
CAMP RILEA

Joint Land Use Study

prepared for:



Clatsop County

800 Exchange Street, Suite 100
Astoria, Oregon 97103

in association with:

- | | |
|--|---|
| ■ Camp Rilea | ■ Oregon Dept. of Fish and Wildlife |
| ■ City of Warrenton | ■ Oregon Dept. of Forestry |
| ■ Confederated Tribes of Grand Ronde | ■ Oregon Dept. of Land Conservation and Development |
| ■ Confederated Tribes of Siletz Indians | ■ Oregon Dept. of Transportation |
| ■ Long Lake Estates HOA | ■ Oregon Military Department |
| ■ National Park Service,
Lewis & Clark National Historical Park | ■ Oregon State Parks |
| ■ North Coast Land Conservancy | ■ U.S. Coast Guard |
| ■ Oregon Dept. of Environmental Quality | ■ Warrenton Trails Association |

prepared by:



FINAL
June 2012

This study was prepared under contract with Clatsop County, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of Clatsop County and does not necessarily reflect the views of the Office of Economic Adjustment.



Acknowledgments

POLICY COMMITTEE

The Policy Committee played an active and important role in the development of the Camp Rilea JLUS. Clatsop County would like to thank the following individuals for their support and professional advice:

-
- | | |
|---|---|
| ▪ Dick Hellberg
<i>City of Warrenton</i> | ▪ Jim Scheller
<i>Warrenton Trails Association</i> |
| ▪ Stan Hutchison
<i>Oregon Military Department</i> | ▪ Matt Spangler
<i>Oregon Department of Land Conservation and Development</i> |
| ▪ Mark Kujala
<i>City of Warrenton</i> | ▪ Mike Stein
<i>Oregon State Parks</i> |
| ▪ Larry McKinley
<i>Oregon Department of Transportation</i> | ▪ Robert Striklin
<i>Clatsop County Planning Commission</i> |
| ▪ Jim Miller
<i>Camp Rilea</i> | ▪ David Szymanski
<i>Lewis & Clark National Historical Park</i> |
| ▪ David Neys
<i>Oregon Department of Transportation</i> | ▪ Katie Voelke
<i>North Coast Land Conservancy</i> |
| ▪ Patricia Roberts
<i>Clatsop County Board of Commissioners</i> | ▪ Ed Wegner
<i>Clatsop County</i> |
| ▪ Tom Savage
<i>Department of Forestry</i> | |
-

TECHNICAL ADVISORY COMMITTEE

The Technical Advisory Committee played an active and important role in the development of the Camp Rilea JLUS. Clatsop County would like to thank the following individuals for their support and professional advice:

-
- | | |
|---|--|
| ▪ Ron Ash
<i>Clatsop County</i> | ▪ Robert Kentta
<i>Confederated Tribes of Siletz Indians</i> |
| ▪ Lyle Christensen
<i>Department of Environmental Quality,
Northwest Region</i> | ▪ Ken Klee
<i>Camp Rilea</i> |
| ▪ Carla Cole
<i>National Parks Service</i> | ▪ Joanne Manson
<i>Oregon Military Department</i> |
| ▪ Celeste Coulter
<i>North Coast Land Conservancy</i> | ▪ Steve Meshke
<i>Clatsop County</i> |
| ▪ Gerald Elliott
<i>Oregon Military Department</i> | ▪ David Nuzum
<i>Oregon Department of Fish and Wildlife</i> |
| ▪ Gene Foster
<i>Department of Environmental Quality,
Watershed Management</i> | ▪ Don Snyder
<i>City of Warrenton</i> |
| ▪ Larry Galizio
<i>Long Lake Estates</i> | ▪ Eirik Thorsgard
<i>Confederated Tribes of Grand Ronde</i> |
| ▪ CPT Sung Yoon Ji
<i>Camp Rilea</i> | ▪ Bill Vagt
<i>Oregon Military Department</i> |
| ▪ Bill Johnston, AICP
<i>Oregon Department of Transportation, R2 Area 1</i> | ▪ Hiller West
<i>Clatsop County</i> |
| | ▪ Jon Wickersham
<i>North Coast Land Conservancy</i> |
-

COUNTY STAFF

The Camp Rilea JLUS program is managed by the Clatsop County Community Development Department. The staff members listed on the right were key to guiding and managing the development of this study.

-
- | |
|--|
| ▪ Ed Wegner
<i>Clatsop County Public Works Director</i> |
| ▪ Hiller West
<i>Clatsop County Community Development
Director</i> |
| ▪ Andrea Neys
<i>Staff Assistant, Clatsop County</i> |
-

PUBLIC INPUT

Clatsop County would like to thank all the citizens who gave their time in assisting in the development of the JLUS by participating in the JLUS workshops and corresponding with members of the Policy Committee or Technical Advisory Committee members.

JLUS CONSULTANTS



- Richard Rust, AICP
- Celeste Werner, AICP
- Michael Hrapla
- Jeff Clonts
- Brenden Cox
- Cathy Lloyd
- Michele Parlett
- Jeanette Studley



Please see the next page.



Table of Contents

Acronyms	v
Glossary	ix
Chapter 1, Introduction	1-1
1.1 What is a Joint Land Use Study?	1-2
1.2 Why Prepare a Joint Land Use Study?	1-2
1.3 Public Outreach	1-5
1.4 JLUS Study Area	1-8
1.5 JLUS Process Timeline / Overview	1-8
1.6 JLUS Implementation	1-8
1.7 JLUS Organization	1-10
Chapter 2, Study Area Profile	2-1
2.1 Camp Rilea Armed Forces Training Center	2-1
2.2 County and City Profiles	2-9
2.3 Study Area Growth Trends	2-10
2.4 Current Development Overview within the Study Area	2-13
Chapter 3, Existing Plans and Programs	3-1
3.1 Federal Plans and Programs	3-3
3.2 Oregon National Guard / Camp Rilea Plans and Programs	3-7
3.3 State of Oregon Departments	3-8
3.4 State of Oregon Plans and Programs	3-9

3.5	Clatsop County Plans and Programs	3-19
3.6	City of Warrenton Plans and Programs	3-22
3.7	Other References	3-25
Chapter 4, Compatibility.....		4-1
4.1	Communications	4-15
4.2	Land Use	4-25
4.3	Safety	4-55
4.4	Vertical Obstructions	4-63
4.5	Frequency Interference / Impedance.....	4-73
4.6	Infrastructure	4-77
4.7	Noise and Vibration.....	4-83
4.8	Dust / Smoke	4-101
4.9	Light and Glare	4-105
4.10	Alternative Energy Development.....	4-113
4.11	Cultural / Historic Sites	4-119
4.12	Water Supply and Quality	4-125
4.13	Biological Resources	4-141
4.14	Marine Environments	4-151

Figures

Figure 1-1	Camp Rilea Location Map	1-4
Figure 1-2	Camp Rilea Joint Land Use Study Area	1-9
Figure 2-1	Camp Rilea Organizational Chart.....	2-3
Figure 2-2	Camp Rilea Facilities and Surrounding Environs.....	2-5
Figure 2-3	Forecasted Populations in Northwest Oregon Counties, 2000-2040.....	2-11
Figure 2-4	Comparative of Housing Prices throughout Clatsop County.....	2-12
Figure 2-5	Price Range and Number of Homes Sold in Warrenton from 2010 to 2011	2-13
Figure 2-6	Unemployment Rates in Northwest Oregon.....	2-15
Figure 2-7	Forecasted Employment by Sector in Oregon.....	2-16
Figure 2-8	Regional Facilities	2-18
Figure 4.0-1	Clatsop Plains and Warrenton CRIAs.....	4-7
Figure 4.0-2	Land Use, Noise, Coastal & Camp Rilea CRIAs	4-8
Figure 4.0-3	Vertical Marine Protection and Vertical / Frequency CRIAs	4-10

Figure 4.1-1	Clatsop County Tsunami Hazard / Evacuation	4-20
Figure 4.2-1	Undeveloped Parcels within ½ Mile of Camp Rilea	4-30
Figure 4.2-2	National and State Park Uses on and around Camp Rilea	4-43
Figure 4.3-1	Live-Fire Ranges on Camp Rilea.....	4-57
Figure 4.3-2	Camp Rilea Surface Danger Zones (Combined).....	4-58
Figure 4.3-3	Firing Range Backdrop	4-59
Figure 4.3-4	Points of Entry onto Camp Rilea.....	4-61
Figure 4.4-1	Zoning Districts Under Flight Corridor from Astoria Airport	4-68
Figure 4.4-2	Camp Rilea Heliport Surfaces and Zones	4-70
Figure 4.7-1	Sound Levels Comparison in dB	4-85
Figure 4.7-2	Small Arms Off-Installation Noise Contours	4-90
Figure 4.7-3	Explosives Off-Installation Noise Contours	4-92
Figure 4.9-1	Nighttime Operation Light Impacts	4-108
Figure 4.12-1	Illustration of Over-Inundated Soil.....	4-126
Figure 4.12-2	Illustration of Overloaded Soil.....	4-126
Figure 4.12-3	Clatsop County Aquifer Reserve Overlay District	4-129
Figure 4.12-4	Ground Water Resources on Camp Rilea	4-133
Figure 4.12-5	Surface Water Resources on Camp Rilea.....	4-136
Figure 4.13-1	Coastal Zone	4-143
Figure 4.13-2	OSB Habitat on Camp Rilea.....	4-147
Figure 4.13-3	Western Snowy Plover Habitat Areas near Camp Rilea	4-148

Tables

Table 1-1	JLUS Sponsor Responsibilities and Participants.....	1-6
Table 1-2	JLUS Policy Committee Responsibilities and Participants	1-6
Table 1-3	JLUS Technical Advisory Committee Responsibilities and Participants	1-6
Table 2-1	Camp Rilea Training Areas	2-8
Table 2-2	Breakout of Federal Dollars Spent in Clatsop County in 2011.....	2-9
Table 2-3	Clatsop County Population Growth 2000 - 2010	2-11
Table 2-4	Clatsop County Population Growth Forecast	2-11
Table 2-5	Clatsop County Worker Earnings.....	2-15
Table 4.1-1	State Agencies and Areas of Potential Coordination with Camp Rilea	4-16
Table 4.2-1	Undeveloped Parcels within 1/2 mile of Camp Rilea in Unincorporated Clatsop County	4-28

Table 4.2-2	Compatibility of Clatsop County Zoning within 1/2 Mile of Camp Rilea.....	4-31
Table 4.2-3	Undeveloped Parcels within 1/2 Mile of Camp Rilea in the City of Warrenton.....	4-36
Table 4.2-4	Compatibility of City of Warrenton Zoning within 1/2 Mile of Camp Rilea	4-37
Table 4.2-5	Zoning Districts Which Allow Communication Towers	4-41
Table 4.2-6	Statewide Planning Goals	4-45
Table 4.7-1	Predicted Peak for an M-16 Rifle	4-86
Table 4.7-2	Zoning Categories by Acre in the Small Arms Zone II	4-89
Table 4.7-3	Undeveloped Parcels in the Small Arms Zone II.....	4-89
Table 4.7-4	Zoning Categories by Acre in the Demolitions Zone II.....	4-91
Table 4.7-5	Zoning Categories by Acre in the Demolitions LUPZ.....	4-91
Table 4.7-6	Undeveloped Parcels in the Demolitions Zone II	4-93
Table 4.7-7	Undeveloped Parcels in the Demolitions LUPZ.....	4-93
Table 4.7-8	Maximum dBA Sound Levels of Common Aircraft at Camp Rilea	4-96
Table 4.7-9	Percentage of the Population Who is Likely to be Highly Annoyed by Aircraft Noise	4-96
Table 4.12-1	Water Contaminants and Quantities.....	4-127
Table 4.12-2	Groundwater Testing Results for Perchlorate and Lead at Camp Rilea (2008).....	4-131
Table 4.12-3	Pollutants Detected in Water Bodies near Camp Rilea	4-134
Table 4.12-4	Identified Sources of Groundwater Pollution.....	4-134
Table 4.13-1	Federally Listed Species in Clatsop County.....	4-145



Acronyms

A

AC-1.....Aquatic Conservation One
AC-2Aquatic Conservation Two
AC-RCR.....Arch Cape Rural Community
Residential Zone
ACSAir Control Squadron
ACUB.....Army Compatible Use Buffer
AD.....Aquatic Development
ADNL.....A-weighted day-night sound level
AFAgricultural Forestry
AGI-ENV.....Adjutant General Installations –
Environmental
AGL.....above ground level
AGOAdjutant General's Office
AICUZAir Installation Compatible Use Zone
ANAquatic Natural
AOAirport Overlay
APZ.....Accident Potential Zone
AR.....Army Regulation
ARODAquifer Reserve Overlay District

B

BASH Bird Aircraft Strike Hazard
BDOD Beach Dune Overlay District

C

CAC Citizen Advisory Committee
CBR Coastal Beach Residential
CDNL..... C-weighted day-night sound level
CEDS Comprehensive Economic
Development Strategy
CERT Community Emergency Response
Team
CFR Code of Federal Regulations
CMP Comprehensive Management Plan
CR Coastal Residential Zone
CREST Columbia River Estuary Studies
Taskforce
CRIA..... Camp Rilea Influence Area
CS.....Conservation Shorelands
CUP conditional use permit
CWA.....Clean Water Act
CZ.....Clear Zone

D

DA PAM Department of the Army Pamphlet
dB decibel
dBA A-weighted decibel
dBP Unweighted Peak
DEA..... Drug Enforcement Agency

D (continued)

DEQ Oregon Department of
Environmental Quality
DLCD Oregon Department of Land
Conservation and Development
DNL Day-night sound level
DoD Department of Defense
DOGAMI Department of Geology and Mineral
Industries
DOT US Department of Transportation
DSL Oregon Department of State Lands
du dwelling unit
DZ drop zone

E

EA Environmental Assessment
EAC Ecola Aquatic Conservation
EFU Existing Farm Use / Exclusive Farm
Use Zone
EIS Environmental Impact Statement
ENS Emergency Notification System
EOC Emergency Operations Center
EOP Emergency Operations Plan
EPA US Environmental Protection Agency
EPNdb effective perceived noise in decibels
ESA Endangered Species Act
ESF emergency support functions

F

F-80 Forest-80
FAA Federal Aviation Administration
FBI Federal Bureau of Investigation
FCC Federal Communications
Commission
FEMA Federal Emergency Management
Agency
FHWA Federal Highway Administration
FONSI Finding of No Significant Impact
ft foot/feet (unit of measurement)
FY Fiscal Year

G

GC General Commercial
GMZ Growth Management Zone
GWMA Groundwater Management Area

H

HCP Habitat Conservation Plan
HI Heavy Industrial
HMGP Hazard Mitigation Grant Program
Hz Hertz (unit of frequency)

I

ICRMP Installation Cultural Resource
Management Plan
IDA International Dark Sky Association
INRMP Integrated Natural Resources
Management Plan
IRT Innovative Readiness Training
ITAM Integrated Training Area
Management
ITP Incidental Take Permit

J

JATC Joint Apprenticeship Training
Committee
JLUS Joint Land Use Study

K

KS-RCR Knappa and Svenson Rural
Community Residential Zone

L

LAW Light Anti-Tank Weapon
LCDC Land Conservation and Development
Commission
Ldn Yearly day-night average sound level

L (continued)

LI Light Industrial
 LI Legislative Initiatives
 LU Land Use
 LUA land use agreements
 LUPZ Land Use Planning Zone
 LW Lake and Wetlands

M

MCL maximum contaminant level
 MI Marine Industrial Shorelands
 MR Military Reserve
 MRF Modified Record Fire

N

NAC-2 Necanicum Estuary Aquatic Conservation
 NACo National Association of Counties
 NBC Nuclear, Biological and Chemical
 NC Neighborhood Commercial
 NCLC North Coast Land Conservancy
 NEPA National Environmental Policy Act
 NGO Nongovernmental Organization
 NHMP National Hazards Mitigation Plan
 NHPA National Historic Preservation Act
 NOAA National Oceanic and Atmospheric Administration
 NPDES National Pollutant Discharge Elimination System
 NPS National Park Service
 NRHP National Register of Historic Places
 NS Natural Shorelands
 NTIA National Telecommunications and Information Administration
 NU Natural Uplands Zone

O

OAR Oregon Administrative Rule
 OCMP Oregon Coastal Management Program
 ODF Oregon Department of Forestry
 ODFW Oregon Department of Fish and Wildlife
 ODOE Oregon Department of Energy
 ODOT Oregon Department of Transportation
 OEA Office of Economic Adjustment
 OEM Oregon Emergency Management
 OHIMS Oregon Heritage Information Management System
 OIC Officer in Charge
 OMD Oregon Military Department
 ONMP Operational Noise Management Plan
 OPDR Oregon Partnership for Disaster Resilience
 OPR Open Space, Parks and Recreation Zone
 OPRD Oregon Parks and Recreation Department
 ORANG Oregon Air National Guard
 ORARNG Oregon Army National Guard
 ORMAP Oregon Map Program
 ORNG Oregon National Guard
 ORS Oregon Revised Statutes
 OSB Oregon Silverspot Butterfly
 OSI Open Space and Institutional
 OSM Office of Spectrum Management
 OTP Oregon Transportation Plan

P

PC Policy Committee
 PK15 Peak Sound Level
 PMP Park Master Plan
 POC point of contact
 PSU-PRC Portland State University Population Research Center

Q

QM Quarry and Mining

R

R-10..... Intermediate Density Residential
 R-40..... Low Density Residential
 RA-1 Residential Agricultural - 1
 RA-2..... Residential Agricultural - 2
 RA-5..... Residential Agricultural - 5
 RCC..... Rural Community Commercial
 RCI..... Rural Community Light Industrial
 RM..... Recreation Management Zone
 ROD..... Record of Decision
 RSA-MFR.... RSA Multi-Family Residential Zone
 RSA-SFR RSA Single Family Residential Zone
 RSO Range Safety Officer

S

SAIC..... Science Applications International Corporation
 SARNAM Small Arms Range Noise Assessment Model
 SDWA..... Safe Drinking Water Act
 SDZ..... Surface Danger Zone
 SFR-1..... Single Family Residential Zone
 SHPO..... State Historic Preservation Officer
 SPMA Snowy Plover Management Areas
 STC Sound Transmission Class
 STIP State Transportation Investment Plan
 SWAT..... Special Weapons and Tactics

T

TAC Technical Advisory Committee
 TADDS Training Aids, Devices, Simulators, and Simulations
 TC..... Tourist Commercial
 TPR Transportation Planning Rule
 TSP..... Transportation System Plan
 TT Treatment Technique

U

UGB Urban Growth Boundaries
 UO..... Urban Operations
 URR Urban Renewal Report
 US United States
 USFWS..... US Fish and Wildlife Service
 USGS..... US Geological Society
 UTES Unit Training Equipment Site
 UXO unexploded ordnance

V

VFR Visual Flight Rule
 VOLTA..... Vocational Outside Line Training Academy

W

WDC..... Warrenton Development Code
 WPCF Water Pollution Control Facilities
 WSSD..... Westport Sewer Service District

X

Y

Z



Glossary

A

Ambient Light – Ambient light is the general background illumination that comes from all directions and has no visible source.

Ambient Noise – The total noise associated with an existing environment (built or natural) and usually comprising sounds from many sources, both near and far, is referred to as ambient noise.

Anchor tenant – an anchor tenant is a host unit or major command on a military installation for which the installation's mission is derived.

Aquiclude – An aquiclude is an impermeable body of rock or stratum of sediment that acts as a barrier to the flow of groundwater.

Aquifer – An aquifer is a layer of porous substrate that contains and transmits groundwater. When water can flow directly between the surface and the saturated zone of an aquifer, the aquifer is unconfined.

Attenuation – Attenuation is a reduction in the level of sound resulting from an object's distance from the noise source or absorption by the surrounding topography, the atmosphere, barriers, construction

techniques and materials, and other factors. Sound attenuation in buildings can be achieved through the use of special construction practices that reduce the amount of noise that penetrates the windows, doors, and walls of a building. Sound attenuation measures may be incorporated during initial construction or as additional construction for existing buildings.

A-weighted Decibel (dBA) – An A-weighted decibel is a unit of measurement for noise using a logarithmic scale and measured using the A-weighted sensory network on a noise-measuring device. An increase or decrease of 10 decibels corresponds to a tenfold increase or decrease in sound energy. A doubling or halving of sound energy corresponds to a 3-dBA increase or decrease.

B

Base Flow – Base flow is groundwater seepage into a stream channel.

C

Candidate Species – Species that are eligible for endangered or threatened status per the Endangered Species Act (ESA) but which are not listed due to higher priority listing activities.

Cultural Site – Cultural sites may prevent development on the base, apply development constraints or require special access by Native American tribal governments or other authorities.

C-Weighted Day-Night Sound Level (CDNL) – CDNL refers to a unit of measurement for short duration, high intensity sound with abrupt onset and rapid decay. It is used to evaluate impulsive noise and vibrations generated by explosive charges and large-caliber weapons, such as claymore mines and detonations.

D

Day-Night Average Sound Level (DNL) – DNL represents an average sound exposure over a 24-hour period. During the nighttime period (10:00 p.m. to 7:00 a.m.), averages are artificially increased by 10 dB. This weighting reflects the added intrusiveness and the greater disturbance potential of nighttime noise events attributable to the fact that community background noise typically decreases by 10 dB at night. For National Guard activities, the DNL may be A-weighted (ADNL) when used to measure aviation noise, or C-weighted (CDNL) when used to measure large caliber weapons noise.

Day-Night Average Sound Level (DNL) – DNL represents an average sound exposure over a 24-hour period. During the nighttime period (10:00 p.m. to 7:00 a.m.), averages are artificially increased by 10 dB. This weighting reflects the added intrusiveness and the greater disturbance potential of nighttime noise events attributable to the fact that community background noise typically decreases by 10 dB at night. For National Guard activities, the DNL may be A-weighted (ADNL) when used to measure aviation noise, or C-weighted (CDNL) when used to measure large caliber weapons noise.

Decibel (dB) – A decibel is the physical unit commonly used to describe noise levels. A unit for describing the amplitude of sound, as it is heard by the human ear.

Dunal – Dunal refers to hills of sand created by the wind.

E

Effluent – Effluent is treated or untreated wastewater that flows out of a wastewater treatment plant, sewer or industrial pipe (called an outfall), generally discharged into surface waters.

Endangered Species – Endangered species are plant or animal species that have a very small population and are at greater risk of becoming extinct. Many species that become extinct never make it to the endangered species list. The presence of threatened and endangered species may require special development considerations, could halt development, and could impact the performance of military missions.

Endangered Species Act – The Endangered Species Act (ESA) provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The lead federal agencies for implementing ESA are the US Fish and Wildlife Service (FWS) and the US National Oceanic and Atmospheric Administration (NOAA) Fisheries Service. The FWS maintains a worldwide list of endangered species. Species include birds, insects, fish, reptiles, mammals, crustaceans, flowers, grasses, and trees.

Eutrophication – Eutrophication is the process that bodies of fresh water undergo as a result of inorganic plant nutrients (e.g. nitrate, phosphate). It may occur naturally but can also be the result of human activity (cultural eutrophication from fertilizer runoff and sewage discharge). Increased sediment deposition can eventually raise the level of the lake or river bed, allowing land plants to colonize the edges, and eventually convert the area to dry land.

F

Frequency Impedance – Frequency impedance is the interruption of electronic signals due to the existence of a structure or object between the source of the signal and its destination (receptor). Key issues to consider relative to frequency spectrum impedance include the construction of buildings or other facilities that block or impede the transmission of signals from antennas, satellite dishes, or other transmission / reception devices affected by line-of-sight requirements.

Frequency Interference – Frequency interference is the inability to effectively distribute or receive a particular frequency because of similar frequency competition. As the use of the frequency spectrum increases (such as the rapid increase in cellular phone technology over the last decade) and as development expands near military installations and operational areas, the potential for frequency spectrum interference increases.

Frequency Spectrum – The frequency spectrum is the entire range of electromagnetic frequencies used for communications and other transmissions, which includes frequencies used for radio, cellular phones, and television. In the performance of typical operations, the military relies on a range of frequencies for communications and support systems. Similarly, public and private users rely on a range of frequencies to support daily life.

G

Glare – The presence of excessively bright light, such as direct or reflected sunlight, or artificial light, such as sport field and stadium lights at night. Glare reduces visibility and can completely impair vision when very intense.

H

Habitat Loss – Habitat loss is when habitat is removed or rendered functionally useless to plant or animal species dependent on the area.

Hertz (Hz) – Hertz is a unit of frequency (of change in state or cycle in a sound wave, alternating current, or

other cyclical waveform) of one cycle per second. A kilohertz (kHz) is a measure of frequency equivalent to 1,000 cycles per second.

Hydrostatic Pressure – Hydrostatic pressure is the pressure exerted by a fluid at equilibrium at a given point within the fluid, due to the force of gravity. Hydrostatic pressure increases in proportion to depth measured from the surface because of the increasing weight of fluid exerting downward force from above.

I

Infrastructure – public facilities and services such as sewers, water, and roadways that are required to support development (existing and proposed).

J

K

L

Leachate – Leachate is any liquid that, in passing through matter, extracts solutes, suspended solids, or any other component of the material through which it has passed.

Look Angle – A look angle is the angle between the vertical plane passing through the radar antenna and the line between the antenna and object.

M

Maximum Contaminant Level (MCL) –MCLs are standards that are set by the United States Environmental Protection Agency (EPA) for drinking water quality. An MCL is the legal threshold limit on the amount of a substance that is allowed in public water systems under the Safe Drinking Water Act. The limit is usually expressed as a concentration in milligrams or micrograms per liter of water.

N

National Pollutant Discharge Elimination System (NPDES) – The NPDES program was established by the federal government to control point-source discharges of wastewater.

National Register of Historic Places – The National Register of Historic places is the US's official list of the country's historic places (both public and private) deemed to be worthy of preservation. The National Register is maintained by the National Park Services, as authorized by the National Historic Preservation Act of 1966 (NHPA).

Noise Contour – Noise contours consist of noise impact lines constructed by connecting points of equal noise level measured in dB and identify areas on a map that fall within that particular dB noise contour.

Noise Exposure Map – A noise exposure map consists of a scaled, geographic depiction of a noise source, its noise contours, and surrounding area.

Noise Sensitive Receptors / Noise Sensitive Land Uses – This term refers to land uses that are typically more sensitive to noise, including residential development, hotels / motels, hospitals, convalescent homes and facilities, schools, day care facilities, libraries, churches, and other similar land uses.

Noise Zones – Noise Zone I is the noise zone that includes all areas in which the PK15(met) decibels are less than 87 (for small arms), the ADNL is less than 65 (for aircraft), and/or the CDNL is less than 62 (for large arms and explosions). This area is suitable for all types of land use. Noise Zone II includes areas where the PK15(met) decibels are between 87 and 104, the ADNL is between 65 and 75, and/or the CDNL is between 62 and 70. Land uses for this zone should typically be limited to manufacturing, warehousing, transportation, and resource protection. Noise Zone III is the zone located closest to the source of noise. It includes PK15(met) decibels greater than 104, ADNL greater than 75, and/or CDNL greater than 70. No noise sensitive uses should occur within this area due to the severity of noise. There is also a Land Use Planning Zone (LUPZ) at the upper end of Noise Zone I and includes areas where the CDNL is between 57

and 62 or the ADNL is between 60 and 65. It does not include land for PK15(met). This zone accounts for variability in seasonal operations where certain times of the year may include a greater amount of operations than normal.

O

P

PK15(met) – PK15(met) refers to the peak sound level, factoring in the statistical variations caused by weather, that is likely to be exceeded only 15 percent of the time (i.e., 85 percent certainty that sound will be within this range). This condition only exists in modeling (one cannot take a PK15(met) reading on the ground) and is used for land use planning with small arms, as well as additional information for large arms and other impulsive sounds.

Prescribed Burn – A prescribed burn is the controlled and intentional ignition of grass, shrub, or forest fuels for the specific purpose reducing vegetation for purposes such as forest management, farming, or habitat restoration.

Primary agency – Primary agency is a designation for agencies in the Oregon Emergency Management Plan. A primary agency is responsible for the management of emergency support functions (ESF) and coordinating the implementation of disaster recovery plans.

Q

R

Recovery Habitat – Habitat needed to support the recovery of species designated to be endangered or threatened per the ESA.

Riparian – Riparian refers to the habitat and/or area relating to, or situated on the banks of a river.

S

Slant Distance – The straight-line distance between two points not at the same elevation is referred to as the slant distance.

Sound Exposure Level (SEL) – SEL is a measure of the total sound energy and is a sum of the sound intensity over the duration of exposure. The SEL provides a convenient single number that adds the total acoustic energy in a transient event, and it has proven to be effective in assessing the relative annoyance of different transient sounds.

Sound Transmission Class (STC) – STC is a single-figure rating of the sound insulating properties of a partition as determined by methods described in "Determination of Sound Transmission Class", American Society of Testing and Materials designation E413-73.

Special-Status Species – According to the ESA, a special-status species is any species that is a listed, candidate, sensitive or species of concern per the ESA.

State Historic Preservation Officer – Each State has a designated State Historic Preservation Officer (SHPO) who carries out many of the responsibilities associated with historic preservation, including survey, evaluation, and nomination of significant historic buildings, sites, structures, districts, and objects.

Supporting Agency – Supporting agency is a designation for agencies in the Oregon Emergency Management Plan. Supporting agencies are responsible for providing expertise, experience and assets to the ESF as needed or requested by the Primary agency.

Surface Danger Zone (SDZ) – An SDZ is an area around a weapons firing range from which the access of all military personnel and civilians is restricted due to the inherent dangers associated with the firing of live munitions. An SDZ can include the surface (and subsurface) of land and water, as well as the overhead air space which provides the medium for launched projectile. An SDZ typically includes the weapons firing position, target impact area and a secondary

buffer area, which is an additional distance where errant projectile/munitions fragments may land without risking harm to life or property. The area of a SDZ can vary in size and shape and is specifically dependent on the type of weapon(s) fired, their firing location and projectile trajectory.

Surface Water – Surface water is derived from waters that flow continuously over land surfaces in a defined channel or bed, such as streams and rivers; standing water in basins such as lakes, wetlands, marshes, swamps, ponds, sinkholes, impoundments, and reservoirs either natural or man-made; and all waters flowing over the land as runoff, or as runoff confined to channels with intermittent flow.

T

Take – Under the ESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." The ESA makes it illegal for any person to take any species listed as threatened or endangered without authorization. Take prohibitions also apply to the habitat a listed species requires for its survival.

Total Maximum Daily Load (TMDL) – A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards.

Taking – When the government acquires private property and fails to compensate an owner fairly. A taking can occur even without the actual physical seizure of property, such as when a government regulation has substantially devalued a property.

Threatened Species – According to the ESA a threatened species is "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Treatment Technique – For some contaminants, the EPA establishes a Treatment Technique instead of an MCL. Treatment Techniques are enforceable procedures that drinking water systems must follow in treating their water for a contaminant.

Tsunami – A tsunami is a series of sea waves usually caused by a displacement of the ocean floor by an undersea earthquake. As tsunamis enter shallow water near land, they increase in height and can cause great loss of life and property damage.

U

United States Environmental Protection Agency – The EPA is the agency of the federal government charged with protecting human health and the environment, by writing and enforcing regulations based on laws passed by Congress. The EPA implements and enforces the provisions of the federal Clean Water Act (CWA) and Safe Drinking Water Act (SDWA), which ensures a clean and safe potable water supply for all states and territories of the United States.

Unweighted Peak (dBP) – Unweighted peak refers to the peak, single event sound level without weighting, on the ground. This measurement incorporates all of the locational characteristics (i.e., berms, weather, vegetation, etc.). However, it is only reflective of that moment in time under those exact conditions. Consequently, there is no particular confidence that the measurement is reliable in other situations, such as the 85 percent certainty of the PK15(met).

V

Vibration – Vibration is the oscillation or motion that alternates in opposite directions and may occur as a result of an impact, explosion, noise, mechanical operation, or other change in the environment.

W

Wind Farm — A series of wind turbines that generate electricity and function as a power plant.

Windmill (wind turbine) – a structure designed to use the movement of wind to move blades in a circular motion, creating mechanical energy that can be used to drive machinery, such as grinding grain or pumping water.

X

Y

Yearly Day-Night Average Sound Level (Ldn) – Ldn refers to the 24-hour average sound level, in decibels, for the period from midnight to midnight, obtained after the addition of ten decibels to sound levels for the periods between 10:00 p.m. and 7:00 a.m. the following day, averaged over a span of one year.

Z

1

Introduction

Military installations are considered critical to the defense of the nation and ensuring service members have the facilities necessary to gain proper training in order to serve the roles they are called on to fulfill. Installations and their personnel also play other important roles in their local communities. Military installations are key components of local economies, generating jobs and millions of dollars in economic activity and tax revenue annually. National Guard installations, like Camp Rilea, also serve an important public safety role, providing critical response capabilities to help the local area and the State of Oregon respond to natural disasters and other calls for help.

The ability of the military to continue operations at an installation can be impacted by compatibility with other land uses in the surrounding area. While originally located in a rural area with few surrounding neighbors, new development over the years has spread into close proximity to Camp Rilea, raising concerns for long-term compatibility between military and civilian uses and sustainability of the military and public safety missions of Camp Rilea. The purpose of this Joint Land Use Study (JLUS) is to bring all parties involved in planning of the areas surrounding Camp Rilea together to address current and future compatibility issues and improve coordination between local jurisdictions, federal and state agencies, Native American Tribal groups, Camp Rilea / Oregon Military Department, and the public.

The Camp Rilea JLUS was undertaken as a proactive effort to ensure increased communication about land use regulation, conservation decisions, and natural resource management issues. To do this, the JLUS must find a balance between often competing desires, and will require action by all entities involved – military and civilian.

1.1 What is a Joint Land Use Study?

A JLUS is a planning process accomplished through the collaborative efforts of a comprehensive list of stakeholders in a defined study area. These stakeholders include local community, state, and federal officials, residents, business owners, local tribal governments, nongovernmental organizations, and the military to identify compatible land uses and growth management guidelines within, and adjacent to, active military installations. The intent of the process is to establish and foster a working relationship among military installations and their proximate communities to act as a team to prevent and / or curtail encroachment issues associated with continued operations, potential future mission changes, and local growth.

The end result of a JLUS is to provide a set of recommendations or potential guidelines that can be implemented by stakeholders to promote compatible development and existence between the military and neighboring communities for the present and future. As such, a JLUS is not an adopted plan and does not in itself establish any regulations; it provides a roadmap to do so.

The Camp Rilea JLUS program is funded through a federal grant provided to Clatsop County by the Department of Defense (DoD), Office of Economic Adjustment (OEA). Clatsop County is charged with management of the grant and is responsible for the preparation of the JLUS in coordination with other interested agencies and organizations in the region (stakeholders). The content of this JLUS is entirely directed by Clatsop County and local stakeholders.

JLUS Goal

The goal of the Camp Rilea JLUS is to guide growth, sustaining the environmental and economic health of the region, and protecting public health, safety and welfare, while protecting the viability of current and future operations at Camp Rilea.

JLUS Objectives

To help meet this goal, three primary JLUS objectives were identified.

- **Understanding** – Convene community and military representatives to identify, confirm, and understand the issues in an open forum, taking into consideration both community and Oregon National Guard (ORNG) viewpoints and needs. This includes public awareness, education and input organized as part of a cohesive outreach program.
- **Collaboration** – Encourage cooperative land use and resource planning between Camp Rilea and area stakeholders so that future development is compatible with the training and operational missions at the installation, while at the same time seeking ways to reduce operational impacts on adjacent lands within Clatsop County.
- **Actions** – Provide a set of mutually supported tools, activities, and procedures from which local jurisdictions, agencies, and the Oregon Military Department (OMD) / ORNG can select, prepare and approve / adopt and then use to implement the recommendations developed during the JLUS process. The actions proposed include both operational measures to mitigate installation impacts on surrounding communities and local government and agency approaches to reduce community impacts on military operations. These tools will help decision makers resolve compatibility issues and prioritize projects within the annual budgeting process of their respective entity / jurisdiction.

1.2 Why Prepare a Joint Land Use Study?

Although military installations and nearby communities may be separated by a fence line they often share natural and manmade resources such as land use, airspace, water, and infrastructure. Despite the many positive interactions among local jurisdictions, agencies, and the military, and because so many resources are shared, the activities or actions of one entity can pose unintended negative impacts

on another, resulting in conflicts. As communities develop and expand in response to growth and market demands, land use approvals have the ability to locate potentially incompatible development closer to military installations and operational / training areas. The result can initiate new or foster existing land use and other compatibility issues, often referred to as encroachment, which can have negative impacts on community safety, economic development, and sustainment of military activities and readiness.

Collaboration and joint planning among military installations and local communities and agencies is needed to protect the long-term viability of existing and future military missions. Working together also enhances the health of economies and industries of the communities before incompatibility becomes an issue.

Recognizing the close relationship that should exist between installations and adjacent communities, the OEA implemented the JLUS program in an effort to mitigate existing and future conflicts and enhance communication and coordination among all affected stakeholders. **This program is designed to preserve the sustainability of local communities within the JLUS study area while protecting current and future operational and training missions.**

Regional Economic and Local Importance

Camp Rilea is located in the northwestern tip of Oregon along the Pacific Ocean in Clatsop County (see Figure 1-1). Within Clatsop County, Camp Rilea is located adjacent to the southern boundary of the City of Warrenton on land between Highway 101 and the Pacific Ocean.

The ORNG is an important economic engine in Oregon and Clatsop County. As a whole, the ORNG employs 11,000 citizen Soldiers / Airmen and civilian employees. In fiscal year 2009 the ORNG spent approximately \$293.5 million dollars throughout the State of Oregon.

Camp Rilea provides between \$8-11 million dollars of benefit to the region annually through direct income and direct purchases. From an employment standpoint, Camp Rilea employs 110 full-time personnel. Camp Rilea has also brought federal dollars to the region through military construction projects, such as \$7 million in fiscal year 2010 (FY10) funding for on-base water/wastewater facility improvements.

Military Strategic Importance

The ORNG's role as both a State and Federal armed force means Soldiers must be well-prepared for a wide array of activities from warfare to emergency response. As a military training facility, Camp Rilea is critical to the comprehensive training of Soldiers. Camp Rilea fulfills the requirements of an Army Maneuver Training Center – Light, providing a training environment that provides a high level of readiness.

As a state-owned asset, Camp Rilea provides community service support and serves as the regional base for North Oregon Coast emergency response and recovery operations.

The specific training opportunities offered at Camp Rilea include:

- Air Assault Training
- Urban Live-Fire Training
- Urban Operations (UO)
- Live Fire Ranges
- Training Aids, Devices, Simulators, and Simulations (TADSS)

Without the training offered at Camp Rilea the ORNG forces would be ill-prepared for real-time combat. Since a large percentage of active Guard Soldiers are being dispatched to fight abroad, appropriate training facilities are essential. ORNG Soldiers are routinely required to deploy to fight in war zones such as Iraq and Afghanistan. Since 2001, the ORNG has mobilized more than 13,000 citizen Soldiers and Airmen for missions throughout the world, including Iraq and Afghanistan. This includes multiple deployments for some ORNG personnel.



In addition to training offered to ORNG units, Camp Rilea is also used for training by:

- Other National Guard units
- Army, Navy, and Marine Corps
- Coast Guard
- City, county and state police departments
- Corrections departments
- Federal agencies, such as the Department of Homeland Security; Bureau of Alcohol, Tobacco, Firearms and Explosives; Drug Enforcement Administration; Federal Bureau of Investigation; National Nuclear Security Administration; US Customs; US Marshal Service; etc.

In addition to the lands on Camp Rilea, the ORNG also cooperates with surrounding landowners (Oregon Department of Forestry, the Campbell Group, and Longview Fiber) to allow the ORNG to use a larger land area for training. This additional space allows for improved maneuverability and more training.

Camp Rilea also has FAA established Class E airspace which allows air units to train at Camp Rilea without impacting civilian air traffic. Camp Rilea is used by helicopters from the ORNG, US Army, and US Coast Guard on a regular basis.

Local Communities Working Together

As a community presence, Camp Rilea contributes much more than just economic benefits. The facilities at Camp Rilea are used by numerous organizations. The open door policy at the Camp renders it a critical asset to the community. Some of the many regular users of Camp Rilea include:

- Church groups
- Youth programs
- Boy Scouts
- Girl Scouts
- Sea Scouts
- Young Marines

In addition, the Camp Rilea facility regularly hosts community groups and activities such as:

- Concerts
- Car shows
- Flea markets
- Conferences

The ORNG also responds with emergency services when needed. This function is especially important in coastal Oregon where the threat of flooding, fires, tsunamis, and other natural disasters is very real.

1.3 Public Outreach

As highlighted in the JLUS objectives (Section 1.1), the JLUS process was designed to create a locally relevant plan that builds consensus and obtains support from the various stakeholders involved. To achieve this objective, the Camp Rilea JLUS process underwent a public outreach program that included a variety of opportunities for interested parties to contribute to the development of this study.

Stakeholders

An early step in any planning process is the identification of stakeholders. Informing or involving them early in the project is instrumental in the identification of their most important issues to address and resolve through the development of integrated strategies and measures.

For the Camp Rilea JLUS, stakeholders include individuals, groups, organizations, and governmental entities interested in, affected by, or affecting the outcome of the JLUS project. Stakeholders identified for the Camp Rilea JLUS included, but were not limited to, the following:

- Local jurisdictions (cities and counties)
- DoD officials (including OEA representatives) and military installation personnel
- Local, regional, and state planning, regulatory, and land management agencies
- Landholding and regulatory federal agencies
- The public (including residents and landowners)

- Environmental advocacy organizations
- Nongovernmental organizations (NGOs)
- Other special interest groups (including local educational institutions and school districts)

Policy Committee and Technical Advisory Committee

The development of the Camp Rilea JLUS was guided by two committees, comprised of city, county, OMD / ORNG, federal and state agencies, resource agencies, local governments, and other stakeholders.

JLUS Policy Committee (PC)

The PC consists of officials from participating jurisdictions, military installation leadership, and representatives from other interested and affected agencies. The PC is responsible for the overall direction of the JLUS, preparation and approval of the study design, approval of policy recommendations, and approval of draft and final JLUS documents.

JLUS Technical Advisory Committee (TAC)

The TAC is responsible for identifying and studying technical issues. Membership includes area planners, military base planners, business and development community representatives, natural resource protection organizations, and other subject matter experts as needed to help assist in the development and evaluation of implementation strategies and tools. Items discussed by the TAC were brought before the PC for consideration and action.

PC and TAC Participants

The PC and TAC served as liaisons to their respective stakeholder groups. PC and TAC members were charged with conveying committee activities and information to their organizations and constituencies and relaying their organization's comments and suggestions to both committees for consideration. PC members were encouraged to set up meetings with their organizations and / or constituencies to facilitate this input.

The responsibilities and list of participants for the JLUS sponsors, the PC, and the TAC are identified in Tables 1-1, 1-2, and 1-3, respectively.

Table 1-1. JLUS Sponsor Responsibilities and Participants

Responsibilities	Participants
■ Project Management and Coordination	■ Clatsop County
■ Accountability and Grant Management	
■ Grant Match	
■ Grant Funding	■ Office of Economic Adjustment

Table 1-2. JLUS Policy Committee Responsibilities and Participants

Responsibilities	Participants
■ Policy Direction	■ City of Warrenton
■ Study Oversight	■ Clatsop County
■ Monitoring	■ Lewis & Clark National Historical Park
■ JLUS Adoption	■ North Coast Land Conservancy
	■ Oregon Department of Forestry
	■ Oregon Department of Land Conservation and Development
	■ Oregon Department of Transportation
	■ Oregon Military Department / Oregon National Guard
	■ Oregon State Parks
	■ Warrenton Trails Association

Table 1-3. JLUS Technical Advisory Committee Responsibilities and Participants

Responsibilities	Participants
■ Identify Issues	■ City of Warrenton
■ Provide Expertise to Address Technical Issues	■ Clatsop County
	■ Confederated Tribes of Grand Ronde
■ Evaluate and Make Recommendations to the PC	■ Confederated Tribes of Siletz Indians
	■ Long Lake Estates
	■ National Parks Service
	■ North Coast Land Conservancy
	■ Oregon Department of Environmental Quality
	■ Oregon Department of Fish & Wildlife
	■ Oregon Military Department / Oregon National Guard
	■ Oregon Department of Transportation

PC and TAC meetings were held throughout the process to ensure the JLUS identified and appropriately addressed local issues. The meetings conducted are highlighted as follows:

- **Meeting #1 (December 13th, 2010)** – This meeting served as the initial kick-off for the committees. This meeting defined the project and provided an overview of the JLUS program and process.
- **Meeting #2 (February 4th, 2011)** – This meeting provided feedback from the public forum conducted the night before to PC and TAC members. Compatibility issues provided at the public forum held on February 3rd were discussed. Committee members' inputs on potential compatibility issues were provided.
- **Meeting #3 (April 22nd, 2011)** – At this meeting, a consolidated list of compatibility issues was provided and committee member input was sought to help refine and consolidate the issues to be discussed in the JLUS.
- **Meeting #4 (September 27th and 28th, 2011)** – Based on inputs received and analysis conducted, a preliminary draft of the Camp Rilea JLUS was distributed to committee members for their review. A meeting with the TAC (September 27th) and PC (September 28th) provided committee members the opportunity to comment on the direction and content of the JLUS. Following this meeting, the JLUS was updated appropriately and a Public Draft JLUS was prepared and released for public review.
- **PC Meeting #4 Continuation (January 20th, 2012)** – This meeting was held as a continuation of the September 28th, 2011 PC meeting, as there was not enough time for the previous meeting to fully discuss the issues. At this meeting, all major changes to date on the document based on TAC and PC comments were discussed with the PC and final direction was provided for development of the Public Draft JLUS.
- **Meeting #5 (May 8th and 9th, 2012)** – At this meeting, public comments on the JLUS were reviewed with committee members. Committee members provided direction on the content of the final JLUS document. At the TAC meeting on May 8th, TAC members provided

recommendations for approval of the Final JLUS, and at the PC meeting on May 9th, the PC approved the final document.

Public Forums

In addition to the PC and TAC meetings, a series of public forums were held throughout the development of the JLUS. These forums provided an opportunity for the exchange of information with the greater community, assisted in identifying the issues to be addressed in the JLUS, and provided input on the strategies proposed. Each forum included a traditional presentation and a facilitated exercise providing a “hands on,” interactive opportunity for the public to participate in the development of the plan.

Each public forum was advertised through a mailer sent to all landowners of property within 3,000 feet of Camp Rilea inviting them to the meeting as well as notices in the Daily Astorian and public service announcements on local radio stations.

The public forums conducted are as follows.

- **Public Forum #1 (February 3rd, 2011)** – At this forum, the JLUS project and purpose were discussed and the 24 standard compatibility factors were introduced. Then attendees were asked to identify specific compatibility issues that they feel should be addressed.



Public Forum #1 held at Camp Rilea

- **Public Forum #2 (April 21st, 2011)** – Based on issues identified by the public, the PC and TAC members, and the team preparing the JLUS, a consolidated list of issues was presented. Meeting attendees were asked to rank the issues to identify their most pressing concerns.
- **Public Forum #3 (March 8th, 2012)** – This forum was used to present the Public Draft Camp Rilea JLUS and obtain public input on the Draft Camp Rilea JLUS. The forum was held in the middle of the planned 30-day public review period.

Public Outreach Materials

Fact Sheets

Several fact sheets were developed to provide project information to PC and TAC members and the public.

1. **JLUS Overview** – At the beginning of the JLUS program, a fact sheet was developed to describe the JLUS program, objectives, and methods for the public to provide input into the process. This fact sheet was made available at Public Forums 1 and 2 and on the project website.
2. **Compatibility Factors** – This brochure describes the 24 compatibility factors that are used for JLUS development. While every factor did not apply to the Camp Rilea JLUS, this list provided an effective tool to ensure a comprehensive evaluation of compatibility factors was conducted. This fact sheet was also made available at Public Forums 1 and 2 and on the project website.
3. **Strategy Tools** – JLUS strategies constitute a variety of actions local governments, military installations, agencies and other stakeholders can take to promote compatible land use planning. This brochure provides an overview of the strategy types that could be applied to address compatibility issues associated with Camp Rilea. This fact sheet was used at Public Forum 3 and was posted to the project website.

Website

In addition to these documents, a project website was developed and maintained that provided stakeholders, the public, and media representatives with access to project information. This website was maintained for the duration of the project to ensure information was easily accessible. Information contained on the website included: program points of contact, schedules, documents, maps, public meeting information, and downloadable comment forms. The project website is located at www.camprileajlus.com.

1.4 JLUS Study Area

The Camp Rilea JLUS study area was designed to encompass all lands near Camp Rilea that may impact current or future military operations or be impacted by these operations. The study area was the initial area of investigation as data was collected. The study area for the Camp Rilea JLUS covered portions of the City of Warrenton and the Clatsop Plains north of the City of Seaside and proximate to Camp Rilea, as well as the land between Astoria Regional Airport and Camp Rilea. As the development of the JLUS moved forward, it was found that some topic areas needed to be addressed in the larger regional context of the Clatsop Plains area, such as water quality and circulation. While the focus of the JLUS is the study area shown on Figure 1-2, certain topics will present information about the larger Clatsop Plains as needed for context or to address a more regional issue.

1.5 JLUS Process Timeline / Overview

The Camp Rilea JLUS began at the end of 2010 and is scheduled to be completed in the spring of 2012.

1.6 JLUS Implementation

It is important to note that once the JLUS process is completed, the final document is not an adopted plan. It is a strategic guide that will be used by local jurisdictions, agencies, and organizations in the study area to guide their future compatibility efforts. To that end, Clatsop County will be seeking acceptance of the study by stakeholders to confirm their collective

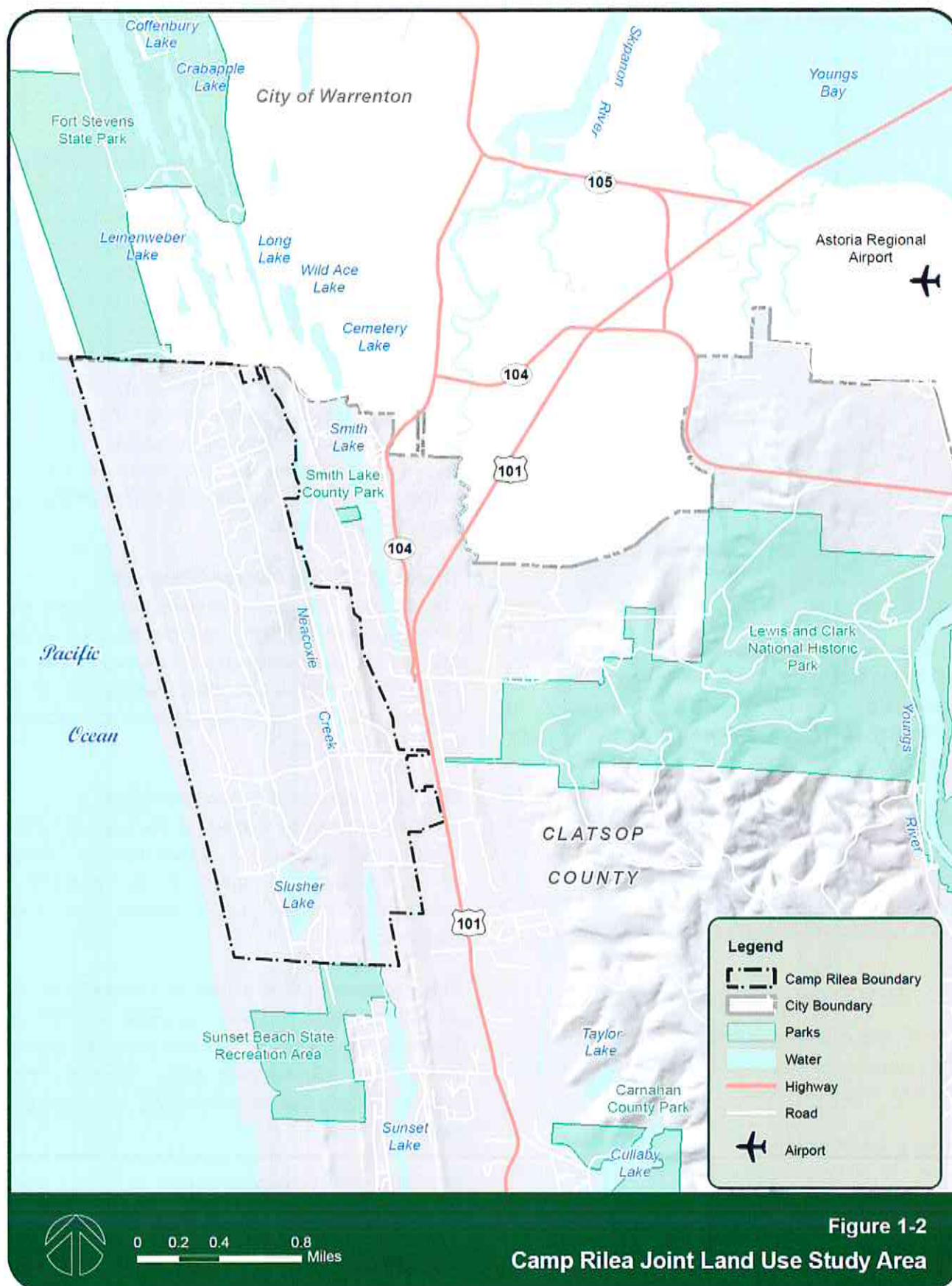


Figure 1-2
Camp Rilea Joint Land Use Study Area

support for identified implementation efforts. For instance, local jurisdictions may use the strategies in this JLUS to guide future subdivision regulation, growth policy, and zoning updates, as well as to assist in the review of development proposals.

Camp Rilea will use the JLUS to guide its interaction with local jurisdictions on future projects, as well as manage internal planning processes with a compatibility based approach. It is through the future actions of the stakeholders involved and their ability to implement that the JLUS strategies may become a reality.

It is important to note that once the JLUS process is completed, the final document is not an adopted plan. It is a strategic guide that will be used by local jurisdictions, agencies, and organizations in the study area to guide their future compatibility efforts.

The key to implementation of the strategies presented in this JLUS is the establishment of a JLUS Coordinating Committee that oversees the implementation of the JLUS after it is complete. Through this Committee, local jurisdictions, Camp Rilea, and other interested parties will be able to continue their initial work together to establish procedures, recommend or refine specific actions for member agencies, and make adjustments to strategies over time to ensure the JLUS remains relevant to the planning issues of the study area.

1.7 JLUS Organization

The following is a brief overview of the organization of the Camp Rilea JLUS, including the contents of each of the four chapters.

Chapter 1: Introduction

Chapter 1 provides an introduction and context for the Camp Rilea JLUS. This Chapter describes the strategic and local importance of Camp Rilea, the working relationships among the entities, the background and intent of the JLUS, the study area, the objectives used to guide development of the JLUS, the stakeholders

involved in developing the JLUS, public outreach methods, implementation premise, and the organization of the JLUS document.

Chapter 2: Study Area Profile

In developing this JLUS, an understanding of Camp Rilea, Clatsop County, the City of Warrenton, and the general setting within the study area is necessary. For Camp Rilea, this chapter provides an overview of Camp Rilea's history, a description of the primary activity areas on Camp Rilea, a review of the current training operations, and the economic impact of the installation on the region. This is followed by an overview of the region's growth potential and a profile of the jurisdictions within the study area, including population, housing, transportation, and important environmental and historical areas. A general description of the areas surrounding Camp Rilea is also provided.

Chapter 3: Existing Plans and Programs

This chapter provides an overview of relevant plans, programs, and studies which can be tools used to address compatibility issues in the JLUS study area. Chapter 3 also evaluates the effectiveness of each existing plan or program relative to addressing compatibility issues.

Chapter 4: Issues and Recommendations

Compatibility can be defined as the balance between community and military needs and interests. The goal of compatibility planning is to promote an environment where both entities can coexist harmoniously.

This chapter provides a look at compatibility issues identified by the PC, TAC, the public, and the JLUS team (as discussed earlier) and presents strategies designed to address each issue. Chapter 4 covers issues divided into the following 14 compatibility topics (factors):

- Communications (Section 4.1)
- Land Use (Section 4.2)
- Safety (Section 4.3)
- Vertical Obstructions (Section 4.4)
- Frequency Interference / Impedance (Section 4.5)

- Infrastructure (Section 4.6)
- Noise and Vibration (Section 4.7)
- Dust / Smoke (Section 4.8)
- Light and Glare (Section 4.9)
- Alternative Energy Development (Section 4.10)
- Cultural / Historic Sites (Section 4.11)
- Water Supply and Quality (Section 4.12)
- Biological Resources (Section 4.13)
- Marine Environments (Section 4.14)

For each of the 14 compatibility factors, each section contains the following information:

- **Key Terms.** In an effort to assist the reader with understanding the important technical terms for each section, a list of defined terms is presented.
 - **Technical Background.** Several of the topics are based on technical analysis, like a noise study, that require a little technical background to help the reader with an understanding of the material being presented.
 - **Existing Tools.** For each compatibility factor, this component provides an overview of relevant plans, programs, and studies which are used to address compatibility issues in the area today. This information also evaluates the effectiveness of each existing plan or program relative to addressing the compatibility issues being assessed.
 - **Compatibility Issues.** In order to develop effective recommendations to enhance compatibility, it is critical to fully understand and assess the key current and potential future issues. For each compatibility factor assessed, the issues identified are discussed. These issues were identified based on input from the PC and TAC, members of the public, existing plans and technical reports, and evaluation by the project team.
- **Strategies.** Following the presentation of issue summaries and existing tools, the JLUS presents strategies that are specific courses of action to address the compatibility issues identified. The strategies were developed cooperatively with stakeholders in the region. The results of a collaborative planning process, the strategies represent a consensus to address compatibility issues.

Please see the next page.

Study Area Profile

This chapter provides an overview of the military and community entities within the Camp Rilea Joint Land Use Study (JLUS) study area. For the military side, this chapter presents an overview of the history and current operations at Camp Rilea. For the community side, this chapter provides profiles of development trends and growth potential in the jurisdictions within the JLUS study area as well as the general setting of the area.

Identifying and describing the various activities performed on the military installation provide valuable insight into the importance of Camp Rilea as a State of Oregon and national strategic asset. This information will enable stakeholders to make informed decisions about the future development and economic growth of their communities adjacent and proximate to Camp Rilea, which ultimately impacts the continued existence and future role of the facility. It also allows the military to understand the types of activities occurring on nearby properties when considering future missions and operations.

2.1 Camp Rilea Armed Forces Training Center

Oregon Military Department / National Guard

The origins of the Oregon militia go back to 1843. The first Adjutant General was appointed in 1847 when the Office of the Adjutant General was created. In the 1870s, the Oregon Legislature designated the acting militia as the Oregon National Guard. In 1915, a federal law was passed that organized all of the country's National Guard units in

accordance with United States Army rules and regulations.

During World War II (WWII), after Germany invaded Poland, President Franklin D. Roosevelt declared a limited national emergency and mobilized the Oregon National Guard. He named the 41st Division as one of four National Guard divisions in the country to be called up to federal service. After the war, National Guard units returned home and the State Guard was deactivated in 1948. On the eve of the Korean War, the units were reactivated through the passage of the Oregon Civil Defense Act of 1949.

In 1950 these units were reinstated for federal service.

In 1961 the Oregon legislature created the Oregon Military Department (OMD), which handled administration and military training. The OMD has an Adjutant General who acts as the director, and two Assistant Adjutants General: one for the Army National Guard and one for the Air National Guard.

Source: http://www.oregon.gov/OMD/omd_history.shtml

Camp Rilea

Camp Rilea was originally founded in 1927 as Camp Clatsop. Camp Clatsop was an important mobilization site during WWII and was the first encampment location of the Oregon Army National Guard (ORARNG) after the war. In 1959, the installation was renamed Camp Rilea in honor of Major General Thomas E. Rilea, the Adjutant General of the State of Oregon from 1941 to 1959. By 1972, Camp Rilea was used as an annual training site by National Guard units.

The 116 Tactical Control Flight of the Oregon Air National Guard (ORANG) moved to Camp Rilea in 1988. It was redesignated the 116 Air Control Squadron (ACS) in 1992.

Units

Camp Rilea is host to several tenant activities, each with their own unique mission:

- **116 Air Control Squadron** – The 116 ACS is a component of the ORANG. The 116 ACS is a deployable radar/communications unit. They utilize a radar system that conducts air surveillance of the Pacific Coast and also assists in training scenarios for aircraft operating out of the Portland area or other areas of the State. Much of this training occurs off the coast over open ocean. The radar system operated by 116 ACS can handle aircraft within 200 miles of its location.
- **234 Engineer Company** – The 234 Engineering Company provides vertical construction assets for the ORARNG and the State of Oregon.

- **Northwest Line, Joint Apprenticeship Training Council (JATC)** – JATC designed the Vocational Outside Line Training Academy (VOLTA) facility, located at Camp Rilea, to allow beginning and experienced students to gain hands-on experience through the use of a pole yard facility that simulates field conditions.

See Figure 2-1 for a breakdown of the Camp Rilea's organizational leadership structure.

Current Mission Operations

Camp Rilea is operated by the OMD, the administrative head of the Oregon National Guard (ORNG). The National Guard is unique in that it serves both state and federal missions, and as such has two distinct mission statements. Camp Rilea's statement for the State is:

"Provide community service support and serve as the regional base for north Oregon Coast emergency response and recovery operations."

This means that Camp Rilea and its personnel are responsible for providing emergency support services for the State of Oregon, primarily the region surrounding Camp Rilea, in the event of an emergency or disaster, such as an earthquake, tsunami, or flood. The Clatsop Plains and surrounding region is at risk for these types of natural disasters because of its location near the ocean and elevation close to sea level. Additionally, Oregon sits atop the Cascadia Subduction Zone, which is a 600-mile-long fault line, putting the state at risk for earthquake activity. In 2007, Camp Rilea and its personnel played a key role during a flood by providing emergency shelter to residents and assisting in cleanup efforts following the damage caused by hurricane force winds and heavy rains.

The federal mission statement is to:

"Provide the facilities and resources required for a Maneuver Training Center – Light; provide a training environment that contributes to the high degree of readiness and military capability"

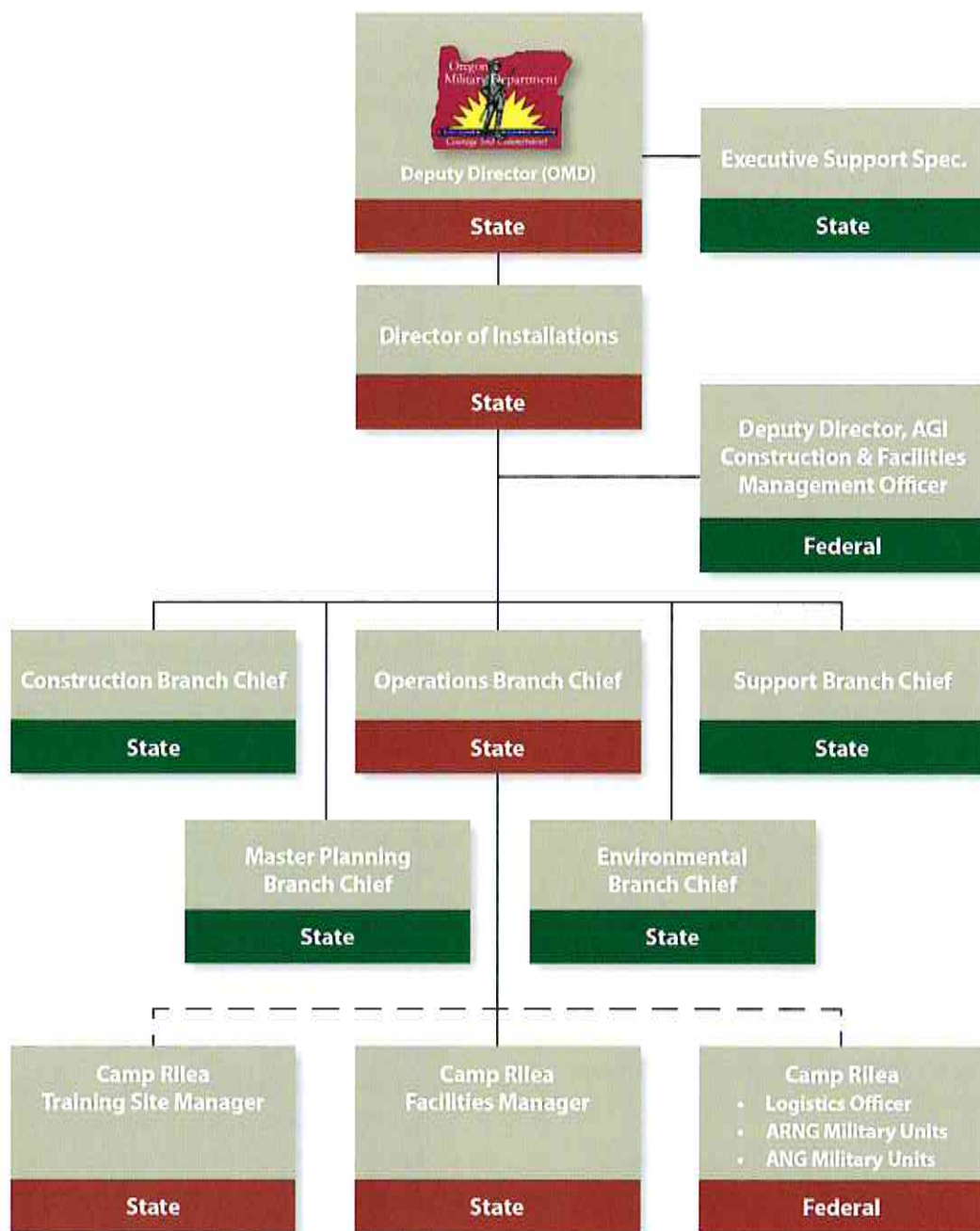


Figure 2-1. Camp Rilea Organizational Chart

of the Armed Forces of the United States and the State of Oregon; and provide school house support to the 249 Regional Training Institute."

This mission is oriented towards providing national defense and troop readiness for the protection of the United States from foreign and domestic threats. In this regard, Camp Rilea operates as a training facility for ORNG and other military units.

Camp Rilea serves as a Major Training Center – Light for the Oregon National Guard, and specializes in small infantry and engineer training. It is used primarily for weapons training and qualifications through the use of firing ranges, vehicle maneuvers on the navigation courses, combat simulations in various types of settings (i.e., rappel tower, obstacle courses, urban warfare), and specialized training opportunities. It also contains classroom facilities to supplement weapons training.

