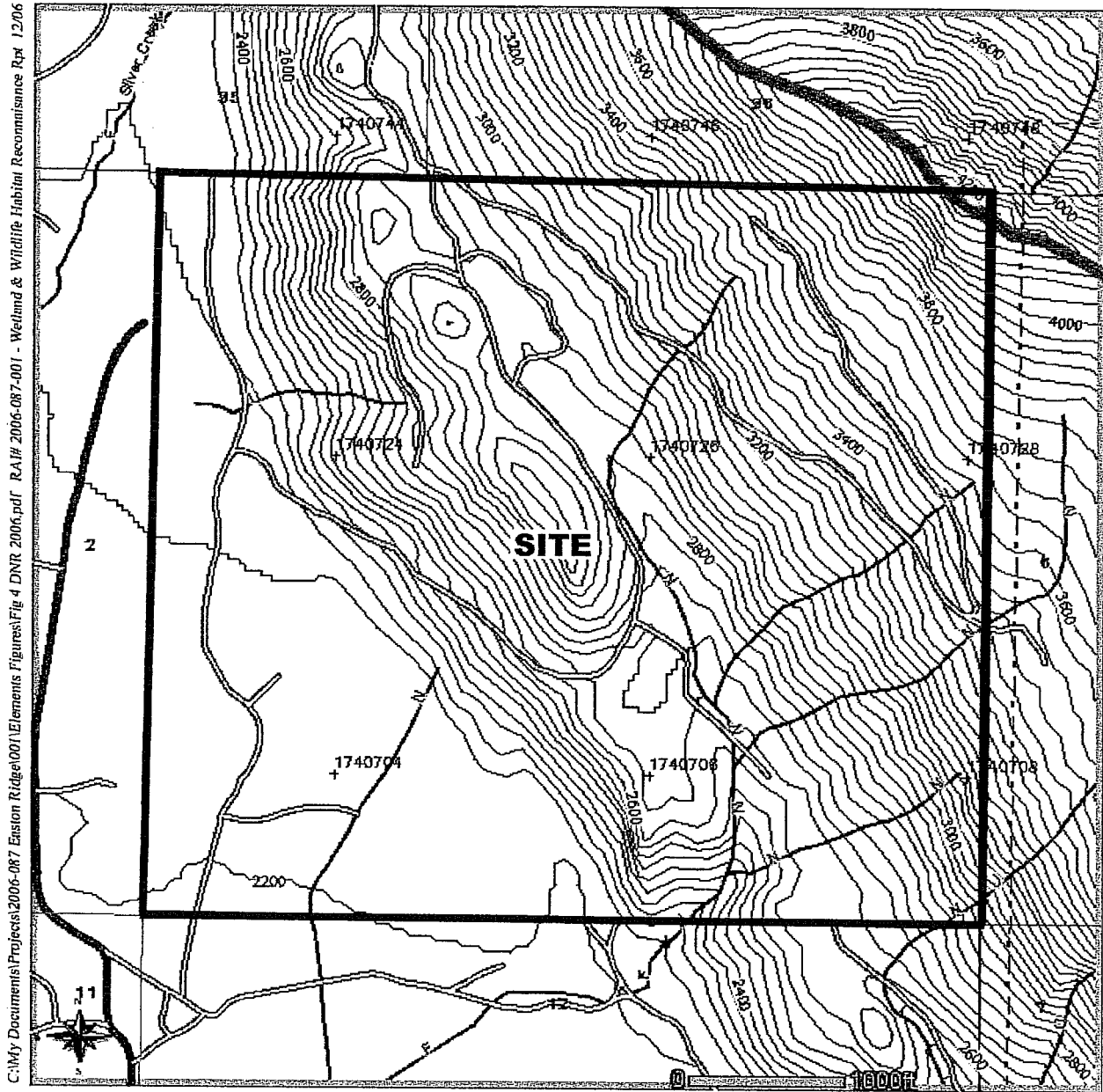


Figure 3. Washington Department of Natural Resources (2004) Forest Practices Base Map, showing streams and seeps for the Marian Meadows Planned Unit Development site.

FOREST PRACTICE ACTIVITY MAP

TOWNSHIP 20 NORTH HALF 0, RANGE 13 EAST (W.M.) HALF 0, SECTION 1

Application #: _____



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Figure 4. Washington Department of Natural Resources (2006) Forest Practice Activity Map showing streams and seeps for the Marian Meadows Planned Unit Development site.

**A Section 106 Archaeological Review and Inventory at the
Proposed Marian Meadows Development, Easton, Kittitas
County, Washington**

September 22, 2006
RLR Report 2006-69-14

By
Christopher Landreau M.S.
and Joel Geffen PhD

REISS-LANDREAU RESEARCH

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Consultation Provided to:
Easton Ridge Land Company
Roslyn, Washington

Executive Summary

Reiss-Landreau Research (RLR) conducted a visual reconnaissance survey and inventory of proposed development lots within 560 acres of previously harvested timber land in Kittitas County, Washington (Figures 1, 3). Marian Meadows is a proposed development outside of Easton, Washington. The project is nearly entirely within a forested tract both ridgeline and flatlands. Initially, 140 acres is slated to be developed, with possible future development on Tracts A and B (Figure 2). Of the 560 acres, only approximately 220 acres was surveyed for archaeological resources. The remaining acreage is set upon Easton Ridge, much of which falls upon the very steeply sloped hillside. The forest was owned by Plum Creek Timber Company until 1999 when it was sold to a private developer.

Much of the tract was harvested in the late 1990's as evidenced by the minimal re-growth and tree ages across the cut. **No historic or prehistoric remains were encountered anywhere on this property, and we believe that in terms of archaeological resources, this development project should proceed.**

The preliminary research conducted at the State of Washington Archaeological archives in Olympia revealed eight archaeological sites within two miles of the project area.

LEGAL INFORMATION

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T 20N, R 13E, Sections 1, and 12

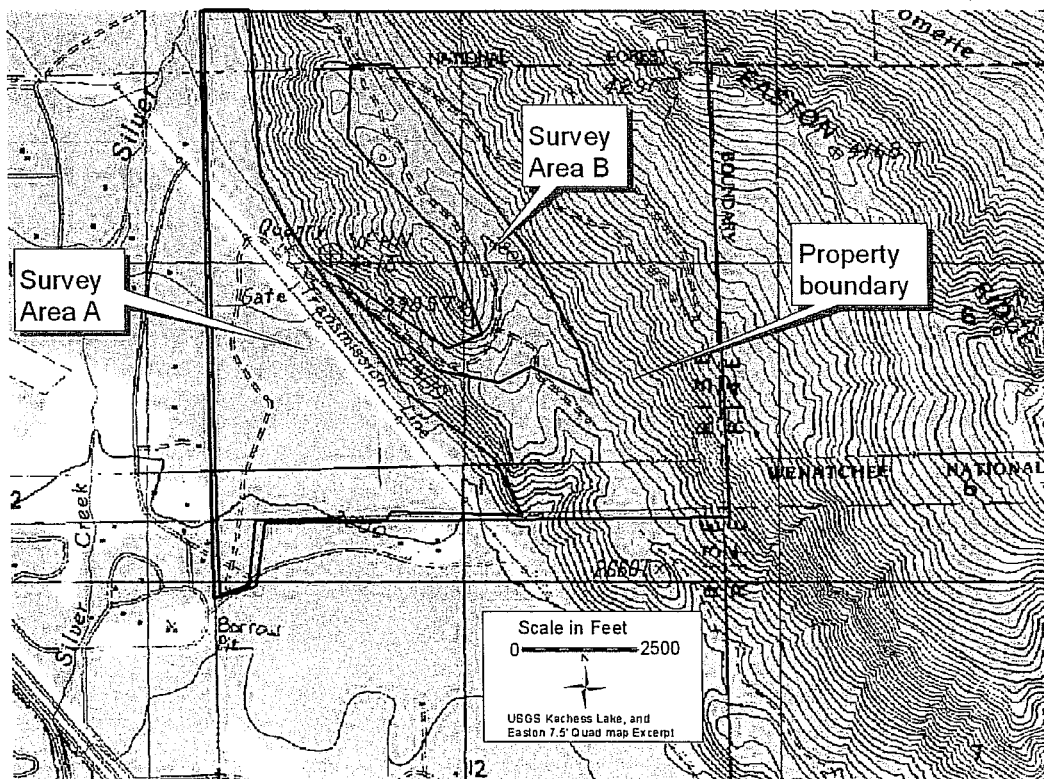
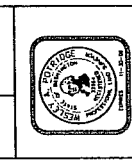


Figure 1: Project Area Topographic map: Areas surveyed are highlighted in blue

NO.	REVISIONS	BY	DATE

MARTAN MEADOWS
PRELIMINARY PLAN
SEC. 1 & 12, TWP. 20 N., RNG 13 E., W.M.
KITTAS COUNTY, WASHINGTON
PHASING AND TOTAL SITE PLAN



CU	DATE
DRAWN	DATE
WSP	DATE
DESIGNED	DATE
PROJECT ENGINEER	DATE
DATE	DATE
PROJECT MANAGER	DATE

SCALE
 1" = 500'
 FILE NAME
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 SHEET NO.
PI

SECTION 1 AND 12, T. 20 N., R. 13 E., W.M.

