BEFORE THE BOARD OF COMMISSIONERS
FOR THE COUNTY OF CLATSOP

In the Matter of:

LEGISLATIVE AMENDMENTS ADOPTING THE NORTH CLATSOP PLAINS SUB-AREA PLAN AND AMENDING THE CLATSOP COUNTY COMPREHENSIVE PLAN, LAND AND WATER DEVELOPMENT USE ORDINANCE 80-14, STANDARDS DOCUMENT AND THE COMPREHENSIVE PLAN ZONING MAP.

ORDINANCE NO. 14-03

Doc # 201408001D

Recording Date: 8-5-2014

RECITALS

WHEREAS, in the interest of the health, safety and welfare of the citizens of Clatsop County and pursuant to State law, the Board of Commissioners hereby determines the necessity of North Clatsop Plains Sub-Area Plan and associated amendments to the Comprehensive Plan, Land and Water Development and Use Ordinance 80-14, Standards Document, and Comprehensive Plan Zoning Map.

WHEREAS, the proposed legislative amendments were considered by the Planning Commission at a public hearing on May 13, 2014, The Commission recommended approval, which is attached as Exhibit "PC"; and

WHEREAS, Planning Commission recommendation did not include the proposed realignments of the Fort to Sea Trail as described the final draft plan and the Board of Commissioners adopted the findings and recommendation of the Planning Commission.

WHEREAS, consideration for this ordinance complies with the Post Acknowledgement rules of the Oregon Land Conservation and Development Commission and the Clatsop County Planning Commission has sought review and comment and has conducted the public hearing process pursuant to the requirements of ORS 215.050 and 215.060, and the Board of Commissioners received and considered the Planning Commission's recommendations on this request and held a public hearing on this ordinance pursuant to law on June 25, 2014 and July 23, 2013; and

WHEREAS, public notice has been provided pursuant to law; now therefore,

THE BOARD OF COMMISSIONERS OF CLATSOP COUNTY ORDAIN AS FOLLOWS:

SECTION 1. The Clatsop Plains Community Plan element of the Clatsop County Comprehensive Plan is hereby amended to include, as Appendix E, the North Clatsop Plains Sub-Area Plan, as shown in the attached in Exhibit "A".

SECTION 2. The text of the Clatsop Plains Community Plan is hereby amended as shown in the attached Exhibit "B".

SECTION 3. The text of the Land and Water Development and Use Ordinance 80-14 is hereby amended as shown in the attached Exhibit "C".

SECTION 4. The text of the Standards Document is hereby amended as shown in the attached Exhibit "D".

SECTION 5. The Comprehensive Plan Zoning Map is hereby amended as shown in the attached Exhibit "E" to include the North Clatsop Plains Overlay District.

SECTION 6. In support of this ordinance, the Board adopts the findings and associated exhibits contained in Exhibit "PC".

Approved this 23rd day of July, 2014

THE BOARD OF COUNTY COMMISSIONERS
FOR CLATSOP COUNTY, OREGON

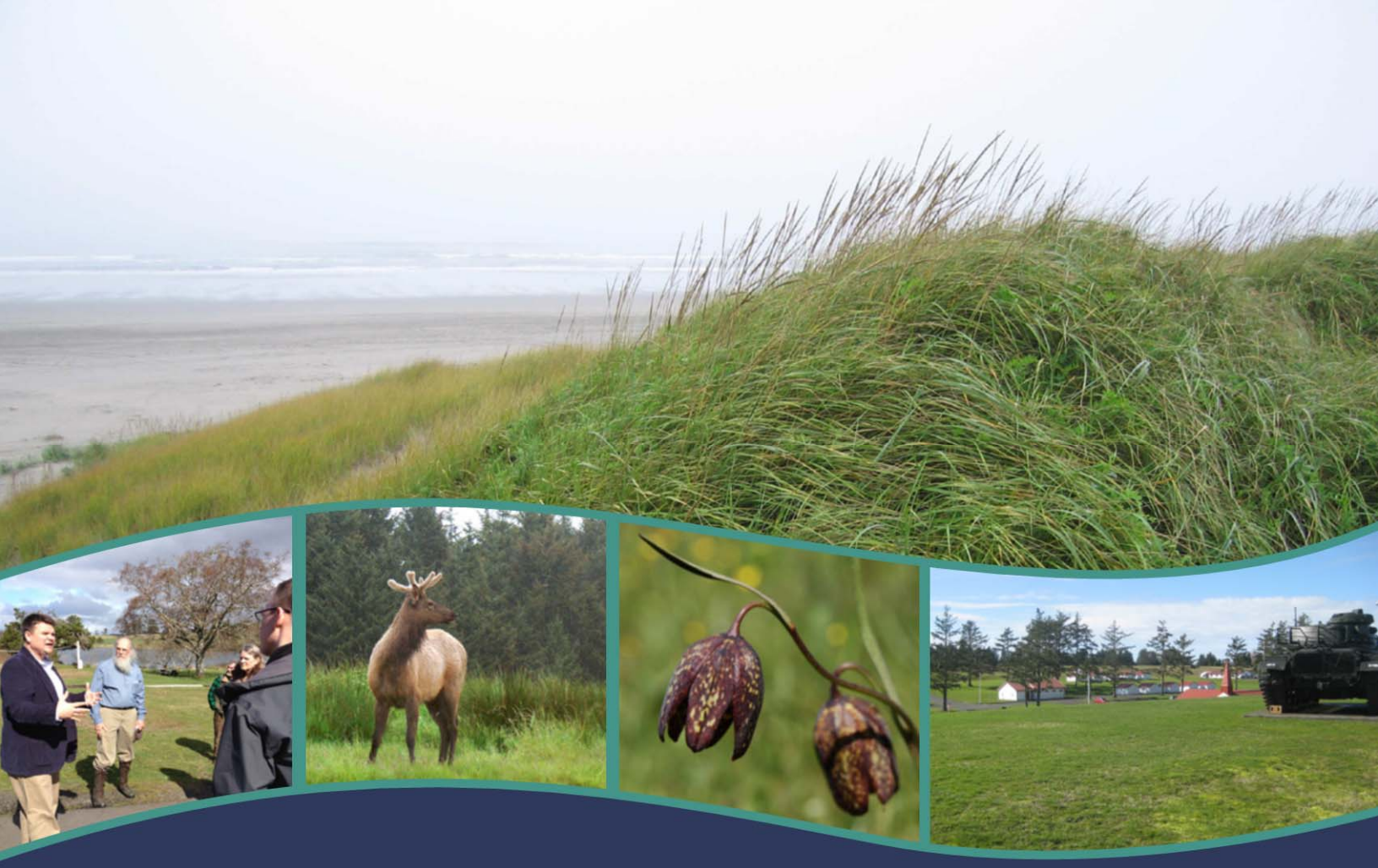
By _____
Scott Lee, Chair

By _____
Valerie Crafard, Recording Secretary

Exhibit “A”

Amend the Clatsop Plains Community Plan to include:

Appendix E – North Clatsop Plains Sub-Area Plan



North Clatsop Plains Sub-Area Plan

Final
July 2014

MIG

CLATSOP COUNTY OREGON 1844

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CHAPTER 1. **PLAN INTRODUCTION**

Photo Credit: Mike Patterson, 2013

Clatsop County developed the North Clatsop Plains Sub-Area Plan in close partnership with state and local community partners. This document includes a series of policy actions intended to maximize the compatibility of future land uses and activities with Camp Rilea's operations, sensitive natural and ecological resources, and the existing rural, open space and character of the North Clatsop Plains and its coastal communities. The document also presents a comprehensive approach to improving and protecting water quality and trail connectivity for multiple users, and minimizing the potential for traffic congestion near the Camp Rilea entrance at Highway 101.

Background and Setting

The North Clatsop Plains study area sits within the Clatsop Plains planning area, as delineated by the County. The Clatsop Plains planning area comprises 16,307 acres within northwest Clatsop County and is located along Oregon's northern Pacific coastline south of the mouth of the Columbia River. The North Clatsop Plains Sub-Area Plan study area extends from the Warrenton city limit (to the north) south past Sunset Beach, and east from the Pacific Ocean shore into the foothills past Highway 101. The study area includes the western portion of the Fort-to-Sea Trail, a number of neighborhoods and developed communities including Sunset Beach, Sunset Lake and Carnahan County Parks, portions of Neocoxie Creek, and numerous interdunal lakes and wetlands (see Figure 1-1).

The North Clatsop Plains is also home to Camp Rilea. Owned by the Oregon Military Department, Camp Rilea serves as a training center for the Oregon National Guard (ORNG), and specializes in small infantry and engineer training. Camp Rilea fulfills the requirements of an Army Maneuver Training Center – Light. Camp Rilea provides facilities 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, and specialized training opportunities. Camp Rilea occupies approximately 1,800 acres of land along the coast.[1]

As a military training facility, Camp Rilea is critical to the comprehensive training of soldiers. Camp Rilea also provides community service support and serves as the regional base for North Oregon Coast emergency response and recovery operations.

The ORNG is an important economic engine in Clatsop County. Camp Rilea employs approximately 110 full-time personnel and provides between $8 and 11 million dollars of benefit to the region annually through direct income and direct purchases. 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.[2]

In 2010, the Department of Defense Office of Economic Adjustment provided Clatsop County with funding to prepare a Joint Land Use Study (JLUS). The purpose of the JLUS process was to address encroachment and land use compatibility issues between Camp Rilea and its surroundings. Clatsop County completed the Camp Rilea JLUS in June of 2012.

The goal of the JLUS was "to guide growth, sustaining the environmental and economic health of the region, and protecting the public the viability of current and future operations at Camp Rilea." The JLUS recommended several strategies that Clatsop County could pursue to address existing and potential land use compatibility issues that could have an adverse impact on Camp Rilea's mission and operations.

The JLUS document recommended the development of a subsequent plan to facilitate implementation of JLUS strategies and identify additional actions that would promote long-term area health and compatibility between Camp Rilea and its neighbors. Clatsop County developed the North Clatsop Plains Sub-Area Plan in direct response to this recommendation.

[1] Clatsop County. Camp Rilea Joint Land Use Study. Prepared by Matrix Design Group. July 2012.
[2] Ibid.

Figure 1-1.
Sub-Area Plan
Study Area

- Highways
- Roads
- Fort To Sea Trail
- North Clatsop Plains Boundary
- Parks
- National and State Parks
- Incorporated Cities
- Camp Rilea
- Water Features

Data Sources: Clatsop County GIS, Bing Maps Aerial 2012

03.13.2014

Photo Credit: Mike Patterson, 2013

Overview of the Plan

Role of the Plan

Protecting the area's natural resources is a policy imperative for the Clatsop Plains community. The North Clatsop Plains Sub-Area Plan presents policies and actions intended to help minimize new development, particularly in the vicinity of Camp Rilea; protect and improve water and habitat resources; strengthen trail-related access and recreation; minimize the potential for land use and transportation conflicts around Camp Rilea; and generally respect the natural character of the landscape.

The North Clatsop Plains Sub-Area Plan is a resource and guide for the County and partners. The County Comprehensive Plan, Zoning Ordinance, and development standards should be updated to reflect Sub-Area Plan policies. In addition, this plan calls upon the support of agency and local partners to advance a number of actions.

The Plan reflects the overarching direction of the Clatsop Plains Community Plan, which, along with other components of the County Comprehensive Plan, guides land use and development within the study area. The Clatsop Plains Community Plan establishes four goals, which together provide an important framework for the Sub-Area Plan and its implementation:

- To protect and maintain natural resources and ecosystems;

- Respect the natural processes;
- Strive for well-designed and well placed development; and
- Preserve the semi-rural, agricultural, open space and marine characteristics of the area.

Plan Development Process

In January 2013, Clatsop County embarked on a community based planning process to develop this Plan. *The process lasted for 17 months, resulting in adoption of the Sub-Area Plan by the Clatsop County Board of Commissioners in Summer 2014.* The process included a series of events and activities designed to provide community members with opportunities to learn about the effort, share and discuss community issues and concerns, and explore a series of actions and policy recommendations with the County and partners. Community members provided input, feedback and direction via the following events and activities:

Plan Advisory Committee. The County established a Community Advisory Committee at the outset of planning to help direct plan development. The Committee met monthly at Camp Rilea to provide community insights, offer technical and policy expertise, and develop Plan actions and recommendations. All Committee meetings were open to the public.

The Committee was composed of approximately 18 community and agency representatives, including local residents and representatives of: Clatsop County government, County Planning Commission, City of Warrenton, Warrenton Trails Association, Camp Rilea, Oregon Department of Environmental Quality (DEQ), Oregon Department of Transportation (ODOT), National Parks Service (NPS), Oregon Department of Parks and Recreation (OPRD), and Oregon Department of Land Conservation and Development (DLCD).

Ad Hoc Trails Committee. An ad-hoc group of Advisory Committee members met on two occasions during the plan development process. The overarching objective was explore alternatives for planning a safe and continuous trail connection that would create greater pedestrian and bicycle access to Sunset and Delaura beaches from nearby locations, and establish a trail "bypass" for users of the Oregon Coast Trail in the event of beach closures. The primary focus was to confirm the specific alignment of proposed trail segments connecting Delaura Beach and the Fort to Sea Trail at Highway 101.

Stakeholder Interviews. The planning team conducted a series of telephone and in-person interviews with agency representatives and local organizations to establish a baseline understanding of area conditions, community needs and concerns, and opportunities. Interviewees included representatives of North Coast Land

Conservancy, Oregon Equestrian Trails North Coast Chapter, Department of Environmental Quality, and others.

Meeting with DEQ Technical Experts. In addition to DEQ representation on the Advisory Committee and a telephone interview with the DEQ North Coast Region coordinator, the consultant team also met with DEQ technical and policy experts at the project outset to discern key issues and current understanding of water quality in the Clatsop Plains. This meeting and subsequent, ongoing conversations also focused on identifying opportunities to a) collect more water quality data and b) improve local water quality conditions overall.

Online Questionnaire. The planning team developed an online questionnaire targeting local residents, property owners and businesses, as well as area residents and others who recreate in the North Clatsop Plains. The questionnaire link was distributed via the County's email list and posted to the County web page. Announcements were sent to each area resident and "business cards" with the questionnaire link were distributed at various commercial locations. Hard copies were provided to May Open House participants also (see below). A total of 102 people participated.

Community Open Houses. Two public meetings were held over the course of plan development: the first took place in May 2013 and the second in February 2014. The first meeting focused on presenting background research conducted in support of Plan development. Topics included current land uses, health and quality of local water bodies, existing trails and recreation areas and activities. The second open house allowed participants opportunity to comment, ask questions and provide feedback on the plan.

Sub-Area Plan Chapters

In addition to this introduction, the North Clatsop Plains Sub-Area Plan includes the following chapters, each described briefly below.

Chapter 2. Land Use Policy and Code Amendments. The Land Use and Conservation Chapter includes policy direction and proposed Zoning modifications to help maximize land use compatibility in the area, create a buffer zone around Camp Rilea, and protect sensitive areas and ecosystems.

Chapter 3. Trails, Beach Access and Communications. This chapter outlines recommendations to: improve trail connectivity and beach access in the North Clatsop Plains, strengthen internal and external communications around beach closures, improve public information around evacuation and safety in the event of earthquakes and tsunamis; and minimize conflicts between Camp Rilea operations and recreation activities.

Chapter 4. Water Quality Action Plan for North Clatsop Plains. This chapter presents a series of near-term, mid-term and longer term actions to improve water quality and improve the effectiveness of wastewater infrastructure in the North Clatsop Plains.

Chapter 5. Camp Rilea Highway Access. This chapter defines the issues related to ingress and egress of Camp Rilea from Highway 101. Several mitigations are evaluated and recommendations for improvements are described and prioritized.

CHAPTER 2. LAND USE POLICY AND CODE AMENDMENTS

Purpose of this Chapter

This chapter contains proposed amendments to the Clatsop County Comprehensive Plan (Clatsop Plains Community Plan Chapter) and Clatsop County Land and Water Development and Use Ordinance. The amendments are proposed to implement the North Clatsop Plain Sub-Area Plan, consistent with the recommendations of Camp Rilea Joint Land Use study (JLUS), which calls for measures "to protect the public from noise and safety impacts…in areas impacted by military training activities" in the vicinity of Camp Rilea.

The plan and code amendments contained in this chapter are final recommendations intended for refinement by County staff and the Planning Commission, prior to adoption by the Clatsop County Board of Commissioners and integration into relevant code and standards documents.

Existing Plans and Regulations

This subsection summarizes the plans and codes that currently apply to land use and development in the North Clatsop Plains Sub-Area.

A. Clatsop Plains Community Plan

The Clatsop Plains Community Plan is a chapter within the Clatsop County Comprehensive Plan. It contains policies specific to the Clatsop Plains region, such as those that prioritize erosion prevention, protection of steep slopes, existing drainage patterns and natural and scenic resources, and public safety. Protection of water resources, coastal views and shoreline dunes are also community plan priorities.

The Community Plan strives for flexibility in housing in unincorporated rural areas while directing the majority of new housing to occur within the urban growth boundaries of Warrenton, Gearhart, and Seaside. Community Plan policies guide future development away from conservation forestlands, shorelands, and other natural resources, and recommend the use of cluster development, permanent "common open space" preservation, and paved streets for future planned developments and subdivisions on rural lands.

The Clatsop Plains Community Plan is part of the Clatsop County Comprehensive Plan. Any amendment to the Community Plan, such as adoption of a sub-area plan for the North Clatsop Plains, requires findings of consistency with the Comprehensive Plan and Oregon Statewide Planning Goals.

B. Clatsop County Land and Water Development and Use Ordinance

The Clatsop County Land and Water Development and Use Ordinance (LWDUO), also known as Ordinance 80-14, establishes 41 zones, 10 of which are found within the North Clatsop Plains Sub-Area (see Figure 2-1). For each zone, the LWDUO lists primary permitted uses, conditional uses, and standards for lot area, coverage, building height, and setbacks, among others.

The LWDUO also contains the County's land use administrative procedures (e.g., application requirements, review procedures, and approval criteria) and special district regulations. A total of 12 special districts or overlay zones are provided. They apply to sensitive lands, such as beach and dune areas, protected bird habitats, and aquifer reserves; natural hazard areas, such as floodplains and unstable soils; and areas subject to special permits or approvals, such as planned developments, destination resorts, and quarries or mines.

Clatsop County Standards Document, also adopted by Ordinance 80-14, contains detailed regulations for site oriented improvements, including: off-street parking, loading, erosion control, and signs; structure siting and development (e.g., cluster developments, mobile homes, historic and archeological site protection, home occupations, short-term rentals, farm dwellings, etc.), environmental protection, vehicle access control and circulation, and roads. This document also summarizes the County regulations' consistency with state and federal requirements.

AF AGRICULTURE FORESTRY (SECTION 3.510)

Section 3.510 is not proposed to change because new development in the AF zone does not pose a significant risk of residential encroachment in the vicinity of Camp Rilea. The zone is intended to facilitate resource management associated primarily with farming and forestry uses. The minimum parcel size for land divisions is 80 acres. Permitted residential uses are limited to: caretaker dwellings for forest operations, temporary forest labor camps, seasonal farm worker housing, replacement dwellings for farm operations where the site is a designated historic resource. Bed and breakfast inns are allowed subject to a conditional use permit.

EFU EXCLUSIVE FARM USE (SECTION 3.560)

Section 3.560 is not proposed to change because new development in the EFU zone does not pose a significant residential encroachment in the vicinity of Camp Rilea. The zone is intended primarily for farm uses and state forestry-related uses. Residential uses are allowed in the EFU zone, but area limited to: farm dwellings, with a minimum parcel size of 80 acres; and non-farm dwellings, with a minimum parcel size of 20 acres, subject to approval of a conditional use permit. Non-farm uses, including non-farm dwellings, must also meet specific standards for compatibility with farming operations. Those same standards in minimizing conflicts between homeowners and farmers also afford some protection to military operations at Camp Rilea.

LW LAKE AND WETLAND ZONE (SECTION 3.610)

Section 3.610 is not proposed to change because Residential uses are not permitted in the LW zone, where the primary permitted uses are restoration, recreation, and other water-dependent and water-related activities. Maintaining current LW designations does not pose a risk related to residential encroachment in the vicinity of Camp Rilea.

NU NATURAL UPLANDS (SECTION 3.600)

Section 3.600 is not proposed to change because residential uses are not permitted in the NU zone, where the primary permitted uses are wildlife sanctuaries or preserves, forest or plant preserves and low intensity recreation. Maintaining current NU designations does not create a risk related to residential encroachment in the vicinity of Camp Rilea.

OPR OPEN SPACE, PARKS AND RECREATION (SECTION 3.580)

Section 3.580 is not proposed to change because residential uses are not encouraged in the OPR district, where the primary permitted uses are farming, forestry, open space, and recreation. Maintaining current OPR designations does not create a risk related to residential encroachment in the vicinity of Camp Rilea.

RA-1/2/5/10 RESIDENTIAL AGRICULTURE (SECTIONS 3.180-3.230)

The RA zones are intended to provide for rural residential uses. They also serve as buffers between resource zones such as EFU and AF zones, and more intensively developed areas such as Goal 14 exception lands and the urban growth areas of adjacent cities.

The RA-1 and RA-2 zones have a minimum parcel area of 2 acres and the RA-5 and RA-10 zones, respectively, have minimum parcel areas of 5 and 10 acres. With cluster subdivisions and partitions these lot sizes may be reduced to no less than one acre west of Highway 101 and no less than 2 acres in size east of Highway 101. Single-family dwellings, guesthouses, and hardship dwellings are permitted outright in all RA zones.

All new subdivisions within the Clatsop Plains Community Plan area must comply with the County's cluster development regulations, per Development Standards Document Section 3.150-3.162. At least 30% of every subdivision, excluding roads and property under water, must be reserved as common open space. The RA zone also requires that where a buffer of trees exists along properties abutting Highway 101 and within the Clatsop Plains area, a minimum 25-foot buffer shall be maintained or planted at the time of development.