The installation is also used by non-military entities for training and recreational activities. The Boy Scouts use the area for wilderness exploration and camping, local and regional police Special Weapons and Tactics (SWAT) use the Urban Operations site, the Oregon State Police Basic Officer Academy has a 12 week training course at Camp Rilea, and the firing ranges are used by various law enforcement and other entities, such as the Coast Guard, to practice and hone firearms skills.

Source: <http://www.globalsecurity.org/military/facility/camp-rilea.htm>

Future Mission Operations

Long-term training at Camp Rilea is stable at current levels, and as of the time that this JLUS was prepared, there were no current plans to expand or add additional missions to Camp Rilea.

Installation Setting

Camp Rilea is owned by the OMD. It occupies approximately 1,800 acres of land along Oregon's northern Pacific coastline, south of the mouth of the Columbia River. It is bordered to the north by the City of Warrenton, to the east by US Highway 101, to

the south by Clatsop County, and to the west by the Pacific Ocean. There is an additional 26,000 acres of maneuver lands available in the surrounding region for use by troops at Camp Rilea through land use agreements (LUAs) with the Campbell Group, Longview Fiber and the Oregon Department of Forestry.

The terrain of Camp Rilea is composed of linear dunes. Neacoxie Creek runs through the western portion of the installation. The northern portion of Sunset Lake extends into the southern portion of Camp Rilea and Slusher Lake is the other main body of water and rests in the southwest portion. The majority of the firing ranges and maneuver areas on Camp Rilea are grassland and open terrain. The rest of the installation is forest and dune. The dunes are used for training and act as a buffer between activities and the public beach and ocean.

Source: *Camp Rilea Armed Forces Training Center Command Brief, PowerPoint Presentation*

Camp Rilea consists of three main types of uses: the cantonment area which consists of operational facilities, barracks, and other structures; weapons firing ranges; and maneuver training and land navigation areas. The developed areas are concentrated in the eastern portion of the installation near the Main Gate. The maneuver training and land navigation areas are on the northern part of Camp Rilea. The firing ranges occupy the middle of the installation, with the Urban Operations site near the south. The locations of these various areas are shown on Figure 2-2. There is a project in conceptual phases that would include an improvement to the Main Gate. The purpose of this improvement is to consider concepts to enhance the ingress and egress onto Camp Rilea so that the installation could more easily accommodate larger vehicles.

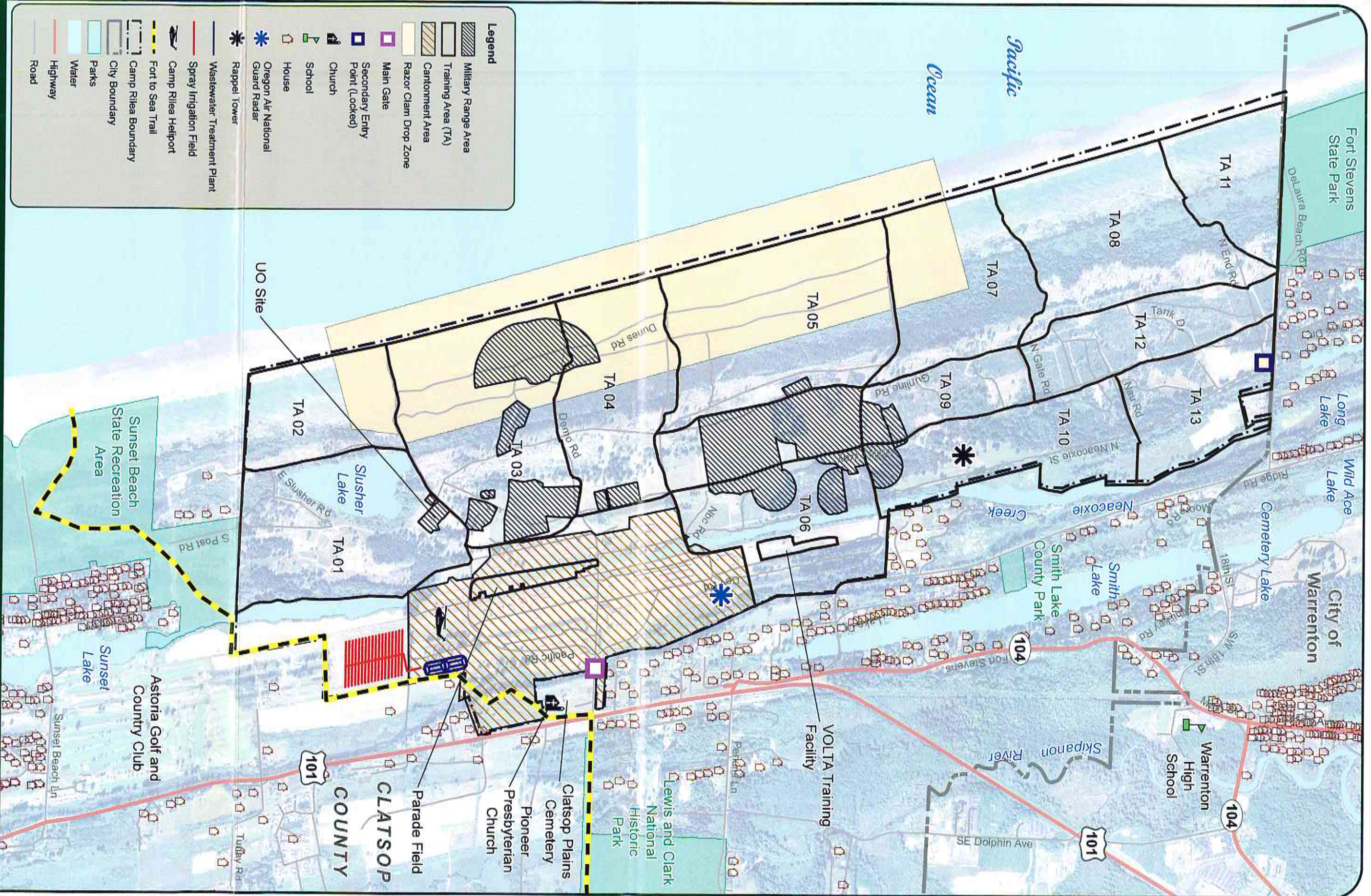


Figure 2-2

Camp Rilea Facilities and Surrounding Environs

Cantonment Area

The cantonment area covers approximately 240 acres of land. It is the developed portion of Camp Rilea and includes administration and headquarters buildings, Transient training unit(s) Headquarters, the range control building for the firing ranges, barracks, staff housing, visitor housing, classrooms, Veterans Affairs medical clinic, an armory, food service facilities, the UTES, the 116 ACS building and radar facility, the current water and wastewater treatment plants, supporting infrastructure, and the parade ground.

There are more than 120 buildings in the cantonment area.

The UTES is a consolidation of ORARNG organizational equipment and vehicles. This is useful in having a centralized and local pooling of assets that are used for weekend training and other operational events, as needed.

The 116 ACS facilities are located north of the main cantonment area and the radar site is on the hill to the east. An expansion plan is being developed to add more capacity to the building due to the added number of personnel that occupy the space during drill times. The VOLTA training facility is located just north of the 116 ACS building, and the UTES is just to the south.

Camp Rilea has a heliport located at the southern end of the cantonment area, which can support helicopters such as the UH-60 and CH-47. Helicopter operations and landing maneuvers are carried out by both the Coast Guard (stationed at Astoria Airport) and the Oregon National Guard. Other National Guard or Army units occasionally use the area for training operations as well.

Weapons Firing Ranges

Camp Rilea has a wide variety of firing and weapons training ranges. Camp Rilea's weapons range areas are shown on Figure 2-2. The following provides an overview of the current activities that can occur on Camp Rilea's ranges:

- Pistol training and qualifications including .38 caliber, 9 mm, .40 caliber, and .45 caliber
- Training and qualifications range with stationary targets set at a specific distance away from the firing point to measure accuracy
- Zeroing weapon sights and honing accuracy
- Army-standard Individual Weapons Qualification with M16 and M4 rifles
- 40 mm grenade launcher with practice chalk and plastic .50 caliber rounds
- Sub-caliber devices, resulting in only 9mm tracer practice rounds being used. No dud-producing rounds are used, so no "Unexploded Ordnance" potential exists
- Grenade, claymore mine, and explosives training and qualifications
- Multi-purpose live-fire range

Camp Rilea operates an Urban Operations (UO) site. The UO is a mockup of an urban area, complete with buildings and roads, where Soldiers train in building infiltration and urban-based combat scenarios (using blank rounds and simulated ammunitions such as paintballs). The UO includes a shoot house for live-fire weapons. The shoot house allows for the use of live-fire rounds within a building setting and its walls are reinforced to prevent the rounds from exiting the building. This allows Soldiers to practice close-quarters room-clearing and hallway navigation skills with containment of rounds fired within the facility. The firing ranges and UO provide invaluable and important combat training skills for Soldiers to prepare for real-world scenarios in an urban environment.

Training Areas

The facilities on Camp Rilea allow for units up to battalion size to train on the camp. Camp Rilea serves as a training site for numerous services including ORNG, Active Army, Navy, Air Force, Marine Corps, international military, US Coast Guard,

Federal and State law enforcement agencies, as well as Army and Navy Reserve units.

The term battalion refers to the size of a tactical military unit. They are generally composed of between 300 to 1,200 personnel, depending on their purpose.

Outside of the cantonment area, Camp Rilea is organized into 13 Training Areas, as shown on Figure 2-2. Table 2-1 identifies the types of operations that currently take place in these areas and Figure 2-2 illustrates their locations. In all cases, roads throughout the designated training areas are used for various types of convoy, tactical, and maneuver operations.

It should be noted that the descriptions in Table 2.1 are training areas / operations as of 2012 and are subject to change as needed to meet the training needs of units using Camp Rilea.

Table 2-1. Camp Rilea Training Areas

Training Area	Operations
Cantonment Area	Proposed Platoon Live-Fire Course Heliport Hand-to-Hand Combat Ropes Practice Course
TA01	Tracked vehicle route Innovative Readiness Training (IRT) Lanes Rappelling Tower Practice Ramp Mine Warfare Area Urban Operations Site Engineer Bridge Points Checkpoint Charlie Checkpoint Saudi
TA02	Miles Squad Range Tracked vehicle route Drop Zone

Training Area	Operations
TA03	Weapons Ranges Grenade Qualifications Course Grenade Accuracy Course Explosives Training Area Tracked Vehicle Route Obstacle Course Ropes Course Proposed Combat Pistol Qualifications Course Drop Zone
TA04	Weapons Ranges Drop Zone
TA05	Proposed Platoon Live-Fire Course Drop Zone
TA06	Tracked Vehicle Route Weapons Ranges Combat Trail Infantry Squad Battle Course Track Vehicle Drivers Course Nuclear, Biological and Chemical (NBC) Chamber Engineering Dig Area Training Area Proposed Platoon Live-Fire Course VOLTA Training Facility
TA07	Land Navigation Drop Zone Proposed Platoon Live-Fire Course
TA08	Land Navigation
TA09	Weapons Ranges Tracked Vehicle Route Proposed Platoon Live-Fire Course
TA10	Weapons Ranges Rappel Tower Land Navigation Proposed Platoon Live-Fire Course
TA11	Tracked Vehicle Route
TA12	Tracked Vehicle Route Land Navigation

Training Area	Operations
TA13	Engineering Dig Area Tracked Vehicle Route Land Navigation

ORARNG and the Coast Guard sometimes conduct separate air operations using helicopters at Camp Rilea. These include landings and takeoffs, transportation and maneuvering of vehicles or buoys suspended from the helicopter, and airborne parachute drops. Parachute drops occur in the Razor Clam Drop Zone, on the western side of Camp Rilea. Occasionally (about twice a year based on recent years), these drops are performed by C-130 Hercules aircraft instead of helicopters. The airspace used by helicopters flying to Camp Rilea is Class E airspace at Astoria, Oregon, which is just less than 5 miles northeast of Camp Rilea.

Although separate from air operations, the Air Assault Training Complex includes a 60 foot rappel tower and UH-60 helicopter mockups where troops can train fast rope rappelling and proper helicopter exiting strategies.

Installation Demographics

Camp Rilea does not have a large number of personnel permanently stationed on-site. The Camp has a total of 107 full-time personnel working in various roles and units:

- 116 Air Control Squadron
- Unit Training Equipment Site (UTES)
- Facilities Maintenance
- Operations
- Billeting / Logistics
- Contracted Services
- 234 Engineer Company
- Headquarters
- Engineering

Additional personnel work on the base during drill weekends or other active times, but are not considered full-time. During drill (one weekend a month and a two-week annual training), the 116 ACS

is authorized to have around 180 personnel on Camp Rilea.

Installation Economic Impact

As a whole, the Oregon National Guard employs more than 11,000 people, working as citizen Soldiers and Airmen, and federal and state civilian employees. Of these, there are 2,600 fulltime employees working for the National Guard and OMD. In 2011, almost \$15 million in federal money was expended in Clatsop County due to the presence of Camp Rilea. There is an additional component of state dollars that were expended in Clatsop County, that when added to the federal dollars, totaled approximately \$15.4 million. The breakout of how specific federal dollars were spent is shown in Table 2-2.

Table 2-2. Breakout of Federal Dollars Spent in Clatsop County in 2011

Training Area	Dollar Amount
Payroll	\$7,425,431
Full Time Guard	\$3,016,612
Annual Training and Temps	\$3,517,641
Drill	\$891,178
Construction	\$6,278,866
Supplies and Services	\$1,077,978
Community Service / Youth Programs	\$85,700
TOTAL	\$14,867,975

Source: Colonel (USAF Retired) Jim Miller, Camp Rilea TSM, March 15, 2012

2.2 County and City Profiles

The Camp Rilea JLUS study area covers the western half of Clatsop County in northwestern Oregon and includes the City of Warrenton.

Regional Overview

The Camp Rilea JLUS study area is located along the Oregon Coast, just south of Washington State. Clatsop County has a total area of 1,085 square miles – 873 square miles of land and 212 square miles

of water (23.74% of the total area). The County is surrounded by natural resources such as the Pacific Ocean, the Columbia River and the forested coast range. The terrain within the study area is a mix of hilly timberland with coastal beaches, dunes and forested areas.

Clatsop County

Clatsop County was established in June 1844 and is known as the location where the Lewis and Clark expedition spent an entire winter in 1805. The first form of county government was established in the 1840s, when a board of commissioners was elected and a district court was formed.

Until the courthouse was built in 1855, early sessions of court were hosted in the private homes of citizens. In 1964 the county court was officially replaced by the board of commissioners. The county government is composed of five commissioners (from the different geographic districts), a county administrator, and ten departments. The commissioners, the district attorney, and the sheriff positions are all elected.

The City of Astoria is Oregon's oldest city and is also the oldest American settlement west of the Rockies. In 1856 Astoria took the place of Lexington as the Clatsop County seat.

Clatsop County's economy used to be more dependent on natural resources and mining, wood product manufacturing and paper manufacturing, but in recent years a higher percentage of employment has been in the leisure and hospitality areas. Other industries include seafood, forest products and agriculture.

Land ownership patterns within Clatsop County show that 80%-90% of the land is forested and much of this is privately owned industrial forest land. Land ownership within the County is broken down as follows:

- Private 88.1%
- State 9.8%

- Federal 1.3%
- County 0.8%

City of Warrenton

The City of Warrenton was first platted in 1889 and incorporated as a city in 1899. The City was named after D.K. Wright Warren, who was an early settler. Clara Cynthia Munson, elected mayor of Warrenton in 1913, was the first female mayor in Oregon. The City's government operates with a Commission-Manager system, meaning it is legislated through a five-person Commission. The seat of the Mayor is selected by the Commission each year.

2.3 Study Area Growth Trends

The following section provides a profile of Clatsop County and the City of Warrenton in relation to population growth, housing growth, and median home values. This information assists in setting the context for the JLUS.

Population

Population data for Oregon and its counties and incorporated communities is based on a combination of information from the US Census Bureau (2000 and 2010), Oregon Office of Economic Analysis, and the Portland State University Population Research Center (PSU-PRC). The PSU-PRC generates annual estimated population reports for all Oregon counties and cities.

In general Northwest Oregon is sparsely populated. Clatsop County's total population in 2010 was 37,039. The population change from the years 2000 to 2010 was four percent. Most of this growth is attributed to the relocation of retirees from the inner counties of Oregon to the coast. According to Census 2010, overall growth for Clatsop County between 2000 and 2010 was less than the state of Oregon's rate of approximately 12 percent. These figures represent the permanent population in Clatsop County but do not consider the fact that the region experiences 80,000 or more visitors on a given summer weekend.

Table 2-3 shows the populations of Clatsop County's five incorporated cities from the 2000 and 2010 censuses and the percentage change in each.

Table 2-3. Clatsop County Population Growth, 2000-2010

Jurisdiction	2000	2010	Number Change	Percent Change
Oregon	3,421,437	3,831,074	409,637	12.0%
Clatsop County	35,630	37,039	1,409	4.0%
Astoria	9,813	9,477	-336	-3.4%
Cannon Beach	1,598	1,690	92	5.8%
Gearhart	1,083	1,462	379	35%
Seaside	5,907	6,457	550	9.3%
Warrenton	4,096	4,989	893	21.8%
Remaining County	13,133	12,964	-169	-1.3%

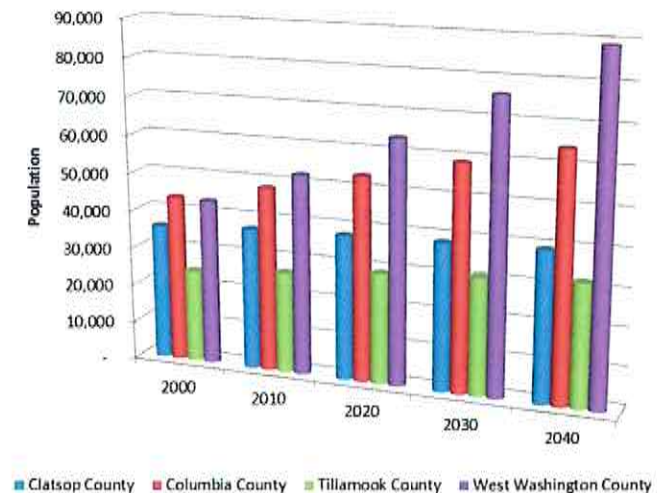
Source: US Bureau Census 2010 - <http://oregon.gov/DAS/OEA/census2010.shtml>

Population wise, Astoria is the largest city in the County (but saw a decrease in population from 2000 to 2010), while Warrenton is the third largest. However, for the total number change in population, Warrenton saw the greatest increase, with almost 900 people. In terms of percentage growth, Warrenton was the second biggest grower in Clatsop County, with a growth rate more than five times greater than the County, and almost twice that of the State's total.

Future Population Projections

Clatsop County is not growing as quickly as the rest of the region. According to the Northwest Oregon Comprehensive Economic Development Strategy (CEDS) Report, Clatsop County is only projected to grow 10% by 2040 as opposed to the 32% to 47% in the neighboring counties. Forecasted population growth numbers throughout Northwest Oregon are shown on Figure 2-3.

Figure 2-3. Forecasted Populations in Northwest Oregon Counties, 2000 -2040



Source: CEDS Report, 2009, pg. 5

As Table 2-4 demonstrates, Clatsop County only expects to see a total population increase of 2,206 in the next 30 years.

Table 2-4. Clatsop County Population Growth Forecast

Year	2010	2020	2030	2040
Population	37,162	37,939	38,643	39,368

Source: Forecasts of Oregon's County Populations and Components of Change, 2000 – 2040; prepared by Office of Economic Analysis, Department of Administrative Services, State of Oregon, April, 2004

Housing Trends

The trend in housing growth for the JLUS study area indicates that home ownership rates are high for modestly to moderately priced homes in the region. Data from 2000 shows that the home ownership rate in Clatsop County is 64.2%. As of 2009, Clatsop County had 21,248 housing units and the median value of owner-occupied housing was \$143,400.

There is a known oversupply of housing in Clatsop County. According to a news article published in the Oregonian in 2005, "More than 5,300 units or building lots have been approved for development. With it comes daunting implications for coastal communities as they stare down the need to expand boundaries and build roads, sewer and water facilities while confronting a growing housing

affordability problem and pondering how an influx of part-time residents might change the civic culture.”

Source: *The Oregonian* Oct. 23, 2005

Sample numbers of residential lots or building permits approved in 2005 or planned for development in the near term:

- Gearhart - 102
- Seaside - 29
- Cannon Beach - 26

Source: *Clatsop County Parks and Recreation Master Plan*

Housing Value Trends

According to the Clatsop County Economic Development Agency, in 2009 Clatsop County housing trends were as follows:

- The mean price of home sales ranged from \$189,000 in Astoria to \$219,000 in Warrenton.
- The median monthly housing costs for homes and condos with a mortgage were \$1,413.

So far in 2011, the range of listing prices for homes throughout the County range from \$179,000 to \$800,000., which suggests that overall prices have gone down. As shown on Figure 2-4, in 2011 the median sales price for homes in Warrenton was \$188,300. This shows a 10.3% decrease in sale price from the previous year. In addition the number of total sale went down by 37%.

Source: <http://clatsoped.com/Facts/Housing/housing.html>

Figure 2-4. Comparative of Housing Prices throughout Clatsop County

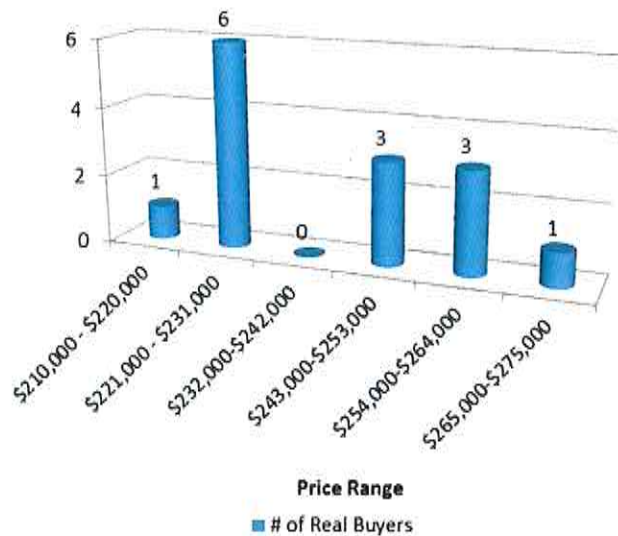


Source: <http://clatsoped.com/Facts/Housing/housing.html>

According to the website Trulia, there are currently 113 resale and new homes in Warrenton; including 14 homes in the pre-foreclosure, auction, or bank-owned stages of the foreclosure process. To date the average listing price for homes for sale in Warrenton was \$274,628.

The Warrenton housing market continues to see an influx of new homes being built in new subdivisions, e.g., The Orchard & Juniper Ridge. Most of the home sales activity in the past year has been in the \$221,000 to \$231,000 price range. Figure 2-5 shows the number of buyers per price bracket of homes in Warrenton in 2010. This information indicates that homes from \$221,000 to \$231,000 sold at the highest rate. This price bracket is on the lower end of the spectrum, suggesting that higher priced homes are in less demand in this area.

Figure 2-5. Price Range and Number of Homes Sold in Warrenton from 2010 to 2011



Source: <http://activerain.com/blogview/2179862/warrenton-oregon-real-estate-home-sales-trends>

2.4 Current Development Overview within the Study Area

A large majority of the land within the study area is currently utilized as either open space or agriculture. There are populated communities scattered throughout the study area, with the City of Warrenton being the incorporated area closest to Camp Rilea and the City of Gearhart to the south.

“Generally, NW Oregon’s infrastructure will support the region’s economic development. Water, sewer, electrical and broadband telecommunications serve most of the region. Electricity to power both industrial and local development is in good supply and priced competitively. Additional building-ready industrial and local developments are needed to attract and grow larger employers, but recent development activities have begun to address this need, NW Oregon has also recently implemented an on-line interactive database of industrial and commercial sites available for business development.”

Source: Northwest Oregon, CEDS, pg. 5

Development Adjacent to Camp Rilea

The area surrounding Camp Rilea is a mix of residential and recreation / open space uses. Residential development occurs on the north, east, and south sides of the base. This development ranges from subdivision-sized lots to rural residential / agricultural residential in nature. For locations of the items discussed below, refer to Figure 2-2.

North

The northern border of Camp Rilea is about evenly split between recreational / open space uses and residential development. The western half of the northern boundary abuts Fort Stevens State Park (a portion that was formerly owned by Clatsop County and was previously known as DeLaura Beach Park). The eastern half is adjacent to residential subdivisions including Long Lake Estates. There is a secondary access gate to Camp Rilea along this border that remains locked when not in use. DeLaura Beach Road is immediately adjacent to Camp Rilea, and provides vehicular beach access from Ridge Road. A trail is proposed adjacent to this road.

East

The eastern side of Camp Rilea is mostly a mix of low density residential, agricultural, and riparian areas. Homes are built near the bottom of the ridge, and Ridge Road provides vehicular travel north and south near the boundary. Smith Lake is between Ridge Road and Highway 104. Highway 104 connects US Highway 101 to downtown Warrenton and Fort Stevens State Park. Highway 101 is a designated Oregon Scenic Byway and a National All-American Road (which carries a greater distinction than a Scenic Byway). It starts at the border of California in the southern part of Oregon and runs up the Pacific Coast and along the eastern side of Camp Rilea and then turns northeast towards the City of Astoria, where it continues over the Columbia River and into the State of Washington. There is a developing commercial corridor along US Highway 101 northeast of Camp Rilea, which includes Costco, Home Depot,

Staples, Lum's Auto Center, Ocean Crest Chevrolet Buick, and Fred Meyer.

Lewis and Clark National Historic Park begins just east of Camp Rilea's Main Gate and includes forestland and several historic and cultural sites that are visited by tourists and residents of the surrounding communities. The Fort to Sea Trail begins in the Park and cuts through part of Camp Rilea as it continues along Camp Rilea's boundary to the Pacific Ocean. Pioneer Presbyterian Church and Clatsop Plains Cemetery are both located immediately southeast of the Main Gate. These sites have important cultural and historical significance for Clatsop County.

There are two public schools in the study area, which are northeast of the installation. Warrenton Grade School, which covers Grades K – 8, is located at 820 SW Cedar (approximately 2.4 miles northeast of Camp Rilea's Main Gate). Warrenton High School, which covers Grades 9 – 12, is located at 1700 SE Main Avenue (Highway 104), roughly 1.7 miles northeast of the Main Gate. Both schools are outside the area designated for the flight corridor center line that connects Camp Rilea with Astoria Airport; however, Warrenton High School is under the expanded flight corridor area (see Section 4.4, Vertical Obstruction, for more information). Both schools are outside the noise contours of concern for weapons firing and range activities as modelled (see Section 4.7, Noise and Vibration, for more information).

There is a site adjacent to Camp Rilea's eastern boundary (near the wastewater treatment plant) that was formerly used as the Pleasant View Adventist School, but is no longer occupied as a school. This site is zoned for a school and could be reused as one in the future, but has recently been approved for a land division, with the intent to have residential uses. This parcel is located under the flight corridor center line, and within several noise contours modelled for weapons firing (see Section 4.7, Noise and Vibration, for more information).

South

Camp Rilea's southern boundary is adjacent to some agricultural land and scattered residential homes as well as Sunset Beach State Recreation Area. The Fort to Sea Trail traverses through the Recreation Area to the beach. Astoria Golf and Country Club, Sunset Lake, and additional residential communities are also on the south side of Camp Rilea.

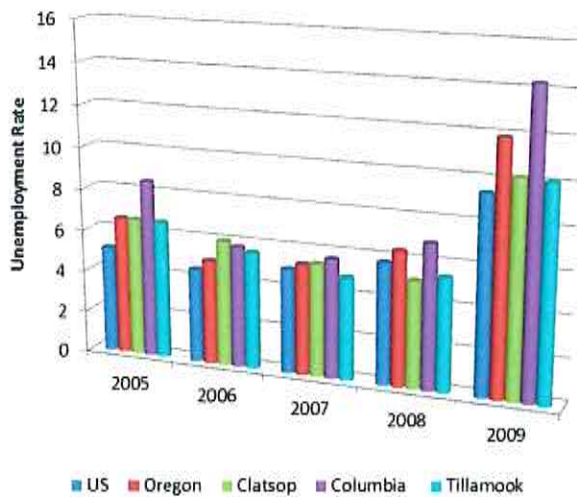
West

The western border of Camp Rilea lies along the Pacific Ocean. The beach is a designated public highway and cars are able to drive along it the beach. The beach is a popular attraction for both residents and tourists and provides recreational activities such as surfing, swimming, and clam digging. It is also sometimes used by Soldiers at Camp Rilea, and during times that certain firing ranges are in use at the installation, the beach is closed to public access/use.

Economy

In general, Warrenton has seen signs of economic growth in the form of big box retail such as Costco, Staples, Home Depot, a Goodwill Super Store and more. The Highway 101 corridor has become a hub for economic growth and there is room for further expansion.

According to the CEDS Report, in 2005 Clatsop County ranked 10th in per capita income in the State at an average of \$23,800/year. In general, Clatsop County's job growth rate is lower than that of the State's, which is in part due to the seasonal nature of much of the employment in the region. As shown on Figure 2.6, the Northwestern Oregon unemployment rate has doubled in the last year, and is now the second highest rate in the nation.

Figure 2-6. Unemployment Rates in Northwest Oregon

Source: Northwest Oregon, CEDS, pg. 5

Federal decisions relating to the management of natural resources has had a direct impact on employment in this region as well.

Source: Northwest Oregon, CEDS, pg. 5

According to the Clatsop Economic Development Resources, in the first quarter of 2009, 16,800 people were employed in Clatsop County. The tourism industry comprises approximately 22% of that number while construction and manufacturing jobs account for nearly 20% of the workforce. Major manufacturing and processing employers include:

- Georgia-Pacific
- Campbell Group
- Pacific Coast Seafoods
- Point Adams Packing Company

Table 2-5 shows the average income for the various sectors of employment in the region in 2007.

Table 2-5. Clatsop County Worker Earnings

2007 Average Nonfarm Employment	# of Jobs	% of Total	Average Pay
Natural Resources & Mining	300	1.7%	\$35,794
Construction	1,110	6.4%	\$36,256
Manufacturing	2,080	11.9%	\$52,392
Trade, Transportation & Utilities	3,040	17.4%	\$27,185
Information	190	1.1%	\$30,321
Financial Activities	680	3.9%	\$28,833
Professional & Business Services	820	4.7%	\$27,464
Educational & Health Services	1,890	10.8%	\$34,080
Leisure & Hospitality	3,890	22.3%	\$15,706
Other Services	660	3.8%	\$16,682
Government	2,830	16.2%	\$33,939
Total Number of Jobs	17,480		

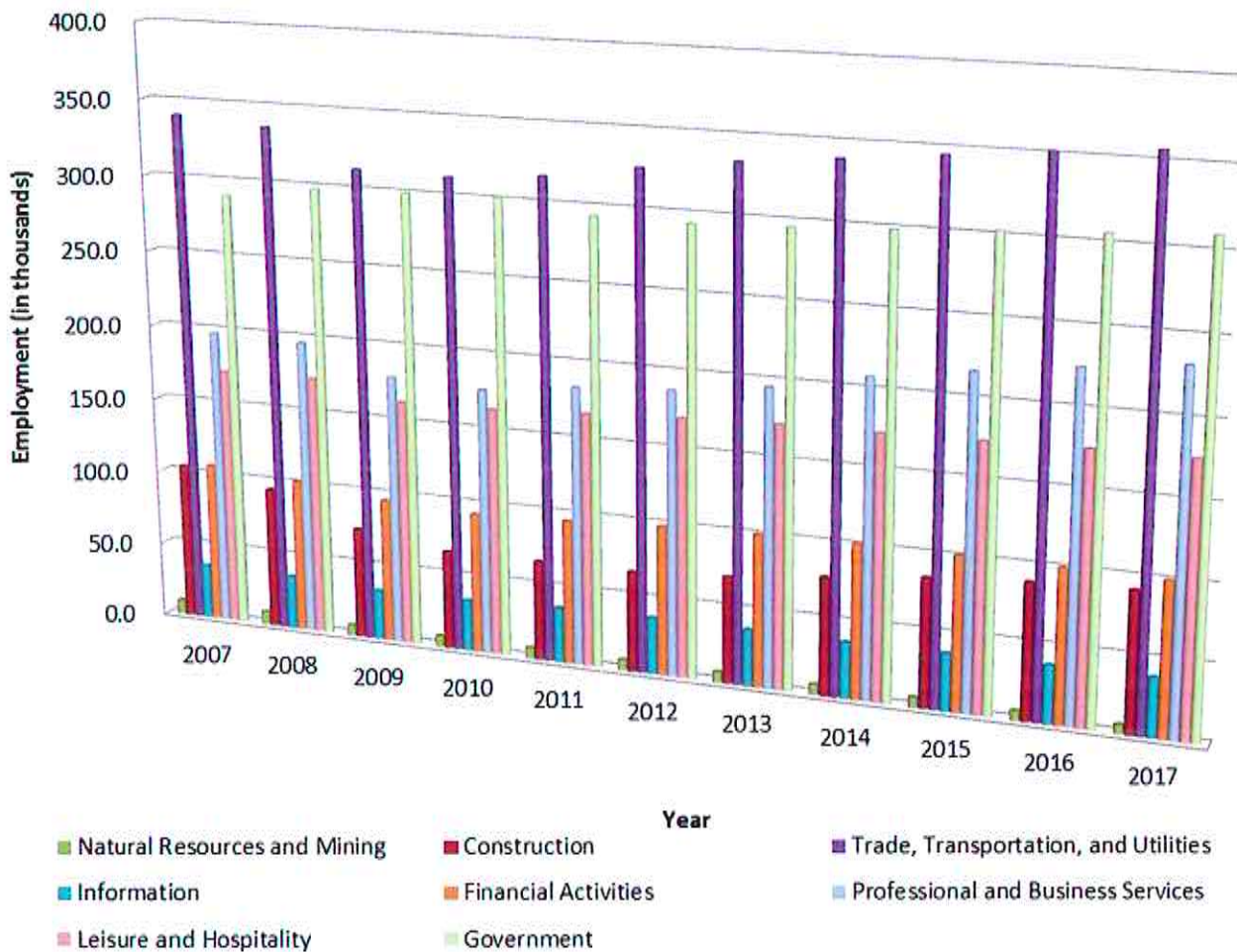
Source:

<http://clatsoped.com/DoingBusiness/Employment/employment.html>

Figure 2-7 shows the forecast for employment by industry throughout the state. As shown Trade, Transportation and Utilities, and Natural Resources and Mining, Information and Leisure and Hospitality are the four leading industries. The chart also indicates that Leisure and Hospitality has remained constant in the past four years and is projected to continue to do so.

According to the CEDS some of the issues contributing to slow economic growth throughout Northwest Oregon include:

- Closure of Chinook salmon fishing south of the Columbia River will significantly impact the commercial fishing industry.
- Loss of federal timber revenues from State managed forests in Columbia and Tillamook counties

Figure 2-7. Forecasted Employment by Sector in Oregon

Source: Northwest Oregon, CEDS, pg. 5

- Complexity of business permitting and difficulties in expanding developable land for economic growth.
- Low commodity prices for timber and lack of demand for finished lumber, closure of salmon fishing and extension of marine reserves, loss of Federal timber revenues, and continued recovery by some communities from the December 2007 and January 2009 storms.

Source: Northwest Oregon, CEDS, pg. 5

Transportation

Northwest Oregon has a multi-modal transportation system. The highway system is well-developed and provides major routes to the Portland metropolitan area. Portland is the primary air and rail transportation

hub; however, there are local airports which serve the JLUS study area.

Clatsop County's Transportation System Plan outlines the existing transportation systems and conditions, and identifies enhancements needed to accommodate future development. The Plan provides information as to how projects are prioritized in Oregon's State Transportation Investment Plan (STIP), which is updated and funded every two years. Currently Northwest Oregon Area Commission on Transportation is working to develop a Transportation Work Plan, which compiles an inventory of projects and unmet needs listed in the region's Transportation System Plans to determine the improvements necessary to enhance transportation and economic

development in the region. According to the CEDS report, examples of potential projects include:

- Rail crossings and downtown rail safety improvements.
- Maintenance of commercial air service.
- Dredge disposal facility near the mouth of the Columbia River.
- Transit facilities.
- Dike restoration to carry rail track.
- Culverts/flood gates to allow passage of water during storm events.
- Roadways.

The major highways serving the Camp Rilea study area are shown on Figure 2-8 and include US Highway 101, US Route 30, and Oregon State Highway 104. These routes are all improved and provide connections from the study area to other parts of Oregon and outside the State.

US Highway 101 runs north–south through the states of California, Oregon, and Washington, along the West Coast of the United States. It is a designated Oregon scenic Byway and a National All-American Road, receiving such designation due to its importance to local communities and visitors alike. This designation carries certain restrictions about the types of development or obstructed views that can occur along the byway, including not allowing billboards.

US Route 30 is a major east–west highway, running from Astoria to the Idaho border. West of Portland, US 30 generally follows the southern shore of the Columbia River; east of Portland the highway has largely been replaced with Interstate 84.

State Highway 104 provides connection between US Highway 101 and Fort Stevens State Park. It is approximately six miles long between its connection to US Highway 101 and the entrance to Fort Stevens State Park and runs through the City of Warrenton.

Air Transportation

There are two airports located in the JLUS study area that serve both commercial and general aviation

aircraft. Local airports include Astoria Regional Airport and Seaside Municipal Airport. Astoria Regional Airport provides passenger flights to Portland International Airport (as well as general aviation aircraft), while Seaside Municipal Airport serves private and business aircraft only. Astoria Regional Airport is also home to the US Coast Guard Group Astoria, which operates three HH-60 helicopters.

Ports

There is a deep-water draft port in Astoria, which has Marine and Cruise Ship terminals, marinas, Haul Out, and Boatyard along Columbia River. Freight grade rail transportation is available between Tillamook and Banks in western Washington County and between Rainier and Portland. The City of Warrenton has two marinas that serve both a charter and large commercial fleet.

Water and Sewer

Clatsop County's water standards work to ensure a supply of safe drinking water to the community, but do not guarantee it. During the building permit review process the County verifies that there is a safe and sufficient water supply for the proposed development. Clatsop County requires a supply of 250 gallons of water for each dwelling per day, year-round. The areas not within city limits have various water sources such as water districts or community water systems, while some cities service areas outside of their boundaries. Camp Rilea has its own water supply. It also has its own wastewater treatment system that has been in operation since 1978 under permits approved by the Oregon Department of Environmental Quality.

Large areas of the County do not have a water service and depend on individual wells or surface water withdrawal for their water. Specific County standards stated on the county website are listed below:

- Water district or a community water system: A letter from the district or system manager stating that they will provide service to the property line.

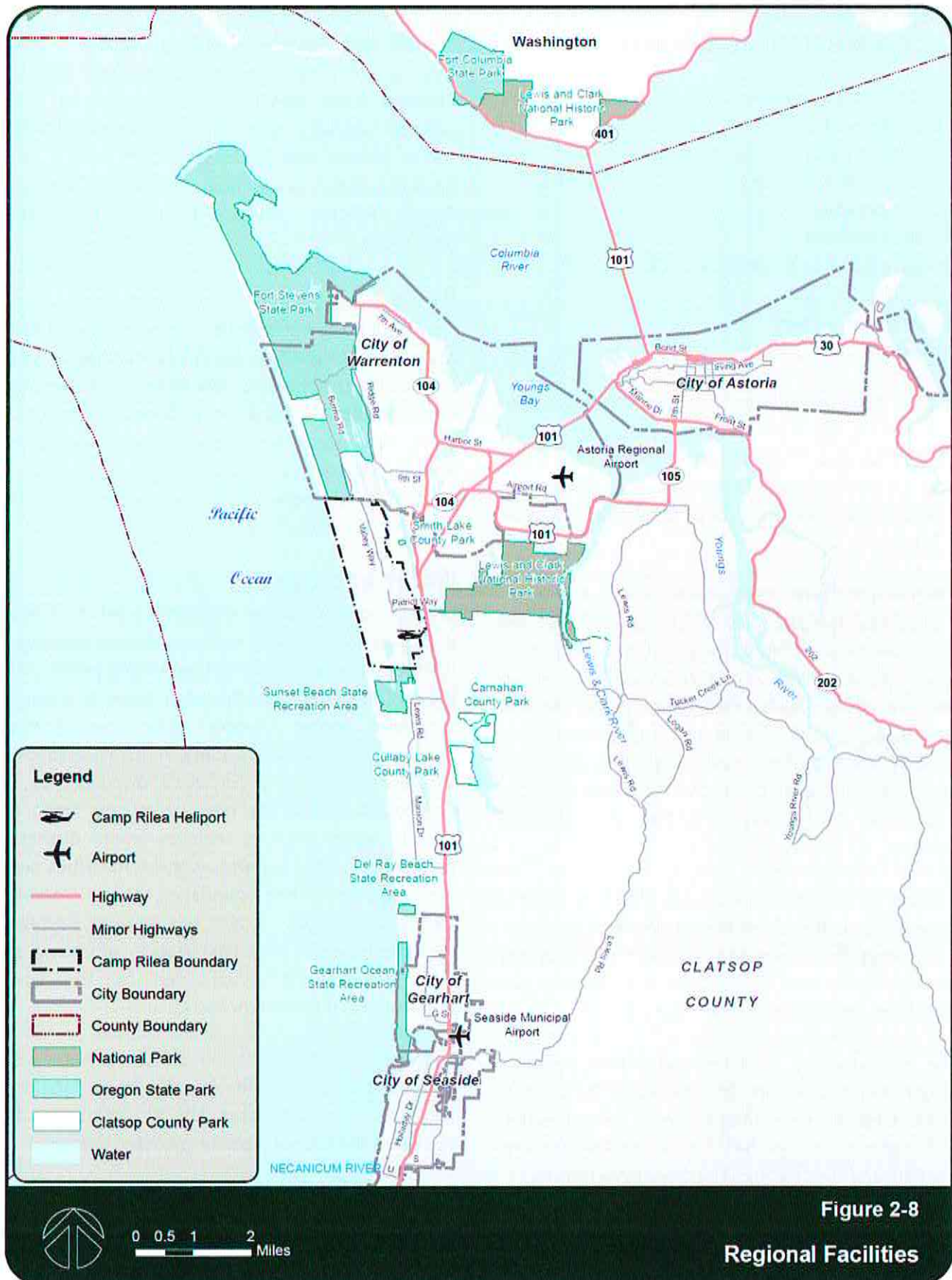


Figure 2-8

Regional Facilities

- Well: Well log data sheet from a licensed well driller, plus a potability test from a certified water-testing lab.
- Spring: Surface water rights from the Oregon Department of Water Resources; plus potability test from a certified water testing lab; plus evidence that the flow equals or exceeds 2.25 gallons per minute.
- Surface Water: Surface water rights to at least 2.25 gallons per minute from the Oregon Department of Water Resources; plus a potability test from a certified water testing lab.

Source: http://www.co.clatsop.or.us/Assets/Dept_12/PDF/water.pdf

The sewer districts in Clatsop County include:

- Astoria Sewer District
- Arch Cape Sanitary Sewer District
- Cannon Beach Sanitary Sewer District
- Seaside Sewer District
- Shoreline Sanitary Sewer District
- Westport Sewer District
- Warrenton Sewer District

Parks and Recreation

The Clatsop Plains region hosts numerous national, state, and local parks and beaches (see Figure 2-8).

National Parks

The National Park Service manages the following park in Clatsop County (see Figure 2-8).

Lewis and Clark National Historical Park

Located to the east of Camp Rilea, the Lewis and Clark National Historic Park is part of the Lewis and Clark Historic Trail, which traces and preserves remnants of the Lewis and Clark expedition. The entire trail is 3,700 miles long, beginning in Wood River, Illinois and ending in Oregon. A new addition to the park is the Fort to Sea Trail, which passes through the southeast corner of Camp Rilea as it connects to the Pacific Ocean (see Figure 2-2).

State Parks and Recreation Areas

All state parks and recreation sites are managed by the Oregon Parks and Recreation Department (OPRD). These areas are shown on Figure 2-8.

Clatsop Beaches

Beginning at Seaside and running north up the coast, there are several state and county recreation areas collectively referred to as the Clatsop Beaches. These beaches include:

- Clatsop Beach
- Del Rey Beach
- Gearhart
- Seaside
- Sunset Beach

The Clatsop Beaches are the ideal location for razor and bay clamming; it is where 95% of the razor clam harvest occurs in the State of Oregon. Razor and bay clamming is prohibited on Clatsop County beaches north of Tillamook Head annually from July 15 to September 30.

Source: <http://www.dfw.state.or.us/mrp/shellfish/razorclams/index.asp>

The Clatsop Beaches provide important commercial and recreational clam harvesting due to the occurrence of negative or “minus” tides in this area tied with the shallow shoreline. These tides occur at their lowest recorded levels during late spring and early summer, reaching levels of -2.5 to -3 feet below the zero base water level. The minus tides expose more of the seabed, which would typically be under water in a typical low tide, and allow for greater opportunities for clamming. While razor and bay clamming also occurs further south near Tillamook Head, the Clatsop Beaches tend to be more fertile due to geography and water currents.



Clamming near Seaside

Del Rey Beach State Recreation Area

Del Rey Beach is located just 2 miles north of the City of Gearhart. It offers day use access to the Oregon coast.

Fort Stevens State Park

To the north of Camp Rilea is Fort Stevens State Park, which used to be a former army facility. The 4,200-acre park offers camping, beaches, lakes, trails, wildlife and historic features such as a sunken ship and a military museum. The park has an expansive network of biking and hiking trails.

Sunset Beach State Recreation Site

Sunset Beach is a 120-acre park located adjacent to the south boundary of Camp Rilea (see also Figure 2-2). The park marks the trailhead of the Fort to Sea Trail. Sunset Beach is a day use beach which offers prime clamming terrain, views from Cape Disappointment and access to the Pacific Coast Trail (also known as the Oregon Coast Trail).

County Parks

According to the February 2010 Clatsop County Parks and Natural Areas – Natural Resources Stewardship Plan, Clatsop County owns and manages 11 parks, totaling 545 acres, and six recreation/natural area sites, totaling 282 acres. Of these, the following three sites are located within the Camp Rilea JLUS study area (see Figure 2-8):

Carnahan Park

Carnahan Park located off US Highway 101 between Warrenton and Gearhart. The 30-acre park is at the

north end of Cullaby Lake and offers lake sports and day use activities.

Cullaby Lake Park

Cullaby Lake Park is 165-acre park located between Warrenton and Gearhart on the south and east sides of Cullaby Lake. The park offers lake recreation and biking and hiking trails.

Smith Lake Park

Smith Lake Park is comprised of 2.5 acres of forest located on the west side of Smith Lake Road off Ridge Road.

Threatened and Endangered Species

According to the Fish and Wildlife Service (USFWS) there are ten listed threatened or endangered species in Clatsop County. Additionally there are numerous mammals, birds, reptiles, invertebrates and plants of concern. However, currently there are no proposed endangered or threatened species. Section 4.14, Biological Resources, discusses the species that are associated with the Camp Rilea study area and how activities on the installation can potentially affect these species, and how species protection impact training operations.

Existing Plans and Programs

Relative to compatibility planning, there are a number of existing plans and programs that are either designed to address compatibility directly or that indirectly address compatibility issues through the topics they cover. This chapter provides an overview of key plans and programs that impact compatibility planning, organized by level of government. The discussion of plans and programs by organization is presented in the following order:

- *Federal Plans and Programs*
- *Oregon National Guard / Camp Rilea Plans and Programs*
- *State of Oregon Departments*
- *State of Oregon Plans and Programs*
- *Clatsop County Plans and Programs*
- *City of Warrenton Plans and Programs*

This review is meant to provide an overview of applicable plans and programs and determine how each may apply to compatibility, as presented under the compatibility factors discussed in Sections 4.1 through 4.14.



JLUS Observations

Text boxes similar to this one are found throughout this chapter that discuss existing plans and programs reviewed and how they relate to Camp Rilea in terms of planning, compatibility and the overall JLUS planning process.

This chapter concludes with an overview of other resources that can be consulted concerning compatibility planning.

Inside Chapter 3

3.1. FEDERAL PLANS AND PROGRAMS 3-3

Army Compatible Use Buffer (ACUB) Program	3-3
Bird Aircraft Strike Hazard (BASH)	3-3
Clean Water Act (CWA)	3-3
Endangered Species Act (ESA)	3-3
Federal Aviation Act (Part 77)	3-3
Lewis and Clark National Historic Trail Comprehensive Management Plan	3-4
Lewis and Clark National Historic Trail Strategic Plan	3-5
National Environmental Policy Act (NEPA)	3-5
National Scenic Byways Program	3-5
Noise Control Act of 1972	3-6
Oregon Silverspot Revised Recovery Plan	3-6
TsunamiReady, TsunamiPrepared	3-6

3.2. OREGON NATIONAL GUARD / CAMP RILEA PLANS AND PROGRAMS 3-7

Camp Rilea Noise Study	3-7
Integrated Natural Resources Management Plan (INRMP)	3-7
Oregon Army National Guard Regulations	3-8

3.3. STATE OF OREGON DEPARTMENTS 3-8

Oregon Department of Environmental Quality (DEQ)	3-8
Oregon Department of Land Conservation and Development (DLCD)	3-8
Oregon Department of Transportation (ODOT)	3-9
Oregon Military Department (OMD)	3-9
Oregon Parks and Recreation Department (OPRD)	3-9
Oregon Department of State Lands (DSL)	3-9

3.4. STATE OF OREGON PLANS AND PROGRAMS 3-9

Fort Stevens Management Plan	3-9
Groundwater Quality Report for the Northwest Coast Basin	3-10
Measure 49	3-10
Northwest Oregon Comprehensive Economic Development Strategy (CEDS)	3-11
Oregon Coastal Management Program (OCMP)	3-11
Oregon Groundwater Protection Act	3-11
Oregon Map (ORMAP) Program	3-12
Oregon Scenic Byways Program	3-12

Oregon State Law 195 – Local Government Planning Coordination	3-12
Oregon State Law 197 – Comprehensive Land Use Planning Coordination	3-13
Oregon Statewide Planning Goals	3-13
Oregon Transportation Plan (OTP)	3-17
State Agency Coordination Program	3-18
Sunset Bay District Parks Master Plan	3-18
Tsunami Regulatory Maps (“SB 379” Maps)	3-18
US Highway 101 from Camp Rilea to Surf Pines Study	3-18

3.5. CLATSOP COUNTY PLANS AND PROGRAMS 3-19

Clatsop County Comprehensive Plan	3-19
Clatsop County Land and Water Development and Use Ordinance	3-19
Clatsop County Standards Document	3-20
Clatsop County Recreational Lands Master Plan	3-20
Clatsop County Parks and Natural Areas – Natural Resources Stewardship Plan	3-20
Clatsop Plains Groundwater Protection Plan Summary Report and Environmental Assessment	3-21
Skipanon River Watershed Assessment	3-21
Clatsop County Natural Hazards Mitigation Plan (NHMP)	3-21
Clatsop County Transportation System Plan (TSP)	3-22

3.6. CITY OF WARRENTON PLANS AND PROGRAMS 3-22

Comprehensive Plan	3-22
Warrenton Municipal Code	3-22
Warrenton Development Code (WDC)	3-23
Urban Renewal Report (URR)	3-23
Downtown and Marina Master Plans	3-23
City of Warrenton Transportation System Plan	3-24
Warrenton Trails Master Plan	3-24
City of Warrenton Natural Hazards Mitigation Plan	3-25

3.7. OTHER REFERENCES 3-25

Guides	3-25
Videos	3-25

3.1. Federal Plans and Programs

Army Compatible Use Buffer (ACUB) Program

Title 10, Section 2684a of the United States Code authorizes the DoD to partner with non-federal governments and private organizations to establish buffer zones around critical active military assets. Within the Department of the Army, this program is called the ACUB program. Through the ACUB program, military installations work with partners to establish buffer zones that can help to protect habitat, sensitive areas, and training areas without acquiring any new land for Army ownership.

Bird Aircraft Strike Hazard (BASH)

A BASH is designed to minimize wildlife and bird strike damage to military aircraft. A BASH plan is designed to control birds, alert aircrew and operations personnel, and provide increased levels of flight safety, especially during the critical phases of flight, take-off and landing operations. Specifically, the plan is designed to:

- Designate a Bird Hazard Warning Group (BHWG) and outline the members' responsibilities.
- Establish procedures to identify high hazard situations and establish aircraft and airfield operating procedures to avoid these situations.
- Ensure that all permanent and transient aircrews are aware of bird hazards and the procedures for avoidance.
- Develop guidelines to decrease the attractiveness of the airfield to birds and disperse the number of birds on the airfield.

Clean Water Act (CWA)

The CWA governs the management of water resources and controls and monitors water pollution in the US. The CWA establishes the goals of eliminating the release of toxic substances and other sources of water pollution to ensure that surface waters meet high quality standards. In so doing the CWA prevents the contamination of near shore, underground and surface water sources. The Oregon Department of Environmental Quality has primacy

from the US Environmental Protection Agency and manages the CWA in Oregon.

National Pollutant Discharge Elimination System (NPDES)

Per the CWA, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into US waters. Point sources are discrete conveyances such as pipes or man-made ditches. According to the law, individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

Endangered Species Act (ESA)

The ESA establishes a program for the conservation of threatened and endangered plants and animals and their habitats. The US Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) are the lead implementing agencies of the ESA. The ESA requires federal agencies, in consultation with the USFWS and/or the NOAA Fisheries Service, to ensure that actions they "authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species." The law also prohibits any action that causes a taking of any listed species of endangered fish or wildlife. ESA provides a platform for the protection of critical habitat and species that may be at risk of extinction.

Federal Aviation Act (Part 77)

The Federal Aviation Act was passed in 1958 to provide methods for overseeing and regulating civilian and military use of airspace over the United States. The Act requires the Secretary of Transportation to make long-range plans that formulate policy for the orderly development and use of navigable air space. The intent is to serve the needs of both civilian aeronautics and national defense, but does not specifically address the specific needs of military agencies. Military planning strives to work alongside local, state, and federal aviation law and policies but sometimes must supersede these and other levels of

government due to national security interests. The Federal Aviation Administration (FAA) was created as a result of the Act for a variety of purposes, including the management of airspace over the US.

The 500-foot (ft.) rule, promulgated by the FAA, states that every citizen of the United States has “a public right of freedom of transit in air commerce through the navigable air space of the United States”. The rule was formally announced in the 1963 Court of Claims ruling in *Aaron v. United States* and states that flights 500 feet or more above ground level (AGL) do not represent a compensable taking because flights 500 feet AGL enjoy a right of free passage without liability to the owners below.

Another important outcome of the Act is FAA Regulation Part 77, commonly known as Part 77, which provides the basis for evaluation of vertical obstruction compatibility. This regulation determines compatibility based on the height of proposed vertical structures or natural features in relation to their distance from the ends of the runway. Using a distance formula from this regulation, local jurisdictions can easily assess the height restrictions near airfields. Additional information on Part 77 is located on the Federal Aviation Administration Internet site at [http:// www.faa.gov/](http://www.faa.gov/).

The main focus of Part 77 is to establish standards used to determine obstructions within navigable airspace, typically within a certain distance from an airport or airfield. It defines an obstruction to air navigation as an object that is of greater height than any of the following heights or surfaces in the following manner:

- A height of 500 feet AGL at the site of the object.
- A height that is 200 feet AGL or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport, excluding heliports with its longest runway more than 3,200 feet in actual length. This height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

- A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required clearance.
- A height within an en route obstacle clearance area, including turn and termination areas, of a federal airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.
- The surface of a takeoff and landing area of an airport or any imaginary surface established under 77.25, 77.28, or 77.29. However, no part of the takeoff or landing area itself will be considered an obstruction.

Lewis and Clark National Historic Trail Comprehensive Management Plan

The Lewis and Clark Trail spans 4,600 miles across 18 states ending its course along the northern border of Oregon following the Columbia River to the Pacific Ocean. This famous trail is a significant cultural resource to US history that requires preservation and protection. The National Park Service (NPS) is in the process of developing the Comprehensive Management Plan (CMP) for the Lewis and Clark National Historic Trail. The purpose of the Plan is to guide administration and management of the Trail for a 20-year period. The Plan will provide a set of long range goals and create a vision for how the Trail should be managed.

There is an existing Management Plan in place that was developed in 1982. This Plan outlines a strategy for commemorating the Lewis and Clark journey through the creation of a trail that retraces their journey and highlights the many historic landmarks along the way. The Plan outlines how cooperative agreements between State and local governments and the Department of Interior will determine the manner in which the Trail is managed. The portion of the Trail that falls within the Camp Rilea JLUS study area is managed by staff of the Lewis and Clark Historical Park in Oregon. Consideration of this Plan and the Trail's cultural significance are important to

this planning process in order to ensure the protection of cultural significance and consistency with NPS goals for the area.

Lewis and Clark National Historic Trail Strategic Plan

The NPS developed the Lewis and Clark National Historic Trail Strategic Plan to ensure compliance with Section 104 of the National Parks Omnibus Management Act of 1994. The Strategic Plan sets out long term goals and associated quantitative indicators to measure the NPS's progress in meeting the objectives of the Plan. The indicators are used to develop the corollary Annual Performance Plan, which evaluates how the goals are being achieved. The Strategic Plan takes into account how external factors such as natural disasters may slow down the establishment of certain portions of the Trail. Most of the goals in the Plan relate to safety and administrative aspects of the program while others address partnering and increasing visitation to historic sites. Given the trail's proximity to Camp Rilea and that it passes through the base, any improvements or changes to the trail have the potential to affect planning for the base and vice versa.

National Environmental Policy Act (NEPA)

The NEPA of 1969 is a federal regulation that established a US national policy promoting the protection and enhancement of the environment and requires federal agencies to analyze and consider the potential environmental impact(s) of their actions. The purpose of NEPA is to promote informed decision-making by federal agencies by making detailed information concerning significant environmental impacts available to both agency leaders and the public.

All projects receiving federal funding require NEPA compliance and documentation. NEPA is applicable to all federal agencies, including the military. Not all federal actions require a full environmental impact statement (EIS). In some cases, if the action may or may not cause a significant impact the agency can prepare an environmental assessment (EA), which is less intensive.

A NEPA document can serve as a valuable planning tool for local planning officials. An EA or EIS can assist in the determination of potential impacts that may result from changing military actions or operations and their effect on municipal policies, plans and programs, and the surrounding community. Public hearings are required for all EIS documents released under NEPA. An EA requires publishing the draft EA and Finding of No Significant Impact (FONSI) and also allowing public comment for a period of 30 days. An EA can either end in a FONSI, or a Record of Decision (ROD) that concludes there will be a significant impact. The information obtained by the EA / EIS is valuable in planning coordination and policy formation at the local government level.

NEPA mandates that the military analyze the impact of its actions and operations on the environment, including its surrounding civilian communities. Inherent in this analysis is an exploration of methods to reduce any adverse environmental impact. NEPA involves a public process that welcomes participation by the community.

National Scenic Byways Program

The National Scenic Byways Program was established in 1991 by Congress to preserve and protect America's important scenic roads and promote tourism and economic development for those that are less-traveled. The Federal Highway Administration (FHWA), a division of the US Department of Transportation, administers the program.

To be designated as a Scenic Byway, a road must go through a nomination process and exhibit at least one of the criteria requirements of displaying scenic, natural, historic, cultural, archaeological, or recreational quality. Certain standards must be met for the specific topic, and the road must already be designated as a state scenic byway. Some roads may be considered for national designation on a case-by-case basis if they are not a State Scenic Byway, but they do meet all the criteria and requirements for national designation.

Designation of a Scenic Byway involves the development of a corridor management plan that has community involvement and specifies the actions, procedures, controls, operational practices, and

administrative strategies to maintain conservation and enhancement on the intrinsic qualities of the byway and promotes tourism and economic development. The management plans themselves do not necessarily impose new regulations or restrictions for the byway, but they provide guides for local governments to incorporate into their planning documents. In addition, Scenic Byways are eligible for special grant funding for byway-related projects through FHWA's National Scenic Byways Discretionary Grants program.

Scenic Byways may further be designated as an All-American Road if they are found to meet additional criteria that make them stand out above the Scenic Byway designation. US Highway 101 that runs along the eastern side of Camp Rilea, and travels through California, Oregon, and Washington, has the distinction of being named an All-American Road.

Noise Control Act of 1972

The Noise Control Act of 1972 determined that noise not adequately controlled has the potential of endangering the health and welfare of people. It states that all Americans are entitled to an environment free from noise that can jeopardize their general health and quality of life. Along with state, local, and territorial governments, actions from the federal government were needed to ensure that the objectives of the Act were met.

Concurrently, military installations were experiencing the impacts related to encroaching urban development locating adjacent to the installation and the resulting complaints regarding noise from military flight operations. In 1973, the DoD responded by establishing the AICUZ program.

The Noise Control Act, as well as the AICUZ program, is important because encroaching development and increased population near military installations often creates compatibility concerns. As communities grow, it is important that the military installation, developers, and the communities work together to mitigate the issue of noise and develop ways to coexist compatibly.

Oregon Silverspot Revised Recovery Plan

The Oregon Silverspot Butterfly (OSB) is the species whose habitat occurs in areas within the boundaries of Camp Rilea as well as patchy areas along the Pacific/Oregon coastline, which is included in the USFWS's Pacific Region (Region 1). The Oregon Silverspot Revised Recovery Plan (2001) was developed as an update to the 1982 Recovery Plan by the US Fish and Wildlife Service of Region 1.

The goal of a Recovery Plan is to identify specific actions that can be employed to recover or protect the listed OSB. The plan provides information about the status of the OSB at the time the plan was developed and states the conditions that must be met in order for the butterfly to be delisted from endangered status. The Plan lists Clatsop Plains as one of the viable and important OSB habitat areas. The OSB habitat in Clatsop County is bisected by Highway 101 and is fragmented by development, which reduces the effectiveness of the habitat. In the plan, Camp Rilea was specifically identified as one of three habitat areas in Clatsop County, but is also documented to have not had a recorded OSB sighting since 1995.

The Plan recommends the following actions to help recover the OSB:

- Protect habitat
- Manage habitat
- Reduce incidence of takings (i.e., habitat degradation)

TsunamiReady, TsunamiPrepared

TsunamiReady, TsunamiPrepared is part of the National Tsunami Hazard Mitigation Program, which is administered by the NOAA. The purpose of the program is to foster grassroots awareness and preparedness for tsunamis. The program provides funding for the remapping of the Oregon coast to help create a comprehensive evacuation plan for the entire coast. Oregon communities that are already participating in this program include Rockaway Beach, Manzanita, Nehalem, Wheeler, Yachats, Waldport, Seal Rock, and Bandon.

3.2. Oregon National Guard / Camp Rilea Plans and Programs

Camp Rilea Noise Study

Per the Noise Control Act of 1972, the Oregon Army National Guard (ORARNG) completed the ORARNG Statewide Operational Noise Management Plan (ONMP) in 2010. The plan aims to achieve maximum compatibility with the surrounding civilian communities by analyzing the noise impacts generated by military training on base. The ONMP explains general military noise issues, discusses ORARNG noise issues and procedures, and presents installation-specific noise environment in detail.

One of suggested strategies for managing noise complaints, mentioned in the plan is to ensure that complaints are directed to the appropriate installation contact by maintaining a Noise Complaint Program per Army Regulation (AR 200-1). The Noise Complaint Management Program is followed by all military installations in order to best manage issues caused by noise.

The ORARNG ONMP identifies the Army Compatible Use Buffer Program as a possible option for managing military generated noise impacts that extend off base. The ONMP outlines the ORARNG's noise complaint procedure policy as follows:

- Complaints are routed to the activity responsible for the complaint.
- Complaints are investigated.
- A Noise Complaint Questionnaire (AGO form 200-1-11) is completed for all noise complaints received.
- The complainant is made aware of the unit mission and informed that every effort will be made to correct the problem, mission permitting.
- A copy of the completed Complaint Questionnaire and the response is provided to the Public Affairs Officer and AGI-ENV. If necessary, complaints and concerns are forwarded to the agency leadership for review.

ONMP also describes the noise environment at Camp Rilea. Sources of off-base noise include small

arms firing activities, demolitions, and helicopter flights. The specific noise impacts of these activities are discussed in the plan. The ONMP states there have only been two noise complaints recorded over the past five years.

Although the ONMP identifies a means for the military to address public noise concerns, it is not distributed for use by the surrounding local governments and therefore has limited utility in helping to influence local decision-making. It is also limited in scope in that it does not articulate proactive strategies for increasing awareness about high sensitivity noise areas outside of the installation.



JLUS Observations

The ONMP is prepared by the US Army Public Health Command for internal use in planning military training activities and facilities. It is not designed as a document intended for outside use. However, the information is not classified and, if appropriately used, could be of benefit to agencies such as Clatsop County in land use planning efforts.

Integrated Natural Resources Management Plan (INRMP)

Camp Rilea's most recent INRMP was adopted in 2001 and meets the requirements set out by the Sikes Act. The Sikes Act requires a balance of military training and natural resource management as long as no net loss of training opportunity results. The INRMP, which lays out a plan for the management of natural resources on Camp Rilea, was developed for compliance with the Sikes Act. According to the Plan, Camp Rilea is known to contain a wide array of ecosystems, ranging from coastal meadows to spruce/fern forest. The INRMP provides adaptive management strategies as a means for accomplishing the goals of managing the various ecosystems. The stated policies of the INRMP are:

- Implement an INRMP and review the provisions annually.
- Apply the concepts of adaptive management and ecosystem management to Camp Rilea to enhance training opportunities and natural resource stewardship.

- Promote native species and enhance the biodiversity and ecological communities of the camp, while ensuring sustainment and compatibility with the camp's military mission.
- Protect and preserve special-status species resources (e.g. wetlands, listed species, and rare species).
- Allow coordinated public access and use of the camp as long as the military and conservation missions are not unduly compromised.
- Support sustainable use of the camp's resources.
- Cooperate with adjacent landowners and public agencies in the management of area ecosystems and natural resources.

These policies are designed to protect the many ecosystems on the installation and simultaneously preserve the integrated training area management (ITAM) or sustained use of training and testing lands. The INRMP outlines efforts to protect and preserve Oregon Silverspot Butterfly habitat.