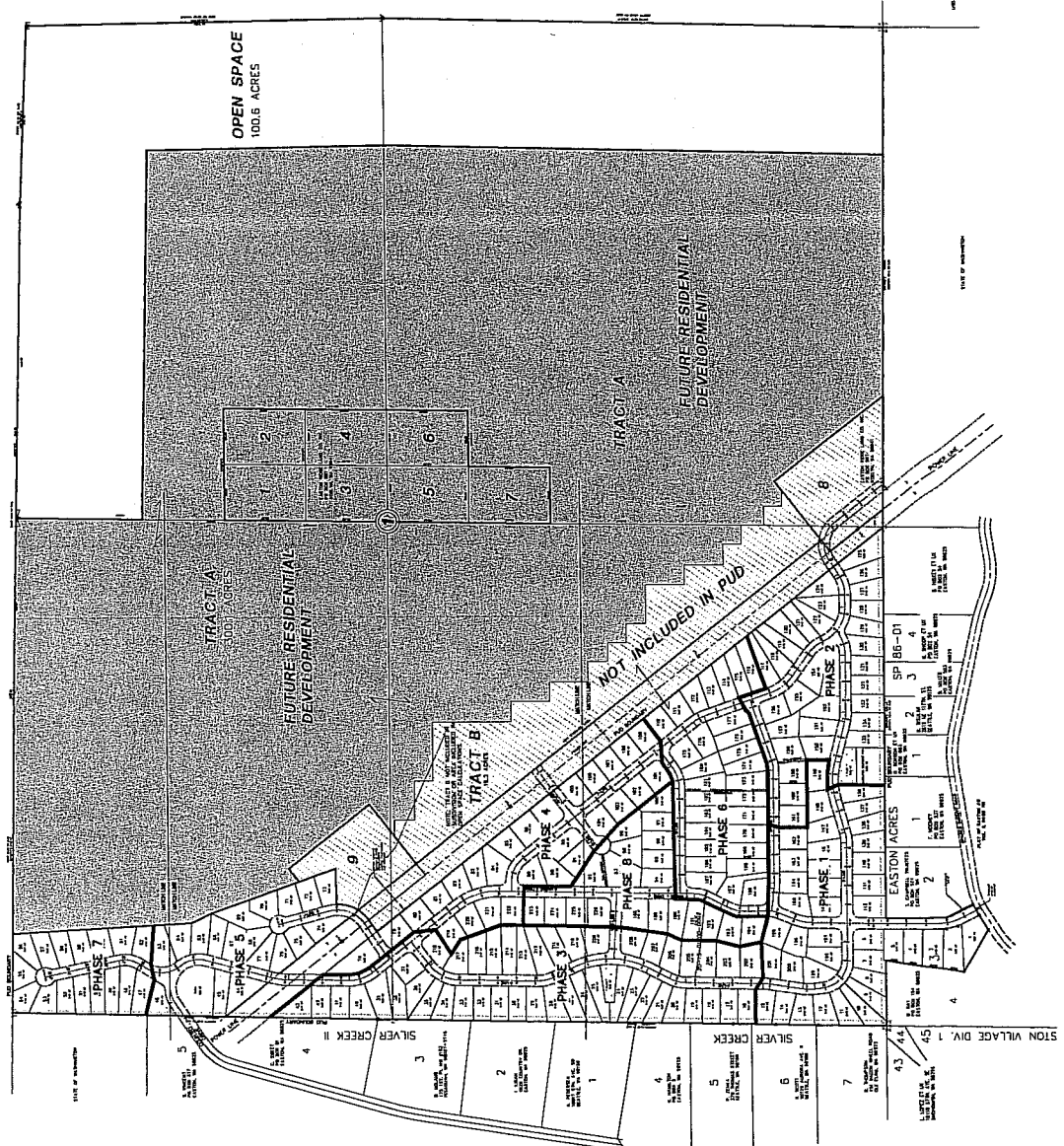


Figure 2: Project Proposed Design

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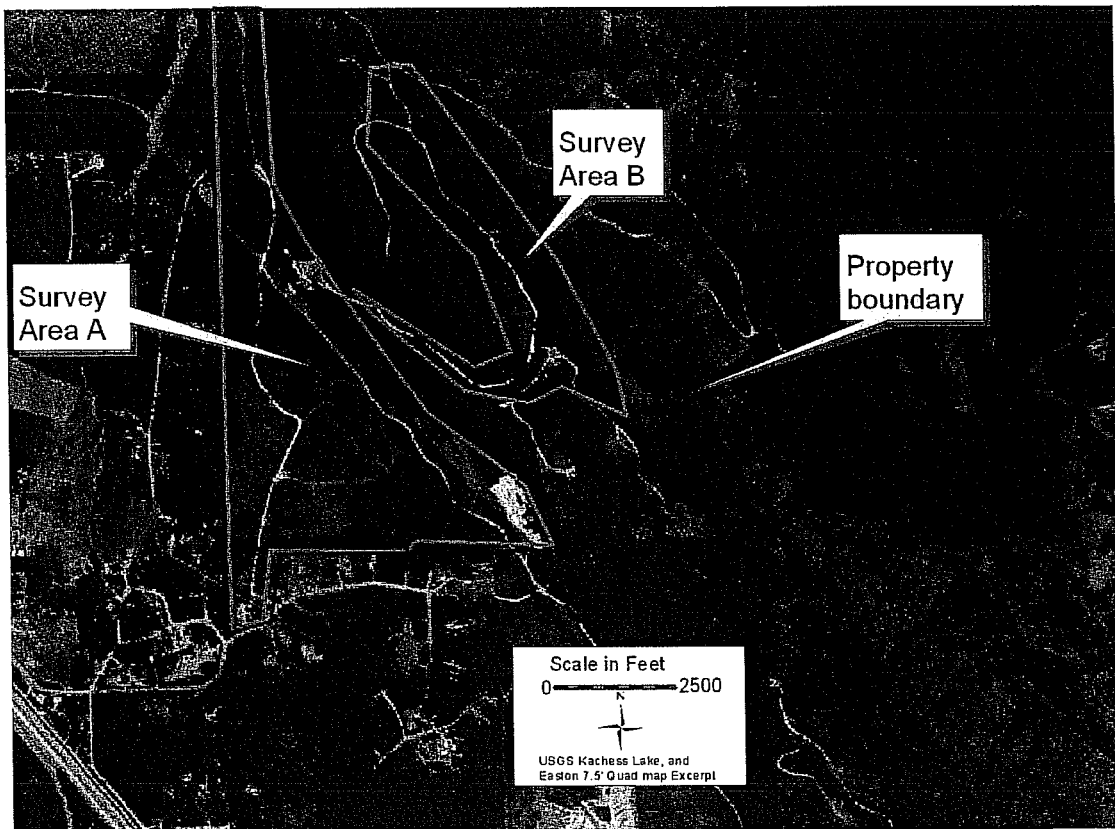


Figure 3: Project Boundaries, orthophoto, USGS Surveyed portions in green.

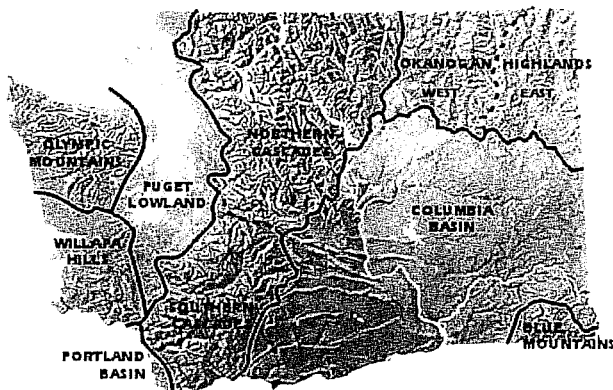
Introduction

Easton Ridge Land Company retained Reiss-Landreau Research (RLR) to conduct an archaeological survey of undeveloped, but partially timber harvested land in Kittitas County, Washington. The land was logged in the late 1990's by Plum Creek Timber Company. This project is an inventory of 560 acres of land. Much of the land, 340 acres or so is located on the ridge side of Easton Ridge, with little or no mitigating flatland. In all approximately 220 acres was surveyed for cultural resources, with 140 acres slated for immediate development. The remainder of the project is on the eastern edge of the postglacial outwash floodplain of Lake Kachess. This area has likely been mostly forested since the end of the Pleistocene, with only a few small springlets and perennial streams on the property.

Geographic and Environmental setting:

Topography and Geology:

This project is within the Northern Cascades Physiographic region (Lasmanis 1991), which is characterized by recent (Pleistocene) uplift, and massive cascades volcanoes.



"A major northwest-southeast structural break separates the Washington Cascades into northern and southern portions. In a general way, the structure follows the trace of Interstate 90 between Seattle and Ellensburg. The North Cascades consist of jagged mountains with numerous glaciers and are composed predominantly of Mesozoic crystalline and metamorphic rocks." Lasmanis, 1991 (Figure 4).

Figure 4: Washington Provinces

Region-wide interactions with glaciers during the last four glaciations within the current ice age have also modified the landscape. The last glaciation, at retreat left several natural deeply scored catchments, of which Lake Kachess, northwest of the project area, is one. During the last century, Lake Kachess was deepened by an artificially enhanced dam at its southern end, creating a substantially larger storage reservoir.

Easton Ridge is comprised in large part of Teanaway Formation deposits. These are basaltic in character. The rock typically occurs in brown, rusty, and reddish tones. Evidence strongly suggests that during the Eocene, between 49 and 37 million years ago, dikes associated with volcanoes conveyed lava to the surface in an area stretching roughly from Kachess Lake past Table Mountain to the Wenatchee vicinity. (Mabry, 2000).

This volcanic activity intruded upon an older geologic landscape of terranes. A terrane can be conceptualized as a large block or "island" of rock. These moved eastward

with the Pacific Plate. Once the Pacific Plate encountered the North American plate, beginning roughly 100 million years ago, these blocks of rock were literally smashed against and in some cases pulled under rock formations of the North American plate. During this process, they were added or accreted to those formations. Tremendous pressure accompanied the collision. Strike-slip faults and thrust faults resulted. Geologic maps of the project areas show various terranes and associated faults (Mabry 2000; The Geology of Washington).

Faulting occasionally caused portions of the land to drop down or pull apart, forming basins. Sediments deposited in such depressions led to the creation of geologic formations. The Roslyn Formation, at 43 million years old, located near Cle Elum Lake, was one of these. It has been estimated at 9,000 feet thick in places. Rock types are primarily sandstone, siltstone, claystone, and shales. Veins of coal developed in the humid, subtropical environment that existed here (Mabry 2000).