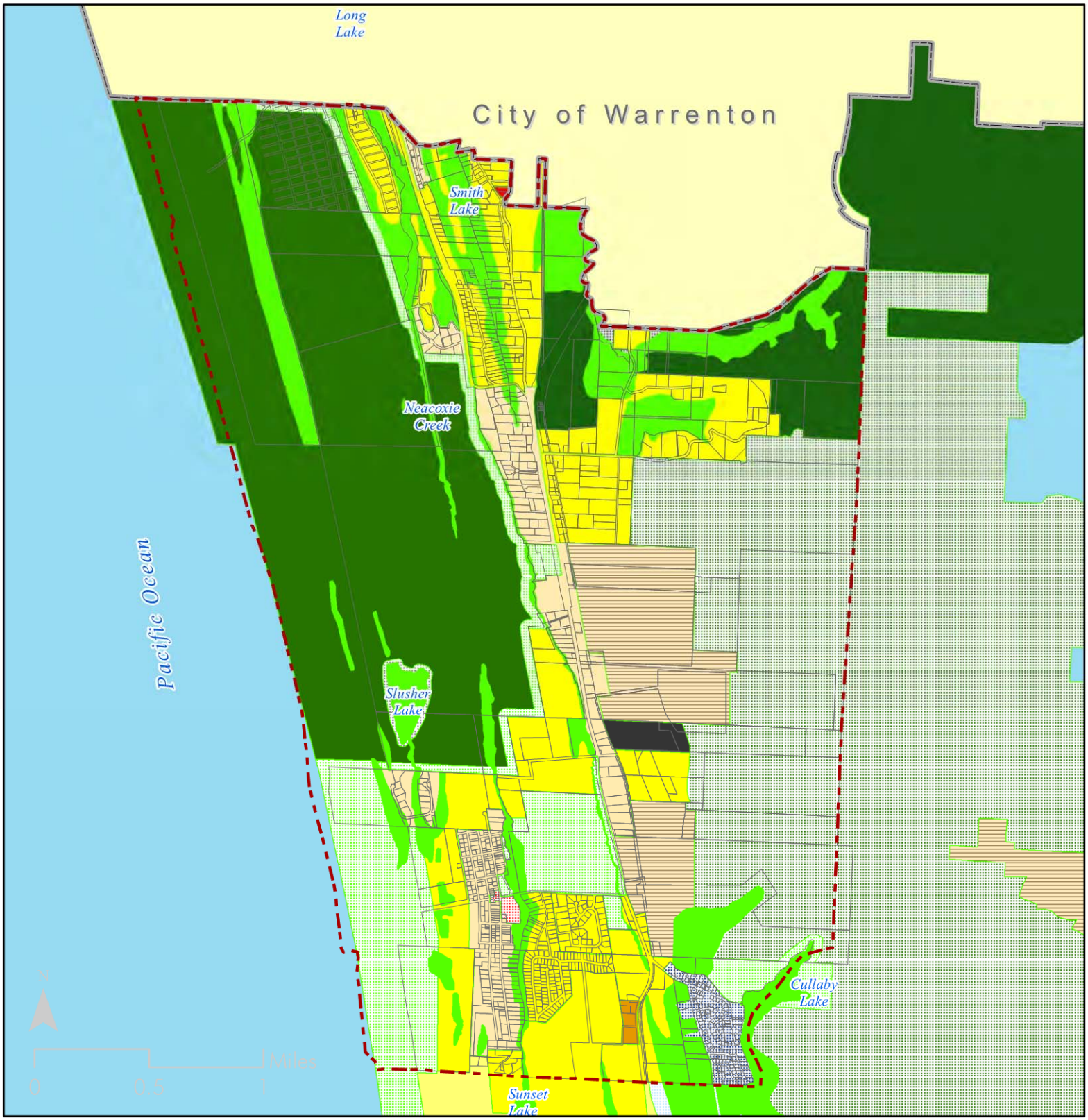

Figure 2-1. North Clatsop Plains Sub-Area Plan Existing Zoning

Data Sources:
Clatsop County GIS

5.9.2014

- North Clatsop Plains Boundary
- Incorporated Cities
- North Clatsop Taxlots
- Rural Service Area-Single-Family Residential
- Rural Service Area-Multi-Family Residential
- City of Warrenton
- Agriculture Forestry
- Forest 80
- Residential Agriculture 1
- Residential Agriculture 2
- Residential Agriculture 5
- Exclusive Farm Use
- Lake and Wetlands
- Natural Shorelands
- Natural Uplands
- Recreation Management
- Coastal Beach Residential
- Single Family Residential-1
- General Commercial
- Neighborhood Commercial
- Tourist Commercial
- Open Space, Parks, Recreation
- Military Reserve
- Light Industrial

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Section 3.160 of the Development Standards Document further guides and directs the design of subdivisions, as follows:

> *Additional Residential Cluster Development Standards for the Clatsop Plains Planning Area.*
>
> *(1) All planned developments and subdivisions shall designate and retain areas as permanent common open space.*
>
> *(2) The minimum percentage of common open space shall be 30% excluding roads.*
>
> *(3) Permanent common open space shall include, whenever possible, steep dunes which would require substantial alterations for building, buffers along streams, water bodies, deflation plains, and farm and forest lands.*
>
> *(4) Buffers (screening) shall be provided in all subdivisions and planned developments along all property lines adjacent to arterials and/or collectors.*
>
> *(5) Permanent common open space as part of subdivisions or planned developments adjoining one another shall be interrelated and continuous whenever possible. This could mean that the common open space could continuously follow ridge tops, deflation plains or shorelands. The Clatsop County Department of Community Development shall prepare a map of potential systems of common open space to be used as a guide for developers.*
>
> *(6) Streams and drainages which form a system of common open space shall be preserved.*

The LWDUO does not require buffers for subdivisions abutting Camp Rilea, even though screening is required adjacent to collector and arterial roads, including Highway 101, and the military is required to maintain a 200-foot buffer, zoned OPR, following the perimeter of Camp Rilea.[1]

Significantly, while the LWDUO requires clustering of lots and the provision of open space in new subdivisions, similar requirements do not exist for partitions or serial partitions except that developments adjacent to an OPR or LW zone must maintain a minimum 50-foot setback. A property owner is not subject to the cluster development requirement if they choose to divide and re-divide parcels over consecutive years.

SFR-1 SINGLE FAMILY RESIDENTIAL ZONE (SECTION 3.160)

The SFR-1 zone primarily consists of rural residential subdivisions that lawfully existed prior to Clatsop County and its cities adopting urban growth boundaries under State Planning Goal 14 (Urbanization). Most of these lands are located adjacent to the City of Warrenton and not adjacent to Camp Rilea.

Single-family dwellings, guesthouses, and hardship dwellings are permitted outright in the SFR-1 zone, with a minimum parcel size of 1 acre.

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[1] Military Reserve Zone, Section 3.857: "A buffer zone a minimum of 200 feet around the perimeter of any new Military Reserve zone and within the property boundaries of any military use area shall be established."

CBR COASTAL BEACH RESIDENTIAL (SECTION 3.240)

This zone applies to the Surf Pines development at the south edge of the plan area. The portion of Surf Pines that lies within the plan area is small and does not appear to have much development potential, though any expansion could present an impact possibly detrimental to military training operations on Camp Rilea if not adequately addressed in development process reviews and conditioned appropriately.

RSA-MFR RURAL MULTI FAMILY RESIDENTIAL ZONE (SECTION 3.120)

One pocket of MFR-zoned land currently exists within the North Clatsop Plains Sub-Area, located east of Highway 101. The zone allows single-family and duplex dwellings as primary permitted uses, and multifamily dwellings are allowed with a conditional use permit. The minimum lot size for developments with approved sewer service is 7,500 square feet per single-family dwelling and 10,000 square feet per duplex. Multifamily housing lot sizes are determined through the conditional use permit process, but in no case are less than 25,000 square feet for the first three units, plus 5,000 square feet for each unit thereafter. This property is currently developed with a manufactured home park, which is at capacity in terms of allowed number of homes on site.

GC GENERAL COMMERCIAL (SECTION 3.340)

The GC zone allows residential use in association with permitted outright or conditional uses, though range and other Camp training noise could be an encroachment concern for some types of susceptible commercial use. Therefore the GC zone creates a moderate risk of encroachment relative to Camp Rilea.

TC TOURIST COMMERCIAL (SECTION 3.320)

The TC zone allows residential developments in association with a development that is permitted or conditional, though range and other Camp training noise could be an encroachment concern for some types of susceptible commercial use. Therefore the TC zone creates a moderate risk of encroachment relative to Camp Rilea. Property at the intersection of Sunset Beach Lane and Lewis Road is designated TC.

LI LIGHT INDUSTRIAL (SECTION 3.440)

The LI zone provides areas for industrial development s that could be incompatible in a commercial or residential zone, but have few objectionable characteristics. The zone is intended for development with limited external impacts, such as processing, assembling and minor manufacturing. The LI zone has minimal risk of encroachment and/or conflict with Camp Rilea.

MR MILITARY RESERVE (SECTION 3.845)

Camp Rilea is zoned MR, which among other provisions requires a 200-foot buffer zoned OPR be maintained around the base perimeter for compatibility with adjacent land uses.

C. Clatsop County Standards Document

Clatsop County Standards Document (Ordinance 80-14) contains detailed regulations for site oriented improvements, including, off-street parking, loading, erosion control, and signs; structure siting and development (e.g., cluster developments, mobile homes, historic and archeological site protection, home occupations, short-term rentals, farm dwellings, etc.), environmental protection, vehicle access control and circulation, and roads. This document also summarizes the County regulations' consistency with state and federal requirements. It is necessary to amend both the LWDUO and Standards Document implement the North Clatsop Plains Sub-Area Plan.

D. Camp Rilea Joint Land Use Study and Camp Rilea Influence Areas

The Camp Rilea JLUS identifies a series of military influence areas (MIA), or formally designated geographic areas where military operations may impact local communities and, conversely, where local activities may affect the military's ability to carry out its mission. Military influence areas for Camp Rilea are referred to as Camp Rilea Influence Areas (CRIAs).The Camp Rilea JLUS document identifies a Land Use CRIA and a Noise CRIA, among others. The Land Use CRIA covers the land area within five miles of Camp Rilea. The JLUS outlined a series of strategies to limit growth in this area, many of which have been addressed in the Sub-Area Plan development process.

The Noise CRIA includes all lands located off-post that fall within the noise contours for small arms and explosives. Noise contours consist of noise impact lines constructed by connecting points of equal noise level measured in decibels (dB) and identifying areas on a map that fall within that particular dB noise contour. JLUS-recommended strategies to reduce noise impacts within the CRIA include adoption of noise attenuation standards for new and existing residences. A review of aerial photography conducted during the JLUS process suggests that roughly 95 homes were located within the Noise CRIA at the time of study.

Noise contours for small arms firing activities at Camp Rilea were developed through the Oregon Army National Guard (ORARNG) Statewide Operational Noise Management Plan (2010). Noise Zone II contours used to define the Noise CRIA (small arms firing activities) include areas where the peak sound level is between 87 and 104 dB.[2] The contours for the Noise CRIA represent the "worst case scenario",

[2] For the purposes of comparison, 30 dB is the intensity of a soft whisper from 5 feet away; 75 dB is the intensity of sound of a car going 65 miles per hour from a distance of 25 feet; 130 is the intensity of a civil defense siren from 100 feet, and 140 dB is the threshold of pain.

or a maximum small arms training scenario that assumes use of all active ranges at one time. According to the JLUS, this scenario is conservative since not all ranges can be used at the same time (i.e., use of one range at Camp Rilea can necessitate closure of others).

The methodology used to help establish the Noise CRIA is based on standards of the US Army Public Health Command. The Small Arms Range Noise Assessment Model (SARNAM) is the computer program used to model small arms noise zones, using the peak noise level and incorporating information on noise source models, sound propagation, ricochet barriers, noise mitigation and safety structures, and the direction weapons are fired.

Effect of Current Policies and Regulations

A. Land Use Compatibility

Camp Rilea is surrounded by a mix of residential and undeveloped recreation/open space uses, with residential uses along the north, east and south sides. The western edge is an undeveloped state beach. The majority of impacts to surrounding uses are related to noise, vibration and general safety. The Camp Rilea Joint Land Use Study (JLUS) identifies the compatibility of site impacts on adjacent land uses as well as strategies for reducing and/or mitigating impacts. To reduce impacts on surrounding properties and uses, Camp Rilea has made the following adjustments to its operating procedures in recent years:[3]

- Adjusted lighting on radar hill to reflect west and south, away from the most populated residential areas;
- Enclosed the Environmental Control Unit on radar hill to help reduce noise;
- Adjusted live fire training hours from 7am – 11pm to 7am – 10pm;[4]
- Restricted overnight operations near the Camp's north border (training must now be complete by 10pm);
- Planted trees along Camp borders in an effort to reduce visual impacts and noise levels; and

[3] All operating procedures at Camp Rilea are subject to change based on the operational training needs of the ORNG.

[4] At present time, this does not include the 116th Air Control Squadron for federal mission support, nor other training.

- Recommended flight paths for inbound and outbound aircraft to avoid populated areas.

While few land uses are entirely incompatible, the JLUS notes that undeveloped sites and existing residential uses have the largest potential to impact Camp operations. In particular, the study recommends that most development should be concentrated in smaller areas and limited to areas outside the ½-mile buffer area surrounding the Camp. Per Camp Rilea, in some areas, the existing County-mandated buffer of 100 feet does not create an adequate or effective separation between the Camp and recent housing developments.

Only the following zones are identified as being compatible without modification: Agriculture Forestry (80 acre minimum lot size); Lake and Wetlands; and Open Space, Parks and Recreation. The JLUS provides several strategies for improving compatibility among the Camp and adjacent uses. This chapter addresses the following strategies:

> **"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.
>
> - 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.
>
> 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." (JLUS, Strategy LU-1 B)

B. Residential Development Potential

The Clatsop County Land and Water Development and Use Ordinance (LWDUO) and Development Standards Document, together known as Ordinance 80-14, implement the County's Comprehensive Plan, which is adopted pursuant to Statewide Planning Goals and state and federal laws.

As described in the Existing Conditions Report, four of the ten zoning districts that exist within the North Clatsop Plains Sub-Area allow residential development at levels that might lead to land use conflicts with Camp Rilea; the four zones are: Residential Agriculture RA, Single Family Residential SFR-1, Rural Multi-Family Residential RSA-MFR, and General Commercial GC. Figure 2.1 shows buildable

lands within the plan area where residential uses are allowed. Residential development may occur where parcels are vacant and where the vacant portions of developed parcels can be divided and meet minimum lot size standards. Development may also occur on lots that do not meet minimum lot size standards, where lots are consolidated, subdivisions are re-platted, or where property owners utilize the Lot-of-Record provisions of the LWDUO. A lot-of-record determination may entitle the owner of a lot that does not meet minimum lot size or dimensional standards to one single-family dwelling per lot, provided the development meets all other applicable development standards. (LWDUO 1.030)

Together, the above conditions create the need for plan and code amendments to manage residential development and to protect the public from noise and safety impacts in areas impacted by military training activities in the vicinity of Camp Rilea.

Recommended Residential Land Use Policy and Regulatory Amendments

Summary of Policy and Regulatory Amendments

The North Clatsop Plains Sub-Area Plan recommends 7 key policy and code changes to address the above objectives, which are summarized below and detailed in the following pages. Noise attenuation standards would likely be adopted in the County's Code of Regulations under Title 15, Buildings and Construction. This would need to be a separate process from the adoption of the Sub-Area Plan and requires action by the Board of Commissioners.

1. Amend the Clatsop Plains Community Plan to add policies for the North Clatsop Plains Sub-Area.

2. Create an overlay zone generally corresponding to the Camp Rilea Influence Areas (CRIA) for Noise (see Figure 2-2)[5]
    - Retain existing zoning designations (i.e., prohibit increases in residential densities).
    - Do not allow receiving sites for Density Transfer program within overlay.
    - Encourage development as far from Camp Rilea boundary as is practicable.
    - Encourage Wildlife Corridor Protection.
    - Adopt noise attenuation construction standards for buildings within the North Clatsop Plains overlay district (e.g. triple pane windows, minimum R-value insulation, fence requirements, etc.).

3. Amend the open space standards for subdivisions and planned developments to require buffering adjacent to the Camp Rilea.

4. Amend Density Transfer program to streamline process and further incentivize transfers.
    - Allow more than one density transfer per sending site.
    - Allow banking of all credits (current program requires application of at least one credit to a clustered development).

[5] The recommended overlay was developed using with the Noise CRIA as a starting point. All parcels that were partially or completely included in the Noise CRIA were selected, and then parcels east of Highway 101 were removed for two primary reasons: 1) the parcels extend back from Highway 101 a rather large distance, while the Noise CRIA only impacted a small portion of land along the eastern border of the highway; and 2) the noise from Highway 101 has a greater impact on these parcels than Camp Rilea noise.

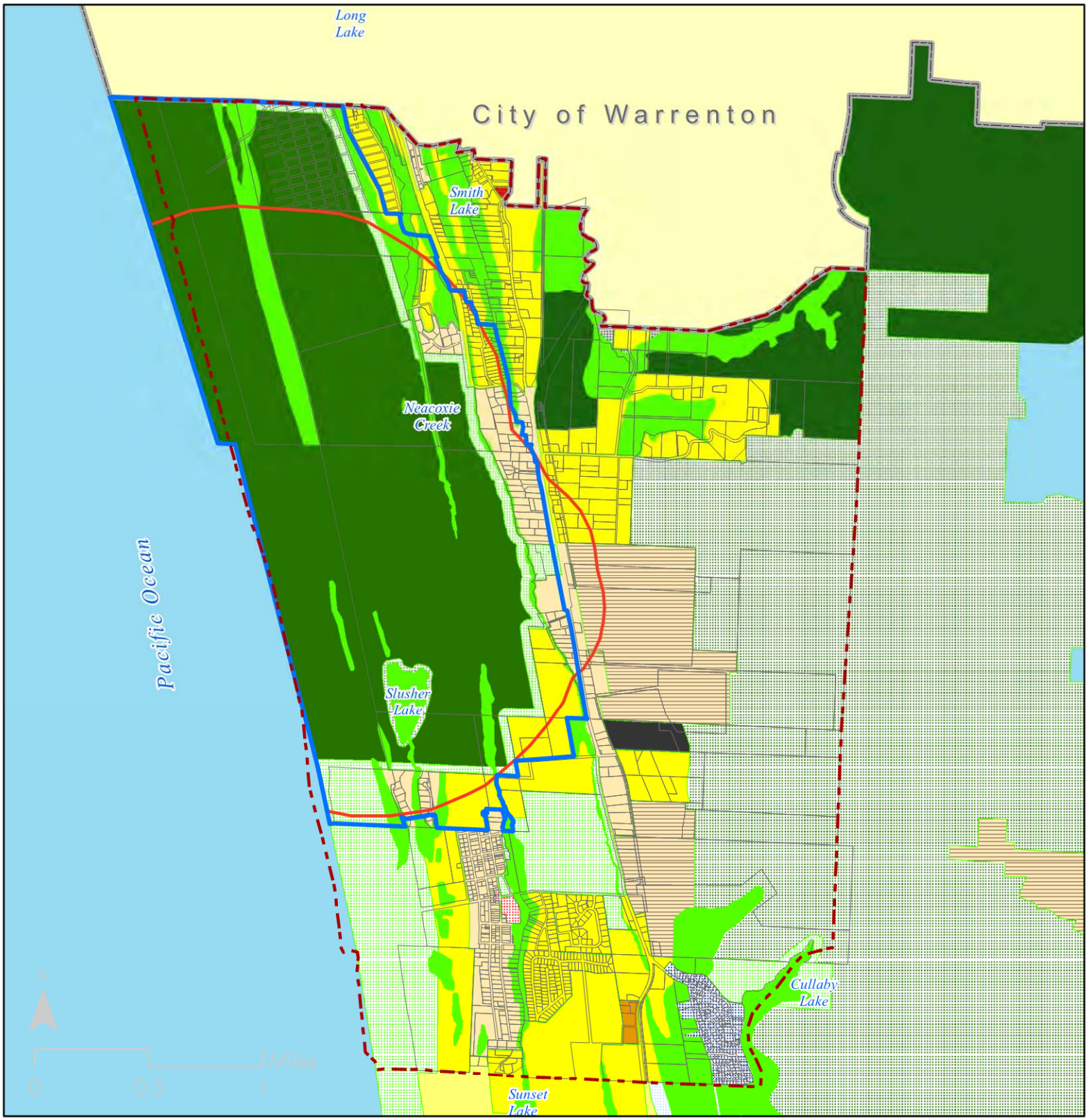

Figure 2-2. Sub-Area Plan Zoning and Proposed Overlay

Data Sources:
Clatsop County GIS

5.12.2014

- North Clatsop Plains Boundary
- North Clatsop Plains Overlay District (/NCP)
- Noise CRIA
- Incorporated Cities
- North Clatsop Taxlots
- Rural Service Area-Single-Family Residential
- Rural Service Area-Multi-Family Residential
- City of Warrenton
- Agriculture Forestry
- Forest 80
- Residential Agriculture 1
- Residential Agriculture 2
- Residential Agriculture 5
- Exclusive Farm Use
- Lake and Wetlands
- Natural Shorelands
- Natural Uplands
- Recreation Management
- Coastal Beach Residential
- Single Family Residential-1
- General Commercial
- Neighborhood Commercial
- Tourist Commercial
- Open Space, Parks, Recreation
- Military Reserve
- Light Industrial

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5. Develop a Purchase of Development Rights Program.
    - Financing options for program start-up
    - Possibilities of mitigation banking

6. Encourage the use of conservation easements where transfer of development rights and other regulatory approaches are not workable or achievable.
    - Coordinate with land trusts and agency partners.
    - Educate property owners on conservation easement benefits and stewardship responsibilities.

7. Promote the Oregon Revised Statute that requires a disclosure (ORS 93.040) that puts buyers on notice to check with the planning department about any zoning or land use issues associated with a property.
    - Inform potential buyers of properties within ½-mile of Camp Rilea about noise and other impacts associated with military operations.

8. Develop an informational brochure about Camp Rilea operations and noise mitigation, and deliver when a development proposal for new development or improvements within the North Clatsop Plains overlay district is submitted to the County.

Further Definition of Key Terms:

Purchase of Development Rights: Purchase of development rights (PDR) programs are one viable approach that state and local governments use to preserve farmland and open space. PDR programs provide a way to financially compensate willing landowners for not developing their land. When buying development rights, the community obtains a legal easement (sometimes referred to as a conservation easement) that permanently restricts development on the land. The landowner, however, still owns the land and can use or sell it for purposes specified in the easement, such as farming, timber production, or hunting. The value of development rights is the difference between the fair market value of the land without the easement and its value as restricted by the easement.

Mitigation Banking: Mitigation banking is the preservation, enhancement, restoration or creation of a wetland, stream, or habitat conservation area which offsets, or compensates for, expected adverse impacts to similar nearby ecosystems. The goal is to replace the function and value of the specific habitats that would be adversely affected by a proposed activity or project. In the US, federal agencies (under section 404 of the Clean Water Act), as well as many state and local governments, require mitigation for the disturbance or destruction of wetland, stream, or endangered species habitat. Once approved by regulatory agencies, a mitigation bank may sell credits to developers whose projects will impact these various ecosystems.

Draft Policy and Regulatory Amendments

AMEND THE CLATSOP PLAINS COMMUNITY PLAN TO ADD POLICIES FOR THE NORTH CLATSOP PLAINS SUB-AREA.