Camp Rilea's INRMP's annual reviews have been conducted and are current, including yearly discussions and documented coordination with the US Fish and Wildlife Service and Oregon Department of Fish and Wildlife. As such, the plan, although adopted in 2001, is considered current

Oregon Army National Guard Regulations

The ORARNG, Installations Division, Environmental Branch has established a number of different regulations that outline procedures and guidelines for managing various environmental issues on the camp. These regulations include:

- **ORARNG Regulation 200-1** – This regulation addresses environmental compliance issues, primarily those relating to federal environmental laws.
- **ORARNG Regulation 210-4** – This regulation established a Pollution Prevention Plan for ORARNG installations. The regulation provides guidelines to reduce, avoid, or eliminate the use of toxic substances and the generation of hazardous wastes.
- **ORARNG Regulation 210-5** – This regulation sets out protocols for Integrated Pest Management.
- **ORARNG Regulation 350-29** – Local Training Area Approval – This regulation establishes the responsibilities of unit commanders to ensure local training areas comply with environmental laws and regulations.
- **ORARNG Regulation 420-47** – Hazardous Material, Waste and Spill Management Plan – This Plan provides information about how the ORARNG will manage hazardous materials and waste.
- **Environmental Standard Operating Procedure, Safe Drinking Water Act** – This plan outlines the ORARNG's procedures for ensuring the supply of safe drinking water at locations that use non-public wells.
- **Ozone Depleting Chemical Elimination Plan** – This plan outlines ORARNG's strategy for managing and phasing out the routine use of ozone depleting substances such as halon and chlorofluorocarbon.

3.3. State of Oregon Departments

Oregon Department of Environmental Quality (DEQ)

The DEQ oversees the implementation of the Oregon Groundwater Protection Act. DEQ upholds this responsibility by partnering with the Oregon Health Division, Water Resources Department, Department of Agriculture, Oregon State University and other state, local, and private organizations.

Oregon Department of Land Conservation and Development (DLCD)

The DLCD is the state agency responsible for overseeing the regulation of land uses throughout the state. DLCD's overall mission is to protect the farm and forest lands and the state's natural resources, foster livability through sustainable community development, ensure the conservation of coastal rivers and ocean resources, develop and manage a clear and consistent land use system, and foster regional collaboration and local decision-making regarding land use issues. DLCD helps to facilitate the implementation of Oregon's land use and planning statutes by assisting and coordinating with local

governments. DCLD is also charged with ensuring local and state compliance with federal regulations.

Oregon Department of Transportation (ODOT)

The ODOT is the state's agency responsible for providing a safe efficient transportation system throughout Oregon. ODOT oversees all modes of transportation from highways and bridges, to public rail passenger and freight systems, to bicycle and pedestrian paths. ODOT develops a state transportation plan, which outlines the agency's vision and goals.

Oregon Military Department (OMD)

The OMD is the administrative head of the Oregon National Guard (ORNG) and oversees the Oregon Emergency Management Division. The OMD coordinates training schedules for ORNG Soldiers and Airmen at facilities throughout the state and procures funding for maintenance and upgrades at these facilities. OMD's State Agency Coordination Program was certified by the Land Conservation and Development Commission in 1988 and emphasizes the need for coordination among the OMD and State agencies, tribal governments, and local governments. This requirement is consistent with the Statewide Planning goals. The required coordination facilitates increased synchronicity between the OMD military installations and the local planning processes.

Oregon Parks and Recreation Department (OPRD)

The OPRD manages the state parks throughout Oregon, including Fort Stevens State Park to the north of Camp Rilea. In addition, OPRD is responsible for several recreational areas in the State, including the Ocean Shores Recreation Area, Oregon's Recreation Trails, Scenic Waterways, and the Willamette River Greenway. OPRD has a Heritage Programs Division, under which falls the State Historic Preservation Office, Heritage Commission, and the Oregon Commission on Historic Cemeteries. This division operates several cultural and historic preservation programs through its various entities.

Oregon Department of State Lands (DSL)

The DSL manages land and natural and fiscal resources that support the Common School Fund. The DSL is also the agency that administers the State Land Board and handles the day-to-day work of the Board. The types of land that the DSL oversees include state lands (i.e. forestland, off-shore land, and land used for agriculture and grazing), unclaimed property, estates, estuarine tidelands, submerged and submersible lands, wetlands, and waterways. The DSL's other responsibilities include leasing or selling state land, leasing mineral rights and energy-production rights on state lands, maintenance of historical land records, and administratively overseeing the Natural Heritage Advisory Council.

3.4. State of Oregon Plans and Programs

Fort Stevens Management Plan

Fort Stevens State Park is located adjacent to the north/northwest of Camp Rilea along the Oregon coastline. The park hosts various public recreational activities as well as provides refuge for wildlife and plant life. The Fort Stevens Management Plan (2001) was developed by the OPRD per Oregon Revised Statutes (ORS) 390.180. Camp Rilea participated in the development of this plan. The plan describes existing facilities, describes future recreation demands, and sets out goals for maintaining and managing the park's resources.

The Plan indicates that most of the beaches and dunes in the park are undeveloped and extend down the coast as far south as Camp Rilea. The Plan identifies urban development as part of the reason for the dislocation of wildlife onto the park and the military installation. The development concepts presented provide a 20-year plan for managing all of these resources and facilities.



JLUS Observations

The Fort Stevens Management Plan demonstrates a planning process that was inclusive of Camp Rilea.

Groundwater Quality Report for the Northwest Coast Basin

The Groundwater Quality Report for the Northwest Coast Basin (2004) was developed by the DEQ to assess groundwater contamination and contaminants in the areas in the northwest corner of Oregon, including Clatsop County. The report assesses the causes of groundwater contamination in the Clatsop Plains dunal aquifer. Most of the identified causes relate the impacts of urban development and agricultural activity on sediment. The report identifies the main primary pollutants to be nitrate, bacteria, and lead. The recommendations made in the report are stated below:

"In the Clatsop Plains area, with a special emphasis in and around the City of Gearhart, a sampling strategy should be developed and implemented to address the following:

- *Evaluate the effectiveness of the geographic rule, particularly as it pertains to nitrate.*
- *Determine the implementation status of local regulations regarding aquifer reserves.*
- *Assess the models and predictions for groundwater impacts from permitted development using on-site septic systems.*
- *Identify nitrate and bacteria sources (e.g., septic versus agricultural).*
- *Determine lead levels, source(s), and its distribution.*

"Where sufficient information is available in the Clatsop Plains area, the DEQ could pursue declaring an Area of Groundwater Concern, or a Groundwater Management Area (ORS 468b.175 & ORS 468b.180, and OAR 340-040-0105[7]). After such a declaration, the DEQ and other agencies would develop an action plan to reduce existing contamination and prevent further contamination of the affected groundwater."

Although the report does not address Camp Rilea specifically, activities that occur on the installation, just like all other activities within the region, have the potential to affect groundwater quality and are an important aspect to consider in regional resource management.



JLUS Observations

Impacts of groundwater contamination on or from Camp Rilea are not examined in the Groundwater Quality Report for the Northwest Coast Basin.

Measure 49

Measure 49 was passed in 2007 as a citizens' repeal of Measure 37 (2004). Measure 37 was a citizen's initiative requiring just compensation in instances where land use regulations restrict the residential use of private property or a farming or forest practice and thereby reduces the fair market value of the property for the property owner. Measure 49 has two components. The first replaces the two forms of compensation put forward in Measure 37—a waiver of land use regulations or the payment of compensation—with an approval for establishment of home sites. This modification serves as a form of compensation for land use regulations imposed after owners acquired their properties. The second limits the filing of new claims to infractions by land use regulations enacted after January 1, 2007. Under Measure 37, relief is only extended to landowners if a reduction in property value can be established. The DLCDC is the entity responsible for hearing and determining the validity of all Measure 37 claim cases.

Measure 37 is codified under ORS 197 and integrated into Measure 49, which allows for more flexibility in the type of compensation used for private property infringement than Measure 37. Measure 49 and 37 create an environment in which any form of land use regulation that restricts residential uses, farming or forest practices can be interpreted as a "taking". In this environment local governments will be less likely to regulate land uses. These regulations may apply when military installations are considering land acquisition as a planning strategy.



JLUS Observations

Measures 49 and 37 create an environment in which any form of land use regulation that restricts residential uses, farming or forest practices can be interpreted as a "taking".

Northwest Oregon Comprehensive Economic Development Strategy (CEDS)

The CEDS was approved in 2009 and covers the period from 2009 to 2013. The CEDS report identifies Northwest Oregon as Clatsop, Columbia, Tillamook, and Western Washington Counties. The CEDS provides an overview of the economic and natural resource conditions, including problems and needs, and lays out strategies for improving economic development in the region. One of the observations noted in this study indicate that the worker to non-worker ratio in the region will be quite low by 2040, indicating low economic activity. To avoid economic stagnation, the study proposes the development of a "new economy" which includes:

- *"Emphasis on improving business operations rather than just returning to the status quo. Successful businesses are implementing lean techniques (a process for ensuring production costs are less than the value of a product), utilizing the Internet to connect with new markets and stimulate sales to current customers, and training workers on new technologies;*
- *Implementing green technology in existing businesses and recruiting / starting up green/alternative energy activity;*
- *Clustering of business development activity to provide critical mass and attract new businesses; and*
- *Natural disaster and economic preparedness."*

The study also discusses existing and potential economic clusters. Examples of existing clusters include food processing, fishing, and wood products, while emerging clusters include aviation, construction, energy and marine services. The CEDS provides essential information about the possibilities for growth in the region.



JLUS Observations

The Northwest Oregon Comprehensive Economic Development Strategy does not discuss the economic role of training activities at Camp Rilea.

Oregon Coastal Management Program (OCMP)

The OCMP integrates all state laws regarding coastal management into a single consolidated program. Effectively, the OCMP is the combination of ensuring compliance with the "19 Statewide Planning Goals", the development and implementation of Local Land Use Plans in Coastal Communities, and the compliance with State coastal laws (such as the Beach Bill, the Removal-Fill Law, and Senate Bill 100). This OCMP has been approved by the US Department of Commerce and is considered to be a successful means for integrating coastal management practices into land use decision-making and ensuring public input as is required when developing any type of planning document.



JLUS Observations

- The program does not require federal landholders with coastal property to complete comprehensive plans.
- The program does not regulate military training impacts on the coast.

Oregon Groundwater Protection Act

The Oregon Groundwater Protection Act was passed in 1989 and serves to prevent the contamination of groundwater through the conservation, restoration, and maintenance of the state's groundwater resources. Groundwater comprises 95% of Oregon's available freshwater and is the primary source of water throughout the state. The law ensures

compliance with federal programs such as the Clean Water Act; Safe Drinking Water Act; Resource Conservation and Recovery Act; Comprehensive Environmental Response, Compensation, and Liability Act; and Federal Insecticide, Fungicide and Rodenticide Act and provides added guidance. The law includes the following regulations:

- Groundwater Quality Protection Rules
- Underground Injection Control Rules
- NPDES and WPCF Permits Program Rules
- Biosolids Program Rules
- Reclaimed Water Program Rules
- On-site Sewage Disposal Program Rules

Per the law, DEQ designates Groundwater Management Area (GWMA) when a groundwater source has high contaminant concentrations due to non-point sources. There are three GWMA in Oregon; however, the Clatsop Plains groundwater source is not one of them. The Act requires ongoing monitoring and assessment of groundwater resources and the establishment of groundwater management areas. As the lead agency responsible for implementing the Act, DEQ is responsible for prioritizing groundwater sites in need of protection. As of 1998, the Clatsop Plains aquifer is known to contain the contaminant nitrate with a moderate level of contamination.

(Source: Implementation Of Oregon's Groundwater Quality Protection Act, Oregon Department of Environmental Quality, January 2001)



JLUS Observations

The Clatsop Plains aquifer is not a designated GWMA.

Oregon Map (ORMAP) Program

The ORMAP Program was initiated by the 1999 Oregon Legislature, which established a fund separate from the General Fund for the creation of an Oregon Map. The goal of the ORMAP Program is to create and maintain a property tax parcel base map of the entire state. This map is digital, publicly accessible, and regularly updated. Each County's Tax and Assessment office is responsible for the contents of the maps.



JLUS Observations

ORMAP is useful for searching information about tax parcels but provides minimal information about the parcels, other than their tax identification information. The program does not include information regarding potential restrictions due to nearby constraints such as military operations.

Oregon Scenic Byways Program

The Oregon Scenic Byways Program is administered by ODOT. The program was created in response to the national program and intertwines with federal and other state scenic roads and highways. The program has three primary goals:

1. To create a unified, statewide network of scenic highways that would recognize and manage Oregon's most outstanding scenic routes;
2. To preserve or enhance the natural, scenic, historical, cultural, recreational, and / or archaeological qualities of Oregon's byways; and
3. To provide a pleasurable attraction for in-state and out-of-state travelers.

In order for a road to be designated an Oregon Scenic Byway, it must go through a nomination and awarding process. Nominations are prepared by individuals or groups and must have the support of the local community, and reach certain criteria guidelines to be considered for awarding. Highway 101, which travels the length of Oregon, from Washington in the north to California in the south, and passes along the eastern side of Camp Rilea, is an Oregon Scenic Byway.

Oregon State Law 195 – Local Government Planning Coordination

ORS 195 provides an overview of how local governments should coordinate on regional land use issues, such as:

- Regional Planning Activities
- Urban Service Agreements
- School Facility Planning
- Parks

- Urban and Rural Reserves
- Urban Service Provider Annexation
- Landslide Hazards
- Compensation for Land Use Regulations

The requirements and instructions for regional coordination contained in ORS 195 contribute to increased coordination among Special Districts and metropolitan service districts. Guidelines about how to establish various types of intergovernmental agreements, annexations, urban service agreements, and just compensation are all outlined in the law. Although the law does not call out a protocol for coordinating with military installations, it provides a potential avenue for increasing coordination with the military.



JLUS Observations

Coordination with military commands or regarding military facilities is not mentioned in the law.

Oregon State Law 197 – Comprehensive Land Use Planning Coordination

ORS 197 is the state law that provides guidance on how to coordinate land uses in Oregon. The law establishes a process for the review of state agency, city, county, and special district land conservation and development plans by the DLCDC. Per ORS 197, city and county governments are responsible for the development of local comprehensive plans. In Oregon, a comprehensive plan is the governing land use planning document for cities and counties that zoning ordinances must conform to. The law recommends that local governments aim to consolidate infrastructure development to those areas that are currently experiencing growth rather than encouraging outward expansion. The law also establishes the protocol for local management of land use activities on federal land. It states that any activity on federal land that requires state approval must request a permit from the local government.

The law also outlines the criteria that local government should use to establish Urban Growth Boundaries (UGB) within their comprehensive plans. These criteria are a set of standards regarding how to

identify and prioritize buildable land. Factors used to establish buildable land consist of a housing analysis, a service district analysis, and a statement of determination. The urban services that require assessment for suitability to support development include:

- Sanitary sewers
- Water
- Fire protection
- Parks
- Open space
- Recreation
- Streets, roads, and mass transit



JLUS Observations

- The detailed requirements for establishing an inventory of buildable land helps to limit sprawling development and focuses future growth areas to areas that will be serviceable.
- By upholding local permitting requirements on federal land the ORS 197 helps to facilitate local involvement in development on military installations.
- The constraints associated with military land uses are not part of the criteria for determining buildable land.

Oregon Statewide Planning Goals

Since 1973, Oregon's land use planning program has been focused on achieving the "19 Statewide Planning Goals". The goals act as a collective vision for the state and its counties and communicate policies on land use subjects, such as citizen involvement, housing, and natural resources. Most of the goals have associated guidelines that provide information and examples about how that particular goal can be achieved; however, following these guidelines is not mandatory.

Each city and county in Oregon is required through State law to adopt a comprehensive plan and zoning and land division ordinances that comply with the Statewide Planning Goals. Per ORS 197, Oregon's Department of Land Conservation and Development (DLCDC), a branch of the Land Conservation and Development Commission (LCDC) reviews local

comprehensive plans to ensure consistency with the Statewide Planning Goals. Once a plan is officially approved, it is considered to be “acknowledged” and serves as the controlling land use planning document for that jurisdiction.

Oregon’s Statewide Planning Goals also apply to special districts and state agencies. There is a strong emphasis on coordination among entities and keeping plans and programs among various local government, special district, and state agencies consistent with each other and currently acknowledged in local plans.

A description of each of the 19 Statewide Planning Goals and how Clatsop County has incorporated them into their comprehensive plan are as follows:

Goal 1: Citizen Involvement

The purpose of this goal is to initiate a citizen involvement program so that all citizens of the jurisdiction have the opportunity to be involved in all phases of the planning process. The prepared citizen involvement plan should be adopted and publicized for all citizens and clearly define in what ways the general public will be involved and able to participate in land use planning processes.

Citizen involvement is an integral component of the Joint Land Use Study (JLUS) process.

Goal 2: Land Use Planning

This goal is meant to establish a process and policy framework for land use planning. This framework should be used when making decisions or taking actions that would affect the use of land, as well as to ensure that such decisions and actions are made based on factual information. In addition, land use plans are required to identify any issues or problems, inventories and factual information that relates to each applicable Statewide Planning Goal, an evaluation of other possible actions, and ultimate policy choices. Economic, energy, environmental, and social needs should be taken into consideration when these factors are identified. There are certain instances where a local government may be entitled to an exception to certain Statewide Planning Goals.

The pursuit of a JLUS for the purpose of improved land use planning around Camp Rilea helps to achieve this goal.

Goal 3: Agricultural Lands

This goal strives to preserve and maintain agricultural lands to be used for farming, agricultural production, forestry, and open space as they currently exist and into the future, based on state needs and policy as established in ORS 215.243 and 215.700. The use of zoning should be utilized to establish agricultural lands and limit the type of development on such lands to those which are suitable with and will not diminish agricultural, farming, or forest lands.

The preservation of agricultural land can serve as a tool for minimizing incompatible development around military installations.

Goal 4: Forest Lands

Similar to Goal 3, this goal is aimed specifically at protecting and maintaining the State’s forest land base and ensuring that Oregon can continue to grow and harvest forest products for its continued economic benefit. Congruent with this practice is also the need for sound management of the associated soil, air, water, fish and wildlife resources which will help to achieve this goal, as well as provide recreational and agricultural activities on forest land. For this purpose, forest lands are identified as lands that were acknowledged as forest at the time the amendment to this goal was adopted. In cases of an un-acknowledged plan or a plan amendment, forest lands will be considered as those suitable for commercial forest uses and adjacent or nearby lands necessary to permit forest operations or practices, including those necessary to maintain soil, air, water and fish and wildlife resources. Zoning and comprehensive plans shall be used by local governments to limit uses on forest lands that can have a negative impact on the land, operations or practices used to grow or harvest trees.

The protection of forest land can serve as a tool for minimizing incompatible development around military installations.

Goal 5: Open Spaces, Scenic and Historic Areas, and Natural Resources

Goal 5 is meant to preserve and maintain Oregon's natural resources and conserve its scenic and historic amenities and open spaces both for present and future generations. The goal presents a list of resources and areas that should be inventoried and protected, including wetlands, wildlife habitat, groundwater resources, approved Oregon recreation trails, and cultural areas. Historic resources, open space, and scenic views and sites are also encouraged to be inventoried, but not required. Implementation of this goal involves the appropriate siting and allowance of development and growth so that it does not damage or infringe on important open spaces, scenic, historic, or natural resources.

The preservation of open space, historic areas and natural resources can serve as a tool for minimizing incompatible development around military installations.

Goal 6: Air, Water and Land Resources Quality

The purpose of this goal is to ensure that the quality of Oregon's air, water, and land are maintained at a level that does not impact people or the natural and other resources and improve the quality of areas as required to be compliant. All waste discharge must be compliant with state and federal environmental and quality regulations and shall not have significant negative impacts on air, water or land resource quality. There are several methods or tools that can be used to implement this goal, including land use controls and ordinances, fees and tax incentive or disincentives, and capital facility programming.

Water and air quality management is a responsibility shared by state and local governments and military installations. In Clatsop Plains achieving this goal requires coordination with Camp Rilea.

Goal 7: Areas Subject to Natural Disasters and Hazards

This goal's focus is to protect people and property from injury or damage caused by natural hazards such as tsunamis, wildfires, or floods, landslides, earthquakes and coastal erosion. These protections should comply with state and federal regulations,

which should be reviewed if either of these are updated. In the event of updates to state or federal regulations, the DLCD shall consult with local government representatives to address new hazard information that will require local response. State agencies shall coordinate their inventories and natural hazards plans and information with local governments when addressing this goal.

Goal 8: Recreational Needs

Whereas most of the previous goals addressed preservation and maintaining resources, this goal responds to the existing and future need for recreational areas to be used by residents and visitors, and includes the provision where necessary for the siting of associated recreational facilities and destination resorts. Government agencies shall be responsible for planning recreation need requirements and have the responsibility for established recreational areas and facilities. In doing so, they should coordinate with private enterprises and ensure appropriate proportions of recreational areas in a quantity, quality and location that will be consistent with the availability of resources. Guidance on the siting of destination resorts in rural areas is also outlined.

The management of recreational resources near Camp Rilea could have an impact on military training and the quality of recreational experiences.

Goal 9: Economic Development

The requirements of Goal 9 are that local government plans provide sufficient availability for a wide range of economic activities and drivers to be able to support the health, welfare and livelihood of the citizens of Oregon. Plans should look at inventories for appropriate economic development or continued economic factors to increased activity and economic growth, while also taking into account other factors such as energy and public facility availability, labor market, educational and training of residents, availability of land, and environmental concerns.

Camp Rilea is an important economic contributor in the Clatsop Plains region; recommendations in the JLUS are strategies for economic retention and help to complement this goal.

Goal 10: Housing

Goal 10 is meant to ensure that there is adequate and acceptable housing for all of Oregon's residents. This includes an inventory of buildable lands and residential use to determine the appropriate number of needed housing units. Such units should be available in price ranges and rent levels that are concurrent with income levels and financial stability of residents, while also accounting for the appropriate density for the land in which they are developed.

Balancing housing needs and the military training needs is an important function of the JLUS.

Goal 11: Public Facilities and Services

The requirements of this goal are to make sure that proper and efficient public facilities and services are planned and available in order to support the livelihood of urban and rural development. Public facilities and services should be appropriate for the type of urban or rural development it shall serve, but also limited to the needs and requirements of the area. Comprehensive plans should include provisions for key facilities. Cities and counties are required to adopt a public facility plan for any area within an urban growth boundary that has a population greater than 2,500 people. This plan must have a provision for solid waste sites that can meet current and long-range needs. For certain unincorporated communities outside of an urban growth boundary, counties must develop and adopt a community public facility plan. The extension of sewer lines outside of urban growth boundaries or unincorporated community boundaries is not allowed, unless it is the only feasible alternative to mitigate public health hazards and will not negatively impact farm or forest land. The LCDC may grant special conditions for local governments to extend sewer lines outside their boundaries to allow residential uses to connect.

Focusing infrastructure investment in high density areas helps to minimize urban sprawl, which can be incompatible with military training activities.

Goal 12: Transportation

This goal addresses the importance of providing a safe transportation system for residents and visitors that is also convenient and economic. Transportation plans should take into account all modes of transportation,

including automobile, mass transit, railway, highway, bicycle, pedestrian, air and water. They should also be considerate of local, regional and state needs, encourage the use of a variety of modes, minimize negative social, economic and environmental impacts and costs, be conscious of energy conservation, conform with appropriate land use plans, strengthen the local economy through flow of goods and services, and meet the needs of the transportation disadvantaged.

Improved roadways can invite new development, which can be incompatible with military training activities.

Goal 13: Energy Conservation

Sound economic principles should be utilized to maximize energy conservation on all development and land uses.

Renewable energy can present potential incompatibilities with military training activities; therefore they need to be coordinated with military installation.

Goal 14: Urbanization

This goal relates to the transitions between urban and rural land uses. Such transitions should be orderly and efficient and ensure that urban populations and urban employment areas are contained within urban growth boundaries. All cities are required to establish and maintain an urban growth boundary in cooperation with counties and regional governments. This urban growth boundary is meant to separate urban and land likely to be urbanized from rural areas. Urban growth boundaries can be updated and changed through a cooperative process among the city, county, and applicable regional governments. All city, county, and regional government entities with stake in the new urban growth boundary must adopt the amendment before it can take effect. The goal provides scenarios in which the urban growth boundary can be expanded or proposed to expand.

Managing urbanization is an important focus of compatibility planning. Implementation of this goal helps to increase compatibility with military training.

Goal 15: Willamette River Greenway

This goal only applies to the Willamette River area, and does not relate to the study area of the JLUS.

Goal 16: Estuarine Resources

Goal 16 identifies the importance of protecting estuaries and their associated wetlands for environmental, economic and social values. Estuaries should be comprehensively managed by relevant local, state and federal agencies, but could also allow appropriate economic development that does not negatively impact them. Oregon estuaries are classified in a manner to determine the most intensive type of development or alteration that is allowed to occur. Appropriate uses for each estuary should be identified in comprehensive plans and be consistent with Oregon Estuary Classification. Uses include preservation, biological, economic, recreational and aesthetic benefits that the estuary could provide. Plans should also protect the ecosystem and environment of the estuary.

The protection of estuarine resources can serve as a tool for minimizing incompatible development around military installations.

Goal 17: Coastal Shorelands

Through this goal, coastal shorelands are conserved, protected, maintained, restored, and where appropriate, developed or used for economic or recreational uses. Shorelands should be managed in a way that is compatible with the adjacent coastal waters, and that also reduces the hazard to human safety or property and negatively impacting water quality, fish and wildlife found in the area. The entity with jurisdiction over the shoreland shall be responsible for developing a plan and programs related to this goal. The general priorities for achieving this goal are to promote uses on the shorelands that maintain the integrity of estuaries and coastal waters, provide for water-dependent and water-related uses, provide uses that are not so intense as to alter the shorelands, and provide compatible development in urban areas.

The protection of coastal shorelands can serve as a tool for minimizing incompatible development around military installations.

Goal 18: Beaches and Dunes

Goal 18 focuses on the conservation, protection, maintenance, restoration, and where appropriate, development or use for economic or recreational uses. This should coincide with ensuring that hazards to human safety and property are minimized from natural or human-induced actions regarding these areas. Development should be considerate of, and appropriately designed for, the ecological, recreational, aesthetic, water resource, and economic value of the beaches and dunes, and should be consistent with dune vegetation and natural limitations for development.

The protection of beaches and dunes can serve as a tool for minimizing incompatible development around military installations.

Goal 19: Ocean Resources

This goal only applies to Oregon Off-Shore Territorial Waters, and does not relate to the study area for the JLUS.

Oregon Transportation Plan (OTP)

The 2006 OTP is the state's long-range multimodal transportation plan. The OTP is the state's guiding document for the various plans that comprise the transportation system plan. The Plan outlines the challenges and opportunities ODOT faces in maintaining and improving state facilities. Most of the transportation management challenges relate to a growing population, declining revenues, and the need for energy efficiency and increased transit options. The Plan identifies goals, policies, and strategies and sets out a plan for implementing these objectives.

The Plan identifies the following initiatives as a focus:

- Maintain the existing transportation system.
- Optimize system capacity and safety through information technology.
- Integrate transportation, lands use, economic development, and the environment.
- Integrate the transportation system across jurisdiction, ownerships and modes.

- Create a sustainable funding plan for Oregon transportation.
- Invest strategically in capacity enhancements.

The Plan does not identify specific roadway projects or improvements. It is a policy document that provides general guidance and serves to establish a decision making framework for budgeting and other more specific planning activities. One of the challenges listed in the Plan mentions how the potential for a rising sea level could have an impact on Highway 101, which runs through the Camp Rilea JLUS study area.



JLUS Observations

The Oregon Transportation Plan is a broad policy document. It does not provide specific guidance on improving access to Highway 101 from Camp Rilea.

State Agency Coordination Program

In accordance with ORS 197.180, all Oregon state agencies are required by to maintain a State Agency Coordination Program, which must be reviewed and certified by the Oregon Land Conservation and Development Commission. These programs are meant to ensure that any action taken by a state agency that affects land use will comply with the Statewide Planning Goals and be compatible with adopted local county or city comprehensive plans.

Sunset Bay District Parks Master Plan

The Sunset Bay District Parks Master Plan (1986) was developed by the OPRD to identify how the park can better meet the growing demand for recreational areas in the region. The Plan covers the following parks:

- (William M) Tugman SP
- Yoakum Point SNA or part of Sunset Bay
- Sunset Bay SP
- Shore Acres SP
- Cape Arago SP



JLUS Observations

This Plan does not reflect current conditions and resources in the region.

Tsunami Regulatory Maps ("SB 379" Maps)

Tsunami regulatory maps (1995), created by the Oregon Department of Geology and Mineral Industries, are the official State maps used in the implementation of ORS 455.446 and 455.447. The maps identify tsunami inundation zones and the law imposes limitations on development within these areas. The maps show a single tsunami inundation line on US Geological Survey topographic maps. The maps do not provide emergency evacuation information but demonstrate areas where inundation would be most likely based on information available at the time they were developed. Each community along the coast has its own map.

US Highway 101 from Camp Rilea to Surf Pines Study

ODOT is developing a facility plan to address safety and mobility concerns along US 101 from Camp Rilea south to Surf Pines Lane. According to ODOT, this 4.6-mile section of highway is mostly two lanes, has above average crash rates, and can be congested by frequent turning movements – especially during the high-volume summer months. Currently, ODOT is in the planning and stakeholder engagement phase of the project. The planning phase of the project entails identifying issues and a range of alternative solutions.

The most relevant aspect of this project to Camp Rilea is the consideration of the interchange at the entrance to Camp Rilea (Patriot Way). Some ideas that have been discussed include:

- Constructing a grade-separated interchange. This idea was set aside because there is not enough traffic to justify the cost.
- Establishing a "backage road" to serve existing rural-residential development on the east side of US 101 just south of Camp Rilea. This would allow some driveways along US 101 to be closed, thereby reducing congestion and safety concerns. The backpage road would connect with

US 101 at the intersection with Camp Rilea, across from Patriot Way. This idea was set aside because the benefits don't justify the costs.

- Widening US 101 to either three lanes (one travel lane in each direction + center turn lane) or five lanes throughout the corridor. Currently at the entry point to Camp Rilea, US 101 has two lanes in each direction and a dedicated turning lane to enter Camp Rilea. The five-lane alternative was set aside because it is not reasonably likely to be funded.



JLUS Observations

- ODOT has been involved in the JLUS planning process and has played an important role in providing information about future plans and projects.
- The Facility Plan considered improvements to US 101 that would allow easier, safer access onto the highway from Camp Rilea, but most of them were set aside.
- US 101 at the entrance to Camp Rilea was previously improved to a five-lane cross section and is relatively safe compared to other sections of the study area.

3.5. Clatsop County Plans and Programs

Clatsop County Comprehensive Plan

The Clatsop County Comprehensive Plan is divided into a Goals and Policies section and six Community Plans. The Goals and Policies section sets out goals for how the entire County and its urban growth boundaries should grow. The Plan is organized according to type of land and identifies goals and strategies for the protection and management of that specific land type. The Plan addresses issues such as economic development, housing stock, and management of rural lands and forest lands to maintain air, water, and land quality. Some of the strategies in the Plan include establishing overlay districts, limiting densities in specific areas, encouraging residential development in areas with existing infrastructure, and coordinating transportation improvements with growth patterns.

Overall the Plan exhibits a conscientious approach to managing how and where the Clatsop County communities develop.

Specific references to Camp Rilea in the Plan include the goal of protecting the aquifer (source of drinking water) located on Camp Rilea and preserving a natural scenic area near Camp Rilea. Most importantly the Plan establishes that densities in areas adjacent to Camp Rilea are generally restricted to one dwelling unit per five acres.

Community Plans

Clatsop Plains Community Plan

Clatsop Plains is a natural resource rich area containing forests, dunes, open spaces, views, animal life and habitat, ocean beaches, and lakes and streams. Maintaining the quality of these resources while respecting landowner rights is one of the primary objectives of the Community Plan. The Community Plan sets out a specific set of policies for the Clatsop Plains region and provides the rationale for the zoning ordinances imposed in this region.

Seaside Rural Community Plan

Most of the policy guidance in the Seaside Rural Community Plan provides is focused on fish and wildlife, transportation, and rural policies. The major issues that the Community Plan addresses relate to preserving rural land and protecting natural resources such as wildlife refuges, shoreland and water areas, water resources and lowlands and uplands territory.



JLUS Observations

The Comprehensive Plan does not include a vision for protecting and preserving the mission at Camp Rilea.

Clatsop County Land and Water Development and Use Ordinance

The Clatsop County Land and Water Development and Use Ordinance (2007) combines zoning, subdivision, land partitioning, use and activity standards, and transportation standards into one ordinance. The Ordinance identifies a number of different zones within Clatsop County. Per the Ordinance, all

development must be consistent with the County Comprehensive Plan.

The Ordinance also has a number of Overlay Districts which are areas where additional and more specific land use restrictions apply. These Overlay Districts are:

Conditional permits, variances, partitions, subdivisions, and property line adjustments are all permissible as long as the proposed action meets the requirements set out in the zoning ordinance. Non-conforming uses are also allowed, subject to specified conditions. Proposed development in coastal areas must undergo a coastal zone consistency review. This requirement entails development requiring state and federal permits to provide a copy of the permit to the County for coordination purposes.

The mapping component of the zoning ordinance is provided through an online service called Webmaps, which allows the public to determine the zoning of a parcel of interest. This mapping system also provides information about tax lots and water features among other information. The map shows Military Reserve zoning for Camp Rilea. The map also shows that areas within urban growth boundaries are limited.



JLUS Observations

- Current zoning allows residential uses to be in close proximity to Camp Rilea's live fire ranges.
- Height restrictions do not necessarily respond to helicopter flight corridors.

Clatsop County Standards Document

The Clatsop County Standards Documents (2007) provides information about the standards that apply to the uses and activities referred to in the Land and Water Development and Use Ordinance. The development standards outlined in this document are extensive and provide guidance on acceptable densities, cluster development, setbacks, height limitations, and historical protection. The Standards Document also outlines environmental protection standards, vehicle access control, road standards, and state and federal requirements.



JLUS Observations

The state and federal requirements section does not address airspace or refer specifically to military facilities.

Clatsop County Recreational Lands Master Plan

The Clatsop County Recreational Lands Master Plan provides information about the local demand for outdoor recreation, providers of recreation, and the park system goals. It also inventories parklands, includes a financial analysis, and identifies a list of capital improvement projects. The Plan is consistent with the 19 Statewide Planning Goals, particularly Goal 8, which requires local governments to inventory recreation needs based on public input. Public input suggests that sightseeing, walking, and beach activities are among the most popular forms of recreation in Clatsop County. Providers of recreational opportunities include the NPS, the State of Oregon, and the cities, counties and parks district.

The Plan assesses each recreational resource in detail and provides specific recommendations about how the facilities and use of the site can be improved.

Clatsop County Parks and Natural Areas – Natural Resources Stewardship Plan

The Clatsop County Parks and Natural Areas - Natural Resources Stewardship Plan, was completed in 2010 by Clatsop County in partnership with Trout Mountain Forestry. The Plan was developed in response to the County's Parks Master Plan which identified the need for an additional assessment of the natural resources in the area, to include 17 parks and natural areas. The Plan provides the first comprehensive assessment of resources such as trees, wetlands, and wildlife. The Plan also identifies potential threats to these resources such as erosion, overuse and invasive species. The policies developed to address these issues include:

- Manage vegetation so as to minimize invasive plants, provide a diverse array of plants and prevent degradation of native ecosystems.

- Manage staff capacity and resources to ensure monitoring and oversight of projects.
- Provide selective and sustainable developed areas in parks.
- Maintain Clatsop County ownership of parks and natural areas.
- Carry out public education.

Overall, the Plan provides useful maps and specific information about the various sites in the area, which can be related and compared to Camp Rilea; however, the Plan does not address habitat management on Camp Rilea.



JLUS Observations

The Plan does not consider how habitat management can be coordinated with or reduced on Camp Rilea.

Clatsop Plains Groundwater Protection Plan Summary Report and Environmental Assessment

The Clatsop Plains Groundwater Protection Plan, completed in 1982, provides a thorough assessment of the conditions, threats, and water management practices in the Clatsop Plains Aquifer area. The document also outlines a detailed plan for addressing the identified issues. The strategies in the Plan include alternatives for wastewater disposal and surface water management as well as a set of groundwater protection tools. The Plan notes that all of the alternatives presented in the study (structural and non-structural) expose how the surface water and aquifer issues are interrelated. Since this report is 30 years old, it is imperative that it be updated to provide current and more relevant information for the issues that are discussed within it.



JLUS Observations

This Groundwater Summary Report provides an assessment of the groundwater contamination at Camp Rilea and suggests a crop management plan to prevent the release of nutrients into the aquifer. However, due to the age and outdated nature of this report, it should be noted that Camp Rilea's wastewater treatment plant has met all requirements from DEQ since it became operational in 1978.

Skipanon River Watershed Assessment

Skipanon River Watershed Assessment was developed in August 2000. The Skipanon River watershed is located in the northwest corner of Clatsop County near the City of Warrenton. It is a tributary to the Columbia River Estuary, and drains approximately 28 square miles of land. Since watersheds are often directly affected by surrounding land uses the Assessment was initiated to determine the health and vitality of Skipanon River watershed. The Assessment indicates which land use activities create which watershed issues, with urban and rural residential development being one of the worst. The Assessment also provides information about the status of the Skipanon River fisheries and the number of endangered or threatened fish species that occupy the watershed. A majority of the recommendations contained in the study relate to filling data gaps, monitoring restoration activities and developing a monitoring plan.

Clatsop County Natural Hazards Mitigation Plan (NHMP)

The Clatsop County NHMP was prepared by Clatsop County in 2008 and identifies the potential risk factors and management strategies for likely natural hazards in the region. The plan includes City addendums specific to each municipality. The implementation strategies developed in the plan include increasing public awareness, retrofitting vulnerable roads, partnering with key agencies, creating a centralized operations center among many others. Camp Rilea is mentioned as a potential shelter and/or Emergency Operations Center in a disaster situation; however, the

role of the military in disaster preparedness and response is not clearly defined in the plan.



JLUS Observations

- Public awareness about the possible use of Camp Rilea as emergency shelter or operations center is limited.
- Camp Rilea's role is not clearly defined in the plan.

Clatsop County Transportation System Plan (TSP)

Clatsop County and the ODOT developed the Clatsop County TSP in 2002. The TSP identifies how the transportation system in the County can continue to better support land uses. The TSP covers a 20-year planning period. The TSP was designed such that it could serve as the Transportation element in the Comprehensive Plan.

As stated in the plan, specific improvements identified in the TSP include:

- *"A road network with connections and extensions to provide for local circulation and access off State highways, including US 101, US 26 and US 30.*
- *"Road Standards that comply with the TPR [Oregon State Law].*
- *"Appropriate improvements along the primary County and State highway corridors to support planned land uses and measures to protect the long-term functionality of statewide highways.*
- *"Pedestrian and vehicle circulation improvements to reduce the need for short car trips on State highways and improve pedestrian safety throughout the planning area.*
- *"Amendments to the County's zoning, subdivision and other land-use related ordinances; the County's Comprehensive Plan; and any relevant County financing*

plans such as a capital improvement plan to other similar documents."

The TSP indicates that several local jurisdictions own their own public roadways in Clatsop County rather than ODOT or Clatsop County. The Plan addresses and evaluates a number of alternative approaches to implementing improvements. The preferred alternative proposes significant corridor improvements to the State Highway system. These include Astoria Bypass Improvements and Astoria Warrenton Parkway Improvements. The roadways addressed in the Plan include all roadways in the County, including those adjacent to Camp Rilea; however, roadway segments within the installation boundary are not addressed.



JLUS Observations

Impacts of proposed roadways improvements on Camp Rilea are not examined in the TSP.

3.6. City of Warrenton Plans and Programs

Comprehensive Plan

The Warrenton Comprehensive Plan was originally adopted in 1983 and provided a vision for how the City planned to grow. The Plan indicates that the City may adjust the UGB to make minor changes such as allow for a Transfer of Development Rights Program. The Plan recognizes Fort Stevens State Park, which is within its Urban Growth Boundary as a local asset, but does not mention Camp Rilea.



JLUS Observations

The vision for development does not consider the presence or possible impact generated by Camp Rilea, which abuts the city's boundary. Nor does it address the beneficial factors that Camp Rilea provides such as open space and security.

Warrenton Municipal Code

The Warrenton Municipal code addresses the city's standards all of the city's services and facilities, including topics such as revenue and finance, health

and safety, and buildings and construction. Most of the building code requirements are based on state law requirements. Building codes address materials and standards and requirements may vary based on environmental condition or geographic constraint, such as location within a floodplain. The code does not currently address specific requirements for development in proximity to Camp Rilea.



JLUS Observations

- There are no requirements for building construction standards near Camp Rilea.
- Title 15 of the Municipal Code does not establish sound attenuation standards for inhabitable structures constructed within 1/2 mile of Camp Rilea.

Warrenton Development Code (WDC)

The WDC is a comprehensive land use and development code that applies to all of the land within the City of Warrenton and its urban growth boundary (UGB). The code is a useful tool for review of all land use and development applications. The WDC provide specific design standards for all types of buildings and may vary by location and constraint. The WDC contains the City's Zoning Map and Land Classification system. Permitted uses and setback information as well as height limitations are described for each zone and overlay district. Some guidelines potentially relevant to the JLUS are provided in the Airport Overlay zone as well as the Soil Hazards Overlay Zone.

The WDC also addresses building heights, which is of particular importance for facilities proposed in proximity to a military installation. The WDC's vertical projections components states that:

"Vertical projections may be subject to height limitations due to other applicable Code standards, such as: Location of the structure in the City's airport overlay zone or the imposition of conditions of development via the conditional use permit review process."



JLUS Observations

- Standards for land use in or around the Military Reserve zone are not identified.
- The development code does not establish a Military Overlay zone for those areas within the city that are within 1/2 mile of Camp Rilea.

Urban Renewal Report (URR)

Warrenton's 2008 URR provides an overview of the City's plans for the establishment of an urban redevelopment area and improvements in this area through the year 2027. The goal of the URR is to eliminate blight and further opportunities for economic development. The URR serves as the legal basis for establishing an Urban Renewal District within the city limits. As is required, the plan includes information about tax increment financing district and appropriate zoning. The Plan outlined in the URR breaks down the plans for improvements into two phases. The URR also includes recommended revisions to the Development Code. The Plan includes a Property Acquisition and Relocation plan, which allow the city to implement the components of the URR.



JLUS Observations

The URR promotes revitalization of the Warrenton downtown area instead of encouraging development at the fringes of the urban boundary.

Downtown and Marina Master Plans

The City of Warrenton Downtown and Marina Master Plans provide an overview of the development plans for these two main areas in the city. The Plan using information developed in earlier planning documents such as the Waterfront Revitalization Plan (1994) and the Community Visioning Project (2001). The Plan combines plans for improvements and development in both the Downtown and Marina areas. The Downtown Master Plan outlines improvements planned for specific streets and neighborhoods in the downtown area. It also identifies the required zoning code adjustments that will be needed to accommodate this plan and sets out an action and

cost estimate for these activities. The five keys ideas for improving the downtown mentioned in the plan are:

- Focus on Natural Settings
- Connect to Waterfront
- Improve Pedestrian and Bike Circulation
- Green Downtown
- City Leading by Example

One of the primary goals of the plan is to encourage new business and attract more tourism.

The Marina Master Plan outlines a general planning strategy that involves upgrading moorage, utilities, and service, among other areas. This plan also identifies the regulatory requirements involved executing this plan and provides an associated cost estimate. As stated in the Plan the goals are:

- Rehabilitate and upgrade the Warrenton Marina to be a major community attraction.
- Support both commercial and sport fishing activities in the marina upgrade.
- Promote mixed-use development on uplands areas around the marina.
- Utilize design guidelines and development standards to create a consistent and aesthetically pleasing development.
- Develop the Harbor Street corridor as a key link between Highway 101 and the downtown area.



JLUS Observations

- The goal of increasing tourism in the region must be planned to accommodate more development and minimize impacts to Camp Rilea's training activities.
- The focus on developing downtown could alleviate sprawling development outside of the City boundaries.

City of Warrenton Transportation System Plan

In addition to the County's TSP, the City of Warrenton has its own transportation plan. Warrenton's 2004 TSP identifies projects that would improve the transportation system throughout the city and

support long-term growth (through 2022). The TSP inventories the existing transportation network and infrastructure and provides guidance on the location, timing, and type of improvements that are needed. The goals of the plan are to increase mobility and livability of the City by improving public transportation, pedestrian, and bicycle access.

Future transportation improvements are expected to be needed at various intersections along Highway 101. These improvements could encourage increased development in these areas. The TSP also refers to a 1993 transportation planning study that analyzed the transportation improvements needed along Highway 101 from Camp Rilea to New Youngs Bay Bridge. The study projected the need for Highway 101 to be widened to four lanes and for various intersection improvements to be made.



JLUS Observations

The TSP is outdated and does not reflect current conditions in the areas surrounding Camp Rilea.

Warrenton Trails Master Plan

The 2008 Warrenton Trails Master Plan was a study funded by the NPS and collaboratively undertaken by the City of Warrenton, the Warrenton Trails Association, and the University of Oregon. The Plan outlines a strategy for creating a comprehensive and fully connected trail system. The Plan maps out the proposed trail network and provides a set of implementation measures that should be taken. According to the Plan, the goal of the trail system is for it to provide transportation routes, recreational opportunities, alternative tsunami routes, revenue, educational opportunities, and linkages to natural areas, cultural and historical attractions, Warrenton's neighborhoods, and adjacent communities. The intended trail network will run throughout the study area. Most of the recommended implementation measures in the Plan entail trail improvements, providing signs and directions and enhance access.



JLUS Observations

Although OMD and Camp Rilea were consulted about the location of a trail route near the installation, neither entity agreed to a location or to allow a trail through Camp Rilea.

City of Warrenton Natural Hazards Mitigation Plan

The City of Warrenton NHMP is an addendum to the Clatsop County Natural Hazards Mitigation Plan. The NHMP was developed as a team effort between the Columbia River Estuary Studies Taskforce (CREST) and Warrenton's Planning Department with assistance from Oregon Partnership for Disaster Resilience (OPDR). Some of the hazards considered in the risk assessment portion of the plan include:

- Coastal erosion
- Drought
- Earthquake
- Flood
- Landslide
- Tsunami

The NHMP focuses on identifying methods for managing and reducing the risk and damages of natural hazards. This NHMP provides expanded guidance for revisions to the City of Warrenton development code and the development of emergency protocols.



JLUS Observations

The NHMP does not outline command and control protocols with Camp Rilea in case of emergency.

3.7. Other References

In the interest of preventing land use compatibility issues between the military and the local community, the DoD Office of Economic Adjustment (OEA) and other public interest groups, such as the National Association of Counties (NACo), have prepared educational documents and videos to inform the public on encroachment issues and methods that can be used to address existing or reduce/avoid future compatibility concerns. Five resources that have been

published to inform the public on land use compatibility are identified under Guides and Videos.

Guides

The Practical Guide to Compatible Civilian Development near Military Installations (July 2007), OEA

This guide offers general information on community development and civilian encroachment issues. The guide can be found at: <http://www.oea.gov/>.

Joint Land Use Study Program Guidance Manual (November 2006)

This manual provides guidance on the JLUS program, process, and efforts to support compatible development. This manual can be obtained on the OEA internet site at the following address: <http://www.oea.gov/>.

Encouraging Compatible Land Use between Local Governments and Military Installations: A Best Practices Guide (April 2007), NACo

This guidebook presents case studies of best practices between the military and communities through communication, regulatory approaches, and Joint Land Use Studies. The guide can be accessed on the NACo internet site at the following address: <http://www.naco.org/>.

Videos

The Base Next Door: Community Planning and the Joint Land Use Study Program, OEA

This informative video discusses the issue of encroachment near military installations as urban development occurs within its vicinity.

Managing Growth, Communities Respond, OEA

This video highlights the lessons learned from three successful communities (Kitsap Naval Base in Bangor, Washington; Fort Drum in Jefferson County, New York; and Fort Leonard Wood in Pulaski County, Missouri) managing growth near their respective military installation.

Please see the next page.

4.0

Compatibility



This section identifies and organizes the recommended courses of action that have been developed through a collaborative effort between representatives of Clatsop County, the City of Warrenton, the Oregon National Guard (ORNG), local organizations, the general public and other stakeholders that own or manage land or resources in the region. Because the Joint Land Use Study (JLUS) is the result of a collaborative planning process, the recommendations in this section represent a true consensus plan; a realistic and coordinated approach to compatibility planning developed with the support of stakeholders involved throughout the process.

The Camp Rilea JLUS was undertaken as a proactive and collaborative effort to ensure the continued operations of Camp Rilea and future use and development of private and public lands in the surrounding area.

The process to prepare the JLUS is predicated on the collaborative efforts of all participants to identify compatible land uses and resource management guidelines within and adjacent to Camp Rilea. The intent of the process is to foster a working relationship between military and other stakeholders to partner in addressing existing and future compatibility issues in a mutually beneficial manner.

Developing Recommendations

JLUS strategies incorporate a variety of actions that can be taken to promote compatible land use and resource planning by multiple stakeholders, including local governments, military installations, agencies, and other identified stakeholders.

Upon implementation, existing and potential compatibility issues arising from the civilian / military interface can be removed or significantly mitigated. As such, the recommended strategies function as the heart of the JLUS document and are the culmination of the planning process.

The compatibility strategies recommended in this JLUS are consistent with Oregon’s Statewide Planning Goals and the ORNG’s policies.

During the preparation of the JLUS, inputs from the Clatsop County Board of Commissioners, Clatsop County Planning Commission, the Policy Committee (PC), and the Technical Advisory Committee (TAC) identified several areas that were considered the highest priorities for implementation. The priority recommendations, along with the issue that they relate to are as follows:

Issue	ID	Strategy	Timing
Issue COM-1		Agency Coordination. It is important to ensure adequate and timely communication between Camp Rilea and local and state agencies and organizations engaged in planning activities. This communication goes both ways, from Camp Rilea to other agencies, and from these agencies to Camp Rilea concerning their activities.	
COM-1	A	Establish a JLUS Coordination Committee. Establish a Joint Land Use Study Coordination Committee, which oversees the implementation of JLUS recommendations and serves to increase coordination on military compatibility issues. This could be integrated into another advisory committee appropriate to the area and issues addressed.	2012
Issue COM-2		Enhanced Public Disclosure Regarding Viewshed Changes on Camp Rilea. Although Camp Rilea meets notification requirements provided for under appropriate regulations, enhanced communications with the public is needed for changes to the viewshed of Camp Rilea from the outside, or addition of new structures near the boundary.	
COM-2	E	Update County CUP List. Clatsop County should update the list of activities that require a Type II CUP within the Military Reserve zone of the Land and Water Development and Use Ordinance to be more comprehensive of the types of activities that are likely to occur in the future, or that currently exist, on military training lands.	2013

Issue	ID	Strategy	Timing
Issue COM-5		Emergency Management Enhancement and Protection. Camp Rilea is an important resource in the case of natural disasters (flooding, tsunamis, etc.); therefore emergency protocols with the local governments need to be clarified to inform the public.	
COM-5	I	Update City and County Hazard Mitigation Plans. Update the Clatsop County Natural Hazards Mitigation Plan and the City of Warrenton Natural Hazards Mitigation Plan to identify the specific role and function of the recently designated Emergency Operations center at Camp Rilea.	2013
Issue LU-1		Appropriateness of Land Use Designations and Placement of New Development. The foundation of local land use planning and regulation is the protection of the public's health, safety, and welfare. Land use areas around Camp Rilea should be designated so as to protect the public from noise and safety impacts. Future development should be avoided in areas impacted by military training activities.	
LU-1	B	<p>Land Use Change Guidelines. Within the Land Use CRIA, land use designations (comprehensive plan or zoning code) in place as of the date of establishment, shall be reviewed using the following criteria prior to any designation change:</p> <ul style="list-style-type: none"> ■ Land currently designated for non-residential use shall not be redesignated to a residential use category. It may be redesignated to another nonresidential use category (except for mixed use) as long as conditions of approval require appropriate noise attenuation requirements for new construction. ■ All new construction of noise sensitive structures shall be required to do an acoustical study and provide appropriate noise attenuation. Funding should be sought to assist in developing pre-authorized design standards that can be used by all builders in lieu of performing studies. ■ Land currently designated for a residential use shall not be modified to another residential designation that allows a higher density of use than allowed in the current designation. ■ Existing, approved subdivisions or other residential development approvals shall not be amended or otherwise modified to increase the number of residential units previously approved. Changes to reorient or redistribute approved units on a given site are not restricted by this strategy. <p>This does not change an owner's approved right to divide a parcel and construct a residence as provided for under the zoning regulations for Clatsop County or the City of Warrenton.</p>	2012
LU-1	D	<p>Clatsop Plains Sub-Area Plan</p> <p>Develop a sub-area plan for the Clatsop Plains region that will include information and planning goals for topics to include:</p> <ul style="list-style-type: none"> ■ Land Use ■ Transportation ■ Trails ■ Water Quality, and ■ Infrastructure <p>This sub-area plan should implement appropriate strategies from this JLUS to promote long-term compatibility. The plan would provide specific language for planning and development around Camp Rilea to minimize future incompatible development.</p> <p>In addition, the sub-area plan should include appropriate technical studies to provide the data and information needed to design appropriate policies and implementation strategies.</p>	2016

Issue	ID	Strategy	Timing
LU-1	E	Warrenton Comprehensive Plan Update When the time comes for the City of Warrenton to update its comprehensive plan, it should address compatibility with Camp Rilea in regards to the topics covered in this JLUS, including information and planning goals for the following topics: <ul style="list-style-type: none"> ■ Land Use ■ Transportation ■ Trails ■ Water Quality, and ■ Infrastructure This comprehensive plan should implement appropriate strategies from this JLUS to promote long-term compatibility. The plan would provide specific language for planning and development around Camp Rilea to minimize future incompatible development. In addition, the plan should include appropriate technical studies to provide the data and information needed to design appropriate policies and implementation strategies.	2016
Issue SA-2		Public Trespassing. Public trespassing, whether inadvertent or intentional, can expose individuals to safety risks associated with entry into an active training facility. Areas of concern to address include: <ul style="list-style-type: none"> ■ Incomplete perimeter fencing ■ Poor signage (damaged and inadequate coverage) Public trail traversing Camp Rilea increases opportunity for trespassing.	
SA-2	B	Trail Network Management. Continue to engage Camp Rilea in the OPRD and NPS planning and management of the trail network surrounding the Camp. Ensure that OMD is provided the opportunity to be fully-engaged in the planning process. The JLUS Coordinating Committee will help organize trail planning around Camp Rilea.	On
Issue WSQ-1		Groundwater Contamination. Camp Rilea sits atop the North Coast Basin aquifer, which is a regionally important groundwater resource. All types of development within the region over sensitive water resources add some degree of potential to impact water quality, most notably the high concentration of septic tanks in the region.	
WSQ-1	C	Update Studies. Studies on groundwater and surface water are out-of-date and should be updated to quantify impacts to water quality. Studies should analyze the impacts of development patterns in the past several decades. In particular new studies that involve testing and sampling of the North Coast sub-basins are needed to determine the current level of risk of contamination	2015

Strategy Foundation

This section was developed based on inputs in the previous sections, extensive stakeholder coordination and input, and onsite assessments.

- **Section 1** provides an introduction to the planning process. An overview of what a JLUS and the need for such a study is explained.
- **Section 2** defines the study area and provides an overview of existing conditions in this study area.

The mission and operations conducted at Camp Rilea are also presented in this section.

- **Section 3** provides a high level overview of the current planning strategies and tools used in the study area. Before establishing new strategies, it is critical to understand the existing tools that can aid in planning for compatibility and are currently available and in use.

The purpose of this evaluation is to determine:

- Is the issue already covered in part or all of the study area? If adequately covered throughout the study area, no further action is needed. If a strategy is found to currently address the issue but only in a portion of the study area, can it be modified to be adopted by other stakeholders?
- Is a strategy currently in place that only partially addresses an issue identified in Section 3? If so, how can that strategy be modified? As an alternate approach, does the strategy need to be replaced with a more effective approach?
- Is an appropriate strategy missing currently? In this case, what new strategies will fit in with the capabilities of the stakeholders in the study area?

■ **Section 4** identifies each of the issues identified through the JLUS process, specifically those that were identified by stakeholders through the public involvement process. Insights and experiences provided by private and public stakeholders provided the basis for identification of potential compatibility issues or opportunities. A review of existing conditions and onsite experience by the consulting team builds on input obtained through the public involvement process.

How to Read the Strategies

Each of the strategies developed is based on addressing the issues identified for that topic. The strategies are presented in a consistent table format following the discussion of each topic. The following paragraphs provide an overview of how to read the information presented for each strategy.

Issue. Each issue addressed is assigned a number for purposes of reference. The numbering system consists of letters representing the topic they address (COM for Communications, LU for Land Use, etc.) and sequential numbers. The numbers are sequential, with the first issue presented given the number “1”, the

second “2”, and so forth. The numbers do not show any other hierarchy or priority.

ID. Each strategy is also assigned an identification letter (A, B, C). The letters are assigned in order to provide a unique and easy reference for each strategy. A strategy’s reference number is composed of the Issue number and this ID.

Strategy. The third column provides the text of the strategy. The text is designed to explain the action proposed.

Camp Rilea Influence Area (CRIA). The Camp Rilea Influence Areas are discussed in detail below.

Timing. A year is provided to show by what year a strategy should be completed. Several strategies will be needed on a continuous or intermittent, as-needed basis. For these strategies, the word “On” is used to designate these as “on-going” strategies.

Local / State / Federal Stakeholders. The major stakeholders who will be responsible for ensuring the strategies are implemented are listed on the top of the strategies table. Many of the strategies will require a collaborative effort, thus more than one stakeholder may be identified as the responsible stakeholder. A square symbol (■) designates that the stakeholder identified is responsible for implementing the strategy. A hollow square (□) designates that the stakeholder plays a key supporting role, but is not directly responsible for implementation.

Sensitive Land Uses

In this section, several strategies use the term “sensitive land uses”. This term includes land uses which, due to their special sensitivity, should be excluded from certain locations near sources of noise. The following types of uses are classified as sensitive land uses within this JLUS.

4.0 Camp Rilea JLUS

- Child day-care center
- Church
- Community treatment facility
- Family day-care provider
- Hospital or convalescent facility
- Hotel
- Manufactured home park
- Motel
- Nursing home
- Participant sports and recreation
- Public assembly facilities (spectator amphitheater, spectator sports facility, theater)
- Recreational vehicle park
- Residential
- School

Camp Rilea Influence Areas

A Military Influence Area (MIA) is a formally designated geographic planning area where military operations may impact local communities, and conversely, where local activities may affect the military's ability to carry out its mission. In this JLUS, the MIAs are referred to as Camp Rilea Influence Areas (CRIAs). In other JLUS documents, terms such as Region of Military Influence (RMI), Military Influence Planning District (MIPD), Military Influence Overlay District (MIOD), Military Influence Disclosure District (MIDD), Airfield Influence Planning District (AIPD), and Areas of Critical State Concern (ACSC) have also been used to describe similar areas.

The CRIAs are used to define the geographic area where the JLUS strategies are to be applied. This technique ensures the strategies are applied to the appropriate areas, and that locations deemed to not be subject to a specific compatibility issue are not adversely impacted by regulations that are not appropriate for their location or circumstance. The official CRIA boundaries and associated restrictions will be developed during the implementation phase of the JLUS.

There are nine CRIAs identified for the Camp Rilea JLUS, which are detailed as follows:

- 1) Clatsop Plains CRIA
- 2) Warrenton CRIA
- 3) Land Use CRIA
- 4) Noise CRIA
- 5) Coastal CRIA
- 6) Camp Rilea CRIA
- 7) Marine Protection CRIA
- 8) Vertical / Frequency (Vertical / Freq) CRIA
- 9) General CRIA

The CRIAs are used to define the geographic area where the JLUS strategies are to be applied. There are seven CRIAs used to guide implementation of the Camp Rilea JLUS.

Clatsop Plains CRIA

This CRIA covers the entire unincorporated portion of the Clatsop Plains area of Clatsop County. Although the southern portions are outside the study area, these strategies are applicable to planning within this entire area. This CRIA is illustrated on Figure 4.0-1.

Warrenton CRIA

The Warrenton CRIA covers the entire City of Warrenton and land within its associated urban growth boundary. The Warrenton CRIA is illustrated on Figure 4.0-1.

Land Use CRIA

This CRIA covers the land area within five miles of the boundary of Camp Rilea. Strategies attached to this CRIA are related to land use planning and disclosure requirements (as a part of real estate transactions). This CRIA is illustrated on Figure 4.0-2.

Noise CRIA

The Noise CRIA includes all lands located off-post that fall within the Noise Zone II contours for small arms and explosives (see Section 4.7 for details). Residential developments within this CRIA may be subject to sound attenuation measures to reduce noise impacts. Based on a review of aerial photography of the area, approximately 95 homes are currently within this CRIA. The Noise CRIA is shown on Figure 4.0-2.

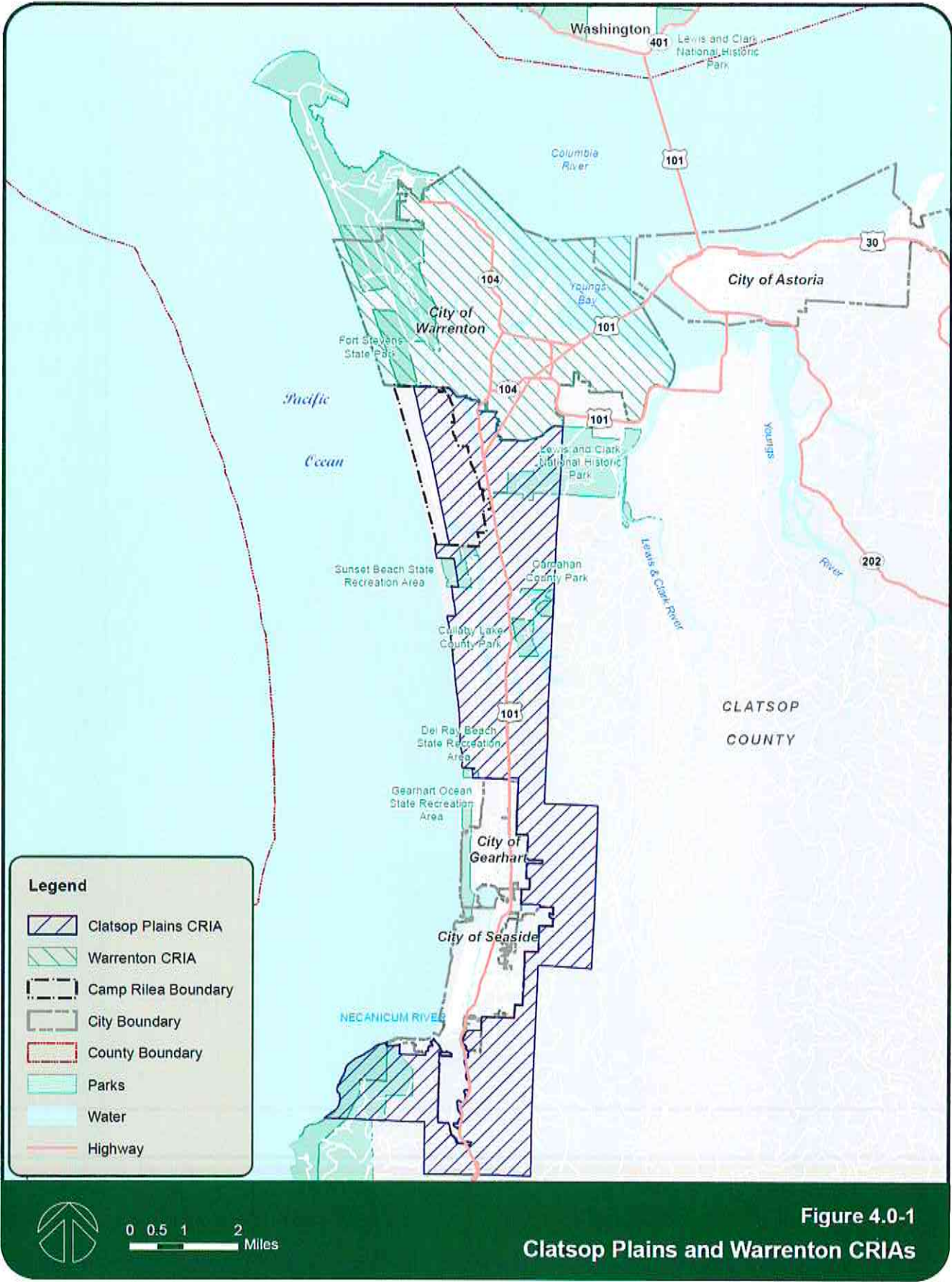
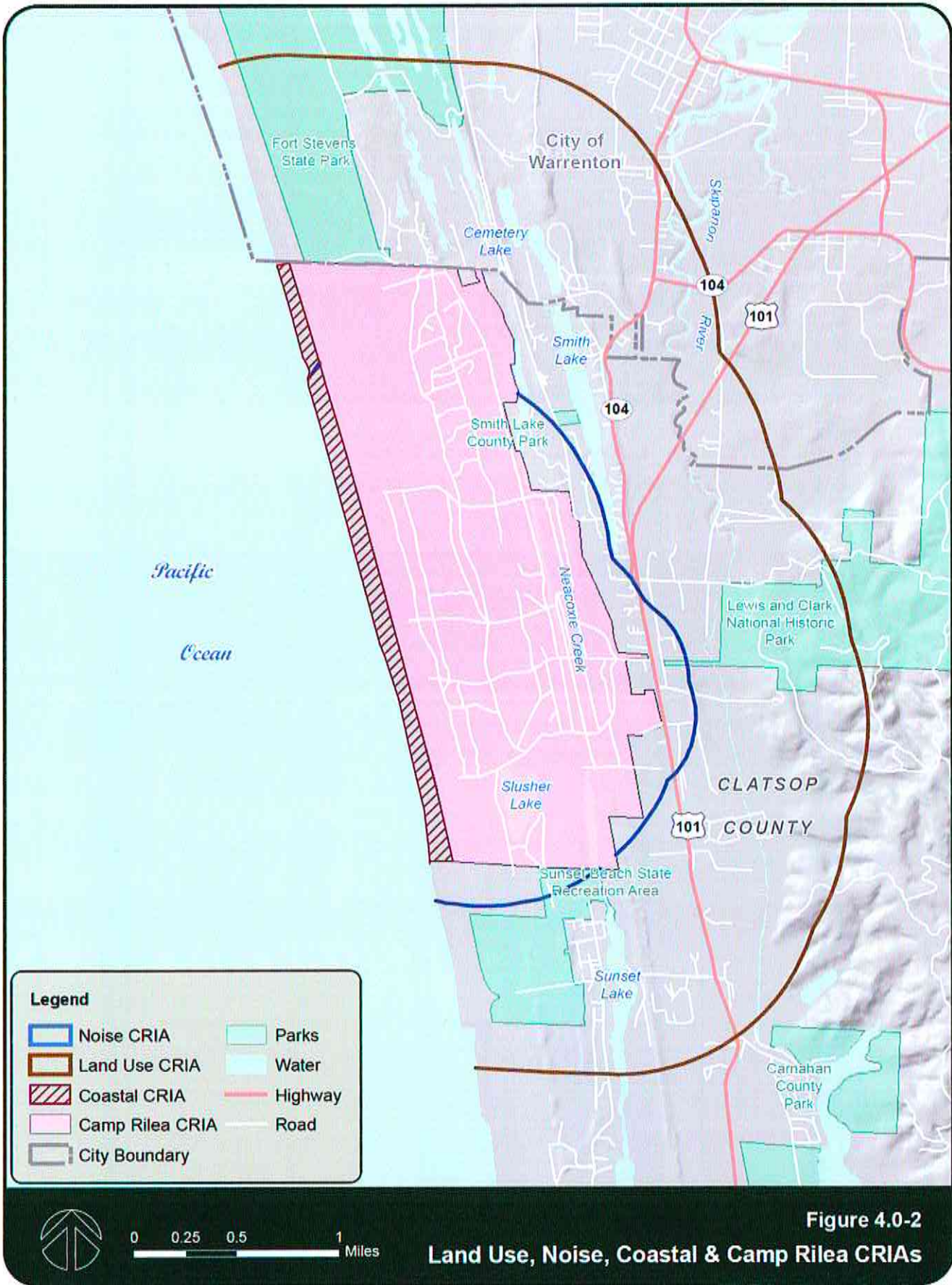


Figure 4.0-1
Clatsop Plains and Warrenton CRIAs



Coastal CRIA

This CRIA applies to the beach and near coastal environs adjacent to the west side of Camp Rilea, as shown on Figure 4.0-2.

