

# **ASTORIA DISTRICT 2018 ANNUAL OPERATIONS PLAN**

# ASTORIA DISTRICT

## 2018 ANNUAL OPERATIONS PLAN

### OVERVIEW

This plan describes the activities and outcomes that Oregonians can expect to see on the Clatsop State Forest in 2018.

The Clatsop State Forest is an actively managed forest, valued by many Oregonians for its mixture of environmental, economic, and social benefits. This plan supports this mixture and provides a balance of these benefits as required by Oregon Administrative Rule (OAR 629-035-0020). We strive to manage the forest sustainably, so that the benefits from the forest can be delivered into perpetuity. The forest harvesting is planned at a sustainable level; a level that our computer models suggest can be harvested year after year without reduction.

The forest has a mixture of habitat types for all of Oregon's native wildlife. Recreational opportunities are diverse and high quality, allowing for off-highway vehicles, bicycling, hiking, hunting, fishing, horseback riding, and more, striving to minimize user and environmental conflicts in the context of a working forest.

Managing a large public forest has its challenges. In addition to the challenges of providing the opportunities described above, the forest is expected to be financially self-supporting. About two-thirds of the revenues from state forest timber sales go to local counties and other taxing districts, including schools. Oregon Department of Forestry (ODF) uses the remaining third of the revenue to manage the forests and keep them healthy, through activities including fire protection, tree planting, thinning, research and monitoring, recreation services, road maintenance and stream improvement.

Every year in the Clatsop State Forest, we learn new things and find new challenges and opportunities. In preparing this plan, we have consulted with geotechnical specialists, wildlife biologists, fish biologists, aquatic specialists, engineers, adjacent landowners, and a variety of interest groups.

Over the last several months, ODF requested review and comments on our plan from others, including the Forest Trust Land Advisory Committee (representing the counties that deeded land to ODF), the State Forests Advisory Committee (SFAC - composed of Oregonians representing many interests), Astoria District Recreation Advisory Committee, Oregon Department of Fish and Wildlife, the US Fish and Wildlife Service, motorized and non-motorized recreation users, hunters, fishermen, and wildlife advocates, as well as Oregonians in general. Comments received and our responses to those comments can be found in Appendix D.

It was through this collaborative approach that we can finalize this AOP as one we are confident will meet the ODF goals; achieving the greatest permanent value for the citizens of Oregon.

### **A short summary of activities planned for the coming year:**

- Prepare timber sales to harvest approximately 73 million board feet of timber volume, through modified clearcut and partial cut harvest, generating revenue of \$27.5 million. This harvest level is in alignment with longer term plans and modeling to ensure it is sustainable and promotes the development of a mixture of habitat types across the landscape.
- Operate at a decreased service level meeting the FY18 Budget Instructions.
- Of the \$27.5 million in revenue, Clatsop County will receive approximately two-thirds or \$18.3 million to distribute to various taxing districts within the County. The Department of Forestry will receive the remaining one-third or \$9.2 million.
- Planting approximately 695,000 trees on 1,800 acres within the Clatsop State Forest.
- Protecting streams and water resources through a series of buffers and seasonal restrictions.
- Habitat development projects such as, retaining green trees in clearcut areas, and leaving down wood and snags, all for wildlife benefits in harvest areas and future forests.
- Maintain approximately 950 mile road network that provides access for timber harvest, various recreational opportunities and fire suppression.
- Conduct over 6,000 individual surveys for northern spotted owls.
- Conduct approximately 380 individual surveys for the marbled murrelet.
- Stream improvement projects. An initial screen suggests that streams near four planned harvest units could benefit from large wood additions to the stream system. These streams will be reviewed further during sale layout to confirm the large wood placement plan.
- Vacate or block approximately 4.3 miles of existing road to enhance watershed health.
- Operate and maintain the following developed facilities in a safe, clean, and responsible manner:
  - Five campgrounds
  - One day use recreation area
  - Six designated camp sites
  - Four dispersed camp sites
  - Two interpretive sites
  - Eight trailhead facilities
- Provide a safe and clean environment for the variety of dispersed activities that occur across the forest – hunting, camping, angling, sight-seeing, target shooting, swimming, mushroom picking, etc.
- Maintaining, managing, and patrolling the motorized and non-motorized trail networks, striving to protect the trail investments, provide for user safety, address developing trail issues, and protecting water quality.
- Continue to provide public firewood cutting and special forest products (salal, mushrooms, etc.) permits.

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# ASTORIA DISTRICT

## 2018 ANNUAL OPERATIONS PLAN

### INTRODUCTION

This annual operations plan (AOP) outlines activities planned on state-owned forestland managed by the Astoria District for Fiscal Year 2018 (FY18), which begins July 1, 2017 and ends June 30, 2018.

The activities in this AOP reflect a decreased service level. The district will be working collectively with the other districts to achieve a \$3 million real reduction in the overall State Forests budget by reducing Personal Services expenditures and maintaining or reducing Services and Supplies. Current plans for monetary reductions specifically for this AOP consist of: implementing a hiring freeze across all state forest programs on the district; reducing reforestation activities such as, reducing planting species that require expensive tubing protection and maintenance and reducing pre-commercial thinning; reducing camping days at Northrup Creek Horse Camp, Viewpoint Campground, and Beaver Eddy Campground; reducing land surveying when feasible; and using larger rock gradations on forest roads that are less expensive to manufacture. In addition, the state forests division will no longer be printing and mailing out timber sale auction booklets and prospectus documents for viewing. All timber sale documents will continue to be available online for viewing and printing and hard copies of contracts will be available at the district office.

During this budget reduction period the district will also be trying to grow volunteer programs that can help maintain some services that may be reduced during this AOP. Additional details planned at this time can be found in the Forest Roads Unit, Young Stand Management, and Recreation sections of this document.

This document describes how the activities and projects undertaken by the district will achieve the goals, strategies, and objectives of the NW Oregon Forest Management Plan (FMP), and the Astoria District Implementation Plan (IP), while implementing this budget direction.

The AOP document is divided into five major categories: Integrated Forest Management; Planning; Public Information and Education; Administration and Appendices.

The proposed operations and activities are planned to be designed, engineered, and submitted for processing during the FY18 time period. Actual on-the-ground operations will likely not occur during FY18 due to the time-lag associated with contract duration, which could be one to three years after auction. In contrast, reforestation, young stand management, recreation management, work-order-contracts for some project work associated with primary and alternate timber sales, and planning activities will be carried out during FY2018. This AOP has undergone a 45-day public comment period, which occurred March 20, 2017 through May 4, 2017. Appendix D, outlines the changes made after the public comment period.

Accomplishments of forest management activities that occurred under previous AOPs can be found in several reports, including the State Forester’s Annual Report for the Association of Oregon Counties, the Common School Forest Lands Annual Report, and individual district annual reports (these reports also cover the accomplishments of the Fire Protection and Private Forests Programs). These reports are available through the local district office or online at: <http://www.oregon.gov/ODF/Pages/Reports.aspx>

## INTEGRATED FOREST MANAGEMENT

### Timber Harvest Operations

#### **Overview of Timber Harvest Operations**

This AOP contains 14 primary operations comprised of 593 acres of partial cut harvests and 1,878 acres of regeneration harvest. The operations range in timber volume from 2.1 to 9.6 million board feet (MMBF) and have an estimated gross revenue of approximately \$31.5 million. Net revenues are estimated to be \$27.5 million. A detailed financial summary is included in Appendix B.

FY 2018 AOP guidance directs the Astoria District to achieve 73 MMBF. At this time, primary operations planned will achieve 74.1 MMBF. Even though this planned volume is higher than the goal of 73 MMBF, the District will ensure that as the AOP year progresses, planned versus sold volume is tracked in order to make sure the volume and financial targets are met. Planned volumes for each operation can be seen in Appendix B.