Amend the Clatsop Plains Community Plan updating and adding policies, as follows. (Page numbers refer to Clatsop County Comprehensive Plan Goals and Policies chapter, as amended June 23, 2012.)

Clatsop Plains Coastal Shorelands: Amend Policy 5:

5. The public has a right to enjoy and utilize all the public water bodies. No improvement shall be permitted which impedes this ability. Care must be exercised in protecting the privately owned shorelands, and in managing beach access to protect public safety in the vicinity of Camp Rilea.

Clatsop Plains Recreation: Create new Policy 7:

7. Clatsop County will work with Oregon Parks and Recreation Department, Oregon Department of Transportation and the Oregon Military Department to provide an additional trail connection/s between the north end of Camp Rilea, the beach and Fort Stevens to the existing Fort-to-Sea Trail.

Clatsop Plains Open Space: Amend multiple policies and adopt recommended action items:

4. All planned developments and subdivisions in the Clatsop Plains planning area designated RURAL LANDS** shall cluster land uses and designate areas as permanent common open space. No reversionary clause shall be permitted in common open space. The minimum percentage of common open space shall be 30%, excluding roads and property under water. The clustering of dwellings in small numbers and the provision of common open space assures good utilization of land, increased environmental amenities, maintenance of a low density semi-rural character, and maintenance of natural systems (dunes, wetlands), and may be used as an open space buffer between the residential use and adjacent military lands, agricultural or forest uses. This policy shall apply in all RURAL LANDS** areas in the Clatsop Plains except for the area commonly known as Surf Pines.* Clustering shall be prohibited in the area known as Surf Pines.* Surf Pines is further described by the following description (see Appendix B) and map.*

5. Permanent open space shall include, whenever possible, steep dunes which would require substantial alterations for building, buffers along streams, water bodies, deflation plains, areas abutting military lands, and farm and forest lands.

6. Buffers (screening) shall be provided in all ~~subdivisions and planned~~ developments along property lines adjacent to arterials and/or collectors.

   [Note: It is recommended the amendment to Policy 6 apply to all development within the Clatsop Plains area.]

7. Permanent open space as part of subdivisions or planned developments adjoining one another shall be interrelated and continuous whenever possible. This could mean that open space could continuously follow ridge tops, deflation plains, wildlife corridors, trail corridors, property lines abutting military lands, or shorelands…

   [Note: It is recommended the amendment to Policy 7 apply to all development within the Clatsop Plains area.]

***

10. Allow more than one density transfer per sending site, until all allowed density is removed.

11. Allow banking of density transfer credits as an alternative to requiring immediate transfer of density to a receiving site.

12. Require receiving sites for density transfers be located outside of the North Clatsop Plains Sub-Area.

Recommended Actions

Coordinate the Transferable Development Rights program with land trusts, cities, state and federal agencies, and other potential agency partners to facilitate density transfers out of the North Clatsop Plains.

Explore the feasibility of adopting a Purchase of Development Rights program to protect open space within the *[Clatsop Plains / North Clatsop Plains Sub-Area]*, including consideration of financing options for program start-up and possibilities of mitigation banking.

Encourage the use of conservation easements where transfer of development rights and other regulatory approaches are not workable or achievable, and coordinate with land trusts, cities, state and federal agencies, and other agency partners, in educating property owners on the benefits and stewardship responsibilities that come with having a conservation easement.

Clatsop Plains Community Development: Create new Policy 3:

3. Establish and maintain an overlay zone for the North Clatsop Plains Sub-Area that:

   a. Prohibits increases in residential densities through zone changes and density transfers;

b. Allows multiple density transfers from a single Transferable Development Rights (TDR)* sending site, and requires that all TDR receiving sites be located outside the North Clatsop Plains Sub-Area;

c. Encourages wildlife corridor protection through clustered development and open space preservation; and

c. Applies noise attenuation construction standards to new dwellings in areas impacted by noise from Camp Rilea.

[*These terms should be defined in the Comprehensive Plan.]

OVERLAY ZONE FOR CAMP RILEA INFLUENCE AREAS (CRIAS)

SECTION 4.XXX NORTH CLATSOP PLAINS OVERLAY DISTRICT (/NCP).

Section 4.xxx Purpose.
The North Clatsop Plains overlay district (/NCP) implements provisions of the Clatsop Plains Community Plan specific to the North Clatsop Plains Sub-Area. It is intended to provide for the planned and orderly growth of the North Clatsop Plains Sub-Area while protecting and maintaining natural resource values and preserving the semi-rural characteristics of the area. It is further intended to maintain compatibility between land uses in the vicinity of Camp Rilea while maintaining landowners' rights to reasonable use of their land.

Section 4.xxx Applicability.
The North Clatsop Plains overlay district (/NCP) applies to areas designated /NCP on the Clatsop County Zoning Map. See Figure 2.2.

Section 4.xxx Development and Uses Permitted.
Development and uses permitted in the underlying zoning district are permitted in the North Clatsop Plains overlay district (/NCP).

Section 4.xxx Conditional Development and Use.
Developments and uses conditionally allowed in the underlying zoning district are conditionally allowed in the North Clatsop Plains overlay district (/NCP), pursuant to LWDUO Article V.

Section 4.xxx Development and Use Standards.

(1) Increases in residential density in the /NCP overlay district through zone changes and density transfers are prohibited.

(2) Notwithstanding the provisions of Development Standards Section 3.160, where common open space is required to be designated within the North Clatsop Plains Sub-Area, the location and configuration of such open space shall be prioritized based on the following criteria; open space areas meeting more than one criterion are preferred:

(A) Open space buffers between residential uses and Camp Rilea;

(B) Wildlife corridors;

(C) Trail corridors;

(D) Ridge tops, deflation plains, and shorelands.

(3) New dwellings within the North Clatsop Plains Camp Rilea Noise overlay (/NCP) as designated on Figure 2.2 shall comply with the noise attenuation construction standards of Title 15.[6]

(4) Notwithstanding the provisions of Development Standards Section 3.161, Density Transfer Standards within the /NCP district are subject to the following requirements and exceptions:

(A) Density may be transferred more than once from a single Transferable Development Rights (TDR)* sending site within the North Clatsop Plains /NCP district, until all density is removed from the site;

(B) All Transfer Development Rights receiving sites shall be located outside the North Clatsop Plains /NCP district;

(C) Density transfer credits need not be applied to a receiving site at the time of transfer but may be saved in a Density Transfer Bank maintained by Clatsop County;[7]

AMEND THE DEVELOPMENT STANDARDS DOCUMENT:

3.160. Additional Residential Cluster Development Standards for the Clatsop Plains Planning Area.

(1) All planned developments and subdivisions shall designate and retain areas as permanent common open space.

(2) The minimum percentage of common open space shall be 30% excluding roads and property under water.

[The above addition of "property under water" is made to make the standard consistent with the Comprehensive Plan.]

(3) Permanent common open space shall include, whenever possible, steep dunes which would require substantial alterations for building, buffers along streams,

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[6] Title 15 of Clatsop County Building Code should be amended by separate ordinance to provide noise attenuation construction standards. See City of Oak Harbor, WA Title 17, Chapter 30, for example of similar code: http://www.codepublishing.com/WA/OakHarbor/html/OakHarbor17/OakHarbor1730.html]

[7] Implementation of the density transfer bank would require amending the table in Development Standards Section 3.162. Consider streamlining the density transfer process by allowing administrative approval of density transfers where credits are stored in a bank instead of being applied directly to a receiving site.

water bodies, deflation plains, wildlife corridors, trail corridors, buffers abutting military lands, shorelands, and farm and forest lands.

[The above addition of "property under water" is included to make the standard consistent with the Comprehensive Plan. The /NCP overlay prioritizes open space areas for the North Clatsop Plains.]

(4) Buffers (screening) shall be provided in all subdivisions and planned developments along all property lines adjacent to arterials and/or collectors.

(5) Permanent common open space as part of subdivisions or planned developments adjoining one another shall be interrelated and continuous whenever possible. This could mean that the common open space could continuously follow ridge tops, deflation plains, trail corridors, wildlife corridors, buffers abutting military lands, or shorelands. The Clatsop County Department of Community Development shall prepare a map of potential systems of common open space to be used as a guide for developers.

(6) Streams and drainages which form a system of common open space shall be preserved.

3.161. Density Transfer Standards for the Clatsop Plains Planning Area.

(1) Transfer of residential development rights between sites in the Clatsop Plains Planning Area is allowed as follows:

(A) Where all density is removed from a parcel, the ~~remaining parcel of the~~ sending site shall be rezoned to either the Open Space Parks and Recreation zone or Natural Uplands zone or Conservation Shorelands zone or Natural Shorelands zone. Where less than the allowed density is removed, a deed restriction shall be recorded over the sending site limiting future development density accordingly. The applicant shall file the rezone request and, as applicable, the deed restriction with no reversionary right, at the same time as the density transfer request is submitted; and

(B) Prior to final approval of a density transfer the County shall require that deed restrictions be filed in the Clatsop County Deed Records in a form approved by County Counsel, that prohibits any further development beyond that envisioned in the approved density transfer until such time as the entire area within the density transfer approval has been included within an urban growth boundary; and

(C) The Community Development Director shall demarcate the approved restrictions on the official Zoning Map, and

(D) All density transfer receiving sites shall be located outside the /NCP overlay, and no~~No~~ parcel of land shall receive ~~be involved in~~ more than one (1) density transfer transaction, and

(E) Density transfer goes with the property - not the owner; and

(F) Minimum lot size shall be one (1) acre for the receiving site

(2) All sending and receiving parcels shall be recorded in the "Density Table" (Section 3.162) and the appropriate sections filled out completely prior to approval. At the applicant's expense[4], if a receiving parcel cannot be identified at the time of application for a density transfer, the applicant can choose to record the remaining credits with an affidavit, which shall be recorded by the applicant, and maintained with the County Planning Department. Staff will review the requisite comprehensive plan text and map amendments for conformity with the down zone and density transfer requirements.

[4] Expense shall include all administrative fees associated with maintaining the affidavit and the staff time required to update the density table when a receiving site has been identified.

CHAPTER 3. **TRAILS, BEACH ACCESS AND COMMUNICATIONS**

Purpose of this Chapter

The North Clatsop Plains is home to a number of recreational amenities of local, regional and State significance. The ocean shore, Oregon's largest day use recreation area, is a favored spot for locals and a destination for visitors to the region. The Lewis and Clark National Historic Park network extends into the study area as does the Fort to Sea Trail, which connects with the Oregon Coast Trail at Sunset Beach in the North Clatsop Plains. With walking and beach activities among the most popular forms of recreation in Clatsop County, access to the area's beaches and trails and the quality of trail connections are important topics to address in this Sub-Area Plan.

The primary purpose of this chapter is to address the need to: 1) limit encroachment on Camp Rilea by recreation uses; 2) establish a trail that connects Fort Stevens to Sunset Beach and the Fort to Sea Trail to the east of Camp Rilea; and 3) ensure that beach closures resulting from Camp live-fire training are well communicated and cooperatively management with other State agencies.

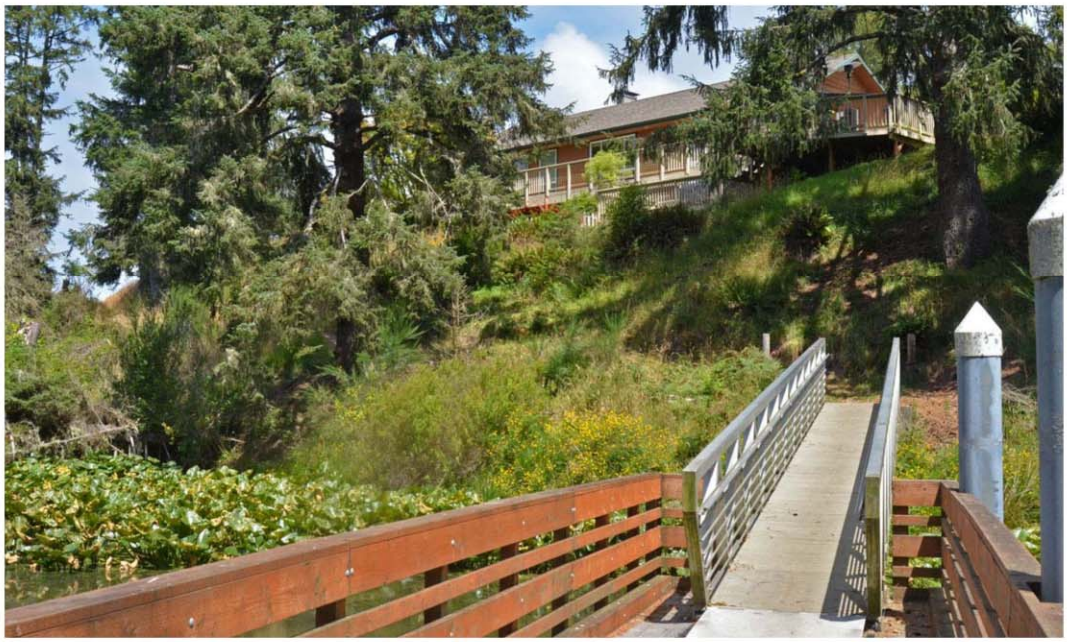

Photo Credit: Mike Patterson, 2013

Scope and Organization

The scope and content of this chapter are driven by key findings and recommendations of the Camp Rilea Joint Land Use Study (JLUS). The Recreation, Trails and Beach Management portion of the Current Conditions Report (2013) contains detailed background information that provided a foundation for its development. In addition to the formal Advisory Committee process that guided Sub-Area Plan development, a Trails Sub-Committee met on three occasions in 2013 to discuss trail alternatives and negotiate the final trail proposal presented in this plan.

Following this introduction, the Trails, Beach Access and Communications chapter is organized into four main parts:

- Related Plans and Programs
- Current Conditions
- Beach Access, Management and Communications
- A Proposal for North Clatsop Plains Trails

The first sections describe current conditions and plans and programs related to trails and beaches in the North Clatsop Plains. Next, the chapter presents recommendations for coordinated management and communications with respect to beach closures, beach access, and tsunami outreach and education. Finally, the chapter presents a proposal to modify and complete the existing trail network in vicinity of Camp Rilea.

Related Plans and Programs

This section provides a brief overview of the State and local plans and policies most relevant to beach access, related management and communications and maintaining and completing the trail network in the area.

Ocean Shore Management Plan

Oregon's ocean shore is considered the State's "largest day use recreational area."[1] Managed by the Oregon Parks and Recreation Department (OPRD), Oregon's beaches (seaward of the vegetation line) are a permanent part of the State's recreation resources, and public use of the ocean shore is protected regardless of the underlying ownership.[2]

The Ocean Shore Management Plan addresses all OPRD duties and responsibilities related to management of Oregon's ocean shore[3], including but not limited to resource preservation, recreation area management, permit administration, and the

[1] Oregon Parks and Recreation Department (OPRD). Ocean Shore Management Plan. January 2005. p. 11.
[2] OPRD. p. 10.
[3] Defined as "...the land lying between the extreme low tide of the Pacific Ocean and that statutory vegetation line, or the line of established upland shore vegetation, whichever is further inland." ORS 390-605(2) as quoted in the Ocean Shore Management Plan.

provision of beach access facilities along the coast, including those at Sunset and Delaura Beach access locations.

The Ocean Shore Management Plan outlines recreation-related recommendations and broad beach safety goals, and examines three types of beach access: general public access, emergency access, and special access provisions for persons with disabilities or limitations.

Fort Stevens State Park Master Plan

The Fort Stevens State Park Master Plan directs the use and management of Fort Stevens State Park, an Oregon Parks and Recreation Department (OPRD) property. The current plan amends the 1976 master plan. Since the plan was last updated in 2001, OPRD has purchased the Delaura Beach property immediately to the north of the formal study area for the Sub-Area Plan. Delaura Beach is now considered part of Fort Stevens.

Clatsop County Parks and Recreational Lands Master Plan

The County's Parks and Recreational Lands Master Plan includes five planning goals for County parks and recreational lands, with related objectives, actions and recommendations. Community members involved in the plan development process shared recommendations specific to the study area. These include: a shared-use trail and mountain bike system at Carnahan Park, parking for horse trailers and large trucks at Delaura Beach, a bike trail from Fort Stevens to Seaside, and greater protection of Delaura Beach dunes and recreation area (now a State recreation site).

Warrenton Trails Master Plan

The Warrenton Trails Master Plan outlines the strategies for creating a system of hiking and biking trails for the City, with connections south into the unincorporated Clatsop Plains. The Master Plan and its advocates are a fundamental driver and component of creating a strong regional network of well-connected trails for multiple uses.

County Comprehensive Plan and Clatsop Plains Community Plan

Comprehensive Plan goals and policies are countywide goals and policies and correspond to the Oregon Statewide Planning Goals. Among its other objectives, Statewide Planning Goal 18 is designed to ensure protection of fore dunes from adverse development and environmental impacts. Both the Oregon Department of Land Conservation and Development and Warrenton Dunes Soil Conservation District should be consulted upon consideration of projects potentially impacting beach and dune areas.

The Clatsop Plains Community Plan addresses a number of issues related to recreation and beach management. Key policies focus on protecting the stability of open sand areas and preventing shoreline erosion and modification of current or

wave patterns or beach sand supply. The Community Plan states the need to limit recreational access and use of active dune areas and specifies that recreational vehicle parks shall not be permitted outside of the urban growth boundaries (i.e., they are not allowed in the study area).

The Plan also articulates the importance of log debris in the formation and maintenance of fore dunes, and the resulting need to regulate driftwood removal from sand areas and beaches.

In addition, the Clatsop Plains Community Plan establishes a planning goal and set of policies to preserve and discourage the obstruction of scenic areas, vistas, views of the ocean and other significant visual features. Scenic areas, per the Plan, are a "resource of greatest importance to this planning area." Related policies include height limit restrictions on beach front lots and adjacent properties, limits to placement of new or excessive signs along Highway 101, and prohibition of intensive development on the foothills or on top of dune ridges.

U.S. Highway 101 Scenic Byway

U.S. Highway 101 is a designated Scenic Byway. The Scenic Byway program is authorized by the Federal Government but administrated by the Oregon Department of Transportation (ODOT). Oregon Administrative Rule (OAR) 734-032 describes the procedure for establishing and administering scenic byways.

These rules set forth broad goals and objectives for the program but they do not establish specific regulations that apply along the scenic corridor. The management strategy that is developed for each specific byway (at the time the corridor is recognized) provides some additional guidance but does not include any enforceable regulations either.

Other administrative rules establish some restrictions on billboards and other types of signs along scenic byways, and other state highways. OAR 734-063 prohibits the placement of any new billboards (referred to by ODOT as outdoor advertising signs) along a Scenic Byway. OAR 734-060 restricts signs along any state highway that incorporate lighting, movement, or other features that could distract drivers.

Scenic Byway protection is primarily accomplished through local comprehensive plans and development regulations that incorporate policies and standards designed to protect the scenic quality of the corridor. These may include special setback requirements, height limitations, material and color restrictions, sign regulations (in addition to the state regulations described previously), and other protection measures.

In 1983, with the adoption of the Clatsop Plains Community Plan, the views along Highway 101, the dune ridges, and coastal foothills are identified as a scenic area. Signs, in accordance with Oregon Administrative Rules are limited in this area, and intensive development is not permitted on dune ridges or in the foothills.

Preparing for a Tsunami: DLCD Land Use Guide for Oregon Coastal Communities

The Oregon Coast, known for its natural resources and spectacular scenery, is also a zone of great instability and vulnerability. The coast, including the North Clatsop Plains, is subject to chronic coastal hazards and vulnerable to the possibility of more catastrophic hazards such as Cascadia earthquake and tsunami, which is anticipated to affect the state in the future. This recently published, web-based guide (January 2014) includes sample tsunami related comprehensive land use plan text and policies, information on needed map amendments, a tsunami hazard overlay (THO) zone model to implement resilience measures, tsunami land use strategy financing and incentive concepts, tsunami evacuation route plan assistance, and information relating to pre-disaster community land use planning for a Cascadia event tsunami. The guide's model comprehensive plan, zoning code and other provisions are designed to be used with the new Department of Geology and Mineral Industries Tsunami Inundation Maps (TIMs) available at www.oregongeology.org.

Other State Level Plans and Programs

Additional State-level plans of immediate relevance and importance to the study area include the Oregon Coastal Management Program and the Oregon Statewide Trails Action Plan.

Current Conditions

This section summarizes existing and planned recreation assets and current recreation activities in the North Clatsop Plains.

North Clatsop Plains Beaches

The study area includes roughly 3.5 miles of coastline, from Delaura Beach south to Sunset Beach. The Sunset Beach State Recreation Site, located within the study area, is approximately 120 acres in size and is the site of the western trailhead of the Fort to Sea Trail, which formally connects to the Oregon Coast Trail at this location. Sunset Beach Lane provides vehicular public access to the beach.

Tourists and visitors alike visit beaches of the Clatsop Plains to relax and to play. Beach driving is a favored pastime. Common activities include swimming and jumping waves, kite-flying, frisbee, and informal team sports such as soccer and wiffle ball. Building small beach fires at night is a popular activity, especially during the summer and on holiday weekends.

According to the Oregon Department of Fish and Wildlife (ODFW), Clatsop beaches have the most stable razor clam populations in the state, and 95 percent of Oregon's razor clam digging occurs here. Seasonal closures (July 15 to September 30) on Clatsop beaches are in place to protect juvenile clams. Shellfish permits are

required for both recreation and commercial shellfish harvesting. ODFW manages permit applications.[4]

Fishing from the Clatsop Plains shore is a common activity, with perhaps one or two dozen people found fishing over the course of a busy spring or summer week. It is not uncommon to encounter one or two anglers during a visit on a given spring or summer day.[5] Surfperch is the most popular and abundant species.

SHORELINE AND COASTAL ACCESS

Driving on the Beach

According to the Oregon Parks and Recreation Department, sightseeing/driving for pleasure is one of the top five outdoor recreation participation activities for both Oregon residents and out of state visitors.[6]

Driving is currently allowed on the Clatsop Plains beach from the Columbia River to the Gearhart public access road north of the Necanicum River.[7] This includes the beach that runs the length of the study area. Legally, the beach is open only to vehicles licensed to drive on the state's highways. Maximum legal driving speed is 25 miles per hour and driving on dunes is prohibited.

Many people use their cars to access the beach when clamming, fishing, or otherwise recreating. Some residents and visitors to the area may use the Clatsop beaches as a Highway 101 bypass, as well.