Camp Rilea CRIA

This CRIA is defined as the boundary of Camp Rilea, and these strategies apply to the Camp Rilea property, as shown on Figure 4.0-2.

Marine Protection CRIA

This CRIA includes the ocean areas that fall within the proposed US Army Corps of Engineers Danger Zone that, if established, will prohibit activity in the ocean areas that could be impacted from weapons firing at Camp Rilea. The Marine Protection CRIA is shown on Figure 4.0-3.

Vertical / Frequency CRIA

The Vertical / Frequency CRIA (abbreviated as “Vertical / Freq”) serves dual roles: to protect important flight areas for helicopters that travel to and from Camp Rilea, including Coast Guard operations; and to preserve an area free of frequency interference or impedance for the radar facility at Camp Rilea. Within this CRIA, strategies address height restrictions in order to avoid vertical obstructions, as well as potential sources of frequency interference or impedance. No structures will be allowed to be constructed that are greater than 500 feet in height without approval by the FAA. This CRIA will extend five miles around the perimeter of Camp Rilea, and includes the flight corridor between Camp Rilea and Astoria Regional Airport. It is illustrated on Figure 4.0-3.

General CRIA

Some strategies apply to plans or programs, and are not defined to a specific area, but are instead descriptive of a future action to be pursued.

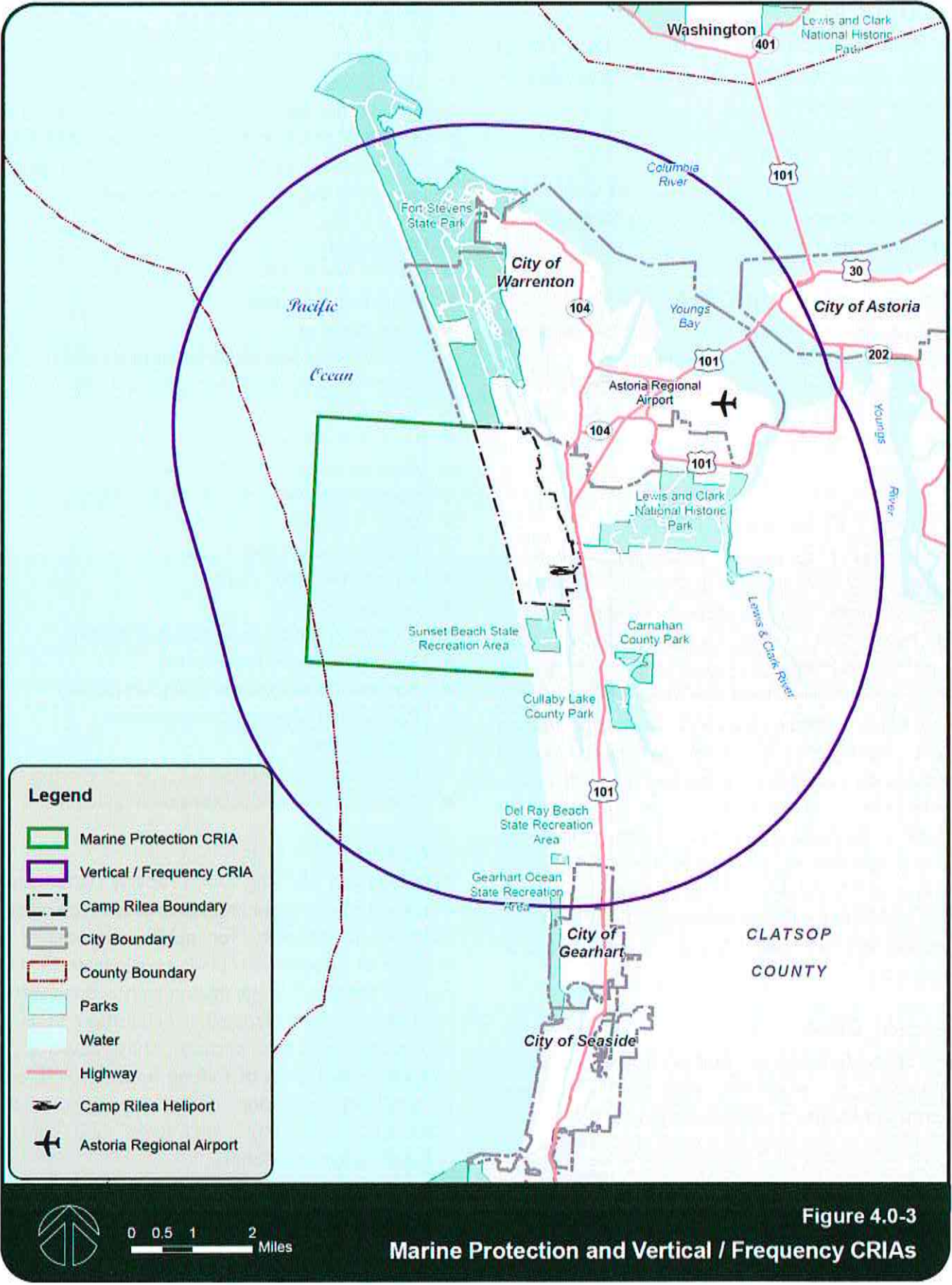
Compatibility Tools

There are a number of strategy types that can be used to address compatibility issues. While all of these “tools” did not end up in the Camp Rilea JLUS, this “toolbox” of possible strategy types was used during the development of the Camp Rilea JLUS strategies. Following this list, each type is described.

- Acquisition
- Airport Master Plan / Airspace Study
- Avigation Easement
- Base Planning
- Bird / Wildlife Aircraft Strike Hazard (BASH)
- Building Codes / Construction Standards
- Capital Improvement Program (CIP)
- Code Enforcement
- Communication and Coordination
- Comprehensive / General / Master Plans
- Deed Notifications / Restrictions
- Habitat Conservation Tools
- Hazard Mitigation Plans
- Legislative Tools
- Memorandum of Understanding (MOU)
- Military Influence Areas (MIA)
- National Environmental Policy Act (NEPA)
- Partnership with Non-Governmental Organizations
- Real Estate Disclosures
- Zoning Ordinance / Subdivision Regulations

Acquisition

As a land use planning tool, property rights can be acquired through donation, easement, or the outright purchase of property for public purposes. The purpose of acquisition tools is to eliminate land use incompatibilities through market transactions and the local development process. Acquisition tools are particularly effective because they advance the complementary goals of shifting future growth away from military installations and preserving community assets such as agriculture, open space, rural character, or sensitive natural habitats.



Airport Master Plan / Airspace Study

An Airport Master Plan provides the guidelines for future long-term airport development which will satisfy aviation demand in a financially feasible manner, while at the same time resolving the aviation, environmental, and socioeconomic issues existing in a community. The Airport Master Plan process is guided by the FAA and ultimately results in projections of future growth and an Airport Layout Plan (ALP). All development at federally obligated airports must be in accordance with and FAA-approved ALP.

For compatibility planning, airspace planning provides a coordinated approach to the designation of special use airspace.

Avigation Easement

An easement is a non-possessory right to use land owned by another party. An avigation easement is an easement that grants the holder one or more of the following rights: the right of flight; the right to cause noise, dust, or other impacts related to aircraft flight; the right to restrict or prohibit certain lights, electromagnetic signals, and bird-attracting land uses; the right to unobstructed airspace over the property above a specified height; and, the right of ingress or egress upon the land to exercise those rights.

Base Planning

Similar to a local jurisdiction, military installations maintain a long-range plan, such as general plans and master plans. The installation's general/master plan is the primary document that is used to guide the development and use of physical assets and the protection of resources. The general / master plan is used to ensure an installation maintains the land use areas and infrastructure needed to respond to its development program and future mission potential.

Bird / Wildlife Aircraft Strike Hazard (BASH)

The Bird / Wildlife Aircraft Strike Hazard (BASH) program is aimed at reducing the potential for collisions between military aircraft and birds and other wildlife. Knowledge of where birds travel, nest, and feed helps the military avoid problem areas, and therefore saves lives and avoids the destruction of valuable aircraft. The program also looks to work with

local stakeholders to avoid actions that would increase BASH incidents. The BASH program considers not only birds / wildlife within the confines of the airfield, but also in neighboring areas.

Building Codes / Construction Standards

Building codes and construction standards are ordinances and regulations controlling the design, construction processes, materials, alteration, and occupancy of any structure to safeguard human safety and welfare. They include both technical and functional standards and generally address structural safety, fire safety, health requirements, and accessibility. Noise attenuation requirements, for example, are typically covered under this category.

Capital Improvement Program (CIP)

A Capital Improvement Program (CIP) is a detailed planning document used to plan and direct a jurisdiction's or agency's investment in public facilities, including infrastructure. The CIP lays out the public facilities plans and programs of the jurisdiction or agency and provides details on expenditures that can be incorporated into the jurisdiction's or agency's annual budgeting process. Most CIPs cover multiple years in order to plan for major expenditures and projects.

Code Enforcement

The purpose of a code enforcement program is to promote and maintain a safe and desirable living and working environment. Related to land use compatibility, code enforcement is a tool used by a community to ensure adherence to its rules and regulations.

Communication and Coordination

In any planning effort, plans can only move toward successful implementation if frequent ongoing communication is maintained among local jurisdictions, the military, state and federal agencies, Native American tribal groups, landowners, and the public. Enhanced communication and coordination is an integral component to successful compatibility planning in support of the military's existing and potential future mission(s).

Comprehensive / General / Master Plans

These are long-range plans that outline goals and policies to guide the physical development in a county or city. Comprehensive plans are designed to serve as the jurisdiction’s blueprint for future decisions concerning physical development, including land use, infrastructure, public services, and resource conservation. Most comprehensive plans consist of written text discussing the community’s goals, objectives, policies, and programs for the distribution of land use as well as one or more diagrams illustrating the general location of existing and future land uses, roadways, public facilities and parks and open space.

Typically, there are three defining features of a comprehensive plan:

- A. **General.** A comprehensive plan provides the general guidance that will be used to direct future land use and resource decisions.
- B. **Comprehensive.** A comprehensive plan covers a wide range of social, economic, infrastructure, and natural resource factors. These include topics such as land use, housing, circulation, utilities, public services, recreation, agriculture, economic development and many other topics.
- C. **Long-range.** Comprehensive plans provide community guidance on reaching a future envisioned in 20 or more years.

Oregon’s land use planning program is focused on achieving the “19 Oregon Statewide Planning Goals”, as identified in the Statewide Planning Program. The goals act as a collective vision for the state and its local jurisdictions and covers topics such as citizen involvement, housing, and natural resources.

Each county and city in Oregon is required through State law to adopts a comprehensive plan and zoning and land division ordinances that comply with the Statewide Planning Goals. Per ORS 197, Oregon’s Department of Land Conservation and Development (DLCD), a branch of the Land Conservation and Development Commission (LCDC) reviews local comprehensive plans to ensure consistency with the

Statewide Planning Goals. Once a plan is officially approved, it is considered to be “acknowledged” and serves as the controlling land use planning document in the jurisdiction.

The 19 Statewide Planning Goals are listed here for reference, and are discussed in more detail in Chapter 3.

- Goal 1: Citizen Involvement
- Goal 2: Land Use Planning
- Goal 3: Agricultural Lands
- Goal 4: Forest Lands
- Goal 5: Open Spaces, Scenic and Historic Areas, and Natural Resources
- Goal 6: Air, Water and Land Resources Quality
- Goal 7: Areas Subject to Natural Disasters and Hazards
- Goal 8: Recreational Needs
- Goal 9: Economic Development
- Goal 10: Housing
- Goal 11: Public Facilities and Services
- Goal 12: Transportation
- Goal 13: Energy Conservation
- Goal 14: Urbanization
- Goal 15: Willamette River Greenway
- Goal 16: Estuarine Resources
- Goal 17: Coastal Shorelands
- Goal 18: Beaches and Dunes
- Goal 19: Ocean Resources

Deed Notifications / Restrictions

Deed restrictions, or covenants, are written agreements that restrict or limit some of the rights associated with property ownership. These restrictions are recorded with the deed for the property and are attached to the property when it is sold to a new owner (i.e., they remain in effect). Deed restrictions are private agreements or contracts executed between a motivated buyer and a willing seller.

Habitat Conservation Tools

The primary objective of habitat conservation tools is the conservation and protection of sensitive natural habitats and the species that occupy them. An example of this is the federal Endangered Species Act

(ESA) which allows for the development of Habitat Conservation Plans (HCPs). An HCP identifies and provides for the regional or area-wide protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity. The primary objective of the HCP program is to conserve natural communities at the ecosystem level while accommodating compatible land use.

Hazard Mitigation Plans

Hazard mitigation is defined as any sustained, cost effective action taken to reduce or eliminate long-term risk to people, property, and the environment from natural and man-made hazards and their effects. Hazard Mitigation Plans include actions that have a positive impact over an extended period of time. This distinguishes them from emergency planning or emergency services, which are associated with preparedness for immediate response to, and short-term recovery from, a specific event. Hazard mitigation actions, which can be used to eliminate or minimize the risk to life and property, fall into three categories: (1) those that keep the hazard away from people, property, and structures; (2) those that keep people, property, and structures away from the hazard; and (3) those that reduce the impact of the hazard.

Legislative Tools

State and local legislation can have a significant impact on compatibility planning by allowing, restricting, or limiting the tools available to local jurisdictions to control land use planning activities. Legislative Tools are designed to encourage changes in state and local laws and ordinances to support the objectives of the recommended JLUS strategies.

Memorandum of Understanding (MOU)

An MOU is a contract between two or more government entities. The governing bodies of the participating public agencies must take appropriate legal actions, often adoption of an ordinance or resolution, before such agreements become effective. The purpose of an MOU is to establish a formal framework for coordination and cooperation. These agreements may also assign roles and responsibilities for all of the agreement's signatories. These

agreements are also known as Joint Powers Agreements or Interlocal Agreements.

Military Influence Areas (MIA)

An MIA is a formally designated geographic planning area where military operations may impact local communities, and conversely, where local activities may affect the military's ability to carry out its mission. An MIA is designated to promote an orderly transition between community and military land uses to ensure that they are compatible. For this JLUS, these areas are being referred to as Camp Rilea Influence Areas (CRIAs).

National Environmental Policy Act (NEPA)

The NEPA is the federal law that established a national policy for the environment and requires federal agencies: (1) to become aware of the environmental ramifications of their proposed actions, (2) to fully disclose to the public proposed federal actions and provide a mechanism for public input to federal decision making, and (3) to prepare environmental impact statements for every major action that would significantly affect the quality of the human environment.

Partnership with Non-Governmental Organizations (NGOs)

NGOs are recognized for their role in developing innovative initiatives and programs to address a variety of issues. Local governments and military installations can develop relationships with NGOs to provide additional resources to achieve joint goals. For example, under these partnerships, agreements can be reached to acquire real estate or property rights in the vicinity of military installations to protect military training, testing, operations, and readiness, while at the same time, achieving the objectives of the NGO, such as habitat protection.

Real Estate Disclosures

Prior to the transfer of real property to a new owner, real estate disclosure requires sellers and their agents to disclose certain specified facts related to the condition of the property. These facts could include noise or other proximity impacts associated with property near a military installation or operations

area. The purpose of real estate disclosure is to protect the seller, buyer, and sales agent from potential litigation resulting from specified existing and / or anticipated conditions (i.e., hazard areas, existing easements). Disclosures provide a practical and cost effective land use compatibility tool as buyers are informed of the possible affects (noise, light, etc.) of military operations prior to purchase.

Zoning Ordinance / Subdivision Regulations

Zoning is the division of a jurisdiction into districts (zones) within which permissible uses are prescribed and restrictions on building height, bulk, layout, and other requirements are defined. The primary purpose of zoning is to protect the public health, safety, and welfare of the community by separating incompatible land uses and establishing design requirements. Effective zoning can also provide opportunities for the implementation of regulations supporting land use compatibility near military installations. For instance, zoning can address:

- Nuisances such as noise, vibration and air emissions,
- Land use type and intensity (including clustering),
- Light and glare,
- Frequency spectrum and impedence,
- Height / vertical obstructions,
- Development incentives, and
- Development processes and procedures.

Land cannot be divided without local government approval. Subdivisions set forth the minimum requirements deemed necessary to protect the health, safety, and welfare of the public. Subdivision review allows local governments the opportunity to ensure that a new subdivision is properly served by needed services and a public or private agency is responsible for maintaining the subdivision improvements. These regulations can be effectively used for compatibility planning. For example, subdivision regulations might limit the division of land in areas with compatibility issues or locations without necessary services. Subdivision regulations can also be used to require open-space set-asides.

It is important to note that once the JLUS process is completed, the final document is not an adopted plan, but rather a recommended set of strategies which should be implemented by the JLUS participants for the JLUS to be successful.

4.1

Communications

4.1.1 Key Terms

Primary Agency – Primary agency is a designation for agencies in the Oregon Emergency Management Plan that are responsible for the management of emergency support functions (ESF) and coordinating the implementation of disaster recovery plans.

Supporting Agency – Supporting agency is a designation for agencies in the Oregon Emergency Management Plan that are responsible for providing expertise, experience and assets to the ESF as needed or requested by the Primary agency.

4.1.2 Existing Tools

Federal and DoD Programs

Hazard Mitigation Grant Program

The Federal Emergency Management Agency (FEMA) oversees the Hazard Mitigation Grant Program (HMGP), which is designed to provide states and local communities with technical and financial assistance in the implementation of long-term hazard mitigation measures post-disaster. The Oregon Emergency Management (OEM) has received an HMGP grant to facilitate recovery from severe winter storms, landslides and flooding that took place in March 2011.

Homeland Security Grant Program

The Homeland Security Grant Program is administered by FEMA to help local communities build and sustain national preparedness capabilities. Through this grant program, Clatsop County received funding that helped pay for the expansions of the Emergency Operations Center on Camp Rilea.

TsunamiReady and StormReady

The National Weather Service's TsunamiReady and StormReady programs recognize local governments that have worked to reduce the risk from tsunamis and severe weather events through education, communications upgrades, and planning. The National Weather Service has designated Clatsop County a TsunamiReady and StormReady community.

State and Local Programs

In addition to the programs listed below, the following is described in detail in Chapter 3, Existing Plans and Programs, and is critical to communications planning and compatibility:

- Clatsop County Land and Water Development and Use Ordinance

Oregon Emergency Operations Plan

Per ORS 401.270 the Oregon Emergency Operations Plan (EOP) establishes the roles and responsibilities of the various federal and state agencies charged with responding to emergency situations. The plan outlines lines of cooperation and communication between state agencies and establishes a concept of operations for emergency response. The plan identifies the Oregon Military Department as a supporting agency in almost all of the emergency management categories.

Clatsop County Emergency Notification System

The Clatsop County Emergency Notification System (ENS) is the official county system that allows local authorities to provide the public with alerts about local and regional emergencies such as floods, water contamination warnings, missing persons reports, and other events. The ENS system contains a database of all listed land-line telephone numbers and will call citizens to inform them of emergencies.

Clatsop County Emergency Operations Plan

Clatsop County’s EOP details the roles and duties of various county departments and personnel during emergencies, and provides for adequate training of all county staff. This plan was updated in March 2012. It also discusses the role of the County’s Emergency Operations Center, which is being relocated to Camp Rilea (see Issue COM-5 for description).

Issue
COM-1

Agency Coordination. It is important to ensure adequate and timely communication between Camp Rilea and local and state agencies and organizations engaged in planning activities. This communication goes both ways, from Camp Rilea to other agencies, and from these agencies to Camp Rilea concerning their activities.

With a total of 1,750 acres, Camp Rilea is one of the largest landholdings in Clatsop County. As the manager of this land, the Oregon Military Department (OMD) should engage in planning activities with all of the federal, state, and local agencies that have nearby

land use interests or relevant regulatory responsibilities. Although there has been some coordination with the OMD in local planning activities (e.g. involvement in planning the Lewis and Clark National Historical Trail), JLUS committee discussions have indicated there is room for improvement, especially locally. Table 4.1-1 indicates the agencies and subject areas where coordination is necessary or could be improved.

As shown in Table 4.1-1, Camp Rilea has many land use responsibilities in the region. Collaboration by the OMD with these agencies is needed to improve awareness about priorities, needs, and procedures. In turn, these agencies should include OMD in their planning processes.

Table 4.1-1. State Agencies and Areas of Potential Coordination with Camp Rilea

Agency	Subject of Potential Coordination with Camp Rilea
Federal	
National Park Service	Lewis and Clark National Historic Trail
National Oceanic and Atmospheric Administration	Endangered species; fisheries management
US Fish and Wildlife Service	Endangered species
US Forest Service	Forest lands
State	
Department of Environmental Quality (DEQ)	Water quality management
Land Conservation and Development	Oregon Coastal Management Program; State Planning Goals
Oregon Parks and Recreation Department (OPRD)	Access to state beaches and parks
Oregon Department of Transportation	US Highway 101 improvements
Local	
Clatsop County Transportation and Development Services	Zoning and development and subdivision permitting near Camp Rilea; military training schedules
Clatsop County Emergency Management	Coordination of emergency management procedures

Agency	Subject of Potential Coordination with Camp Rilea
City of Warrenton Building / Planning Department	Zoning and development and subdivision permitting near Camp Rilea; military training schedules
City of Warrenton Department of Public Works	Infrastructure extension (water and sewer)

Issue COM-2	Enhanced Public Disclosure Regarding Viewshed Changes on Camp Rilea. Although Camp Rilea meets notification requirements provided for under appropriate regulations, enhanced communications with the public is needed for changes to the viewshed of Camp Rilea from the outside, or addition of new structures near the boundary.
--------------------	--



Camp Rilea Rappel Tower

During the public meetings held as part of the Camp Rilea JLUS process, several neighbors of Camp Rilea expressed concern that they were not made aware of development plans on the Camp in advance of construction.

Of particular concern were structures such as the rappelling tower, which stands at approximately 60 feet tall and could allow military personnel to view into neighboring properties during training exercises. Another concern had to do with the placement of the radar facility on camp, which generates noise and light that sometimes disturbs neighboring properties. These concerns indicate that there may be a need for increased public disclosure of development plans in Clatsop County.

The requirement in Clatsop County is that all entities proposing development through a Conditional Use Permit must notify all property owners within 500 feet

of the boundary of the property to be developed. In some cases, this distance could be extended if necessary, but 500 feet is the minimum. OMD originally received Clatsop County approval, via Conditional Use Permit and public notice, to site the radar station in early 1989; however, some nearby residents did not feel there was adequate communication between OMD and themselves on this placement.

According to the Clatsop County Land and Water Development and Use Ordinance, Camp Rilea is zoned as a Military Reserve. Each use permitted within this zone is organized according to the type of associated permitting requirement (e.g. Type I, Type II, and Type III).

Per Section 3.849 of the ordinance, the following principal uses and their accessory developments are permitted in Military Reserve zone under a Type I procedure, subject to applicable development standards:

- 1) Military reserve and activities related, such as:
 - a) Training of military personnel
 - b) Movement of military personnel
- 2) Dwelling units for military personnel stationed at the military reserve
- 3) One caretaker's residence for every one hundred acres of land in the military reserve
- 4) Storage facilities for military equipment and supplies
- 5) Minor utilities
- 6) Property line adjustment
- 7) Low intensity recreation

Per Section 3.851 of the ordinance, the following conditional development and uses and their accessory developments may be permitted under a Type II procedure and Sections 5.0000 to 5.030 and subject to applicable standards:

- 1) Public/semi-public development
- 2) Utilities necessary for public service

4.1 Camp Rilea JLUS

- 3) Exaction, processing, stockpiling of rock, sand, mineral, and other surface materials
- 4) Airports, heliports
- 5) Public or private recreation facilities such as riding stables, golf courses, boating docks or ramps etc., subject to the provisions of Section S4.200-S4.234

Activities such as the storage of hazardous waste and the development of nuclear power generation facilities may be permitted under a Type III procedure and are subject to conditions set by the Community Development Director or Planning Commission.

The primary uses on Camp Rilea require a Type I or Type II procedure. Under both a Type I and II procedure, Camp Rilea is required to submit an application to the County, but is not required to host a public hearing or notify other property owners of the application / proposal. A Type II procedure requires only public notice, while Type IIa and Type III processes require a public hearing.

As the areas around Camp Rilea continue to be developed, impacts generated by training and development on the Camp will become higher profile. In the absence of public disclosure about development plans, Camp Rilea will likely receive more questions, concerns, and possibly complaints and meet more resistance from neighbors. To minimize controversy, Camp Rilea should voluntarily communicate about its development plans and solicit inputs from its neighbors on future development plans.

Issue COM-3	Public Communications on Operations. Range and air operations vary depending on the needs of the unit training at Camp Rilea. While a number of factors can impact the type, timing, and duration of these operations, and some are outside the control of Camp Rilea (such as weather), there is a lack of information available to the public relative to expectations concerning upcoming training events.
--------------------	--

As a land steward and neighbor in the Clatsop Plains area, the OMD should be responsible for communicating information about the training activities and schedules to nearby residents. Since training activities take place on an irregular schedule (due to weather conditions and training requirements) and may have nuisance impacts such as noise and vibration, neighboring communities should be alerted about what and when to expect these events. Increased communication between Camp Rilea and surrounding communities is especially important in advance of live-fire training.

As discussed under Issue SA-1, live-fire training takes place on Camp Rilea approximately 126 days per year. Use of live-fire ranges often requires the closure of the beach on the west side of Camp Rilea to ensure public safety. Live-fire activity sometimes produces noise that extends off-installation. Some aircraft operations are also conducted at Camp Rilea. These activities cause noise that can potentially extend off-base as well. Increased transparency about training schedules and the associated impacts on nearby residents could likely help increase awareness and minimize the level of annoyance.

During the initial JLUS process public meetings and committee meetings, one issue that was mentioned was the lack of a single public information point of contact (POC) on Camp Rilea. Members of the public stated that when they have complaints or questions about training schedules and operations they have a challenging time identifying who to contact. However, during the course of the JLUS process, the position of permanent Training Site Manager at Camp Rilea was filled. Among other duties, this position is meant to provide some public communications that could help to resolve issues brought up early on in the JLUS process.

The primary issue is that there is no established community information and communication plan for Camp Rilea. Development of such a plan would most likely address the major concerns of the citizens and could include phone numbers for whom to contact if there is a concern or question about operations at Camp Rilea and would also establish procedures for

interacting with the public (i.e. community open houses hosted by Camp Rilea).

Issue COM-4	Enhanced Regional Cooperation on Common Issues. Opportunities exist for Camp Rilea and other agencies to work together in the development of regional solutions. Key Areas are: <ul style="list-style-type: none"> ■ Habitat protection ■ Transportation (vehicles) ■ Transportation (trails) ■ Infrastructure ■ Water quality ■ Recreation
------------------------	--

The Clatsop Plains region has many natural resources that need to be managed as the region continues to grow. To best manage these resources and coordinate investments in infrastructure and transportation networks, the jurisdictions within the Clatsop Plains need to enhance their regional coordination. There are multiple subject areas such as sensitive species habitat protection, transportation improvements, trail expansion, infrastructure development, and groundwater quality maintenance that need to be coordinated on a regional scale. One step towards increased regional coordination should entail the inclusion of the OMD in regional planning processes.

As discussed under Issue COM-1, Camp Rilea is an important stakeholder in the Clatsop Plains region. For example, Camp Rilea was required to maintain designated Oregon Silverspot Butterfly (OSB) habitat on-post, which inhibited certain uses and activities on the land (See Issue BR-1). Camp Rilea also played an important role in the design and expansion of the Fort to Sea Trail as it was integrated into the Lewis and Clark National Historical Trail. The trail now follows the actual journey of the expedition and runs through the installation. These are just a few examples of some of the past issues that have entailed regional coordination with Camp Rilea. As demonstrated, increased coordination, regionally and with Camp Rilea, will limit the competition for scarce resources

and will ensure more efficient use of land in the Clatsop Plains region.

Issue COM-5	Emergency Management Enhancement and Protection. Camp Rilea is an important resource in the case of natural disasters (flooding, tsunamis, etc.); therefore emergency protocols with the local governments need to be clarified to inform the public.
------------------------	--

The Clatsop Plains region is at high risk of various natural disasters such as floods, mudslides, earthquakes, and tsunamis. According to the Oregon EOP, Clatsop County and Tillamook County are the two counties in the state at the highest risk of experiencing a tsunami. Oregon also sits atop the Cascadia Subduction Zone, which is a 600-mile-long fault line, which puts the state at risk for earthquake activity. In the event of a severe natural disaster, evacuation may be necessary. The Oregon Department of Geology and Mineral Industries (DOGAMI) created evacuation maps for each of the coastal regions in Oregon (See Figure 4.1-1). In instances where evacuation is necessary communication among the OMD, Camp Rilea, and the surrounding communities will be essential. Given the high likelihood of natural disasters it is important that state agencies, local jurisdictions, and Camp Rilea establish a coordinated emergency management plan.

At the state level, the EOP serves to identify the roles and responsibilities of all state agencies in the instances of emergency. The EOP designates OMD as a primary agency in the area of Logistics Management and Resource Support, making it responsible for coordinating the provision of state resources during an emergency. OMD is also listed as a supporting agency in the following areas:

- Transportation,
- Communications,
- Public Works and Engineering,
- Fire Fighting,
- Emergency Management,
- Mass Care, Emergency Assistance, and Human Services,

4.1 Camp Rilea JLUS

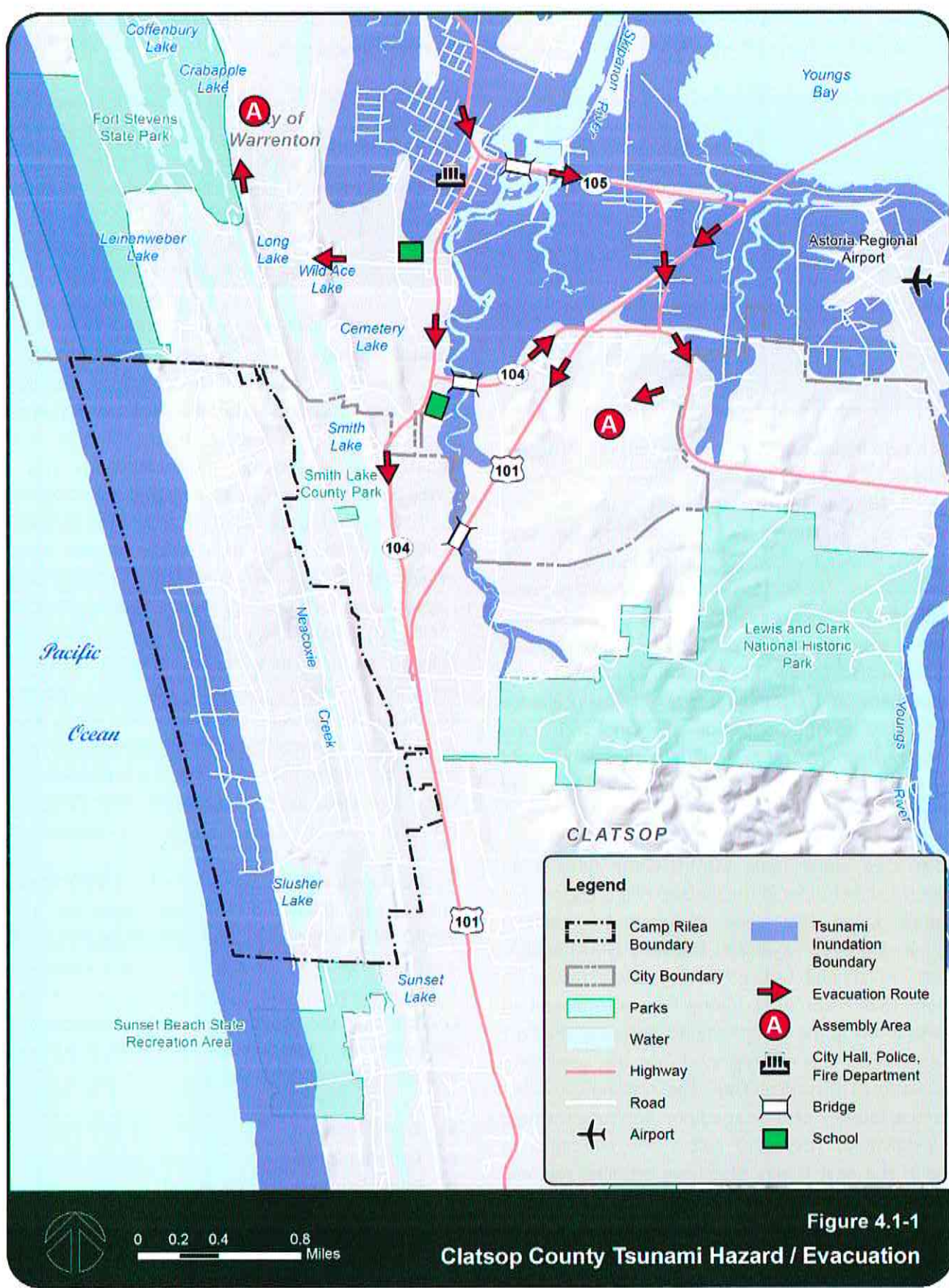


Figure 4.1-1
Clatsop County Tsunami Hazard / Evacuation

- Public Health and Medical Sciences,
- Search and Rescue,
- Oil and Hazardous Materials,
- Agriculture and Natural Resources,
- Energy, Public Safety, and Security, and
- External Affairs.

Per the EOP, OMD and all Oregon Army National Guard units are built into the state emergency response system and have an important support role.

Regionally, Camp Rilea's role in emergency management has been augmented and become more significant. The Clatsop County Sheriff's Department has plans to relocate its Emergency Operations Center (EOC) to Camp Rilea. The EOC is an important resource during emergencies because it houses emergency communications equipment and provides a secure site away from designated hazard zones such as the Tsunami Inundation Zone. In the event of a large-scale emergency or disaster, the EOC allows for the operation of a multi-agency coordination facility. It also serves as the central point for requests for resources, public information, and overall incident management during such times. Currently, the EOC is

not fully equipped to provide full support services, but if a situation arises, then additional resource requests can be made.

To further improve its emergency management system, Clatsop County created a new Emergency Management Department that is focused exclusively on coordinating and planning for emergencies. This structural change has already helped to streamline communications and coordination among county agencies and personnel. Other efforts to improve emergency management in Clatsop County have included updates to Community Emergency Response Team (CERT) training and updating the EOP. These efforts, among others, have helped Clatsop County earn the TsunamiReady and StormReady designations. These designations are made by the National Weather Service and indicate that a local jurisdiction is well-prepared for emergency response.

Clatsop County's progress and system improvements are expected to improve the emergency response. As part of these improvements, it is necessary for the County to continue to engage Camp Rilea and the OMD in its emergency planning.

Strategies

The following strategies are recommended to address the issues identified in this section.

Issue	ID	Strategy	CRIA	Timing	Local		State					Federal			Tribal Gov't	
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS		USCG
COM-1	A	Establish a JLUS Coordination Committee Establish a Joint Land Use Study Coordination Committee, which oversees the implementation of JLUS recommendations and serves to increase coordination on military compatibility issues. This could be integrated into another advisory committee appropriate to the area and issues addressed. Other Entities: NGOs	General	2012	■	■	■	■		■	■	■	■	■	■	■

4.1 Camp Rilea JLUS

Issue	ID	Strategy	CRIA	Timing	Local		State						Federal			Tribal Gov't	
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS	USCG		USFWS
COM-1	B	Amend ORS 195, Local Government Planning Coordination Amend to require local government coordination of planning activities with OMD in jurisdictions adjacent to military facilities. Other Entities: Oregon Legislature	General	2016					<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>					
COM-1	C	Review of Development in Marine Environment Any application or permit request for development within the Marine Protection CRIA shall be provided to Camp Rilea / OMD for review and comment prior to approval or award. Development not consistent with the safety zones associated with Camp Rilea shall not be allowed. Other Entities: U.S. Corps of Engineers, Oregon Department of State Lands	Marine Protection	On					<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input checked="" type="checkbox"/>		
COM-2	D	Notification of NEPA Documents Ensure timely transmittal of all NEPA documents prepared for Camp Rilea or other projects within the vicinity of Camp Rilea to Clatsop County, City of Warrenton, and OMD for all National Park, State Park, highway projects, or other infrastructure projects in Clatsop County. Provide notification to all members of the JLUS Coordination Committee.	General	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
COM-2	E	Update County CUP List Clatsop County should update the list of activities that require a Type II CUP within the Military Reserve zone of the Land and Water Development and Use Ordinance to be more comprehensive of the types of activities that are likely to occur in the future, or that currently exist, on military training lands.	Clatsop Plains	2013	<input checked="" type="checkbox"/>							<input type="checkbox"/>					

Issue	ID	Strategy	CRIA	Timing	Local		State						Federal				
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS	USCG	USFWS	Tribal Gov't
COM-3	F	Establish a Camp Rilea Outreach Program Camp Rilea should create an outreach plan to pass information to the community. The Camp Rilea public outreach program should describe outreach activities to include tours of the installation, develop informational brochures to be mailed to neighbors and posted on the website, identifies a single public relations point of contact for Camp Rilea and makes contact information widely available. As part of the outreach program, Camp Rilea should host regularly scheduled open houses for the public to provide an overview of training activities, construction, or other items of public interest. This forum should also allow residents the opportunity to comment on concerns. An open house on an annual basis prior to the start of the summer season would be appropriate.	General	2013	<input type="checkbox"/>	<input type="checkbox"/>						<input checked="" type="checkbox"/>					
COM-4	G	Acknowledge and Retain Oregon National Guard (ORNG) at Camp Rilea Acknowledge the economic role of the ORNG in the Northwest Oregon Comprehensive Economic Development Strategy. Develop a strategy for retaining training operations at Camp Rilea. Include JLUS Implementation as part of the strategy. Other Entities: Northwest Oregon Regional Partnership	General	2013	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>											
COM-5	H	OMD Involvement in Emergency Response Continue to engage the Oregon Military Department in the development of emergency response procedures for the State.	General	On	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			
COM-5	I	Update City and County Hazard Mitigation Plans Update the Clatsop County Natural Hazards Mitigation Plan and the City of Warrenton Natural Hazards Mitigation Plan to identify the specific role and function of the recently designated Emergency Operations center at Camp Rilea.	General	2013	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>											

4.1 Camp Rilea JLUS

Issue	ID	Strategy	CRIA	Timing	Local		State					Federal			Tribal Gov't	
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS		USCG
COM-5	J	Increase Public Awareness about Camp Rilea's role as an Emergency Operations Center Communicate Camp Rilea's role in regional emergency management to the public on websites, in brochures and emergency notification forms (e.g. Department of Geology and Mineral Industries (DOGAMI) evacuation route brochures). Other Entities: DOGAMI	General	2013	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>				
COM-5	K	Update the Tsunami Regulatory Map Update the Tsunami Regulatory Maps to confirm that the cantonment area of Camp Rilea remains outside of the Tsunami Inundation area. Other Entities: DOGAMI	Clatsop Plains	2016	<input type="checkbox"/>											

4.2

Land Use

4.2.1 Key Terms

Drop Zone (DZ) – A DZ is a designated location where parachutists or parachuted supplies land.

Conditional Use Permit (CUP) – A CUP allows a city or county to consider special uses which may be essential or desirable to a particular community, but which are not allowed as a matter of right within a zoning district, through a public hearing process.

Taking – When the government acquires private property and fails to compensate an owner fairly. A taking can occur even without the actual physical seizure of property, such as when a government regulation has substantially devalued a property.

Urban Growth Boundary (UGB) –UGB is the means for monitoring urbanization recommended in the “19 Statewide Planning Goals”. Per the state goals: “UGBs are to be established and maintained by cities, counties and regional governments to provide land for urban development needs and to identify and separate urban and urbanizable land from rural land.”

Visual Flight Rule (VFR) – VFRs are regulations which allow a pilot to operate an aircraft in weather conditions generally clear enough to allow the pilot to

see where the aircraft is going and navigate accordingly.

Zoning – Zoning is the process of planning for land use by a locality to allocate certain kinds of structures in certain areas. Zoning also includes restrictions in different zoning areas, such as height of buildings, use of green space, density (number of structures in a certain area), use of lots, and types of businesses.

4.2.2 Technical Background

This section refers to noise issues, vertical obstruction issues, and safety issues, the technical details of which are explained in detail in their respective sections.

4.2.3 Existing Tools

Federal and DoD Programs

Although there are no federal or DoD programs whose central focus is land use, other programs and regulations apply to land use planning. See Section 4.3-2 for a discussion on safety programs that also relate to land use.

State and Local Programs

In addition to the plans and programs identified here, numerous others were considered as they relate to compatible land use planning:

- Oregon Statewide Planning Goals
- Fort Stevens Master Plan
- Clatsop County Parks and Recreation Master Plan

Clatsop County Comprehensive Plan

The Clatsop County Comprehensive Plan (2007) is consistent with the Statewide Planning Goals and provides an overall vision for how the County plans to develop. The vision is a balance between preserving the natural features of the environment, encouraging economic development and tourism, and growing in areas that have existing infrastructure. The plan includes five smaller community plan components. The Clatsop Plains Plan encompasses the JLUS study area and encourages orderly growth, shore protection and the prohibition of other forms of development that might compromise the natural environment. The plan advocates for growth to take place within the incorporated cities and limits rural development to a density of one structure per acre. Although it is not identified in the Clatsop Plains Community Plan, the county-wide Comprehensive Plan limits residential densities in areas adjacent to Camp Rilea (as well as resource lands such as forest, agricultural, wetlands, or estuary lands) to a five-acre minimum zone.

Clatsop County Land and Water Development and Use Ordinance

The Clatsop County Land and Water Development and Use Ordinance establishes the zoning designations for the county. The ordinance has a wide array of zones and overlays, which designate appropriate uses and restrict inappropriate uses.

The ordinance zones Camp Rilea as a Military Reserve zone and establishes a buffer zone that extends 200 feet inside the Camp from its boundary. This buffer restricts zoning to Open Space and Recreation (OPR). The purpose of this buffer is to limit development on the Camp around the boundary that might be incompatible with civilian uses.

The ordinance establishes height restrictions for various types of structures. Most structures are limited to heights of 45 feet or less, but communications towers can exceed 200 feet with a CUP. The ordinance also limits the number of communications towers allowed within the county and the density of towers by requiring towers over 60 feet in height to be located at least 2,640 feet apart.

The ordinance also establishes an Airport Overlay Zone, which is intended to prevent the development of airspace obstructions in airport approaches and surrounding areas through height restrictions and other land use controls as deemed essential to protect the health, safety, and welfare of the people of the city/county. This zone does not cover the entirety of the flight corridors used by helicopters traveling between Camp Rilea and Astoria Regional Airport.

Clatsop County Standards Document

The Clatsop County Standards Document was originally adopted in 1980 and was recently amended in 2011. The updated code provides detailed guidance on construction standards that apply to new development. The code does not currently address specifications in relation to military activities for sites in proximity to Camp Rilea.

City of Warrenton Comprehensive Plan

The Warrenton Comprehensive Plan was originally adopted in 1983 and provides a vision for growth. The plan outlines the city’s UGB and city limits, which extend out to the northern perimeter of Camp Rilea. Recent planning efforts in Warrenton have focused on revitalizing the city center and focusing development on the inner city rather than outer edges of the City near Camp Rilea. However, there is evidence that the city is considering developing in areas that fall outside of the UGB (e.g. water and sewer extension), which is in conflict with the plan and Statewide Planning Goals.

City of Warrenton Development Code

The Warrenton Development Code provides information about the City’s zoning, development standards, building codes, and permitting requirements. The code establishes zoning designations that are consistent with the Statewide

Planning Goals, in that they encourage cluster development and development in areas with existing infrastructure. The code also establishes an UGB, identified as the Growth Management Zone (GMZ), which identifies where urbanized development will occur. According to the Warrenton Development Code, the GMZ provides growth management standards that help to ensure the conversion of large residential areas are consistent with the City's vision and are supported by adequate services.

The code does allow for residential uses to be located adjacent to Camp Rilea. The code limits the height of most structures to a maximum of 45 feet.

Fort Stevens State Park Master Plan

The Fort Stevens State Park Master Plan was published in 2001 and outlined the Oregon Parks and Recreation Department's (OPRD's) plans for preserving the natural resources while also improving facilities to accommodate visitors and recreational uses. According to the plan, Fort Stevens receives 1.4 million visitors annually and the peak season is July 1 to September 30. The development proposals in the plan are aimed at improving the quality of the facilities on Fort Stevens but not necessarily increasing visitation. According to the plan, increased parking increases visitation more than any other improvements. Facility improvements do not increase parking capacity and therefore did not significantly increase visitation. Increased visitation could prove to be incompatible with Camp Rilea if not planned properly due to the potential for increased exposure to safety risks and noise.

Since the plan was published 10 years ago, most of the improvements have already been made. A new plan indicating updated facility improvements is not currently available. However, as the existing plan indicates, any new development on Fort Stevens is subject to development permit requirements. Any improvements outlined in the Master Plan, have already been approved by Clatsop County and the City of Warrenton and therefore cannot be denied. Improvement plans that are not in the Master Plan can be denied.

Measures 37 and 49

Measures 37 and 49 are state regulations that address just compensation in instances where land use regulations restrict the residential use of private property or a farming or forest practice, thereby reducing the fair market value of the property for the property owner. Measure 37 is codified under ORS 197 and integrated into Measure 49, which allows for more flexibility in the type of compensation used for private property infringement than Measure 37. Measure 49 and 37 create an environment in which any form of land use regulation that restricts residential uses, farming or forest practices can be interpreted as a "taking". These regulations are discussed in greater detail in Chapter 3 of this JLUS.

Statewide Planning Goals

The State of Oregon ensures consistency in land use planning and natural resources through the enforcement of the "19 Statewide Planning Goals". By ensuring that all state and local plans conform to the goals outlined in these guidelines the state is able to ensure consistency in land use policy.

Warrenton Transportation System Plan

The Warrenton Transportation System Plan (TSP) was adopted in 2004 and establishes a plan for transportation systems through the year 2022. The TSP addresses ways to improve the transportation system in a way that will emphasize the local street network and protect the function of US Highway 101 as a statewide highway. This plan also addresses all modes of transportation, including pedestrian and bicycle.

Warrenton Urban Renewal District Plan

The Warrenton Urban Renewal District Plan (2007) provides guidance to the city on where infrastructure improvements need to be made to support downtown development in the city. The goal of the plan is to revitalize the downtown of the city and foster economic growth. The plan encourages infill development and focuses on providing a network of interconnected bike and pedestrian trails.

4.2 Camp Rilea JLUS

The Warrenton Downtown-Marina Master Plan

The Warrenton Downtown-Marina Master Plan provides a vision for the redevelopment of the city's downtown. The document provides a theme which is intended to guide future development and sets out a series of goals which focus on intentional, high-quality development, encouraging employment near housing, focusing on preserving natural resources and green development. The approach taken in the plan encourages development that is within city limits.

Issue LU-1	Appropriateness of Land Use Designations and Placement of New Development. The foundation of local land use planning and regulation is the protection of the public's health, safety, and welfare. Land use areas around Camp Rilea should be designated so as to protect the public from noise and safety impacts. Future development should be avoided in areas impacted by military training activities.
-------------------	--

Military training on Camp Rilea generates impacts which are experienced off-installation. The most significant of these impacts are noise from the small arms firing ranges on Camp Rilea, low-level flights over developed areas, and various other impacts such as vibration. Some of these impacts can be mapped or quantified, but many of them cannot. To determine which areas might be impacted by training activities that are not mapped or quantified, this study examines the zoning of undeveloped parcels within 1/2 mile of Camp Rilea.

Undeveloped Parcels within 1/2 mile of Camp Rilea

The county and city zoning maps provide insight into how these jurisdictions plan to develop the remaining undeveloped land around Camp Rilea. To determine the compatibility of the current zoning designations around Camp Rilea, this study examines the zoning of parcels within a 1/2 mile area of the northern, eastern, and southern boundaries of Camp Rilea. The western edge of the Camp is an undeveloped state beach and the impacts of training in that area are discussed

separately in Section 4.3, Safety. The zoning of all undeveloped parcels within a half-mile area to the north, east, and south of Camp Rilea is shown in Figure 4.2-1. There are numerous parcels in both the City of Warrenton and Clatsop County that could be developed in a manner that might be incompatible with military training as discussed below.

Clatsop County

Table 4.2-1 shows the undeveloped parcels within 1/2 mile of Camp Rilea that are located in unincorporated Clatsop County, as well as their associated zoning category. The number on the "Map #" column is associated with the geographic location of the parcels as shown on Figure 4.2-1.

Table 4.2-1. Undeveloped Parcels within 1/2 mile of Camp Rilea in Unincorporated Clatsop County

Map #	Tax Lot #	Clatsop County Zoning
28	810290004600	LW
29	810290004400	SFR-1
30	810290004500	SFR-1
36	81028CA01400	SFR-1
37	81028CA01500	SFR-1
38	81028CC00100	LW/SFR-1
39	81028CA00704	SFR-1
40	81028CA01900	SFR-1
41	81028CC00300	LW
42	81028CA02000	GC
43	81028CA00701	SFR-1
44	81028CD00400	SFR-1
45	810280003400	SFR-1
46	81028CD00401	SFR-1
47	810280003500	RA-5/LW
48	81028CD00402	SFR-1
49	810280003502	LW/SFR-1
50	81028CD00700	LW/SFR-1
51	810280003601	LW/SFR-1
52	81033A001100	AF
53	81033B001900	RA-5/LW
54	81033B002702	RA-5/LW
55	81033B001300	SFR-1
56	81033B001400	LW

Map #	Tax Lot #	Clatsop County Zoning
57	81033B001701	LW
58	81033A001300	SFR-1
59	81033B000201	SFR-1/LW
60	81033B001700	LW
61	81033B001600	LW
62	81033B000304	SFR-1/LW
63	81033A001800	SFR-1
64	81033A001901	SFR-1
65	81033BC00205	RA-1
66	81033BC00204	RA-1
67	81033CA02900	SFR-1/LW
68	81033D001100	SFR-1
69	81033D001001	AF
70	81033D001000	AF
71	81033BC00301	RA-1
72	81033CA03200	SFR-1/LW
73	81033CA03300	SFR-1/LW
74	81033D001200	SFR-1
75	81033CA01400	SFR-1/LW
76	81033CD00100	SFR-1/LW
77	81033CD00500	SFR-1/LW
78	81033C001500	RA-1/F-80
79	81033D000103	RA-5
80	81033D000900	RA-5
81	710030000102	F-80
82	71004A001400	RA-5
83	710040002300	RA-1
84	71004A000201	RA-5
85	71004A000200	RA-5
86	71004A000800	RA-5
87	71004A001700	RA-5
88	710030000200	EFU
89	710030000300	EFU
90	710040004100	RA-1
91	710040004200	RA-1
92	710030000900	EFU/RA-1
93	710030000901	EFU
94	710090000200	RA-5/LW
95	71010B002100	RA-5
96	710090000400	RA-5/OPR/LW

Map #	Tax Lot #	Clatsop County Zoning
97	710090000901	AF
98	71009BC02000	RA-1
99	71009BC02100	RA-1
100	71009BC00100	RA-1
101	710090000902	OPR
102	710090000801	OPR
103	710090000802	RA-5
104	71009BC01900	RA-1
105	71009BC00400	RA-1
106	71009BC01800	RA-1
107	710090000805	RA-5
108	710090000500	OPR/LW
109	71009BC01700	R-1
110	71009BC00600	R-1
111	71009BC01600	R-1
112	71009BC01000	R-1/LW
113	71009BC01300	R-1/LW
114	710090000906	R-1
115	71009CB00900	OPR
116	71009CA01200	OPR
117	71009DB00100	R-1
118	71009DB06400	LW
119	71009DB06200	OPR
120	71009CA00700	RA-1
121	71009CA00800	RA-1
122	71009DB06300	OPR
123	71009CA01300	OPR
124	71009CA02000	RA-1
125	71009DB06000	OPR

Principle permissible uses in these zones and their compatibility with military training activities on Camp Rilea are discussed in Table 4.2-2.

4.2 Camp Rilea JLUS

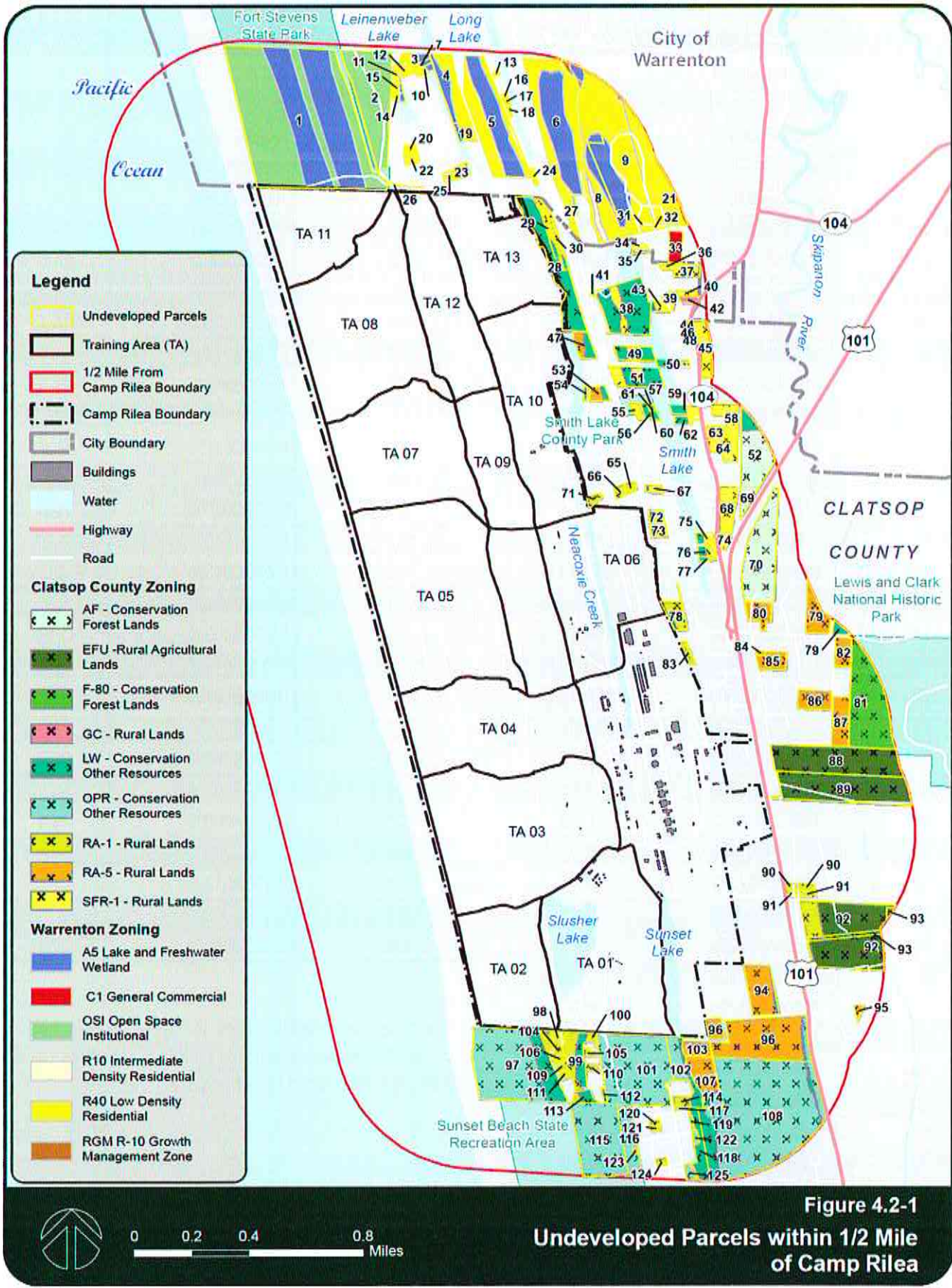


Table 4.2-2. Compatibility of Clatsop County Zoning within 1/2 Mile of Camp Rilea

Zoning	Principle Permissible Uses	Density/Height Restrictions	Compatibility
Agricultural Forestry (AF)	<ul style="list-style-type: none"> ■ Temporary forest product processing ■ Exploration, mining, commercial gravel extraction ■ Processing, landfills, dams, reservoirs, road construction or recreational facilities ■ Exploration for and production of geothermal, gas, oil ■ Hydrocarbons ■ Farm use ■ Local distribution lines ■ Uninhabitable structures accessory to fish and wildlife ■ Towers and fire stations ■ Forest labor camps ■ Private hunting and fishing operations without lodging ■ Caretakers residents for parks and fisheries ■ Road widening ■ Exploration for mineral aggregate resources ■ Temporary on-site structures ■ Water intake facilities ■ Public or private schools and necessary buildings. ■ Churches and cemeteries ■ Creation or enhancement of wetlands ■ A replacement dwelling in conjunction with farm use if the existing dwelling is on National Register of Historic Properties ■ Seasonal worker housing ■ Utilities for public service ■ Winery 	<p>Minimum division of land: 80 acres</p> <p>Maximum building height: 45 feet</p> <p>Transmission towers: over 200 feet</p>	<p>Maybe. For the most part the uses permitted in the AF zone are compatible with training impacts generated by Camp Rilea. However, schools and churches located within 1/2 mile of the Camp may experience noise levels that create a nuisance. In addition, even with a conditional use permit, towers should not exceed 200 feet in height.</p>

4.2 Camp Rilea JLUS

Zoning	Principle Permissible Uses	Density/Height Restrictions	Compatibility
Exclusive Farm Use (EFU)	<ul style="list-style-type: none"> ■ Farm uses ■ Operations for the exploration of geothermal resources and oil and gas and use of related production equipment ■ Public or private schools and related buildings ■ Utility facilities including Communication Facilities ■ Winery ■ Operations for the exploration for minerals ■ Climbing and passing lanes within the right-of-way ■ Reconstruction or modification of public roads and highways ■ Temporary public road or highway detours ■ Minor betterment of existing public road and highway related facilities ■ Creation, restoration, or enhancement of wetlands. ■ Alteration, restoration, or replacement of a lawfully established dwelling ■ Churches and cemeteries in conjunction with churches ■ Seasonal farm worker housing ■ Replacement dwelling to be used in conjunction with farm use if the existing dwelling has been listed on the National Register of Historic Places 	<p>Minimum parcel size: 80 acres</p> <p>Maximum building height: 45 feet</p> <p>Transmission towers: over 200 feet</p>	<p>Maybe. For the most part the uses permitted in the EFU zone are compatible with training impacts generated by Camp Rilea. However, schools and churches located within 1/2 mile of the Camp may experience noise levels that interfere with activities. In addition, even with a conditional use permit, towers should not exceed 200 feet in height.</p>
Forest-80 Zone (F-80)	<ul style="list-style-type: none"> ■ Widening of roads ■ Uninhabitable structures accessory to fish or wildlife enhancement. ■ Temporary forest labor camps ■ Alteration, restoration or replacement of a lawfully established dwelling ■ Exploration for and production of geothermal, gas, oil, and other associated hydrocarbons ■ Communication facilities 	<p>Minimum division of land: 80 acres</p> <p>Maximum building height: 45 feet</p>	<p>Yes. These uses are compatible with military training operations as long as communications facilities are limited to a height of less than 200 feet.</p>

Zoning	Principle Permissible Uses	Density/Height Restrictions	Compatibility
General Commercial (GC)	<ul style="list-style-type: none"> ■ Bed & breakfast ■ Property line adjustment ■ Partition ■ Splitting and sale of firewood ■ Public or private neighborhood park or playground ■ Golf driving range ■ Low intensity recreation ■ Boat ramps ■ Utilities ■ Land transportation facilities 	<p>Lot size for development: 15,000 square feet plus 10,000 square feet for a single family dwelling or mobile home</p> <p>Lot width / depth dimension ratio: 1:3</p> <p>Maximum building height: 35 feet</p>	Maybe. For the most part these uses are compatible with military training activities; however, noise may be a source of disturbance for patrons of Bed and Breakfast establishments.
Lake and Wetlands (LW)	<ul style="list-style-type: none"> ■ Low intensity recreation ■ Passive restoration ■ Vegetative shoreline stabilization ■ Submerged cable, sewer line, waterline or other pipeline ■ Maintenance and repair of existing structures ■ Cultivation and harvest of cranberries in designated areas ■ Bridges and pile supported walkways or other piling supported structures ■ Property line adjustment ■ Land transportation 	N/A	Yes.
Open Space, Parks and Recreation (OPR)	<ul style="list-style-type: none"> ■ Farm use ■ Forest use ■ Wildlife refuge or management area ■ Public regional park or recreation area excluding campgrounds ■ Historical or archaeological site/area ■ Golf courses except in areas identified as Coastal Shorelands ■ R.V. Park except in the Clatsop Plains Planning Area ■ Other watersheds ■ Public or private neighborhood park or playground ■ Golf driving range ■ Municipally owned watersheds ■ Accessory development ■ Property line adjustment ■ Low intensity recreation 	Maximum building height: 35 feet	Yes. However, noise and vibration generated by military operations may be disruptive to wildlife.

4.2 Camp Rilea JLUS

Zoning	Principle Permissible Uses	Density/Height Restrictions	Compatibility
Residential Agricultural (RA-1)	<ul style="list-style-type: none">■ One family dwelling■ Guesthouse■ Accessory buildings■ Limited home occupations■ Farm use■ Roadside stand for farm products grown on the premises■ Forestry■ Low intensity recreation■ Public or private neighborhood park or playground■ Horticultural nursery■ Temporary uses■ Cluster developments■ Handicapped housing facility.■ Utilities■ Health hardship dwelling■ Property line adjustment■ Partition■ Communication facilities■ Land transportation facilities	1 du / 2 acres Lot width / depth dimension ratio: 1:3 Maximum building height: 35 feet	Maybe. Residential uses within 1/2 mile may be subject to nuisances such as noise, vibration, and dust generated by military training activities. Cluster developments should be limited to areas outside of the 1/2 mile area as they entail higher densities of development. Residential uses should be avoided in noise contours.
Residential Agricultural (RA-5)	<ul style="list-style-type: none">■ One family dwelling per lot■ Guesthouse■ Accessory buildings■ One mobile home per lot■ Limited home occupation■ Minor utilities■ Farm use■ Forestry■ Low intensity recreation■ Public or private neighborhood park or playground■ Horticultural nursery■ Cluster developments■ Two family dwelling (duplex)■ Temporary uses■ Handicapped housing facility■ Health hardship dwelling■ Property line adjustment■ Communication facilities■ Land transportation facilities	1 du / 5 acres 2 du /10 acres Lot width / depth dimension ratio: 1:3 Maximum building height: 35 feet	Maybe. Residential uses within 1/2 mile may be subject to nuisances such as noise, vibration, and dust generated by military training activities. Cluster developments should be limited to areas outside of the 1/2 mile area as they entail higher densities of development. Residential uses should be avoided in noise contours.

Zoning	Principle Permissible Uses	Density/Height Restrictions	Compatibility
Single Family Residential (SFR-1)	<ul style="list-style-type: none"> ■ One family dwelling. ■ Guesthouse ■ Accessory buildings ■ Limited home occupation ■ Public or private neighborhood park or playground ■ Limited signs ■ Name plates ■ Handicapped housing facility ■ Property line adjustment ■ Partition ■ Low intensity recreation ■ Cluster development ■ Utilities 	<p>1 du / acre (with some few exceptions)</p> <p>Lot width / depth dimension ratio: 1:3</p> <p>Maximum building height: 26 feet</p>	<p>Maybe. Residential uses within 1/2 mile may be subject to nuisances such as noise, vibration, and dust generated by military training activities. Cluster developments should be limited to areas outside of the 1/2 mile area as they entail higher densities of development. Residential uses should be avoided in noise contours.</p>

As referred to in Table 4.2-2, the other zoning designations that are compatible with training on Camp Rilea are AF, EFU, and OPR, F-80, and LW. However, the pattern of development around Camp Rilea is one where residential development is located closest to Camp Rilea and open space and agricultural uses are farther out. Figure 4.2-1 illustrates that within the 1/2-mile area there are a number of undeveloped parcels zoned RA-1, RA-5 and SFR-1 located immediately along the eastern and southern perimeter of Camp Rilea near Training Areas #6, #1, and the Cantonment Area. These are the parcels numbered 71, 66, 65, 67, 72, 73, 75, 76, 77, 78, 83, 90, 91, 94, 96, 103, 98, 104, 106, 109, 11, 99, 105, and 110 in Figure 4.2-1. Training Area #6 is where a majority of live-firing ranges, tracked vehicle maneuvering and training activities take place. Existing residential development in these areas, both within and outside of the noise contours, have been identified to experience noise and vibration impacts from the training. The parcels that are located within the small arms and demolitions noise contours are discussed in greater detail in Section 4.7, Noise. If the undeveloped parcels in this area are developed for residential uses, residents will likely experience noise impacts from training activities. Therefore, residential uses should be avoided in these areas.