The Pleistocene Period, which began approximately two million years ago and ended around 10,000 years ago, was a significantly colder era. This was a time of glaciation. The valleys containing Cle Elum Lake and Kachess Lake, which were created during this time, display the classic "U"-shape associated with glaciated alpine landscapes. Frigid temperatures occasionally yielded, however, to intervals of relatively warmer climate. At these times the glaciers would retreat. Meltwaters impounded behind terminal moraines led to the formation of Kachess Lake and Cle Elum Lake (Bureau of Reclamation).

Vegetation:

This is a fairly typical east slope, mid elevation Northern Cascades timber harvested plant community (Figure 5). The re-growing timber is mostly grand fir, and there is also Douglas fir on the property. The re-growth deciduous plant community is comprised of vine maple, and various grasses.

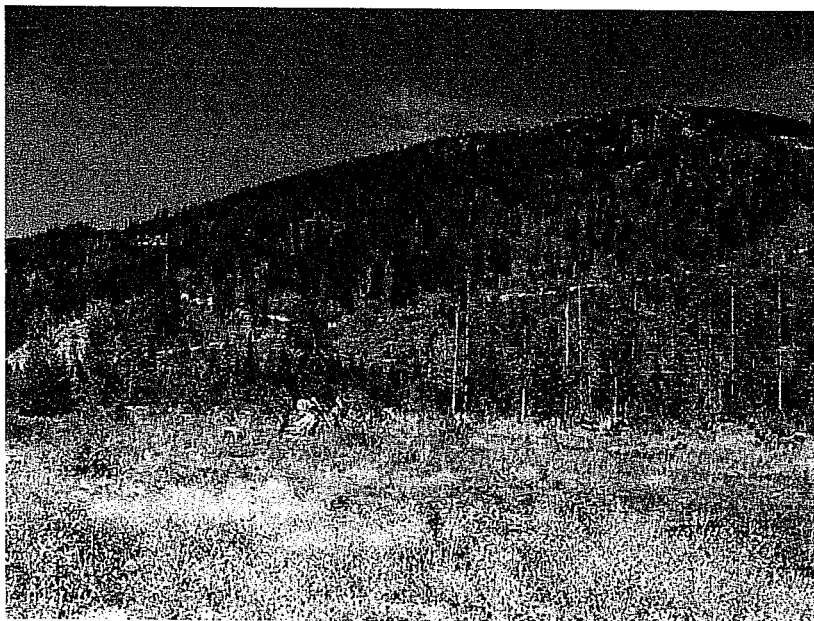


Figure 5: a view of the clearcut area (foreground) and Easton Ridge

Land Use History

Lake Kachess is a glacially carved basin that has been modified with an earthen dam to help serve the water needs of the Kittitas and Yakima agricultural valleys, and is part of a complex irrigation system permitting Cascade waters to be used on the dry high desert of eastern Washington.

Pre-contact

Ice-bound landscapes were gradually replaced by tundra-like expanses of grasses and cold-tolerant trees such as spruce (Hodges et al., 2003: 13). Peoples pursuing large grazing animals such as mammoth and using Clovis projectile points were in the Wenatchee area 11,500 years ago. People were hunting around Cle Elum Lake 11,000 years ago (WSDOT 2006:3-181).

A warm stretch of weather known as the Altithermal occurred from roughly 8,000 to 4,500 years ago. "Cascade"-type projectile points are associated with this period of increased aridity. Such points have been discovered along the edges of Kachess Lake (Hodges et al., 2003: 13).

The period from 4,500 to 2,500 years ago is known as the Frenchman Springs phase. During this time regional human populations grew and pithouses became more widespread. One house, estimated to be between 5,200 and 2,500 years old, was found near Lake Easton State Park; approximately three miles west of the project area near Kachess Lake (Hodges et al., 2003: 13).

Contact

Between 1,000 years ago and the early 1800s, when European and American explorers began arriving, populations continued to increase. Major settlements came into existence along the Yakima River (Figure 6). Fishing was an extremely important activity. Large summer fishing villages were established at the lower ends of Kachess Lake and Cle Elum Lake. Additionally, people harvested plant and animal foods in upland areas in season. Vicinities around Cle Elum Lake and Kachess Lake were utilized by both Kittitas and Snoqualmie groups (WSDOT 2006: 3-181; Hodges et al., 2003: 16).



Figure 6: Longhouse from the 1870's, Parker Washington, Yakama Reservation

The arrival of Lewis and Clark at the beginning of the nineteenth century heralded great changes for native peoples. Native communities were decimated by disease. Missionaries moved into the region in the 1830s and 1840s. Settlers also came, following close behind the missionaries' footsteps. Desiring land, the U.S. Government pushed native groups on both sides of the Cascade Mountains to sign treaties. In 1855 this was accomplished. Reservations were created for the Kittitas, Snoqualmie, and other groups in the Pacific Northwest.

Non-native peoples did not delay in exploiting resources on lands ceded by Indians. Gold was discovered in Swauk Creek in 1867 (Figure 8). By the 1870s miners flooded into the area and began working claims along the Yakima and Cle Elum rivers (Hodges et al., 2003: 17). Logging camps (Figure 7) were established around Cle Elum Lake and Kachess Lake. Ranching provided meat to both mining and logging communities. With the arrival of the Northern Pacific Railroad in 1886, ranchers could sell cattle in eastern markets (WSDOT 2006:3-182).

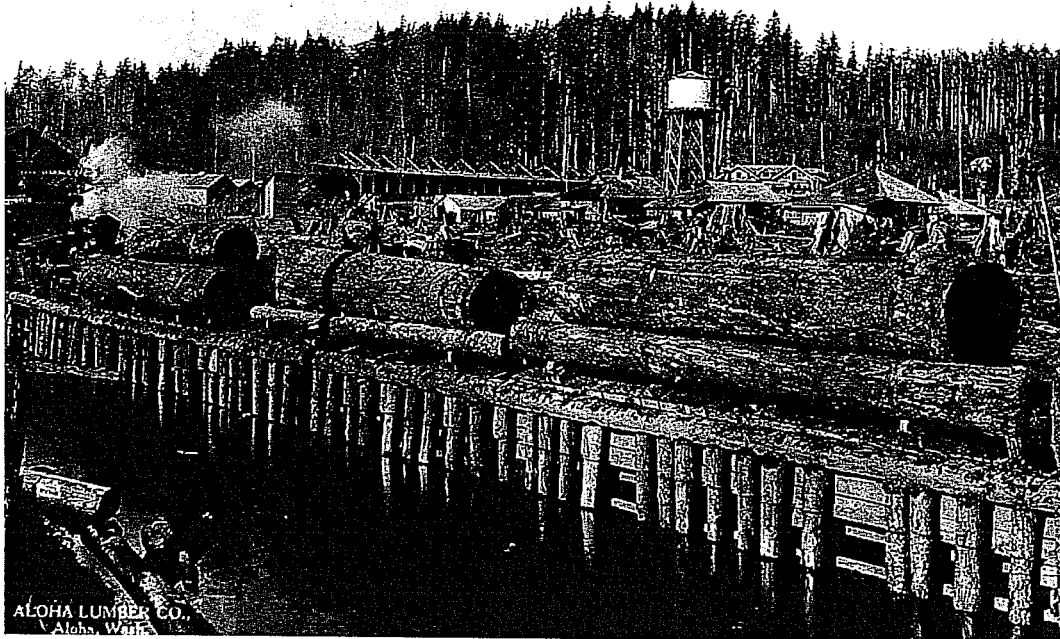


Figure 7: Logging operations from Aloha WA

To encourage railroads to extend their lines, the Federal government provided them with a means of raising capital through land sales. Rail companies were given every other section on either side of the tracks (Draffan 1998: 9). The Northern Pacific Railroad thus came into possession not only of forested lands, but also lands containing coal. The Northern Pacific wasted no time. Coal mining began in 1886. Rails were constructed to the towns of Cle Elum and Roslyn. Like cattle, coal was sent by rail to eastern markets. By the early twentieth century, coal production reached over one million tons each year. Coal mining crested in the 1920s. With oil effectively competing with

coal as a fuel source in the 1930s, coal mining began a decline. Its dying gasp in the Cle Elum-Roslyn area was heard in the 1960s. Slag piles found in these communities are a visible reminder of this history (WSDOT 2006: 3-183).



Figure 8: Swauk Creek Mining Town structure

In addition to coal production and active logging operations, the early twentieth century witnessed the construction of dams on Kachess Lake and Cle Elum Lake. These were part of Federal programs intended to increase agricultural productivity across the arid West. A reservoir was built at Lake Kachess in 1912. Cle Elum Lake was dammed in 1933. These provided precious water to downstream farms and orchards at places like Thorp, Ellensburg, and Kittitas.

Just as coal faded as an economic powerhouse in the area, logging is currently diminishing in importance. This places great stresses on once-thriving logging communities like Easton. It was born as a logging camp located at the confluence of four railway lines. Easton was the final stop for trains before they headed west over Snoqualmie Pass (WSDOT 2006: 3-182).

Major logging corporations like Plum Creek--a direct descendant of the Northern Pacific Railroad and its landholdings--recognize that the heyday of timber operations is past. While Plum Creek still harvests timber, increasing corporate energies are focused on selling unprofitable lands and/or transforming them into recreational and/or homesite properties. Perhaps the most dramatic sale and transformation of the forested landscape near the project areas is the resort development presently taking form on 7,400 acres along the lower Cle Elum River. When completed, it will host roughly 3,000 homes, condominiums, hotels, and golf courses (Tri-County Water Resource Agency 2000: 6-136-37).

Cultural sites found in this area reflect the diversity of fish and game that surely must have been present pre-contact, and are reflective of a rich ecological hotspot, as any river fed lake must be. Water flows, prior to damming were unimpeded to the Pacific Ocean, and allowed anadromous fish a direct avenue to enter their preferred upland spawning areas.