General Recreation and Emergency Beach Access

Sunset Beach Lane is the only developed road in the study area – and one of few in the Clatsop Plains -- that provides direct vehicular access to the beach. According to OPRD's definition of a general access location for recreation, a public access site is an "all-weather public parking lot located within ¼ mile of the sandy beach or rocky intertidal area, that can be accessed via all weather, two wheel drive roads, is actively managed by some public agency; and is to be provided about every three miles along the Oregon coast."[8] According to OPRD, both Sunset Beach and the Delaura Beach Road access location meet this definition.[9]

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[4] The Camp Rilea JLUS also discusses clamming, tides and beach closures.
[5] Ibid.
[6] Oregon Parks and Recreation Department. Ocean Shore Management Plan. 2005. p. 45.
[7] Exceptions are summer afternoons and evenings north of Peter Iredale access.
[8] OPRD. Ocean Shore Management Plan. p. 57.
[9] Hillman, Laurel, Oregon Parks and Recreation Department (OPRD). April 10, 2013. Written comment.

Emergency and Americans with Disabilities (ADA) Access

According to OPRD, existing beach access points provide sufficient emergency access. The critical issue is their ongoing maintenance to ensure easy access, especially for emergency vehicles. The Ocean Shore Management Plan identifies access to the beach for those with disabilities and general limitations as a key priority. The boardwalk connecting the Fort to Sea trailhead to the Pacific Ocean is ADA-accessible.

BEACH CLOSURES

Seasonal restrictions coinciding with western snowy plover nesting season (March 15 – September 15) may impact beach access to the north and south of the study area (at Columbia River South Jetty and Necanicum Spit), but do not restrict recreational use of or access to beaches within the study area.

Discussion of beach closures in the study area relates primarily to Camp Rilea live-fire training. While highly unlikely , munitions from range activities have the potential to travel off Camp Rilea and land on the shoreline and in the ocean. In response to this public safety issue, the Camp's live-fire range surface danger zones (SDZs) and related Department of Army standards are in place to protect nearby undeveloped beach and ocean areas by restricting access in these areas during training events.[10]

National and State Parks

Fort Stevens State Park lies immediately to the north of the study area and attracts thousands of tourists and visitors annually. Delaura Beach, once County-owned, is now part of the Fort Stevens State Park and shares Camp Rilea's northernmost boundary. Fort Stevens is the second largest OPRD property in terms of acreage and encompasses forests, diverse wetlands, inland lakes, and miles of ocean and Columbia River beach. It also includes a variety of historic resources, including much of the historic Fort Stevens site and the wreck of the Peter Iredale.

The Yeon Property, located between Clatsop Beach and Sunset Lake, is part of the Lewis and Clark National Historical Park network. This site is home to remnant coastal prairie which may be the site of reintroduction for the Oregon Silverspot butterfly, and is also part of the North Coast Land Conservancy's Neacoxie Corridor Initiative. The Yeon Property has an easement that allows for trail and recreational access and a series of informal "social trails" used by neighbors.[11] Any change to current uses such as developing a more formal trail connection would need to undergo formal federal planning, evaluation and approval.

[10] Clatsop County. Camp Rilea JLUS. p. 4-56.

[11] Clatterbuck, Chris. Chief of Natural and Cultural Resources, Lewis and Clark National Historical Park. Teleconference. May 29, 2012.

North Clatsop Plains Trails

Hiking and walking on the beach is a favored recreational pastime of locals in the area. National and regional amenities also attract out-of-town visitors to the area and its trails.

HIKING TRAILS

The roughly 6.3-mile Fort to Sea Trail is part of the Lewis and Clark National Historical Park and connects the Oregon Coast Trail at Sunset Beach with Fort Clatsop to the northeast, and then to Netul River Trail and Netul Landing to the south. The National Parks Service maintains the portion of the trail east of Highway 101 and OPRD maintains the western extent.

The 382-mile trail along the Oregon Coast begins at the Columbia River South Jetty, located four miles north of the Fort Stevens State Park campground. The first sixteen miles, including the portion that passes through the study area, is on the beach.

BICYCLE AND EQUESTRIAN TRAILS AND PATHWAYS

When asked about favorite outdoor activities as part of a 2005 public opinion survey, biking was mentioned by over half of the respondents.[12] At the same time, trails and pathways for cyclists and mountain biking opportunities in the study area are limited.

Participants in the 2005 County Recreational Lands Master Plan Process specifically called for the development of mountain bike trails in the Clatsop Plains (for example, at Cullaby Lake and near Camp Rilea), and a bike trail connecting Fort Stevens State Park to Seaside. Similar calls have been made for more horse camps, trails and facilities at Fort Stevens State Park and Delaura Beach. The existing Delaura Dune Trail at Delaura Beach is open to equestrian users, as is the ocean shore.

County Parks

Both Carnahan and Smith Lake County Parks are located within the study area. Carnahan Park is a 31-acre site that provides boat access (i.e. parking, a gravel boat ramp, and a small dock) to Cullaby Lake.[13] Carnahan County Park, like Cullaby Lake County Park, is a day use fee area. The north end of Cullaby Lake at Carnahan Park is closed to waterskiing but otherwise open to motorized boating, with specified use restrictions clearly posted.

Smith Lake Park is composed of roughly three acres of unmaintained woodland west of Smith Lake and is accessible via Ridge Road. The County Recreational Lands

[12] Clatsop County. Clatsop County Parks and Recreational Lands Master Plan. 2005.
[13] Only the northwest portion of Carnahan Park is formally part of the study area.

Master Plan identified Smith Lake Park as a natural area suitable for low-impact recreation.[14]

Sunset Lake Public Park

Sunset Lake Public Park is an approximately two-acre park located on the northeast corner of Sunset Beach and Lewis roads, and maintained by neighboring property owners. The County has no record of ownership of Sunset Lake Public Park, nor is the park maintained according to any formal arrangement. The two or three parcels that make up the park are designated as open space for parks and recreation by the County zoning code.[15]

[14] Clastop County. Clatsop County Parks and Recreational Lands Master Plan. March 2006. p. 64.
[15] Steve Meschke, Clatsop County Parks Superintendent. May 7, 2013. Teleconference.

Photo Credit: Mike Patterson, 2013

Beach Access, Management and Communications

A primary objective for managing recreation in the North Clatsop Plains is to limit encroachment of land uses and activities in the immediate vicinity of Camp Rilea. While many residents recall times when recreation on Camp property was less regulated and access to the beach by way of Camp property possible, the Camp's mission demands adherence to more stringent security standards today. Members of the public may not access the beach via Camp property. With the exception of the Fort to Sea Trail, informal recreation and recreation unrelated to groups or events hosted at Camp Rilea is not allowed and is considered trespassing.

At the same time, community residents, the County, and its partners, including Camp Rilea, recognize the importance of the area's recreation sites and amenities to the character and economy of the Plains, the health and lifestyle of its residents, and the experience of its visitors.

This section provides an overview of key issues and policy actions necessary to protect and enhance the Plains' culture of outdoor recreation and the recreation experience of residents and visitors while ensuring public safety and supporting the Camp's mission of national defense, troop readiness and regional emergency response and recovery.

Key Issues and Opportunities

COOPERATIVE MANAGEMENT AND LIVE-FIRE BEACH CLOSURES

An important objective of the Sub-Area Plan and planning process is to help ensure that beach closures resulting from Camp live-fire training are well communicated and cooperatively managed in partnership with Oregon Parks and Recreation Department and other applicable State agencies. In 2014, Oregon Military Department and OPRD finalized a formal agreement to guide management and closure of the beach west of Camp Rilea.

To help reduce beach closures, Camp Rilea has restricted range operations to 45-minute intervals from 7:15am to 10:00pm, with a 15-minute pause at the top of every hour to allow travel in either direction through the closed-off beach area. The Camp has also restricted range operations during zero to minus tides (+/- 2 hours) to keep beaches open for clamming and related activities.

DELAURA BEACH RECREATION ACCESS

Delaura Beach is a location of strategic importance with respect to North Clatsop Plains beach access. Participants in past planning processes have suggested that the State provide direct public vehicular access to the beach at Delaura Beach Road, in part as a way to provide alternative egress in the event of beach closure at Camp Rilea.[16] However, the steep fore dune at Delaura Beach and State environmental regulations designed to protect coastal fore dunes (Statewide Planning Goal 18 and related Comprehensive Plan policies) preclude development of an access road at this location.[17]

Currently, Delaura Beach Road at Fort Stevens is not maintained for regular vehicle traffic. Culverts have failed and the road is marked with large depressions that flood during spring and winter months and prevents the passage of vehicles. Conditions at some locations preclude access for pedestrians and other users as well, making reliable access to Delaura Beach very challenging. Vehicle access must be maintained for emergency vehicles, per existing intergovernmental agreement with the County.

This plan proposes that State Parks improve Delaura Beach Road leading to the fore dune, transforming it into a multi-use pathway for low impact recreation. Improving this road for pedestrian and equestrian users, at a minimum, would strengthen beach access for area residents and visitors. This plan does not recommend or propose any improvements that would negatively impact the fore dune or associated coastal resources at Delaura Beach. For further discussion, see the next section: A Proposal for North Clatsop Plains Trails.

[16] OPRD. Ocean Shore Management Plan. p. 6.
[17] OPRD. Fort Stevens State Park Master Plan. 2001. p. 32.

Per OPRD, any capital improvements to strengthen connectivity and access at this location must be part of the Fort Stevens State Park Master Plan.

PUBLIC AND VISITOR INFORMATION

The JLUS process and this planning process have identified the need to provide the public with better information about the Camp's federal and state mission and activities, particularly as they relate to enjoyment of nearby coastal and recreational resources. Participants have suggested that the Camp make it easier for members of the public to reach appropriate staff with questions and concerns. In response, Camp Rilea has recently developed a Web site with the phone numbers and emails of Camp Rilea staff. The Web site also shows the current status and schedule of Camp firing ranges.

In addition, with release of the new state tsunami inundation maps (Department of Geology and Mineral Industries - www.oregongeology.org) the County and State have the opportunity to provide beach and trail day users with the most recent information about the threat of a tsunami and clear direction about what to do in the event of an earthquake or tsunami.

Recommendations

Recommendations related to management and communications around beach recreation, access and related improvements include the following:

A. Continue to schedule live-fire training to avoid training during minus and zero tides, when possible, which are the ideal tides for collecting clams from the beaches *(JLUS Recommendation LU-3 H).*

B. Encourage organizers of beach events (i.e., beach clean-ups, etc.) to reach out to OPRD and Camp Rilea prior to scheduling in order to minimize or eliminate conflicts with Camp training events and others.

C. Per the JLUS, increase public awareness about the risk of trespassing onto Camp Rilea and the need to stay on marked trails. Take a comprehensive approach to the effort, focusing also on increasing awareness of Camp Rilea's mission, its role in the community, and its live-fire training, associated beach closures and other associated impacts.

D. In partnership with Camp Rilea, OPRD, DOGAMI and/or ODFW, establish informational kiosks at Sunset Beach and Fort Stevens beach access (Peter Iredale). Provide and design information to achieve the communication objectives of the different agencies. Consider an integrated and/or interpretive approach; use clear graphics and language that is easy to understand.

E. Identify picnic shelters, lookouts and other locations on high ground to serve as community 'safe spaces' and meet-up/information locations in the event

of an earthquake or tsunami. Map this information and make readily available to area residents and visitors.

F. Initiate the process to update the Fort Stevens Park Master Plan. Evaluate the potential to improve Delaura Beach Road to strengthen access for pedestrians, bicycles and equestrian users. Consider re-aligning the road or pathway to create a greater buffer or distance from Camp Rilea property. Explore adjusting the right-of-way to reflect the final roadway alignment accurately. When updating the Master Plan, consider adding vehicular beach access north of Delaura Beach Road.

G. Explore the feasibility of installing a gate to control vehicular access at Delaura Beach. Doing so may reduce encroachment and trespass on Camp Rilea property, protect sensitive dune resources, and minimize wear on culverts and other infrastructure.

A Proposal for North Clatsop Plains Trails

The following trails proposal reflects the outcomes of a deliberative process involving a number of agencies and organizations, including Clatsop County, Camp Rilea, Oregon Parks and Recreation Department (OPRD), the National Parks Service, Oregon Department of Transportation, and Warrenton Trails Association. These organizations met in a series of meetings to examine multiple trails alternatives on publicly owned lands, resulting in the recommended new trails and trail modifications presented in this document. Preceding this effort, Warrenton Trails Association has worked closely with Clatsop County and the City of Warrenton to advance discussion and implementation of particular trail and pathway segments.

The objectives of this proposal are two-fold: 1) to create a continuous trail connection from Fort Stevens State Park to the Fort to Sea Trail and Sunset Beach that bypasses Camp Rilea property to the east; and 2) to realign a segment or segments of the existing Fort to Sea Trail which currently pass through Camp Rilea property, with the objective of limiting encroachment on Camp property.

North Clatsop Loop Trail

DELAURA BEACH TRAIL

Many community members have expressed strong support for a continuous trail connecting Delaura Beach to Ridge Road. The proposed Delaura Beach Trail segment runs along the northern boundary of Camp Rilea and is part of the City of Warrenton Trails Master Plan. The following provides a brief description of the status of this effort and possibilities moving forward.

Fort Stevens State Park

The first portion of the Delaura Beach Trail segment is proposed to run the length of Delaura Beach Road at Fort Stevens State Park (see Figure 3-1). Opportunity exists to explore alternative alignments, as well. A trail leading through the woods north of Delaura Beach Road could more feasibly provide direct access to the beach and could alleviate Camp Rilea concerns with respect to limiting activity near its property boundary. These improvements would create a stronger connection for Delaura Beach visitors, in addition to helping create a continuous trail bypassing the Camp to the east. Delaura Beach is a popular location for horse back riding, and future improvements would need to support continued equestrian use.

Any new or improved trails and associated facilities at this location must be part of the Fort Stevens State Park Master Plan (last updated in 2001). This suggests the need to initiate a collaborative process to update this document.

City of Warrenton Right-of-Way

The second portion of the Delaura Beach Trail runs from the State park line to Ridge Road. The trail is envisioned to coincide with the road itself; proposed improvements include a paved shoulder along Delaura Beach Lane.[18] The proposed trail is in close proximity to several historic sites, including a World War II Japanese shelling monument and the Smith Mission Monument.[19]

The City of Warrenton, with the support of a consultant team (HBL/OTAK), recently developed the Delaura Beach Trail Plan. At the time of writing, this plan was nearly complete. Lack of funding is the primary implementation challenge. The City has earmarked over 20 percent of the required funds, and the County has dedicated nearly one-third of the funds required to meet project costs. However, a considerable gap remains and recent efforts to secure grant funds have been unsuccessful.[20]

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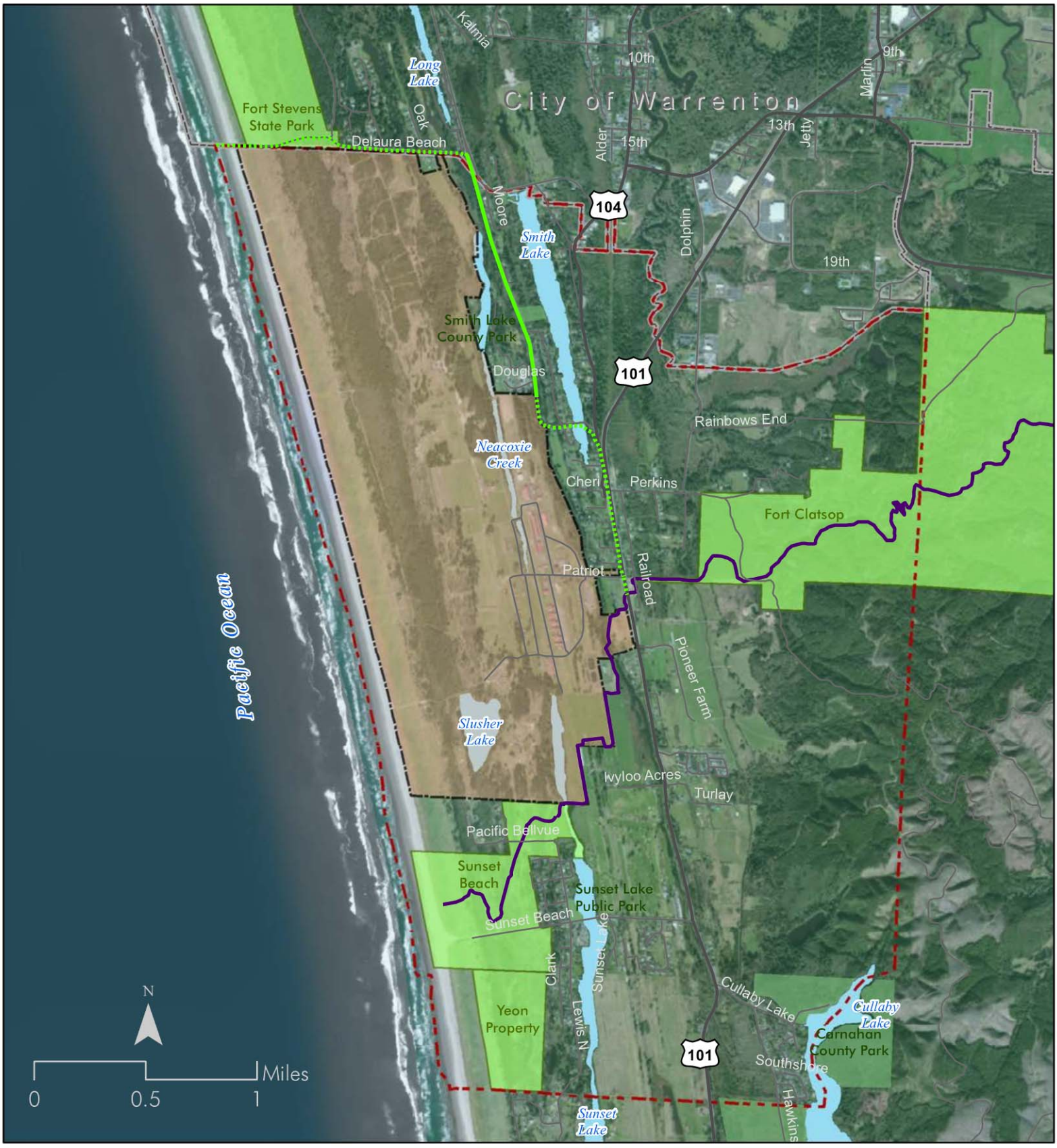
[18] City of Warrenton. Warrenton Trails Master Plan. July 2008. p. 8.

[19] Clatsop County (prepared for). Camp Rilea Joint Land Use Study (JLUS). June 2012. p. 4-42.

[20] Scheller, Tessa James. August 19, 2013. Telephone communications with Nicole Lewis, MIG, Inc.



Despc 1+, Sub-Area Plan Trails Proposal

- Camp Rilea Bypass Trail (proposed)
- Camp Rilea Bypass Trail (completed)
- Highways
- Roads
- Fort To Sea Trail
- Project Area Boundary
- Parks
- National and State Parks
- Incorporated Cities
- Camp Rilea
- Water Features

Data Sources: Clatsop County GIS, Bing Maps Aerial 2012

05.3/ .2012

CLATSOP COUNTY OREGON 1844

MIG

A view of the Highway 101 easement and potential East Bypass Trail location, looking south from the junction with Highway 104. Photo Credit: Mike Patterson, 2013

LOOP TRAIL EAST SEGMENT

A critical gap in pedestrian connectivity exists between Ridge Road at Delaura Beach Lane and the Fort to Sea Trail. It should be noted that past trail proposals have included a 1.2 mile trail section that would connect Ridge Road to the Fort to Sea Trail by way of Camp Rilea property. This trail was envisioned to follow the dune and riparian area along Neocoxie Creek and Camp Rilea's northeast border.[21] While carefully considered and discussed by the Trails Sub-Committee, the need to maintain a secure border and limit encroachment of Camp Rilea property precludes this option at present time.

This section briefly describes the current proposal and concept for the east segment of the proposed trail network.

Ridge Road Improvements

Clatsop County has recently repaved and improved Ridge Road to accommodate pedestrians and bicyclists. The County has added six feet of shoulder on each side of the road. Presently, the Warrenton Trails Association is working with the County to add an additional three-foot gravel pathway along the west shoulder, near the water where people most enjoy walking.

[21] City of Warrenton Trails Master Plan. p. 8.

East Segment South

The current proposal for the southern portion of the East Segment includes a pedestrian pathway that would generally follow the current right-of-way along Columbia

Columbia Beach Lane and proposed East Bypass Trail location.
Photo Credit: Mike Patterson, 2013

Beach Road/Lane and continue along the eastern edge of Highway 104 and Highway 101 right-of-way (Oregon Scenic Byway), connecting users to the Fort to Sea Trail just south of Camp Rilea. Development of a boardwalk running parallel to the roadway over the creek and wetlands at Columbia Beach Lane would be required. This proposed route takes advantage of the continuous highway right-of-way, managed by the Oregon Department of Transportation (ODOT), and will require close coordination with the agency.

Evaluation of specific alignments and trail designs along both the highway and Columbia Beach Lane must prioritize pedestrian safety. Columbia Beach Road is narrow, shoulders are limited, and blind curves exist at both ends. Widening will be necessary to accommodate new uses; bridge improvements and enhanced signage are likely needed as well. In addition, the Trails Sub-Committee expressed concerns about environmental impacts, particularly along Columbia Beach Lane. Water quality and fill issues associated with the portion of the road that passes through the Smith Lake dike are anticipated.

The Trails Sub-Committee identified the need to evaluate grade separation as a strategy to buffer the trail from vehicular traffic along Highways 104/101. With respect to Highway 101 and 104, the actual location of the trail alignment will be subject to further investigation and negotiation. The clear zone on a 55 mile per hour

section of highway is 30 feet from the fog line (i.e., center lane). The ODOT bike and pedestrian manual is fairly vague regarding how far a trails needs to be located from the highway shoulder. Ideally, the trail would be located within ODOT right-of-way but beyond the current embankment to create a natural grade separation. While existing right-of-way appears wide enough to support a trail alignment, grading may be required. In addition, current encroachment by private property owners will require coordination.

Opportunity may exist to leverage State or National Scenic Byway Program resources for trail improvements along Highway 101. Per 2012 project eligibility criteria, eligible projects include constructing "visitor, bicycle and pedestrian facilities including rest areas, shoulder improvements and interpretive facilities for byway travelers."[22]

[22] State of Oregon. Year 2012 Scenic Byway Projects Application Packet. Oregon Scenic Byways Program. November 2011. http://www.oregon.gov/ODOT/HWY/SCENICBYWAYS/docs/2012_grant_applications/2012_sb_grant_application_packet.pdf

Draft Recommendations

Recommendations related to implementation of the trails proposal presented in this plan include the following:

H. Determine the specific engineering requirements and associated environmental impacts of the proposed East Bypass Trail. Work with ODOT, OPRD and National Parks Service to explore maintenance and management alternatives and determine responsibilities. Work with partners to establish preliminary cost estimates and identify funding sources.