As planned, these operations are estimated to primarily contain conifer species. Hardwoods are anticipated to make up 14% of the total volume. Operations will be conducted on approximately 1.8% of the district’s total acres. Partial cuts account for 24% percent of the harvest while modified clearcuts equate to 76%.

Table 1. Annual Operations Plan objectives compared to Annual Harvest Objectives identified in the Astoria District Implementation Plan. All values are acres, except for Volume.

<b>Annual Harvest Objectives</b>	<b>IP Annual Objective</b>		<b>2018 AOP</b>
	<b>Low</b>	<b>High</b>	
Volume (MMBF)			74.1
Partial Cut Harvest	100	2,800	593
Regeneration Harvest	285	2,200	1,878

Table 2 illustrates the planned versus sold volume history over the life of the current Astoria District Implementation Plan (2011). The IP is a ten year plan intended to guide the District through 2021. The volume objective may fluctuate from year to year as long as the average over the ten years is 73 MMBF.

Table 2. Accomplishment of AOP Harvest Volume Compared to IP Annual Objective (MMBF)

Fiscal Year	IP Annual Objective	AOP Planned Volume	AOP Sold Volume	Cumulative Difference from Objective <sup>1</sup>
2012	69.7	69.4	67.7	-2.0
2013	69.7	70.0	73.8	4.1
2014	74.4	74.2	75.0	0.6
2015	74.3	73.5	71.4	-2.9
2016	73	73.5	76.8	3.8
2017 (Current AOP)	73	72.6	--	--
2018 (Draft/ Approved AOP)	73	74.1	--	--

1. IP Harvest Objective versus Sold Volume

## Structural Habitat Components

Stands designated for regeneration harvest in this operations plan fit into one or more of the following situations: highly marketable stands, over-stocked and dense stands, under-stocked stands, diseased stands, stands that are surplus to the complex structure targets in the desired future condition landscape design, and stands in areas that would provide an opening in the landscape to temporarily serve as big game foraging habitat and increase landscape diversity.

Structural habitat components such as snags and down wood are considered for all harvest prescriptions. In the case of regeneration harvests, it is essential to incorporate structural habitat components into the management prescription to ensure they are retained.

Structural components may be retained at higher levels in some units and at lower levels in other units. The intent is to achieve the targets outlined in the Forest Management Plan strategies in a given annual operations plan. The estimates used in the pre-operation reports for existing snags and down wood are generally based on SLI data for the sale areas. The estimates of the post-harvest expectations are based on ocular estimates, past contracts, monitoring results, or SLI data for that basin. During sale layout, cruise data gives a more recent account of the number of existing snags per acre. It is from the current cruise information that the remaining number of snags needed is tallied. If needed, additional green trees will be marked as wildlife trees for future snag recruitment or trees may be topped or girdled. It is rare that the conifer downwood requirements of 600-900 cubic feet per acre cannot be met, however, this type of situation would be where a higher amount of downwood would be left on another unit in the basin making up for the lower levels in the hardwood stand.

The process of producing an array of forest stand structures across the landscape is a gradual one. A variety of silvicultural practices will be used to actively move the forest towards the desired range of stand structures outlined in the IP (see Table 12 in the IP, page 73).

Stand structures consist of Regeneration (REG), Closed Single Canopy (CSC), Understory (UDS), Layered (LYR), and Older Forest Structure (OFS). Non forested parts of the forest are labeled (NON or NF). Structure definitions can be found in the Northwest Oregon State Forests Management Plan beginning on page 4-13.

All of the Primary and Alternate harvest operations and many of the other forest management activities have been reviewed by ODF's wildlife biologists, aquatic specialist, geotechnical specialist, road engineer, operations coordinator, and fish and wildlife biologists from the Oregon Department of Fish and Wildlife. Information on operations that occur within the provincial circle of a northern spotted owl has been provided to the US Fish and Wildlife Service. Occasionally, operations may contain a resource or activity that needs to be reviewed by another state agency, such as the Department of Agriculture or the Department of State Lands. Written comments from the external resource specialists can be found in Appendix C.

Oregon Department of Transportation's (ODOT) State Archaeologist conducted a cultural resource review of all the operations planned in this AOP. A screen was done to determine if: any of the operational areas had been previously surveyed for archaeological resources utilizing the State Historic Preservation Office database; an archaeological resource was within the operational area and/or within a quarter mile from the operational area; or the General Land Office (GLO) maps from the 1850's - 1900's contained any insight into historic sites that existed back in those years.

For this AOP, the Archaeological review revealed no resource sites within any of the planned operations or within a quarter mile of any of the planned operations. There were, however, seven operations where remnants of a trail and/or structure remains may exist. The locations of these are not exactly known or mapped. Our foresters will continue to look out for artifacts during sale layout and report any findings to the ODOT Archeologist for review and recommended protection measures.

Some smaller scale operations targeting infrastructure maintenance may also produce timber volume during the 2018 fiscal year. These small operations are not included as part of the AOP because they affect a very small area, produce little volume or revenue, and do not require significant effort to develop and execute. For example, a sale may be set up to thin the trees in an ODF Campground to remove unsuitable trees, improve safety and improve growing conditions for the remaining trees. Several other sales may remove trees adjacent to main haul roads to allow roads to dry and improve drainage. These sales will be less than \$100,000 in value and comply with all policies, rules, and plans.

### **Minor Landscape Design Modifications**

The landscape design is a long term vision of the Desired Future Condition (DFC) for an array of stand structures across the district which will be achieved through a variety of silvicultural prescriptions across diverse stand types.

The District's vision for future development of complex and general stands on the landscape is described and mapped in the Astoria District Implementation Plan. The Landscape Design is composed of stands occupying 30 percent of the district that is to be managed for DFC - Complex

structure, either Layered (LYR) or Older Forest Structure (OFS). Management of DFC – Complex structure usually consists of partial cuts only. The DFC of the remaining 70 percent of the district is called General. A DFC of General allows for a variety of management options including both partial cuts and modified clearcuts.

The development of the landscape design during implementation planning is generally conducted at the stand level, or higher, using the best available information at the time. Recognizing that some minor changes will be necessary during operational planning. Minor changes to a landscape design will not exceed 240 acres in an AOP. Modifications will be described annually in the AOP and documented in Appendix F.

### **Harvest Operations within Terrestrial Anchor Sites and Aquatic Anchors**

The State Forests' Species of Concern Strategies specifically identifies fish and wildlife species of concern on the Clatsop State Forest. Two of these strategies are incorporating Terrestrial Anchor Sites (TAS) and Aquatic Anchor (AA) sites into the forest.

- Terrestrial Anchor Sites (TAS): are areas intended to benefit terrestrial wildlife species of concern; especially those associated with older forest or interior habitat conditions, sensitive to forest fragmentation, or do not readily disperse across younger forest conditions. Management within TAs is intended to develop larger patches of mature forest conditions, to emulate natural small-scale disturbance patterns, and to minimize short-term negative impacts to habitat. Harvest will mostly consist of thinnings but small regeneration harvest areas and/or retention cuts will be used at times to emulate natural small-scale disturbances. ODF biologists will be consulted when patch cuts and/or retention cuts will be used within TA's.
- Aquatic Anchor (AA): sites are watersheds where salmon and aquatic amphibian conservation is of concern. Riparian management strategies beyond those described in the FMP will be applied within AAs. In addition, areas designated for the development of complex structure in the Landscape Design are clustered around streams important to fish in the AA.

The Species of Concern Strategies provide long term goals for TAS and AA. Any management activities within those areas are designed to achieve those goals. These strategies have not identified specific limits to the total area that can be harvested within these areas; however, the district and resource specialist will be tracking the harvest trends within these areas.