Native Americans were seasonally nomadic into this region, to acquire warm weather food resources like berries and salmon, in the relative cool of the mountains.

Vast trail systems would have led to Lake Kachess and the Easton area, from lower winter villages of the Kittitas and Yakima Valleys.

There are eight known cultural resources previously recorded within two linear miles of this project area.

Previously recorded archeological sites:

45KT913

This site (Luttrell, 1991) is located just above the Yakima River. It is the remains of a prehistoric campsite near Lake Easton. The site is potentially eligible to the national Register of Historic Places. The site is also located one mile SW of the Marian Meadows project area.

45KT1014

This site (DePuydt, 1994) is a large multi-component pre-contact fishing camp, and historic construction camp site along the former margins of Lake Kachess. The site is two miles NW of the Marion Meadow project area.

FS1470 and 1471

These sites (Hicks and Bishop, 1993) are lithic scatters located above the confluence of the Kachess river channel. The site is located two miles NW of the Marian Meadows project area.

45KT2195

This site (McKenney, 2002) is located in Lake Easton state park is a small scale lithic and historic material scatter that has been tested for eligibility to the National Register of Historic Places. However, it was found to lack enough context for inclusion in the National Register. This site is located two miles west of the Marian Meadows project area.

45KT2196

This site (Kohman and McKenney, 2002), located in Lake Easton state park is a large scale lithic scatter with diagnostic tools that has been tested and found eligible to the National Register of Historic Places. This site is located two miles west of the Marian Meadows project area.

45KT2197

This site (McKenney, 2002), located in Lake Easton state park is a medium scale lithic scatter that has been tested for eligibility to the National Register of Historic Places. However, it was found to lack enough context for inclusion in the National Register. This site is located two miles west of the Marian Meadows project area.

45KT2625

This site (Madden, 2005) consists of the remnants of an historic roadway. Given lack of continuity, the remnants of this road were found to be likely ineligible to the National register of Historic Places. It is located one mile west of the Marian Meadow project area.

Note: None of the archaeological sites within two miles will be impacted in any way by this project undertaking.

Physical survey methodology:

The survey methodology was determined by the project blueprints (see Figure 1), which outlined the most important sections on which to focus the subsurface evaluations. The property had also been surveyed and flagged in the field for construction.

RLR undertook a complete visual walkover assessment of the flatlands portion of the project area (Figure 9) that has been slated for development into the high density housing (Survey Area A). Most of the rest of the project area occurs on Easton Ridge with slopes from 15%- 60% grades and steeper in portions. Reiss Landreau surveyed an upper flat with sections slated for development (Survey Area B). Much of the rest of the project is on hazardous slopes and is not slated for development.

The transects were spaced at ten meters, and additional lines were systematically walked in the areas slated for subsurface construction in a more concerted attempt to discern surface features that may represent any archaeological remains.

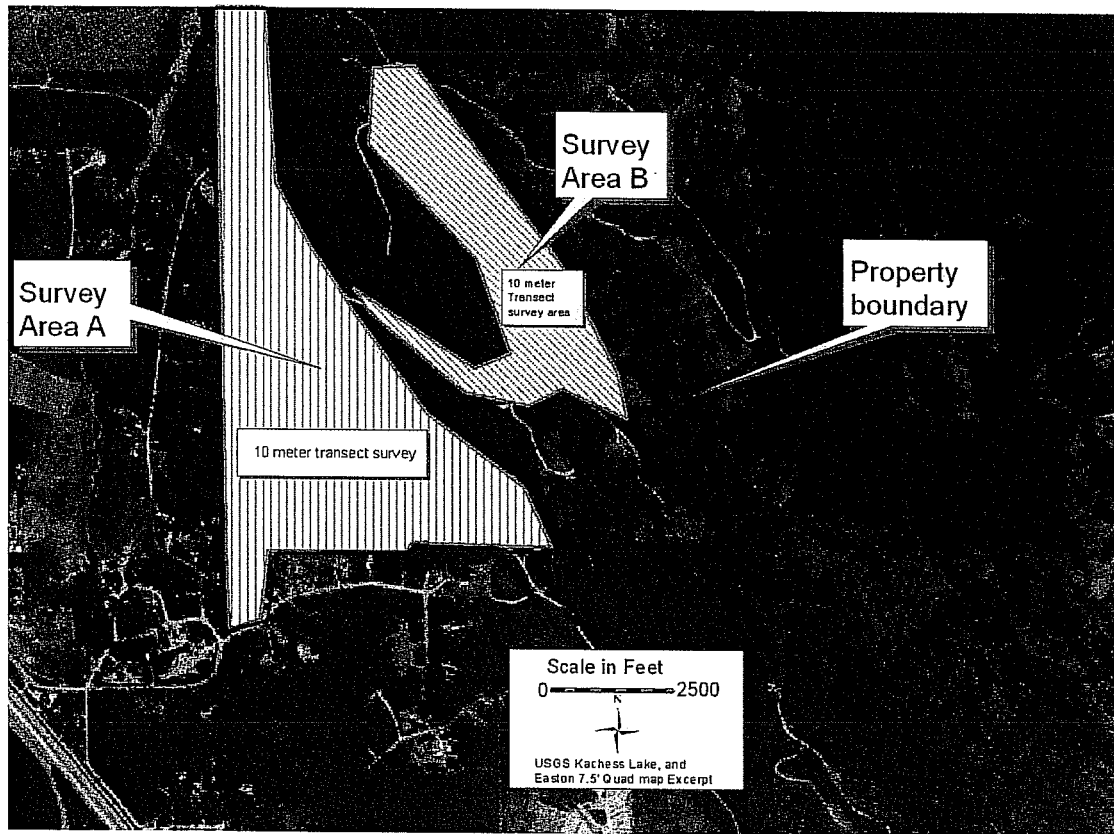


Figure 9: Walkover Transect survey

Survey Results

Visual reconnaissance:

The visual survey of the area was hindered at times by slash from the clear cut, and visibility throughout was at 10%-60% unless roads were utilized (Figure 10).

Some modern trash is evident throughout the project area, as well as two modern rock and gravel quarries. However no historic or prehistoric cultural materials, features artifacts or traces were identified within the Marian Meadows property. The site is away from water, and has been heavily wooded throughout the Holocene (Figure 11), like much of the surrounding North Cascades, and presents a much less likely locale for human use than the nearby glacial lakes, and the Yakima River.

There were no logical locations for subsurface excavations throughout this site. The results of the walkover survey throughout this project area were negative for cultural resources, sites and/or features. There were three identified small springs on the project area, and two tiny perennial drainages. However, no resources were identified in the sections surrounding them.



Figure 10: Typical road surface in project area

The visible soils in the area were silty loams with excessive crumbling basalts, and subangular colluviums or residual glacial outflow cobbles.



Figure 11: A view of the principal development flat facing west from Easton Ridge. Note: the treeline in background is the project boundary

Project Recommendations:

Without archaeological discovery of any sort, RLR recommends that this project proceed. However this report does not in any way signal completion of the 106 process, as Tribal and SHPO concurrence are required.

We also recommend that at any time during the project when a monitor is not present, should human or unknown bone(s) be uncovered, a professional archaeologist should be called, and work should stop until the material is evaluated. Thus, RLR strongly recommends the following measures be enacted upon inadvertent discovery:

1. The Appropriate authorities such as the county sheriff and coroner will be contacted immediately as is required by law when human remains are discovered.
2. The State of Washington DAHP and local tribal groups, if the burials are deemed Native American, will be called for consultation.

3. Arrangements should be made as quickly as possible to identify the effected area, so that work can continue in other areas of the course. It is anticipated that delays will only impinge on the areas agreed to by the consulting parties.

4. Should human remains be located, decisions about protection and/or evaluation should be made with the appropriate authorities. This procedure should be enough to allow for minimal project delays. However, if human remains are located, contingencies, such as an alteration in course design may be necessary.

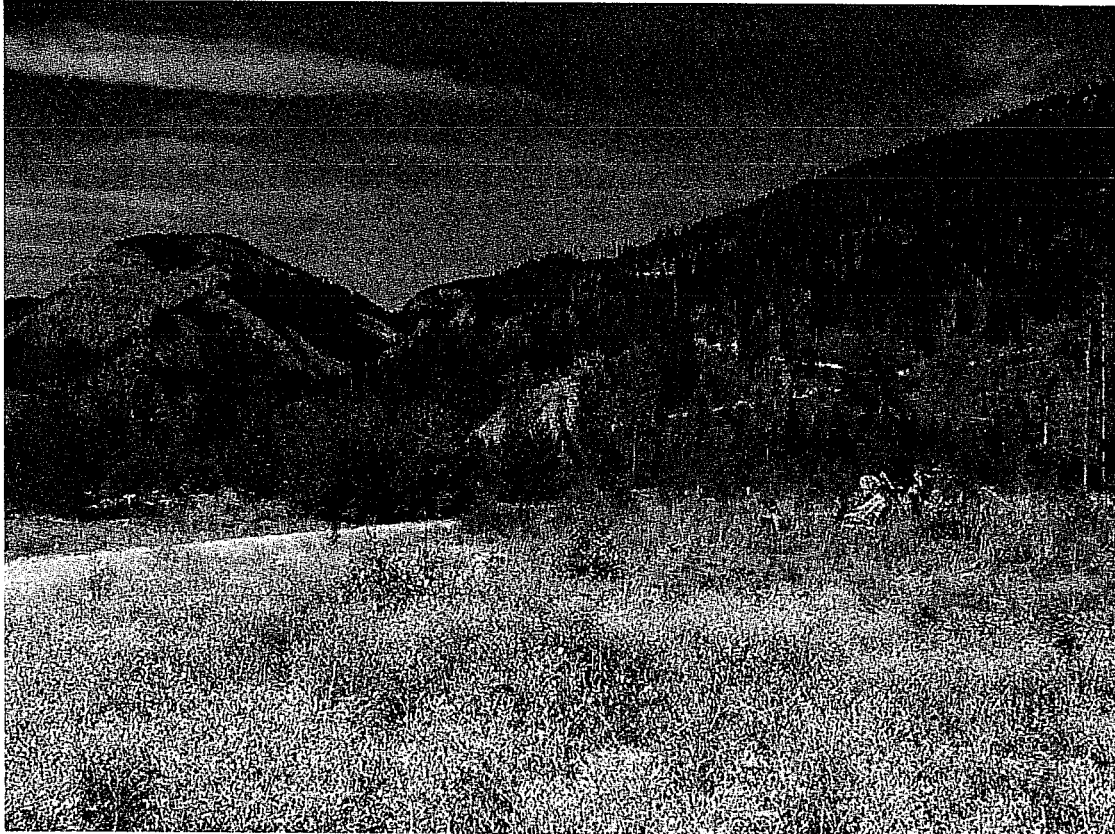


Figure 12: Lower flat with a view toward Easton ridge, facing NW

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Marian Meadows Planned Unit Development
Kittitas County, Washington