Clatsop Plains Sub-Area

The Clatsop County Comprehensive Plan includes five Community Plans, one of which is the Clatsop Plains Community Plan. This Community Plan provides goals and policies for the Clatsop Plains in terms of land use and resource management, including the protection of agricultural and natural resources. It covers several topic areas, each with policies that relate to the topic area. The topic areas covered are:

- General Landscape Units,
- Coastal Shorelands and Other Shorelands,
- Beaches, Dunes, etc.,
- Natural Resources,
- Critical Hazards,
- Housing,
- Public Facilities and Services,
- Transportation,
- Cultural and Historic,
- Fish and Wildlife Areas,
- Recreation,
- Open Space,
- Community Development, and
- Rural Lands.

4.2 Camp Rilea JLUS

While the Community Plan provides a good starting template, a more thorough Sub-Area Plan would help to better discuss planning goals on a more specific level. In addition, the current Community Plan does not address specifically compatibility planning around Camp Rilea. The development of a Sub-Area Plan should promote compatibility around Camp Rilea and allow for a more interactive planning process among all stakeholders in the region.

City of Warrenton

As shown in Figure 4.2-1 the City of Warrenton abuts Camp Rilea along the northern border. Table 4.2-3 shows the undeveloped city parcels within this half-mile area of Camp Rilea and how they are zoned.

Table 4.2-3 shows the undeveloped parcels within ½ mile of Camp Rilea that are located in the City of Warrenton, as well as their associated zoning category. The number on the “Map #” column is associated with the geographic location of the parcels as shown on Figure 4.2-1.

Principle permissible uses in these zones and their compatibility with military training activities on Camp Rilea are shown in Table 4.2-4.

Table 4.2-3. Undeveloped Parcels within 1/2 mile of Camp Rilea in the City of Warrenton

Map #	Tax Lot #	Warrenton
1	81000000300	OSI/A5
2	810290001302	OSI
3	81020CD00107	R40
4	810290001100	R40/A5
5	810290001004	R40/A5
6	810290000200	R40/A5
7	81020CD00102	R40/A5
8	810290000100	R40/A5
9	810280002300	R40/A5
10	81020CD00500	R40/A5
11	81020CD00105	R40/A5
12	81020CD00101	R40/A5
13	81029A001410	R40/A5
14	81020CD00100	R40/A5
15	81020CD00104	R40/A5
16	81029A001415	R40/A5
17	81029A001416	R40/A5
18	81029A001417	R40/A5
19	81029AC01400	R40/A5
20	81029BD00200	R40
21	81028BD00800	R40
22	81029BD01800	R40
23	81029AC00100	R40/A5
24	81029A001420	R40
25	81029AC00400	R40
26	81029BD00900	R40
27	810290000600	R41
31	810280002400	R40
32	810280003800	R40
33	810280002504	C1
34	81028CB01301	R40
35	81028CB01302	R40

Table 4.2-4. Compatibility of City of Warrenton Zoning within 1/2 Mile of Camp Rilea

Zoning	Permissible Uses	Density/Height Restrictions	Compatibility
Coastal Lake and Fresh Water Wetland (A5)	<ul style="list-style-type: none"> ■ Low intensity recreation ■ Passive restoration ■ Vegetative shoreline stabilization ■ Bridges and access roads ■ Individual docks for recreational or fishing use and necessary piling ■ Submerged cable, sewer line, water line or other pipeline ■ Maintenance and repair of existing structures ■ Developed hiking or bicycle trails ■ (Certain exceptions are made for uses that are within the Marine Commercial Shorelands Zone, the Recreation-Commercial Zone, and the Water Dependent Industrial Zone.) 	N/A	Yes.
General Commercial (C1)	<ul style="list-style-type: none"> ■ Personal and business service establishments such as barber or beauty shop, clothes cleaning, or funeral home ■ Professional, financial, business and medical offices ■ Retail business establishments ■ Amusement enterprises ■ Technical, professional, vocational and business schools ■ Membership organizations ■ Eating and drinking establishment ■ Hotel, motel or other tourist accommodation, including bed and breakfast ■ Automobile sales, and/or service and parts establishment ■ Boat and marine equipment sales, service or repair facilities ■ Building material sales yard ■ Government buildings and uses ■ Transportation facilities and improvements ■ Dredge Material Disposal ■ Community gardens 	Maximum building height: 45 feet	Maybe. Uses that may be sensitive to noise such as professional offices and government buildings may experience nuisances such as noise and vibration.

4.2 Camp Rilea JLUS

Zoning	Permissible Uses	Density/Height Restrictions	Compatibility
Open Space and Institutional (OSI)	<ul style="list-style-type: none">■ Maintenance and repair of existing facilities■ Uses and activities allowed under the applicable City-approved management plan for the facility■ Replacement and repair of existing public recreational park facilities or improvements to existing park facilities which do not cause an increase in overall visitor capacity or have significant land use impacts■ Outdoor recreation■ Temporary uses■ Government buildings and uses■ Transportation facilities and improvements subject■ Park host (one site) for dedicated city parks and located in an approved RV site.■ Community gardens	<p>Lot coverage: no more than 50%</p> <p>Maximum building height: 30 feet</p>	Yes.
Intermediate Density Residential (R-10)	<ul style="list-style-type: none">■ Single-family detached dwelling■ Modular home■ Manufactured home■ Residential home■ Residential (Care) Facility■ Day care■ Cemetery■ Farming, grazing, truck gardening, orchards and production of nursery stock■ A temporary dwelling for no more than six months while building a permanent residence■ Accessory structure no larger than 1,200 square feet, in conjunction with an existing residence on the same property■ Transportation facilities and improvements■ Community gardens	<p>Minimum lot area for residences: 10,000 square feet</p> <p>Minimum lot coverage: 35%</p> <p>Maximum building height: 40 feet</p>	Maybe. Residential uses within 1/2 mile may be subject to nuisances such as noise, vibration, and dust generated by military training activities. Cluster developments should be limited to areas outside of the 1/2 mile area as they entail higher densities of development. Residential uses should be avoided in noise contours.

Zoning	Permissible Uses	Density/Height Restrictions	Compatibility
Low Density Residential (R-40)	<ul style="list-style-type: none"> ■ Single-family detached dwelling ■ Modular home ■ Manufactured home ■ Residential home ■ Residential (Care) Facility ■ Day care ■ Farming, grazing, truck gardening, orchards and production of nursery stock ■ A temporary dwelling for no more than six months while building a permanent residence ■ Accessory structure, no larger than 1,200 square ft., in conjunction with an existing residence on the same property ■ Transportation facilities and improvements ■ Community gardens 	<p>Minimum lot size with on-site sewage: 40,000 square feet</p> <p>Minimum lot size when connected to City of Warrenton sewer system: 10,000 square feet</p> <p>Connected to city sewer system - 10,000 square feet</p> <p>Lot coverage: 35%</p> <p>Maximum building height: 30 feet</p> <p>Except agricultural buildings, solar collectors and wind energy systems and radio receivers whose maximum building height is: 40 feet</p>	<p>Maybe. Residential uses within 1/2 mile may be subject to nuisances such as noise, vibration, and dust generated by military training activities. Cluster developments should be limited to areas outside of the 1/2 mile area as they entail higher densities of development. Residential uses should be avoided in noise contours.</p>
Growth Management Zone (GM)	<p>The following standards apply to development within the Growth Management Zone:</p> <p>A. All development shall provide the following primary urban services: water, sanitary sewer facilities connecting to the City sewer system, local streets, fire protection and drainage. An inability to provide an acceptable level of all primary services shall result in the denial of a land use application.</p> <p>B. All development shall be reviewed to ascertain whether an adequate level of the following secondary urban services exists: Collector and arterial streets, school, police protection and parks. Where the City determines and supports with Findings that an unacceptable level of secondary urban services exist, the City may deny the land-use application unless the developer ensures the availability of an acceptable level of the services within five years from occupancy.</p>	Same as R-10	<p>Maybe. The GM zone encompasses the entire northern boundary of Camp Rilea. This area should be primarily rural development and not urbanized development.</p>

4.2 Camp Rilea JLUS

Zoning	Permissible Uses	Density/Height Restrictions	Compatibility
	C. City specifications shall be the standard used as measurement of acceptability of a service.		
	D. Encourage the development within urban areas before the conversion of urbanizable areas.		

The most compatible uses are those allowed in the A5, C1, and OSI zones. However, the pattern of existing development within 1/2 mile of Camp Rilea is primarily low density-residential development (R-40). Figure 4.2-1, illustrates that there are a number of undeveloped parcels located along the northern perimeter of Camp Rilea near Training Areas #11 and #13 that are zoned R-40. These parcels are numbered 26, 25, 23, 22, 20, and 24 in Figure 4.2-1. The ORNG engages in vehicle maneuvering and digging in these training areas, so existing and future residents could experience noise, vibration, and dust. Residential uses should be avoided in this area.

In general, for all parcels that fall within the 1/2 mile area, and more specifically the small arms noise contours, the least intense land use should be encouraged. Subdivisions of parcels, increased densities, and upzoning should be avoided in these areas. Recently, Clatsop County approved a lot split on a 13-acre parcel (parcel # T7N, R10W, Section 04, TL3500) zoned RA-5, RA-1, LW, BDO and NWI. This lot split will allow the owners to develop a caretaker facility and single-family home within close proximity to the camp. Approval of this subdivision intensifies the use of this parcel and allows for future uses, which will likely be incompatible with military training activities.



Residential development on the east side of Camp Rilea

Flight Paths

The US Coast Guard occasionally uses Camp Rilea for helicopter training. The US Coast Guard helicopters travel to and from Astoria Regional Airport and fly from 500 feet above ground level (AGL) to 1,000 feet AGL in accordance with FAA aviation rules. The US Coast Guard flies in a VFR pattern. Consequently helicopters do not always follow established flight paths. However, as Figure 4.4-1 in Section 4.4 Vertical Obstructions shows they do tend to fly in a routine pattern. According to the Oregon Statewide Operational Noise Management Plan (see Section 4.9, Noise for more information), the aircraft are not flown often enough to generate measurable noise impacts. Similarly, since the aircraft are flown at levels of 500 feet AGL, there is limited likelihood of collision with most structures. However, since a number of the zoning districts within Clatsop County and the City of Warrenton allow communication towers as a principle or conditional use, there is an opportunity for tall structures to be erected in these areas.



Helicopter flying over Camp Rilea

As shown in Table 4.2-5, the following zones allow communication towers in Clatsop County and the City of Warrenton.

Table 4.2-5. Zoning Districts Which Allow Communication Towers

Clatsop County	Warrenton
RCC-LI	I-2
RCI	A-1
TC	A-2
HI	A-3
LI	R-C
F-80	C-2
AD	OSI
RC-MFR	
RSA-MFR	
RA-1	
RA-2	
RA-5	
GC	
EFU	
AF	
MR	

Per the Clatsop County Land and Water Use and Development Ordinance, Section S4.700, communication towers are allowed in the zones listed in Table 4.2-5. Under a CUP II or CUP IIa, communications towers may exceed the maximum height established for each zone, which ranges from 60 to 200 feet depending on the zone. The CUP review process does not establish an additional height restriction, therefore, if approved, towers reaching 500 feet or more could be erected in these zones.

According to the City of Warrenton zoning, wireless communication facilities are allowed conditionally in the zoning districts listed above, upon approval of a CUP. The code encourages the collocation of towers but does not establish a maximum height for these facilities. In the absence of a maximum height restriction for such structures, there is an opportunity for communication towers of 500 feet or higher to be developed and interfere with military aircraft flights. Although 500 AGL is the minimum height at which helicopters fly en route to Camp Rilea, some structures even ranging between 200 to 500 feet tall can still pose safety concerns for aircraft and pilots.

Issue LU-2	Compatibility with State and National Park Plans. Camp Rilea is bordered on portions of three sides by state and national park lands and trails associated with use of the State and National Parks. Consistent long-range planning is needed to ensure compatibility between the uses.
-----------------------------	--

As shown on Figure 4.2-2, Camp Rilea is surrounded by numerous state and national parks, beaches, and trails. To the north of the Camp is Fort Stevens State Park. To the east of the Camp is the Lewis and Clark National Historical Park, through which runs the Fort to Sea trail.

Plans are currently underway to develop the DeLaura Beach Trail that will run adjacent to the northern boundary of Camp Rilea. This trail is being designed by the Oregon Department of Transportation and the City of Warrenton, and will include a paved shoulder improvement. The trail is in close proximity to several historic sites, including a World War II Japanese shelling monument and the Smith Mission Monument.

To the south is the Sunset Beach parking lot and to the west are a public beach and the Pacific Coast Trail (also known as the Oregon Coast Trail). There are also numerous county parks located around the Camp. Of these parks and trails, the Fort Stevens State Park, the Lewis and Clark National Historical Park, the Fort to Sea Trail and Sunset Beach are the largest and the most likely to present either incompatibilities with training operations or opportunities for conservation around Camp Rilea. A description of the management plans for these parks and beaches follows.

Fort Stevens State Park

Fort Stevens was an important military installation until World War II, when it was closed. Now it is a 4,200-acre state park and recreation area which offers camping, beachcombing, freshwater lake swimming, trails, wildlife viewing, an historic shipwreck, and an historic military area. The park contains nine miles of bicycle trails and six miles of hiking trails. Fort Stevens State Park abuts a portion of the northern boundary of Camp Rilea. This helps to provide a partial buffer

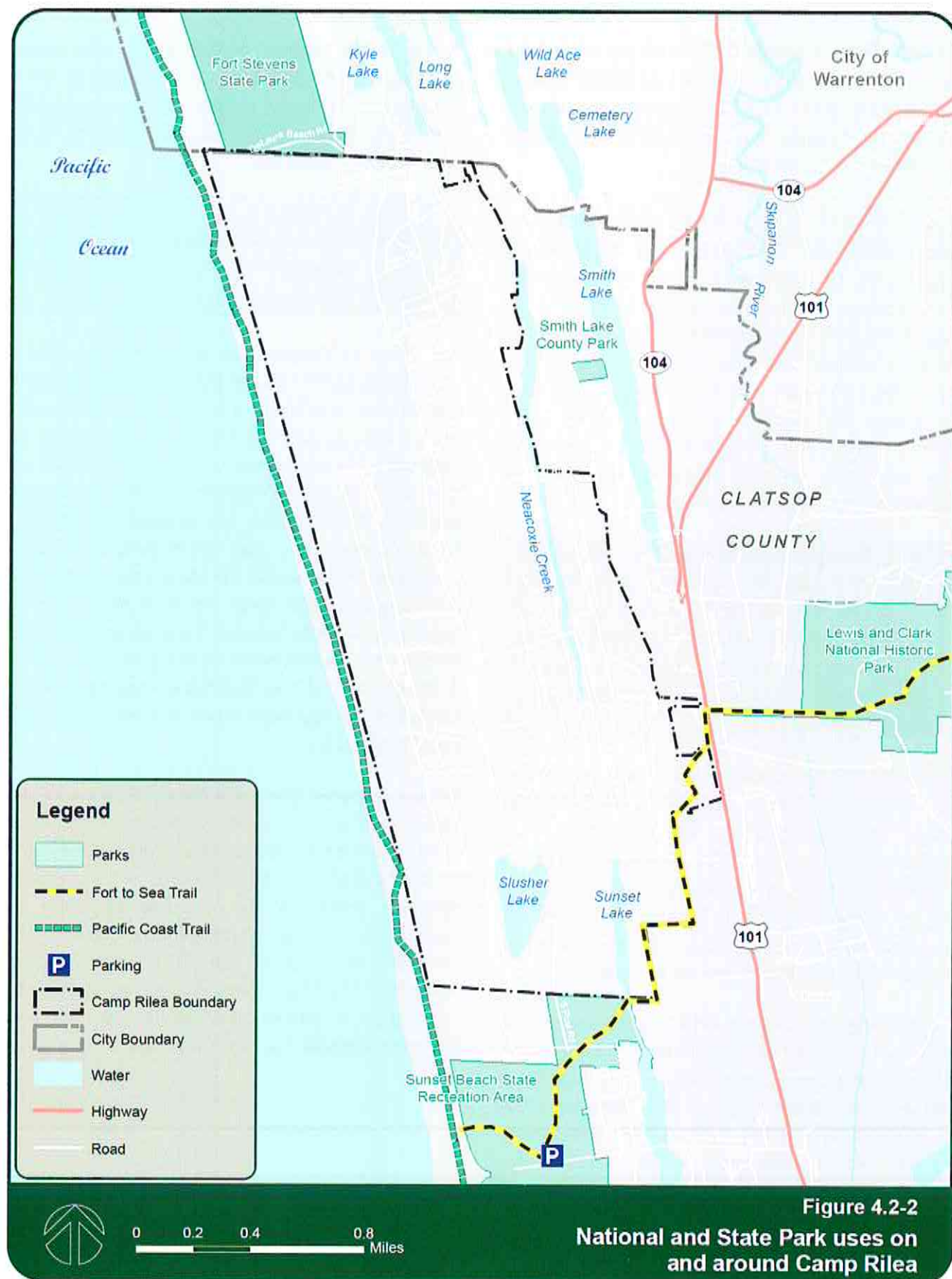
from development on the northern boundary. The Fort Stevens State Park Master Plan encourages partnership between the park and Camp Rilea, as well as other entities, to ensure compatible existence between all entities for future development or activities.

Fort Clatsop National Memorial / Lewis and Clark National Historical Park

The Fort Clatsop National Memorial (formerly Fort Clatsop) is where the Lewis and Clark expedition spent the winter of 1805. In 2005 Fort Clatsop National Memorial became part of the Lewis and Clark Historical National Park. The National Park Service (NPS) is responsible for managing and maintaining the park. At the time of this designation various improvements were made to the park such as the creation of several new trails including the 6.5-mile Fort to Sea Trail, the 2.5-mile Clatsop Loop Trail at Ecola State Park, and the 1.5-mile Netul River Trail along the Lewis and Clark River at Fort Clatsop. The route of the Fort to Sea Trail was designed so that half of the trail is on NPS land and half is on State of Oregon land. The portion of the trail on State land included a pedestrian underpass at Highway 101, which entered onto Camp Rilea along the eastern and southern boundary and crossed onto Sunset Beach.

Although the design of the trail was coordinated with the Oregon Military Department, the fact that the trail traverses onto the Camp could decrease security monitoring and increase trespassing opportunities and expose the public to noise and vibration from military training activities.

Other improvements that were part of this project include the development of the Sunset Beach / Fort to Sea Trail parking lot. The expansion of the trail and the addition of a parking lot are expected to draw more tourists to the region over the long-term.



4.2 Camp Rilea JLUS

In addition, future expansion of facilities can be anticipated as an updated version of the Lewis and Clark National Historical Trail Management Plan is currently being developed. The long-term increase in visitation in the region could have impacts on Camp Rilea activities as stated above.

Sunset Beach State Recreation Area

Sunset Beach State Recreation Area is an OPRD-managed site. The Sunset Beach parking lot serves as the terminus of the Fort to Sea Trail. There is no management plan for Sunset Beach State Recreation Area. As a coastal area and shore, the beach falls under the purview of the Oregon Coastal Management Plan and the Oregon Shoreline Plan. However, there are no plans that indicate near-term facility expansion or that designate this area as important habitat for certain species.

Issue LU-3	Training Operations Limit Access to Public Lands and Marine Area. During live-fire exercises, beach and marine area within the active surface danger zones (SDZs) are closed to public access. These closures limit recreation on beach areas.
---------------	---

The live-fire ranges at Camp Rilea have associated SDZs, which extend off-installation onto the beach and over the ocean. In addition the ORNG Razor Clam Drop Zone, which is where ORNG Soldiers train in the use of parachutes, encompasses more than half of the beach on the western edge. The live-fire ranges are used approximately 126 times a year and the Drop Zone is used for training several times a year.

During training exercises the ORNG restricts access to a portion of the beach per regulations relating to the protection of public safety from errant munitions contained in the Army Pamphlet (DA PAM) 385-63. A map of this area and the public safety implications associated with the placement of the SDZs over the beach are discussed in Section 4.3, Safety.

Since the beach is a state beach, it is a public facility. Although the closure of the beach may only be periodic, it limits the ability of the public to use this state beach. Closure of a public facility is incompatible with recreational activities such as clamming and use of the Pacific Coast Trail.

Issue LU-4	Compliance with State Planning Law. The JLUS needs to ensure all recommendations are in accordance with State Planning Law.
---------------	--

The State of Oregon has an established land use planning program that has guided and influenced land use decision making throughout the State since the 1970s. This program is based on the “19 Oregon Statewide Planning Goals”, presented in Table 4.2-6, that serve as the foundation for all state and local planning. Per ORS 197, the Oregon Department of Land Conservation and Development (DLCD) is responsible for ensuring the Statewide Planning Goals are integrated into state and local plans. The JLUS must also take into account the goals and policies put forth in the “19 Statewide Planning Goals”. Table 4.2-6 states each of the Statewide Planning Goals and compares the approach taken and recommendations made in the JLUS.

When completed, the Camp Rilea JLUS is only a study, and reflects a common understanding on actions that will be pursued to help enhance compatibility. Many of the strategies contained in this JLUS will require separate public review and hearings with their appropriate commission, board, or council. As these strategies are pursued, compliance with the Oregon Statewide Planning Goals will be incorporated, as appropriate, as part of these actions. For more on the Oregon Statewide Planning Goals, see Section 3.4.

Table 4.2-6. Statewide Planning Goals

Goal Title	Statewide Planning Goal	JLUS Approach and Recommendations
1. Citizen Involvement	To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.	The JLUS process is designed to be inclusive and allow numerous opportunities for public input throughout the project. This approach is consistent with the Statewide Planning Goals.
2. Land Use Planning	To establish a land use planning process and policy framework as a basis for all decision and actions related to use of land and to assure an adequate factual base for such decisions and actions.	The JLUS discusses the need for local governments to develop regulatory mechanisms that are mindful of training activities on Camp Rilea and their off-base impacts. This approach is consistent with the Statewide Planning Goals.
3. Agricultural Lands	To preserve and maintain agricultural lands.	The JLUS recommends preserving existing agricultural lands. This is consistent with the Statewide Planning Goals.
4. Forest Lands	To conserve forest lands by maintaining the forest land base and to protect the state's forest economy by making possible economically efficient forest practices that assure the continuous growing and harvesting of forest tree species as the leading use on forest land consistent with sound management of soil, air, water, and fish and wildlife resources and to provide for recreational opportunities and agriculture.	The JLUS recommends preserving open space and forested lands. This is consistent with the Statewide Planning Goals.
5. Open Spaces, Scenic and Historic Areas and Natural Resources.	To protect natural resources and conserve scenic and historic areas and open spaces.	The JLUS recommends preserving open space and historic sites. The JLUS provides numerous recommendations on how to manage natural resources. This approach is consistent with the Statewide Planning Goals.
6. Air, Water and Land Resources Quality	To maintain and improve the quality of the air, water, and land resources of the state.	None of the JLUS issues identified relate to diminished air or land quality. Issues relating to water quality are regional and mechanisms are in place to ensure that they are addressed. JLUS recommendations are consistent with ensuring existing strategies continue and are enhanced through increased coordination.

4.2 Camp Rilea JLUS

Goal Title	Statewide Planning Goal	JLUS Approach and Recommendations
7. Areas Subject to Natural Disasters and Hazards	To protect people and property from natural hazards.	The JLUS discusses the importance of a well-designed and coordinated emergency management plan and the role of the Oregon National Guard in emergency management. To improve emergency management protocols the JLUS recommends enhancing coordination with Camp Rilea. The JLUS recommends preserving existing agricultural lands. This is consistent with the Statewide Planning Goals.
8. Recreational Needs	To satisfy the recreational needs of the citizens of the state and visitors and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.	The JLUS aims to balance recreational needs with public safety and military training needs. The JLUS recommends preserving existing agricultural lands. This approach is consistent with the Statewide Planning Goals.
9. Economic Development	To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens.	Preserving economic development opportunities, including the preservation of the military mission, is one of the primary goals of the JLUS. This approach is consistent with the Statewide Planning Goals.
10. Housing	To provide for the housing needs of citizens of the state.	Housing has not been identified as an issue of concern in the JLUS.
11. Public Facilities and Services	To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.	The JLUS discusses the need to focus the development of public facilities and infrastructure in developed areas to minimize sprawling development around Camp Rilea. These recommendations are consistent with the Statewide Planning Goals.
12. Transportation	To provide and encourage a safe, convenient and economic transportation system.	The JLUS recommends improving the safety of the roadway system around Camp Rilea. These recommendations are consistent with the Statewide Planning Goals.
13. Energy Conservation	To conserve energy.	The JLUS does not address Energy Conservation.
14. Urbanization	To provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities.	The JLUS discussed the impacts that urbanization in the communities surrounding Camp Rilea might have on the general quality of life and military training activities. Recommendations in the JLUS encourage cluster development, development within urban growth boundaries and other land use planning techniques that will help to avoid sprawling development. These recommendations are consistent with the Statewide Planning Goals.

Goal Title	Statewide Planning Goal	JLUS Approach and Recommendations
15. Willamette River Greenway	To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway.	N/A
16. Estuarine Resources	To recognize and protect the unique environmental, economic, and social values of each estuary and associated wetlands; and to protect, maintain, where appropriate develop, and where appropriate restore the long-term environmental, economic, and social values, diversity and benefits of Oregon's estuaries.	The JLUS discusses the need to protect the water quality of wetlands habitat on Camp Rilea as well as allow for training opportunities. This approach is consistent with the Statewide Planning Goals.
17. Coastal Shorelands	To conserve, protect, where appropriate, develop and where appropriate restore the resources and benefits of all coastal shorelands, recognizing their value for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources and recreation and aesthetics. The management of these shoreland areas shall be compatible with the characteristics of the adjacent coastal waters; and the use and enjoyment of Oregon's coastal shorelands.	The JLUS discusses the need to balance shoreland use and habitat protection with military training activities. This approach is consistent with the Statewide Planning Goals.
18. Beach and Dunes	To conserve, protect, where appropriate develop, and where appropriate restore the resources and benefits of coastal beach and dune areas; and To reduce the hazard to human life and property from natural or man-induced actions associated with these areas.	The JLUS discusses the importance of dunes and beaches as special-status species habitat. The JLUS recommends increased awareness about the impacts of training on these areas. These recommendations are consistent with the Statewide Planning Goals.
19. Ocean Resources	To conserve marine resources and ecological functions for the purpose of providing long-term ecological, economic, and social value and benefits to future generations.	The JLUS addresses potential impacts of training on ocean resources and recommends methods for minimizing these impacts. This approach is consistent with the Statewide Planning Goals.

Issue LU-5	Shortfalls of Measure 37 and Measure 49. Measure 37 and Measure 49 limit the land use regulatory capacity of local governments.
-------------------	--

Two State of Oregon measures, which were passed through referendum, have significantly affected the ability of local governments to enforce land use regulations. The first is Measure 37, which was passed in 2004 and has since been codified as Oregon Revised Statute (ORS) 195.305. Measure 37 was created as a

citizen response to concerns that state and local government land use regulations imposed restrictions on the use of private property and therefore equaled a "taking". Thus, to prevent local governments from "taking" private property through regulation, ORS 195.305 requires local governments to pay compensation, or waive the regulation, when it "restricts the use of private real property . . . and has the effect of reducing the fair market value of the property." The law also identifies how government compensation should be calculated based on the

4.2 Camp Rilea JLUS

reduction in the fair market value of the affected property.

Regulations that are exempt from the law include those that:

1. Restrict “activities commonly and historically recognized as public nuisances under common law”;
2. Relate to the protection of public health and safety;
3. Comply with federal law;
4. Restrict or prohibit the use of property for “selling pornography or performing nude dancing”; and
5. Were enacted prior to the date of acquisition of the property by the current owner or an ancestor.

The second, Measure 49 was passed in 2007 as a citizens’ repeal of Measure 37. Measure 49 was eventually codified into ORS 197. Measure 49, modified Measure 37 by amending the requirement that local governments either extend a waiver of the land use regulations or compensate the owner of the affected property. Instead, Measure 49 allows claimants to establish a specific number of home sites as another form of compensation. Measure 49 also requires claimants to demonstrate a reduction in property value by presenting appraisals of the property one year before and one year after the enactment of the regulation.

The goal of Measure 49 is to allow for the compensation of unfair regulatory burdens, while also allowing the local governments the opportunity to protect farmland, forests and water resources. Although Measure 49 did alleviate some of the strict requirements set forth in the original Measure 37, both laws now restrict the manner in which local governments regulate land use in their jurisdictions.

Strategies

The following strategies are recommended to address the issues identified in this section.

Issue	ID	Strategy	CRIA	Timing	Local		State						Federal			Tribal Gov't	
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS	USCG		USFWS
LU-1	A	Define and Establish Camp Rilea Influence Areas(CRIAs) Establish nine CRIAs as shown on Figures 4.0-1 through 4.0-3. The CRIAs should be used by stakeholders to identify the applicability of the strategies presented in this JLUS.	General	2016	■	■											
LU-1	B	Land Use Change Guidelines Within the Land Use CRIA, land use designations (comprehensive plan or zoning code) in place as of the date of establishment, shall be reviewed using the following criteria prior to any designation change: ■ Land currently designated for non-residential use shall not be redesignated to a residential use category. It may be redesignated to another nonresidential use category (except for mixed use) as long as conditions of approval require appropriate noise attenuation requirements for new construction. ■ All new construction of structures for noise sensitive land uses (see definition in Glossary) shall be required to do an acoustical study and provide appropriate noise attenuation. Funding should be sought to assist in developing pre-authorized design standards that can be used by all builders in lieu of performing studies. ■ Land currently designated for a residential use shall not be modified to another residential designation that allows a higher density of use than allowed in the current designation. ■ Existing, approved subdivisions or other residential development approvals shall not be amended or otherwise modified to increase the number of residential units previously approved. Changes to reorient or redistribute approved units on a given site are not restricted by this strategy.	Land Use	2012	■	■											

4.2 Camp Rilea JLUS

Issue	ID	Strategy	CRIA	Timing	Local		State					Federal			Tribal Gov't	
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS		USCG
		This does not change an owner's right to divide a parcel and construct a residence as provided for under the zoning regulations for Clatsop County or the City of Warrenton.														
LU-1	C	Require Real Estate Disclosures Require that all properties developed or sold that are within the Land Use CRIA have a real estate disclosure included as part of the sale materials that states the property is located within close proximity to a military installation that performs day and night time training operations, both air operations and ground. The military operations may produce noise, vibration, and other compatibility issues.	Land Use	2016	■	■										
LU-1	D	Clatsop Plains Sub-Area Plan Develop a sub-area plan for the Clatsop Plains region that will include information and planning goals for topics to include: <ul style="list-style-type: none">■ Land Use■ Transportation■ Trails■ Water Quality, and■ Infrastructure This sub-area plan should implement appropriate strategies from this JLUS to promote long-term compatibility. The plan would provide specific language for planning and development around Camp Rilea to minimize future incompatible development. In addition, the sub-area plan should include appropriate technical studies to provide the data and information needed to design appropriate policies and implementation strategies.	Clatsop Plains	2016	■											

Issue	ID	Strategy	CRIA	Timing	Local		State						Federal			Tribal Gov't
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS	USCG	
LU-1	E	<p>Warrenton Comprehensive Plan Update</p> <p>When the time comes for the City of Warrenton to update its comprehensive plan, it should address compatibility with Camp Rilea in regards to the topics covered in this JLUS, including information and planning goals for the following topics:</p> <ul style="list-style-type: none">■ Land Use■ Transportation■ Trails■ Water Quality, and■ Infrastructure <p>This comprehensive plan should implement appropriate strategies from this JLUS to promote long-term compatibility. The plan would provide specific language for planning and development around Camp Rilea to minimize future incompatible development.</p> <p>In addition, the plan should include appropriate technical studies to provide the data and information needed to design appropriate policies and implementation strategies.</p>	Warrenton	2016		■										
LU-2	F	<p>Develop a Beach Management Plan</p> <p>A Beach Management Plan for the beach area on the west side of Camp Rilea should be developed to identify the recreation uses and natural resources on the beach and identify a coordinated management approach that takes Camp Rilea training needs into account. The plan should consider Camp Rilea's impacts to and uses of the beach. OMD should be involved in the development of the plan.</p> <p>As part of the Management Plan:</p> <ul style="list-style-type: none">■ Activities that encourage a link between this area and areas north of Camp Rilea along the beach should be discouraged.■ Provide for parking areas for on-site uses.■ Provide trail linkages that go on the east side of Camp Rilea (located off the installation). <p>Other Entities: North Coast Land Conservancy, The National Coast Trail Association, The Warrenton</p>	Coastal	2016	■							■	■			

4.2 Camp Rilea JLUS

Issue	ID	Strategy	CRIA	Timing	Local		State					Federal			Tribal Gov't		
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS		USCG	USFWS
		Trails Association, Oregon Equestrian Trails, The Skipanon Watershed Council, and Skipanon Water Control District															
LU-2	G	Incorporate Training Impacts into Park and Recreational Area Management Plans Ensure recommendations being put forth in the Lewis and Clark National Historical Trail Management Plan, the Fort Stevens State Park Plan and other recreational area plans consider the potential impacts of training on Camp Rilea on recreation activities (e.g. noise, vibration), and are designed to be compatible with the uses at Camp Rilea. Other Entities: North Coast Land Conservancy, The National Coast Trail Association, The Warrenton Trails Association, Oregon Equestrian Trails, The Skipanon Watershed Council, and Skipanon Water Control District	General	2016									■	■			
LU-3	H	Scheduling of Training Scheduling of live fire training should continue to consider avoidance of training during minus tides, when possible, which are the ideal tides for collecting clams from the beaches.	General	2013								■	■				
LU-3	I	Communicate Safety Risks Work with OPRD and NPS to increase public awareness about the risk of trespassing onto Camp Rilea. ■ OPRD and NPS should pursue notifications to stay on marked trails on kiosk displays to trail segments that pass adjacent to or through Camp Rilea. ■ Ensure these warnings are issued on websites and informational brochures for these locations and trails. Show Camp Rilea boundaries in NPS Fort-to-Sea Trail maps.	General	2013								■	■	■			

Issue	ID	Strategy	CRIA	Timing	Local		State						Federal		Tribal Gov't	
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMID / Camp Rilea	OPRD	NPS		USCG
LU-4	J	<p>Ensure Consistency with Statewide Planning Goals</p> <p>The JLUS Coordination Committee should coordinate with the Department of Land Conservation and Development (DLCD) to determine which state programs might help facilitate implementation.</p> <p>Other Entities: JLUS Coordination Committee</p>	General	2013	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				

Please see the next page.

4.3

Safety

4.3.1 Key Terms

Surface Danger Zone (SDZ) — An SDZ is an area around a weapons firing range from which the access of all military personnel and civilians is restricted due to the inherent dangers associated with the firing of live munitions. An SDZ can include the surface (and subsurface) of land and water, as well as the overhead air space which provides the medium for launched projectiles. An SDZ includes the weapons firing position, target impact area and a secondary buffer area, which is an additional distance where errant projectile/munitions fragments may land without risking harm to life or property. The area of a SDZ can vary in size and shape and is specifically dependent on the type of weapon(s) fired, their firing location and projectile trajectory.

4.3.2 Existing Tools

Federal and DoD Programs

DoD Ammunition and Explosives Safety Standards: General Explosives Safety Information and Requirements (6055.09-M)

DoD Manual 6055.09 was developed in accordance with DoD Directives 5134.01 and 6055.9E. The purpose of the manual is to establish explosives safety standards designed to manage risks associated with ammunition and explosives. The guidance therein provides protection criteria intended to minimize serious injury, loss of life, and damage to property.

MCO 3570.1B and Department of the Army Pamphlet (DA PAM) 385-63

These Marine Corps and Army regulations provide standards and procedures for the safe firing of ammunition, demolitions, lasers, guided missiles, and rockets for training. The guidance in these regulations addresses:

4.3 Camp Rilea JLUS

- Surface danger zones as minimum safety standards;
- Range safety responsibilities for the unit commander, Officer in Charge (OIC), and Range Safety Officer (RSO) for all ranges, especially for live-fire operations;
- Procedures for ammunition and explosives: positioning and issuing; suspension of ammunition and explosives involved in malfunctions; UXO and misfire procedures and reporting; and disposition of ammunition and explosives involved in malfunctions and accidents;
- Risk-management principles and deviation authorities, and employs the operational risk management process to identify and control range hazards.

33 CFR 334, Danger Zone and Restricted Area and Regulations – Title 33 – Navigation and Navigable Waters

Title 33 of 33 CFR Part 334 provides regulations that:

- Prescribe procedures for establishing, amending and disestablishing danger zones and restricted areas;
- List the specific danger zones and restricted areas and their boundaries;
- Prescribe specific requirements, access limitations and controlled activities within the danger zones and restricted areas; and
- The CFR aims to establish regulations while also minimizing interference with or restriction of the food fishing industry.

State and Local Programs

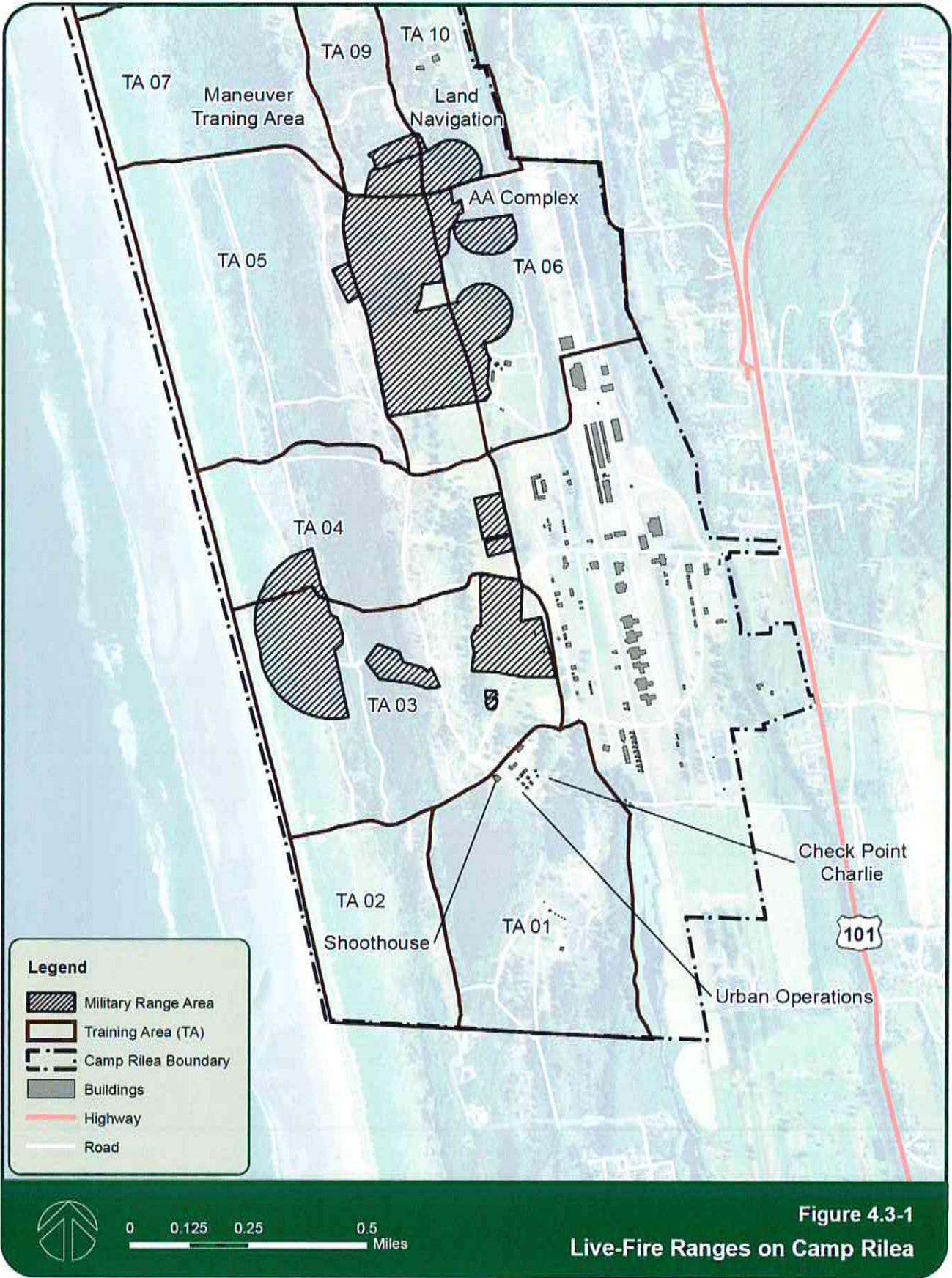
In addition to the programs discussed here, additional plans and programs were considered in the review of safety issues. These programs are described in detail in the section whose topic is their central focus. Specifically, the following plans and programs described in other sections were considered in the assessment of safety:

- Oregon Coastal Management Program
- Ocean Shore Management Plan
- Lewis and Clark State Park Trail
- Oregon Army National Guard Statewide Operational Noise Management Plan

Additionally, the discussion in Section 4.4, Vertical Obstructions, discusses technical background and programs that play an important role in safety considerations.

Issue SA-1	Live-Fire Range Surface Danger Zones (SDZ). Munitions from range activities have the potential to travel off Camp Rilea and land on the shoreline and in the ocean. These areas are designated as an SDZ for each range. As the SDZs extend beyond the installation boundary, this issue addresses concerns over public safety.
-----------------------	--

The live-fire ranges used on Camp Rilea are shown on Figure 4.3-1. Each of these ranges has an associated SDZ, which serves as a buffer area for potentially errant munitions. All access to the land encompassed by an SDZ is restricted during training. As shown in Figure 4.3-2, the outermost perimeter of the SDZs extends past Camp Rilea onto the beach and over the Pacific Ocean. In total, the SDZs encompass approximately 1,169 acres of land and 4,474 acres of water. All of the land under the SDZs that is located outside of Camp Rilea is undeveloped beach. As a public beach, however, the area within the SDZs is frequented by the public. It is popular location for clamming, which attracts both locals and tourists in large numbers during the peak seasons.



4.3 Camp Rilea JLUS

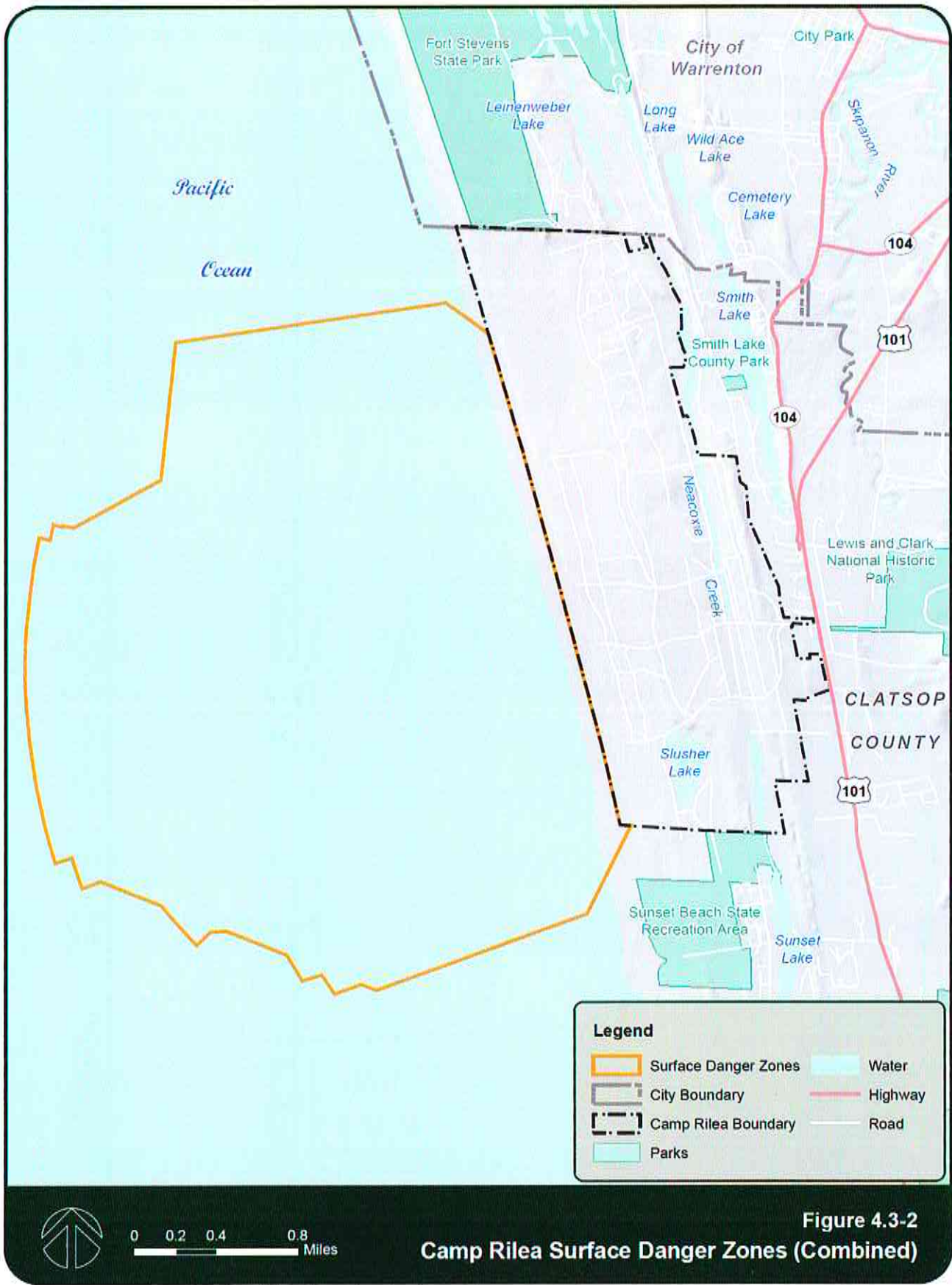




Figure 4.3-3 Firing Range Backdrop

In order to ensure public safety and compliance with the Army regulations DA PAM 385-63, Camp Rilea temporarily restricts access to the beach during training activities. The ranges were operational 126 days in Training Year 2011 (1 October 2010 – 30 September 2011). The hours of normal operations are 7:00 am to 4:30 pm. If live-fire training is scheduled to go later than 11:00 pm, the OMD posts a notification in the Daily Astorian and Seaside Signal newspapers a week in advance. This typically only happens two to three times per year. As an additional safety precaution, Camp Rilea maintains natural buffers such as sand dunes and forested areas between the point of fire and the beach. The buffers absorb fired munitions and help to minimize the number of spent rounds that could potentially land on the beach helping to reduce the safety risk to off-base areas. Although the possibility exists for fired rounds to land on the beach, there have been no documented occurrences by OMD. See Figure 4.3-3 for an image of the buffer surrounding one of the firing ranges.

To restrict access to the beach during live-fire training activities, the Oregon National Guard (ORNG) posts beach guards along the public entry points who prohibit unauthorized access to the beach. During the public outreach sessions of the Camp Rilea Joint Land Use Study the public commented that there should also be permanent signage along the beach entry points indicating periodic beach closure.

With the beach guards in place, the public cannot enter the closed beach area. If the public demands access to the beach, there are procedures in place for the beach guards to inform Range Control of secured area breach and to commence immediate cease fire on the ranges. It should be noted that to date, no injuries to Soldiers or the public have been reported during the conduct of any live fire exercise.

As shown on Figure 4.3-2, the SDZs also extend past the beach over the Pacific Ocean. The U.S. Army Corps of Engineers is proposing to establish a Danger

4.3 Camp Rilea JLUS

Zone offshore of Camp Rilea which would restrict public activity from occurring within the Zone, including the use of watercraft, when weapons training ranges are in use. The Danger Zone would enclose the SDZs over the Pacific Ocean. The Corps of Engineers anticipates that establishment of the Danger Zone would not have a significant effect on the use of the area because watercraft can navigate around it and, consequently, the Corps does not plan to prepare an environmental impact statement. However, an analysis of potential environmental effects will be prepared. Public comment on the proposed Danger Zone closed on June 1, 2012.

Currently, public comments received by the Corps are being evaluated and an analysis of potential environmental effects from the proposed Danger Zone is being prepared.

Issue SA-2

Public Trespassing. Public trespassing, whether inadvertent or intentional, can expose individuals to safety risks associated with entry into an active training facility. Areas of concern to address include:

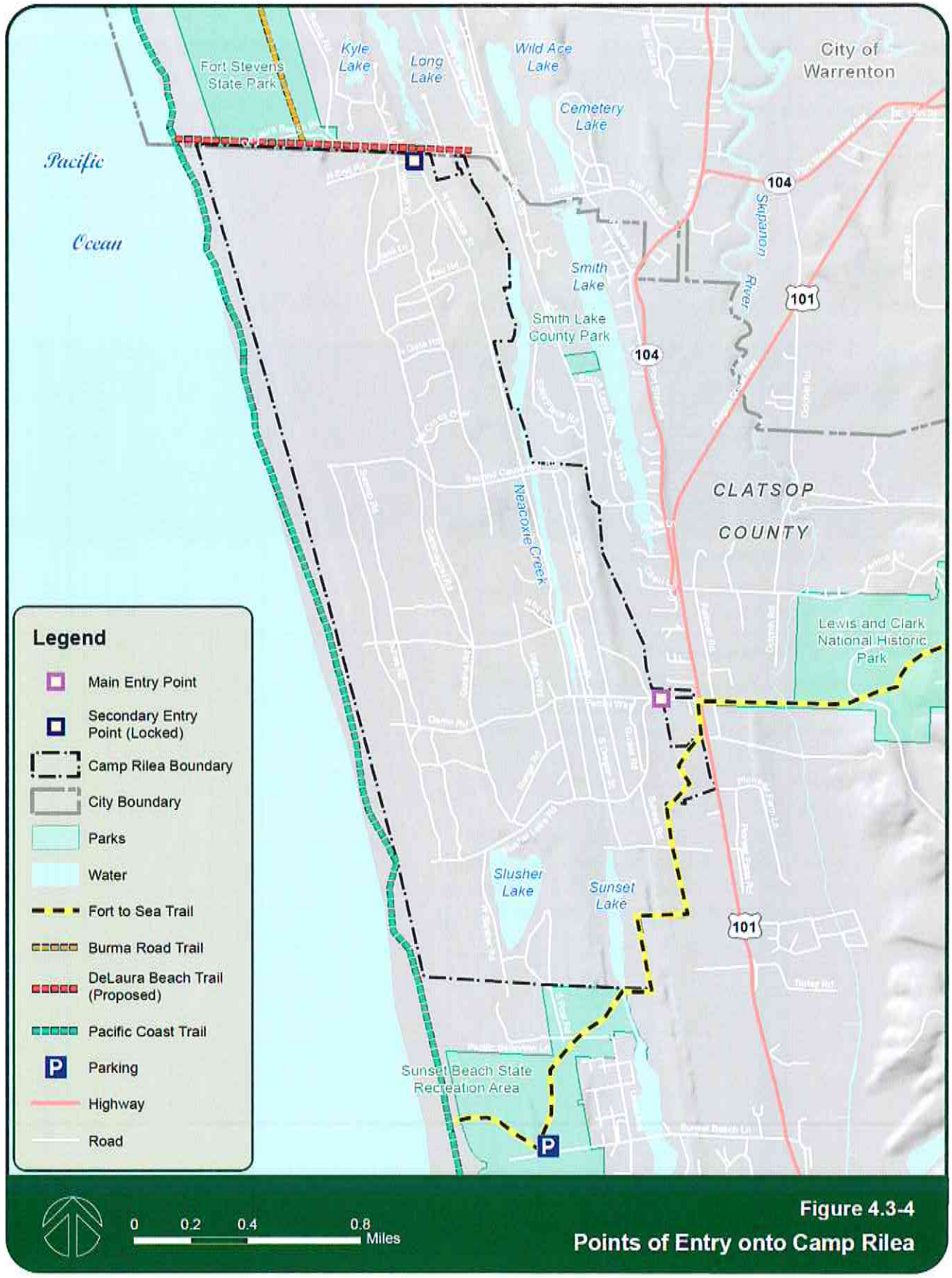
- Incomplete perimeter fencing.
- Poor signage (damaged and inadequate coverage).
- Public trail traversing Camp Rilea increases opportunity for trespassing.

Camp Rilea is an open installation, which means the public is welcome to visit the Camp and use the facility for certain types of public purposes. However, there are still procedures and regulations that must be followed when going onto the Camp, such as entering and exiting through the proper entry point (the main gate entrance off of US Highway 101). Camp Rilea hosts numerous groups and events such as at-risk youth groups, high-school sports camp, Boy Scout groups, car shows, flea markets and conferences. In spite of this open door policy, the ORNG does not allow trespassing. According to the ORNG, people who enter the base from locations other than the front gate and do not check in at the front gate are

trespassers. According to the ORNG, the rate of trespassing onto Camp Rilea is low at approximately three or four incidences a year.

Trespassing incidents can occur for a number of reasons. Key to this potential is that Camp Rilea does not have a fence around the entire perimeter of the installation. Currently, fencing is located along the southern, northern, and portions of the eastern boundaries of the installation. Although there are various natural buffers around the Camp such as sand dunes to the west and lakes to the south, it is easy to gain unauthorized access to the Camp. Although some signage is posted around the perimeter of the Camp, it is not adequate, particularly along the beach on the western boundary due to factors such as wind or theft damaging the existing signs and making them hard to see. Poor signage increases the opportunity for people recreating on the beach to access the Camp from the beach. From the beach trespassers could unknowingly wander onto the Camp, although most of the ranges are centralized within the Camp and are not near the borders, so it would take some time for a trespasser to reach a firing range on foot.

The western edge of Camp Rilea also has a high potential for visitors with varying degrees of knowledge about the existence of Camp Rilea. Access to the western edge is prompted by the public beach areas (which are open to the public unless live firing is occurring), and access to the area provided by the trails connecting to and through the area. Running through the adjacent beach is the north-south Pacific Coast Trail, also known as the Oregon Coast Trail. The Pacific Coast Trail is a state park hiking trail that runs along the entire coast of Oregon. Along the northern boundary of Camp Rilea runs the DeLaura Beach Trail, which connects into a network of other trails and provides direct access to Fort Stevens State Park. The Fort to Sea Trail, which was incorporated into the National Park Service's Lewis and Clark Trail in 2005, starts at the Fort Clatsop Visitor Center and traverses through a small portion of southeastern Camp Rilea from the east cutting southwesterly and ending at Sunset Beach. As Figure 4.3-4 shows, Camp Rilea is a convergence point for numerous trails in the region. Consequently the Camp experiences a great deal of



4.3 Camp Rilea JLUS

pedestrian and bike traffic along its perimeter, which increases the potential for intentional and unintentional trespassing, although, to date, this has not been a significant issue.

Public safety is a high priority at Camp Rilea. There are precautions set in place before ranges are used at

Camp Rilea to ensure the highest level of public safety. The posting of beach guards serves to secure the beach areas during range usage. In addition, all ranges are cleared by notice and visual observation prior to conducting operations.

Strategies

The following strategies are recommended to address the issues identified in this section.

Issue	ID	Strategy	CRIA	Timing	Local		State					Federal					
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS	USCG	USFWS	Tribal Gov't
SA-1 SA-2	A	Improve Signage Maintenance Camp Rilea should ensure that signs posted to warn of training activities are maintained and legible.	Camp Rilea	On								■					
SA-2	B	Trail Network Management Continue to engage Camp Rilea in the OPRD and NPS planning and management of the trail network surrounding the Camp. Ensure that OMD is provided the opportunity to be fully-engaged in the planning process. The JLUS Coordinating Committee will help organize trail planning around Camp Rilea. Other Entities: North Coast Land Conservancy, The National Coast Trail Association, The Warrenton Trails Association, Oregon Equestrian Trails, The Skipanon Watershed Council, and Skipanon Water Control District	Land Use	On								■	■	■			

4.4

Vertical Obstructions

4.4.1 Key Terms

Accident Potential Zone (APZ) — An APZ is a zone at the end of a heliport primary surface, located on the ground, under the rotary-wing approach and departure surface that has a higher potential for aircraft accidents (based on a statistical evaluation of past aircraft incidents). The type of APZ relates to the probability of a safety hazard. A Clear Zone (CZ) is the area closest to the primary surface and represents the largest risk of an accident occurring during takeoff or landing. Above ground structures are typically not permitted in these areas and, optimally, these areas remain undeveloped. APZ I begins at the outer end of the CZ and has less accident potential than the CZ. Where an APZ or CZ extends off a base, land use planning/regulations that limit concentrations of people exposed to possible flight safety hazards is desirable in order to protect public health and safety.

Heliport Approach Surface — The approach surface begins at each end of the heliport primary surface with the same width as the primary surface, and extends outward and upward for a horizontal distance of 4,000 feet where its width is 500 feet. The slope of the approach surface is 8 to 1 for civil heliports and 10 to 1 for military heliports.

Heliport Primary Surface — The area of a heliport's primary surface coincides in size and shape with the designated take-off and landing area. This surface is a horizontal plane at the elevation of the established heliport elevation.

Imaginary Surface — Imaginary surfaces are the areas surrounding a heliport or runway that must be kept clear of objects that might damage an aircraft. A man-made or natural object that projects above an imaginary surface is an obstruction. The imaginary surfaces for heliports are described above.

Standard VFR Heliport — Visual flight rule design standards are used for heliports that have no current or future requirement for instrument flight rules.

Transitional Surfaces — These surfaces extend outward and upward from the lateral boundaries of the primary surface and from the approach surfaces at a slope of 2 to 1 for a distance of 250 feet measured horizontally from the centerline of the primary and approach surfaces.

Vertical Obstructions — Vertical obstructions structures that exceed a specified height above ground level and extend into airspace. Vertical obstructions may be created by buildings, trees,

4.4 Camp Rilea JLUS

structures, or other features that are be of greater height than, and encroach into, the navigable airspace used for military operations (aircraft approach, transitional, as well as military training or flight routes). These can present a safety hazard to both the public and military personnel and potentially impact military readiness.

Visual Flight Rules – Visual flight rules (VFR) are a set of regulations that allow a pilot to operate an aircraft in weather conditions that are generally clear enough to allow the pilot to see where the aircraft is going. This type of navigation does not require the use of navigational aids or instruments, such as a control tower.

4.4.2 Technical Background

The Federal Aviation Administration (FAA) has developed regulations, referred to as Part 77, which describe distances from airport and heliport sites that buildings, structures, or objects can be in height so that they do not interfere with aircraft takeoff and landing operations. Camp Rilea has one heliport in the southern portion of the installation.

Part 77 requires that for a ratio of “25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each [DoD] heliport” (airport), any structure being proposed must have a notice filed with the FAA. The FAA also states:

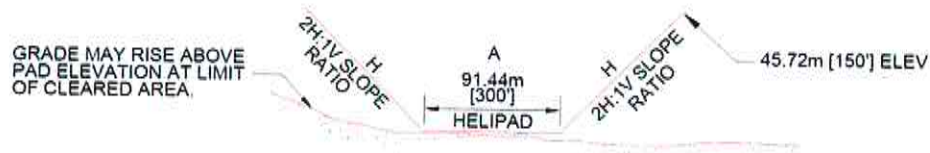
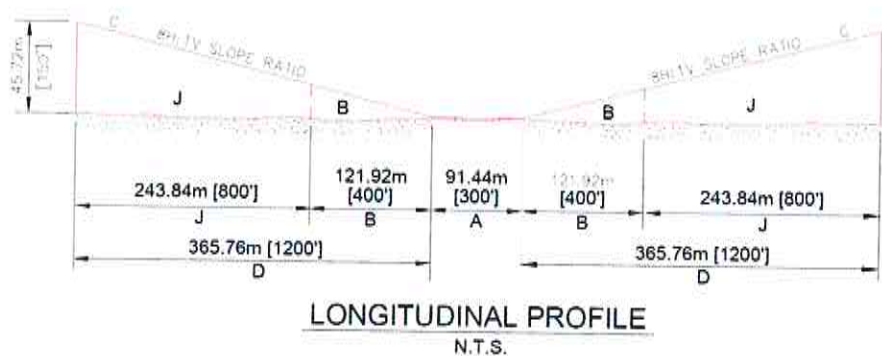
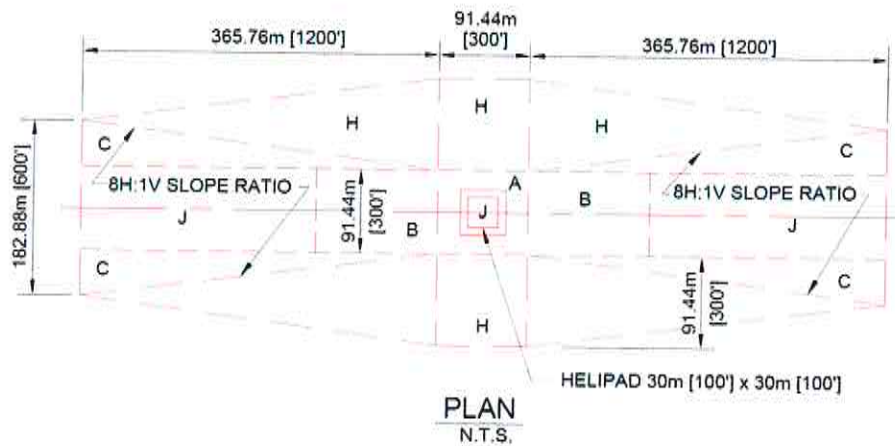
“The airport imaginary surfaces proposed for helicopters have been substantially revised for compatibility with the current “Heliport Design Guide.” The primary surfaces coincide in size and shape with the takeoff and landing area of each heliport. The designated approach clearance surfaces begin at the edge(s) of the primary surface and extend outward and upward at a slope of 8 to 1. The approach surface is a trapezoid whose inner width is coincident with the width of the primary surface and which extends to the minimum en route altitude where its width is 500 feet. Transitional surfaces extend outward and

upward at a slope of 2 to 1 from the lateral boundaries of each primary surface and approach surface for a horizontal distance of 250 feet from the centerline of these surfaces.”

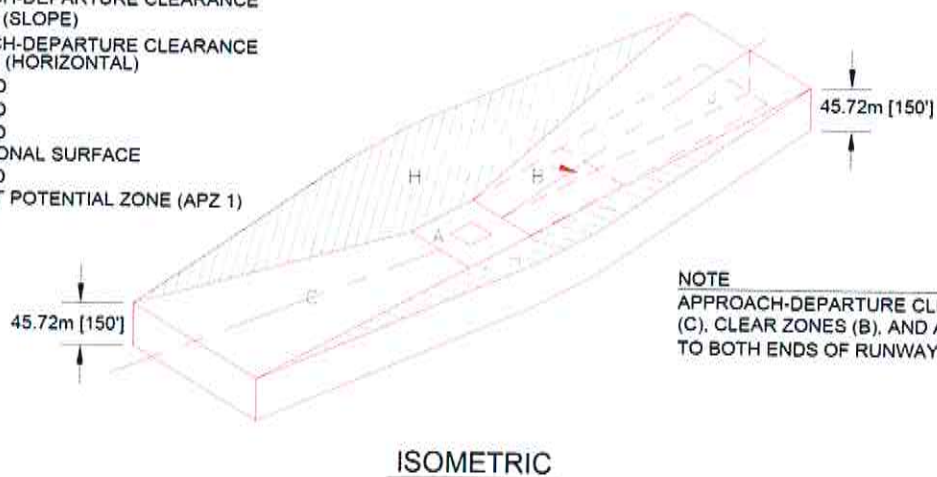
UFC 3.260-01, *Airfield and Heliport Planning and Design* serves as the official DoD document that describes requirements of heliports at military installations, which was updated in November 2008. This document sets forth requirements for military heliports and safety zones associated with takeoffs, landings, and hover points. According to the planning and design regulations, the following distances are suggested for VFR heliports:

- Size of heliport = 100 feet by 100 feet minimum
- Size of primary surface = 300 feet by 300 feet minimum
- Length of clear zone = 400 feet
- Width of clear zone = 300 feet
- APZ I length = 800 feet
- APZ I width = 300 feet

The various surfaces and zones associated with a Standard VFR heliport are illustrated on the next page.



- LEGEND**
- A PRIMARY SURFACE
 - B CLEAR ZONE SURFACE
 - C APPROACH-DEPARTURE CLEARANCE SURFACE (SLOPE)
 - D APPROACH-DEPARTURE CLEARANCE SURFACE (HORIZONTAL)
 - E NOT USED
 - F NOT USED
 - G NOT USED
 - H TRANSITIONAL SURFACE
 - I NOT USED
 - J ACCIDENT POTENTIAL ZONE (APZ 1)



NOTE
APPROACH-DEPARTURE CLEARANCE SURFACE (C), CLEAR ZONES (B), AND APZS (J) APPLICABLE TO BOTH ENDS OF RUNWAY.

4.4.3 Existing Tools

Federal Tools

FAA Part 77

The Federal Aviation Act requires the Secretary of Transportation to make long-range plans which formulate policy for the orderly development and use of “navigable air space”. The intent is to serve the needs of both civilian aeronautics and national defense, but does not include the specific needs of military agencies. Military planning strives to work alongside local, state, and federal aviation law and policies but sometimes must supersede these and other levels of government due to national security interests.

The 500-foot (ft) rule, promulgated by the FAA, states that every citizen of the United States has “a public right of freedom of transit in air commerce through the navigable air space of the United States”. The rule was formally announced in the 1963 Court of Claims ruling in *Aaron v. United States* and states that flights 500 feet or more above ground level (AGL) do not represent a compensable taking because flights 500-feet AGL enjoy a right of free passage without liability to the owners below.

Part 77 of the Federal Aviation Act establishes standards used to determine obstructions within navigable airspace, typically within a certain distance from an airport, airfield, or heliport. It defines an obstruction to air navigation as an object that is of greater height than the primary, approach, or transitional surfaces.

Airfield and Heliport Planning and Design

The DoD created a document called *Airfield and Heliport Planning and Design* that established standards for airfield, runway, and heliport safety zones and imaginary surfaces. The major criteria of this document are discussed previously in this section.