The TAS comprise approximately 8% of the Astoria District. It's important in selecting stands for harvest and developing prescriptions in these areas to ensure these harvest activities achieve the goals of the TAS. Table 3 summarizes harvest operations within the TAS since the strategy was adopted (AOPs 2012 through 2018).

In this AOP, there will be no harvest within any of the TAS on the Astoria District.

Table 3. Summary of Harvest Operations within TAS (Acres and Percent)

Terrestrial Anchor Site (TAS)	Current AOP (FY 2018) Planned Harvest		Cumulative Harvest (FY 2012 AOP to Present)	
	Clearcut	Partial Cut	Clearcut	Partial Cut
Buster	-	-		
% of Acres	-	-		
Plympton	-	-		70
% of Acres	-	-		1.7%
Sweethome	-	-	10	121
% of Acres	-	-	0.4%	5.3%
All TAS	-	-	10	191
% of Acres	-	-	0.4%	1.7%
Entire District	-	-		
% of Acres	-	-		

The AAs comprise approximately 23% of the Astoria district. The AA strategies focus on protection of riparian areas within the AA watersheds. Harvest in these basins require additional stream buffers contributing towards longer term riparian protection. Since the boundaries of these anchors are watersheds, these anchor basins cross lands not managed by ODF. Of the five anchor basins in the Astoria District, two are almost completely on District ownership and three have acreage on other ownerships. In this AOP, 2.4% (752 acres) of all AAs on the Astoria district will be modified clearcut and 0.6% (64 acres) will be partial cut.

Table 4. Summary of Harvest Operations within AA (acres and percent)

Aquatic Anchors (AA)	Current AOP (FY 2018) Planned Harvest		Cumulative Harvest (FY 2014 AOP to Present)	
	Clearcut	Partial Cut	Clearcut	Partial Cut
Northrup Creek (7,207 Ac.)	219	-	494	-
% of Acres	3.0%	-	6.9%	-
Buster Creek (10,874 Ac.)	139	-	753	440
% of Acres	1.3%	-	6.9%	4.0%
Upper Rock Creek (3,498 Ac.)	212	-	271	-
% of Acres	6.1%	-	7.7%	-
Upper North Fork Nehalem (9,908 Ac.)	182	64	654	460
% of Acres	1.8%	0.6%	6.6%	5.3%
Coal Creek (183 Ac.)	-	-	-	-
% of Acres	-	-	-	-

### Summary of Timber Harvest Operations by Basin

In the following section, the commercial forest management operations planned for FY 2018 will be summarized in the context of the 17 management basins on the Astoria District. ODF and ODFW resource specialists reviewed the FY 2018 operations plan and provided input. Individual

pre-operation reports include information on riparian protection and structural components such as snags, down woody debris, and green tree retention (these reports are available upon request). Since the Forest Management Plan strategies provide standards for these components, they are not directly addressed in this AOP. Road concerns and standards are discussed in the Transportation Planning and Harvesting section.

Table 5. Summary of Timber Harvest Operations in each Management Basin. All values are in net acres.

<b>Management Basin</b>	<b>Partial Cut</b>	<b>Clearcut</b>
Astoria	157	225
Beneke	0	0
Buster	0	387
Crawford	0	0
Davis	0	0
Fishhawk	0	0
Gnat	0	130
Hamilton	0	76
Klaskanine	0	0
Lousignot	118	166
N. Fork Nehalem	64	213
Northrup	0	290
Plympton	0	101
Quartz	220	239
Sager	34	51
Scattered	0	0
Sweethome	0	0
<b>Total</b>	<b>593</b>	<b>1878</b>

Descriptions of operations occurring in each basin can be found below. In each basin where harvest will be occurring, the expected change in the current condition is noted. Changes in CSC, UDS, LYR and OFS are estimated to occur 5-10 years post-harvest. The harvest occurring in each basin during FY18 is within the anticipated trajectory towards the DFC goal for that basin. The DFC goals for each basin are outlined in the Astoria District Implementation Plan.

### **ASTORIA BASIN**

**Boiler Fleet Combo** - This operation is comprised of five modified clearcut units totaling 225 acres and six partial cut units totaling 157 acres. The modified clearcut units range from 39-51 years old. The current condition of the stands to be partial cut are mostly CSC with 17 acres of UDS in Area 1. The current condition of the stands to be clearcut is a mixture of CSC and UDS, with the exception of Area 11 which is currently LYR. The DFC for all of the modified clearcuts is General. The partial cut units are approximately 35 years old the majority which are currently in the CSC condition; with Area 6 and Area 8 currently LYR. The DFC for the partial cuts is General. Due to the stand age and condition the partial cuts will be a first entry thinning aimed at maximizing tree growth for the future.

This operation is under consideration to be marketed as a sort sale. In addition, all or portions of the project work may be completed through a work order contract.

## **BENEKE BASIN**

There are no harvest operations planned in this basin for FY 2018.

## **BUSTER BASIN**

Long Walker Areas 2, 4, and 5 - This operation consists of four modified clearcuts totaling 182 acres, new road construction right-of-way totaling eight acres, and one partial cut unit totaling 34 acres. The modified clearcut units consist of a mixture of UDS and LYR stands and are 76-81 years in age. The partial cut unit is currently in the CSC condition and is approximately 40 years old. A first entry thinning will be conducted in this sale area in order to promote growth and to recover volume loss due to competition mortality. All stands have a DFC of General. (Areas 1 and 3 are within the Sager Basin)

This operation is within the Buster Creek Aquatic Anchor (AA). As a result, all Type F, and large and medium Type N streams within the AA will have a 100 foot no-harvest buffer and all small, perennial, debris flow-prone, and high-energy Type N streams within the AA will have a 50 foot no-harvest buffer.

Oswego Area 1 – This operation consists of two modified clearcuts totaling 138 acres and new construction right-of-way totaling one acre. Area 1 is currently a mixture of UDS and LYR with an age of 53-69 years, while Area 2 is UDS and is approximately 68 years old. After harvest both sale areas will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC of both sale areas is General. (Area 2 of this sale is within the Quartz Basin)

Pancho – This operation consists of four modified clearcuts totaling 161 acres, and new road construction right-of-way totaling four acres. Areas 1, 2, and 4 are currently in the LYR condition and have an age range of 74-78 years while Area 3 is in the UDS condition and is approximately 78 years old. After harvest all units will be replanted with a mixture of conifer species, allowing for a variety of future management options. All stands have a DFC of General.

This operation is within the Upper Rock Creek Aquatic Anchor (AA). As a result, all Type F, and large and medium Type N streams within the AA will have a 100 foot no-harvest buffer and all small, perennial, debris flow-prone, and high-energy Type N streams within the AA will have a 50 foot no-harvest buffer.

## **CRAWFORD BASIN**

There are no primary harvest operations planned in this basin for FY 2018.

Popeye (Alternate Operation) – This operation consists of one modified clearcut unit totaling 20 acres, two partial cut units totaling 325 acres, and new construction right-of-way totaling five acres. The modified clearcut unit is currently in the UDS condition and is approximately 81 years old. After harvest this unit will be replanted with a mixture of conifer species, allowing for a variety of future management options. The partial cut units are currently in the CSC condition and range between 29-43 years old. These units are planned to have a first entry thinning in order to promote growth and to recover volume loss due to mortality. All stands have a DFC of General.

## **DAVIS BASIN**

There are no primary harvest operations planned in this basin for FY 2018.