I. Continue to advance the Delaura Beach Trail Plan, working with partners to identify additional sources of funding to bridge the existing gap. Explore opportunities to implement the plan in phases, and to do so cost-effectively.

CHAPTER 4. WATER QUALITY ACTION PLAN FOR NORTH CLATSOP PLAINS

Purpose of this Chapter

The North Clatsop Plains area has faced water quality issues for several years. Currently, many waterbodies in and around the Plains suffer from water quality impairment and are consequently tracked by the State. Because of these impairments, several of the waterbodies experience invasive aquatic plants that visually harm the landscape, inhibit recreation, and are harmful to the local ecosystem. The community is also concerned that both surface and ground waters are being polluted, and could pose harm to human health and the environment. As the next step toward addressing community concerns, Clatsop County has developed a water quality action plan as a part of the North Clatsop Plains Sub-Area Plan.

The issue of water quality and its contributing factors is a relatively complex matter that stems from many different human activities and natural processes. This is particularly true for the Clatsop Plains. The hydrology is unusually fluid due to the common occurrence of porous soils, leading to significant interconnectivity between surface and ground waters. This creates a challenging environment to determine the root causes of water quality impairment. Previous studies, particularly the Camp Rilea Joint Land Use Study (JLUS), identify septic tank leachate as one of the potential causes. Other pollutant sources identified include agriculture, residential

and commercial fertilizer, stormwater runoff, logging, and lack of surface water flow through the watersheds.

Because the root causes of water quality impairment are not yet fully defined, the action plan has been developed so that progress can still be made while pursuing the needed data. This is accomplished primarily through a phased implementation approach. Action items that can sensibly be implemented without significant additional data collection are recommended for the near term, while action items that have greater dependency on data collection, resource partnering or greater investment are recommended for longer term implementation.

Scope and Organization

To fully understand the scope and intent of the action plan, it is important to consider the planning process. Primary steps included research of existing conditions, review of previous studies, review of current state and local policies, review of current state and local programs, and many discussions with the North Clatsop Plains Sub-Area Plan Advisory Committee and several agency representatives.

Many different categories of options were explored including existing policy and enforcement, new policy, infrastructure improvements, parallel programs and resources, and partnering opportunities. The Surface and Groundwater portion of the Regulatory Options Report (2013) detailed the individual options within those categories. After several discussions with the Advisory Committee and agency representatives, the list of options was narrowed and formed into an action plan.

The action plan consists of a three-pronged approach that can be phased over time. The first component involves sharing resources to attain needed water quality data and for implementation of other important strategies. The second component is the implementation of policy strategies and actions presented in this plan; and the third component is to improve the wastewater infrastructure. Together, these elements form a flexible but forward-thinking and multi-faceted water quality action plan.

This chapter is organized in the following sections:

- Current Conditions
- Related Programs and Resource Sharing
- Policy Strategies and Actions
- Wastewater Infrastructure Improvements

The Current Conditions section of this chapter provides important background information related to current issues within the study area. The Water Quality portion of the Existing Conditions Report (2013) presents findings from the literature review that provided the foundation for Plan development.

The Related Programs and Resource Sharing section of this chapter provides detail for ongoing programs that have similar water quality goals. It identifies ways in which efforts can be aligned and resources shared.

The Policy Strategies and Actions and Wastewater Infrastructure Improvements sections present a series of action items selected to improve water quality conditions in the North Clatsop Plains. Each action item is categorized as either near-, mid- or long-term with regard to the implementation schedule. Near-term actions include actions for implementation in the next two years; mid-term actions are intended for implementation in the next three to five years; and long-term measures are those intended for implementation between five and ten years from now. This action plan is designed to support and correspond with implementation of the Land Use and Zoning chapter of the North Clatsop Plains Sub-Area Plan.

Current Conditions

Water Quality Pollution and Sources

As previously stated, several waterbodies in the North Clatsop Plains are listed as impaired under the Oregon Department of Environmental Quality's (DEQ) 303(d) list. The list includes the Skipanon River, Neacoxie Creek (southern portion only), Smith Lake, Sunset Lake, and Cullaby Lake. Documented causes of impairment include temperature, low dissolved oxygen, high levels of nutrients (nitrates and phosphorus), bacteria, fecal coliform, and pH levels. Because of these impairments, several of the waterbodies experience invasive aquatic plants such as water lilies, Brazilian elodea, and fanwort. Due to the porous soils, many share concerns that pollutants are infiltrating into the underlying aquifer.

Though many data gaps remain, various groups have completed studies in the last decade that have at least partially characterized the impaired conditions and that have attempted to identify sources of pollution. One of the key sources, consistently identified in most reports, is septic tank leachate. There are concerns that the density of septic systems and, hence, higher concentrations of leachate, may be exceeding the carrying capacity of the underlying soils. Older septic systems are of greatest concern, as they may be significantly underperforming or failing. Compounding the issue further are compliance problems with some of the community-based wastewater treatment systems such as the Shoreline Estates and Sunset RV Park systems.

Agricultural pollution sources have also been identified as contributors to water quality impairment. Raising livestock is one of the more common agricultural practices in the area. Based on review of aerial mapping, agricultural activities are apparent particularly along the west border of Highway 101. Farming and livestock can contribute a range of pollutants such as nitrates and pesticides. Fertilizers, both residential and commercial, may also be contributing to high nutrient conditions. Residential fertilizers are used for basic landscape application whereas commercial fertilizing could stem from locations such as the Astoria Country Club golf course. There is "consensus", particularly among DEQ representatives, that more long term data is necessary to define the type and levels of pollutants accurately and to delineate the significance of each of the sources.[1]

Stormwater runoff and drainage is another area of concern identified in previous reports. From a watershed perspective, waterbodies such as Neacoxie Creek are known to have been disconnected from previous flow channels, potentially causing stagnation.[2] Additionally, the JLUS states that culverts are often installed without coordination among properties. Also, a pattern has appeared whereby new developments are shedding water to adjacent properties instead of managing stormwater onsite.[3]

Regulatory and Policy Context

The public agencies that ostensibly have the most impact on current water quality policy in the North Clatsop Plains include the DEQ and Clatsop County. Other agencies with policy influence include the State Water Resources Department (WRD), the County Soil and Water Conservation District, the Oregon Military Department (OMD) (i.e., Camp Rilea), the Skipanon Water Control District, the Skipanon Watershed Council, the Environmental Protection Agency (EPA), and the National Oceanic and Atmospheric Administration (NOAA).

The Existing Conditions Report lists several different policies enacted by the agencies listed above. Below are policies and regulations that are defined and emphasized for the purposes of this action plan:

- DEQ Onsite Wastewater Treatment System Rules – This policy is Oregon Administrative Rule (OAR) Chapter 340, Divisions 071 and 073, current as of July 1, 2011. These rules establish requirements for the construction, alteration, repair, operation, and maintenance of onsite wastewater treatment systems. Their purpose is to restore and maintain the quality of public waters and to protect the public health and general welfare of the people of the state

[1] Representatives from the Department of Environmental Quality. Interview with Jay Renkens. Portland OR, 17 April 2013. Transcript of Meeting.
[2] K.U. Snyder et al., Necanicum River Watershed: Final Report, E&S Environmental Chemistry, Inc., 2002, pp. 7-24.
[3] Matrix Design Group, Camp Rilea: Joint Land Use Study, June 2012, pp.4-138.

of Oregon. The State rules apply to all septic systems in the North Clatsop Plains. They also address Wastewater Pollution Control Facility (WPCF) requirements, which are currently utilized in some of the multi-family zoned areas.

- The Geographic Rule for the Clatsop Plains Aquifer – This policy is found within DEQ Onsite Wastewater Treatment System Rules in section 340-071-0400(5). These rules provide a basis for continued use of onsite wastewater treatment systems while protecting the quality of groundwater for future water supplies. The rules impact development standards for septic systems and require the set-aside of aquifer reserve areas.

- The Clatsop County Land and Water Development and Use Ordinance (LDWUO) – Provisions of this ordinance are designed to manage the impact of development on groundwater. This document provides the most specific development guidance with regard to sewerage requirements. It lists each of the zoning designations and the corresponding minimum lot size required.

- The Clatsop County Standards Document – This document establishes development standards that guide site and structure improvements, cluster development, setbacks, height limitations, scenic view protection, and historical protection. The Standards Document also outlines environmental protection standards and state and federal requirements that help protect water quality.

- The Aquifer Reserve Overlay (ARO) District – This policy is found within the LWDUO. The ARO covers an area that generally follows the boundaries of Camp Rilea. The purpose is to limit land use over the aquifer to preserve it as a source of drinking water. It specifically prohibits the construction of subsurface sewage disposal systems (i.e., septic) and limits fertilizer use and other activities that could impact water quality.

Existing Sanitary Infrastructure

The North Clatsop Plains study area is an unincorporated area of Clatsop County without a centralized public sanitary sewer collection and treatment system. The majority of residents use standard septic systems for wastewater treatment and disposal, with the exception of a small number of residents that connect to a community-sized, on-site collection and treatment system. The nearest municipal wastewater collection system and treatment plant is located within the City of Warrenton, just across the northern border of the study area. To the south, the nearest municipal wastewater collection system and treatment plant is located in the City of Seaside. The City of Gearhart does not have a public wastewater system, relying primarily on individual septic systems.

The great majority of the systems in use in the North Clatsop Plains are individual septic systems. If referring to the County Zoning Map, the properties zoned Single-Family Residential and Residential Agriculture all use individual septic systems. The properties zoned Rural Multi-Family Residential and Commercial are all on septic with the exception of Sunset Beach RV Park. Water Pollution Control Facility (WPCF) permits in the study area include the Sunset Lake RV Park, Glenwood Village, and Camp Rilea. Camp Rilea, which encompasses a very large portion of the study area, recently upgraded their treatment plant. In addition to biological treatment and disinfection, they now use rapid infiltration (considered a land application system) and can treat wastewater to Class A standards for reuse, thus reducing demand on the freshwater aquifer. This treatment plant serves Camp Rilea housing and facilities only. For clarification, a WPCF sanitary system provides community-based collection and treatment, but is still considered an on-site system. A sanitary sewer system that discharges to surface water, such as a river or ocean, would require a National Pollutant Discharge Elimination System (NPDES) permit. Typically the larger municipalities, such as the cities of Warrenton and Seaside, are holders of NPDES permits.

As a part of exploring the extents and characteristics of existing sanitary infrastructure, representatives from the Public Works Departments from the cities of Warrenton and Seaside were contacted. The representative from the City of Warrenton described their treatment plant as having the capacity to accept wastewater loads from areas outside of the urban growth boundary. He noted, however, that this would not be allowed under current State regulations.[4] In a similar discussion with a representative from the City of Seaside, the wastewater treatment plant was characterized as antiquated and without capacity for wastewater loads outside of City limits.[5]

The Shoreline Sanitary District is a group of 147 homes adjacent to Cullaby Lake (i.e., Shoreline Estates). They currently operate a package sanitary treatment facility that discharges from a lagoon into the Skipanon River. In recent years, DEQ determined that their water quality permit could not be renewed due to polluting impacts to the Skipanon River. Several alternative treatment options were explored, but the only realistic option was to build a sewer line to the City of Warrenton's wastewater collection system. Because there was no practical alternative, the Department of Land Conservation and Development (DLCD) provided an exception to OAR 660-011 by allowing a community outside of the urban growth boundary to connect. Under these conditions, no other community is allowed to utilize this system. The project includes a pump station and approximately 3.3 miles of sewer force main pipe at an estimated cost of $2 million. The District is still operating the treatment facility under an extended administrative agreement with DEQ under the premise that the plant will be decommissioned. At the time of

[4] Snyder, Don. Director of Public Works City of Warrenton. Interview with Daniel Johnston. Portland OR, 26 Nov 2012. Teleconference.
[5] Wallace, Neal. Director of Public Works City of Seaside. Interview with Daniel Johnston. Portland OR, 22 Mar 2013. Teleconference.

writing, construction for the new project is expected to break ground in May 2014. The project is funded through grants and loans from the US Department of Agriculture (USDA) and the Infrastructure Finance Authority (IFA).

Issues with Sanitary Infrastructure and Water Quality

Within the study area, the most visible problems with wastewater disposal occur in the multi-family or commercially zoned areas. With regard to septic systems, previous studies (i.e., JLUS and Portland State University (PSU) Lake Management Study) indicate that wastewater leachate is entering surface water, and potentially groundwater, and that the density of the septic systems may be a contributor. It is also believed that older septic systems, which may have failed or are low functioning, may constitute the greater of the problem, as compared to new systems built to modern standards.[6] Based on an evaluation of the Zoning Map, there are several locations where clusters of homes may be contributing to an overconcentration of leachate. One area with relatively dense housing is on the east and west border of Sunset Lake, just south of Camp Rilea. To the north of the main entrance to Camp Rilea, and south of Smith Lake, relatively dense housing borders Highway 101. Concentrated housing lies to the east and west of Smith Lake up to the boundary with the City of Warrenton.

Existing Water Infrastructure

Sources for potable water vary across the study area. A significant number of properties are in fact connected to a public water system. The City of Warrenton is one of the primary providers with water mains as far south as Gearhart. The City of Warrenton's source is the Lewis and Clark River, just east of the Seaside area.[7] Camp Rilea also maintains its own water distribution system within the confines of the property. Several properties in the study area also use well-water by drilling into the North Coast Basin Aquifer.[8]

Just to the south of the study area, the City of Gearhart recently commissioned a new water supply and treatment system. The new system is composed of eight new water wells that feed into a new water treatment and storage system. Prior to the commissioning of this system, the City received potable water through the City of Warrenton's distribution system.[9] The City of Seaside, the southerly neighbor of Gearhart, also maintains their own water supply, treatment, and distribution system. Their primary water source is the South Fork of the Necanicum River.

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[6] Johnson, York. North Coast Basin Coordinator DEQ. Interview with Nicole Lewis. Portland OR, 25 April 2013. Teleconference.

[7] Snyder, Don. Public Works Director City of Warrenton. Interview with Daniel Johnston. Portland OR, 26 Nov 2012. Teleconference. .

[8] Matrix Design Group, Camp Rilea: Joint Land Use Study, June 2012, pp.4-130.

[9] McCarthy, Nancy. "Gearhart to Celebrate New $11 Million Water System Sunday." The Daily Astorian, 31 Aug 2012.

Existing Stormwater Infrastructure

The North Clatsop Plains does not have a centralized stormwater collection system. Stormwater runoff disperses locally into ditches, streams, and lakes. Culverts are used to allow drainage to pass under roads and highways, between properties, and to equalize surface waters. All of these storm drainage conduits are important to help prevent localized flooding. Also, it is important to consider that the flow of surface and groundwater, both seasonal and storm related flows, have the ability to transport and concentrate pollutants in localized areas.

Several important organizations within the study area provide oversight for drainage and surface waters to include the Skipanon Water Control District, Skipanon Watershed Council, the North Coast Watershed Association, and the Clatsop County Soil and Water Conservation District. The Skipanon Water Control District primarily focuses on drainages on the east side of Camp Rilea. District representatives have noted that stormwater issues have increased as the area has developed. [10] Several drainage disputes have occurred between property owners in the past. These problems are partially attributed to a lack of drainage regulation.

[10] Scheller, Jim. Skipanon Water Control District. Interview with Nicole Lewis. Portland OR, 21 Mar 2013. Teleconference.

Related Programs and Resource Sharing

The County has an opportunity to participate in several resource sharing activities. Participating in these opportunities can result in addressing important water quality needs. The following is a list of current plans and programs that contain resource sharing opportunities:

- Water Quality Status and Action Plan for the North Coast Basin
- Statewide Groundwater Monitoring Program
- Wetlandia Water Quality Testing Program
- Oregon's Integrated Water Resources Strategy
- Clatsop Plains Community Plan
- Clatsop County Comprehensive Plan Goals and Policies
- Relevant Local Agencies

Water Quality Status and Action Plan for the North Coast Basin

Prepared by DEQ in 2011, the Water Quality Status and Action Plan for the North Coast Basin includes a broad-based evaluation of water quality in the North Coast region, along with an associated action plan. It represents analysis on a watershed basis and addresses some of the limitations of the Total Maximum Daily Load (TMDL) process. The report includes summaries of water quality problems and the strategies needed to mitigate them. The document identified issues such as bacterial effects on shellfish habitat, dairy operations, turbidity in drinking water, nitrate and bacteria in groundwater, and impacts to fish and aquatic life.

Partnering with DEQ for continuance of this program will further address water quality needs in the study area. Those needs include technical guidance, expansion of

water quality testing and analysis, and development of water quality improvement targets.

Some key actions from the 2011 report include the following: [11]

- Review the effectiveness of the current Clatsop Plains Geographic Rule, determining if the contaminant loading predictions have been met.
- Determine if the area should be declared an Area of Groundwater Concern or a Groundwater Management Area.
- Conduct further groundwater investigations to determine the extent of contamination in the Clatsop Plains areas.

Statewide Groundwater Monitoring Program

The State's 2013-2015 budgets included funding for a Statewide Groundwater Monitoring Program, establishing two positions that enable groundwater monitoring in two geographic regions per year. The entire state will be assessed over the next 10 years. No schedule or geographic prioritization is established at present time. The information developed will be used to determine areas of the state that are especially vulnerable to groundwater contamination, long-term trends in groundwater quality, status of ambient groundwater quality, and emerging groundwater quality problems. Resulting data will also inform groundwater users of potential contamination risks. DEQ identified the Clatsop Plains region as a groundwater monitoring priority in the Northwest Region, however, monitoring is unlikely in the 2014 cycle. A detailed monitoring schedule has not been developed at this time.

Wetlandia Water Quality Testing Program

The Wetlandia project is a collaborative project between the North Coast Watershed Association, Clatsop Community College, Necanicum Watershed Council, DEQ, and local restoration partners and volunteers. The intent is to create an organized water quality testing program in the lower Columbia River and North Coast. This project will benefit water quality improvement efforts by providing a scientific basis for councils to guide watershed stewardship and restoration. By participating in this program, the County can influence the data collection process.

Oregon's Integrated Water Resources Strategy

This program is sponsored by the Oregon Water Resources Department (WRD). The program was developed in August of 2012, and contains State-level strategies and resources for the protection of ground and surface water resources. It advocates for the proper use of septic systems to include servicing and repair of older systems. By staying apprised of program status and activities, the County can take advantage of State water quality efforts.

[11] Purcell, Jennifer. DEQ NW Region. E-mail to Nicole Lewis. Portland OR, 5 Aug 2013.

Clatsop Plains Community Plan

The Clatsop Plains Community Plan outlines a series of policies that prioritizes protection of water quality resources as the area develops. The Natural Resources section of the Community Plan outlines several recommendations from a local water quality study.

The Community Plan recommends policy development that will protect water quality, the groundwater supply, the loss of stabilizing vegetation, and salt water intrusion into the water supply.

Finally, the Community Plan includes two recommended actions pertaining to water quality. The first is the development of a water management program consistent with the water-budget equation. The second asks the County to cooperate with other local jurisdictions to consider the value of developing the Clatsop Plains aquifer as a water source.

Clatsop County Comprehensive Plan Goals and Policies

The Comprehensive Plan goals and policies are countywide goals and policies and correspond to the Oregon Statewide Planning Goals. Goal 6 is intended to maintain and improve the quality of the air, water, and land resources of the State. The following policies pertain to water quality:

- The County shall encourage the maintenance of a high quality of water through encouraging the concentration of urban development inside Urban Growth Boundaries and encouraging maintenance and improvement of pollution control facilities.
- The County Planning Department shall work with the DEQ to monitor and keep its environmental data base current including information on surface and groundwater quality.

Local Agencies

Several important organizations within the study area provide oversight for drainage and surface waters including the Skipanon Water Control District, Skipanon Watershed Council, the North Coast Watershed Association, and the Clatsop County Soil and Water Conservation District. These agencies offer a multitude of information relating to water quality, and can help form a more complete picture of water quality.

State Agencies

Highway 101 is a major public facility traversing the study area and is under the jurisdiction of the Oregon Department of Transportation (ODOT). The highway generates a significant amount of stormwater runoff containing contaminants from vehicles using this facility. Per the Camp Rilea-Surf Pines Facility Plan, Highway 101 will eventually be widened in this area. Once the facility is improved, ODOT will install stormwater features per requirements of the Clean Water Act and Endangered Species Act. Improvements to local roads will likely trigger these same requirements.

Photo Credit: Mike Patterson, 2013

Policy Strategies and Actions

This section presents the most promising initiatives to improve water quality in the North Clatsop Plains, as identified during Sub-Area Plan development. Each action is categorized as near-term (1-2 years), mid-term (3-5 years), and long-term (5-10 years). The following are the specific actions presented in this section:

A. Implement a Comprehensive Water Quality Study
B. County Management of Onsite Wastewater Management Program
C. Revise County Stormwater Development Standards
D. Work with DEQ to Update the Geographic Rule
E. Evaluate the Watersheds for Improved Interflow
F. Revise County Base Zoning and Development Requirements
G. State Designation of the North Clatsop Plains as a Groundwater Management Area (GWMA)

Near-Term Actions

A. IMPLEMENT A COMPREHENSIVE WATER QUALITY STUDY

Actions:

A.1: Coordinate with key professionals from State and local agencies, consultants, and from parallel water quality programs to define the project scope. A key parallel program is the Wetlandia project. This program can provide some of the data necessary for surface water. A study should also be initiated focusing on groundwater.

A.2: Implement water quality studies for surface water and groundwater that provide clarity as to the root causes of the water quality impairment. Pollutants and their concentrations should be traced back to their source. The study should include recommendations as to the most effective pollution reduction measures, specific to each water body.

A.3: Evaluate the study results in terms of its conclusiveness and the feasibility of subsequent recommended actions presented below.

Background and Need: A more comprehensive study is necessary to accurately define the types and levels of pollutants contributing to water quality impairment. In order to develop the most effective policy, the root causes of water quality impairment must be identified. Despite this process' relative focus on contamination associated with wastewater management in the Clatsop Plains, the proposed comprehensive water quality study should confirm the level and sources of contamination associated with stormwater runoff from Highway 101; use of pesticides, herbicides and fertilizers; and other uses. Data collection and quality must meet DEQ criteria and standards and support the key policy imperatives of this plan, such as establishing a State Groundwater Management Area.

The PSU Lake Study conducted in 2005 made the following statement in the executive summary:[12]

> *".....individual lakes will require more focused, smaller-scale studies that focus on identifying variability in redox potential and quantifying the potential nutrient sources around each lake."*

Benefits: Conducting a comprehensive study allows the County to tailor policy and direct resources toward the most effective policies. This also provides a stronger scientific foundation that will help garner public support.