Traffic Impact Study

December 2006

Prepared for:

Easton Ridge Land Company
103 S. 2nd
P.O. Box 687
Roslyn, WA 98941

Prepared by:



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FINDINGS & CONCLUSIONS

Project Description. The initial plat of the proposed Marian Meadows Planned Unit Development (PUD) includes up to 226 single-family homes. The approximately 560 acre site is located on the north side of Sparks Road and east of Country Drive in Easton, WA. Project completion is expected by year 2011.

Trip Generation. The completed project is estimated to generate approximately 2,200 new weekday daily trips, with 168 trips occurring during the weekday a.m. peak hour and 223 trips during the weekday p.m. peak hour.

Intersection Operational Analysis. All movements at the four unsignalized study intersections are expected to operate at level of service (LOS) B or better in 2011 with or without the proposed project during both the a.m. and p.m. peak hours.

Vehicular Access. The primary access to the site is proposed via a paved county road which intersects with Sparks Road. A secondary access would also be provided via the extension of Country Drive. The proposed access onto Sparks road would be controlled with a stop sign for vehicles exiting the site. In 2011, all movements at the proposed Sparks Road access are expected to operate at LOS A during both the a.m. and p.m. peak hours. The need for a left-turn lane on Sparks Road at the proposed access and an acceleration lane from the development onto Sparks Road were assessed and were determined to not be needed.

Mitigation. The County's currently adopted LOS standard is LOS C. In 2011 with or without the proposed development, all study intersections are expected to operate at LOS B or better during the weekday a.m. and p.m. peak hours which is better than the County's LOS standard. Therefore, no mitigation is proposed at the study intersections.



INTRODUCTION

The initial plat of the proposed Marian Meadows PUD includes up to 226 single-family homes. The approximately 560 acre site is located on the north side of Sparks Road and east of Country Drive in Easton, WA (see **Figure 1**). Vehicular access to the site is proposed onto Sparks Road and Country Drive. Project buildout is anticipated by year 2011. A preliminary site plan for the development of the initial plat is shown in **Figure 2**.

Analysis Approach

To analyze potential traffic impacts from the Marian Meadows PUD, the following tasks were completed:

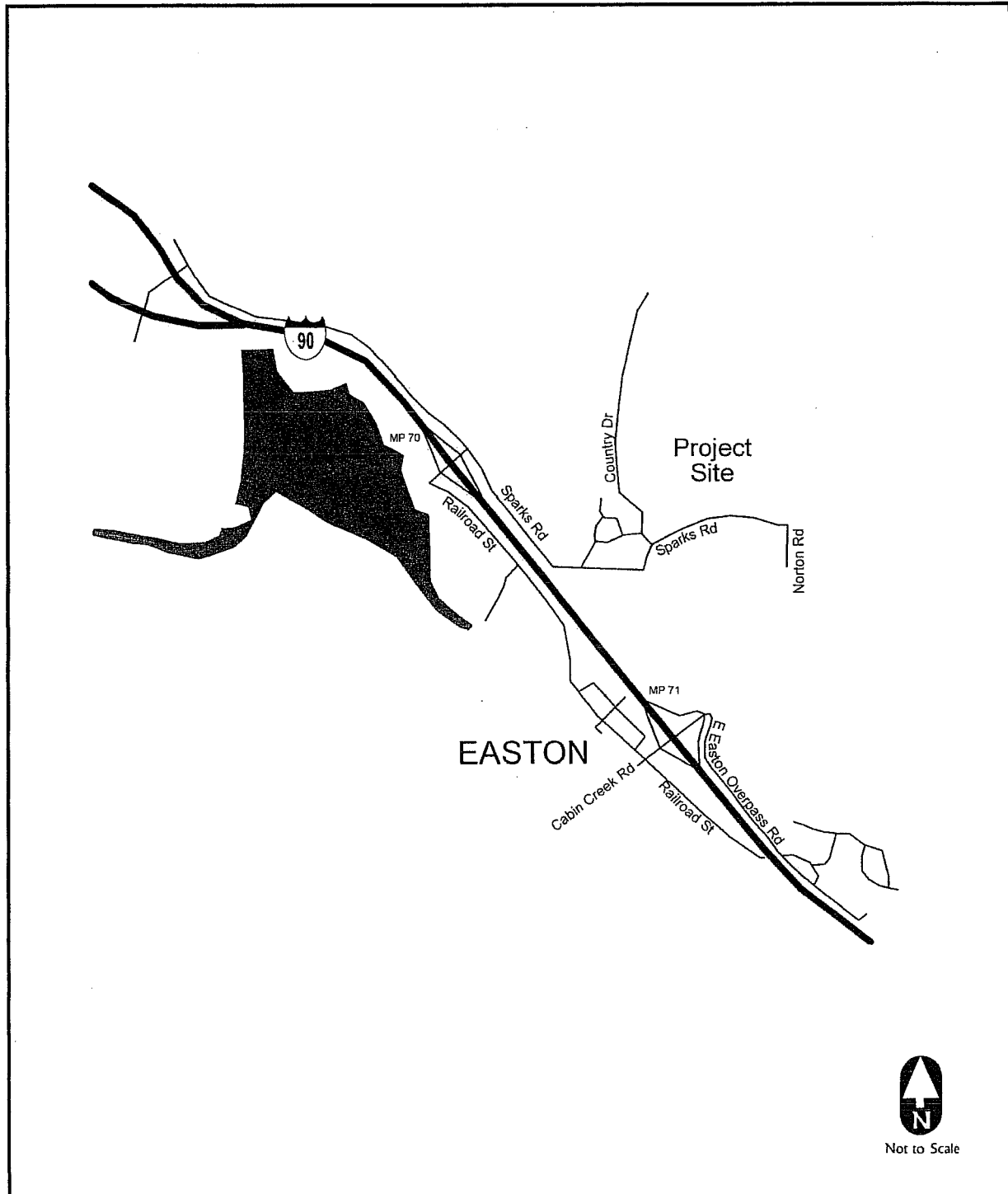
- Assessed existing conditions through field reconnaissance and reviewed existing planning documents.
- Documented existing roadway conditions in the project vicinity.
- Analyzed existing a.m. and p.m. peak hour LOS at four study intersections.
- Estimated the net new weekday daily, a.m. and p.m. peak hour trips generated by the Marian Meadows PUD.
- Assigned project-generated a.m. and p.m. peak hour trips to the existing street network.
- Analyzed year 2011 a.m. and p.m. peak hour operations at the following study intersections:
 - Railroad Street/I-90 eastbound ramps
 - Railroad Street/I-90 westbound ramps
 - Railroad Street/Sparks Road
 - Country Drive/Sparks Road
- Assessed operations at the proposed access on Sparks Road including LOS and queuing.
- Identified mitigation to Kittitas County.




Primary Data and Information Sources

- Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 7th Edition, 2003.
- All Traffic Data October 2006 traffic counts.
- *Highway Capacity Manual, Special Report 209*, Transportation Research Board, Updated 2000.
- Washington State Department of Transportation (WSDOT) *Design Manual*, May 2006.

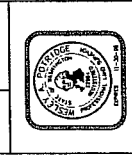




 <p>Transportation Engineering NorthWest</p>	<p>Figure 1 Project Vicinity</p>	<p>Marian Meadows Easton, Washington</p> <p>12/5/06</p>
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NO.	REVISIONS	BY	DATE

MARTAN MEADOWS
PRELIMINARY PLAN
SEC. 1 & 12, TWP. 20 N., RNG 13 E., W.M.
KITTITAS COUNTY, WASHINGTON
PHASING AND TOTAL SITE PLAN



FILE NO.	DATE
DRAWN	DATE
WAP	DATE
DESIGNED	DATE
PROJECT ENGINEER	DATE
PROJECT MANAGER	DATE

SCALE	FILE NAME
HORIZ. 1" = 300'	MPLAN-RESID-000
	PROJECT NO.
	08-08-2014
	SHEET NO.
	P1

SECTION 1 AND 12, T. 20 N., R. 13 E., W.M.