Davis Ridge Combo (Alternate Operation) – This operation consists of one modified clearcut totaling 24 acres, and one partial cut totaling 38 acres. The modified clearcut unit is currently in the LYR condition and is approximately 57 years old. After harvest this unit will be replanted with a mixture of conifer species, allowing for a variety of future management options. The partial cut unit is currently in the CSC condition and is approximately 37 years old. This stand will be thinned to capture competition mortality and to increase growth rates for a healthy future stand. All stands have a DFC of General.

All or portions of the project work for this sale may be completed through a work order contract.

## **FISHHAWK BASIN**

There are no primary harvest operations planned in this basin for FY 2018.

Sliver Picker (Alternate Operation) - This operation consists of two modified clearcut units totaling 51 acres. The current condition of Area 1 is UDS and is approximately 80 years old. Area 2 is currently in the LYR condition and has an age range of 40-80 years. After harvest both sale areas replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC of both sale areas is General.

All or portions of the project work for this sale may be completed through a work order contract.

Plympton East Area 3 (Alternate Operation) – This operation consists of one modified clearcut totaling 44 acres, one partial cut totaling 39 acres and new construction right-of-way totaling one acre. The modified clearcut unit is showing as LYR in the inventory, although past blow down has altered the stand significantly. The age for this stand is approximately 69 years. This harvest will be done in order to re-establish the stand and to release the vigorously growing hemlock understory. The DFC for this stand is General. The partial cut unit is also currently in the LYR condition and is approximately 76 years old. This stand will be thinned to continue promote the DFC of LYR. (Area 2 of this operation is within the Plympton Basin)

The partial cut unit overlaps the edge of the Plympton NSO Circle. The thinning will be done in order to continue to promote NSO habitat. Per policy, a Biological Assessment will be done by the NWOA Biologist as part of the planning process in order to assess risk to the site.

## **GNAT BASIN**

Dino – This operation consists of three modified clearcut units totaling 232 acres and new construction right-of-way totaling two acres. The units are a mixture of UDS and LYR and range from 62-76 years old. After harvest this unit will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC for all units is General.

This operation is partially within the Northrup Basin.

Harkin Larkin - This operation consists of two modified clearcut units totaling 110 acres. The stands are primarily in the CSC condition, although 15 acres of Area 1 is currently LYR. The age

range for Area 1 is 57-85 years. Area 2 is approximately 85 years old. The vision for both sale areas is to have fully stocked stands that will provide for a variety of future management options. The DFC for both sale areas is General.

This operation is under consideration to be marketed as a sort sale. In addition, all or portions of the project work may be completed through a work order contract. For marketing purposes there is potential to market one sale area as a regular stumpage sale and the other will be marketed as a sort sale. This will be done as another way to analyze if sort sales realize higher value.

### **HAMILTON BASIN**

Hawkeye – This operation consists of one modified clearcut unit totaling 75 acres and new road right-of-way totaling one acre. The clearcut unit is currently in the LYR condition and is approximately 79 years old. After harvest this unit will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC for all stands is General.

El Nino (Alternate Operation) – This operation consists of two modified clearcut units totaling 157 acres and new construction right-of-way totaling five acres. Area 1 is a mixture of UDS and LYR and is between 71-81 years old. Area 2 is primarily LYR with a small patch of both LYR and CSC. The age for Area 2 is approximately 72 years. After harvest this unit will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC for all stands is General.

### **KLASKANINE BASIN**

Cal Barr (Alternate Operation): This operation consists of four modified clearcut units totaling 59 acres, and two partial cuts, totaling 58 acres. The modified clearcut units are a mixture of CSC and LYR, although three of the areas were significantly damaged during the windstorm in 2008. The ages of these stands range from 61–71 years. They are poorly stocked and have been previously salvaged. What remains of the stands will be harvested and replanted to re-establish a fully stocked, vigorously growing conifer stand. Area 4 is a partial cut that is a mixture of UDS and CSC. The goal of the operation is to harvest the trees that would die out due to competition for growing space with the rest of the stand. The age range is 29-44 years. Area 6 is a partial cut that is currently in the UDS condition and is approximately 61 years old. This six acres will be thinned to promote rapid growth on the residual conifer and hardwood stand. The DFC for all the sale areas is General.

Area 6 is a partial cut that occurs within a portion of the buffer of the Leonard Road MMMA. A preliminary Biological Assessment has been done by the NWOA Biologist as part of the planning process in order to assess risk to the site.

### **LOUSIGNOT BASIN**

Daisy Chain – This operation consists of two modified clearcut units totaling 161 acres and new construction right-of-way totaling one acre. Both units are currently in the LYR condition and range between 71-80 years old. After harvest this unit will be replanted with a mixture of conifer

species, allowing for a variety of future management options. The DFC for all the stands is General.

This operation is within the Northrup Creek Aquatic Anchor (AA). As a result, all Type F, and large and medium Type N streams within the AA will have a 100 foot no-harvest buffer and all small, perennial, debris flow-prone, and high-energy Type N streams within the AA will have a 50 foot no-harvest buffer.

Vesper View – This operation consists of two modified clearcuts totaling 80 acres and one partial cut totaling 118 acres. Areas 1 and 2 are currently in the UDS condition and are currently between 75-80 years old. After harvest both sale areas will be replanted with a mixture of conifer species, allowing for a variety of future management options. Area 3 is currently in the CSC condition and is approximately 36 years old. Thinning will be done in order to capture competition mortality and increase stand growth. The DFC for Area 3 is general.

Vesper Bell (Alternate Operation) – This operation consists of three modified clearcut units totaling 156 acres. Areas 1 and 3 are currently in the UDS condition and range from 73-76 years in age. Area 2 is currently in the LYR condition and is approximately 68 years old. After harvest this unit will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC for all the stands is General.

### **NORTH FORK NEHALEM BASIN**

Cole Soap – This operation consists of two modified clearcuts totaling 102 acres. The sale areas are primarily in the LYR condition and are approximately 91 years old. After harvest this unit will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC for all the stands is General.

This operation is within the North Fork Nehalem Aquatic Anchor (AA). As a result, all Type F, and large and medium Type N streams within the AA will have a 100 foot no-harvest buffer and all small, perennial, debris flow-prone, and high-energy Type N streams within the AA will have a 50 foot no-harvest buffer.

Sassy Sally – This operation consists of two modified clearcut units totaling 110 acres, two partial cut units totaling 64 acres and new construction right-of-way totaling one acre. Areas 1 and 3 are currently in the UDS and LYR condition and are approximately 80 years old. After harvest these units will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC for Areas 1 and 3 is General. Area 2 is primarily in the UDS condition and is approximately 80 years old. This sale area will be moderately thinned to promote layering within the stand and limb growth while maintaining greater than 40% crown closure. The DFC for Area 2 is LYR. Area 4 is currently in the LYR condition and is approximately 72 years old. This stand will be thinned in order to maintain the LYR condition and also promote the OFS condition. About half of Area 4 has the DFC of OFS; while the second half of the unit has a DFC of General.

Area 2 is a partial cut that occurs within a portion of the buffer of the Sassy Sally MMA. A preliminary Biological Assessment has been done by the NWOA Biologist as part of the planning process in order to assess risk to the site.

This operation is within the North Fork Nehalem Aquatic Anchor (AA). As a result, all Type F, and large and medium Type N streams within the AA will have a 100 foot no-harvest buffer and all small, perennial, debris flow-prone, and high-energy Type N streams within the AA will have a 50 foot no-harvest buffer.

East Summit Combination (Alternate Operation) – This operation consists of two modified clearcut units totaling 51 acres, two partial cut units totaling 146 acres and new construction right-of-way totaling five acres. The modified clearcut units have a current condition of UDS and CSC and are between 37 and 52 years old. After harvest these units will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC for all the stands is General. The partial cut units are CSC with a portion of LYR within Area 2. These sale areas are approximately 37 years old. They will be thinned from below to maintain stand health and to increase the growth rates within the stand. The DFC for these stands is General.