Local Tools

Clatsop County Land and Water Development and Use Ordinance

The Clatsop County Land and Water Development and Use Ordinance is the document that contains and describes the zoning districts for Clatsop County. Transmission towers and antennas, including communications facilities, taller than 100 feet in height in the Forest-80 Zone and taller than 200 feet in height in the Agriculture-Forestry Zone and Exclusive Farm Use Zone are allowed through the approval of a conditional use permit (specifically, a Hearing’s Officer Conditional Use Permit Review). The proposed siting of such towers is required to be sent to the FAA for consideration if it is near an airport or within a flight path; however, this may not include the flight route from Astoria Regional Airport to Camp Rilea.

The Heavy Industrial Zone and Marine Industrial Shorelands Zone do not have a height limit except for within 100 feet of non-industrial zone. In these cases, the building height has a maximum of that defined within the abutting district.

The ordinance also includes an Airport Overlay Zone, which limits the height of buildings within the aircraft approach surfaces to adhere to FAA standards. Although these apply to fixed-wing aircraft, they are still adequate to support helicopter operations for the aircraft that fly to and from Camp Rilea.

Warrenton Development Code

The Warrenton Development Code is the document that outlines the various zoning districts for the City of Warrenton. Warrenton abuts Camp Rilea on the northern boundary and also encompasses much of the land between the Astoria Regional Airport and Camp Rilea, which serves as the preferred flight path for Coast Guard helicopters that occasionally train at Camp Rilea. The Development Code limits the heights of structures within each type of zone. In general, most zones have a structural height limit of 35 or 45 feet, which is well below the height at which helicopters fly at during transit between Astoria Regional Airport and Camp Rilea. Warrenton also includes an Airport Hazard Overlay District, which

surrounds Astoria Regional Airport and limits the height of development within critical operational areas and imaginary surfaces associated with the runway.

The Water Dependent Industrial Shorelands District does not have a height limit except for within 100 feet of non-industrial zone, or if it falls under the Airport Hazard Overlay District. In these cases, the building height has a maximum of that defined within the abutting district.

Issue VO-1	Low-Level Flights. Flight paths (including low altitude flight) must be clear of man-made structures that infringe on the airspace used by helicopters (transit, drop zones, and landings) and fixed-wing assets (drop zones) using Camp Rilea and connected transit routes for training, emergency response, and other operations.
-------------------	--

US Coast Guard helicopters traveling to and from Camp Rilea from the Astoria Regional Airport typically fly between 500 to 1,000 feet AGL during their transit, and maintain 1,000 feet AGL above populated areas when possible. Coast Guard helicopters only go below 500 feet AGL when they are inside the perimeter of Camp Rilea (unless there is an emergency). Figure 4.4-1 illustrates the flight path from Astoria Regional Airport to Camp Rilea. On the figure, the centerline is the path that is usually followed, but it also includes a one kilometer buffer on each side of the centerline, in which helicopters sometimes deviate depending on various conditions such as weather. The associated zoning categories are also shown under the corridor.

The Airport Hazard Overlay District generally restricts the height of development around Astoria Regional Airport so that no structures should be built that would impact the flight route. The overlay covers most of the flight route from the airport to Camp Rilea, but some of the lands in the southern part of the flight corridor are not covered. As Figure 4.4-1 illustrates, there is land under the flight corridor that is designated under the Forest-80, Agriculture-

Forestry, and Exclusive Farm Use zoning districts (not within the Airport Hazard Overlay District), which can have transmission towers and antennas taller than 200 feet with a conditional use permit. Due to the rural nature of the surrounding area, it is not likely these uses would occur, and be greater than 500 feet in height, but there is a possibility.

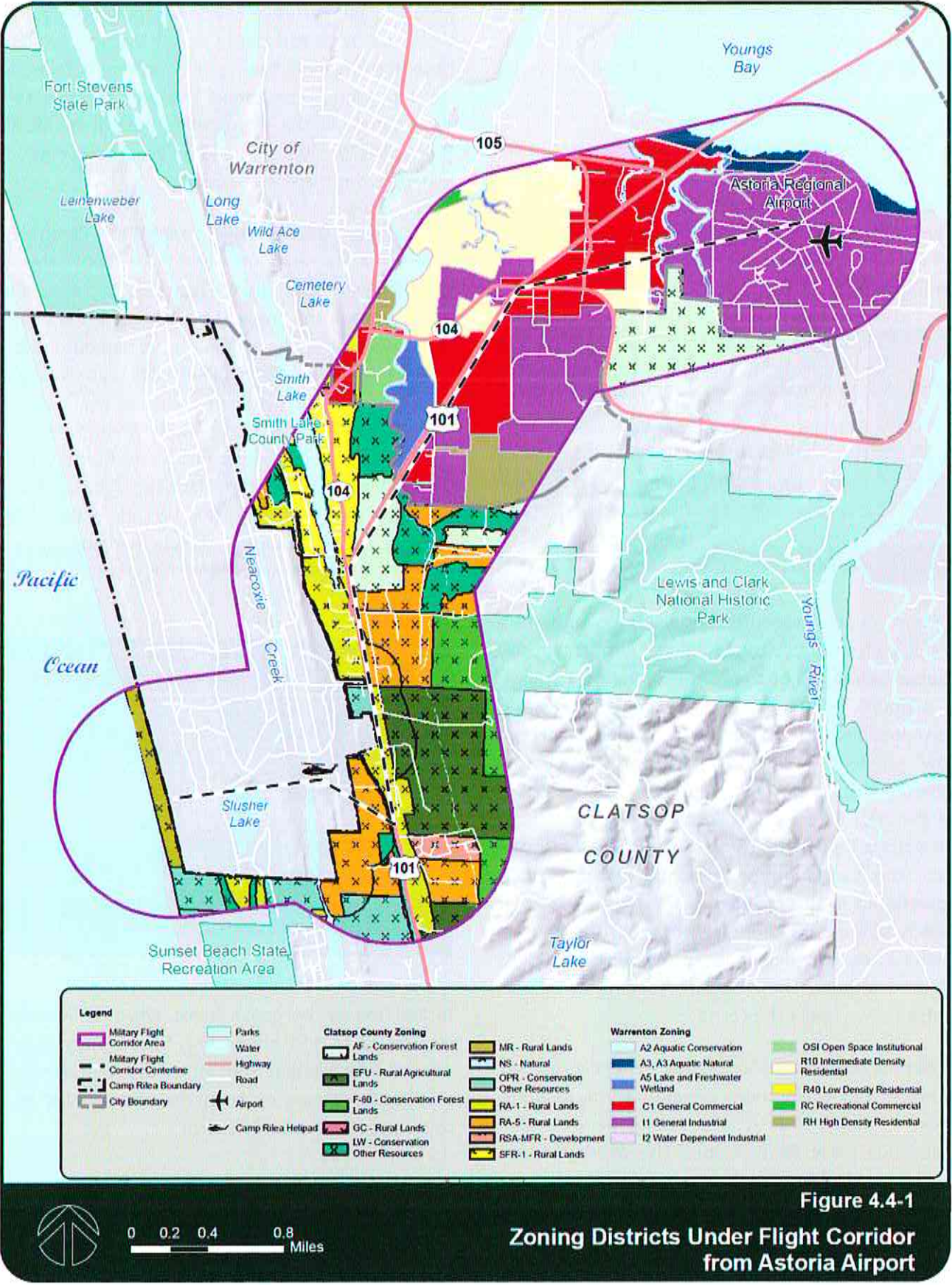
The Coast Guard only trains at Camp Rilea approximately 40 hours per year, but they do frequently fly through the surrounding area during other types of training and patrols along the beach or off the coast. Approximately 50 percent of Coast Guard training on Camp Rilea takes place in Training Area 13 in the northeastern corner of the installation (see Figure 2-2 in Section 2 Study Area Profile). The types of training performed by the Coast Guard at Camp Rilea include slope landing, landing on one wheel and then rotating the aircraft, external loads (picking up and moving objects hanging from the aircraft), confined areas, and hovering close to the tree line.



Coast Guard helicopter training at Camp Rilea

In addition to the Coast Guard, ORARNG helicopters also travel to and from Camp Rilea. They generally enter the installation from either the west, flying over the Pacific Ocean, or from the east, similar to the route used by the Coast Guard.

4.4 Camp Rilea JLUS



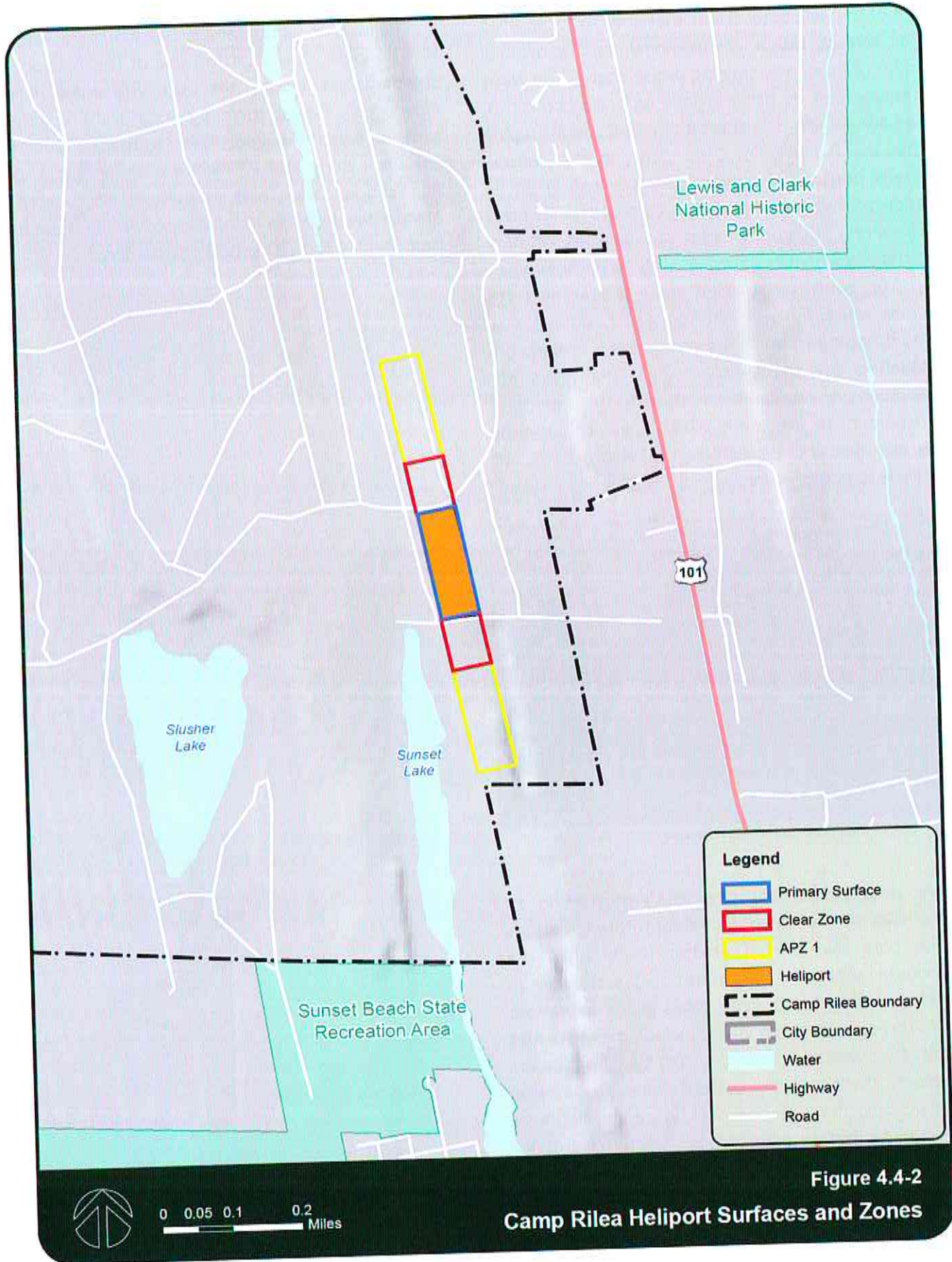
Much of the helicopter traffic that goes to Camp Rilea is for transportation of personnel, and a minimal amount of helicopter training occurs there. The types of training that do occur include rappelling on ropes, attached vehicle transportation, and paratrooping within the Razor Clam Drop Zone; in the central-western portion of Camp Rilea (see Figure 2-2 in Section 2 Study Area Profile). ORARNG helicopters only operate at Camp Rilea for various transportation and training activities approximately 36 days per year. The drop zone is also used twice a year by C-130 aircraft, which fly between 500 and 1,000 feet AGL when dropping troops. The drop zone is entirely on-installation and the approach path that goes off-installation is parkland to the north and rural development to the south, which does not currently have any objects that create vertical obstructions, nor are likely to in the future.



A CH-47 Chinook transporting a Humvee at Camp Rilea

The heliport at Camp Rilea is classified as a Standard VFR Heliport. Based on the size of this heliport and standards set forth in the *DoD Airfield and Heliport Planning and Design*, the primary surface is roughly the same size as the heliport. As Figure 4.4-2 illustrates, the Clear Zone and APZ I are entirely within Camp Rilea's boundaries, and so there is no concern for private development being located within these areas that could construct vertical obstructions.

There is a heliport in the southern portion of Camp Rilea that has the potential for future structures to be built that are of greater height than the associated approach and transitional surfaces. In addition, helicopter training takes place in various areas throughout Camp Rilea, including drop zones along the western boundary of the installation. Although there are no current issues of vertical obstructions, the potential for future development that could interfere with or pose safety hazards for helicopter aircraft at Camp Rilea should be addressed and controlled for the future.



Strategies

The following strategies are recommended to address the issues identified in this section.

Issue	ID	Strategy	CRIA	Timing	Local		State						Federal			Tribal Gov't
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS	USCG	
VO-1	A	Share Proposals for Structures Exceeding 200 feet in Height Ensure Camp Rilea and Coast Guard are made aware of any proposals for structures greater than 200 feet tall within Clatsop County and the City of Warrenton. Clatsop County and the City of Warrenton should inform Camp Rilea and the Coast Guard of future proposals for any development, including communication transmission towers that are within the identified flight route from Astoria Regional Airport to Camp Rilea.	Vertical / Freq	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		
VO-1	B	Ensure FAA Part 77 Compliance For all new, redeveloped or rehabilitated structures (including electrical transmission towers/lines, cellular and radio transmission towers, etc.), ensure compliance with FAA Part 77 height limit requirements to minimize vertical obstructions (i.e. buildings, telecommunications facilities recreational facilities, energy transmission/generation towers, etc.). In addition, ensure the developments and structures are compatible with, and do not pose a safety hazard to, air operations in the region. Other Entities NGOs	Vertical / Freq	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

4.4 Camp Rilea JLUS

Please see the next page.

4.5

Frequency Interference / Impedance

4.5.1 Key Terms

Frequency Spectrum – The frequency spectrum is the entire range of electromagnetic frequencies used for communications and other transmissions, which includes frequencies used for radio, cellular phones, and television. In the performance of typical operations, the military relies on a range of frequencies for communications and support systems. Similarly, public and private users rely on a range of frequencies to support daily life.

Impedance – Impedance is the interruption of electronic signals due to the existence of a structure or object between the source of the signal and its destination (receptor). Key issues to consider relative to frequency spectrum impedance include the construction of buildings or other facilities that block or impede the transmission of signals from antennas, satellite dishes, or other transmission / reception devices affected by line-of-sight requirements.

Interference – Interference is the inability to effectively distribute or receive a particular frequency because of similar frequency competition. As the use of the frequency spectrum increases (such as the rapid increase in cellular phone technology over the last decade) and as development expands near

military installations and operational areas, the potential for frequency spectrum interference increases.

Look Angle – A look angle is the angle between the vertical plane passing through the radar antenna and the line between the antenna and object.

4.5.2 Technical Background

Frequency interference is related to other transmission sources. Interference can result from a number of factors, including:

- Using a new transmission frequency that is near an existing frequency;
- Reducing the distance between two antennas transmitting on a similar frequency;
- Increasing the power of a similar transmission signal;
- Using poorly adjusted transmission devices that transmit outside their assigned frequency or produce an electromagnetic signal that interferes with a signal transmission; and
- Existing electronic sources and uses created by portable systems affecting entire communities utilizing Wi-Fi broadband systems and industrial sources that produce electronic noise by-product.

In order to successfully complete its operational activities within the installation and its training areas, the military relies on a range of frequencies for communications and support systems. Since 1993, Congress has been selling federal spectrum bands for reallocation to the private sector, promoting the development of new telecommunications technologies, products and services. The expanding public and commercial use of the frequency spectrum from Wi-Fi wireless transmitters to consumer electronics can encroach on the military's use of the frequency spectrum. Increasing community and DoD demands for this important resource can create conflicts for all users.

4.5.3 Existing Tools

Federal Tools

Federal Communications Commission (FCC)

The FCC is the agency responsible for regulating non-governmental interstate and international (which originate or terminate within the US) radio, television, wire, satellite, and cable communications within all 50 states, Washington D.C. and all US territories. It is the entity that licenses non-Federal use of the frequency spectrum through a public process.

Federal Strategic Spectrum Plan

In March 2008, the US Department of Commerce released the Federal Strategic Spectrum Plan, which was conducted by the National Telecommunications and Information Administration (NTIA) in consultation from the FCC. This plan was developed in response to the Presidential Spectrum Policy Initiative established in 2003, which sought to ensure that appropriate frequency spectrum is available and properly utilized by various government entities for economic and national security means. Fifteen Federal agencies submitted their frequency use plans, which were then incorporated into this Strategic Plan. The plan provides a comprehensive description of the current use and future needs of the 15 Federal agencies regarding the frequency spectrum. The plan encourages the collaboration of Federal and civilian communities to work together to ensure that use of

the frequency spectrum is appropriately shared and one entity does not impact another's usage.

Coordination among these various agencies and the Federal Strategic Spectrum Plan should be able to properly manage any additional frequency bandwidth requirements between future military needs and civilian activities.

National Telecommunications and Information Administration, Office of Spectrum Management (OSM)

The OSM is a branch of the NTIA that is responsible for managing how the Federal government uses the radio frequency spectrum. Some of the tasks of the OSM are to assist in managing the use of the radio frequency spectrum and include assigning frequencies to government agencies, maintaining spectrum use databases, planning peacetime and wartime use of the spectrum, and participating in Federal government communications regarding emergency readiness. Approximately 70 Federal agencies and departments use the radio frequency spectrum for communications, broadcasting, navigation and other purposes that are crucial to their continued operations. The NTIA maintains a Government Master File of the more than 40 specific radio services and frequency assignments that these agencies and departments use.

**Issue
FII-1**

Radar Interference / Impedance. Camp Rilea hosts an Air National Guard radar system that needs to be protected from interference and impedance. There exists the potential for new structures or vegetation to impede the ability of the Air National Guard radar to adequately track aircraft.

The 116 Air Control Squadron of the Oregon Air National Guard operates a radar facility at Camp Rilea. This site is located on a hill on the eastern border of Camp Rilea. The location was chosen because it is the highest point on Camp Rilea, and it must be protected from interference so that the radar can continue to operate effectively and efficiently. The radar is used by the Air National Guard mostly for air surveillance and training scenarios for aircraft flying out of Portland and aircraft using Warning Area 570 off the coast approximately 10 miles west of Camp Rilea, over the Pacific Ocean. It is capable of communicating with aircraft up to 200 miles away. It also supports national security missions by monitoring for hostile or suspicious activities.



Camp Rilea's Radar Equipment

The frequencies that the radar site uses are not close enough to commercial uses or cell phone frequencies for there to be interference between military and civilian uses. The surrounding civilian area is mostly rural, so it is not expected that enough users will be located in the outlying communities that will increase the amount of frequency usage so as to cause interference between civilian and military activities. Furthermore, the Air National Guard does not operate the radar outside of its allocated frequencies.

Although there are no current impedance issues regarding obstructions in the look angles of the radar and the aircraft it communicates with, there is the potential for future structures or objects to be an issue. The largest concern is the trees that grow along the northern edge of the radar facility. In the past, these have had to be cut back because they grew too tall and impacted the "view" of the radar. The cutting back of tree tops has upset some of the nearby residents because they were not informed that such action would be taken, and the trees helped to buffer them from Camp Rilea's activities and impacts such as noise. It is not anticipated that any structures would be erected due to the surrounding zoning and nature of current development as rural. The development of large windmill facilities could also impact the proper operation of the radar facility. This issue is further discussed in Section 4.10, Alternative Energy Development.

Strategies

The following strategies are recommended to address the issues identified in this section.

Issue	ID	Strategy	CRIA	Timing	Local		State					Federal			Tribal Gov't	
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS		USCG
FII-1	A	Establish Procedures to Avoid Frequency Conflicts / Issues The OMD and 116 ACS should provide notice to Clatsop County and City of Warrenton regarding communications projects that should be referred to the military for review. For new communication towers, the level of concern would be dependent upon how tall, how close, and the power output of the communications tower. In addition, OMD should coordinate with Clatsop County and City of Warrenton when any new high output transmission device should be added to the installation that could impact off-installation communications.	Vertical / Freq	2016 On	■	■						■				



4.6

Infrastructure

4.6.1 Key Terms

Infrastructure – Infrastructure refers to public facilities and services such as sewers, water, electric, and roadways that are required to support development (existing and proposed).

Military Convoy – A military convoy is a group of four or more military vehicles traveling together, typically including larger vehicles that may require special transportation route coordination and planning.

4.6.2 Technical Background

Public facilities and services should be appropriate for the type of urban or rural development they serve, but also limited to the needs and requirements of the area. The provision of a safe transportation system, including all modes of transportation (automobile, mass transit, railway, highway, bicycle, pedestrian, air, water, etc.), is an important infrastructure component. Adequate transportation infrastructure contributes to local, regional, and state accessibility.

Infrastructure plays an important role in land use compatibility. On the positive side, infrastructure can enhance the operations of an installation and community by providing needed services, such as sanitary sewer treatment capacity and transportation

systems. On the other hand, infrastructure can become an encroachment issue if enhanced or expanded without consideration for how future development may occur. The extension or expansion of community infrastructure to a military installation or areas proximate to an installation have the potential to induce growth, potentially leading to incompatible uses and conflicts between military mission and civilian communities. Through careful planning, the extension of infrastructure can serve as a mechanism to guide development into appropriate areas, protect sensitive land uses, and improve compatibility of land uses and military mission.

4.6.3 Existing Tools

State Tools

Oregon Department of Transportation

The Oregon Department of Transportation (ODOT) is the state agency responsible for providing a safe and efficient transportation system in the State of Oregon. ODOT oversees all modes of transportation and is responsible for planning, managing, and guiding all transportation related projects in the state.

As described in Chapter 3 of the Camp Rilea JLUS, ODOT is developing a facility plan to address safety

4.6 Camp Rilea JLUS

and mobility concerns along a 4.6 mile section of US 101 between Camp Rilea and Surf Pines Lane. Representatives from the surrounding community and Camp Rilea have been involved in that planning effort. If constructed, the improvements identified in the US 101 facility plan would generally improve safety and mobility in the vicinity of Camp Rilea. However, the plan does not propose any improvements to the intersection at Patriot Way specifically intended to improve access to Camp Rilea.

Oregon Transportation Planning Rule

The Oregon Transportation Planning Rule (TPR) implements Statewide Planning Goal 12 (Transportation), the objective of which is to provide a safe, convenient, multimodal and economic transportation system. Guidelines for planning and implementation are included to support these objectives. The guidelines also require consideration of local and regional economies, social consequences, environmental impacts, energy, the needs of transportation disadvantaged, and the use of multimodal transportation options.

The TPR was adopted in 1991 by the Land Conservation and Development Commission (LCDC), with the concurrence of the Oregon Department of Transportation (ODOT) and requires local governments to adopt land use regulations consistent with county, state, and federal requirements “to protect transportation facilities, corridors, and sites for their identified functions.”

Oregon Statewide Planning Goals

As previously described in Section 3.4, Oregon’s land use planning program is focused on achieving “19 Oregon Statewide Planning Goals” that serve as a collective vision for the state and its counties. Goal 11: Public Facilities and Services addresses infrastructure components, including public services and transportation. This goal is addressed in Clatsop County’s Comprehensive Plan, as discussed below in Local Tools.

Local Tools

Clatsop County Comprehensive Plan

Clatsop County’s Comprehensive Plans includes provisions for key public facilities and services. Cities

and counties are required to adopt a public facility plan for any area within an urban growth boundary that has a population greater than 2,500 people. This plan must have a provision for solid waste sites that can meet current and long-range needs. The extension of sewer lines outside of urban growth boundaries or unincorporated community boundaries is not allowed, unless it is the only feasible alternative to mitigate public health hazards and will not negatively impact farm or forest land. New development permits, excluding those for land divisions, are only permitted if public facilities such as water and sanitation or septic / sewage capacity are capable of handling the increased load. In order to obtain approval for the development of new subdivisions, it must be proven that adequate, reliable, and available water supply exists. The LCDC may grant special conditions for local governments to extend sewer lines outside their boundaries to allow residential uses to connect.

Based on the current planning guidelines, existing infrastructure is not in place to support additional development that would further encroach on Camp Rilea; however, development is not prohibited from these areas.

Goal 12 of the Statewide Planning Goals addresses Transportation and the importance of providing a safe, convenient, and economically viable transportation system for residents and visitors. Clatsop County’s plan is broken down into 11 goals and associated objectives that are intended to implement and support the other elements of the comprehensive plan while also directing the County’s transportation system and planning process. The 11 goals address mobility, livability, coordination, public transportation, pedestrian and bicycle facilities, accessibility, environment, system preservation, capacity, transportation funding, and safety.

Warrenton Transportation System Plan

The City of Warrenton’s most recent transportation plan was completed in 2004 (2004 Transportation System Plan (TSP)) and identifies projects that would improve the transportation system throughout the city and support potential growth through the year 2022. The goals of the plan are to increase mobility and livability of the City by improving public

transportation, pedestrian and bicycle access. Future transportation improvements are expected to be needed at various intersections along Highway 101. These improvements could invite more development in these areas. The TSP also refers to a 1993 transportation planning study that analyzed the transportation improvements needed along Highway 101 from Camp Rilea to New Youngs Bay Bridge. The study projected the need for Highway 101 to be widened to four lanes and for various intersection improvements to be made.

**Issue
INF-1**

Growth Inducement. The extension of water and wastewater infrastructure to areas near and to the south of Camp Rilea from the City of Warrenton and other potential suppliers may induce additional growth near Camp Rilea that could, depending on its location, introduce additional land use conflicts.

The expansion of utility services or the extension of utility infrastructure in areas proximate to military installations promotes the desirability and capability of the area for growth, increasing the potential for incompatible development. Through careful planning, the extension of infrastructure can serve as a means to guide development into appropriate areas while providing the community opportunities for new development potential.

Although no official plans exist, the possibility of extending the sanitary sewer system and domestic water lines and the potential extension of sewer service from Warrenton south of Camp Rilea (to Gearhart) was discussed during the JLUS public involvement process. The City of Warrenton's Urban Renewal Report identifies proposed improvements to the existing storm water system. Streets and infrastructure in the Renewal Area will encourage rehabilitation as well as new development. This plan proposes infrastructure improvements that would support additional development through increased capacity; however, the Urban Renewal Area is not proximate to Camp Rilea and would not result in compatibility issues.

**Issue
INF-2**

Safe Highway Access. Access on- and off-installation is limited to a single gate that enters/exits directly onto Highway 101 at an at-grade intersection. Control and consolidation of access to the highway as well as other physical improvements would enhance safety.

In addition to serving the Oregon National Guard, Camp Rilea also serves as a training site for other military units and is frequently used by members of the public and civilian organizations such as local community groups, police Special Weapons and Tactics (SWAT) teams throughout the Pacific Northwest, and Boy Scout groups, among others.

The segment of Highway 101 that provides access to Camp Rilea is a five-lane rural highway, with two lanes in the southbound direction, two lanes in the northbound direction, and one median lane used for turning purposes. The intersection between Highway 101 and Patriot Way is uncontrolled. Vehicles originating from the south direction must turn left and cross over two lanes of oncoming traffic in order to proceed onto Patriot Way toward the main gate. Vehicles originating from the north utilize a dedicated turn lane onto Patriot Way.



Aerial of the highway entrance to Camp Rilea

4.6 Camp Rilea JLUS

ODOT is developing the “US 101 Camp Rilea to Surf Pines Facility Plan”, to address safety and operational issues on the section of Highway 101 from Camp Rilea to Surf Pines Lane (south of Warrenton). Although safe highway access from the Camp Rilea gate to Highway 101 has been identified as a concern during the JLUS process, particularly for members of the community entering and exiting the base for public events held at Camp Rilea, the project team developing the US 101 Camp Rilea to Surf Pines Facility Plan determined there is insufficient traffic accessing Highway 101 at the Patriot Way interchange to justify the cost of grade separation.

Highway 101 is designated by ODOT as a “Lifeline Route.” Lifeline Routes are considered most likely to withstand a major seismic event, and other natural disasters. They are intended to be used for evacuation in the event of an emergency. Bridges along Lifeline Routes have funding priority for seismic upgrading.

Issue
INF-3

Convoy Operations. Convoy operations to and from Camp Rilea may pose issues relative to highway safety.

Military convoys use the Patriot Way / Highway 101 entrance for entering and exiting Camp Rilea. Four or more vehicles constitute a convoy. The maximum number of vehicles allowed in a convoy is 25. When exiting Camp Rilea to proceed north along Highway 101 toward Warrenton, military convoys must cross two southbound lanes of Highway 101, turning left through an uncontrolled intersection to join northbound traffic, creating a potential safety hazard. If prior arrangements are made, either the Oregon State Police, ODOT, or the Clatsop County Sheriff’s Department will make themselves available to temporarily stop traffic so the convoy can traverse the intersection unimpeded. However, military personnel frequently initiate their convoys without this assistance, electing instead to negotiate the uncontrolled intersection one vehicle at a time. Convoy operations exiting Camp Rilea, either with or without assistance, can temporarily impede normal traffic operations.

In addition to posing safety concerns at the exit point, convoy operations traveling along local roadways pose potential traffic conflicts. Military vehicles are generally wider than most vehicles, occupying almost the full width of the travel lane. Military vehicles can also be very large. During the JLUS process, convoy vehicles were observed traveling along the main roadways of Astoria’s downtown. These vehicles have the potential to disrupt traffic when occupying the same road as a standard civilian vehicle.



Military convoy travelling through Astoria

Strategies

The following strategies are recommended to address the issues identified in this section.

Issue	ID	Strategy	CRIA	Timing	Local		State						Federal			Tribal Gov't	
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS	USCG		USFWS
INF-1	A	Inform Camp Rilea of Infrastructure Extensions If the City of Warrenton moves forward with any plans of extending infrastructure past its UGB, such as the proposed sewer extension, it should inform OMD and discuss alternatives that would help reduce potential future development along the infrastructure line (growth-inducement). The coordination should be done early in the planning process to optimize compatibility and reduce costs associated with plan changes.	Land Use	On	■	■	■		■			■					
INF-2	B	Limit Future Growth of New Infrastructure Lines If infrastructure lines are extended outside the Warrenton UGB, a limit to the number of new users that can attach to the lines should be implemented to prevent additional growth that could not only encroach upon Camp Rilea, but also add to the strain of the surrounding environment.	Clatsop Plains	On	■	■			■								
INF-2	C	Safe and Efficient Traffic Circulation on and off Camp Rilea The JLUS Coordination Committee shall assist in implementing the findings of the ODOT study for the Highway 101 corridor. Other Entities: NGOs	Clatsop Plains	On	■	■	□	□	□	□	■	■	□	□	□	□	□
INF-2	D	Alternate Access to Camp Rilea In developing options for new, or substantial increased use of existing, secondary access points, OMD shall work with ODOT in the location, design, and potential mitigation associated with use of such facilities. Early coordination with Clatsop County and City of Warrenton should also be conducted.	Camp Rilea	2013							■	■					

4.6 Camp Rilea JLUS

Please see the next page.

4.7

Noise and Vibration

4.7.1 Key Terms

Ambient Noise — The total noise associated with an existing environment (built or natural) and usually comprising sounds from many sources, both near and far, is referred to as ambient noise.

Attenuation — Attenuation is a reduction in the level of sound resulting from an object's distance from the noise source or absorption by the surrounding topography, the atmosphere, barriers, construction techniques and materials, and other factors. Sound attenuation in buildings can be achieved through the use of special construction practices that reduce the amount of noise that penetrates the windows, doors, and walls of a building. Sound attenuation measures may be incorporated during initial construction or as additional construction for existing buildings.

A-weighted Decibel (dBA) — An A-weighted decibel is a unit of measurement for noise using a logarithmic scale and measured using the A-weighted sensory network on a noise-measuring device. An increase or decrease of 10 decibels corresponds to a tenfold increase or decrease in sound energy. A doubling or halving of sound energy corresponds to a 3-dBA increase or decrease.

C-Weighted Day-Night Sound Level (CDNL) — CDNL refers to a unit of measurement for short duration, high intensity sound with abrupt onset and rapid decay. It is used to evaluate impulsive noise and vibrations generated by explosive charges and large-caliber weapons, such as claymore mines and detonations.

Day-Night Average Sound Level (DNL) — DNL represents an average sound exposure over a 24-hour period. During the nighttime period (10:00 p.m. to 7:00 a.m.), averages are artificially increased by 10 dB. This weighting reflects the added intrusiveness and the greater disturbance potential of nighttime noise events attributable to the fact that community background noise typically decreases by 10 dB at night. For National Guard activities, the DNL may be A-weighted (ADNL) when used to measure aviation noise, or C-weighted (CDNL) when used to measure large-caliber weapons noise.

Decibel (dB) — A decibel is the physical unit commonly used to describe noise levels. A unit for describing the amplitude of sound, as it is heard by the human ear.

Noise Contour — Noise contours consist of noise impact lines constructed by connecting points of equal noise level measured in dB and identifies areas

4.7 Camp Rilea JLUS

on a map that fall within that particular dB noise contour.

Noise Sensitive Receptors / Noise Sensitive Land Uses – This term refers to land uses that are typically more sensitive to noise, including residential development, hotels / motels, hospitals, convalescent homes and facilities, schools, day care facilities, libraries, churches, and other similar land uses.

Noise Zones – **Noise Zone I** is the noise zone that includes all areas in which the PK15(met) decibels are less than 87 (for small arms), the ADNL is less than 65 (for aircraft), and/or the CDNL is less than 62 (for large arms and explosions). This area is suitable for all types of land use. **Noise Zone II** includes areas where the PK15(met) decibels are between 87 and 104, the ADNL is between 65 and 75, and/or the CDNL is between 62 and 70. Land uses for this zone should typically be limited to manufacturing, warehousing, transportation, and resource protection. **Noise Zone III** is the zone located closest to the source of noise. It includes PK15(met) decibels greater than 104, ADNL greater than 75, and/or CDNL greater than 70. No noise sensitive uses should occur within this area due to the severity of noise. There is also a **Land Use Planning Zone (LUPZ)** at the upper end of Noise Zone I and includes areas where the CDNL is between 57 and 62 or the ADNL is between 60 and 65. It does not include land for PK15(met). This zone accounts for variability in seasonal operations where certain times of the year may include a greater amount of operations than normal.

PK15(met) – PK15(met) refers to the peak sound level, factoring in the statistical variations caused by weather, that is likely to be exceeded only 15 percent of the time (i.e., 85 percent certainty that sound will be within this range). This condition only exists in modeling (one cannot take a PK15(met) reading on the ground) and is used for land use planning with small arms, as well as additional information for large arms and other impulsive sounds.

Slant Distance – The straight-line distance between two points not at the same elevation is referred to as the slant distance.

Sound Transmission Class (STC) – STC is a single-figure rating of the sound insulating properties of a partition as determined by methods described in "Determination of Sound Transmission Class", American Society of Testing and Materials designation E413-73.

Unweighted Peak (dBP) – Unweighted peak refers to the peak, single event sound level without weighting, on the ground. This measurement incorporates all of the locational characteristics (i.e., berms, weather, vegetation, etc.). However, it is only reflective of that moment in time under those exact conditions. Consequently, there is no particular confidence that the measurement is reliable in other situations, such as the 85 percent certainty of the PK15(met).

Vibration – Vibration is the oscillation or motion that alternates in opposite directions and may occur as a result of an impact, explosion, noise, mechanical operation, or other change in the environment.

Yearly Day-Night Average Sound Level (Ldn) – Ldn refers to the 24-hour average sound level, in decibels, for the period from midnight to midnight, obtained after the addition of ten decibels to sound levels for the periods between 10:00 p.m. and 7:00 a.m. the following day, averaged over a span of one year.

4.7.2 Technical Background

Due to the technical nature of this resource topic and its importance to the JLUS process, this section provides a discussion of the characteristics of sound and the modeling process used to evaluate noise impacts.

Characteristics of Sound

It is important to understand that there is no single perfect way of measuring sound, due to variations used by different entities when conducting sound studies or sound modeling. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). The sound pressure level has become the most common descriptor used to characterize the

loudness of an ambient sound level. The dB scale is used to quantify sound intensity. Because sound pressure can vary by over one trillion times within the range of human hearing, a logarithmic loudness scale (i.e., dB scale) is used to present sound intensity levels in a convenient format.

Since the human ear is not equally sensitive to all frequencies within the entire spectrum, noise measurements are weighted more heavily within those frequencies of maximum human sensitivity in a process called “A-weighting” written as dBA. The human ear can detect changes in sound levels of approximately 3 dBA under normal conditions. Changes of 1 to 3 dBA are typically noticeable under controlled conditions, while changes of less than 1 dBA are only discernible under controlled, extremely quiet conditions. A change of 5 dBA is typically noticeable to the general public in an outdoor environment. Figure 4.7-1 summarizes typical A-weighted sound levels for a range of indoor and outdoor activities.

Environmental noise fluctuates over time. While some noise fluctuations are minor, others can be substantial. These fluctuations include regular and random patterns, how fast the noise fluctuates, and the amount of variation. Weather patterns can have a strong effect on how far sound travels and how loud it is. Certain weather events can change the consistency of the air and either cause sound to travel further and be louder or can reduce the distance at which it can be heard. Temperature and wind velocity are prime examples of factors that can affect sound travel. Sound tends to travel further in cold temperatures. Specific combinations of temperature and wind direction can create atmospheric refraction, which is when atmospheric conditions bend and/or focus sound waves towards some areas and away from others. When describing noise impacts, it is common to look at the average noise over an average day.

Small arms are the most common types of weapons fired at training ranges. Weapons that fire rounds less than 20 mm are considered small arms. The Small Arms Range Noise Assessment Model (SARNAM) is the computer program used to model small arms

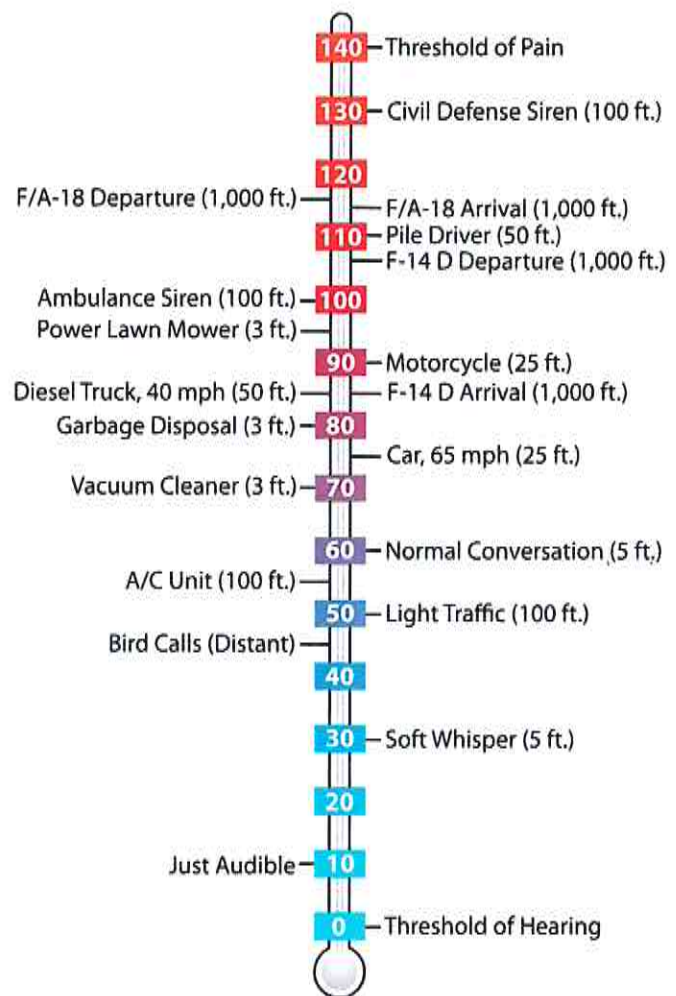


Figure 4.7-1. Sound Levels Comparison in dB

noise zones. It uses the peak noise level and incorporates the most recent available information on weapons noise source models, sound propagation, ricochet barriers, noise mitigation and safety structures, and the direction weapons are fired to create the noise zones. Table 4.7-1 illustrates the unweighted peak levels of an M-16 rifle (5.56 mm) to correlate the distance decay and direction of small arms noise. In the table, the 180° azimuth is directly behind the weapon. The table identifies that the direction that the weapon is fired has a large impact on the level of sound associated with it. In general, once the sound is heard greater than 1,000 meters away, it should not be loud enough to annoy most people. However, this can change based on terrain, weather, and other site specific conditions.

Table 4.7-1 Predicted Peak for an M-16 Rifle

Distance (meters)	Predicted Level, dBP Azimuth		
	0o	90o	180o
50	135-150	112-127	102-117
100	113-128	106-121	95-110
200	106-121	99-114	89-104
400	93-108	86-101	78-93
800	85-100	77-92	69-84
1,600	75-90	67-82	59-74

Source: ORARNG Statewide Operational Noise Management Plan, September 2010

Sound associated with demolitions and other impulse noises are generally more likely to produce noise complaints. This is because these sounds tend to travel further, are harder to mitigate, and are often accompanied by vibrations that can impact quality of life or potentially cause structural damage to buildings, depending on how big and how close they are. Studies done on vibration have shown that homeowners typically become concerned about potential structural damage due to rattling when the peak dB exceeds 120 dBP; however, actual damage is not likely to occur until a level of 150 dBP is reached.

4.7.3 Existing Tools

Federal and DoD Programs

The Noise Control Act of 1972

The Noise Control Act of 1972 determined that noise not adequately controlled has the potential of endangering the health and welfare of people. It states that all Americans are entitled to an environment free from noise that can jeopardize their general health and quality of life. Along with state, local, and territorial governments, actions from the Federal government were needed to ensure that the objectives of the Act were met.

Concurrently, military installations were experiencing the impacts related to encroaching urban development locating adjacent to the installation and then addressing complaints regarding noise from

military flight operations. In 1973, the DoD responded by establishing the Air Installations Compatible Use Zone (AICUZ) program (which is designed for installations that include an active runway). The Noise Control Act, as well as the AICUZ program, is important because encroaching development and increased population near military installations often creates compatibility concerns. As communities grow, it is important that the military installation, developers and the communities work together to mitigate the issue of noise and develop ways to coexist compatibly.

Oregon Statewide Operational Noise Management Plan

Per the Noise Control Act of 1972, the Oregon Army National Guard (ORARNG) updated the ORARNG Statewide Operational Noise Management Plan (ONMP) in 2010. The plan aims to achieve maximum compatibility with the surrounding civilian communities by analyzing the noise impacts generated by military training on-base. The ONMP is organized in such a manner that general military noise issues are discussed first, then OMD/ORARNG noise issues and procedures are discussed, and finally, installation-specific noise environment is explained in detail. The ONMP provides information and data for military installation and land use planners to analyze potential problem areas using computer-generated noise contour maps, planning strategies, lessons learned from other installations, strategies for the installation to limit or manage noise that leaves the installation’s boundaries, and guidance on complaint management procedures.

One of the suggested strategies for managing noise complaints mentioned in the plan is to ensure that complaints are directed to the appropriate installation. This process is also maintained by ORARNG’s Noise Complaint Program per Army Regulation (AR 200-1). The Noise Complaint Management Program is the program that each installation follows to best manage issues caused by noise. Some of the key techniques for managing noise mentioned in the ORARNG ONMP include listening, informing, and responding to inquiries or complaints.

The ORARNG ONMP identifies the Army Compatibility Use Buffer Program as a possible option for managing military generated noise impacts that extend off base by purchasing land around the base to provide a buffer for noise events. The ONMP outlines the ORARNG's noise complaint procedure policy as follows:

- Complaints are routed to the activity responsible for the complaint.
- Complaints are investigated.
- A Noise Complaint Questionnaire (AGO form 200-1-11) is completed for all noise complaints received.
- The Complainant is made aware of the unit mission and informed that every effort will be made to correct the problem, mission permitting.
- A copy of the completed Complaint Questionnaire and the response is provided to the Public Affairs Officer and Adjutant General Installations – Environmental section. If necessary, complaints and concerns are forwarded to the agency leadership for review.

ONMP also describes the noise environment at Camp Rilea. Sources of noise that extend beyond the installation's boundaries include noise related to small arms firing, explosions associated with small demolition charges, and helicopter flights. The specific noise impacts of these activities are discussed in the plan.

Since the ONMP is designed primarily for internal coordination, it is not distributed to local governments and therefore has limited utility in helping to influence local decision-making. The ONMP also does not articulate proactive strategies for increasing awareness about noise generating activities.

Issue NV-1

Noise from Training Operations. The live-fire weapons ranges and grenade ranges used at Camp Rilea by Soldiers create noise that can be heard off-installation in the nearby residents.

The largest issue of noise incompatibility at Camp Rilea is the result of weapons firing and use of explosives, including grenade and claymore mine training activities. Camp Rilea serves as a primary weapons firing training installation for the ORARNG, as well as other federal, state, and local organizations. Camp Rilea has many separate weapons firing ranges that allow for firing of various types of firearms.

Each type of weapon has its own variability in sound (dB) and the distance the sound typically travels (based on the frequency of the sound wave and other factors). The various ranges used for weapons firing and training on Camp Rilea include:

- Pistol Range
- Rifle Known Distance / Zero I range
- Rifle / Machine Gun / Zero II Range
- Rifle / Machine Gun / Zero III Range
- Modified Record Fire Range
- Infantry Squad Battle Course
- Anti-Armor Weapon (AT-4) / M-203 Range
- Urban Operations (UO) Site
- Hand Grenade Range
- Claymore Mine Range
- Demolitions Training Range

The sound generated by training at Camp Rilea that is detectable off-installation is not of sufficient intensity to cause physical damage to a person's hearing. But the levels in some locations adjacent to the installation are exposed to noise levels not considered compatible with noise sensitive land uses, such as residential. The noise exposure on these areas would produce nuisance levels of sound (noise). Adjacent portions of Clatsop County and the City of Warrenton are generally rural in nature and the ambient noise level is rather low with the exception of roadway noise from Highway 101. Some additional factors that increase ambient noise levels in the region include civilian uses of ATVs on the beach and dunes and

4.7 Camp Rilea JLUS

heavy farm equipment or logging instruments. The topography and vegetation of the area around Camp Rilea can direct and/or mitigate noise levels to some extent, which the current noise models presented in the ONMP and discussed in the section do not account for in their assessment. The sound levels also vary during different types of weather.

There are many factors, both resulting directly from the noise source as well as dependent upon the individual, that can determine how annoying noise can be for a person. Some of these factors include:

- time of day the noise occurs,
- intensity of the noise,
- duration of the noise,
- how often the noise occurs,
- abruptness of onset or cessation of the noise,
- the ambient noise climate and how much the noise itself differs from the ambient environment,
- the impact that the noise has on an individual's activity,
- the real or perceived notion of what efforts have been taken to control the noise, or what efforts could be taken,
- feelings about the importance or necessity of the noise-generating activity, and
- fear or lack of knowledge about why the noise-generating activity is taking place.

The majority of the noise concerns and complaints expressed by nearby residents of Camp Rilea are in regard to firing activities that take place in the evening, late at night or early in the morning, and on weekends, particularly during the summer months (when residents are more likely to be outside, windows are open, and training is at a higher tempo). The general hours of operation of the firing ranges are from 7:00 am to 4:30 pm. This is the timeframe that the majority of activity takes place. However, the ranges have an actual curfew of 6:00 am to 11:00 pm that training can occur. All range use must be requested by the user and approved by Range Control in advance, regardless of the time of day. There are approximately two to three times per year when

training takes place later than 11:00 pm. In these instances, notice is posted in the local newspapers (Daily Astorian and Seaside Signal) a week in advance to notify residents of the extended night firing hours.



Small arms training on a firing range at Camp Rilea

Night training at Camp Rilea can be required by units training at the facility in order to gain real-world training reflective of combat situations. Although ads are placed in the local papers when night-firing will occur, not everyone is made aware when this happens and they are disturbed after 11:00 pm, when they would expect training would not occur.

Noise contours were developed for small arms firing activities through the ONMP. These contours represent a maximum small arms training scenario that assumes every range was being actively used. This occurs approximately 20 days per year.

The noise contours created by assuming all ranges are active at once is misleading. Not all ranges could ever be used at the same time since some range use closes down other ranges. A good example is when the Zero I range is used, the KD portion of the range cannot be used. Speculating on the noise level of each range is not a good representation of average use since highest level of range use is four ranges and normal use is usually only one or two ranges at a time. Therefore, the ONMP noise contours represent the "worst case scenario" and suggest a misleading and unfounded level of activity.

The Zone III noise contour for small arms is contained entirely within the boundary of Camp Rilea. Noise Zone II extends outside the Camp's boundaries along approximately 1,550 feet on the east side and roughly 660 feet on the south side. These contours overlay residential areas, which are a sensitive use and can be impacted by noise nuisance. The small arms Zone II also extends west of the installation boundary onto the beach and over the ocean. In 2009, Camp Rilea built a sound attenuation barrier near the machine gun range. The structure is built with three sides that acts as a funnel to direct sound towards the beach where it is less impactful, but it can sometimes still be heard in the community.

Although the Noise Zone II does not extend north of Camp Rilea boundary, the area to the north is within Noise Zone I, in which residential and other noise sensitive uses are compatible. However, noise may still occasionally be identified as a nuisance. There are residential areas to the north, including the Long Lakes Estates, which have experienced noise levels that residents have identified as being disruptive.

Table 4.7-2 shows the total number of acres of each type of zoning district that are located under the small arms Zone II (including the beach). If all of the residential categories are added up, there are 393 acres of land designated for residential use, much of which is already developed with homes. These are the uses that are sensitive to noise impacts. These areas are illustrated on Figure 4.7-2. Additionally, Table 4.7-3 shows the zoning designations of the undeveloped parcels within Zone II (not including those located along the beach on the western side of Camp Rilea). The number in the "Map ID #" column refers to Figure 4.2-1 in Section 4.2, Land Use. The majority of undeveloped parcels are in residential zones.

Table 4.7-2 Zoning Categories by Acre in the Small Arms Zone II

Zoning Category	Acres
EFU	31
LW	36
MR	191
OPR	38
RA-1	121
RA-5	56
SFR-1	25
TOTAL	498

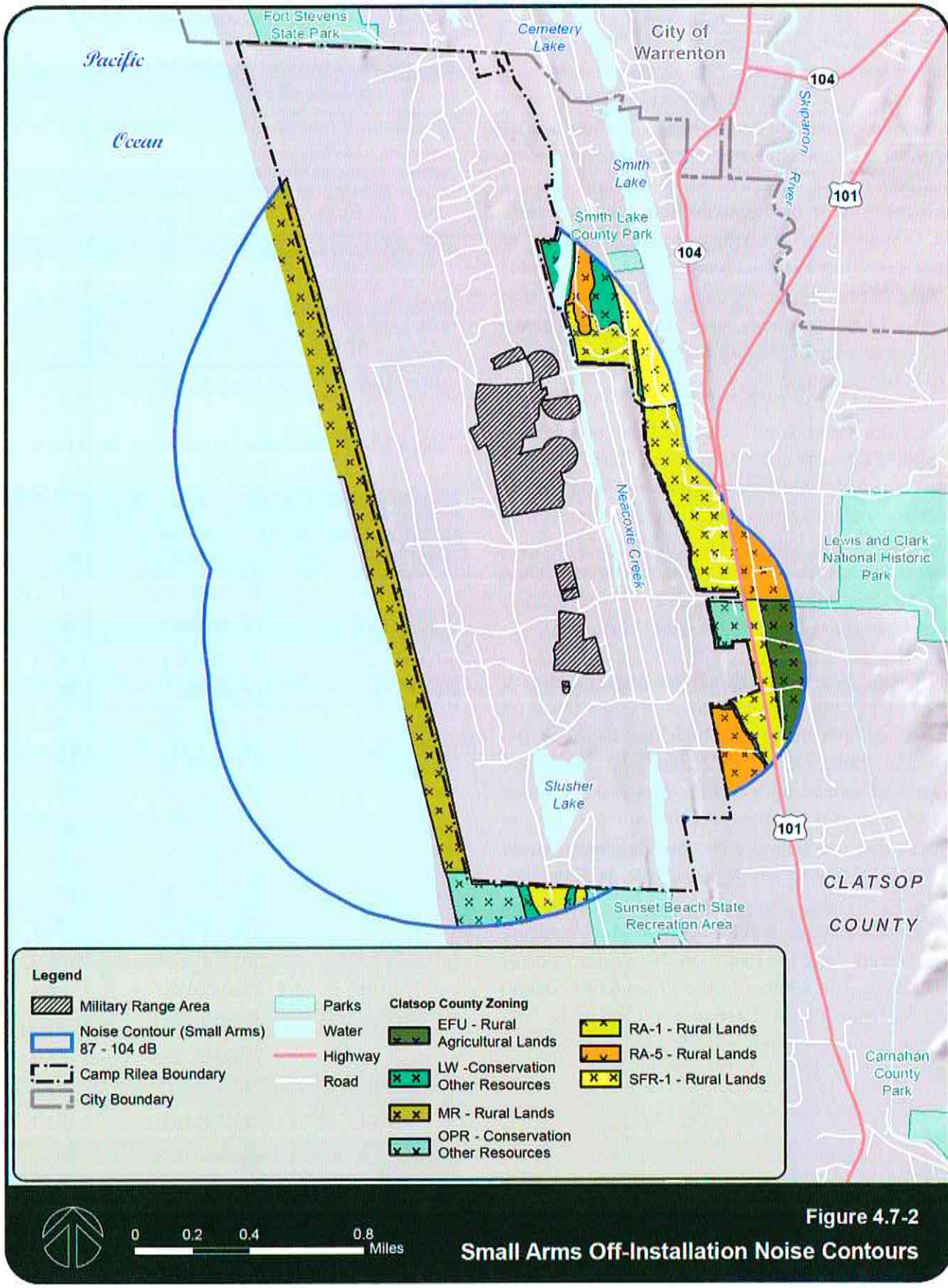
Source: Clatsop County; Matrix Design Group

Table 4.7-3 Undeveloped Parcels in the Small Arms Zone II

Map ID #	Tax Lot #	Zoning Category
53	81033B001900	RA-5/LW
54	81033B002702	RA-5/LW
65	81033BC00205	RA-1
66	81033BC00204	RA-1
67	81033CA02900	SFR-1/LW
71	81033BC00301	RA-1
72	81033CA03200	SFR-1/LW
73	81033CA03300	SFR-1/LW
78	81033C001500	RA-1/F-80
83	710040002300	RA-1
88	710030000200	EFU
89	710030000300	EFU
90	710040004100	RA-1
91	710040004200	RA-1
97	710090000901	AF
98	71009BC02000	RA-1
100	71009BC00100	RA-1
104	71009BC01900	RA-1
106	71009BC01800	RA-1

Source: Clatsop County; Matrix Design Group

4.7 Camp Rilea JLUS





A Soldier at the grenade training range (non-explosive)

Explosives Training

The Explosives Training Area is located in the southwestern portion of Camp Rilea and is used for training with grenades, explosive detonations with a maximum of 2.5 pounds, and claymore mines. Grenade and explosives training are only a small part of the activity that occurs at Camp Rilea, and generally occur around 10 times per year. Explosives and grenade training never occurs later than 11:00 pm. The Zone III noise contour for demolitions was modeled around the Explosives Training Area and is contained within Camp Rilea's boundaries, except for a small amount that covers beach property on the west side. Zone II extends beyond the eastern and southern boundaries into residential areas and open space and agricultural lands. It also extends to the west over the beach and the Pacific Ocean. The LUPZ contour extends further past the eastern and southern boundaries, over residential, agricultural, open space, park, and forest lands. The contour also extends west of the base over the beach and Pacific Ocean (see Figure 4.7-3).

Tables 4.7-4 and 4.7-5 show the total number of acres of each type of zoning district that are located under the demolitions Zone II and LUPZ, respectively (including the beach). Under Zone II, there are a total of 239 acres of residentially zoned land, and under the LUPZ (not including what is under Zone II), there are an additional 370 residential acres designated for residential uses, much of which is already developed with homes. These two noise contours and the land by zoning category under each are illustrated on Figure 4.7-3. Tables 4.7-6 and 4.7-7 show the zoning

designations of the undeveloped parcels within Zone II and the LUPZ, respectively (not including those located along the beach on the western side of Camp Rilea). The number in the "Map ID #" column refers to Figure 4.2-1 in Section 4.2, Land Use. A large percentage of undeveloped parcels are in residential zones.

Table 4.7-4 Zoning Categories by Acre in the Demolitions Zone II

Zoning Category	Acres
EFU	12
LW	15
MR	89
OPR	62
RA-1	97
RA-5	53
TOTAL	328

Source: Clatsop County; Matrix Design Group

Table 4.7-5 Zoning Categories by Acre in the Demolitions LUPZ

Zoning Category	Acres
AF	39
EFU	145
F-80	20
LW	44
MR	39
OPR	165
RA-1	108
RA-5	176
RSA-MFR	9
SFR-1	38
TOTAL	783

Source: Clatsop County; Matrix Design Group

4.7 Camp Rilea JLUS

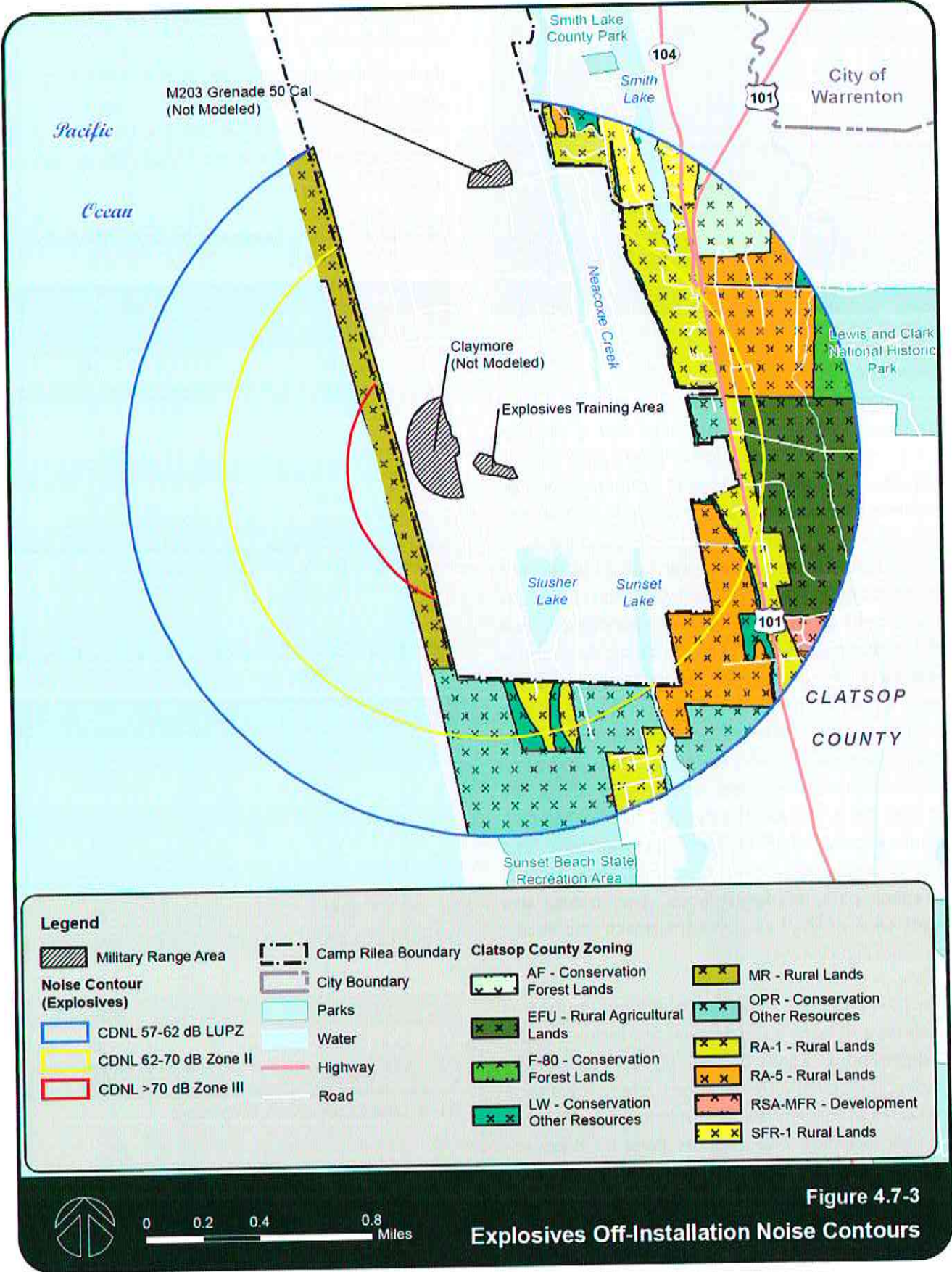


Table 4.7-6 Undeveloped Parcels in the Demolitions Zone II

Map ID #	Tax Lot #	Zoning Category
78	81033C001500	RA-1/F-80
83	710040002300	RA-1
97	710090000901	AF
98	71009BC02000	RA-1
99	71009BC02100	RA-1
100	71009BC00100	RA-1
101	710090000902	OPR
104	71009BC01900	RA-1
106	71009BC01800	RA-1

Source: Clatsop County; Matrix Design Group

Table 4.7-7 Undeveloped Parcels in the Demolitions LUPZ

Map ID #	Tax Lot #	Zoning Category
65	81033BC00205	RA-1
66	81033BC00204	RA-1
68	81033D001100	SFR-1
70	81033D001000	AF
71	81033BC00301	RA-1
72	81033CA03200	SFR-1/LW
73	81033CA03300	SFR-1/LW
74	81033D001200	SFR-1
75	81033CA01400	SFR-1/LW
76	81033CD00100	SFR-1/LW
77	81033CD00500	SFR-1/LW
79	81033D000103	RA-5
80	81033D000900	RA-5
81	710030000102	F-80
82	71004A001400	RA-5
84	71004A000201	RA-5
85	71004A000200	RA-5
86	71004A000800	RA-5
87	71004A001700	RA-5
88	710030000200	EFU
89	710030000300	EFU

Map ID #	Tax Lot #	Zoning Category
90	710040004100	RA-1
91	710040004200	RA-1
92	710030000900	EFU/RA-1
93	710030000901	EFU
94	710090000200	RA-5/LW
96	710090000400	RA-5/OPR/LW
101	710090000902	OPR
102	710090000801	OPR
103	710090000802	RA-5
107	710090000805	RA-5
108	710090000500	OPR/LW
113	71009BC01300	R-1/LW
114	710090000906	R-1
115	71009CB00900	OPR
116	71009CA01200	OPR
117	71009DB00100	R-1
118	71009BC01300	R-1/LW
119	71009DB06200	OPR
120	71009CA00700	RA-1
121	71009CA00800	RA-1
122	71009DB06300	OPR
123	71009CA01300	OPR

Source: Clatsop County; Matrix Design Group

Complaint risk guidelines were developed based on the experience of the Naval Surface Warfare Center in Dahlgren, Virginia. These results indicate that a predicted sound level of less than 115 dBP will yield a low risk of complaints, a dBP between 115 and 130 will be at moderate risk for complaints, and a dBP of greater than 130 will have a high risk for complaints. Complaints are highly dependent upon the individual or group experiencing the noise levels, so this guide is meant as a general determination. At 140 dBP, there is a chance for damages to the human ear.

The ORARNG ONMP modeled the risk of noise complaints to determine the potential that activity involving the demolition of 2.5 pound explosives under unfavorable conditions could annoy nearby

4.7 Camp Rilea JLUS

residents. According to the modeling, there is a high risk of complaints (greater than 130 dB PK15[met]) associated with 2.5 pound demolition activity among the residential areas that are located along parts of the eastern and southwestern portions of Camp Rilea. The extent for a moderate risk of complaints (115 to 130 dB PK15[met]) extended approximately 6,070 feet to the east and roughly 5,740 feet to the south and covered residential areas and agricultural, forest, and park and recreational lands.

Between 2005 and 2010, only two official noise complaints were recorded at Camp Rilea. Some calls have been received inquiring about demo and pyrotechnic activities, but were not voiced as official complaints.

Although the Statewide ONMP depicts the noise contours, and these contours do not extend past the northern boundary of Camp Rilea, there are still residents outside of the contours, particularly to the north and northeast, who have voiced concerns about hearing weapons firing, especially at night. The sound tends to travel further during the times that training is conducted at night because the temperatures are cooler. In addition, the Neacoxie Creek valley on the eastern side of Camp Rilea can funnel and carry noise to the north off-installation into residential areas.

In addition to disturbing nearby residents, the noise from the live-fire ranges also has the potential to create adverse impacts on wildlife. While wildlife, such as elk, are found on Camp Rilea, many of them are habituated to the noise, and so there is no adverse impact to them. Much of the undeveloped land surrounding Camp Rilea is open space. As discussed in Chapter 2, there are several listed threatened and endangered species that occur throughout Clatsop County, although none are known to currently exist on Camp Rilea. The impacts of noise on threatened and endangered species is further discussed in Section 4.13, Biological Resources.

Issue NV-2

Vibrations from Range Operations.

Some live-fire weapons, grenade, and explosive detonation training creates vibrations that may be felt off-installation at times.

Some nearby residents adjacent to Camp Rilea have expressed concerns about the vibrations associated with training operations at the base. These vibrations are generally the result of grenade, claymore, and explosive detonations, which take place primarily in the southwestern portion of the installation. Some residents stated that occasionally training or explosives detonation will be so severe that it shakes their homes and they worry about damage to their homes or property. Under most circumstances, the distance between the source of the vibration and the structures that are off-installation would reduce the force generated by the vibration so that it would not cause any structural damage among the residential communities surrounding Camp Rilea.