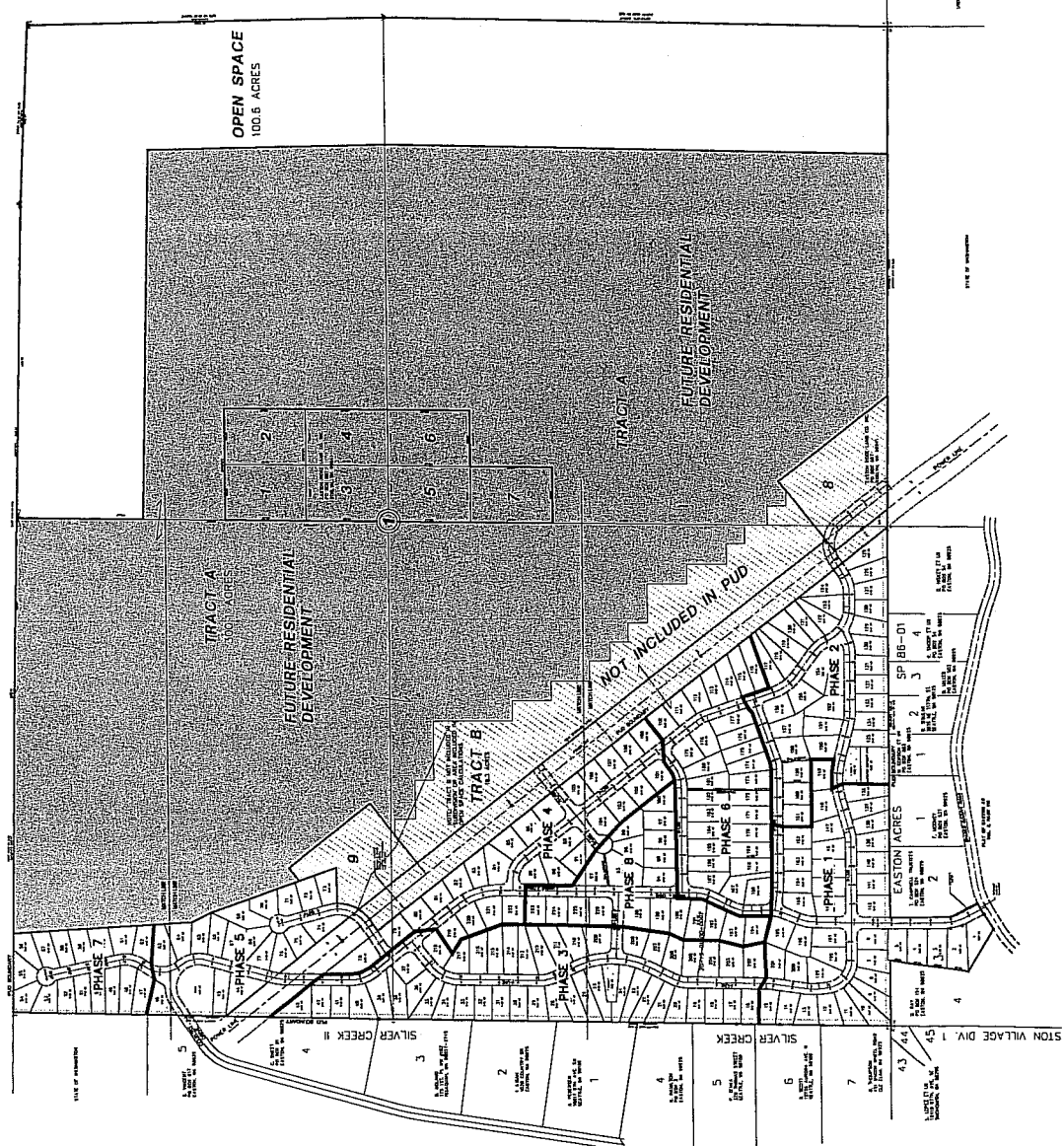


Figure 2: Preliminary Site Plan

EXISTING CONDITIONS

Roadway Network

The primary roadways serving the Marian Meadows PUD include Railroad Street, Sparks Road, and Country Drive (see **Figure 1**).

Railroad Street is a County maintained two-lane road with a posted speed limit of 35 mph. Railroad Street provides access to the town of Easton. The average daily traffic (ADT) on Railroad Street in the vicinity of the I-90 ramps is 480 vehicles (per 2005 traffic count).

Sparks Road is a County maintained two-lane primarily east-west road with a posted speed limit of 35 mph. Sparks Road provided access to/from the site to the I-90 eastbound and westbound on/off ramps. In the immediate project vicinity, the ADT on Sparks road is 250 vehicles (per 2005 traffic count).

Country Drive is a publicly dedicated, privately maintained two-lane primarily north-south road with a posted speed limit of 15 mph.

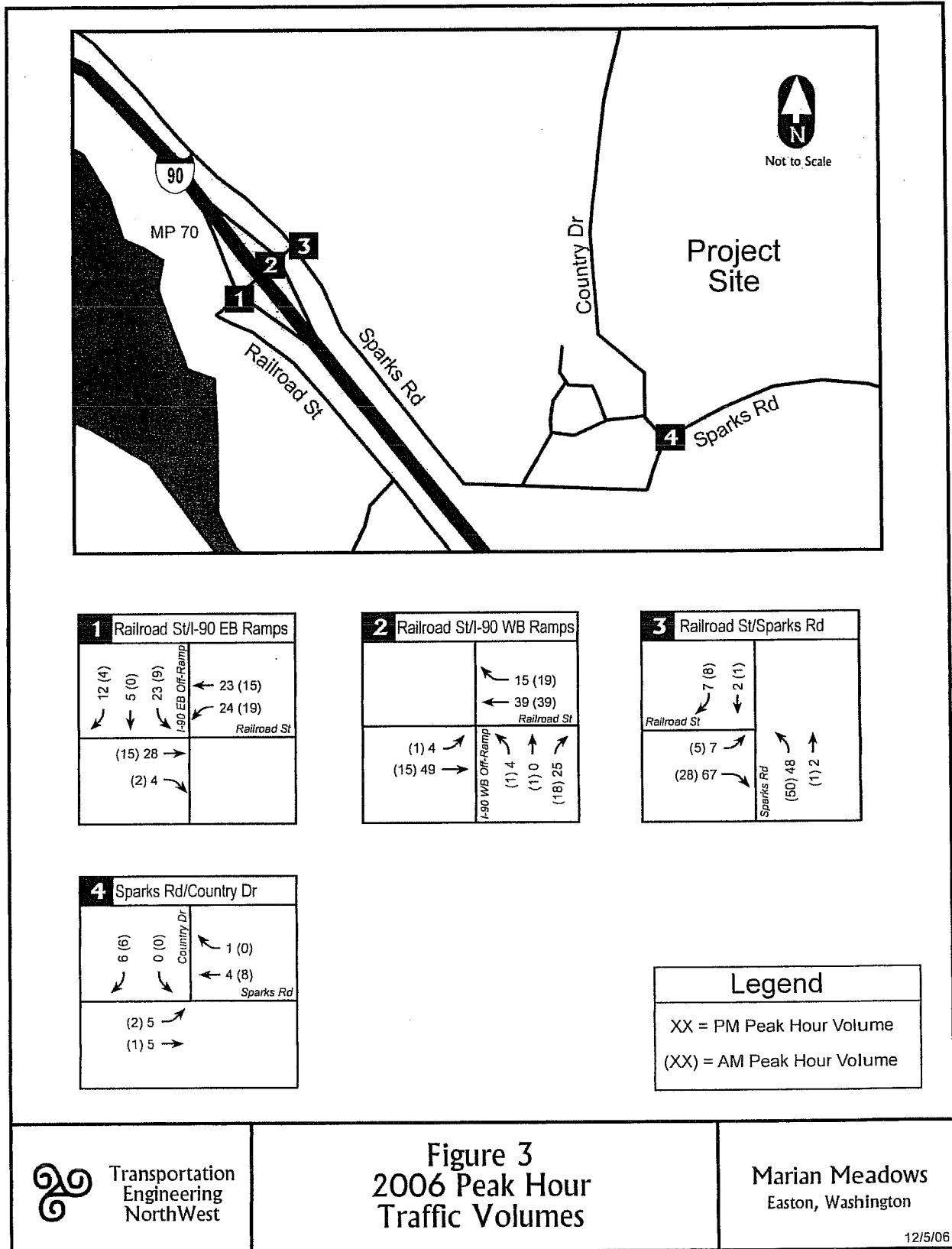
Existing Traffic Volumes

Weekday a.m. and p.m. peak hour traffic counts were collected on October 26, 2006 at the four study intersections. Study intersections were determined based on the anticipated distribution of project traffic and discussions with Kittitas County staff. The study intersections analyzed in this study are as follows:

1. Railroad Street/I-90 eastbound ramps (stop-controlled)
2. Railroad Street/I-90 westbound ramps (stop-controlled)
3. Railroad Street/Sparks Road (stop-controlled)
4. Country Drive/Sparks Road (stop-controlled)

Figure 3 shows the existing weekday a.m. and p.m. peak hour traffic volumes at the study intersections.





Existing Levels of Service

Existing weekday a.m. and p.m. peak hour level of service (LOS) analyses were conducted at the four study intersections. LOS serves as an indicator of the quality of traffic flow and degree of congestion at an intersection or roadway segment. It is a measure of vehicle operating speed, travel time, travel delays, and driving comfort. The LOS grading ranges from A to F.

Table 1 summarizes the delay range for each LOS at unsignalized intersections. The methods used to calculate the levels of service are described in the *Highway Capacity Manual* (Special Report 209, Transportation Research Board, 2000).

Level of Service	Delay Range (sec)
A	≤ 10
B	> 10 to ≤ 15
C	> 15 to ≤ 25
D	> 25 to ≤ 35
E	> 35 to ≤ 50
F	> 50

Source: "Highway Capacity Manual", Special Report 209, TRB, 2000

The LOS reported at two-way stop-controlled intersections is based on the average control delay (sec/veh) and is reported for each movement. Therefore, the reported LOS at two-way stop controlled intersections does not represent a measure of the overall operations of the intersection.

The existing a.m. and p.m. peak hour LOS results at the study intersections are summarized in **Table 2**. Level of service worksheets are included in **Appendix A**.