Key Considerations: This study could be relatively costly. This subject crosses into many different disciplines. A substantial amount of time may be necessary to process the results and translate them to policy. Also, the complexity of the hydrology could pose challenges to pinpointing pollutant sources.

Other ongoing programs could help the County to attain the necessary water quality data. As described in the previous section Related Programs and Resource Sharing, those programs include the Water Quality Status and Action Plan, Wetlandia, and the Statewide Groundwater Monitoring Program.

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[12] Mark Sytsma, Final Report Regional Lake Management Planning for TMDL Development, Portland State University: Center for Lakes and Reservoirs, Executive Summary, pp. 2.

B. COUNTY MANAGEMENT OF ONSITE WASTEWATER MANAGEMENT PROGRAM

Actions:

B.1: Formalize an agreement with DEQ and/or other counties that allows County administration of the Onsite Wastewater Management Program, either on its own or in partnership with other counties.

B.2: Provide staff, training, and financial resources commensurate with the adopted responsibility.

B.3: Create standards and policies for the onsite program and employ public outreach and education to obtain community support. Programs in other counties can be used as benchmarks or models. Three counties known to have solid programs include Lincoln County[13], Columbia County[14], and Tillamook County[15].[16]

B.4: Consider implementing a time of transfer inspection program. The DEQ's current voluntary program may provide a starting point or model. This program represents a collaborative partnership with the Oregon Association of Realtors to promote and increase education and awareness on the importance of onsite septic system inspections at the time of property transfer, and the importance of proper use and regular maintenance of onsite septic systems.[17]

Background and Need: Corrective action is required for underperforming or failing wastewater systems; a known cause of pollution. Many older septic systems are likely to be in violation of State rules. Historically, septic system management has been relatively weak due to insufficient State resources.

Two-thirds of the state's 36 counties currently contract with DEQ to manage the onsite wastewater program. Clatsop County is among those whose programs are managed by DEQ. Also, there has been recent legislative working group activity with the aim of boosting effectiveness and economy for onsite wastewater programs. Next steps include determination of an implementation plan.

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[13] Website link at: http://www.co.lincoln.or.us/planning/onsite/

[14] Website link at: http://www.co.columbia.or.us/departments/land-development-services/lds-home

[15] Website link at: http://www.co.tillamook.or.us/gov/comdev/sanitation/

[16] Kucinski, Michael. Onsite Wastewater Program Manager, DEQ. Interview with Daniel Johnston. Portland OR, 23 Oct 2013. Teleconference.

[17] Memorandum of Understanding between Oregon Association of Realtors and State of Oregon Department of Environmental Quality. November 1, 2013.

Benefits: Benefits of an actively managed program include regular monitoring and inspection, greater enforcement capability, and better customer response. Additionally, the County would have the ability to compile septic system data and compare it to other water quality factors.

Data Needed: This is currently a DEQ managed program. The County should assess whether this action is financially feasible, and whether the transfer would result in a more effective program. Additionally, there could be backlash from the community if the new program is perceived to be heavy handed.

Key Considerations: The resources available from DEQ may not be sufficient to employ a fully effective program. By adopting the program, the County would assume greater accountability for septic system issues. Also, if inspection and enforcement are increased, public backlash could occur.

C. REVISE COUNTY STORMWATER DEVELOPMENT STANDARDS

Actions:

C.1: Research and benchmark sustainable stormwater management standards for new development. These standards can be modeled after other successful programs and adapted to County needs. See *Data Needed* (below) for examples of stormwater programs.

C.2: Incorporate the new standards into the Standards Document. Examples include culverts, bioswales, infiltration basins/ditches/planters, rain gardens, and created wetlands. These practices generally require stormwater management before runoff leaves property boundaries.

C.3: Early in the development review process, provide a handout to land use applicants containing guidance about cost effective low impact development standards.

Background and Need: The Clatsop County Standards Document primarily addresses stormwater in terms of temporary erosion control measures. Because of the current impairment issues the Clatsop County Standards Document should include greater requirements for permanent stormwater management. Note that DEQ does not currently require stormwater permit compliance (Phase II NPDES) of Clatsop County. This is likely a result of the relatively low population.

Benefits: Treatment of stormwater runoff will reduce contaminant transport to surface waters. Detention will prevent erosion. Proper management of culverts and drainages will also prevent erosion, transport of pollutants, and property damage. When properly applied, greater stormwater standards can also lead to more innovative and aesthetic landscaping.

Data Needed: A comprehensive review of existing County development standards and permitting requirements is necessary to reveal where new standards can be incorporated or where existing standards can be enhanced. Sustainable stormwater standards can be benchmarked from other counties and municipalities. Examples of Counties that apply these standards include Marion County and Lane County. Marion County has drafted a straight-forward stormwater management manual that contains many of the fundamental standards and action plans.[18] This plan, however, seems to lack detail for post construction runoff standards. Lane County is another noteworthy example. They have developed an intergovernmental agreement with the City of Eugene for their stormwater management manual content. Their manual provides more detail for post-construction runoff.[19] Also, with regard to public education and outreach, the EPA published an informative brochure that is easy for residents and businesses to understand.[20]

Key Considerations: When there is adequate physical space to incorporate stormwater features, additional costs can be minimal. In cases where extra space is not available, more sophisticated management systems are required such as underground detention vaults. Depending on the sophistication, program administration will require staffing and resources. Additional resources may also be necessary to implement maintenance practices such as road sweeping and swale upkeep.

Mid-Term Actions

D. WORK WITH DEQ TO UPDATE THE GEOGRAPHIC RULE

Actions:

D.1: Coordinate with DEQ on a project scope that will provide the analysis necessary to update the Geographic Rule. This scope could be included as one of the key objectives of the Comprehensive Water Quality Study previously described.

D.2: Utilize the updated Geographic Rule to guide zoning policy changes and to manage the Onsite Wastewater Management Program.

Background and Need: As currently written, the Geographic Rule does not appear effective or meaningful for the Clatsop Plains. The Rule defines the sewage loading rate allowed per acre, but is fairly unrestrictive in this regard. Re-evaluating and updating the rule can provide the County with a basis for modifying zoning policy to reduce densities of septic leachate.

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[18] Website link at: http://www.co.marion.or.us/PW/ES/waterquality/strmwtr.htm
[19] Website link at: https://www.eugene-or.gov/index.aspx?NID=477
[20] Website link at: www.epa.gov/owow/weatherchannel/after_the_storm-read2.pdf

The overall intent of the Geographic Rule is to provide a basis for continued use of onsite wastewater treatment systems while protecting the quality of groundwater for the future. It also requires the set-aside of an aquifer reserve area. Paragraph (C) of the Geographic Rule states the following:

> *(C) Lot or parcel does not violate the department's Water Quality Management Plan or any rules in this division, except that the projected maximum sewage loading rate may exceed the ratio of 450 gallons per ½ acre per day. In this case, the onsite system must be either a sand filter system or a pressurized distribution system with a design sewage flow not to exceed 450 gallons per day.*

Benefits: Updating the Geographic Rule will create meaningful guidelines for the management of the Onsite Wastewater Program and for zoning policy changes. It will provide an overarching limit to the allowable leachate quantity per unit of land, therefore enabling the County to manage development with respect to protecting water quality.

Data Needed: In order to establish a meaningful limit to septic leachate concentrations, extensive study and analysis of water resources and soils will be required. Including this action item as an objective for the Comprehensive Water Quality Study would be most efficient.

Key Considerations: The Geographic Rule can be written so that there are more restrictive limits to the overall density of septic systems. It could also be written in terms of maximum allowable nitrate levels for a given area. Using maximum nitrate levels could allow the County more flexibility in the determination of allowable property sizes and associated wastewater treatment technologies.

In previous discussions, DEQ indicated that updating the Geographic Rule could be a difficult process because it involves legislative changes.

E. EVALUATE THE WATERSHEDS FOR IMPROVED INTERFLOW

Actions:

E.1: Coordinate with the various watershed entities and relevant government agencies to determine project scope.

E.2: Implement a study that characterizes the impacts of current flow patterns on water quality, and proposes modifications to the watershed. Examples include culverts, conduits, pumping, ditches, or channels.

E.3: Evaluate the public impact, construction costs, and general feasibility of recommended improvements.

Background and Need: Previous studies identified stormwater run-off and drainage as an area of concern. Stagnation of Neacoxie Creek is believed to be the result of flow channel disconnection.

Benefits: Improving the flow between water bodies will reduce stagnation issues. Many of the impairment qualities identified by DEQ could be improved by increased turnover and flow. Some of those impairments include high temperatures, high levels of nutrients, and low dissolved oxygen.

Data Needed: Developing recommendations for improvements will require a survey of the watershed and existing drainage features. The County and other local watershed councils may already have much of this data. A watershed analysis would then be conducted to determine any capacity or management issues. Groundwater levels also play an important factor on surface waters. The analysis should outline those relationships.

As a reference, the City of Tillamook undertook a stormwater runoff study in 2004. The study associated stormwater system deficiencies to pollution issues in Tillamook Bay and the receiving streams/rivers. The plan included recommended action items to improve water quality. This study represents a more local municipal point of view, but it does share similar objectives.[21]

Key Considerations: Watershed management is just one piece of the puzzle. To be most effective, this analysis should be incorporated into a broader water quality study as suggested in this document.

Additionally, changes to the watershed could be publically contentious. Some property owners may protest consequences such as altered surface/groundwater levels. Reconnecting drainages such as Neacoxie Creek could require property acquisition. Environmental planning and permitting would be required.

F. REVISE COUNTY BASE ZONING AND DEVELOPMENT REQUIREMENTS

Actions:

F.1: Conduct a study that determines the carrying capacity of underlying soils with respect to septic leachate concentrations.

F.2: Modify the current zoning requirements within the LDWUO to reduce the quantity or concentration of septic system leachate.

[21] Website link at: http://tillamookor.gov/public-works-department/tillamooks-storm-water-management-challenge/

Background and Need: Current County zoning code establishes requirements for types of sewer systems and associated lot sizes. Specifically, it allows onsite septic systems for:

- Lot sizes of 1 acre (minimum) for Single-Family Residential (SFR-1)
- Lot sizes 15,000 square feet or greater for Multi-Family Residential (RSA-MFR)
- Two acre lots (minimum) for Residential Agriculture (RA-1)

The County Standards Document defers to DEQ Rules and County zoning requirements with respect to (a) lot size and sewage disposal (on-site)[22]; and (b) locations served by public or private sewer.

The Clatsop Plains Community Plan recommends specific zoning revisions with respect to lot size and allowable wastewater systems. If future data indicates that septic systems are more polluting than originally assumed, then the Clatsop Plains Community Plan recommendations may not be adequately restrictive. If the County prefers to take immediate action, the recommendations in the Community Plan can be incorporated as stated above. If the County prefers to wait for more conclusive data with regard to septic system impact, then this action item and associated changes to zoning requirements could be deferred until that time.

Benefits: The primary benefit is greater control over the development of new septic systems. Implementing this action item will reduce septic leachate concentrations for new development.

Data Needed: Analysis is needed that recommends appropriate leachate concentrations, leading to recommended zoning or development changes. The Geographic Rule attempts to satisfy this need, but the standards are inadequately restrictive. If the Geographic Rule were to be re-evaluated, it could serve as the driver for needed zoning or development changes.

Key Considerations: Creating more restrictive zoning policy or requiring higher performing septic systems could result in some degree of public discontentment. If these modifications are supported by scientific studies, then the changes may be easier to defend.

Several of the action items presented in the Land Use chapter of this plan will also contribute toward leachate reduction. Actions that create buffers and open space and

[22] The Standards Document states that a lot or parcel shall have "sufficient size to permit compliance with the requirements of the Department of Environmental Quality for sewage disposal by septic tank and drain field….." (Section S1.010(1))

minimize land use densities may have a similar result as the suggested zoning modifications described above.

References: (a) LWDUO Article 3: Zones and Special Purpose Districts. (b) Standards Document.

G. STATE DESIGNATION OF THE NORTH CLATSOP PLAINS AS A GROUNDWATER MANAGEMENT AREA (GWMA)

Actions:

G.1: Develop and implement a groundwater sampling plan per State requirements to determine whether the study area exceeds GWMA nitrate targets. This sampling plan can be a component of the Comprehensive Water Quality Study scope.

G.2: If State designation of a GWMA is realized, form a groundwater management committee that will work with the State and local agencies to develop and implement an action plan.

Background and Need: The Oregon Groundwater Protection Act (1989) sets the framework for the GWMA. A GWMA is typically established when contaminant levels pose a risk to human health. The State is responsible to ensure that the committee implements meaningful improvements to groundwater quality.

Establishment of a GWMA can require an in-depth and extended sampling and analysis phase. As a reference, the Lower Umatilla Basin GWMA required a 4-year interagency hydrogeologic investigation to determine the extents and sources of contamination. 38 groundwater testing wells were established and regularly monitored. Because every location is unique, the Clatsop Plains will require a site specific hydrogeologic investigation as the first step toward potential GWMA designation.

Benefits: Designation as a GWMA may help to justify implementation and funding for other listed action items such as wastewater infrastructure improvements. Contaminant reduction will be required by the State.

Key Considerations: Designation as a GWMA infers that the State will have greater authority over the water quality effort, thereby reducing County authority. This designation could also have unfavorable impacts such as property value reduction. Results of a groundwater sampling plan may justify a Planning Goal exception from the Department of Land Conservation and Development for wastewater infrastructure development.

Wastewater Infrastructure Improvements

Improving wastewater infrastructure in the Clatsop Plains can play an important part toward achieving water quality goals. Three infrastructure action items have been developed. The first infrastructure improvement is recommended as a near-term action, and involves the repair and upgrade of existing septic systems. The second infrastructure improvement is recommended as a mid-term action and involves the construction of rural community wastewater systems. The third action item is not favorably viewed by the Advisory Committee, but is included for informational purposes. This scenario includes construction of public sewer from the City of Warrenton through the Clatsop Plains.

Formation of a rural sanitary district is a recommendation that supports each of the wastewater infrastructure action items. A rural sanitary district is a public entity formed specifically to provide sanitation facilities and services for those within the district boundaries. In this case, the creation of a sanitary district, or districts, can provide the organization and legal means necessary for infrastructure improvements.

A. Explore Various Wastewater Infrastructure Improvements

Actions:

A1: Consider a sanitary district(s) for those locations or areas where it is most sensible. This can be based on housing density or general feasibility of district formation. Investigate funding opportunities for infrastructure improvements. Prepare a facilities plan that compares alternatives to support the attainment of funding.

A2: Upgrade and repair existing septic systems to reduce effects of septic leachate on water quality. This action does not require a Planning Goal exception from the Department of Land Conservation and Development (DLCD) OAR 660-011.

- *Related Case Study: "Septic Upgrade Loan Program", Deschutes County*[23] – Due to high nitrate issues in southern Deschutes County, the County created a contract with Neighbor Impact, a non-profit organization, to provide low interest loans for the purpose of upgrading septic systems.

A3(a): Consider one or more rural-sized community wastewater collection and treatment systems. Funding would be necessary to design, construct and maintain the system. These systems could be located in the more densely housed areas. Property is needed for the treatment system and for the drainfields, and a site suitability analysis is needed from DEQ. The buffer areas adjacent to Camp Rilea could potentially be used for drainfields. An exception from DLCD is required.

- *Related Case Study: The Reserve in Gearhart*[24] – The Reserve is a new subdivision within Gearhart with the potential for 130 homes on lots between 10,000 and 30,000 square feet. The wastewater system is permitted as a Water Pollution Control Facility (WPCF) and is a Septic Tank Effluent System (STEP). Each lot has a 1,500-gallon septic tank that pumps the fluids to a central treatment system (Orenco AdvanTex media filtration) and is then dispersed to the drainfield through driplines. The drainfields are also set-asides for Silverspot Buttefly habitat.[25]

A3(b): Consider extension of public sewer from the City of Warrenton through the North Clatsop Plains if future development and water quality conditions warrant more aggressive action. Provide branch collectors and pump stations for the clusters

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[23] Web link at: http://www.deschutes.org/Community-Development/Regional-Projects-and-Resources/Groundwater-Protection-Project/Financial-Assistance/Septic-Upgrade-Loan-Program.aspx

[24] Web link at: http://www.reserveatgearhart.com/welcome

[25] Artman, Gary. DEQ Permit Manager. Interview with Daniel Johnston. Portland OR, 24 Oct 2013. Teleconference.

of homes further away from Highway 101. An exception from DLCD is required. Note that this action item may not be necessary if A3(a) is implemented.

- *Related Case Study: Miles Crossing Vacuum Sewer*[26] – This sanitary district is located south of the City of Astoria and serves approximately 900 residents. Previously, many of the septic tank systems were failing and causing water quality problems. A vacuum sewer was constructed by connecting residents to small diameter piping, and then to an 8-inch-diameter pressure main that traverses under Young's Bay to Astoria's treatment system.

Background and Need: The provision of wastewater infrastructure is a relatively common solution for locations with failing septic systems. Repair and upgrade of septic systems is a relatively simple step, and likely requires the least investment. Constructing a community wastewater system is more complicated, as it requires significant community cooperation and investment, as well as an exception from DLCD. The extension of public sewer from Warrenton is similar in complexity, but has the potential to reach many communities instead of one.

Benefits: The following are benefits resulting from the listed infrastructure improvements:

- Repairing or upgrading failing septic systems would have a direct impact in terms of leachate concentration reduction for individual homes. Construction of community collection systems has the benefit of centralizing wastewater treatment and disposal, allowing for a consistent treatment process, a centrally monitored system, and efficient maintenance. Extension of public sewer would allow for the complete removal of leachate from the served areas. The leachate would be directed to a State-monitored treatment plant.
- If a sanitary district is created for the purpose of infrastructure improvements, public funding or private financing then becomes an option. Public funding sources include DEQ, the Infrastructure Finance Authority (IFA), and the U.S. Department of Agriculture (USDA). Specific programs under DEQ include the Clean Water State Revolving Fund. Specific programs under IFA include the Water/Wastewater Finance Program and Safe Drinking Water Revolving Loan Fund. Typically USDA-funded projects are for larger infrastructure projects exceeding $1 million in construction cost.
- Partnering with local lenders could also benefit these development scenarios. For example, partnering could occur with local lenders to require a time of transfer inspection as part of loan approval criteria. This

[26] Web link at: http://www.orinfrastructure.org/story.php?storyID=120

would supplement a current effort to encourage time of transfer septic inspections being undertaken by DEQ in partnership with the Oregon Association of Realtors. A Memorandum of Understanding between the two organizations includes details future efforts to increase education and awareness of the importance of onsite septic inspections at the time of property transfer. Changes will be made to the Law and Rule Required Course for real estate professionals, continuing education materials, the buyer advisory and seller advisory. They will also develop a new homebuyer packet.

- Local credit unions could also provide low interest loans to repair and replace failing septic systems.

Data Needed: An evaluation is needed that determines the communities for which sanitary district formation is prudent. Considerations include quantities and density of homes within the area, the potential for public acceptance, available land area for treatment/drainfields, and economic feasibility.

Key Considerations: The formation of a sanitary district by its own accord will not ensure its success. Maintaining financial solvency is the greatest challenge, especially for districts that have a small customer base. By having a larger customer base, the costs associated with sanitary improvements and operation are more distributed.

The first step toward formation of a sanitary district includes petitioning the governing body for the district and establishing the board members. Typically the governing body is the County's Board of Commissioners.

Action items A2 and A3 require exceptions from DLCD to build sewer collection systems in unincorporated areas. Oregon Administrative Rules (OAR) 660-011-0060 (4)a and (4)b govern when these exceptions are allowed. In summary, (4)a requires that either DEQ or the Oregon Health Division determine that a health hazard exists and that there is no practicable alternative. The discovery of fecal coliform in surface waters would constitute an example that could trigger a health hazard designation. (4)b lists the land use requirements and regulations required of the local government. A surface water sampling plan would be necessary to confirm existence of a health hazard area.

Reference: Formation of Sanitary Districts is governed by Oregon Revised Statutes (ORS) Chapter 450 Sanitary Districts and Authorities; Water Authorities. DLCD exceptions governed by OAR 660-011-0060 Sewer Service to Rural Lands.

Summary

This action plan recommends a three-pronged, phased approach that allows for implementation of action items in the near-, mid-, and long-term. By proceeding in this manner, action items that do not depend greatly on additional data can be implemented in the near future, while items that require a greater scientific basis or larger investment can be planned further in the future.

Determining the effectiveness of action items will require close attention and study. As more data becomes available, strategies may require adjustment to ensure that the effort is on the right track. Additionally, the establishment of defined water quality goals or reduction targets will also be an important outcome of the water quality analysis. These goals can also help to streamline the strategy for greatest effectiveness.

The following is summary of each of the action items and the associated timetable:

Near-Term (1-2 Years)

1. **Implement Comprehensive Water Quality Studies** – In order to develop the most effective policy, the root causes of water quality impairment must be identified. This should include analysis of watershed and stormwater issues, septic systems, agriculture, commercial practices, and groundwater, and to what degree they are impacting surface water impairment.

2. **Share Resources with Parallel Programs** –Sharing resources can provide needed information and programs. Needs include water quality guidance, testing, and analysis. Other programs include the Wetlandia Water Quality Testing Program and the DEQ Statewide Groundwater Monitoring Program.
3. **Continue Implementation of a County-Managed Onsite Wastewater Program** –The County can create a more effective program and reduce the effects of failing septic systems. The program can include enforcement of current State rules through a consistent inspection program, with potential to establish a "time of transfer" inspection program to fix or replace aged or failing infrastructure.
4. **Revise County Stormwater Development Standards** – Improve water quality by providing sustainable stormwater management such as treatment, detention and on-site management. Standards can be applied to residences, businesses, roads, and maintenance practices.
5. **Upgrade and Repair Septic Systems** – Upgrade and repair existing septic systems. This action targets older, failing systems, which are likely contributing more pollutants than new systems. By creating a sanitary district, funding can be sought to facilitate the upgrades.

Mid-Term (3-5 Years)

1. **Work with DEQ to update the Geographic Rule for the Clatsop Plains** As currently written, the Rule does not appear effective or meaningful for the Clatsop Plains. The Rule defines the sewage loading rate allowed per acre, but is fairly unrestrictive in this regard. Re-evaluating and updating the rule could provide the County with a basis for modifying zoning policy to reduce densities of septic leachate.
2. **Evaluate the Watersheds to Improve Interflow** – Pollutants may be concentrating due to a lack of interflow among waterbodies. This evaluation could reveal the significance of this factor, and propose measures to improve interflow.
3. **Revise County Base Zoning and Development Requirements** – For new development, this initiative would have the result of reducing the concentration of septic leachate. Restricting future development of septic systems will help control the issue.
4. **State Designation of the North Clatsop Plains as a GWMA** – After implementing a sampling plan, and receiving the State designation as a GWMA, this action item will require formation of a State-monitored committee. The local committee will be required to implement an action plan that realizes meaningful reductions in pollutant concentrations.