This operation is partially within the North Fork Nehalem Aquatic Anchor (AA). As a result, all Type F, and large and medium Type N streams within the AA will have a 100 foot no-harvest buffer and all small, perennial, debris flow-prone, and high-energy Type N streams within the AA will have a 50 foot no-harvest buffer.

Seuss Split (Alternate Operation) – This operation consists of one modified clearcut unit totaling eight acres and one partial cut unit totaling 21 acres. The clearcut unit is currently in the UDS condition and is approximately 74 years old. The DFC for this unit is General. The partial cut unit is currently in the UDS condition and is approximately 46 years old. This stand will be moderately thinned in order to promote layering and to move the stands towards its DFC of OFS.

All or portions of the project work for this sale may be completed through a work order contract.

## **NORTHRUP BASIN**

Daisy Chain – This operation consists of two modified clearcut units totaling 162 acres and new construction right-of-way totaling one acre. The clearcut units are currently in the UDS condition and are approximately 71–80 years old. After harvest these units will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC for all the stands is General.

This operation is partially within the Lousignot Basin.

Dino – This operation consists of three modified clearcut units totaling 232 acres and new construction right-of-way totaling two acres. The units are currently in the UDS and LYR condition and range from 62-76 years in age. After harvest these units will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC for all the stands is General.

This operation is partially within the Gnat Basin.

This operation is within the Northrup Creek Aquatic Anchor (AA). As a result, all Type F, and large and medium Type N streams within the AA will have a 100 foot no-harvest buffer and all small, perennial, debris flow-prone, and high-energy Type N streams within the AA will have a 50 foot no-harvest buffer.

Flintstone (Alternate Operation) – This operation consists of two modified clearcut units totaling 165 acres. The stands are currently in the UDS condition and are 66–79 years old. After harvest these units will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC for all the stands is General.

All or portions of the project work for this sale may be completed through a work order contract.

This operation is within the Northrup Creek Aquatic Anchor (AA). As a result, all Type F, and large and medium Type N streams within the AA will have a 100 foot no-harvest buffer and all small, perennial, debris flow-prone, and high-energy Type N streams within the AA will have a 50 foot no-harvest buffer.

Foster Sort (Alternate Operation) – This operation consists of one modified clearcut unit totaling 35 acres. The stands are currently in the UDS condition and are approximately 70 years old. After harvest these units will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC for all the stands is General.

This sale is planned to be marketed as a sort sale in an effort to achieve a higher value for the sale.

This operation is within the Northrup Creek Aquatic Anchor (AA). As a result, all Type F, and large and medium Type N streams within the AA will have a 100 foot no-harvest buffer and all small, perennial, debris flow-prone, and high-energy Type N streams within the AA will have a 50 foot no-harvest buffer.

## **PLYMPTON BASIN**

Nicolai – This operation consists of one modified clearcut unit totaling 101 acres. The sale area is currently in the UDS condition and is approximately 61 years old. After harvest this unit will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC for all the stands is General.

This sale area partially overlaps the edge of the Plympton NSO Circle. A preliminary Biological Assessment has been done by the NWOA Biologist as part of the planning process in order to assess risk to the site.

All or portions of the project work for this sale may be completed through a work order contract.

Plympton East Area 2 (Alternate Operation) – This operation consists of one modified clearcut totaling 44 acres, one partial cut totaling 39 acres and new construction right-of-way totaling one acre. The modified clearcut unit is showing as LYR in the inventory, although past blow down has altered the stand significantly. The age for this stand is approximately 69 years. This harvest will be done in order to re-establish the stand and to release the vigorously growing hemlock understory. The DFC for this stand is General. The partial cut unit is also currently in the LYR condition and is approximately 76 years old. This stand will be thinned to continue promote the DFC of LYR. (Area 3 of this operation is within the Fishhawk Basin)

The partial cut unit (Area 2) planned for this operation overlaps the edge of the Plympton NSO Circle. The thinning will be done in order to continue to promote NSO habitat. A preliminary Biological Assessment has been done by the NWOA Biologist as part of the planning process in order to assess risk to the site.

## **QUARTZ BASIN**

Oswego Area 2 – This operation consists of two modified clearcuts totaling 138 acres and new construction right-of-way totaling one acre. Area 1 is currently a mixture of UDS and LYR with an age of 53-69 years, while Area 2 is UDS and is approximately 68 years old. After harvest both sale areas will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC of both sale areas is General. (Area 1 of this sale is within the Buster Basin)

Pied Piper - This operation consists of three modified clearcut units totaling 177 acres and new construction right-of-way totaling three acres. The sale areas are all currently in the UDS condition and range from 45–64 years old. After harvest, all sale areas will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC of all the sale areas is General.

Spruce Run Ridge – This operation consists of one partial cut unit totaling 220 acres and new construction right-of-way totaling three acres. The partial cut unit is currently in the UDS condition and is approximately 64 years old. The unit will be thinned in order to promote the DFC of LYR. Lost Lake and the Spruce Run Creek Trail are within the vicinity of this operation. The operation will be managed so as to create the least amount of interference with recreationalists as possible.

This operation is under consideration to be marketed as a sort sale. In addition, all or portions of the project work may be completed through a work order contract.

Quartz Run (Alternate Operation) – This operation consists of three modified clearcut units totaling 200 acres. The stands are primarily in the LYR condition and are approximately 70 years old. After harvest, all sale areas will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC of all the sale areas is General.

## **SAGER BASIN**

Long Walker Areas 1 and 3 - This operation consists of four modified clearcuts totaling 182 acres, new road construction right-of-way totaling eight acres, and one partial cut unit totaling 34 acres. The modified clearcut units consist of a mixture of UDS and LYR stands and are 76-81 years in age. The partial cut unit is currently in the CSC condition and is approximately 40 years old. A first entry thinning will be conducted in this sale area in order to promote growth and to recover volume loss due to mortality. All stands have a DFC of General. (Areas 2, 4, and 5 are within the Buster Basin)

West Sager (Alternate Operation) – This operation consists of two modified clearcut units totaling 66 acres and new construction right-of-way totaling one acre. The clearcut units are currently in the CSC and UDS condition and range from 76-87 years in age. After harvest, all sale areas will be replanted with a mixture of conifer species, allowing for a variety of future management options. The DFC of all the sale areas is General.

## **SCATTERED BASIN**

There are no harvest operations planned in this basin for FY 2018.

## **SWEETHOME BASIN**

There are no primary harvest operations planned in this basin for FY 2018.

Woody Woodpecker (Alternate Operation) – This operation consists of two modified clearcut units totaling 100 acres, two partial cut units totaling 289 acres, and new construction right-of-way totaling six acres. The partial cut units are currently in the UDS and LYR condition and will be thinned to promote the DFC of LYR and OFS. The stand ages range from 64-91 years. Additionally these units are within the Sweethome TAS, thus the prescriptions will be developed in consultation with the NWOA Biologist. The modified clearcut units are also in the UDS and LYR condition, however, these units have a DFC of General and are not within the TAS. The ages for the modified clearcuts range from 69-91 years old.

A portion of Area 2 overlaps the buffer of the Boulder Candyflower MMMA. A preliminary Biological Assessment has been done by the NWOA Biologist as part of the planning process in order to assess risk to the site.

This operation is partially within the North Fork Nehalem Aquatic Anchor (AA). As a result, all Type F, and large and medium Type N streams within the AA will have a 100 foot no-harvest buffer and all small, perennial, debris flow-prone, and high-energy Type N streams within the AA will have a 50 foot no-harvest buffer.