Table 2			
Existing AM and PM Peak Hour LOS Summary			
Intersection	LOS¹	Delay (sec)¹	V/C Ratio²
AM Peak Hour			
1. Railroad Street/I-90 eastbound ramps			
Southbound Left-Thru-Right (I-90 off ramp)	A	9.3	0.02
Westbound Thru-Left (Railroad St)	A	7.4	0.02
2. Railroad Street/I-90 westbound ramps			
Northbound Left-Thru-Right (I-90 off ramp)	A	8.7	0.03
Eastbound Thru-Left (Railroad St)	A	7.5	0.00
3. Railroad Street/Sparks Road			
Northbound Left-Thru (Sparks Road)	A	9.2	0.07
Southbound Thru-Right (Sparks Road)	A	8.6	0.02
4. Country Drive/Sparks Road			
Southbound Left-Right (Country Drive)	A	8.6	0.01
Eastbound Thru-Left (Sparks Road)	A	7.5	0.00
PM Peak Hour			
1. Railroad Street/I-90 eastbound ramps			
Southbound Left-Thru-Right (I-90 off ramp)	A	9.5	0.06
Westbound Thru-Left (Railroad St)	A	7.4	0.02
2. Railroad Street/I-90 westbound ramps			
Northbound Left-Thru-Right (I-90 off ramp)	A	8.8	0.03
Eastbound Thru-Left (Railroad St)	A	7.5	0.00
3. Railroad Street/Sparks Road			
Northbound Left-Thru (Sparks Road)	A	9.2	0.06
Southbound Thru-Right (Sparks Road)	A	8.6	0.01
4. Country Drive/Sparks Road			
Southbound Left-Right (Country Drive)	A	8.3	0.01
Eastbound Thru-Left (Sparks Road)	A	7.2	0.00
Notes:			
1. The level of service (LOS) and delay at stop-controlled intersections is reported for each movement.			
2. V/C= Volume to Capacity ratio.			



DETERMINATION OF TRAFFIC IMPACTS

Trip Generation

The vehicular trip generation estimate for the proposed Marian Meadows PUD was based on trip equations published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual* 7th Edition for Land Use Code (LUC) 210, Single-Family Detached Housing. The weekday daily, a.m., and p.m. peak hour trip generation associated with the proposed Marian Meadows PUD is shown in **Table 3**.

Land Use	Units ¹	ITE LUC ²	Directional Distribution		Trips Generated		
			In	Out	In	Out	Total
Weekday Daily							
Single-Family Residential	226 DU	210	50%	50%	1,100	1,100	2,200
Weekday AM Peak Hour							
Single-Family Residential	226 DU	210	25%	75%	42	126	168
Weekday PM Peak Hour							
Single-Family Residential	226 DU	210	63%	37%	140	83	223
Notes:							
1. DU = Dwelling Units.							
2. Institute of Transportation Engineers, Trip Generation Manual, 7th edition Land Use Code.							

As shown in **Table 3**, the Marian Meadows PUD is estimated to generate approximately 2,200 weekday daily vehicle trips, with 168 trips occurring during the weekday a.m. peak hour and 223 trips during the weekday p.m. peak hour. The Housing Element of the Kittitas County Comprehensive Plan identifies Easton as a community where the majority of housing units are seasonal or recreational. Thus, it is likely that a majority of the proposed units in the Marian Meadows PUD will also be seasonal or recreational. Recreation homes may not generate as much weekday peak hour traffic as homes in typical suburban areas of cities, which is what the ITE data is based on. Therefore, this trip generation likely represents a conservative high estimate.



Trip Distribution and Assignment

The weekday a.m. and p.m. peak-hour project trips generated from the proposed Marian Meadows PUD were distributed onto the existing street network based on existing travel patterns in the area. This trip distribution was approved by the County on November 26, 2006. The following trip distribution was used:

- 35% to/from I-90 eastbound
- 30% to/from I-90 westbound
- 35% to/from town of Easton (via Railroad Street)

Based on the layout of the proposed lots and internal roads as shown in **Figure 2**, 90% of the site trips were estimated to use the Sparks Road access and the remaining 10% of the site trips were estimated to use the Country Drive access. The assignment of the weekday a.m. and p.m. peak hour project trips from the Marian Meadows PUD at the study intersections is shown in **Figure 4**.

Future Traffic Volumes

Future year 2011 baseline traffic volumes without the proposed project were estimated based on existing traffic volumes with a 1.43 percent annual growth rate applied. The annual growth rate of 1.43 percent used to estimate growth in background traffic was provided by Kittitas County staff. The resulting 2011 baseline traffic volumes at the four study intersections are shown in **Figure 5**.

Future year 2011 traffic volumes with the Marian Meadows PUD were estimated by adding the project trips (**Figure 4**) to the 2011 baseline traffic volumes (**Figure 5**). **Figure 6** shows the estimated year 2011 a.m. and p.m. peak hour traffic volumes with the Marian Meadows PUD.

Future Levels of Service

Future year 2011 levels of service (LOS) were analyzed with and without the Marian Meadows PUD. The 2011 a.m. and p.m. peak hour LOS analysis results for the study intersections are summarized in **Table 4**. Detailed LOS summary worksheets are provided in **Appendix A**.



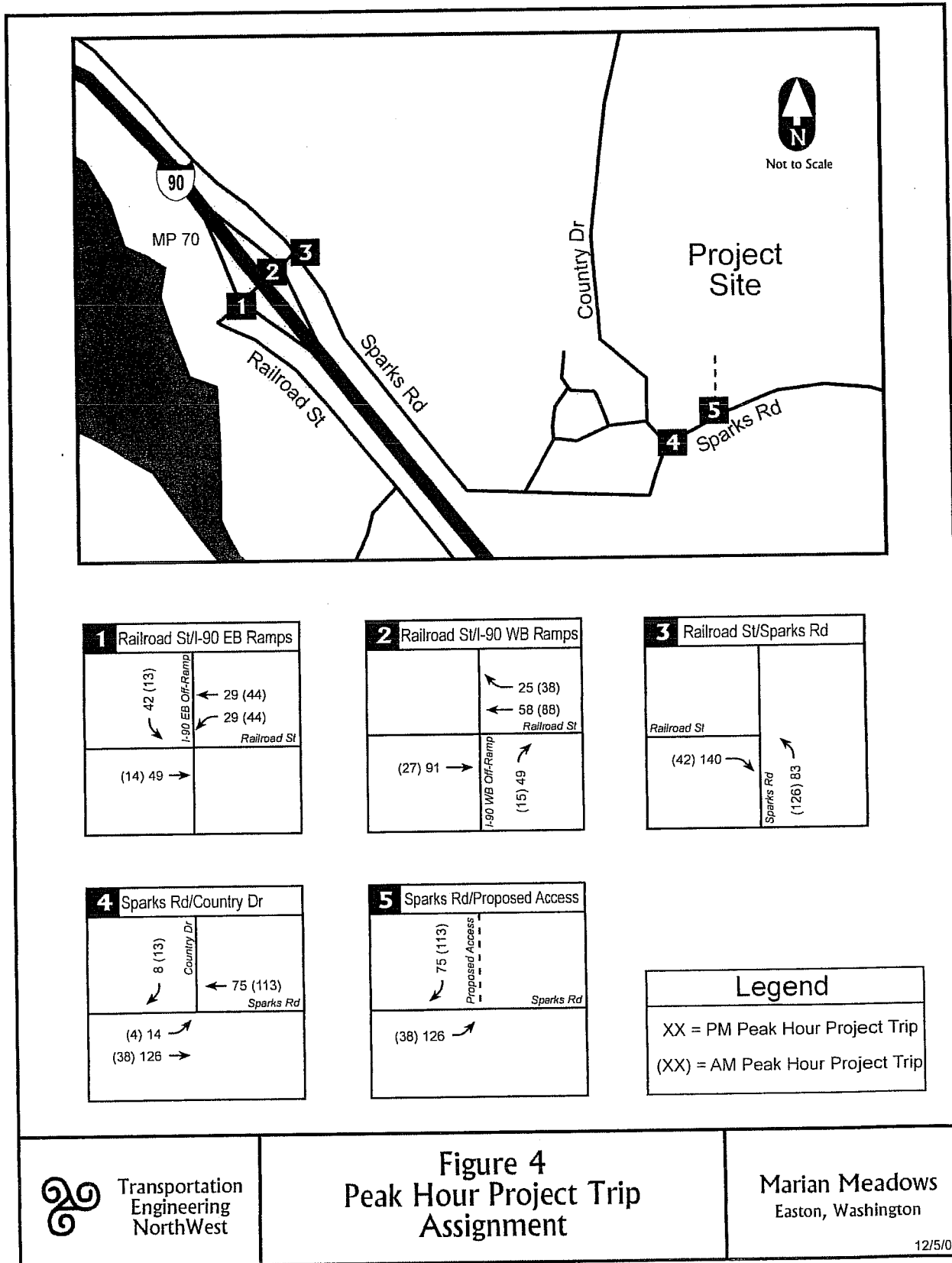
**Table 4
Marian Meadows PUD
Future Year 2011 Peak Hour LOS Summary**