Longer Term

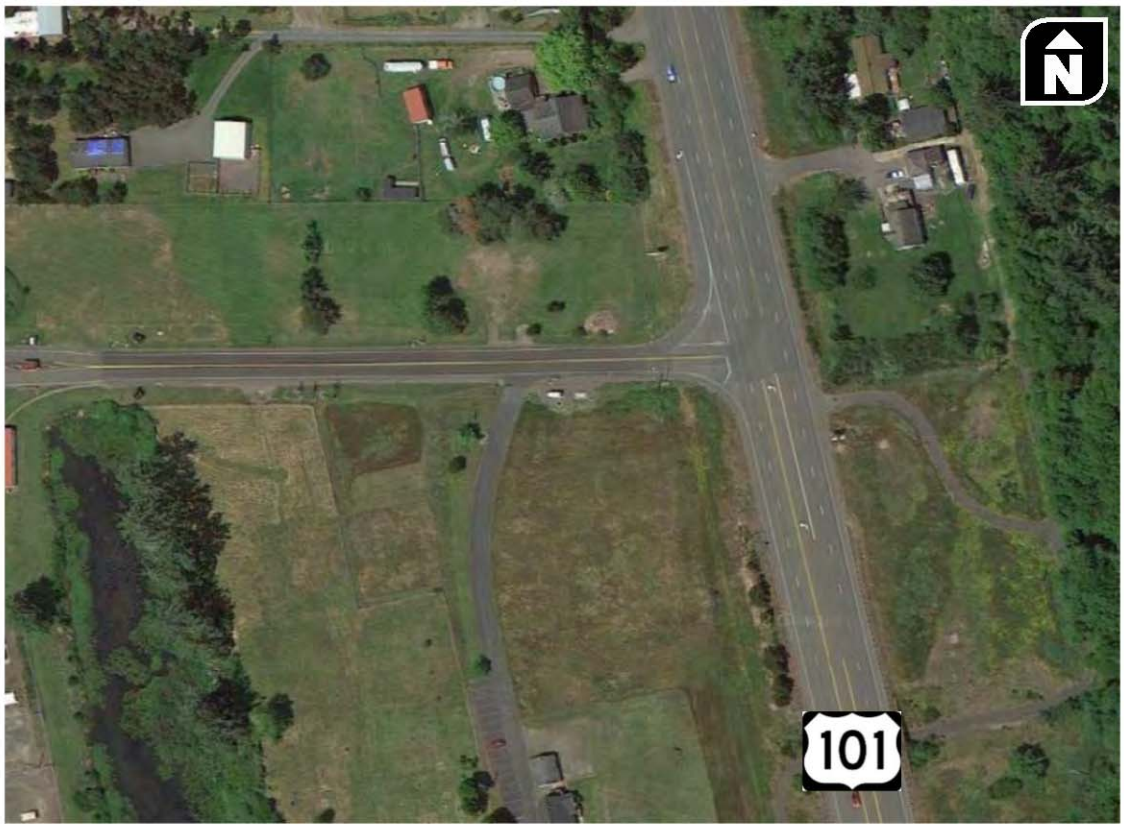
1. **Explore Various Wastewater Infrastructure Improvements** – Consider extension of public sewer from the City of Warrenton through the Plains area. This is an effective manner in which to remove all septic leachate from the Plains by delivering it to a municipal wastewater treatment facility. A large investment is needed for the collection system.

CHAPTER 5. CAMP RILEA HIGHWAY ACCESS

Purpose of this Chapter

The purpose of this section is to summarize the existing safety and operational conditions and characteristics of the US 101 intersection with Patriot Way south of Warrenton, Oregon within unincorporated Clatsop County. Located on US 101 at milepost 9.87, this stop-sign controlled intersection serves as the primary entrance to the Camp Rilea Armed Forces Training Center. Figure 5-1 illustrates the existing entrance configuration.

Figure 5-1: Existing layout of the US 101/Patriot Way intersection.



Camp Rilea Access Needs

Facility Uses

Camp Rilea Armed Forces Training Center serves as training grounds for the Oregon Army National Guard, provides regional emergency response, and maintains a full-time staff and operations for its Army and Air Guard tenant units and the Camp Rilea Unit Training Equipment Site (CRUTES).

As a National Guard training center site, peak usage for training occurs on weekends and during annual training periods during the summer. Camp Rilea Training Center provides various weapons ranges, mock villages/urban training sites, a confidence course, rappel tower, land navigation course, drivers training roads, assembly/parade fields, billeting and mess facilities, rental houses, Kilroy's Restaurant, office and armory space, vehicle fueling and maintenance areas, and various recreation services. Unit training activities are typically limited to the installation, with meals and lodging provided on-site.

Camp Rilea also hosts various events and seasonal activities, such as the Youth Challenge program, conferences, and other seasonal activities. These activities do not typically involve convoys.

Convoy Characteristics

This section describes various characteristics of military convoys, driver characteristics, and vehicle types.

TRAVEL PATTERNS

Units travel to Camp Rilea from throughout the State. On a typical drill weekend, units arrive either Friday evening or Saturday morning. Local tenant units arrive on-site via privately owned vehicles, whereas outlying units travel in convoys to bring their assigned tactical vehicles, weapons, overnight gear, and other training equipment. These convoys include vehicles such as commercial charter buses, government-owned school buses, military convoys of supply and tactical vehicles, and a number of State or privately owned passenger cars. Convoys generally travel to Camp Rilea from either US 30 or from US 26 depending on weather conditions along the coast range, thereby accessing Camp Rilea both from the north and south.

ARRIVAL AND DEPARTURE TIMES

Arrival times for convoys at the Camp Rilea entrance is typically during off-peak hours on weekends. Outlying units are located throughout the State, with units that most commonly train at Camp Rilea located from throughout the Portland metro and Willamette Valley area. When training at Camp Rilea, these units commonly schedule a drill weekend that begins on Friday evening (typically 6:00 p.m.), requires loading/staging of vehicles, and with a unit departure between 7:00 p.m. and 8:00 p.m. This results in late evening arrivals between 10:00 p.m. and 12:00 a.m. (midnight).

Departure times from Camp Rilea can vary, again depending on the home station location of the training unit. Generally, departing convoys leave Camp Rilea between 9:00 a.m. and 12:00 p.m. (noon) on Sunday to provide time to travel, unload vehicles, and complete the weekend's training by Sunday evening.

NUMBER OF VEHICLES

When traveling, vehicles may travel as a single group (which requires prior convoy permit approval through ODOT), or be released in smaller groups of approximately six or fewer vehicle serials staggered over the course of an hour. These groupings are commonly comprised of similar vehicles due to the disparate acceleration and attainable speeds of various tactical vehicles.

Driver Characteristics

Within National Guard units, driver training is a key aspect of a unit's annual training plans; military personnel accumulate a minimum number of driver training hours to maintain their military license on tactical vehicles. The limited opportunities to drive tactical vehicles, or new soldiers beginning their training, or learning to travel with a trailer in tow, results in a wide range of driver skill levels. Drivers are often provided a route map, but again, with soldiers training from throughout the State who are unfamiliar with the area, there is a desire to maintain close spacing and visibility with lead vehicles.

Military vehicles are designed to be rugged for off-road travel and are reinforced to withstand ballistics. This results in heavy vehicles that accelerate slowly and have smaller windows with more limited visibility. These conditions create a higher potential for inexperienced drivers in unfamiliar vehicles to improperly judge gaps in high speed oncoming highway traffic.

TYPES OF VEHICLES

Common types of military vehicles in convoys are shown in Figure 5-2 on the next page. These range from light personnel carrying vehicles to heavier tactical vehicles or semi-trucks. Generally, longer convoys will include more small vehicles such as HMMWVs (Humvees).

Figure 5-2: Illustration of various tactical vehicles that are commonly driven to Camp Rilea.

Safety and Operational Conditions

SAFETY CONDITIONS

Historical crash records were obtained from ODOT for the five year period from January 1, 2007 to December 31, 2011. Crashes that result in injuries or over $1,500 in property damage are required to be reported; less serious crashes may also be included within this database. Crashes for Clatsop County were obtained, mapped, and reviewed based on those that were near the access point for Camp Rilea.

Only a single crash was reported within the crash database at the entrance. This crash was identified as a fatality that occurred during the noon hour on Friday, June 25, 2010. The crash occurred when a privately-owned vehicle heading eastbound turned left onto US 101 in front of a dump truck that was traveling southbound on the highway. The 77 year old driver and 82 year old passenger were killed, and the dump truck driver was injured. The crash occurred during daylight in cloudy and dry weather conditions. Drugs, alcohol, and speed were not factors in the crash, and all those involved were wearing seat belts.

No military convoys or tactical vehicles were involved in crashes during this period.

OPERATIONAL CONDITIONS

No traffic counts were collected at the US 101/Patriot Way intersection as part of this analysis. Review of historical counts within the January 2013 Report *US 101: Camp Rilea to Surf Pines Facility Plan* provides seasonally adjusted peak hour counts from nearby intersections to the south that show approximately 800 vehicles in each direction along US 101 near Patriot Way.

ODOT also has a permanent traffic count station (ATR 04-001) located 2.09 miles north of Dellmoor Loop Road (approximately one mile south of Sunset Beach Road). Data from this count station shows average daily traffic volumes of approximately 13,200 vehicles, with high summer peaking characteristics that fluctuate by nearly 50 percent throughout the year along the coastal highway. Based on this seasonal variation, peak summertime volumes may range as high as 20,000 vehicles per day in this section. Between 2002 and 2011 growth along this portion of the highway has been stagnant, with a slight decline shown by the ATR.

While operational analyses were not conducted, observations indicate that there can be high delays, particularly during the peak summer months, at the Patriot Way intersection. Convoys are not typically arriving or departing Camp Rilea at these peak time periods, though visitors and staff do use the access throughout the day.

Key Issues and Opportunities

Convoys typically arrive and depart during seasons, days of week, and times of day in which there is little difficulty entering or exiting US 101 at Patriot Way. Even so, special measures may be needed to accommodate the size and operational characteristics of convoys entering and exiting Camp Rilea. Improvement options considered and recommended are summarized below.

Improvement Options

To improve safety at the highway access, a series of options were identified ranging in cost, complexity, and ease of implementation. The options are summarized below. These options are described in increasing order of cost, complexity, and ease of implementation.

IN-BRIEFING/RISK ASSESSMENT

Prior to the start of any training at Camp Rilea, an in-briefing is required for key leaders that includes training site protocol, environmental requirements, and post limits. In addition to this safety briefing at the post, company commanders or unit leaders provide a safety briefing (Composite Risk Assessment) to soldiers before they depart their units. The safety briefing covers issues related to safe convoy travel speeds, route selection, risks, and mitigating factors for those risks. The information discussed in these safety briefings could be augmented to include a highlight of the risks at the Camp Rilea entrance and proper protocol for entering or exiting in a convoy (and a passenger vehicle). While the benefit of this outreach may be limited, the cost and ease of implementation is low.

CONVOY SIGNAGE

Military convoys should include appropriate signage on lead and trail vehicles. Some military units have flashing lights that mount on lead and trail vehicles in addition to the signs. While these signs are readily available, protocol for the use of these signs may not be widely known among unit leaders. Similar to the in-briefing measures, ensuring that unit leaders have these signs, mounting hardware, supplemental caution lights, and enforce their use provides a low-cost option that helps the public to be aware that multiple slower-moving vehicles are traveling together. Figures 5-3 and 5-4 illustrate common signs on the lead and trail vehicles in a convoy.

Figure 5-3: Lead Vehicle Signage.

Figure 5-4: Trail Vehicle Signage

EVENT MANAGEMENT

Part-time flagging or traffic control at the entrance could provide temporary traffic relief for large events that occur at Camp Rilea. These events are not generally associated with convoys, but do provide higher risks as they typically occur during peak highway travel periods (summertime). Traffic control could be provided by law enforcement, ODOT, or private contractors.

ADVANCE WARNING SIGNS

ODOT has an electronic variable message (VMS) sign for northbound motorists on US 101 at milepost 9.95 about 500 feet in advance of the Camp Rilea entrance. The VMS is used to notify drivers of upcoming accidents and incidents, and for an occasional special event at the camp. The options that are discussed in this memorandum would augment this VMS.

The next option includes installation of advance warning signs on the northbound and southbound highway approaches. Stand-alone signs would ideally be placed 500 feet in advance of the intersection, and the sign and installation cost would be approximately $2,000.

As an option, advance warning signs could be mounted on the guide signs that highlight the location of Camp Rilea rather than be provided as stand-alone signs. This option could potentially reduce sign installation costs and help reduce sign clutter in the area, particularly with the variable message sign located immediately south of the Camp Rilea entrance. Figure 5-5 illustrates a potential warning sign that could be applied (Sign W12-54). A supplemental placard below the sign would be added to this sign indicating the distance to the entrance. *A sketch showing the placement and wording of the advanced signing is attached.*

As many of the convoys are traveling during evening or late night hours, supplementing these advance signs with flashing beacons could further increase driver awareness. Continuous flashing yellow beacons, mounted on a span wire assembly at the entrance, could be installed at an approximate cost of $50,000.

Due to the low occurrence of convoys, a more ideal option would include a push-button activated system that would only be activated as needed. Installation of a push-button activated system at or near the guard tower could be used to initiate the beacons. The cost of this system would range from approximately $25,000 for a remote-activated solar-powered system to $75,000 for a hard-wired system. *A sketch showing the placement of the flashing beacons and signing is attached.*

Figure 5-5: Supplemental flashing beacons.

TWO-STAGE LEFT-TURN TREATMENT

Another option discussed was creating a two-stage left-turn maneuver for exiting vehicles. This option allows exiting left turning vehicles from Camp Rilea to cross one direction of traffic at a time; left-turning vehicles would cross the southbound direction of traffic, take refuge in the raised, channelized median, then enter the northbound lane of traffic when there was an adequate gap in traffic. Implementing this option could be costly if highway widening was required, and it could also create conflicts with adjacent accesses onto US 101. Costs for this option were not prepared as detailed cross-section information was not available. For order of magnitude purposes only, highway widening, median installation, and signing and striping treatments would likely cost about $200,000. Figure 5-6 illustrates this treatment.

Figure 5-6: Two-stage left-turn treatment (Aerial imagery of Salmon River Highway and SE Cruickshank Road intersection in McMinnville, Oregon).

PART-TIME TRAFFIC SIGNAL

A final option would be to install a part-time traffic signal. This signal would be operated in a manner similar to a fire station, with the signal activated only when a convoy (or possibly other major event) was exiting. Installing a traffic signal would be costly, with costs for the signal hardware alone approximately $250,000. The remote activation system would cost $25,000 to $75,000 more, depending on whether this was remote or hard-wired. The steep highway shoulder grades, need for advance warning signs and treatments, and available right-of-way for the signal hardware were identified as potential impediments to implementation, but were not included in this cost. *A sketch showing the placement of the signal equipment is attached.*

Entrance Recommendations

Discussion with the team identified a range of options that could be considered near-term. These include the educational/outreach elements to inform drivers of proper convoy signing and protocols. It was recommended that Camp Rilea prepare these materials and disseminate them to visiting units either in advance of their travel or as part of the in-briefing process. The team also recommended that advance warning signs with activated beacons be further considered. Technical elements, such as who would control the beacons and how, remain elements for a future design process.

For occasional event traffic, coordination with local law enforcement for entrance traffic control may be appropriate.

The more costly options such as the two-stage left-turn and signal were not recommended as near-term solutions. Two-stage left-turns might be needed long-term depending on growth in highway traffic volumes or activity at Camp Rilea, but the need for a higher-capacity treatment can be monitored and incorporated into long-range highway plans as appropriate.

APPENDIX A. **SUMMARY OF PLAN RECOMMENDATIONS**

Purpose of this Appendix

This appendix provides a summary of recommendations that appear in Chapters 2-5 of the North Clatsop Plains Sub-Area Plan.

Table A-1. Plan Recommendations and Timeline

Chapter 2. Land Use Policy and Code Amendments	
Recommendations	**Timeline**
1. Amend the Clatsop Plains Community Plan to add policies for the North Clatsop Plains Subarea.	Near-Term
2. Create an overlay zone generally corresponding with the Camp Rilea Influence Area (CRIA) for Noise	Near-Term
○ Retain existing zoning designations (i.e., prohibit increases in residential densities).	Near-Term
○ Do not allow receiving sites for Density Transfer program within overlay.	Near-Term
○ Encourage development as far from Camp Rilea boundary as is practicable.	Near-Term
○ Encourage Wildlife Corridor Protection.	Near-Term
○ Adopt noise attenuation construction standards for buildings within the North Clatsop Plains overlay district (e.g. triple pane windows, minimum R-value insulation, fence requirements, etc.).	Near-Term
3. Amend the open space standards for subdivisions and planned developments to require buffering adjacent to the Camp Rilea.	Near-Term
4. Amend Density Transfer program to streamline process and further incentivize transfers	Near-Term
○ Allow more than one density transfer per sending site.	Near-Term
○ Allow banking of all credits (current program requires application of at least one credit to a clustered development).	Near-Term
5. Develop a Purchase of Development Rights Program further	Mid-Term
○ Financing options for program start-up	Mid-Term
○ Possibilities of mitigation banking	Mid-Term

6. Encourage the use of conservation easements where transfer of development rights and other regulatory approaches are not workable or achievable.	Near-Term
○ Coordinate with land trusts and agency partners.	Near-Term
○ Educate property owners on conservation easement benefits and stewardship responsibilities.	Mid-Term
7. Promote the Oregon Revised Statute that requires a disclosure (ORS 93.040) that puts buyers on notice to check with the planning department about any zoning or land use issues associated with a property.	Near-Term
○ Inform potential buyers of properties within ½-mile of Camp Rilea about noise and other impacts associated with military operations	Near-Term
8. Develop an informational brochure about Camp Rilea operations and noise mitigation, and deliver when a development proposal for new development or improvements within the North Clatsop Plains overlay district is submitted to the County.	Near-Term
Chapter 3. Trails, Beach Access and Communications	
Recommendations	**Timeline**
1. Continue to schedule live-fire training to avoid training during minus and zero tides, when possible, which are the ideal tides for collecting clams from the beaches *(JLUS Recommendation LU-3 H).*	Near-Term
2. Encourage organizers of beach events (i.e., beach clean-ups, etc.) to reach out to OPRD and Camp Rilea prior to scheduling in order to minimize or eliminate conflicts with Camp training events and others.	Near-Term
3. Per the JLUS, increase public awareness about the risk of trespassing onto Camp Rilea and the need to stay on marked trails. Take a comprehensive approach to the effort, focusing also on increasing awareness of Camp Rilea's mission, its role in the community, and its live-fire training, associated beach closures and other associated impacts.	Near-Term
4. In partnership with Camp Rilea, OPRD, DOGAMI and/or ODFW, establish informational kiosks at Sunset Beach and Fort Stevens beach access (Peter Iredale). Provide and design information to achieve the communication objectives of the different agencies. Consider an integrated and/or interpretive approach; use clear graphics and language that is easy to understand.	Near-Term

5. Identify picnic shelters, lookouts and other locations on high ground to serve as community 'safe spaces' and meet-up/information locations in the event of an earthquake or tsunami. Map this information and make readily available to area residents and visitors.	Mid-Term
6. Initiate the process to update the Fort Stevens Park Master Plan. Evaluate the potential to improve Delaura Beach Road to strengthen access for pedestrians, bicycles and equestrian users. Consider re-aligning the road or pathway to create a greater buffer or distance from Camp Rilea property. Explore adjusting the right-of-way to reflect the final roadway alignment accurately. When updating the Master Plan, consider adding vehicular beach access north of Delaura Beach Road.	Mid-Term
7. Explore the feasibility of installing a gate to control vehicular access at Delaura Beach. Doing so may reduce encroachment and trespass on Camp Rilea property, protect sensitive dune resources, and minimize wear on culverts and other infrastructure.	Mid-Term
8. Determine the specific engineering requirements and associated environmental impacts of the proposed East Bypass Trail. Work with ODOT, OPRD and National Parks Service to explore maintenance and management alternatives and determine responsibilities. Work with partners to establish preliminary cost estimates and identify funding sources.	Mid-Term
9. Continue to advance the Delaura Beach Trail Plan, working with partners to identify additional sources of funding to bridge the existing gap. Explore opportunities to implement the plan in phases, and to do so cost-effectively.	Mid-Term

Chapter 4. Water Quality Action Plan for North Clatsop Plains

Recommendations	**Timeline**
1. Implement Comprehensive Water Quality Studies	Near-Term
○ Coordinate with key professionals from State and local agencies, consultants, and from parallel water quality programs to define the project scope. A key parallel program is the Wetlandia project. This program can provide some of the data necessary for surface water. A study should also be initiated focusing on groundwater.	Near-Term
○ Implement water quality studies for surface water and groundwater that provide clarity as to the root causes of the water quality impairment. Pollutants and their concentrations should be traced back to their source. The	Near-Term

study should include recommendations as to the most effective pollution reduction measures, specific to each water body.	
○ Evaluate the study results in terms of its conclusiveness and the feasibility of subsequent recommended actions presented below.	Near-Term
2. Continue Implementation of a County Managed Onsite Wastewater Management Program	Near-Term
○ Implement the agreement with DEQ that allows County administration of the Onsite Wastewater Management Program.	Near-Term
○ Provide staff, training, and financial resources commensurate with the adopted responsibility.	Near-Term
○ Create standards and policies for the onsite program and employ public outreach and education to obtain community support. Programs in other counties can be used as benchmarks or models. Three counties known to have solid programs include Lincoln County, Columbia County, and Tillamook County.	Near-Term
○ Consider implementing a time of transfer inspection program. The DEQ's current voluntary program may provide a starting point or model. This program represents a collaborative partnership with the Oregon Association of Realtors.	Near-Term
3. Revise County Stormwater Development Standards	Near-Term
○ Research and benchmark sustainable stormwater management standards for new development. These standards can be modeled after other successful programs and adapted to County needs for examples of stormwater programs.	Near-Term
○ Incorporate the new standards into the Standards Document. Examples include culverts, bioswales, infiltration basins/ditches/planters, rain gardens, and created wetlands. These practices generally require stormwater management before runoff leaves property boundaries.	Near-Term
○ Early in the development review process, provide a handout to land use applicants containing guidance about cost effective low impact development standards.	Near-Term
4. Work with DEQ to Update the Geographic Rule	Mid-Term
○ Coordinate with DEQ on a project scope that will provide the analysis necessary to update the Geographic Rule. This scope could be included as one of the key objectives of the Comprehensive Water Quality Study previously described.	Mid-Term