## **Forest Roads Management**

### **Overview**

A variety of forest road and transportation system management and land surveying activities are planned for this AOP. Primary objectives include providing forest access and meeting the goals, objectives and standards contained in the *Forest Roads Manual*. As site specific information is gained during the preparation of planned management activities, emphasis will be given to refinement of Level III Transportation Plans in conformance with:

- The 12 Guiding Principles for Road Management
- Oregon Department of Forestry Road Standards

Additionally, Board of Forestry Performance Measures, adopted in 2008 set targets for the State Forests Division to achieve. Performance Measure 5 was specific to road management and is described as follows:

*The Board of Forestry Performance Measure #5 directs that the Clatsop State Forest will:*  
Reduce the miles of hydrologically connected roads to less than 15 percent of the road network within the next ten years, and maintain or improve that level of reduction for the following ten years. Reduce the number of road crossings that are barriers to fish passage to less than two percent within the next ten years, and maintain or improve that level of reduction for the subsequent ten years.

Based on current budget direction, district staff has been analyzing all costs involved in all areas of the Forest Roads Unit and are proposing to reduce project costs by, using a larger gradation of rock on forest roads which costs less to manufacture, reducing land surveying when possible, and searching out grant partnership opportunities for stream crossing improvements for fish passage. Project work will focus on work that supports current and planned timber sales, meets FPA water quality standards, protects existing infrastructure, and safety.

Project work associated with these sales is anticipated to further the intent of Performance Measure 5:

- Boiler Fleet
- Cole Soap
- Daisy Chain
- Dino
- Harkin Larkin
- Hawkeye
- Long Walker
- Nicolai
- Oswego
- Pancho
- Pied Piper
- Sassy Sally
- Spruce Run Ridge
- Vesper View

Exact details of each project, such as cross drain locations, are not known at this time and will be further refined upon sale and project field layout.

A summary of estimated values for planned timber operation road and project work activities is shown in the Forest Roads Summary Table, in Appendix B.

Some of this project work will be accomplished with Work Order Contracts. At this time we have identified all or portions of project work on these sales that will likely be completed via these contracts: Boiler Fleet, Harkin Larkin, Nicolai, and Spruce Run Ridge.

Additionally, some of the planned alternate operations may have project work associated with them completed in FY18 with Work Order Contracts. At this time we have identified all or portions of project work on these sales that will likely be completed via these contracts: Davis Ridge Combo, Flintstone, Seuss Split, and Sliver Picker. This work is also anticipated to further the intent of Performance Measure 5.

## **Road Construction**

The planned harvest operations in this AOP anticipate the construction of 1.8 miles of collector roads and 10.6 miles of Spur roads. Approximately 14% or 1.7 miles is planned to be native earth (dirt) roads. All dirt spurs and 0.4 mile of reopened dirt spur will be blocked or vacated upon completion of road use. In addition to the blocked dirt spurs, there will be 2.2 mile of spurs vacated.

Therefore, this Operations Plan will increase the amount of active roads by an estimated 8.1 net miles.

## **Road Improvement**

Road improvement projects will use ODF road inventory protocols to assess existing road drainage, stability, surfacing and vegetation conditions, and to aid in the development of transportation system improvement plans.

- Approximately 5.5 miles of Mainline, 28 miles of Collector, and 20.5 miles of Spur roads are identified for improvement with planned operations.

## **Fish Passage**

Fish passage improvements will be addressed with the following operations:

- Long Walker
- Pancho
- Vesper View

All of these projects have been submitted to be considered to receive funding through a grant from the National Fish and Wildlife Foundation, Coast Coho Business Plan, Strategic Action Plans.

## **Road Access Management**

Approximately 4.3 miles of road are identified for closure and/or permanent vacating with these operations, as follows:

- Boiler Fleet: Road closure includes approximately 1.5 miles of dirt spur roads.
- Daisy Chain: Road closure includes approximately 0.5 mile of dirt spur road.
- Pancho: Road closure includes approximately 0.5 mile of rocked spur road and one Type F stream crossing.
- Pied Piper: Road closure includes approximately 0.1 mile of dirt spur road.
- Vesper View: Road closure includes approximately 1.7 miles of rocked spur roads and two Type F stream crossing.

Old abandoned or legacy type roads found during sale layout will be evaluated for vacating.

## **Road Maintenance**

Planned road maintenance activities will be accomplished by timber sale contracts and by the district road crew. A breakdown of planned road maintenance activities follows:

- Timber Sale Contracts: Approximately 99.7 miles of active road maintenance (associated with FY 2018 hauling operations and road use) is planned within timber sale contracts.
- Approximately 400 miles of mechanical road brushing and spraying is planned for State Forest roads in this operations plan.

District Road Crew: The District road crew will perform routine road maintenance activities on approximately 50 miles of inactive and active forest roads located throughout the District.

Specific Forest Road Costs associated with each timber sale can be found in Appendix A: Forest Roads Summary

## **Management of Rock Source/Supply**

Rock quarry development and/or rock crushing is necessary to provide sufficient quantities of road rock for planned road construction, road improvement, and road maintenance activities. Quarry developments are planned for the following operations:

- Cole Soap
- Daisy Chain
- Harkin Larkin
- Long Walker
- Oswego
- Pancho
- Pied Piper
- Sassy Sally
- Vesper View

## **Land Surveying**

Every year surveying needs are analyzed and planned to be kept at a minimum level while ensuring property lines and corners are clearly marked.

Land surveying may be necessary for the following timber sales:

- Boiler Fleet
- Pancho
- Sassy Sally

Approximately 1.5 miles of ownership boundary are planned to be surveyed and 10 property corners are planned to be re-witnessed at an estimated cost of \$23,000.

## Young Stand Management

The young stand management program applies various silvicultural treatments to create diverse management options for forest development and growth.

These applications include site preparation, planting, interplanting, rehabilitation, vegetation management, slash abatement, invasive species control, tree protection, pre-commercial thinning, and pruning. To meet the objectives of the Northwest Oregon Forest Management Plan, specific prescriptions of the above applications must be developed for each set of forest and environmental conditions.

Based on current budget direction, district staff has been analyzing all costs involved in all areas of the Young Stand Management program and are proposing to: reduce the use of western redcedar and other species that requires expensive tubing and/or pruning; minimize the costs associated between planting and free-to-grow while ensuring the goal of fully stocked stands; performing release treatments only when stands are in danger of losing growth while keeping the goal of fully stocked stands and protect and maintaining existing stands from animal damage through the use of trapping and exclusion barriers (bud caps and vexar tubing).

Forest health strategies within this program focus on a diverse composition of tree species to provide stability and resiliency to the forest and emulates a natural species mix for the region. Implementation of a diversity of tree species at the time of reforestation can minimize the levels and severity of pest outbreaks, while diversifying the forest both structurally and compositionally. Enhancing the diversity of native species contributes to habitats and conditions suitable for many natural dynamics that keep pest populations and damage within acceptable levels. The program incorporates improved and locally collected seed, with a greater resistance to native and non-native pests. This integrated process reduces the susceptibility to the forest health issues of Northwest Oregon such as Swiss Needle Cast.

The use of South Fork crews has been an important component to the success of young stand management activities on the Clatsop State Forest. The recent review of the cost –benefit analysis of South Fork will shift which activities are best performed by South Fork. Some of those activities commonly used by South Fork are tree protection (trapping, bud capping and tubing), noxious weed control, mechanical hand release, and seed collection will mainly be accomplished by South Fork inmate crews.

See the Reforestation and Young Stand Management Summary in the Appendix A-4 for an itemized list of what is planned in FY2018.