As mentioned previously, studies have been conducted regarding the potential for structural damage resulting from vibration. When the sound that causes a vibration exceeds 120 dBP is when homeowners typically become concerned for structural damage occurrence due to the rattling effect. However, structural damage is not likely to occur until a level of 150 dBP is achieved (a level far exceeding those modeled for Camp Rilea). The weapons fired at Camp Rilea are small, and so are not likely to produce destructive vibrations. Similarly, the explosives used at Camp Rilea have a fairly small net explosive weight, which is not likely to exceed destructive levels off-installation. The unconsolidated nature of the soil in the region also helps to dampen vibration as it spreads away from the source.

**Issue
NV-3**

Low-Level Flight Operations. Rotary-wing (helicopters) and fixed-wing (airplanes) aircraft that train or fly near Camp Rilea create noise that is sometimes heard off-installation. This includes noise associated with transit to and from Camp Rilea, take-off and landing operations of helicopters, low-level hovering over the installation, and drop zone operations.

Helicopter Flights

Camp Rilea has a designated heliport at the south end of the cantonment area, which is used by the Oregon Army National Guard and others. Other types of helicopter operations take place throughout Camp Rilea, including the Parade Grounds for personnel transportation activities, and Training Area 13 for different types of field maneuvers, and within the Razor Clam Drop Zone on the west side of the installation. The primary types of rotary aircraft that utilize Camp Rilea are:

- CH-47 Chinook
- HH-60-J Jayhawk
- OH-58 Kiowa
- UH-60 Blackhawk

Helicopter training at Camp Rilea is not very extensive and generally consists of troop transport and refueling among Army National Guard. ORARNG helicopters only operate at Camp Rilea for various training activities approximately 36 days per year. Coast Guard training sometimes includes picking up and moving buoys that are attached to the underside of the helicopter. Other helicopter activity at Camp Rilea is contributed by commercial users, Columbia bar pilots, and other military entities.

The majority of aircraft that utilize Camp Rilea come from the Astoria Regional Airport to the northeast. They generally approach and depart from the east along Highway 101, or west over the Pacific Ocean (primarily Coast Guard helicopters), and are instructed to avoid flying over Fort Stevens State Park to the north, Astoria Country Club to the south, and

residential areas if possible. Aircraft that come from places other than Astoria Regional Airport are generally advised to approach from the west over the Pacific Ocean to avoid flying over residential areas.



Helicopter training at Camp Rilea

The flight route used for transit between Astoria Regional Airport and Camp Rilea is illustrated on Figure 4.4-1 in Section 4.4, Vertical Obstructions.

Due to the low number of flights made to Camp Rilea, there are no currently modeled noise contours for helicopter flights around the installation. Although noise generation by overflight is minimal, it does occur over residential areas at times. Individual overflights over residential areas may cause annoyance among residents. Studies known as the “Scandinavian Studies” were conducted in 1974 and 1988 that indicate predictions for annoyance levels among the public. These studies were performed based on an airfield with 50 to 200 operations per day, which is much higher than the number of operations that occur at Camp Rilea, but their results provide a starting point for determining the risk of a noise complaint.

Table 4.7-8 presents the maximum dBA for a CH-47D Chinook helicopter and a UH-60A Blackhawk helicopter. The information in the table was provided in the Statewide ONMP. Although the ORARNG utilizes the UH-60L model at Camp Rilea, the ONMP only provided data on the UH-60A, which is assumed to have a similar noise footprint as the UH-60L for the purposes of the discussion in this JLUS. UH-60

4.7 Camp Rilea JLUS

Blackhawk and CH-47 Chinook aircraft are the most commonly used at Camp Rilea. The Blackhawk is much more commonly used.

Table 4.7-8 Maximum dBA Sound Levels of Common Aircraft at Camp Rilea

Slant Distance (Feet)	Maximum Sound Level by Aircraft Type (dBA)	
	UH-60A Blackhawk	CH-47D Chinook
200	91	98
500	83	89
1,000	76	83
2,000	69	77
5,000	58	67
10,000	48	59

Source: ORARNG Statewide Operational Noise Management Plan, September 2010

Table 4.7-9 identifies the percentage of the population that is likely to be highly annoyed based on the dBA of the aircraft.

Table 4.7-9 Percentage of the Population Who is Likely to be Highly Annoyed by Aircraft Noise

Maximum dBA	Percentage Highly Annoyed
70	5%
75	13%
80	20%
85	28%
90	35%

Source: ORARNG Statewide Operational Noise Management Plan, September 2010

According to the Coast Guard they have an inventory of 3 HH-60-J Jay Hawk helicopters, which they fly 2,300 times a year. When flying over populated areas they fly at an altitude of over 1,000 feet above ground level (AGL) and 500 to 1,000 feet when approaching Camp Rilea. These guidelines are the general standards that all helicopter traffic flying to and from Camp Rilea operate under, in accordance with the "Fly Neighborly" program.

One of the major concerns of local residents is that helicopters fly too low over houses and generate noise that affects peace, privacy, outdoor living and horses or livestock at pasture. The exact noise levels generated by the aircraft flown in and out of Camp Rilea have not been measured.

Issue	Vibration for Flight Operations.
NV-4	Vibration occurs off-installation relative to low-level helicopter and fixed-wing flights occurring on and near Camp Rilea.

US Coast Guard helicopters traveling to and from Camp Rilea from the Astoria Regional Airport typically fly between 500 to 1,000 feet AGL during their transit, and maintain 1,000 feet AGL above populated areas when possible. For any flight over 500 feet AGL, the FAA rules for General Aviation apply.

Occasionally, helicopters traveling to or from Camp Rilea fly at low altitudes over the nearby residential areas. This type of flight is advised against if it can be avoided. However, sometimes certain weather or other factors play a role in the flight paths that are taken by pilots and they fly over residential areas. This can result in people on the ground feeling vibration from the low-flying aircraft, and sometimes causes homes or structures to shake. Although there structural damage is unlikely due to these vibrations, they can be a nuisance to residents and this type of low-level flight should be avoided whenever possible.

Sometimes jet aircraft flying over the area have been mistaken for training at Camp Rilea. Although these aircraft may use nearby training areas over the Pacific Ocean (Warning Area 570 is located about 10 miles off the coast over the Pacific Ocean), they are not associated with Camp Rilea. There may be rare occasions when these aircraft fly over the shore. The issue of low flying jet aircraft causing vibration and potential structural damage to homes was identified as a concern by residents, but does not fall within the scope of this JLUS.

Issue NV-5	Noise from the Radar System. The Oregon Air National Guard operates radar equipment placed on a hilltop along the eastern boundary of Camp Rilea. The radar and support equipment generate noise which can be heard off-installation.
-----------------------	--

The radar is operated by the Oregon Air National Guard. It is used to track and control aircraft using the training ranges over the ocean. This radar is located on an elevated hilltop on-base on the east edge of the installation. Neighbors close to the radar site have noted the increase in noise associated with operations at the radar site since it became operational, but some noted that noise has decreased over the past year.

The radar site formerly had a backup generator on-site that created a higher noise levels that could be heard by nearby residents; however, a new generator was added near the Main Gate of the Camp in 2010. The new generator is able to supply backup power to the radar site, reducing the need to use the on-site generator. This has helped to reduce the noise output from the radar site.

Currently, the main noise source at the radar site is the environmental control system that is used to cool the equipment so that it can operate properly and not overheat. This system can be loud at times and the sound can travel off-installation and be heard by nearby residents. There is also a small degree of sound associated with other mechanical operations of the equipment, but it is generally not loud enough to cause concern.

Strategies

The following strategies are recommended to address the issues identified in this section.

Issue	ID	Strategy	CRIA	Timing	Local		State					Federal			Tribal Gov't													
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS		USCG	USFWS											
NV-1	A	<p>Develop Sound Attenuation Building Standards for New Construction</p> <p>Amend city and county building codes to require sound attenuation for new construction of sensitive land uses located within the noise contours for demolitions and small arms and defined as being within the Noise CRIA. The minimum STC rating of structure components shall be provided in compliance with the table shown below. As an alternative to compliance with this table, structures shall be permitted to be designed and constructed so as to limit their interior noise level to no greater than 45 Ldn. Exterior structures, terrain and permanent plantings shall be permitted to be included as part of the alternative design. The alternative design shall be certified by an acoustical engineer.</p> <table><thead><tr><th>dB LDN</th><th>STC of Exterior Walls and Roof / Ceiling</th><th>STC of Doors / Windows</th></tr></thead><tbody><tr><td>65-69</td><td>39</td><td>25</td></tr><tr><td>70-74</td><td>44</td><td>33</td></tr><tr><td>> 75</td><td>49</td><td>38</td></tr></tbody></table>	dB LDN	STC of Exterior Walls and Roof / Ceiling	STC of Doors / Windows	65-69	39	25	70-74	44	33	> 75	49	38	Noise	2013	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
dB LDN	STC of Exterior Walls and Roof / Ceiling	STC of Doors / Windows																										
65-69	39	25																										
70-74	44	33																										
> 75	49	38																										
NV-1	B	<p>Develop a Voluntary Sound Attenuation Retrofit Program for Residential Uses</p> <p>Develop a program that provides guidance on sound attenuation standards for retrofitting existing residential and commercial facilities. The program can include grant opportunities available to assist property owners in retrofitting structures in noise sensitive areas. Other funding sources for retrofitting homes should be identified and provided within the program materials as well.</p>	Noise	2016	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input type="checkbox"/>																	

Issue	ID	Strategy	CRIA	Timing	Local		State						Federal		Tribal Gov't	
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS		USCG
NV-1	C	Sound Attenuation for Existing Structures Significant (defined as an activity that modifies, alters or expands an existing use by 50 percent) extension, enlargement, relocation, reconstruction or substantial alteration of an existing residential use within the Zone II noise contours for small arms and demolitions shall include the implementation of sound attenuation materials. This shall also apply to changes in a structure that result in an increase in the number of habitable units within the structure (with habitable units as defined by the 2010 US Census). Attenuation standard, if required, shall be those identified under Strategy NV-1 A.	Noise	2013	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
NV-1	D	Develop and Provide Sound Attenuation Technical Support Develop and provide educational materials, either through inclusion in the adopted building codes or as a supplemental educational document, describing building techniques which can be used to achieve the required 45 dB interior noise maximum threshold. Clatsop County shall pursue funding from DoD to produce technical support materials, with other stakeholders distributing and using these materials.	General	2013 On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input type="checkbox"/>					
NV-1	E	Require a Note be Recorded on a Title to Real Property as Part of any Discretionary Development Permit or Approval Require that a note be recorded on a title for real property located within Zone II as part of any discretionary development permit or approval. The note shall state that the real property is located in close proximity to an active military training facility that performs day and night time training operations, both ground and air operations. The military operations may produce noise, vibration, and visual issues.	Noise	2013 On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										

4.7 Camp Rilea JLUS

Issue	ID	Strategy	CRIA	Timing	Local		State					Federal			Tribal Gov't	
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS		USCG
NV-1	F	Training Times Implement or continue the following: <ul style="list-style-type: none">■ Training curfew for special circumstances should be set from 7:00 AM to 11:00 PM.■ Operations outside these hours require authorization from Range Control one week prior to the training.■ Operations outside of curfew should not be authorized for non-military training.■ OMD will continue to post in newspaper if training will exceed 11:00 pm.■ OMD should work to determine if seasonal times can be used, so that training ends at 10:00 pm during non-summer months.	Camp Rilea	On								■				
NV-1	G	Vegetation Sound Barrier OMD should investigate the possibility of reforestation around the perimeter of Camp Rilea to act as a sound barrier and reduce sound impacts that travel off-Camp.	Camp Rilea	2013								■				
NV-1	H	Encourage Density Transfers Clatsop County should be supportive of voluntary applications for the transfer of density from the area within the Noise CRIA to other appropriate locations within the county.	Noise	On	■											
NV-2 NV-4	H	Perform a Vibration Study Prior to change in training mission or activity areas relative to heavy weapons training or training involving explosives that would potentially create significant vibration, OMD would perform a vibration study as required to meet the needs of NEPA to determine the impacts of weapons training areas outside the installation.	Noise	On								■				
NV-5	I	Construct a Sound Barrier The Oregon Air National Guard should evaluate and construct, if warranted, a sound barrier around noise sources of the radar facility to reduce the amount of equipment-generated noise that is heard off-installation. Other Entities: Oregon Air National Guard	Camp Rilea	2016								■				

4.8

Dust / Smoke



4.8.1 Key Terms

Prescribed Burn – A prescribed burn is the controlled and intentional ignition of grass, shrub, or forest fuels for the specific purpose of reducing vegetation to assist with forest management, farming, or habitat restoration. A prescribed burn may also refer to the intentional controlled burn of vegetation for firefighter training.

4.8.2 Technical Background

Particles of dust and other materials that are found in the air are referred to as particulate matter. The term PM-10 refers to particulate matter that is less than ten microns in size. At certain concentrations, this particulate matter can be harmful to humans and other animals if it is inhaled, as it can cause strain on the heart and lungs to provide more oxygen for the body as a result of increased buildup of dust. The harm can be more severe in the elderly, children, and people with pre-existing respiratory problems. PM-10 can be caused by many activities, including driving on unpaved roads and surfaces, wind erosion from vacant lots, disruption of land from explosions, and other earth-moving activities such as construction, demolition, and grading. Its

primary source, in many areas, is vehicles (engine exhaust), wood burning, and industrial processes.

4.8.3 Existing Tools

Local Tools

Oregon Department of Forestry

The Oregon Department of Forestry (ODF) issues all burning permits for prescribed burns in Oregon. When a burning permit is requested, ODF meteorologists analyse wind and weather forecasts, check the number of burns that are already permitted for the area and consider the acreage proposed to be burned. A determination of how the proposed burn and associated smoke would affect populated areas based on these factors will determine whether or not the proposed burn is approved. If the burn is approved, ODF will provide instructions on how to conduct the burn and monitor the results. ODF also operates the Oregon Smoke Management Plan, the focus of which is the regulation and control of smoke released during burns that could affect populated areas.

Issue DS-1	Dust from Military Training Activities. Military training activities such as vehicle maneuvers and helicopter operations create dust at times.
-----------------------------	---

Parts of Camp Rilea are used for vehicle maneuver training. Most of this training occurs in the northwestern portion of the installation on the land navigation courses. These areas are undeveloped and have some primitive roadways that are used for traversing and navigating. Compared to other larger training installations, the vehicle usage at Camp Rilea is not as big an issue for stirring up dust that could impact neighboring communities. In addition, the generally moist climate of the region keeps most dust levels at a minimum during vehicle maneuvers. However, occasionally, there is some dust that gets stirred up and has been mentioned by residents to be a nuisance. There has been no mention of PM-10 levels associated with the training at Camp Rilea.

After review of this issue, it was determined that no substantial compatibility issue exists and that current procedures adequately address this issue.

Issue DS-2	Smoke from Prescribed Burns. Burning of vegetation at Camp Rilea generates smoke that sometimes goes off-installation. In some cases, there is the potential of such smoke to reduce visibility on Highway 101.
-----------------------------	--

In order to maintain the full operational ability at Camp Rilea, vegetation growth must be managed and controlled. Due to the variety of invasive species and natural vegetative growth that occurs on the installation, sometimes the easiest method for reducing overgrowth in training areas is to utilize prescribed burns of the area. These burns also help to reduce invasive species growth, which tends to overburden native species. Camp Rilea also hosts some regional firefighter training events where additional burns take place for educational and training purposes.

The ODF is in charge of all prescribed burns that occur on Camp Rilea, and permission for such burns must be provided by ODF in the form of a permit

before they can commence. The permitting process aims to ensure that smoke from a prescribed burn will not impact nearby areas, but sometimes it still occurs. There is the minimal potential that a prescribed burn could become uncontrolled and thus burn a larger area and produce more smoke than intended, or in worst case scenario, threaten other areas from being burned, but this is unlikely given the safety precautions taken.



Example of a prescribed burn

In the past, portions of training areas 2-9 and 11 have used prescribed burns for training purposes. Prescribed burns of the dune areas of Camp Rilea take place roughly every three to five years, depending on the need for a reduction in forest fuels and if the area is open for burning. Except for Training Area 6, these locations are mostly on the western side of Camp Rilea, furthest away from where smoke would impact Highway 101 visibility, but still could impact nearby residents. Prescribed burns at the firing ranges are conducted as the opportunity arises.

Camp Rilea currently has two Type 6 Wildland Fire Engines (as shown in the picture above) that are located at Range Control, but will be relocated to the Interim Wildland Guard Station in the near future, which is located at the north end of Pacific Way. Each truck has a 300 gallon water tank, and a 50 gallon per minute pump @ 150 psi. There is one full time firefighter at Camp Rilea. If a fire were to break out that needed additional support to manage, the Warrenton Fire Department would be the next responders.

Strategies

Due to the minimal nature of the compatibility issues associated with dust and smoke in and around Camp Rilea, no strategies are required to address these issues.

4.8 Camp Rilea JLUS

Please see the next page.

4.9

Light and Glare



4.9.1 Key Terms

Ambient Light — Ambient light is the general background illumination that comes from all directions and has no visible source.

Glare — The presence of excessively bright light, such as direct or reflected sunlight, or artificial light, such as sport field and stadium lights at night. Glare reduces visibility and can completely impair vision when very intense.

4.9.2 Technical Background

Over the years, military combat tactics have evolved and require new methods of training to properly prepare personnel for their intended missions. To gain the advantage over enemies, a substantial number of combat operations are conducted under the cover of darkness. When training with night vision equipment, military personnel can conduct their training in near-daylight conditions. Light sources from commercial, industrial, and residential uses at night can cause glare and excess illumination, which can negatively impact the use of military night vision devices during ground and air operations.

Under dark sky conditions, night vision goggles (NVG) can allow military personnel to view objects up to a distance of 300 meters (984 feet); however, lighting located outside of an installation can decrease the NVG effectiveness to a distance of 50 meters (164 feet). This off-installation lighting also produces a halo effect around objects, which further reduces visibility and resolution for air and ground personnel. The amount of ambient light experienced on the ground is a function of:

- intensity of nearby light sources (up to 20 miles away);
- distance from the sources;
- spectra of the light sources (blue light decays faster in the atmosphere);
- density of the cloud deck;
- height of the cloud; and
- relative humidity.

According to this basic light pollution formula, the proximity to a city has a relatively greater effect on the amount of light pollution the sky will suffer. Getting twice as close to a city makes its sky glow appear approximately six times brighter. Sky glow from cities typically diminishes in the later hours of the night, when more businesses close and some lights are turned off. It follows that, as development

4.9 Camp Rilea JLUS

continues to progress outward from a city, the amount of light pollution can increase. Increased light pollution can cause an increase in the amount of sky glow and ultimately create compatibility issues in areas that were not impacted at one time.

The impacts of the use of outdoor lighting on the dark skies over Camp Rilea are primarily determined by two principal factors – the amount of developed land (density) and the distance of the developed land from the installation. The relationship between density and distance is best demonstrated using an estimate of urban sky glow called Walkers Law. The relationship captured through the use of this formula was developed based on measurements of sky glow for a number of cities in California. The following formula is used to estimate sky glow at an observing site looking at a zenith angle of 45 degrees toward an urban source:

$$I=C \times P \times R(n)$$

Where:

I = Percent increase of the night sky brightness above the natural background, at 45°down from directly overhead (facing the city, directly overhead is roughly ¼ of this value),

P = Population of the city,

R = Distance, in kilometers, from the observing site to the center of the city,

“C” = 0.01 for “r” values between 10 and 50 km, and

“n” = 2.5 for “r” values between 10 and 50 km

According to the National Oceanic and Atmospheric Administration (NOAA), the assumed radius of a city is a function of its population, ranging from 2.5 km to 24 km. Walker's law applies if the installation is outside the city radius. If located inside the city radius, the sky glow increases in a linear manner toward the center by another factor of 2.5.

Consider the following examples:

- **Scenario 1:** A 100-acre development located two kilometers from the installation with a density of six units per acre (assuming 2.5 persons per household) would impact the sky background by over 260 percent (nearly 663 percent with NOAA factor).
- **Scenario 2:** A 100-acre development located 20 kilometers from the installation with a density of six units per acre (assuming 2.5 persons per household) would impact the sky background by approximately less than 1 percent (just over 2 percent with NOAA factor).

If the density was decreased to one unit per acre the resulting scenarios would result in the following increased sky glow:

- **Scenario 1:** Approximately 44 percent (almost 111 percent with NOAA factor).
- **Scenario 2:** Approximately less than 1 percent (still less than 1 percent with NOAA factor).

In general, the following trends are demonstrated:

- The more dense the urban development, the greater the potential for light intrusion.
- The closer development is to the installation, the greater the potential for light intrusion.

4.9.3 Existing Tools

Local Tools

Clatsop County Land and Water Development and Use Ordinance

The Clatsop County Land and Water Development and Use Ordinance only addresses the issue of lighting by requiring that exterior lighting in some zones be directed away from adjacent property, and for industrial zones, lighting shall be cutoff lighting when adjacent to a residential zone. There is no mention of lighting regulations to reduce overall nighttime lighting.

Warrenton Development Code

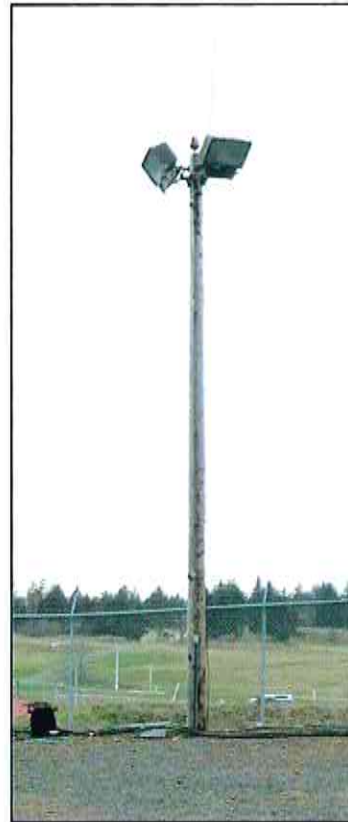
The Warrenton Development Code includes a section covering outdoor lighting within the Chapter 3, Design Standards. These standards state that “The lighting for residential, commercial and industrial zones shall be shielded and directed down into the site and shall not shine or glare onto adjacent property or streets. Light poles, light fixtures and flag poles shall not exceed 25 feet in height. Installation cost shall be borne by the developer.” However, these regulations are only applied within the Development Code to the commercial district along Highway 101, SW Dolphin and SE Marlin Avenues. In order to be more effective at reducing excess nighttime lighting, this should be applied city-wide.

Issue LG-1

Light Impacts from Base Operations. Some lighting at Camp Rilea can spill over into adjacent properties. Key uses are:

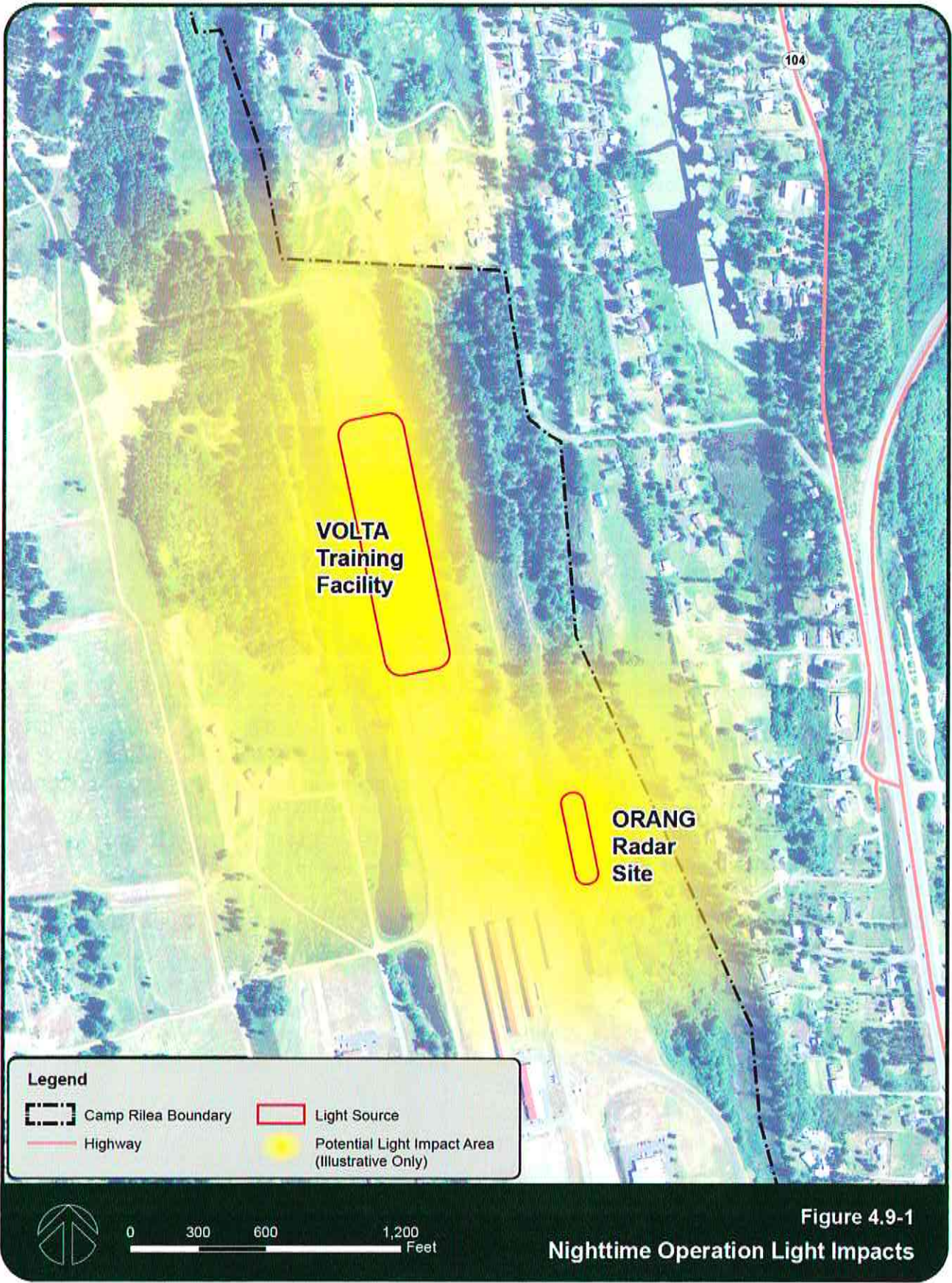
- The Oregon Air National Guard radar facility produces light that spills onto neighboring properties.
- Lighting at the utility training center produces light that sometimes spills onto neighboring properties.

The radar site that is operated by the Oregon Air National Guard at Camp Rilea is located on a hill on the installation's eastern border. At night, this facility uses a very bright light to illuminate the area for security reasons and also for functionality if personnel must go there at night so that they can see. The light is located on the western side of the site and shines towards the east. Due to its elevated location on a hill, this light is often observed by nearby residents who live near the bottom of the hill. It has been described to be very bright on some nights and shines into the windows of their homes. The issue is not just a matter of light going into the windows of the homes, but it also makes some residents feel that their privacy is being infringed upon by having bright light shine onto their property from atop a hill.



The lighting used at the radar site is not shielded and its location atop a hill, pointing downwards, produces excess lighting that intrudes upon nearby residential areas.

Figure 4-9-1 shows the location of the radar facility in relation to the nearby residential areas. In the figure, a simulated yellow light glow has been superimposed to identify the location of the primary lighting at the facility as well as how it expands outwards towards the residential areas. The figure is meant to show a general description of the light spillage from the radar facility off-installation, and is not meant to identify the maximum extent to which the light travels and impacts nearby residents.



There is a power pole and line training facility located on Camp Rilea that is used for various groups, including the Oregon State Police and students enrolled in courses with Northwest Line. It is part of the Vocational Outside Line Training Academy (VOLTA), which was designed by the Northwest Line Joint Apprenticeship Training Committee (JATC) and allows students to engage in hands-on experience by using a pole yard that simulates field conditions. The training center includes power transmission equipment (transformers and switching systems) to provide realistic experience, as well as a classroom component. VOLTA allows entry-level students who are interested in or just getting started in line worker training to gain the hands-on experience needed to progress in the field as an apprentice.



The VOLTA power pole training facility

Training activities at VOLTA occasionally occurs in the evening or nighttime. During these times, the lights used by the equipment and poles are very bright and can be seen by nearby residential areas. They have been described as almost being as bright as daylight by some of the residents and make it difficult to sleep or do other nighttime activities because of the intrusive light. Currently, VOLTA holds three sessions per year, which take place in spring, summer, and fall (April, July, and October in 2011). Each session lasts 10 weeks and includes power pole training. Other training and usage of the power poles occurs throughout the year as well.

The VOLTA facility is near the radar facility, but is located at the base of the hill. The residents who are impacted by lighting from the power pole training are not the same as those impacted by the radar because the hill acts as a buffer for this light-producing activity. The power pole course sits on flat land that has minimal vegetation on it all the way to the Camp Rilea's boundary, north of the facility. There are civilian homes located adjacent to the fenceline that are in view of the course, and when it is used at night, they are impacted by excess light that spills past the boundary.



One of the homes adjacent to the fenceline, north of the VOLTA facility

Figure 4.9-1 identifies the location of the power pole training complex in relation to the residential areas that are sometimes impacted by nighttime light training. A simulated glow has been superimposed over the training facility, which is meant to show which direction the light protrudes towards residential uses. The glow is not meant to serve as the maximum extent to which the light can be seen from off-installation.

Issue LG-2	Light Impacts from Off-Installation Uses. The ability to conduct night vision goggle training is an important component of training at Camp Rilea. Controlling significant light sources, glare, and general increases in ambient light in the surrounding area is essential to maintaining an environment suitable for night vision equipment usage.
-----------------------------	--

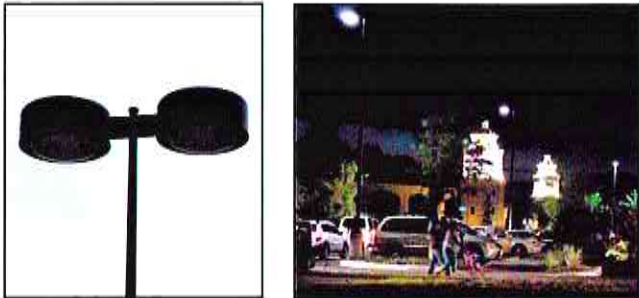
There are many factors that contribute to excess nighttime light that can interfere with night vision equipment. The types of exterior lights used, their distance from Camp Rilea, and the times at which they are left on all play an important role in how much ambient light is observed on the installation. Lower wattage light bulbs can be used in downward-pointed lighting fixtures, since the light is not spreading in all directions. Thus, lower wattages may be used to illuminate the same area because the light is not being wasted. This will result in lower energy costs.

The International Dark Sky Association (IDA) is an organization dedicated to the education and promotion of dark skies and dark sky preservation. The IDA has worked with communities around the world to develop methods for reducing light pollution. IDA-approved light fixtures are typically more expensive than less efficient fixtures during initial purchase, which is one reason people chose not to install them; however, the savings in energy costs could be recuperated as quickly as within one year of installation.



Examples of poor street light fixtures that result in light spreading past where it is needed, and creating excess ambient light

Downward directed, fully shielded, and low glare lighting, using efficient modern lighting sources and amounts appropriate to the needs for utility, safety, security and commerce, improves visibility and decreases energy waste and carbon dioxide emissions, and therefore reduces costs of operation for outdoor lighting systems. New installations using such efficient lighting systems accrue benefits and savings immediately. These benefits, accruing year-to-year, rapidly recoup costs associated with replacements to presently in-place lighting systems; all users benefit from the improved lighting efficiency needed to reduce light pollution.



An example of good street lighting and how it looks at night

The biggest concern for lighting that could impact training at Camp Rilea is from the commercial development in the City of Warrenton a little less than two miles northeast of Camp Rilea’s main gate. There is lighting that is unshielded and remains on past business hours that is sometimes seen from Camp Rilea depending on weather conditions, and could reduce visibility and effectiveness of night vision equipment. As the surrounding Clatsop Plains continue to develop and experience new growth, this growth should be managed so that additional lighting impacts do not become a problem in the future. This could be done through the use of lighting techniques that prevent light spillage and also the types of lighting devices used so that lights are shielded and more efficiently utilized.

The current impact of nighttime lighting from off-installation uses is minimal for Camp Rilea and does not require any strategies to address the issue.

Strategies

The following strategies are recommended to address the issues identified in this section.

Issue	ID	Strategy	CRIA	Timing	Local		State					Federal			Tribal Gov't
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS	
LG-1	A	Relocate the Light at the Radar Site The Air National Guard shall (at the radar site): <ul style="list-style-type: none">Relocate lights at the radar site so that they are located on the eastern side of the site and directed inward towards Camp Rilea instead of towards the edge of Camp Rilea where it encroaches upon residential homes.All lights shall be retrofitted to be shielded.No lights shall be mounted on the sides of buildings, structures, or mechanical equipment unless directed downward.Any above changes must ensure that they meet with military security requirements.	Camp Rilea	2014											
LG-1	B	Light Barrier and Shielding at VOLTA Facility Northwest Line or Camp Rilea should determine the extent of off-installation light intrusion and then identify appropriate alternative light barrier options, such as planting vegetation along the fenceline north of the VOLTA facility to reduce the amount of excess light that shines onto neighboring civilian property during nighttime training activities. Camp Rilea should work with Northwest Line on the usage and placement of lighting to minimize off-installation impacts. <ul style="list-style-type: none">Permanent lights at the VOLTA Facility should be retrofitted with shielding devices so that it is focused on the VOLTA site and does not spill into other areas.All temporary lights, to the extent possible, shall be oriented to face inward to Camp Rilea.	Camp Rilea	2014											

4.9 Camp Rilea JLUS

Please see the next page.

4.10

Alternative Energy Development

4.10.1 Key Terms

Wind Farm – A series of wind turbines that generate electricity and function as a power plant.

Windmill (Wind Turbine) – A structure designed to use the movement of wind to move blades in a circular motion, creating mechanical energy that can be used to drive machinery, such as grinding grain or pumping water.

4.10.2 Technical Background

Wind turbines create frequencies that can interfere with radio transmissions between air traffic controllers and aircraft or other types of communications devices. Recent studies indicate that large numbers of wind turbines located between five and eight miles from a radar system can have a negative impact on the system and interfere with readings. In some cases, the spinning blades are shown to cause “ghosts” (up to the size of a 747 aircraft) on radar readings, which look like an unknown aircraft or occurrence and cause security concerns, or can act as a “wall” where radar cannot see through the blades. If an aircraft is flying near this “wall,” then it could potentially not be seen by the radar. This is of particular concern in times of aircraft malfunction when communication and tracking by the

radar system is imperative for safety. The Air Force has identified that wind turbines will have the greatest impact on Digital Air Surveillance Radar, Precision Approach Radar, and other navigational aids. This interference can also interfere with monitoring bird activity on radar, which could lead to additional bird and aircraft strike hazard concerns. The impacts to radar are increased with height and the number of wind turbines; however, the greatest impact is caused by their location in proximity to the radar system. Although research is still being conducted, it is not fully known how tall, large, or how many windmills must be present to fully interfere with radar operations to a point that they are compromised.

Source: “Report to the Congressional Defense Committees: The Effect of Windmill Farms on Military Readiness”, Department of Defense, Office of the Director of Defense Research and Engineering, 2006

In 2010, the DoD tried to intervene and cancel development plans for the 845-megawatt Shepherds Flat wind farm in Gilliam and Morrow Counties because of their proximity to a radar facility near Fossil, Oregon. Many months were spent between the DoD and the developers to work out logistics and assess the potential impacts of the wind farms on the radar facility, but eventually the DoD conceded and the Shepherds Flat project is currently underway, and scheduled to be completed in August 2012. It is projected to be the largest land-based wind farm in

the world. The DoD is seeking equipment and technology upgrades to mitigate the potential interference and impacts that the wind farm will have on that facility.

4.10.3 Existing Tools

Local Tools

Clatsop County Comprehensive Plan Goals and Policies

The Clatsop County Comprehensive Plan lists goals and policies regarding current and future development within the County. One of the policies for open space states that “Development shall not be allowed to impair the feasibility of potential wind generating facilities at sites identified as appropriate for such generation.” In addition, the Northeast Community Plan and the Seaside Rural Community Plan (both smaller portions of the County) encourage the use of solar and wind energy generation facilities. Development of such facilities in these areas is not likely to impact operations at Camp Rilea.

Clatsop County Land and Water Development Use Ordinance – Clatsop County Standards Document

Chapter 3, Section S3.020 of the Clatsop County Standards Document provides height limitations for windmills within the County. It states that windmills shall not be taller than 35 feet above either the average height of the surrounding treeline or the tallest structure within 250 feet of the windmill. If there is no structure within 250 feet of the windmill site, then the windmill shall not be taller than 70 feet. However, the document does not identify how the height is measured, whether the maximum height is measured from the tallest tip of the windmill blade, or the height of the tower, excluding the blades.

Oregon Department of Energy

The Oregon Department of Energy (ODOE) strives to ensure that the State has an adequate supply of affordable, reliable, and safe energy to support its residents and economy. ODOE also works to conserve energy and develop clean and renewable energy sources, such as wind energy. ODOE coordinates with the seven-member Oregon Energy Facility Siting

Council to oversee the development of large energy facilities and transmission corridors. All proposed energy facilities must be thoroughly reviewed by the Council and receive a site certificate. This review process ensures that the site standards of the facility will protect the public interests and conserve Oregon’s natural resources, from the time it is built to the time that it is decommissioned.

Territorial Sea Planning

In 1977 the US Department of Commerce approved the State of Oregon Coastal Management Program, prepared pursuant to the Coastal Zone Management Act of 1972. In 1987, the State of Oregon adopted the Oregon Ocean Resources Management Program, a program of ocean resource planning and management. This program is part of Oregon’s coastal management program. The Oregon Ocean Resources Management Program consists of:

- 1) Applicable elements of the Oregon Coastal Management Program approved by the US Secretary of Commerce on July 7, 1977, and as subsequently amended pursuant to the Coastal Zone Management Act of 1972, including statutes that apply to coastal and ocean resources, those elements of local comprehensive plans of jurisdictions within Oregon’s coastal zone as defined in the Oregon Coastal Zone Management Program which may be affected by activities or use of resources within the ocean, and those statewide planning goals which relate to the conservation and development of ocean and coastal resources;
- 2) The Ocean Policy Advisory Council or its successor;
- 3) Those portions of the Oregon Ocean Resources Management Plan that are consistent with ORS 196.405 to 196.515; and
- 4) The Territorial Sea Plan as reviewed by the council and submitted to the agencies represented on the council.

In Oregon, the Department of Land Conservation and Development (DLCD) is designated the primary agency for coordination of ocean resources planning. DLCD is currently involved in a process of updating the

Territorial Sea Plan, which was last amended in 1994, to address offshore renewable energy development. Oregon statute provides that the Oregon Ocean Resources Management Plan and Territorial Sea Plan shall be compatible with acknowledged comprehensive plans of adjacent coastal counties and cities.

In 2010 Clatsop County initiated an effort to plan for its territorial sea, which extends approximately 3.5 miles outward from the shore. The County process has focused on the adoption of a new Goal 19 (Ocean Resources) Element to the Comprehensive Plan, and adoption of policies under other planning goals. Together these will provide a framework for the County's participation in the review of any proposal for renewable energy development off the County's shore. This participation is anticipated to take place under a Joint Agency Review Team framework, which is established in part Five of the Territorial Sea Plan.

The Oregon Military Department has adopted a "net zero" energy use policy for its facilities, including the one at Camp Rilea. It is actively evaluating options for alternative energy development to serve Camp Rilea, including offshore wave and wind energy. Should an offshore energy facility be proposed off the shores of Clatsop County, it would be submitted to the Oregon Department of State Lands (DSL) for lease approval and reviewed as provided under the Oregon Territorial Sea Plan.

Warrenton Development Code

The Warrenton Development Code does allow for solar collectors and wind energy systems in the Low Density Residential (R-40) District, with a maximum building height of 40 feet. This height is well below the height that would impair flight operations.

Issue ALT-1

Potential for Future Wind and Solar Energy Development. The development of wind turbines could present vertical obstructions for aircraft and the development of certain types of solar energy facilities could create light and glare impacts.

The City of Warrenton allows the development of solar and wind energy-generating systems within the Low Density Zoning District. This zoning district abuts the northern boundary of Camp Rilea. Although these types of uses are allowed on the land adjacent to Camp Rilea, the maximum height of 40 feet that they can be is not tall enough to impact helicopter flights, as they typically fly at greater than 500 feet when outside the Camp Rilea boundary when possible.

Similarly, the maximum height that windmills can be in Clatsop County is 35 feet taller than the nearest structure or average tree line height within 250 feet away, or 70 feet if no structure or tree line is within that distance. There are currently no structures near Camp Rilea's border or along the flight route from the Astoria Airport to Camp Rilea that are tall enough that a nearby windmill would impact flight operations if it was built at an additional 35 feet in height.

There is currently a small windmill, which is approximately 60 feet tall, located within Camp Rilea along its southeast boundary. This windmill is located within a zone where its use is allowed. The size of this windmill is small enough that it does not impact flight operations, based on flight take-off and landing patterns of helicopters using Camp Rilea. Camp Rilea personnel have confirmed that it does not pose a vertical obstruction concern for pilots.

In the past, the surfaces of solar panels were reflective in nature and had the potential to cause glare. Modern solar panels are generally designed so that they do not create excess glare and would not interfere with aircraft pilots' vision when flying over them. Some residential homes, businesses, or other facilities may have personal solar panels installed on their roofs for energy usage, but there are not likely to be any large-scale solar facilities located within proximity to Camp Rilea in the future.



The windmill on Camp Rilea's southeastern border

It is not likely that there will be any alternative energy facilities constructed in the areas surrounding Camp Rilea that would interfere with operations at the installation; however, it would be beneficial for Clatsop County to be proactive in the event that any proposals for such a development are considered in the future.

Issue ALT-2	Wind Development Impacts to Radar. If wind farms are developed near Camp Rilea in the future, they could have an impact on the radar site's ability to function correctly due to interference caused by wind turbines spinning.
------------------------	--

Oregon currently has a wide array of wind energy-generating facilities in operation and a number of facilities currently being proposed, under review, or under construction. The majority of these developments are in the eastern half of Oregon, in the northern counties. The distance away from the radar facility at Camp Rilea does not pose an issue of interfering with the radar's operations.

There are no current plans within Clatsop County to develop large-scale wind energy-generation facilities, and in the foreseeable future it is likely they will continue to be developed in the eastern portion of the State. However, Clatsop County should take measures to protect the future interests of Camp Rilea's radar facilities in order to be proactive for the installation. Residential windmills are not likely to cause any disturbance with the radar facility's

operations and should continue to be encouraged where they are appropriate.

Issue ALT-3	Lack of Alternative Energy Sources in Clatsop County. There are several sources of potential alternative energy production within the region around Camp Rilea that are not being utilized or adequately explored.
------------------------	---

Clatsop County historically relies on conventional sources of energy. Although some types of alternative energy facilities can impact military operations, other can help to supplement the regional power grid when operated correctly, and not interfere with military missions. Likewise, alternative energy facilities at military installations can successfully be implemented without negatively impacting the local community.

Clatsop County is exploring the potential for developing wave energy facilities along the Pacific Coast. This venture is new to Oregon, which brings its own issues of how to go about "zoning" water areas to allow for this type of use to occur. Much research and planning is still needed before wave energy facilities can become a reality in Oregon, and how they will relate to surrounding uses or the potential impacts that might be associated with them.

ORNG was selected as the only Army National Guard state in the country to act as a "pilot" state for "Net-Zero" Energy under an initiative sponsored by the Department of the Army. By Army definition, "A Net Zero ENERGY installation produces as much energy on site as it uses over the course of a year." So, as an organization, energy use is reduced, energy efficiency is maximized, and alternative energy is considered in meeting the Net Zero Energy goal.

Under the leadership of the Governor, Oregon is attempting to be a leader in developing wave energy. As a Net Zero Energy pilot state, OMD is attempting to use this emphasis to look at options available at Camp Rilea. Two obvious potential sources of alternative energy that can be produced on site are wind and wave energy developments. Although back-up power is provided to the camp via generators fuelled with diesel, wind, and / or wave energy would enhance

Camp Rilea's independence from other sources (energy security and / or energy independence) and further its Net Zero Energy efforts, both of which enhance its ability to meet its emergency service mission requirements for the North Oregon Coast in time of floods, wind storms, tsunamis, and other natural or man-made disasters.

Camp Rilea is currently exploring some alternative energy methods (including solar, wave, and hydro), and in general, a national push for military installations to have a larger percentage of their overall power supply from alternative energy sources is underway. During a large storm in 2007, much of the Clatsop Plains was without power for several weeks. Camp Rilea never lost power thanks to the use of backup generators, and it was at times, one of the only facilities with power. It would be beneficial for other entities, such as Clatsop County, the City of Warrenton, and state agencies to pursue alternative energy and backup power generation alternatives in the event of an emergency.

OMD has expressed interest in the development of offshore energy production as well. OMD hired Science Applications International Corporation (SAIC) to conduct a nine-month feasibility study of offshore energy devices that could help to enhance the power supply at Camp Rilea. The first site visit by SAIC's ocean renewable energy team to Camp Rilea was on November 15, 2011. Although additional study and analysis will be needed, initial survey indicates there is potential for the siting of ocean energy facilities near Camp Rilea. Concurrent with this process is outreach to Clatsop County and other stakeholders for their input on the matter.

During the proposal of any new alternative energy facilities, Camp Rilea will address potential impacts with alternative energy source siting in a manner that minimizes or avoids interference with the Camp's primary military and emergency service missions and potential environmental issues, as well as the regional civilian community. The County and City of Warrenton also should ensure alternative energy development opportunities and any resultant impacts for areas outside of Camp Rilea within the Clatsop Plains are adequately addressed so as not to interfere with military and emergency operations on the site.

Strategies

The following strategies are recommended to address the issues identified in this section.

Issue	ID	Strategy	CRIA	Timing	Local		State					Federal			Tribal Gov't		
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS		USCG	USFWS
ALT-1 ALT-2 ALT-3	A	Inform Alternative Energy Proposals Clatsop County and City of Warrenton should inform Camp Rilea and allow them to comment on any proposals for alternative energy facilities, in particular, wind, wave, and tidal power-generation facilities. In addition, Camp Rilea should inform nearby residents of similar proposals on-installation and allow for comment.	General	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>					
ALT-1	B	Update Clatsop County Standards Document Windmill Description Chapter 3, Section S3.020 of the Clatsop County Standards Document should be revised to specifically state what point of reference on a windmill is measured when determining the height of the structure (i.e. tip of the tallest blade, height of the main tower, etc.).	General	2014	<input checked="" type="checkbox"/>												
ALT-1	C	DoD Siting Clearinghouse The Department of Defense Siting Clearinghouse requirements and standards published in Title 32, Code of Federal Regulations, Part 211 shall advise and guide the process to facilitate the early submission of renewable energy project proposals to the Clearinghouse for military mission compatibility review.	General	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
ALT-3	D	Ocean Development Coordination All proposed alternative energy or other types of development, within ocean areas that are inside the proposed Army Corps of Engineer Danger Zone (See Section 4.3 Safety) shall be coordinated with OMD for input on potential impacts from weapons firing. Other Entities: Department of State Lands, US Army Corps of Engineers, National Oceanic and Atmospheric Administration, Bureau of Ocean Energy Management	Marine Protection	On								<input checked="" type="checkbox"/>					

4.11

Cultural / Historic Sites

4.11.1 Key Terms

Cultural Site – A cultural site is a location that has been identified as historic significance due to its connection with historic events or design features. Cultural sites may prevent development on the base, apply development constraints or require special access by Native American tribal governments or other authorities.

ICRMP – Integrated Cultural Resources Management Plan (ICRMP) is a five year plan for compliance with all applicable laws and regulations related to cultural resources.

National Historic Preservation Act – federal legislation that requires agencies to consider the effects of a proposed project on properties listed in, or eligible for listing in, the National Register of Historic Places.

State Historic Preservation Officer – Each State has a designated State Historic Preservation Officer (SHPO) who carries out many of the responsibilities associated with historic preservation, including survey, evaluation, and nomination of significant historic buildings, sites, structures, districts, and objects.

National Register of Historic Places – The National Register of Historic places is the US's official list of the country's historic places (both public and private) deemed to be worthy of preservation. The National Register is maintained by the National Park Service, as authorized by the National Historic Preservation Act of 1966.

4.11.2 Technical Background

The protection of cultural and historic sites is provided through the National Historic Preservation Act (NHPA) as a means to protect historical and cultural foundations of the United States. NHPA addresses the preservation of cultural resources including historic, cultural, and archaeological resources. Documentation of cultural resources as well as NHPA compliance activities must be coordinated through the State Historic Preservation Officer (SHPO). As a state agency, the ORNG is also subject to Oregon cultural resource laws and regulations when operating on state lands

Cultural resources typically occur in three forms: archaeological, architectural, and traditional cultural. Archaeological resources are considered material remains of past human life or activities that provide scientific or humanistic insight into past human

cultures. Architectural resources are structures including standing buildings, bridges, dams, canals, etc. of historical or aesthetic significance. Traditional cultural resources include properties that can be eligible for inclusion on the National Register of Historic Places due to their association with cultural practices or beliefs of a living community. They can also include areas that are not eligible for registry, but still hold the same value to the community.

Special considerations must be made for any development or expansion of military missions considered for areas with cultural significance.

4.11.3 Existing Tools

National Historic Preservation Act

Issues and related strategies have been developed based on guidance provided through the National Historic Preservation Act (NHPA) of 1966, which requires federal agencies to consider the effects of a proposed project on properties listed in, or eligible for listing in, the National Register of Historic Places. Because no specific action is being proposed as part of this planning process, the review of cultural resources is focused on the identification of existing resources and not potential effects that would result from a specific proposed action.

Integrated Cultural Resources Management Plan

DoD Instruction 4715.3 and AR 200-4 require military installations to develop an Integrated Cultural Resources Management Plan (ICRMP) as an internal tool for integrating and managing cultural resources while maintaining ongoing military missions and readiness. The Oregon Military Department completed an ICRMP for four facilities, including Camp Rilea, in 2007. The ICRMP defines program shortcomings and forecasted actions to address shortcomings at the state level and at military facilities.

Lewis and Clark National Historic Trail Comprehensive Management Plan and Strategic Plan

The NPS is in the process of developing the Comprehensive Plan (CMP) for the Lewis and Clark National Historic Trail. The purpose of the plan is to guide administration and management of the Trail and provide long range goals for management of the Trail.

The existing Management Plan was developed in 1982 and outlines a strategy for commemorating the Lewis and Clark journey through the creation of a trail that retraces their journey and highlights the many historic landmarks associated with the expedition. This Plan recommended the development of 27 Trail segments and 13 historic sites. The Plan outlines how cooperative agreements between State and local governments and the Department of Interior will determine the manner in which the Trail is managed. The portion of the Trail that falls within the Camp Rilea JLUS study area is managed by staff of the Lewis and Clark Historical Park in Oregon.

Oregon Heritage Information Management System

The Oregon Heritage Information Management System (OHIMS) is recognized as the Oregon/Washington region-wide data repository for cultural resource data. It is an online database that catalogs, and provides basic information about, all historic resources throughout Oregon.

Issue CH-1	Protection of Cultural Heritage. Camp Rilea and the surrounding area have significant Native American and historic resources that need to be protected.
---------------	--

Camp Rilea maintains a recently completed ICRMP whose overarching purpose is the protection of existing resources. According to this plan, most cultural resource sites are located outside of the development areas, and the presence of historic and archaeological resources does not significantly constrain development.

The most recent review of Camp Rilea's facilities, conducted in coordination with the SHPO, was conducted in 1999 as part of an installation-wide effort to identify eligible resources within Camp Rilea. This review resulted in the identification of 34 buildings and several miscellaneous structures eligible for listing on the National Register of Historic Places, all of which are located within the cantonment area. Several of these structures have since been demolished in consultation with the SHPO due to a lack of significance.

This survey resulted in the identification of two buildings and one structure in the northwest corner of Camp Rilea (one within the Camp boundary and the other two outside) that had not been previously inventoried. These resources were constructed during World War II as fire control stations for coastal defense batteries at the mouth of the Columbia River. They have been recommended as eligible for the National Register and SHPO has concurred with this recommendation. There are no historic districts at Camp Rilea.

A Historic Landscape Assessment was completed for Camp Rilea in March 2003. The SHPO concurred with the overall assessment and recommendation of a Historic Military Landscape at Camp Rilea focused on the cantonment area.

Consultations with the appropriate Native American tribes conducted as part of the ICRMP process have not identified any Native American issues specific to Camp Rilea. Areas that have been identified on the installations as having cultural significance have been classified as restricted from training and operational use.

There are several cultural resources located outside of the installation boundary but within the study area, as described below.

Lewis and Clark National Historical Park and Trail

The Lewis and Clark National and State Historical Parks were dedicated in 2004 to commemorate the Lewis and Clark Expedition. The Park is administered

by both the NPS and States of Oregon and Washington.

The Lewis and Clark State Park Trail is a National Park Service (NPS) historic trail that stretches 3,700 miles from Wood River Illinois to Oregon. The trail preserves and protects the remnants of the historic route of the 1804-1806 Corps of Discovery Expedition, including American Indian perspective and makes this piece of heritage available to the public for enjoyment, cultural experience, understanding, and appreciation. The Fort to Sea portion of the trail in Clatsop County is on state land and crosses onto the Oregon Military Department's Camp Rilea where it runs along the eastern and southern boundary ends at Sunset Beach, which is owned by Oregon State Parks and Recreation Department. This trail became part of the Lewis and Clark Trail in 2005. Planning and design of the trail was coordinated with the Oregon Military Department, thus compatibility issues resulting from the trail's cultural value and the military operations have not been identified as a concern.

Clatsop Plains Pioneer Presbyterian Church

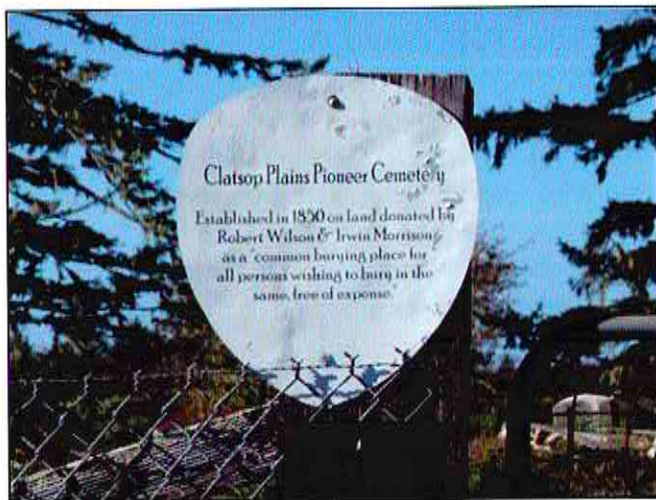
The Clatsop Plains Pioneer Church is located on Patriot Way in Warrenton, adjacent to the eastern border of Camp Rilea. The church was constructed in 1927 and is the oldest surviving in Clatsop County. The church is also the oldest continuous Presbyterian Church located west of the Rocky Mountains that served the white settlers. This religious structure is constructed of brick and sandstone and is characterized as Classical Revival style. Although the church is not listed on the National Register, it has been identified as eligible. There are currently no compatibility issues or potential effects on this historic resource that result from its location near the Camp Rilea border; however, additional civilian development or a change in military operations would require consideration of this resource.



Pioneer Presbyterian Church

Clatsop Plains Cemetery

The Clatsop Plains Cemetery is associated with the Clatsop Plains Pioneer Presbyterian Church, located on the same site as the church. The site was established as a cemetery in 1840. Although no headstones remain on the site, it has been identified as the burial grounds for several of the early settlers to the area. The cemetery is not listed on the National Register; however, it is an eligible resource.



Clatsop Plains Cemetery

Private Resource

There are two private resources located in the vicinity of Camp Rilea that are listed on the National Register, both located in Warrenton. The Warren House (Warren, Daniel Knight House), constructed in 1885, is a Queen Anne single dwelling that was individually listed in 1988.

The Goodwin-Wilkinson Farmhouse, located in Clatsop County in the vicinity of Warrenton, is a farmstead house designed in the Gothic Revival style. The building was constructed in 1862 and listed on the National Register in 1992.

Archaeological Resources

An archaeological field survey and subsurface testing was conducted on Camp Rilea in 1999 by Applied Archaeological Research. No archaeological sites or isolates were identified during this survey, and no archaeological deposits, sites, or isolates were located within the study area.

Although no known archaeological resources have been identified or documented within the study area, The Oregon Department of Transportation's planning process for the improvement of Highway 101 identifies the general area extending along the northwest coast in the vicinity of Highway 101 as having a high probability for intact, significant precontact and historic period archaeological resources. Previous archaeological resource studies conducted in the area concluded that four sites are potentially eligible for inclusion in the National Register of Historic Places (NRHP). All of the sites are located near the Highway 101 at Dellmoor Loop Road intersection. Additionally, the Confederated Tribes of the Grand Ronde consider the study area a Traditional Cultural Property, which may be eligible for NRHP designation. Correspondence with the Confederated Tribes of the Grand Ronde during the early stages of this project indicates a strong interest in any proposed project that would affect this area; however, no changes are proposed at this time.

Concern for the potential for ancient burial grounds to be located within the JLUS study area was expressed during the JLUS public involvement process; however, no documentation or evidence of such resources exists. Due to the location of both eligible and listed cultural resources paired with the regulatory requirements associated with the protection of cultural resources, the potential for compatibility issues to arise is minimal.

Strategies

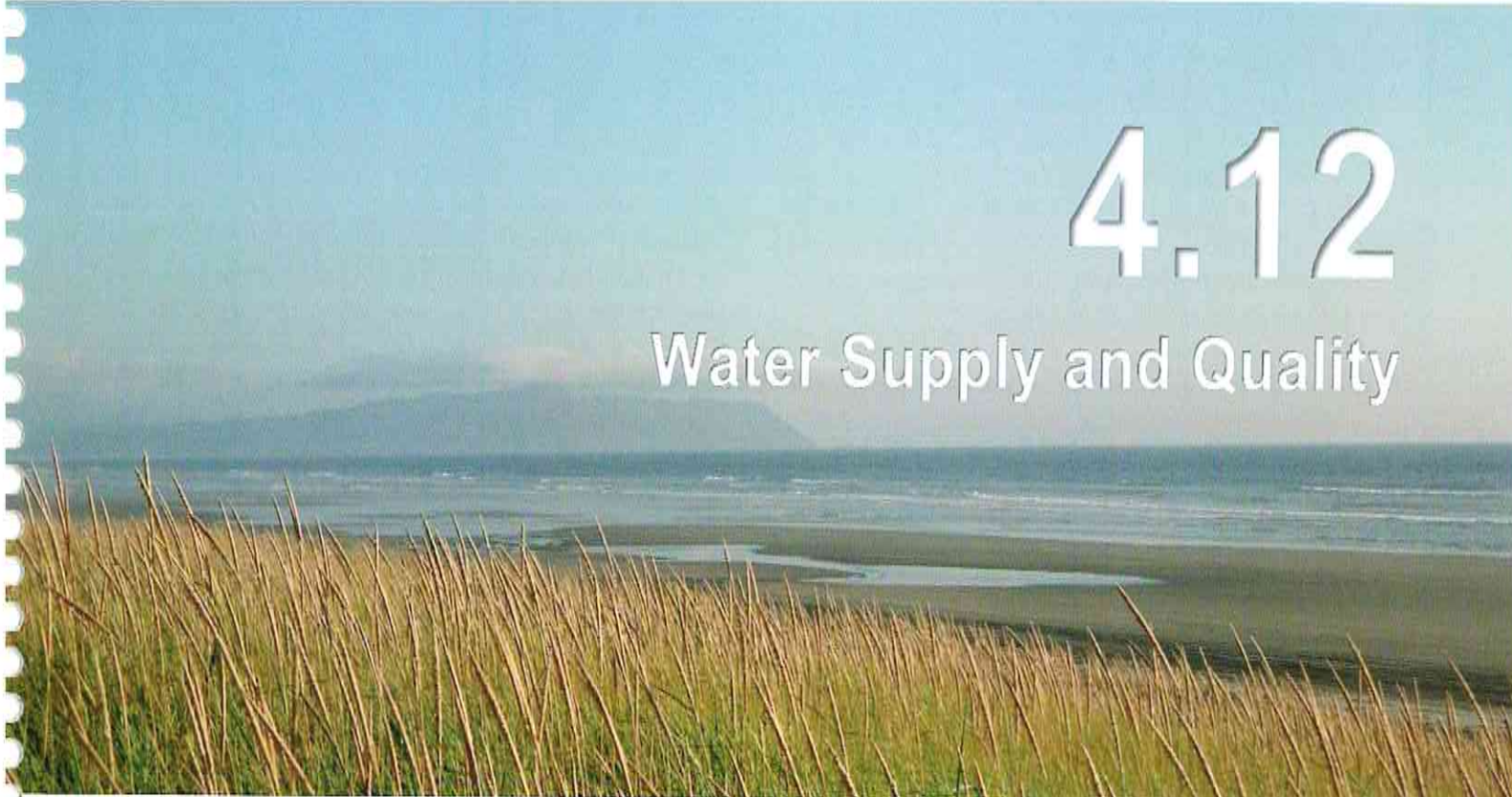
The following strategies are recommended to address the issues identified in this section.

Issue	ID	Strategy	CRIA	Timing	Local		State						Federal				
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS	USCG	USFWS	Tribal Gov't
CH-1	A	Coordination Between Tribal Governments and Other Entities Continue coordination and consultation of proposed changes with tribal governments and organizations within the study area.	Camp Rilea	On													
CH-1	B	Consider Historic Context Consider the cultural and historic setting of the Pioneer Presbyterian Church and Clatsop Plains Cemetery when siting and designing new facilities near these locations on Camp Rilea. Other Agency: SHPO	Camp Rilea	On													

Please see the next page.

4.12

Water Supply and Quality



4.12.1 Key Terms

Aquiclude — An aquiclude is an impermeable body of rock or stratum of sediment that acts as a barrier to the flow of groundwater.

Aquifer — An aquifer is a layer of porous substrate that contains and transmits groundwater. When water can flow directly between the surface and the saturated zone of an aquifer, the aquifer is unconfined.

Base Flow — Base flow is groundwater seepage into a stream channel.

Dunal — Dunal refers to hills of sand created by the wind.

Effluent — Effluent is treated or untreated wastewater that flows out of a wastewater treatment plant, sewer, or industrial pipe (called an outfall), generally discharged into surface waters.

Eutrophication — Eutrophication is the process that bodies of fresh water undergo as a result of inorganic plant nutrients (e.g. nitrate, phosphate). It may occur naturally but can also be the result of human activity (cultural eutrophication from fertilizer runoff and

sewage discharge). Increased sediment deposition can eventually raise the level of the lake or river bed, allowing land plants to colonize the edges, and eventually convert the area to dry land.

Hydrostatic Pressure — Hydrostatic pressure is the pressure exerted by a fluid at equilibrium at a given point within the fluid, due to the force of gravity. Hydrostatic pressure increases in proportion to depth measured from the surface because of the increasing weight of fluid exerting downward force from above.

Leachate — Leachate is any liquid that, in passing through matter, extracts solutes, suspended solids, or any other component of the material through which it has passed.

Maximum Contaminant Level (MCL) — MCLs are standards that are set by the United States Environmental Protection Agency (EPA) for drinking water quality. An MCL is the legal threshold limit on the amount of a substance that is allowed in public water systems under the Safe Drinking Water Act. The limit is usually expressed as a concentration in milligrams or micrograms per liter of water.

National Pollutant Discharge Elimination System (NPDES) – The NPDES program was established by the federal government to control point-source discharges of wastewater.

Surface Water – Surface water is derived from waters that flow continuously over land surfaces in a defined channel or bed, such as streams and rivers; standing water in basins such as lakes, wetlands, marshes, swamps, ponds, sinkholes, impoundments, and reservoirs either natural or man-made; and all waters flowing over the land as runoff, or as runoff confined to channels with intermittent flow.

Total Maximum Daily Load (TMDL) – A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards.

Treatment Technique – For some contaminants, the EPA establishes a Treatment Technique instead of an MCL. Treatment Techniques are enforceable procedures that drinking water systems must follow in treating their water for a contaminant.

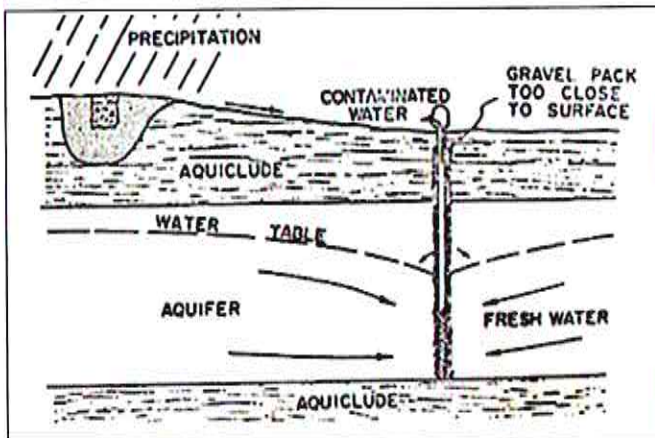
United States Environmental Protection Agency – The EPA is the agency of the federal government charged with protecting human health and the environment, by writing and enforcing regulations based on laws passed by Congress. EPA implements and enforces the provisions of the federal Clean Water Act (CWA) and Safe Drinking Water Act (SDWA), which ensures a clean and safe potable water supply for all states and territories of the United States.

4.12.2 Technical Background

One form of groundwater contamination occurs when there is a high density of septic systems, which release organic contaminants into the soil. Problems with septic systems are worsened by the simultaneous reliance on private wells for drinking water. Statistics show that as much as one-half of all septic systems in operation are not functioning correctly. A common failure of a septic system is the over-inundation of soil with effluent. These conditions occur when soil is

clogged with waste particles or other substances and effluents cannot move through it. In these circumstances, wastewater will move from the drain line to the surface. When effluent comes to the surface it becomes water runoff that can wash into surface waters or inadequately sealed wells and contaminate them. Figure 4.12-1 illustrates this process.