○ Utilize the updated Geographic Rule to guide zoning policy changes and to manage the Onsite Wastewater Management Program.	Mid-Term
5. Evaluate the Watersheds for Improved Interflow	Mid-Term
○ Coordinate with the various watershed entities and relevant government agencies to determine project scope.	Mid-Term
○ Implement a study that characterizes the impacts of current flow patterns on water quality, and proposes modifications to the watershed. Examples include culverts, conduits, pumping, ditches, or channels.	Long-Term
○ Evaluate the public impact, construction costs, and general feasibility of recommended improvements.	Long-Term
6. Revise County Base Zoning and Development Requirements	Mid-Term
○ Conduct a study that determines the carrying capacity of underlying soils with respect to septic leachate concentrations.	Mid-Term
○ Modify the current zoning requirements within the LDWUO to reduce the quantity or concentration of septic system leachate.	Mid-Term
7. State Designation of the North Clatsop Plains as a Groundwater Management Area (GWMA)	Mid-Term
○ Develop and implement a groundwater sampling plan per State requirements to determine whether the study area exceeds GWMA nitrate targets. This sampling plan can be a component of the Comprehensive Water Quality Study scope.	Mid-Term
○ If State designation of a GWMA is realized, form a groundwater management committee that will work with the State and local agencies to develop and implement an action plan.	Mid-Term
8. Explore various wastewater infrastructure improvements	Mid-Term
○ Consider a sanitary district(s) for those locations or areas where it is most sensible and legally defensible. This can be based on housing density or general feasibility of district formation. Investigate funding opportunities for infrastructure improvements. Prepare a facilities plan that compares alternatives to support the attainment of funding.	Mid-Term
○ Upgrade and repair existing septic systems to reduce effects of septic leachate on water quality. This action does not require a Planning Goal exception from the Department of Land Conservation and Development (DLCD) OAR 660-011.	Mid-Term

○ Consider one or more rural-sized community wastewater collection and treatment systems. Funding would be necessary to design, construct and maintain the system. These systems could be located in areas with more dense housing. Property is needed for the treatment system and for the drainfields, and a site suitability analysis is needed from DEQ. The buffer areas adjacent to Camp Rilea could potentially be used for drainfields. An exception from DLCD is required.	Mid-Term
○ Consider extension of public sewer from the City of Warrenton through the North Clatsop Plains if future development and water quality conditions warrant more aggressive action. Provide branch collectors and pump stations for the clusters of homes further away from Highway 101. An exception from DLCD is required.	Longer Term

Chapter 5. Camp Rilea Highway Access

Recommendations	**Timeline**
1. Educational/outreach elements to inform drivers of proper convoy signing and protocols.	Near-Tear
2. Coordinate with local law enforcement for entrance traffic control may be appropriate.	Near-Term
3. Install advance warning signs with activated beacons when needed.	Mid-Term
4. Consider two-stage left- depending on growth in highway traffic volumes and activity at Camp Rilea.	Longer Term

APPENDIX B. **DEFINITIONS AND CRITERIA FOR WILDLIFE CORRIDORS**

Purpose of this Appendix

This appendix is intended to assist the County with the definition, identification and protection of wildlife corridors in the North Clatsop Plains area and perhaps other areas of the Clatsop Plains in future planning efforts. Appendix B contains two sections. The first is an overview of emergent wetland, riparian zone and coastal prairie that includes a definition of each and a summary of the value they provide. The second section provides a suggestion for evaluation criteria that can be used to determine what is and is not high value habitat and how various corridors can be prioritized.

Overview of Wildlife Corridors

This section provides definitions and values of emergent wetland, riparian zone and coastal prairie.

Emergent Wetland

DEFINITION

A wetland habitat dominated by soft-stemmed herbaceous plants typically dominated by sedges, rushes and cattails. Water levels can range from a few inches to a few feet. Emergent wetlands, which can occur in isolation or in association with other water bodies, include deep and shallow marshes and wet meadows.

VALUES OF RIVERS, LAKES AND EMERGENT WETLAND

Water storage and flood management

Well managed, fully connected systems provide mechanisms for flood water management, water storage and aquifer restoration.

Water Filtration

Fully connected waterways and wetlands filter particulates, break down complex organic materials and generally improve water quality.

Biological Productivity

Fully connected, ecologically functional waterways and wetland provide high biological productivity that supports fish, waterfowl and other wildlife.

Recreational opportunities

Well maintained waterways and wetland provide for recreational opportunities that include non-motorized boating, fishing and wildlife watching.

Riparian Zone

DEFINITION

The type of wildlife habitat found along the banks of a river, stream, lake or other body of water. Riparian habitats are ecologically diverse and may be home to a wide range of plants, insects and amphibians that make them ideal for different species of birds. Riparian areas can be found in many types of habitats, including grassland, wetland and forest environments.

VALUES OF RIPARIAN ZONE

Ground Water Regeneration

The flow of water through riparian soils regenerates ground water.

Nutrient and Temperature Moderation

Riparian vegetation can remove excess nutrients and sediment from surface runoff and shallow ground water. Riparian vegetation shades streams to optimize light and temperature conditions for aquatic plants, fish, and other animals.

Migrating Bird Corridors

Riparian areas provide natural corridors for migrating birds.

Endangered and Threatened Habitat Species

Riparian areas provide important habitat for many endangered and threatened species and other wildlife and plants.

Plant and Animal Diversity

Although riparian ecosystems generally occupy small areas on the landscape, they are usually more diverse and have more plants and animals than adjacent upland areas.

Natural Barriers

Riparian areas act as natural barriers that can protect watersheds from damaging disturbances from people and livestock.

Coastal Prairie

DEFINITION

Habitats characterized by expansive areas of mostly treeless grasslands containing specialized plant species adapted to well drained, low nutrient soils and frequent disturbances either by fire or sand inundation.

VALUES OF COASTAL PRAIRIE

Food and Shelter for Bees and Other Insects

Grasslands provide food and shelter for bees and other insects that pollinate our food crops. The importance of these native pollinators, especially ground and twig nesting bees, is increasing due to the current collapse of populations of the European honeybee.

Carbon Storage

Grasses have an enormous capacity for carbon storage. Prairies remove more carbon from the atmosphere than any other ecosystem in America.

Filtration and Erosion Control

Compared to annual grasses, native perennial grasses are deep-rooted. The plants capture, filter and store water, anchoring the soil in place with their deep fibrous roots. Because they are long-lived, they provide erosion control throughout the year long after annual plants die.

Wildlife Habitat

Grasslands provide habitat and forage for wildlife. Many plant and wildlife species that inhabit grasslands depend on the availability of grassland habitat for their continued existence.

Scenic Viewsheds

Grasslands are open habitats that provide scenic view-sheds. The aesthetic potential of expansive natural areas contributes to the economy by increasing adjacent property values and promoting nature-based tourism.

Evaluation Criteria

The following includes several evaluation criteria for identifying and prioritizing wildlife corridors in the North Clatsop Plains.

CRITERIA

Size

Larger tracts should have preference. Recommended vegetative riparian buffer width for water quality concerns is 30m. Recommended width for riparian habitats focused on wildlife enhancement values range from 30m to 500m depending on species.

Distance or connection to other resource areas

Tracts should have connectivity. Tracts that produce disconnected islands of habitat should be discouraged.

Habitat Quality

Tracts should be selected because they either represent ecologically intact habitats or have high restoration potential.

Habitat Quality

Tracts should include codified conservation easements that define management for ecological function and diversity of habitat components.

OTHER CONSIDERATIONS

Selection criteria should take long-range management concerns into account and include funding for long-term restoration activities and invasive species control.

Other potential criteria include educational and recreational opportunities (hiking, non-motorized boating, fishing) that do not negatively impact primary goals for protecting water quality, ecological values and species diversity. Existing and future regulatory jurisdiction and potential threats from development are used by some agencies as selection criteria as well.

APPENDIX C. **NORTH CLATSOP PLAINS GROUNDWATER STUDY PROPOSAL (JAN 13, 2014)**

The North Clatsop Plains Area has been identified as an area vulnerable to groundwater contamination. Previous studies conducted in the area have shown nitrate contaminants of concern. The disposal of wastewater through on-site septic systems has been identified as the source of nitrate groundwater contamination.

The first step in updating the state of groundwater quality in the area will be a new groundwater study. Groundwater sampling will be done within the North Clatsop Plains Area to assess the current levels of contaminants. The study area would cover the North Clatsop Plains extending from Seaside to Warrenton, including the North Clatsop Plains Sub-Area identified in this document.

The approach that is currently being considered includes the random selection of wells within the North Clatsop Plains Area to create a statistically significant sample set that could be used to indicate the extent and level of contamination within the area. If areas of "special concern" (such as the North Clatsop Plains Sub-Area, locations with high densities of on-site septic systems, etc.) are identified prior to sampling, additional samples may be included in those areas to further delineate the local extent and level of contamination. Private domestic wells, public water supply wells, and existing monitoring wells will be considered for sampling.

Nitrate analysis will be included for all samples. Bacteria may also be included. Pharmaceuticals and Personal Care Products may be included as additional contaminants potentially resulting from septic systems. These compounds can be derived from anthropogenic sources of contamination due to their common use and potential presence in septic and sewage wastewater. The analysis of groundwater quality indicators and additional contaminants will be considered for the area during the development of a Quality Assurance Project Plan for the study.

The data generated from the proposed groundwater study would provide needed information for determination of groundwater protection management designation as well as feeding decisions to change management of onsite wastewater management programs, the geographic rule, and local zoning and development requirements relative to septic systems. Groundwater contamination is only one of the water quality concerns for the area.

Groundwater sampling and analysis should be considered as part of a more comprehensive approach that includes other water quality issues that have been identified in the North Clatsop Plains Area. To be successful, monitoring must be designed to answer specific questions. A good water quality study includes monitoring for parameters of concern at geographically significant locations under relevant hydrologic conditions. Understanding the relationship between surface and groundwater may require characterizing the chemistry of both systems and mapping the ground water table relative to surface water.

Oregon Department of Environmental Quality

Laboratory & Environmental Assessment Division

Water Quality Monitoring Section

Exhibit "B"

Amend text of the Clatsop Plains Community Plan:

Coastal Shorelands and Other Shorelands

Policies

5. The public has a right to enjoy and utilize all the public water bodies. No improvement shall be permitted which impedes this ability. Care must be exercised in protecting the privately owned shorelands~~.~~, and in managing beach access to protect public safety in the vicinity of Camp Rilea

Recreation

Recreational Policies

7. Clatsop County will work with Oregon Parks and Recreation Department, Oregon Department of Transportation and the Oregon Military Department to provide an additional trail connection(s) between the north end of Camp Rilea, the beach and Fort Stevens to the existing Fort-to-Sea Trail.

Open Space

Policies

4. All planned developments and subdivisions in the Clatsop Plains planning area designated RURAL LANDS** shall cluster land uses and designate areas as permanent common open space. No reversionary clause shall be permitted in common open space. The minimum percentage of common open space shall be 30%, excluding roads and property under water. The clustering of dwellings in small numbers and the provision of common open space assures good utilization of land, increased environmental amenities, maintenance of a low density semirural character, and maintenance of natural systems (dunes, wetlands), and may be used as an open space buffer between the residential use and adjacent military lands, agricultural or forest uses. This policy shall apply in all RURAL LANDS** areas in the Clatsop Plains except for the area commonly known as Surf Pines.* Clustering shall be prohibited in the area known as Surf Pines.* Surf Pines is further described by the following description (see Appendix B) and map.*

5. Permanent open space shall include, whenever possible, steep dunes which would require substantial alterations for building, buffers along streams, water bodies, deflation plains, areas abutting military lands, and farm and forest lands.

6. Permanent open space as part of subdivisions or planned developments adjoining one another shall be interrelated and continuous whenever possible. This could mean that open space could continuously follow ridge tops, deflation plains, wildlife corridors, trail corridors, property lines abutting military lands, or shorelands.

9. Allow more than one density transfer per sending site, until all allowed density is removed.

10. Allow banking of density transfer credits as an alternative to requiring immediate transfer of density to a receiving site.

11. Require receiving sites for density transfers be located outside of the North Clatsop Plains Overlay District.

Recommended Actions

Coordinate the Transferable Development Rights program with land trusts, cities, state and federal agencies, and other potential agency partners to facilitate density transfers out of the North Clatsop Plains Overlay District.

Explore the feasibility of adopting a Purchase of Development Rights program to protect open space within the Clatsop Plains / North Clatsop Plains Sub-Area, including consideration of financing options for program start-up and possibilities of mitigation banking.

Encourage the use of conservation easements where transfer of development rights and other regulatory approaches are not workable or achievable, and coordinate with land trusts, cities, state and federal agencies, and other agency partners, in educating property owners on the benefits and stewardship responsibilities that come with having a conservation easement.

Community Development
General Development Policies

3. Establish and maintain an overlay zone for the North Clatsop Plains Sub-Area that:
   a) Prohibits increases in residential densities through zone changes and density transfers;
   b) Allows multiple density transfers from a single density transfer sending site, and requires that all receiving sites be located outside the North Clatsop Plains Overlay District;
   c) Encourages wildlife corridor protection through clustered development and open space preservation; and
   d) Applies noise attenuation construction standards to new dwellings in areas impacted by noise from Camp Rilea.

Exhibit "C"

Amend the text of the Land and Water Development and Use Ordinance 80-14, to include the *North Clatsop Plains Overlay District*:

SECTION 4.500 NORTH CLATSOP PLAINS OVERLAY DISTRICT (/NCP).

Section 4.520 Purpose.

The North Clatsop Plains overlay district (/NCP) implements provisions of the Clatsop Plains Community Plan specific to the North Clatsop Plains Sub-Area. It is intended to provide for the planned and orderly growth of the North Clatsop Plains Sub-Area while protecting and maintaining natural resource values and preserving the semi-rural characteristics of the area. It is further intended to maintain compatibility between land uses in the vicinity of Camp Rilea while maintaining landowners' rights to reasonable use of their land.

Section 4.530 Applicability.

The North Clatsop Plains overlay district (/NCP) applies to areas designated /NCP on the Clatsop County Zoning Map.

Section 4.540 Development and Uses Permitted.

Development and uses permitted in the underlying zoning district are permitted in the North Clatsop Plains overlay district (/NCP).

Section 4.550 Conditional Development and Use.

Developments and uses conditionally allowed in the underlying zoning district are conditionally allowed in the North Clatsop Plains overlay district (/NCP), pursuant to LWDUO Article V.

Section 4.560 Development and Use Standards.

(1) Increases in residential density in the /NCP overlay district through zone changes and density transfers are prohibited.

(2) Notwithstanding the provisions of Development Standards Section 3.160, where common open space is required to be designated within the North Clatsop Plains Sub-Area, the location and configuration of such open space shall be prioritized based on the following criteria; open space areas meeting more than one criterion are preferred:

- **(A)** Open space buffers between residential uses and Camp Rilea;
- **(B)** Wildlife corridors;
- **(C)** Trail corridors;
- **(D)** Ridge tops, deflation plains, and shorelands.

(3) New dwellings within the /NCP overlay shall comply with the noise attenuation construction standards of Title 15 of the Clatsop County Code of Regulations.

(4) Notwithstanding the provisions of S3.161, Density Transfer Standards within the /NCP district are subject to the following requirements and exceptions:

- **(A)** Density may be transferred more than once from a single density transfer sending site within the /NCP overlay until all density is removed from the site;
- **(B)** All density transfer receiving sites shall be located outside the /NCP overlay district;
- **(C)** Density transfer credits need not be applied to a receiving site at the time of transfer but may be saved in a Density Transfer Bank maintained by Clatsop County;

Amend the text of the Standards Document:

3.160. Additional Residential Cluster Development Standards for the Clatsop Plains Planning Area.

(1) All planned developments and subdivisions shall designate and retain areas as permanent common open space.

(2) The minimum percentage of common open space shall be 30% excluding roads~~.~~, and property under water.

(3) Permanent common open space shall include, whenever possible, steep dunes which would require substantial alterations for building, buffers along streams, water bodies, deflation plains, wildlife corridors, trail corridors, buffers abutting military lands, shorelands, and farm and forest lands.

(4) Buffers (screening) shall be provided in all subdivisions and planned developments along all property lines adjacent to arterials and/or collectors.

(5) Permanent common open space as part of subdivisions or planned developments adjoining one another shall be interrelated and continuous whenever possible. This could mean that the common open space could continuously follow ridge tops, deflation plains, trail corridors, wildlife corridors, buffers abutting military lands, or shorelands. The Clatsop County Department of Community Development shall prepare a map of potential systems of common open space to be used as a guide for developers.

(6) Streams and drainages which form a system of common open space shall be preserved.

3.161. Density Transfer Standards for the Clatsop Plains Planning Area.

(1) Transfer of residential development rights between sites in the Clatsop Plains Planning Area is allowed as follows:

(A) Where all density is removed from a parcel, ~~The~~ the ~~remaining parcel of~~ the sending site shall be rezoned to either the Open Space Parks and Recreation zone or Natural Uplands zone or Conservation Shorelands zone or Natural Shorelands zone. Where less than the allowed density is removed, a deed restriction shall be recorded over the sending site limiting future development density accordingly. The applicant shall file the rezone request and, as applicable, the deed restriction with no reversionary right, at the same time as the density transfer request is submitted; and

(B) Prior to final approval of a density transfer the County shall require that deed restrictions be filed in the Clatsop County Deed Records in a form approved by County Counsel, that prohibits any further development beyond that envisioned in the approved density transfer until such time as the entire area within the density transfer approval has been included within an urban growth boundary; and

(C) The Community Development Director shall demarcate the approved restrictions on the official Zoning Map, and

(D) All density transfer receiving sites shall be located outside the /NCP overlay, and no ~~No~~ parcel of land shall receive ~~be involved in~~ more than one (1) density transfer transaction, and

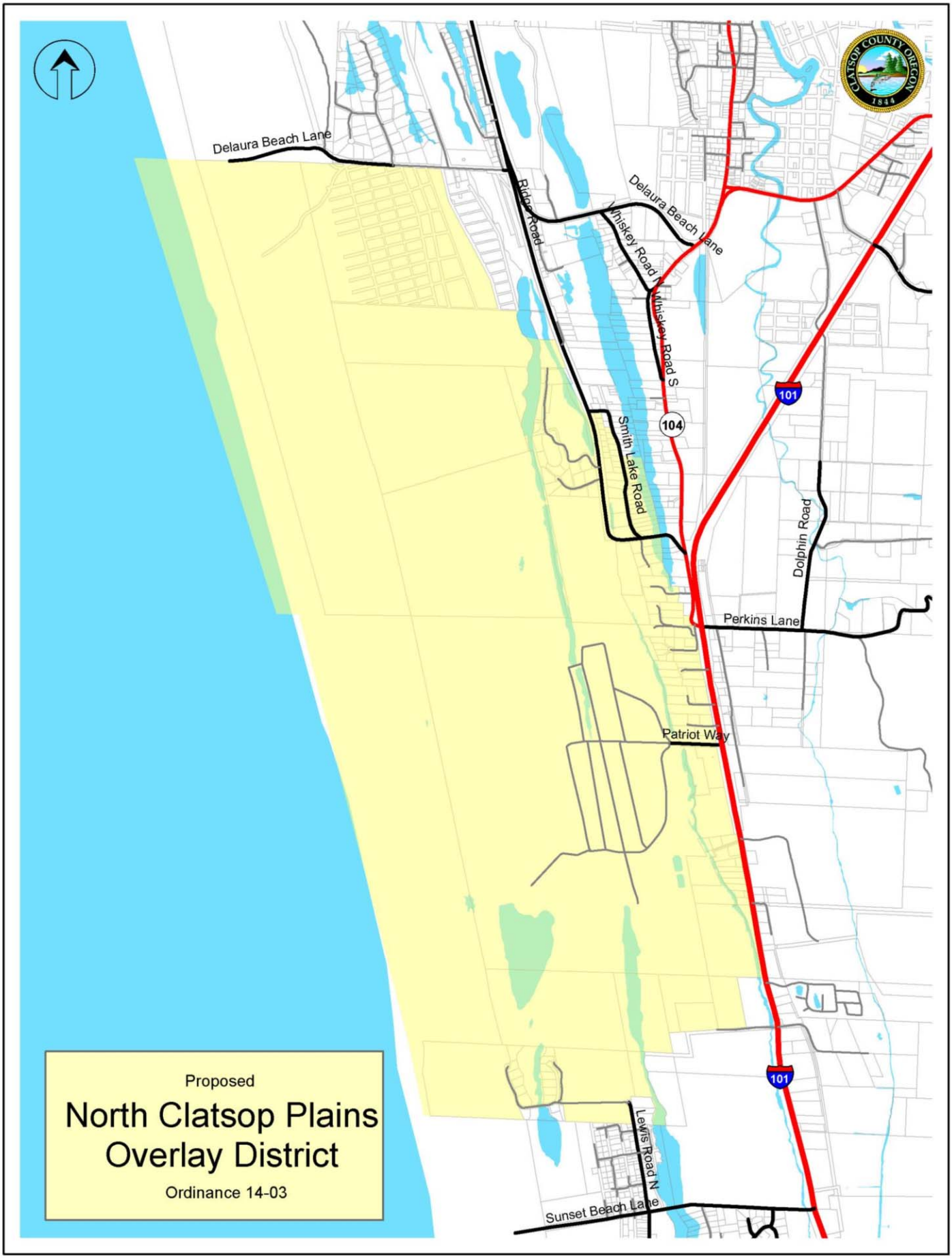
(E) Density transfer goes with the property - not the owner; and

(F) Minimum lot size shall be one (1) acre for the receiving site.

(2) All sending and receiving parcels shall be recorded in the "Density Table" (Section 3.162) and the appropriate sections filled out completely prior to approval. At the applicant's expense, if a receiving parcel cannot be identified at the time of application for a density

transfer, the applicant can choose to record the remaining credits with an affidavit, which shall be recorded by the applicant, and maintained with the County Planning Department. Staff will review the requisite comprehensive plan text and map amendments for conformity with the down zone and density transfer requirements.

Exhibit “E”


Delaura Beach Lane
Ridge Road
Delaura Beach Lane
Whiskey Road N
Whiskey Road S
101
104
Smith Lake Road
Dolphin Road
Perkins Lane
Patriot Way
101
Lewis Road N
Sunset Beach Lane
Proposed
North Clatsop Plains
Overlay District
Ordinance 14-03

Properties included in the North Clatsop Plains Overlay District listed by taxmap number.

710040002200
710040002300
710040002303
710040002304
710040002305
710040002306
710040002307
710040002308
710040002309
710040002310
710040002311
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710040002600
710040002601
710040002602
710040002700
710040002800
710040002900
710040002980
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