The following specific activities will be conducted throughout the fiscal year:

## **Site Preparation**

These activities prepare the planting sites to enable new conifer stands to meet stocking guidelines and become free to grow. The site preparation activities consist of primarily three site specific prescriptions:

(1) Herbicides applied by helicopter, or by ground methods, target site specific vegetation species that will aggressively compete with the newly planted trees. In FY 2018, there are 1,400 acres proposed for site preparation through a combination of aerial and hand applications using contractors and South Fork crews.

(2) Dense slash concentrations created during timber harvest will be mechanically piled concurrently with harvest operations during the summer and fall seasons to improve and open planting areas.

(3) Slash accumulations from harvest activities (landings and processor piles) and any mechanically piled slash concentrations are burned by State Forest staff during the late fall and winter after sufficient rains have reduced the risk of an escaped broadcast burn.

## **Seedlings / Nurseries**

A wide variety of seedlings are grown at forest nurseries throughout the Pacific Northwest to meet the reforestation needs. Seedlings are grown in three different stock types, 1) plug seedlings or one year old container grown seedlings, 2) plug ones which are grown one year in a container followed by a second year in a bare root bed, and 3) straight bare root seedlings grown from seed in a bare root bed and then transplanted to a lower stocking bare root bed. The budget accounts for a string of growing costs over several years rather than just those costs of the trees being grown and planted in the winter of 2018. The budget for seedlings includes portions of the costs for growing seedlings for the planting years of 2018, 2019, and 2020. Additionally there are costs associated with the seed that is used for growing the seedlings, estimated transportation costs and various costs associated with packaging and freezer and/or cooler storage.

The individual species mixture and stock type used for a particular reforestation unit is determined after the final inventory from the forest nursery. For Astoria 250,000 or 35% of the seedlings for 2018 are bare root grown Douglas-fir and western hemlock. The remaining 445,000 or 65% of the 2018 seedlings are grown in one year containers to give more flexibility to the planting season. The container seedling species include Douglas-fir and western hemlock again, along with minor amounts of grand fir, noble fir, Sitka spruce and western redcedar. The seedlings are grown in nurseries in Oregon and Washington to avoid a catastrophic loss at any one nursery along with a concern towards keeping transportation costs as low as possible.

## **Planting**

Planting is comprised of matching the appropriate species and stock type to the planting site. Forest health strategies are addressed on a site specific basis when the planting plan is developed. Site specific prescriptions consider target species, Swiss Needle Cast risk, Phellinus weirii (laminated root rot) presence, required stocking guidelines, natural advanced regeneration, and the desired future condition of the stand. To accomplish this, a mixture of species are planted to provide for a healthy, productive, and sustainable forest ecosystem over time. This strategy provides for diverse habitats for wildlife and biodiversity while offering a full range of social, economic, and environmental benefits for future generations.

The planting plan anticipates 1,400 acres of initial planting and 300 acres of interplanting in regeneration harvest units to be planted by contractor crews. A mixture of the following species will be planted based upon the site characteristics: Douglas-fir, western hemlock, noble fir, Sitka spruce and western redcedar. Stocking densities are site specific and natural regeneration is considered when establishing a new stand.

## **Vegetation Management**

Vegetation management activities focus on releasing existing conifer or hardwood stands, which have been overtopped by competing vegetation, or controlling roadside brush encroachment. Various prescriptions focus on ensuring that newly established stands are kept in a healthy condition, so the forest stand will continue to grow to its biological and economical potential. In young stand management, the plan includes 600 acres of chemical release through aerial and hand chemical application using contractor and South Fork crews, and 400 acres of mechanical hand release using contractor and South Fork crews.

## **Tree Protection**

This activity is designed to protect young stands from being foraged by elk and deer, or damaged by clipping or girdling by mountain beaver, voles, rabbits, mice and other rodents. Site specific prescriptions are utilized to protect trees from damage, so the forest stands can develop into their desired future condition. Integrated Pest Management systems will be used in unusual situations that require more significant control methods along with associated monitoring that occurs during stocking surveys. The District plans to trap mountain beavers on 1,200 acres or nearly every planting unit using a combination of South Fork crews and contractors. Tree tubes will be installed on all western redcedar (approximately 5,000 tubes) as part of the tree planting contract. Bud capping will be performed by South Fork crews and/or contractors immediately following planting of Douglas-fir in susceptible areas of big game damage. The ODFW is planning a new controlled hunt for elk on State Lands in Clatsop County north of Highway 202 but leaves a large exclusion protecting the Jewell Wildlife Refuge. The first controlled hunt is planned for January 2018 and will focus hunting in areas that have been heavily impacted by big game damage.

## **Pre-commercial Thinning**

During this AOP, 600 acres of stands may be scheduled for Precommercial thinning based on funding availability. Budgets are currently being prepared but it will not be known if funding is available until later in the spring.

Precommercial thinning (PCT) is a silvicultural technique that provides growing space by removing less vigorous trees from the stand during this stage of competition. These thinnings are made as an investment for the future growth and development of the stand. PCT is conducted in stands when high stand densities first develop, generally from 7 to 18 years of age. This practice accelerates the development of both conifer and hardwood stands towards the selected silvicultural pathway. Generally, all minor species, such as western redcedar and true firs, are retained. The practice of precommercial thinning allows for increased individual tree growth until significant competition between trees develops again, 10 to 15 years later. At this point, other management prescriptions can be evaluated.

Red alder, western hemlock and Sitka spruce stands provide unique challenges for density management, as these species generate a prolific amount of seed that will germinate in the understory of existing stands. Pre-commercial thinning of red alder stands regenerated from natural seeding, advanced regeneration or plantations is required at a relatively early age (7 to 8 years). Pre-commercial thinning of all of these extremely dense young stands provides flexibility in future density management activities.

## **Pruning**

There are currently no areas planned or identified for pruning for FY2018.

## **Invasive Species**

Approximately 50 acres of invasive/noxious weed treatment is expected to be accomplished by District staff and/or South Fork Crews. Planned invasive weed treatment will focus on continuing work in the Astoria Basin and addressing small populations of Scotch Broom identified along roadside ditches, landings, and in units, as resources allow. The noxious weed treatments are highly variable in nature and 50 acres is a gross estimate whereas most of the treatments are spot spraying of individual weeds and small patches of dense weeds.

Additionally, equipment on timber sale operations that leave surfaced roads are required to be washed prior to entering the forest.

## **Stocking Surveys**

Stocking surveys will be conducted on young conifer stands to determine stocking levels in the two year old and four year old stands. Approximately 2,900 acres of stocking surveys will be conducted by district staff in FY2018.

## Recreation Management

### **Overview of Recreation Management**

Recreation activities are diverse on the Clatsop State Forest, with dispersed use throughout the forest. Activities include family camping, group camping, hunting, target shooting, fishing, hiking, all-terrain vehicle (ATV) riding, horseback riding, mountain biking, nature study, and sightseeing. Due to agency budget constraints, the primary focus of the District Recreation Program will be directed at base level maintenance of existing infrastructure and trails.

Based on current budget direction, district staff has been analyzing all costs involved in the recreation program and will be: maintaining the one vacant position in motorized recreation (hiring freeze); reducing the camping days at Northrup Creek Horse Camp, Viewpoint, and Beaver Eddy Campgrounds; and are relying more on user groups for assistance in management of our recreation sites.

Some of the benefits of these proposal are:

- ODF will be able to focus limited staff time at campgrounds during the peak recreation season.
- Protecting the site, preventing vandalism, and eliminating over-stays will be a focus.
- Reducing camping days at Northrup Creek Horse Camp, Viewpoint, and Beaver Eddy Campgrounds will allow our current limited staff a better opportunity to meet user needs and ensure public safety at our recreation facilities across the district and better align with adjacent districts' campground dates.
- Making our key user groups a partner in our recreation sites will allow ODF to still offer a high level recreation experience with limited staffing, generate more ownership from those groups who use ODF facilities the most, and increase our ability to communicate with the recreating public.