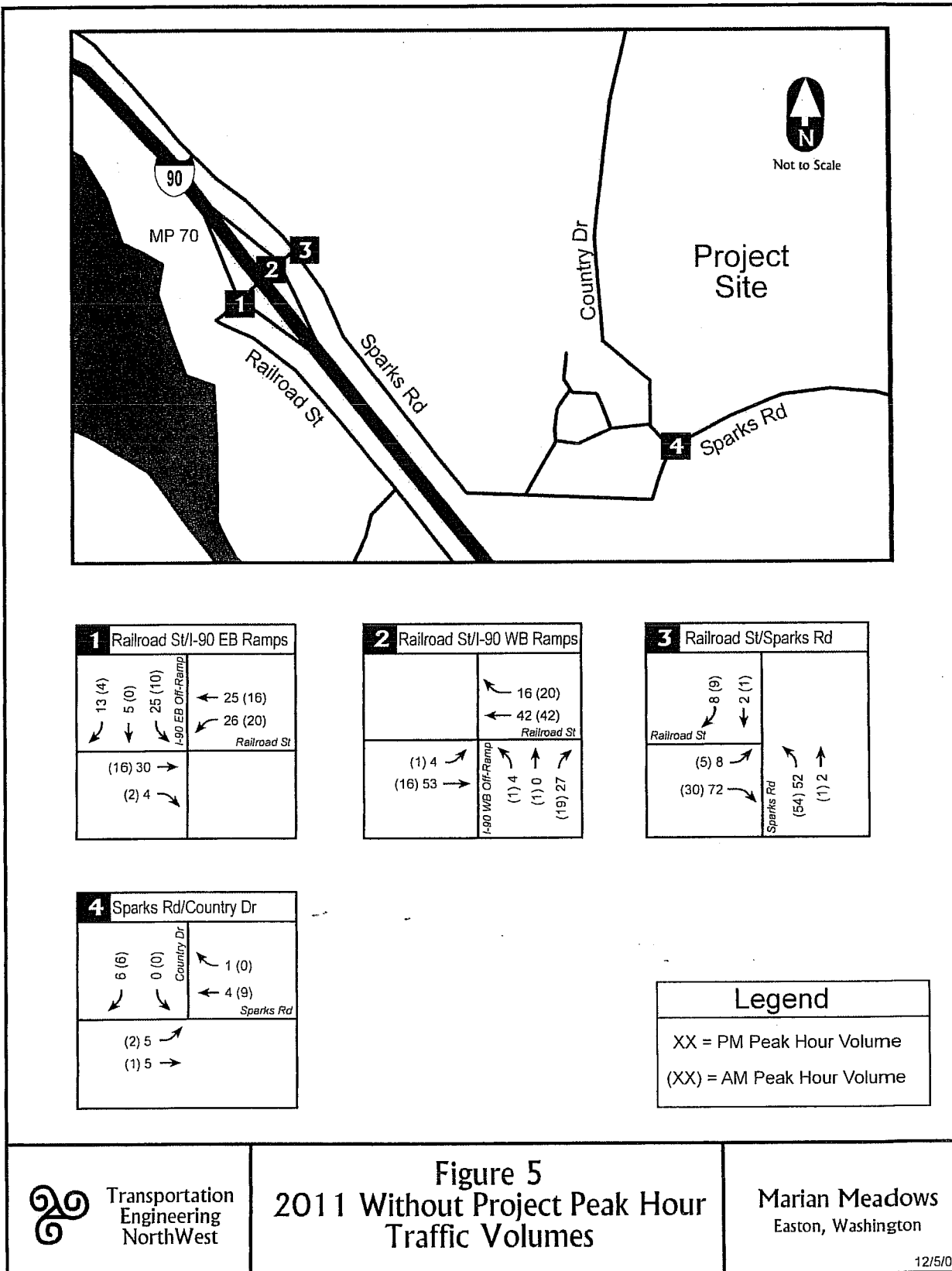
Intersection	2011 Without Project			2011 With Project		
	LOS ¹	Delay (sec) ¹	V/C Ratio ²	LOS ¹	Delay (sec) ¹	V/C Ratio ²
AM Peak Hour						
1. Railroad Street/I-90 eastbound ramps						
Southbound Lt-Thru-Rt (I-90 off ramp)	A	9.4	0.02	B	12.2	0.06
Westbound Thru-Left (Railroad St)	A	7.4	0.03	A	7.6	0.08
2. Railroad Street/I-90 westbound ramps						
Northbound Lt-Thru-Rt (I-90 off ramp)	A	8.7	0.03	A	9.1	0.05
Eastbound Thru-Left (Railroad St)	A	7.5	0.00	A	7.9	0.00
3. Railroad Street/Sparks Road						
Northbound Left-Thru (Sparks Road)	A	9.3	0.07	B	10.5	0.26
Southbound Thru-Right (Sparks Road)	A	8.6	0.02	A	8.6	0.02
4. Country Drive/Sparks Road						
Southbound Left-Right (Country Drive)	A	8.6	0.01	A	9.9	0.03
Eastbound Thru-Left (Sparks Road)	A	7.5	0.00	A	8.1	0.01
PM Peak Hour						
1. Railroad Street/I-90 eastbound ramps						
Southbound Lt-Thru-Rt (I-90 off ramp)	A	9.6	0.07	B	12.1	0.19
Westbound Thru-Left (Railroad St)	A	7.4	0.02	A	7.7	0.05
2. Railroad Street/I-90 westbound ramps						
Northbound Lt-Thru-Rt (I-90 off ramp)	A	8.8	0.03	A	9.6	0.10
Eastbound Thru-Left (Railroad St)	A	7.5	0.00	A	7.8	0.00
3. Railroad Street/Sparks Road						
Northbound Left-Thru (Sparks Road)	A	9.3	0.07	B	10.6	0.20
Southbound Thru-Right (Sparks Road)	A	8.6	0.02	A	8.7	0.02
4. Country Drive/Sparks Road						
Southbound Left-Right (Country Drive)	A	8.3	0.01	A	8.9	0.02
Eastbound Thru-Left (Sparks Road)	A	7.2	0.01	A	7.5	0.02
Notes:						
1. The level of service (LOS) and delay at stop-controlled intersections is reported for each movement.						
2. V/C= Volume to Capacity ratio.						



As shown in **Table 4**, all movements at the four stop controlled study intersections are expected to operate at level of service (LOS) B or better in 2011 with or without the proposed project.





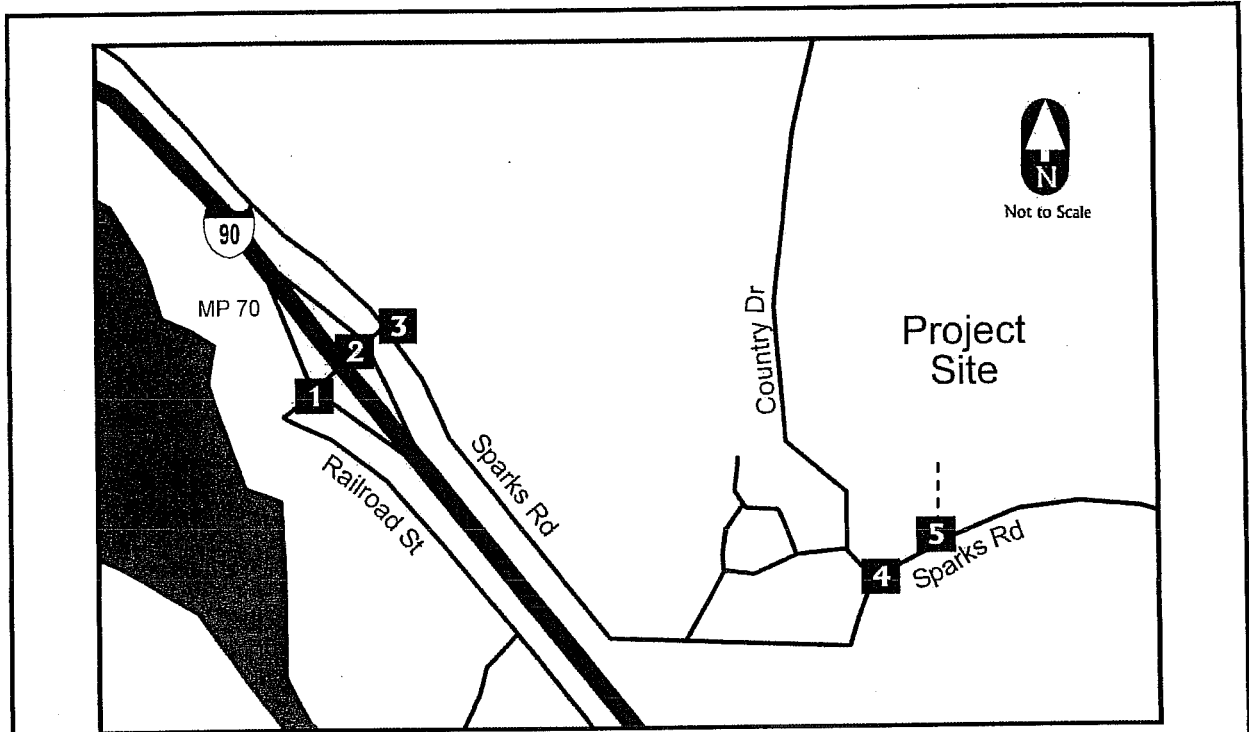


Transportation Engineering NorthWest

Figure 5
 2011 Without Project Peak Hour Traffic Volumes

Marian Meadows
 Easton, Washington

12/5/06



1 Railroad St/I-90 EB Ramps	
13 (4) ↓ 5 (0) ↓ 67 (23) ↓ I-90 EB Off-Ramp	← 54 (60) ← 55 (64) Railroad St
(30) 79 → (2) 4 →	

2 Railroad St/I-90 WB Ramps	
	↗ 45 (58) ← 100 (130) Railroad St
(1) 4 ↗ (43) 144 →	I-90 WB Off-Ramp (1) 4 ↗ (1) 0 ↑ (34) 76 ↗

3 Railroad St/Sparks Rd	
↘ 8 (9) ↓ 2 (1) Railroad St	
(5) 8 ↗ (72) 212 ↗	Sparks Rd (180) 135 ↗ (1) 2 ↑

4 Sparks Rd/Country Dr	
14 (19) ↘ 0 (0) ↘ Country Dr	↗ 1 (0) ← 79 (122) Sparks Rd
(6) 19 ↗ (39) 131 →	

5 Sparks Rd/Proposed Access	
75 (113) ↘ 0 (0) ↘ Proposed Access	↗ 0 (0) ← 5 (9) Sparks Rd
(38) 126 ↗ (1) 5 →	

Legend
XX = PM Peak Hour Volume
(XX) = AM Peak Hour Volume

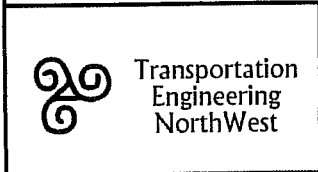


Figure 6
2011 With Project Peak Hour
Traffic Volumes

Marian Meadows
 Easton, Washington

12/5/06