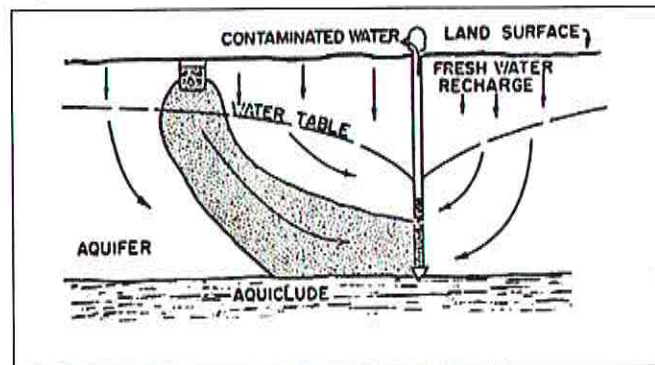
Figure 4.12-1. Illustration of Over-Inundated Soil



Source: <http://www.cee.vt.edu/ewr/environmental/teach/gwprimer/group03/sgwppollute.htm>

Contamination can also happen when pollutants from the drain field move too quickly through the soil and into the groundwater. When there is a large volume of wastewater moving through the system, soils with high permeability can be rapidly overloaded with organic and inorganic chemicals and microbes, allowing rapid movement of pollutants into the groundwater. An example of this is shown in Figure 4.12-2.

Figure 4.12-2. Illustration of Overloaded Soil



Source: <http://www.cee.vt.edu/ewr/environmental/teach/gwprimer/group03/sgwppollute.htm>

According to the EPA the presence of the organic compounds identified in Table 4.12-1 indicates drinking water pollution.

Table 4.12-1. Water Contaminants and Quantities

Contaminant	Maximum Contaminant Level Goal (MCLG mg/L)	Maximum Contaminant Level (MCL mg/L)	Potential Health Effects from Long-Term Exposure Above the MCL (unless specified as short-term)
Cryptosporidium	Zero	Treatment Technique	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)
Giardia lamblia	Zero	Treatment Technique	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)
Total Coliforms (including fecal coliform and E. Coli)	Zero	5.0%	Not a health threat in itself; it is used to indicate whether other potentially harmful bacteria may be present
Viruses (enteric)	Zero	Treatment Technique	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)
Nitrite (measured as Nitrogen)	1	1	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die; symptoms include shortness of breath and blue-baby syndrome
Acrylamide	Zero	Treatment Technique	Nervous system or blood problems; increased risk of cancer

4.12.3 Existing Tools

In addition to the plans and programs outlined below, the following play an important role in water supply and quality and are reviewed in Chapter 3, Plans and Programs.

- Safe Drinking Water Act
- Clean Water Act
- Oregon Groundwater Protection Act

State and Local Programs

Oregon Army National Guard (ORARNG) Regulation 210-4

This ORARNG regulation establishes a Pollution Prevention Plan for all ORARNG installations. It provides information about the existing sources of potential pollution on each installation and identifies practices that will ensure compliance with federal and state laws as well as minimize the risk of pollution.

Integrated Water Resources Plan

The Integrated Water Resource Plan is a State of Oregon project aimed at assessing the quality of

water resources throughout the State and improving water quality management practices through the development of recommendations. The plan is still being developed and final recommendations are not available; however, draft recommendations encourage continued monitoring of groundwater and surface water resources.

Oregon Department of Environmental Quality (DEQ), Onsite Septic System Programs

The DEQ implements the rules and regulations contained in Oregon Revised Statutes (ORS) – Chapter 340, Division 71 (Onsite Wastewater Systems) and Division 73 (Constructions Standards) as well as ORS 454 (Sewage Treatment and Disposal Systems) and ORS 468B (Water Quality). The regulations set forth requirements for the installation, construction, and management of onsite septic systems and require DEQ to issue permits and certify and license installers and pumpers. The standards prohibit the issuance of septic table permits when the groundwater is within 5.5 feet of the ground surface. Such requirements help to manage the potential contamination of groundwater but don’t restrict the number of septic tanks that may be installed in the Clatsop Plains area.

Clatsop County Comprehensive Plan

The goals and policies section of the Comprehensive Plan recommends the following strategies for the preservation of water quality in the County:

- Allow for on-site wastewater disposal.
- Rehabilitate the Camp Rilea wastewater spray irrigation field with a cover material that is conducive to plant growth.
- Close the Warrenton landfill and prohibit further leachate contamination.
- Adhere to the following wastewater disposal practices in the unincorporated Clatsop Plains areas:
 - Continue to implement current zoning of 1 acre lot size and permit the use of septic tanks and disposal fields.
 - For lots between ½ acre and 1 acre require a septic tank with a low pressure disposal field or sand filter.

- For lots between 10,000 square feet and ½ acre require septic tanks with sand filter and low pressure disposal field.
- Prohibit septic tanks on lots less than 10,000 square feet.

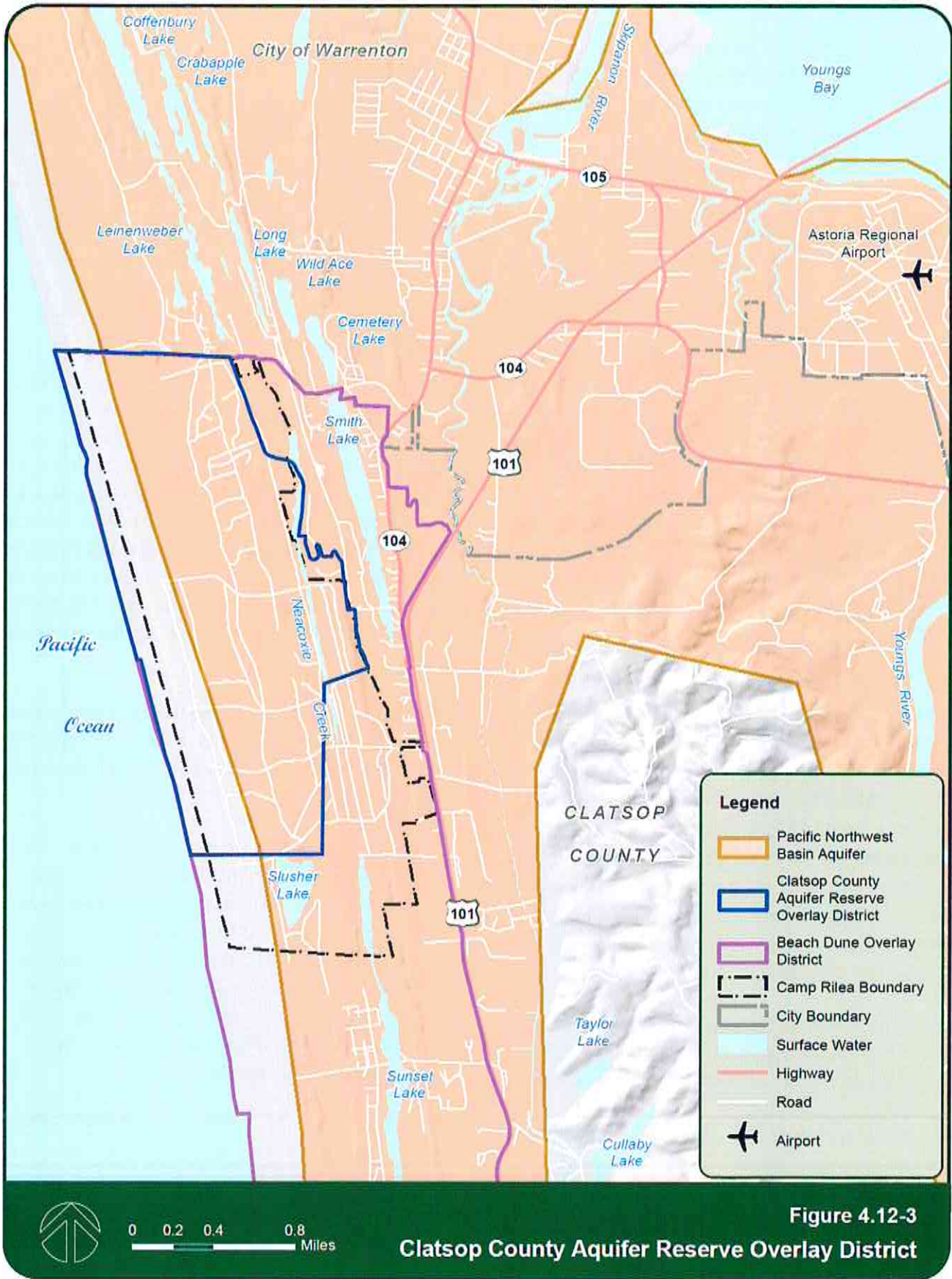
- Establish aquifer reserve areas (including 2.5 square miles in Warrenton, all of Camp Rilea and 40 acres in Clatsop County).
- Control land uses to minimize contamination from pollutants.
- Continue the groundwater monitoring programs as part of the DEQ statewide well monitoring program.

Clatsop County Land and Water Development and Use Ordinance

To help manage the impacts of development on groundwater, the Clatsop County Land and Water Development and Use Ordinance establishes two overlay districts. One is the Aquifer Reserve Overlay District (AROD), which is meant to preserve the aquifer as a source for future drinking water by limiting the use of land over it. The AROD prohibits the following activities within the overlay zone, unless they are determined by the Community Development Director to not adversely impact the aquifer:

- Construction of subsurface sewage disposal systems.
- Application of fertilizers in amounts and concentrations which would add nitrates to the groundwater.
- Construction of oil and gas storage facilities unless they are adequately protected to prevent spillage from reaching groundwater.
- Other activities which, in the opinion of the Community Development Director, would cause the degradation of groundwater as a potable water source.

The AROD covers a large portion of Camp Rilea, as shown on Figure 4.12-3. The County currently implements the AROD.



The other overlay district is the Beach Dune Overlay District (BDOD) in which activities and uses that might compromise beach dune resources are restricted. One of the general development guidelines of this overlay zone require that development not draw down the groundwater supply.

Final Report Regional Lake Management Planning

This report was completed by the DEQ in 2005 and provides an overview of the condition of lakes within the Clatsop Plains region. The report explores the relationship of the lakes and groundwater in this region to determine the extent to which they may be co-contaminating each other. The study attributes the high concentration of septic systems in the region and the presence of invasive species as a potential cause of low water quality conditions. The report recommends lake-specific management plans, short and long-term management strategies, as well as regular monitoring of the lakes, to document changes in water quality that may result from weed management.

North Coast Subbasins Water Quality Management Plan (WQMP)

The WQMP was developed by the DEQ in 2003 and provides a comprehensive overview of the conditions of the subbasins that comprise the North Coast Basin. The purpose of the WQMP is to provide a strategy for implementing the TMDL for subbasins known to be contaminated. The WQMP assesses water pollution levels and sources in each of the subbasins and then identifies a management plan for minimizing this pollution. The plan recommends strategies such as:

- modification of wastewater treatment permits,
- modification of general and minor permits,
- implementation of existing management plans, and
- public review of TMDL and management plans.

Issue WSQ-1	Groundwater Contamination. Camp Rilea sits atop the North Coast Basin aquifer, which is a regionally important groundwater resource. All types of development within the region over sensitive water resources add some degree of potential to impact water quality, most notably the high concentration of septic tanks in the region.
----------------	--

The North Coast Basin is a dunal aquifer located between the Columbia River and the City of Seaside in the Clatsop Plains region. Clatsop Plains is a complex of unconsolidated dunal sands, which contains numerous inter-dunal lakes whose base flow comes from groundwater supplied by the North Coast Basin. The groundwater in the western half of the Camp moves towards the ocean, while the groundwater in the eastern part of the Camp moves both south towards Sunset Lake and north towards Neacoxie Creek. Groundwater from the aquifer surfaces at Slusher Lake.

The North Coast Basin aquifer is the primary drinking water source for residents of the Clatsop Plains. According to the Groundwater Control Report for the North Coast Basin:

There are over 2,000 water rights for groundwater use in the basin. Over 200 public drinking water systems serving 77,000 people in the basin use groundwater either exclusively or in combination with surface water. Another 4,000 domestic water wells in the basin provide drinking water to rural residences and areas not served by public water providers. (pg.48)

The proximity of military training activities, wastewater treatment facilities, and communities dependent on septic tanks in the region could expose the aquifer to lead, nitrates, and bacteria. These potential sources of groundwater contamination are discussed below.

Potential Sources of Groundwater Contamination

Expended Munitions

Since Camp Rilea is used as a live-fire training range there are expended munitions located in designated areas on the installation. Some types of munitions contain hazardous substances such as lead and perchlorate, which can be absorbed by the soil and infiltrate into groundwater sources, thereby contaminating them. According to a study called "Communities in the Line of Fire: The Environmental, Cultural, and Human Health Impacts of Military Munitions and Firing Ranges" (June 2002), prepared by the Military Toxics Project:

Sources of toxic contamination from munitions and their constituents at military testing and training ranges may be divided into several categories. Small arms ammunition contaminated thousands of ranges across the country with lead." (pg.1)

In 2008, the Oregon Military Department (OMD) conducted an evaluation of the aquifer as part of an effort to install water supply wells at Camp Rilea. The evaluation was comprehensive in nature, included "primary" and "secondary" EPA drinking water standards, and was coordinated with the Drinking Water Program of the Oregon Health Division. The evaluation took samples from on- and off-installation sources. The results of this testing are shown in Table 4.12-2.

Table 4.12-2. Groundwater Testing Results for Perchlorate and Lead at Camp Rilea (2008)

	Initial Sample	4-Hour Sample	8-Hour Sample	EPA Standard
Perchlorate (Method 314.0)	Not Detected (MDL 0.4 ug/L)	Not Detected (MDL 0.4 ug/L)	Not Detected (MDL 0.4 ug/L)	No federal standards. Recommended that water systems with 4 ug/L or greater seek alternate water sources or treatment.
Lead	0.598 ug/L	0.114 ug/L	0.103 ug/L	15 ug/L

Source: Oregon Military Department
MDL= Method Detection Level
ug/L = micrograms/liter

As shown, the levels of perchlorate and lead in the groundwater near Camp Rilea were either not detectable or below the EPA action level. Because of the outcome of these results three supply wells were developed on the west side of the second dune in a north-south orientation between the ranges and the beach. In sum, the assessment did not identify any impacts to groundwater or other human or ecological receptors, from the presence of expended munitions on Camp Rilea. However on-going well monitoring should take place to ensure the continued safety of the water.

Camp Rilea Wastewater Treatment Plant

Effluent from the on-installation wastewater treatment plant (WWTP) at Camp Rilea has been considered as a potential source of groundwater contamination in the region. Camp Rilea is the only area outside of an incorporated city in the Clatsop Plains, with a wastewater treatment facility. The facility serves a population of 125 full-time nonresidential staff with a temporary peak population of 1,200 persons during training exercises.

Camp Rilea's WWTP (identified on Figure 4.12-4) was constructed in 1978 in accordance with DEQ rules and regulations. At this time an operating permit was obtained. Over the years this permit has been renewed as required. The original permit was issued as a "beneficial use" permit, meaning wastewater had to be used for irrigation purposes. However, the OMD had trouble finding farmers to harvest what was grown on the field due to seasonal issues with precipitation, among other things. Alternatively, fences were built and the irrigation field was converted into a pasture for cattle.

Due to treated water storage capacity constraints, OMD had to obtain permit exceptions from DEQ to continue to operate the WWTP. During the last set of permit renewals, DEQ required OMD to evaluate its potential impacts to groundwater and surface water from WWTP operations. A two-year study concluded there was no impact to Sunset Lake and treated effluent was unlikely to have impacts to the underlying groundwater. DEQ recommended that OMD obtain a regular discharge permit, which did not have the same beneficial use requirements. To qualify for this permit, OMD installed rapid infiltration basins and constructed a recycled water treatment plant. This plant treats water to Class A criteria and allows for 65% reuse of the effluent on the installation. These systems are now beginning operation under the new permit, issued by DEQ in August 2011.

In sum, past groundwater monitoring activities on Camp Rilea have not identified the WWTP as a source of groundwater contamination and recent upgrades to facilities have reduced the likelihood of contamination.

Civilian Wastewater Infrastructure

Clatsop County does not provide sewer services to unincorporated areas in the County. Each of the incorporated areas within the County has designated sewer districts. Within the JLUS study area these are the Warrenton Sewer District, the Shoreline Wastewater Treatment Plant, and the Seaside Sewer District. Consequently, there are large areas throughout Clatsop County that do not have

municipal utilities and manage their wastewater through septic systems.

Some individual subdivisions in unincorporated areas operate their own wastewater treatment systems as well. The Cullaby Lake subdivision is one example. However, this treatment system is currently in failure and poses hazards for groundwater contamination.

High concentrations of septic systems are a common cause of groundwater contamination. Since the North Basin Aquifer is a high level aquifer (meaning it is at or near the ground surface) it is at higher risk of hydrostatic pressure. Hydrostatic pressure can cause buoyancy in underwater tanks and result in fracturing. Fractured tanks are likely to cause septic tanks to malfunction and leak. A high density of septic tanks, common to rural areas, increases the likelihood of aquifer contamination by bacteria.

In addition, many homes in the area are used as vacation homes and are only occupied certain months out of the year. This can affect the nitrogen cycle, or the breakdown of waste matter in the septic tanks. Conversion and removal of nitrogen is dependent upon living bacteria. The high incidence of vacation homes means that septic systems have very high loads then no load. This does not allow a living bacteria bed to form. Liquid effluent is delivered, through the extremely porous sand (32% porosity) of the Clatsop Plains, directly to the groundwater, where it resides until uptake from deep rooted plants or the groundwater intersects the numerous lakes. In essence, many systems are just directing discharging wastes into the groundwater.

According to the North Coast Subbasin Report bacteria levels have been found in a portion of the subbasin, which falls within the JLUS study area (Necanicum River). The levels of bacteria are shown in Table 4.12-3.

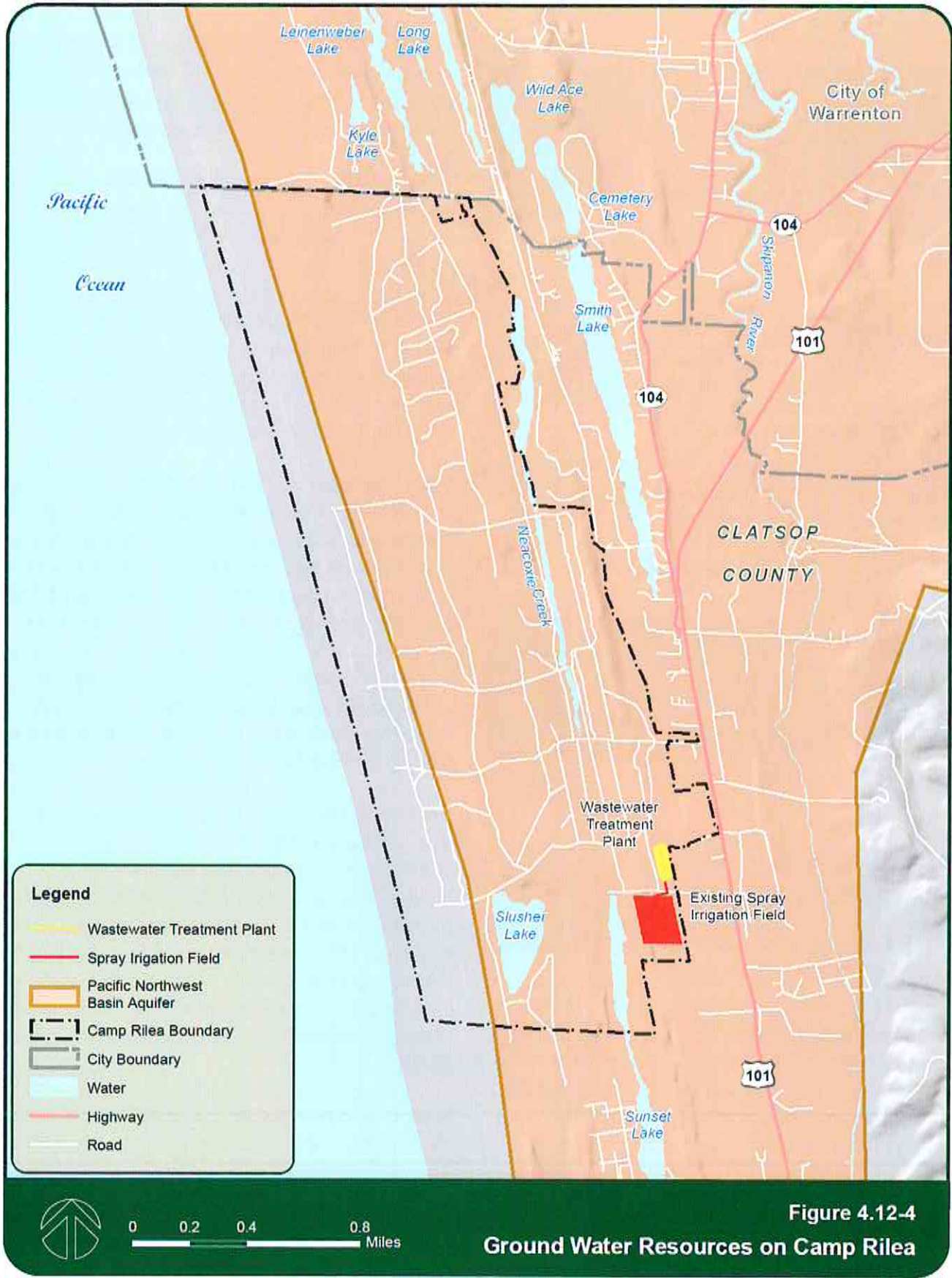


Figure 4.12-4
Ground Water Resources on Camp Rilea

Table 4.12-3. Pollutants Detected in Water Bodies near Camp Rilea

Water body	River Mile	Parameter	Season	Criterion	Year Listed
Necanicum River	0 to 5.9	E Coli	Summer	Mean of 126 MPN	2002
Pacific Ocean	26 to 30	Fecal Coliform	Year Around	Median 14 MPN	2002

Source: North Coast Subbasin Report, 2003, pg. 12

The study goes on to identify point source dischargers and likely sources of pollutants within the JLUS study area. These are listed in Table 4.12-4.

Table 4.12-4. Identified Sources of Groundwater Pollution

Legal Name	Permit Type	Nearest City	Receiving Water Body	River Mile	Pollutants Possible
City of Seaside	NPDES	Seaside	Necanicum River	0.2	Temperature and Bacteria
Shoreline Sanitary District	NPDES	Warrenton	Skipanon River	8	Temperature and Bacteria

Source: North Coast Subbasin Report, 2003, pg. 13

The report does not identify the specific source of pollution in the City of Seaside, but it can be deduced that septic tanks are likely a contributing factor. Since this report has been issued the Shoreline Sanitary District has renewed its NPDES permit with modifications to enhance the Skipanon River water quality. The permit application determines that this facility has a low potential for adversely impacting groundwater quality.

In sum, impacts to the groundwater and surface water from the use of septic tanks have been reported and detected within the JLUS study area. To maintain this status quo the placement and density of septic tanks needs to continue to be managed closely.

To help manage these issues, DEQ has established a set of permitting requirements. These requirements prohibit the issuance of septic tank permits when the groundwater is within 5.5 feet of the ground surface. Such requirements help to manage the potential contamination of groundwater but don't restrict the number of septic tanks that may be installed in the Clatsop Plains area. Therefore as the region continues to grow, the need for septic tanks will increase as will the likelihood of groundwater contamination.

Other activities that may contribute to groundwater contamination include salt water intrusion from water withdrawal. Salt water intrusion and groundwater drawdown are typically results of high levels of well-withdrawal. Saltwater intrusion is the induced flow of seawater into freshwater aquifers caused by the pumping from aquifers that are in hydraulic connection with the sea. Depending on the underground gradients, pumping may cause the migration of salt water from the sea towards a well, making the freshwater well unusable.

The Clatsop County Land and Water Development and Use Ordinance regulates these impacts on the groundwater through the establishment of the Aquifer Reserve Overlay District, which prohibits the construction of subsurface sewage disposal systems. However, if the current pattern of development in this region persists and water and wastewater infrastructure is not developed, there is an increased risk of groundwater contamination and reduced water quality.

In sum, multiple measures are being taken to minimize the impact of septic tanks on groundwater resources. An important management strategy is to continue to monitor the placement and density of septic tanks.

**Issue
WSQ-2**

Surface Water Contamination. There are several surface water resources on Camp Rilea and in the region with varying levels of contamination. Efforts to prevent contamination in these waterways and manage these resources are impacting training on Camp Rilea.

In addition to groundwater resources, Camp Rilea and the surrounding region also contain numerous surface water resources, such as estuarine marshes, freshwater lakes and backwater streams (see Figure 4.12-5).

The two main lakes on Camp Rilea are Slusher Lake and Sunset Lake. Slusher Lake is a self-contained water body, which is entirely within the boundary of Camp Rilea. Sunset Lake is only partially on-installation and flows into the Neacoxie Creek, which flows through the installation.

The portion of Sunset Lake located off-installation includes a boat launch site and a parking area. It is also surrounded by residential homes and is located just west of Astoria County Club and golf course.

Sunset Lake is known to have water quality issues. According to DEQ's Water Quality Assessment Database, Sunset Lake is listed as "impaired" (due to the presence of aquatic weeds or algae) under provisions of Section 303(d) of the Clean Water Act (CWA). Impaired waters are waters where the state has determined existing pollution controls are not sufficient to attain or maintain applicable water quality standards. The law requires that states establish a prioritized schedule for waters on the lists, and develop TMDLs for the identified waters based on the severity of the pollution and the sensitivity of the uses to be made of the waters, among other factors (40C.F.R. §130.7(b)(4)).

The DEQ database states that, "The development of fungi or other growths having a deleterious effect on stream bottoms, fish, or other aquatic life, or which are injurious to health, recreation, or industry may not be allowed". As a result of overgrowth of algae and plant materials in Sunset Lake, the portion that is

located on Camp Rilea is no longer used for military training. It was used in the past for water training, but the growth is so thick now that movement through the water is difficult, and so water training on Camp Rilea is now done exclusively at Slusher Lake. The DEQ database indicates that there is insufficient data to determine the presence of all other contaminants in Sunset Lake.

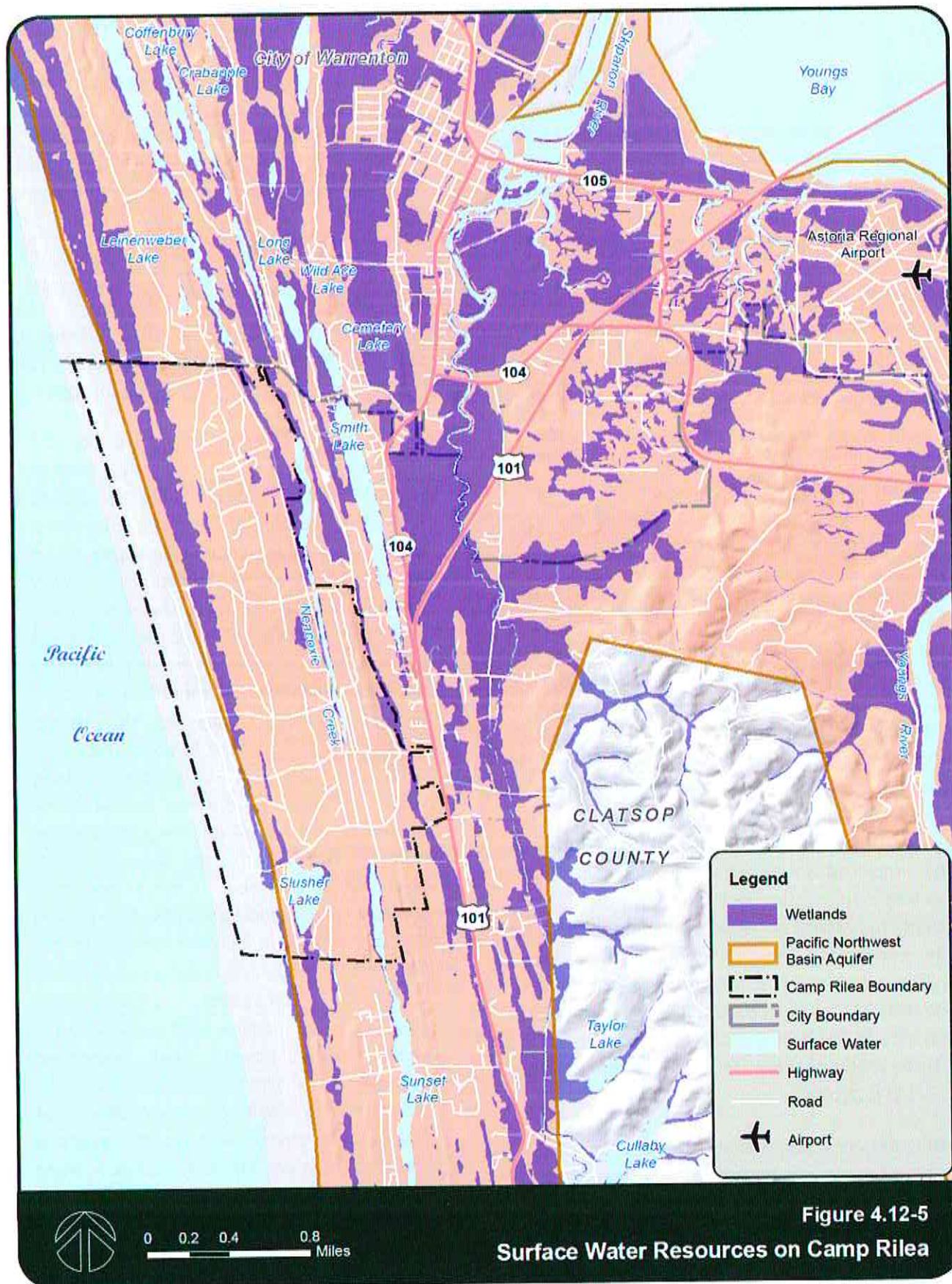
Source:

<http://www.deq.state.or.us/wq/assessment/rpt2010/results303dnew10.asp>

Other data such as the Clatsop Plains Lake Management Report, also assert that Sunset Lake is subject to eutrophication from various sources.

Sunset Lake is a narrow, interdunal lake with abundant growth of the non-native, invasive fragrant waterlily. The lake has the second highest population density of the study lakes, with 191 people per square mile within 400 m of the shore. The population is mainly concentrated on the west shoreline of the lake. Most of these residences use septic tanks for waste disposal. One of the sources of high nutrient groundwater is from the west side of the lake, where many of the houses surrounding the lake are located. The highly conductive sandy soils surrounding the lake, coupled with the connection of the lake to the groundwater [incomplete]. The surface water quality data indicate the lake is highly eutrophic. Watershed nutrient reduction controls may reduce groundwater nutrient concentrations and nutrient loading to the lake, which would decrease phytoplankton abundance. Decreased phytoplankton abundance will increase light availability for aquatic plant growth. Thus, watershed nutrient control may benefit water quality by reducing phytoplankton abundance but exacerbate problems with aquatic weeds in the lake. Therefore, efforts to reduce nutrient loading should be implemented in concert with the integrated aquatic vegetation management plan for the lake.

(Source: Clatsop Plains Lake Management Report, pg. 107)



The consequence of contamination on these surface waters is twofold. Firstly, it presents a potential for groundwater contamination. Since the North Coast Basin aquifer is unconfined and is situated in a dunal system, there is a high potential for nutrient input or cross-contamination between the two water sources. As stated in the Clatsop Plains Lake Management Report:

The unconsolidated beach and dune sand of the Clatsop Plains in combination with abundant winter rainfall produce a locally significant freshwater aquifer (Frank, 1970). This unconfined aquifer is relatively close to the surface resulting in over 20 lakes and numerous wetlands in many of the interdunal swales (Frank, 1970; Shapiro, 1995). Stream inputs or outputs to many of the lakes and wetlands are absent suggesting a strong relationship between the surface water and shallow ground water systems. Nutrient input to the interdunal lakes of the Clatsop Plains through ground water seepage has been identified as a possible problem. This concern is based on increased development around the lakes and the use of septic tanks for sewage treatment (Shapiro, 1995). Nitrogen and phosphorus brought into the lakes through ground water seepage may ultimately increase the trophic status of the lakes. (Source: Clatsop Plains Lake Management Report, pg.1)

Thus, the quality of surface water resources relates to the quality of groundwater resources. Secondly, concerns about contamination in Sunset Lake have impacted the ability for military personnel to train on or near the lake. The following restrictions to training activities on Camp Rilea apply:

- No ground disturbing activities or digging near surface water and wetlands.
- All vehicles must stay on existing roads.
- Minimal engineer bridging training (the construction of bridges) over lakes.

- No training with motorized vehicles in surface waters.
- Avoid spills of hazardous materials.

The Atlas of Oregon Lakes has also identified Sunset Lake to have higher pollution levels than other nearby lakes. The alkalinity of the lake is one of the highest that was observed in the coastal lakes contained in the atlas survey; however, the reason is unknown. The composition of the sandy soils coupled with the use of septic systems by most of the buildings around the lake is thought to be one possible cause for enrichment of algal nutrients and other pollutants. Coliform counts within Sunset Lake are also higher than most other Oregon recreational lakes. Though the specific reason is not known, it could be from farmland drainage or fecal matter from waterfowl. The atlas suggested that water quality might be improved by dredging down to the clean sand layer at the bottom of the lake and removing the accumulated organic matter that sits on top of the sand.

The National Park Service (NPS) recently began doing water quality monitoring at Yeon Lake, a small lake located a little less than a mile south of Camp Rilea, just west of Sunset Lake and south of Sunset Beach Road. In 2011, NPS took baseline data for the following parameters:

- Temperature
- Acid neutralizing capacity
- Anions and cations
- Dissolved organic carbon
- Dissolved oxygen
- Nutrients (Phosphorus and Nitrogen)
- pH
- Specific conductance
- Water clarity (Secchi depth)
- Chlorophyll-a
- Benthic macroinvertebrates
- Zooplankton

There is a continuous temperature gauge in Yeon Lake that measures dissolved oxygen twice a year, while the other parameters are planned to be sampled again in five years. Although the full results

of the water sampling were not yet been completed at the time this JLUS was written, the physical water quality parameters (temperature, dissolved oxygen, pH) all show an acceptable level.

In summary, because of the extremely porous soil / sand of the Clatsop Plains, surface water and groundwater, are extremely well interconnected. Contamination of Clatsop Plain’s waters Affects the health and safety of the region, and directly affects Camp Rilea’s mission. Contamination has eliminated military training in that portion of Sunset Lake located on Camp Rilea. In addition, contamination potentially impacts the groundwater as a drinking water source.

Issue WSQ-3	Uncoordinated Culverts. Installation of culverts for stormwater management and water flow often takes place without coordination between properties, which can result in flooding and backups down or upstream.
------------------------------	--

Due to the amount of rainfall and the presence of streams, lakes, and other water bodies in the region, drainage and stormwater management are important considerations. One method used to handle drainage for new development or roads is the use of culverts. However, oftentimes these culverts are installed without coordination among properties up or downstream, and / or are installed at too small of a size to adequately handle the amount of water that needs to flow through them. This can result in localized flooding during heavy rain periods. In terms of compatibility, localized flooding on Camp Rilea resulting from inadequate culvert sizes or placement could temporarily render certain training areas as flooded or too damp to operate in.

Section S6.050(17)(A) of the Clatsop County Standards Document sets the standards for culvert sizes used for public and country roads to handle drainage. The document states:

The design and construction of all drainage facilities within a project shall be of sufficient size and quality to receive and transport, at a 25 year storm frequency standard all surface drainage and natural drainage course waters coming to and passing through the project from the watershed or watersheds to which it is servient, when the lands located in such are at full planned development, according to the Comprehensive Framework Plan. The minimum diameter pipe to be used shall be 12 inches.

Prior to approval being granted for a project, it must be shown that the existing downstream facilities be adequate to receive and pass storm water runoff discharged through and from the proposed project from a 25 year storm based on the present development plus any proposed developments of the lands of the watershed or watersheds to which the proposed project is servient.

In those areas located in the 100-year floodplain, the design and construction of all drainage facilities shall be of sufficient size and quality to receive and transport the 100-year storm without raising the floodplain elevation. The drainage facilities may be designed to pass less than a 100-year storm provided retention or detention of the runoff is designed and that such retention or detention does not raise the floodplain upstream.

Strategies

The following strategies are recommended to address the issues identified in this section.

Issue	ID	Strategy	CRIA	Timing	Local		State						Federal				Tribal Gov't
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS	USCG	USFWS	
WSQ-1	A	Review Wastewater Disposal Technologies and Standards for New Construction Clatsop County should work with DEQ to establish construction standards for new construction that minimizes wastewater impacts to groundwater, as well as a maximum density of septic tanks and wells per an acre in the zoning ordinance in areas that are not within the Aquifer Overlay Zone.	Clatsop Plains	2013	■		■										
WSQ-1	B	Monitoring of Groundwater Groundwater sources and wells at Camp Rilea should be routinely monitored and sampled so as to provide adequate data for monitoring and to ensure compliance with the CWA.	Clatsop Plains	On	■		■					■					
WSQ-1	C	Update Studies Studies on groundwater and surface water are out-of-date and should be updated to quantify impacts to water quality. Studies should analyze the impacts of development patterns in the past several decades. In particular new studies that involve testing and sampling of the North Coast subbasins are needed to determine the current level of risk of contamination.	Clatsop Plains	2015	■		■										
WSQ-1 WSQ-2 WSQ-3	D	Ground and Surface Water Management Plan Develop management plans for the Clatsop Plains region that establish fish passage requirements between water bodies, culvert coordination for connected water bodies, water quality standards, and other items deemed applicable during development of the plan. As part of this, develop a plan for managing the water quality of Sunset Lake. Identify strategies such as invasive vegetation management. Build indicators into the study to promote monitoring of progress.	Clatsop Plains	2016	■		■					■					

Issue	ID	Strategy	CRIA	Timing	Local		State					Federal				
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS	USCG	USFWS
WSQ-2	E	Surface Water Monitoring Monitor surface water quality throughout the Clatsop Plains region. Focus studies on the relationship between surface water and groundwater resources. Camp Rilea should allow collection of water samples by other agencies if needed.	Clatsop Plains	On			<input checked="" type="checkbox"/>					<input type="checkbox"/>				

4.13

Biological Resources

4.13.1 Key Terms

Candidate Species — Species that are eligible for endangered or threatened status per the Endangered Species Act (ESA) but which are not listed due to higher priority listing activities.

Endangered Species — Endangered species are plant or animal species that have a very small population and are at greater risk of becoming extinct. Many species that become extinct never make it to the endangered species list. The presence of threatened and endangered species may require special development considerations, could halt development, and could impact the performance of military missions.

Endangered Species Act — The ESA provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The lead federal agencies for implementing ESA are the US Fish and Wildlife Service (USFWS) and the US National Oceanic and Atmospheric Administration (NOAA) Fisheries Service. The USFWS maintains a worldwide list of endangered species. Species include birds, insects, fish, reptiles, mammals, crustaceans, flowers, grasses, and trees.

Habitat Loss — Habitat loss is when habitat is removed or rendered functionally useless to plant or animal species dependent on the area.

Hertz (Hz) — Hertz is a unit of frequency (of change in state or cycle in a sound wave, alternating current, or other cyclical waveform) of one cycle per second. A kilohertz (kHz) is a measure of frequency equivalent to 1,000 cycles per second.

Recovery Habitat — Habitat needed to support the recovery of species designated to be endangered or threatened per the ESA.

Riparian — Riparian refers to the habitat and/or area relating to, or situated on the banks of a river.

Special-Status Species — According to the ESA, a special-status species is any species that is a listed, candidate, sensitive or species of concern per the ESA.

Take — Under the ESA, “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct.” The ESA makes it illegal for any person to take any species listed as threatened or endangered without authorization. Take prohibitions also apply to the habitat a listed species requires for its survival.

Threatened Species — According to the ESA a threatened species is “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

4.13.2 Technical Background

Per the ESA, species can be designated “threatened” or “endangered” if the population of the species is diminishing in large geographical areas. A common cause for population reduction in species is the loss of Critical Habitat. Critical Habitat, as defined in Section 3 of the ESA is:

- “(i) The specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features;*
- (I) Essential to the conservation of the species and;*
- (II) That may require special management considerations or protection; and*
- (ii) Specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. Conservation describes the use of all methods and procedures necessary to remove an endangered or a threatened species from listing under the ESA.”*

The ESA requires federal agencies, in consultation with the USFWS and/or the NOAA Fisheries Service, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The law also prohibits any action that causes a “taking” of any listed species of endangered fish or wildlife. Human activities such as urban development, recreational use, vehicle use, aircraft use, and habitat alteration among others can contribute to the loss of important habitat and put

sensitive species at risk. Some of this section references noise and its effects on animal species. Section 4.7 provides detailed information about the basics of noise and how sound is measured.

4.13.3 Existing Tools

Federal and DoD Programs

Army Compatible Use Buffer Program (ACUB)

The purpose of the ACUB program is to provide a natural buffer between military training areas and community activities. The creation of these buffer zones helps to minimize urban development, protect training facilities, provide protected habitat for threatened and endangered species that is off-installation.

Bird / Wildlife Air Strike Hazard (BASH) Program

The BASH program is aimed at minimizing collisions between military aircraft and birds. The BASH program covers predatory birds, nuisance flocking birds (gulls), and migratory geese and ducks. In addition to birds, the BASH program also addresses other animals that could pose a hazard to aircraft operations including coyotes, deer, moose, and rabbits.

Camp Rilea Integrated Natural Resources Management Plan (INRMP)

The INRMP identifies Camp Rilea natural habitat and species for the purpose of managing, maintaining, and preserving its resources. The INRMP is focused on the resources located on Camp Rilea and does not consider or address impacts generated by training on nearby off-installation areas on natural resources.

State and Local Programs

Oregon Coastal Management Program



Oregon's Coastal Management Program is designed to protect the federally approved Coastal Zone shown in Figure 4.13-1. The Coastal Zone, established in 1971, encompasses almost all of the watersheds that drain to the Pacific Ocean through Oregon. The program assimilates various state statutes for managing coastal lands into a single program, administered by the Department of Land Conservation and Development.

Figure 4.13 -1. Coastal Zone

Ocean Shore Management Plan

The Ocean Shore Management Plan provides the Oregon Parks and Recreation Department (OPRD) with a comprehensive set of guidelines about how best to manage recreation and natural resources in shoreline areas. The plan provides information about all of the OPRD shore and beach areas throughout the state and sets out specific policies for the management of these areas based on baseline conditions. This plan provides information about Snowy Plover habitat areas and was written concurrently with the Habitat Conservation Plan (HCP) for the Western Snowy Plover.

Oregon Silverspot Butterfly Revised Recovery Plan

The Oregon Silverspot Butterfly (OSB) Revised Recovery Plan (2001) puts forth a plan for improved management of OSB habitat to allow for the recovery of the species. The goal of the plan is to get the OSB delisted. The recovery strategies outlined in the Plan include the following actions:

- Protect and enhance existing habitat in all of the six habitat conservation areas (Long Beach Peninsula, Clatsop Plains, Coastal Mountains, Cascade Head, Central Coast, and Del Norte).
- Determine the ecological requirements, population constraints, and management needs of the OSB.
- Better understand habitat requirements, factors affecting the population and determine how best to restore OSBs into restored or unoccupied habitat.
- Monitor the butterfly's population and habitat status.
- Reduce take

Habitat Conservation Plan for the Snowy Plover

The Habitat Conservation Plan (HCP) was developed to ensure that the Oregon Parks and Recreation Department (OPRD) manages the shore in a manner that protects and facilitates the recovery of the endangered Snowy Plover. The HCP will qualify the OPRD for an Incidental Take Permit (ITP) from the USFWS, which allows the OPRD to keep beaches open to recreation as long critical habitat areas are designated. Thus the HCP identifies a statewide approach to facilitating the conservation of the Snowy Plover. The HCP establishes "Snowy Plover Management Areas" along the coast, which identify where critical habitat areas are located. The beach to the west of Camp Rilea is not one of these designated areas.

Western Snowy Plover Pacific Coast Population Recovery Plan

The Western Snowy Plover Pacific Coast Population Recovery Plan (2007) was developed by USFWS. The goal of the Recovery Plan is "to remove the Pacific coast population of the Western Snowy Plover from the List of Endangered and Threatened Wildlife and Plants by: (1) increasing population numbers distributed across the range of the Pacific coast population of the Western Snowy Plover; (2) conducting intensive ongoing management for the species and its habitat and developing mechanisms to ensure management in perpetuity; and (3) monitoring western snowy plover populations and threats to

determine success of recovery actions and refine management actions.”

The Recovery Plan identified 19 recovery areas for Snowy Plover along the Oregon coast, including some areas owned or leased by OPRD. In response to the information provided in the Recovery Plan, the OPRD developed the Habitat Conservation Plan (HCP) for the Western Snowy Plover in 2010. The HCP identifies specific management strategies that should be employed to protect Snowy Plover habitat. The areas in Clatsop County that are targeted for management in the HCP include the Columbia River South Jetty and the Necanicum Spit.

Clatsop County Land and Water Development and Use Ordinance

In addition, Clatsop County’s Land and Water Development and Use Ordinance includes a Sensitive Bird Overlay District in place to protect the habitat of species such as the Northern Bald Eagle, Great Blue Heron, Band-tailed Pigeon and Snowy Plover. Specifically the Overlay District seeks to protect nesting and roosting habitat, which are identified by the Oregon Department of Fish and Wildlife (ODFW). The Overlay District helps to protect this habitat by requiring that all development proposals with this area be reviewed for impacts to sensitive bird habitat and reviewed by the ODFW. The general buffer zones established in the ordinance state:

“A sensitive bird habitat will be considered affected by a use or activity if it is located within 660 feet of an eagle or osprey site or within 300 feet of a heron rookery or pigeon mineral spring or within 200 feet of snowy plover nesting habitat. However, the Oregon Department of Fish and Wildlife may determine that uses and activities located further from the sensitive habitat will also affect the site because of unique site conditions such as topography. The basis for such a finding shall be spelled out in the Oregon Department of Fish and Wildlife’s determination of impact.”

In addition Clatsop County regulates land uses on the beach, which is a designated coastal shoreland, by the

Oregon Department of Land Conservation and Development. Regulation of this area is consistent with the Statewide Planning Goals.

Issue BR-1	Sensitive Species and Habitat on Camp Rilea. Camp Rilea contains and is surrounded by habitat that is important to numerous species including special-status species such as the Oregon Silverspot Butterfly and the Western Snowy Plover.
---------------	---

Sensitive Habitat and Species

According to the INRMP Camp Rilea supports 270 plant species and 165 species of wildlife. Eco-regions on the Camp include:

- Coastal Zone Meadows
- Floating Aquatic
- Sweet Gale Wetlands
- Forested Wetlands
- Planted Pine Forest
- Deciduous Forest
- Spruce/Fern Forest
- Scots Broom/Beachgrass Community
- Upland Sedge Meadows
- Wet Sedge Meadows
- Cultivated Grasslands

Camp Rilea also has estuarine marshes, freshwater lakes, blackwater streams, marine terraces, and sand dunes. The entire three mile western edge of Camp Rilea abuts beach land, which is managed by the OPRD. The diversity of habitat areas on the Camp renders it important to plant and wildlife species. Key habitat areas for wildlife include riparian areas, lakes, creeks, sloughs, willow wetlands, and open beach water. Riparian and coastal habitat areas attract various bird species including migratory shorebirds. Wetlands and forested areas tend to attract Black-tailed deer and Roosevelt elk, while the lakes host an array of fish. There are also other areas in the region that offer similar habitat diversity for various species that should be preserved so Camp Rilea does not bear the burden of habitat. Many areas have already been lost due to development.

Per an inventory of vertebrate fauna conducted by the US Geological Survey (USGS) in 1997 through 1999, Camp Rilea is home to 124 bird species, 33 mammal species, and 12 species of amphibians and reptiles. The large presence of both sensitive and other species on Camp Rilea indicates that it has an important role in the local eco-system. Camp Rilea is just one part of the larger regional ecosystem, and other areas that provide valuable habitat include Fort Stevens State Park, the Lewis and Clark National Historic Park, and forestland. However, as forestland and open space land is harvested or developed upon, Camp Rilea may become an "island" of habitat as it provides a good amount of land that will remain undeveloped for training purposes.

Table 4.13-1 shows the species federally listed as threatened or endangered in Clatsop County.

Table 4.13-1. Federally Listed Species in Clatsop County

Species	Status
Mammals	
Columbian white-tailed deer	E
Birds	
Marbled murrelet	CH T
Western Snowy Plover	CHT
Short-tailed albatross	E
Northern spotted owl	CH T
Reptiles and Amphibians	
Loggerhead Sea Turtle	E
Green Sea Turtle	T
Leatherback Sea Turtle	E
Olive Ridley Sea Turtle	T
Insects	
Oregon Silverspot Butterfly	CH T
Plants	
Nelson's checker Mallow	T

E = Endangered T = Threatened

CH = Critical Habitat has been designated for this species

Of these species the Oregon Silverspot Butterfly (OSB) is the only species known to have protected habitat on Camp Rilea. The Western Snowy Plover has designated recovery habitat areas in the region but not on the installation.

On-Installation Impacts of Training on Species

Different types of training activities can have adverse impacts on habitat and species and efforts to protect habitat and species can impact Soldiers' ability to train on Camp Rilea. According to Camp Rilea's INRMP, military training activities that are most likely to have an impact on habitat and species are as follows:

"Engineer heavy equipment operations and mounted maneuvering (using tracked vehicles) have by far the greatest potential negative effect on natural resources. Excavation and maneuvering heavy tracked and wheeled vehicles across even the best-suited landscapes on an infrequent basis can cause damage to vegetation and soils. In addition regularly used areas such as trails, bivouac sites, and firing points can experience loss of vegetation and soil impacts, especially if heavy equipment vehicles are used. Adverse impacts can lead to soil erosion, soil compaction, loss of wildlife habitat and the presence of unwanted pests and weeds. Wildlife can also be affected by training noise."

Other potential threats to species dwelling on the Camp could be generated by aircraft operations. Camp Rilea is located within the coastal fly way of migratory birds. The Camp's unique dunal habitat(s), wetlands, and lakes therefore attract numerous bird species.

The presence of large groups of birds on military installations with any kind of air mission can increase the likelihood of bird and air strike hazards. At Camp Rilea, BASH is a concern for the safety of helicopter pilots. Although there have been very few, if any, incidents of bird strikes with aircraft at Camp Rilea, the implementation of a BASH program would help to safeguard against potential future incidents.

Oregon Silverspot Butterfly

The OSB is a medium-sized butterfly, whose dorsal wings are orange with black spots and bars and whose ventral wings have metallic covered spots. The OSB survives on nectar supplied by plants in the aster and the goldenrod family. The OSB is also known to consume the nectar of the tansy ragwort and false dandelion. Unreliable sources of nectar have proven to be a cause for unstable conditions for the OSB.



Oregon Silverspot Butterfly

The OSB is often found in coastal meadows and sand dunes. This species formerly inhabited wide areas along the Oregon and Washington coasts. The OSB has been almost completely eliminated from its coastal habitat due to development, fire control, and the presence of invasive species (e.g. Scotch Broom). According to the USFWS, Oregon Silverspot Recovery Plan, as of 2001, this species was listed as threatened and occurs at disjunct sites near the Pacific Coast from Del Norte County, California, north to Long Beach Peninsula, Washington. No OSBs have been recorded on Camp Rilea since 1995, or in the Clatsop Plains since 1998.

As Figure 4.13-2 shows, there is a great deal of OSB habitat located on Camp Rilea. Due to diminishing OSB habitat in the region, in 1998 the USFWS required Camp Rilea to set aside 68 acres of OSB habitat in accordance with the OSB Habitat Management Plan. As part of the habitat management, no major training activities, surface disturbance, or facility development are allowed in these designated areas.

In September 2008, with financial support from the ACUB program and the assistance of OMD and Camp Rilea, the North Coast Land Conservancy (NCLC) purchased a 109-acre parcel of land known as Reed Ranch. This parcel is one of the last remaining undeveloped swaths of land in the Clatsop Plains area. The land was purchased because it contains OSB habitat and will offset the habitat currently set aside on the Camp. NCLC owns the land and is responsible

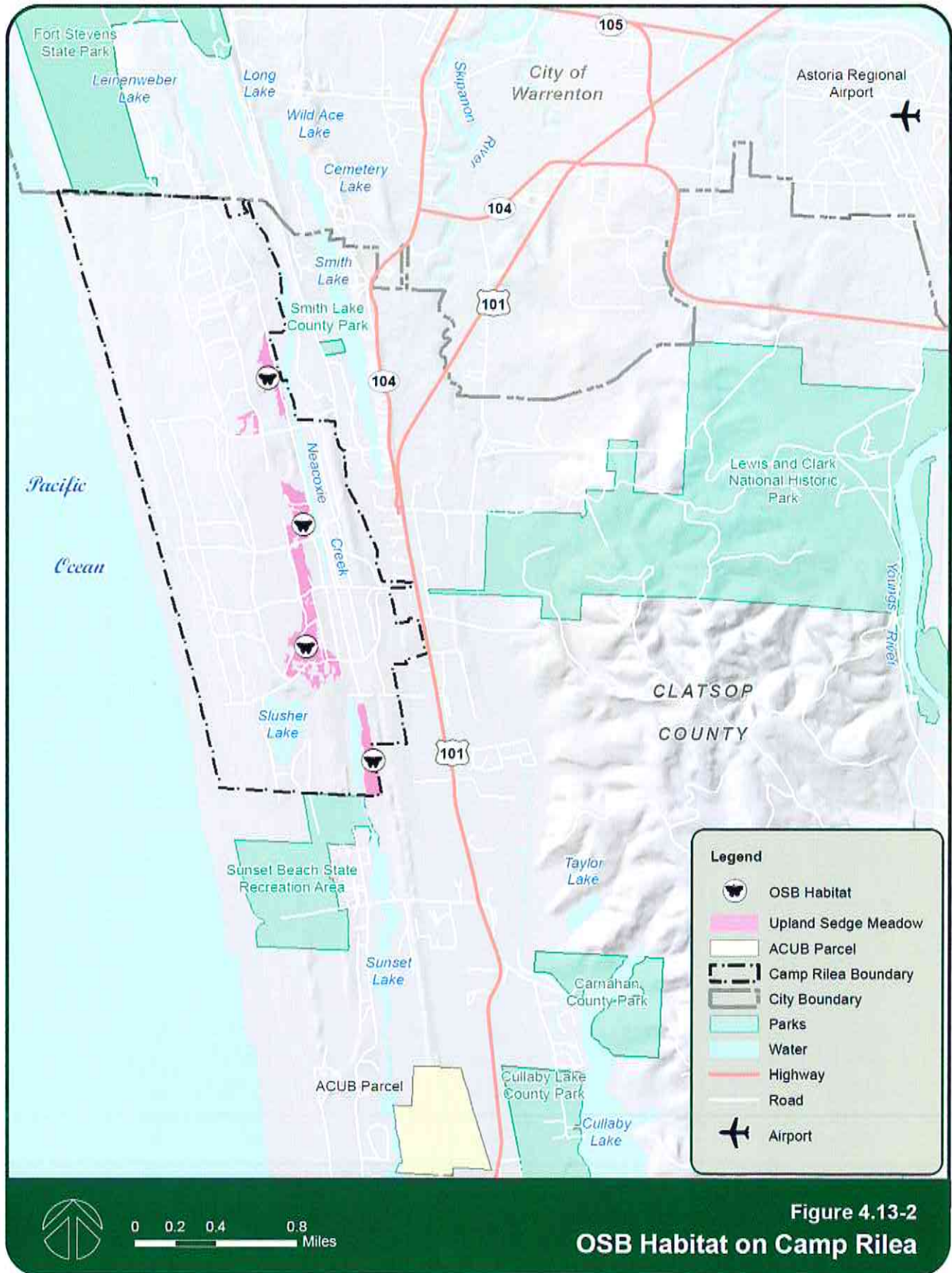
for managing it for OSB habitat. The eventual goal of the land purchase is to open up the on-installation OSB protected areas for full training purposes. The USFWS agreed to the arrangement provided the Camp agreed to a five-year phase out period. As of January 2012, 45 of the 68 habitat acres on Camp Rilea are released from all training restrictions or mandatory management as OSB habitat. Twenty-three acres remain subject to "no surface disturbing activities, and they will all be released by January 2014.

Off-Installation Impacts of Training on Species

Western Snowy Plover

The Western Snowy Plover (Snowy Plover) is a small shorebird known to occupy Pacific coastal areas. In 1993, the bird was designated "threatened" under the Endangered Species Act (ESA). The Snowy Plover nests on shores, estuaries, offshore islands, bays, peninsulas, and rivers. Snowy Plovers are found on barren or sparsely vegetated sand beaches along the coast, and on alkaline flats and river bars farther inland. They winter primarily in coastal areas on beaches and tidal flats. Human activities that are known to disturb the Snowy Plover include noise from vehicles, bicycles, domestic dogs and kite flying. Disturbances such as these can cause the bird to leave its nest and abandon its eggs.

USFWS has recently proposed revising the designated critical habitat for the Pacific Coast population of the Western Snowy Plover. The revision would change the amount of designated critical habitat from a total of 12,145 acres in 32 units in Washington, Oregon, and California to a total of 68 units totaling approximately 28,261 acres. Oregon contains 5,219 acres in 13 units. Two of these designated units are near the JLUS study area – the Columbia River Spit, 169 acres and the Necanicum River Spit, 211 acres, which are shown in Figure 4.13-3.



4.13 Camp Rilea JLUS

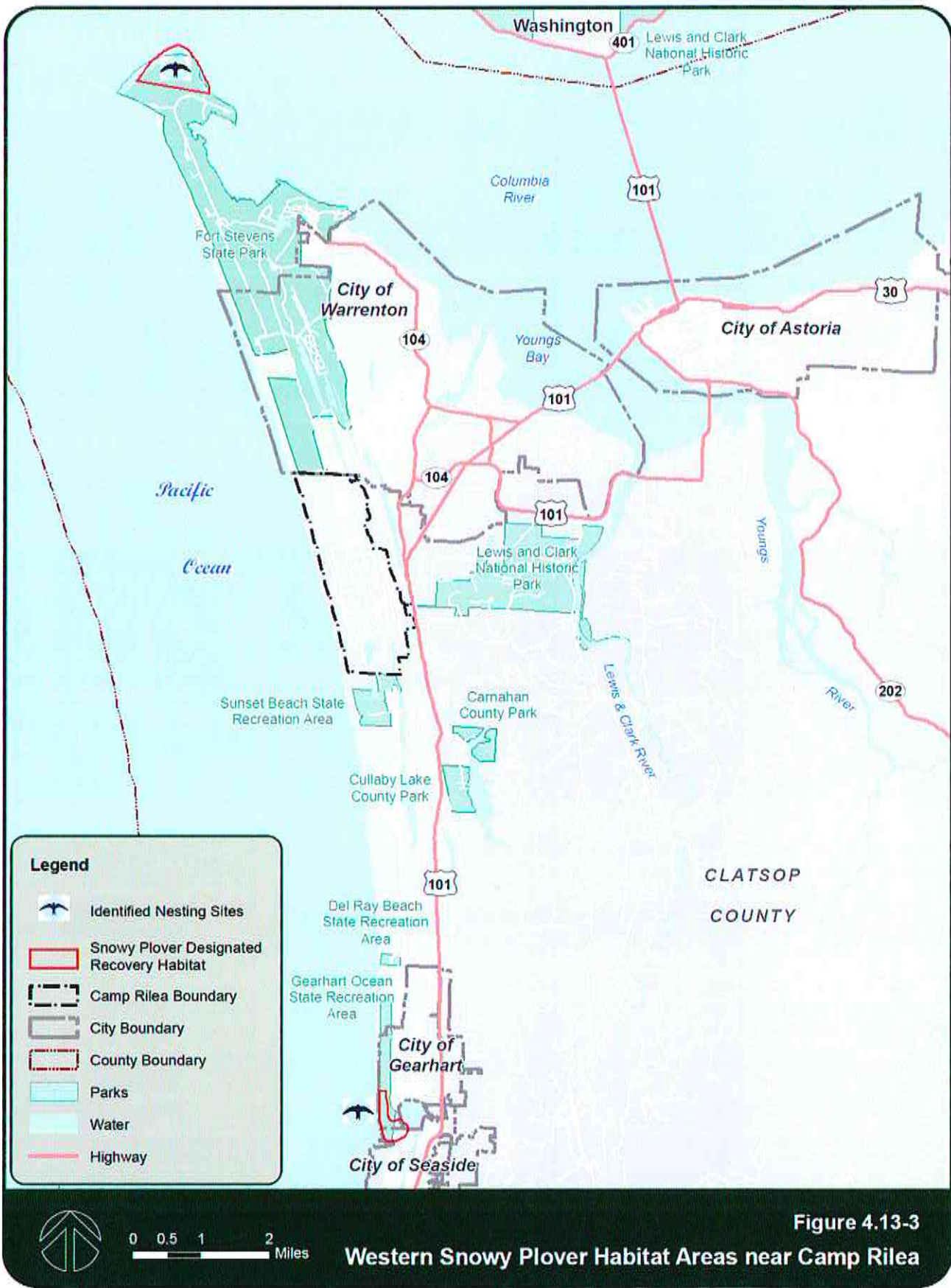


Figure 4.13-3
Western Snowy Plover Habitat Areas near Camp Rilea

Strategies

The following strategies are recommended to address the issues identified in this section.

Issue	ID	Strategy	CRIA	Timing	Local		State						Federal		
					Clatsop County	City of Warrenton	DEQ	DFW	DLCD	ODF	DOT	OMD / Camp Rilea	OPRD	NPS	USCG
BR-1	A	Regional Approach to Conservation Continue to participate in regional efforts to protect the environment and finding joint opportunities to protect sensitive species on locations off Camp Rilea in order to protect on-going training operations. Additionally, this should include ongoing coordination among all entities involved for invasive species control. Other Entities: NGOs	General	On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
BR-1	B	Bird Air Strike Hazard Plan (BASH) Develop a BASH plan for Camp Rilea, which takes into consideration (and is coordinated with) the needs of the USCG that use Camp Rilea, in addition to ORARNG's needs.	Clatsop Plains	On							<input checked="" type="checkbox"/>		<input type="checkbox"/>		

Please see the next page.

4.14

Marine Environments

4.14.1 Key Terms

Marine Species – Marine species refers to all fish and mammals that inhabit salt water, including shellfish, clams, marine worms, other marine invertebrates, and marine plants found in the coastal and estuarine waters.

4.14.2 Existing Tools

Federal and DoD Programs

Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) was enacted in 1972 prohibiting the “take” of any marine mammal in US waters by any person or US citizens in international waters. The MMPA also prohibits the importation of marine mammals and their products into the US, unless otherwise granted an exception. In this study, the marine species and habitat are those that are located within the ocean, particularly in the area defined by the SDZ.

Endangered Species Act

OMD is subject to compliance with the Endangered Species Act (ESA) and must ensure that species and their habitat are protected from further endangerment. This endangerment refers to the

unintentional impacts of training on threatened or endangered species within training areas including SDZs. While the SDZ for Camp Rilea occurs in the ocean, it is paramount that OMD continues to comply with applicable federal regulations.

Ocean Shore Management Plan

The Ocean Shore Management Plan (OSMP) was released in January 2005 by the Oregon Parks and Recreation Department. It provides guidance to OMD on management of ocean resources, including marine species. While there is brief discussion of inter-agency coordination in the OSMP, it does not speak to collaboration with other federal agencies, such as the DoD, in managing marine life and its habitat. Despite the minimal potential impact on marine species that could be caused by military training activities conducted at Camp Rilea, the OSMP excludes definitive guidance regarding the coordination and protection of marine life from military training activities.

<div>Issue</div> <div>ME-1</div>	<div>Impact on Marine Species.</div> <div>Munitions from range activities have the potential to travel off Camp Rilea landing on the shoreline and in the ocean, potentially impacting marine species.</div>
----------------------------------	--

The surface danger zones (SDZs) associated with the live-fire ranges on Camp Rilea extend off-base onto the adjacent beach and over the ocean, as shown on Figure 4.3-2 in Section 3 Safety. The area encompassed by the SDZs indicates where all fired munitions have a statistical probability to land. SDZs are based on the one in a million (1:1,000,000) chance of a fired round landing in a particular location. To limit the amount of fired rounds that exit Camp Rilea onto the beach areas, Camp Rilea maintains natural buffers such as sand dunes and forested areas between the live-fire ranges and the beach. There have been no documented cases by OMD where a fired round has landed on the beach. The live-fire training ranges at Camp Rilea are active approximately 126 days a year, therefore the risk of errant munitions landing past the installation’s boundaries and injuring marine species is minimal.

According to the Ocean Shore Management Plan, 13 threatened or endangered species, species of concern, or candidate species are known to potentially occur on or near the Oregon Ocean Shore. Of these species, the most likely to dwell on sandy beach areas are plant species such as the pink sand verbena, silvery phacelia and manyleaf gilia, as well as the Western Snowy Plover. As discussed in Section 4.13 Biological Resources, plant species are not likely to be impaired by spent rounds.

Snowy Plovers do not nest west of Camp Rilea because there is no nesting habitat there. Breeding habitat is considered to be the limiting factor for the recovery of the species. The introduction of European beach grass to stabilize the dunes essentially eliminated that habitat. European beach grass dramatically changed the topography, ecology, and beach processes on the northern West Coast of America. This all but eliminated the breeding habitat of the Western Snowy Plover in these areas.

Some of the most successful populations of Western Snowy Plover are located on military installations (i.e. Camp Pendleton in California). Military training is much less damaging to the Western Snowy Plover than almost any recreational activity (off road driving, loose dogs, random trampling, and kite flying). Plover nesting is generally undeterred by airport noise, and firing ranges. Physical disturbances seem to be far more damaging.

Federally listed species that could potentially be found in Clatsop County’s offshore waters include the Green Sea Turtle, Loggerhead Sea Turtle, the Leatherback Turtle and the Olive Ridley Turtle.

There have been several studies conducted for various military installations, including the US Navy at Apra Harbor on Guam, to determine impact on marine species and habitat caused from military training activities, such as live-fire range training. This study has shown that the adverse impact to marine species is relatively low and is a rare occurrence. This is due to the natural topography (i.e. sand dunes) as well as other constructed land features (i.e. berms) to safeguard against stray munitions from exiting Camp Rilea or impacting marine life. These studies were conducted on ranges that are used more frequently than the ranges at Camp Rilea (Marine Corps Relocation to Guam and the Northern Mariana Islands Final Environmental Impact Statement, 2010). Although there is invariably a possibility that marine species may be struck by stray munitions from the live-fire ranges, the probability is slim.

After review of this issue, it was determined that no substantial compatibility issue exists and that current procedures adequately address this issue. Therefore, no additional actions (strategies) are needed to address this issue.

Strategies

Due to the minimal nature of the compatibility issues associated with marine environments in and around Camp Rilea, no strategies are required to address these issues.

Please see the next page.