Details of the proposal are:

- Northrup Creek Horse Camp will be open the full summer season with no special use permit required, from May 22 through September 11, 2017. The campground will remain available in the fall, from September 11 through November 30, through the special use permit process. The North Coast Chapter of OET has agreed to supply a camp host for the holiday weekends associated with Memorial Day, 4<sup>th</sup> of July, and Labor Day.
- The North Coast Chapter of OET created a Facebook page that highlights Northrup Creek Horse Camp and will be used to advertise maintenance projects for volunteers as well as trail conditions.
- ODF will communicate campsite vacancy status every Friday during the recreation season to OET's Facebook administrator to post for potential users.
- Shifting Viewpoint Campground from being open year-round to open from the first weekend in April to the last weekend in October. OHV Trails will remain open year-round.
- Reducing available camping days at Beaver Eddy Campground by opening the weekend prior to Memorial Day and closing the third weekend after Labor Day.

Utilizing the South Fork Inmate Camp for maintenance and repairs of recreation facilities is a critical component of achieving the FY2018 objectives of the District recreation program. It is

anticipated that during FY2018 the use of South Fork Crews at the Nicolai Mountain OHV Area will be reduced due to higher demand in areas where travel time is more efficient for them. This factor makes it even more critical for the district to grow our volunteer program to assist in maintenance of many of our trail systems.

### **Facilities (Campgrounds, View Points, Trail Heads, etc.)**

The Astoria District is responsible for operation and maintenance of five fee campgrounds, one dispersed recreation area, and eight designated sites, two interpretive sites, and seven designated trailheads.

- Gnat Creek Campground
- Henry Rierson Spruce Run Campground
- Beaver Eddy Campground
- Northrup Creek Horse Camp
- Viewpoint Campground
- Lost Lake Recreation Area (Day Use Area)
- Lower Nehalem designated sites (two)
- North Fork Nehalem dispersed sites (two)
- Kerry Road designated sites (two)
- Plympton Ridge designated sites (two)
- Shingle Mill OHV Staging Area and Trailhead
- Hunt Creek OHV Trailhead
- Astoria District Demonstration Forest
- Chet Reed Arboretum
- Gnat Creek Trailhead
- Bloom Lake Trailhead
- Soapstone Lake Trailhead
- Diane Berry Equestrian Trailhead
- Spruce Run Creek Trailhead
- Demonstration Forest Trailhead

Activities associated with facility operation and maintenance includes:

- Campground host recruitment and supervision
- Coordination of daily maintenance activity by South Fork Inmate Camp
- Scheduling of garbage and recycling services, vault toilet pumping, well maintenance
- Well water testing
- Sign and information board management
- Fee collection
- Public contacts/use management
- Public Use monitoring
- Assessment and coordination of facility repairs
- Firewood sales
- Lost and Found program

During this AOP work will continue on the repair and retrofitting of our campground kiosk structures to repair rot issues.

Table 6. Developed Facility and Dispersed Campsite Project

<b>Project Type</b>	<b>Project Name</b>	<b>Work Resources</b>	<b>Project Description</b>
Vault Toilet Construction	Lower Nehalem River Vault Toilet Grant	Grant and in-kind work	Install double vault toilets at the Spruce Run walk-in tent site area and Beaver Eddy campsite Area.
Boat Ramp	Lower Nehalem River Vault Toilet Grant	Grant and in-kind work	Install a paddle craft launching site at Spruce Run walk-in Area and improve campsite access.
ADA Assessable campsites	Lower Nehalem River Vault Toilet Grant	Grant and in-kind work	Improve Beaver Eddy campsites to meet ADA standards.
Improve Parking	Lower Nehalem River Vault Toilet Grant	Grant and in-kind work	Improve surfacing at the parking area at the Beaver Eddy Campground site.

## Trails

### Motorized (OHV) Trails

Within the Nicolai Mountain Off Highway Riding Area there are approximately 30 miles of Off Highway Vehicle (OHV) trails, with an 820 foot learner’s loop at the Shingle Mill Staging Area. ODF continues to receive funding from Oregon Parks and Recreation Department (OPRD) for funding District OHV positions and facility operation and maintenance costs. ODF continues to work collaboratively with the District Recreation Advisory Committee and local ATV users to develop the Nicolai Mountain OHV Riding Area.

Table 7. Motorized Trail Projects

<b>Project Type</b>	<b>Project Name</b>	<b>Work Resources</b>	<b>Project Description</b>
Trail Maintenance	Nicolai OHV Trail Maint.	South Fork/ODF/Volunteers	Maintain trails within the Nicolai Mtn. OHV Area

### Non-Motorized Trails

Minor trail re-routes and associated maintenance occur as needed across the District. Planned re-routes of non-motorized trails during this AOP include sections of the Spruce Run Creek Trail. Currently, there are approximately 20 miles of designated non-motorized trails on the District.

Table 8. Non-Motorized Trail Projects

<b>Project Type</b>	<b>Project Name</b>	<b>Work Resources</b>	<b>Project Description</b>
Trail Re-route	Spruce Run Trail Re-route	South Fork/ODF	Re-route trail outside of an existing riparian area due to annual flooding. This will be performed in conjunction with the LWCF grant.

## Trail Maintenance (Motorized and Non-Motorized)

Trail maintenance (non-motorized):

- Gnat Creek Trail – Four miles
- Bloom Lake Trail – Two miles
- Soapstone Lake Trail – Two miles
- Demonstration Forest Trail – One mile
- Northrup Equestrian Trails – Nine miles
- Spruce Run Creek – Three miles

## **Volunteer Program**

In 2016, the Clatsop State Forest had over 1,738 hours of volunteer work consisting of trail volunteers (United States Coast Guard, North Coast Trail Alliance, Pacific Trail Riders, Sons of Beaches, and Oregon Equestrian Trails), camp-host programs, and various recreational committee member participants. The District Recreation Staff plan to continue more time in FY2018 to further develop a working relationship with local clubs and organizations, and increase volunteerism on the forest.

## **Grants**

ODF is partnering with the Land and Water Conservation Fund, to install vault toilets at the Beaver Eddy and Spruce Run walk-in sites, increase ADA accessibility to campsites, and install a new paddle craft launching site at the Spruce Run Campground. This work will be conducted using both grant funding, FDF funding, as well as in-kind work performed by the Department of Forestry. This work is being performed in conjunction with the Tillamook District and additional work is being performed on the Morrison Eddy Campground as part of this grant work.

ODF is currently looking at the potential to grow Public/Private partnerships. If potential opportunities present themselves they will be evaluated on a case by case basis.

## Other Integrated Forest Management Projects

### **Aquatic Habitat Improvement**

Restoration Goals and Identification Process: The overarching principles for fish habitat restoration are described in the Forest Management Plan. Landscape and site-specific strategies will improve levels of aquatic function in the short term to meet the immediate habitat needs of depressed species and place aquatic habitats on a trajectory toward desired conditions. At the same time actions are carried out to restore the ecological processes and functions that create and maintain self-sustaining habitats over the long term. Restoration strategies include: completing assessments to identify limiting factors and identify, design, and implement projects to remedy identified problems. Projects should mimic natural process, use multidisciplinary approach, and consider site-specific as well as watershed scale processes and disturbance regimes. Projects will be designed to re-establish natural physical and biological processes. The district's approach to restoration planning is further refined in the Implementation Plan. The types of projects in order of priority are: (1) Fish Passage, (2) Road Decommission or Hydrologic Disconnection, (3) Instream Habitat Projects, and (4) Alternative Plans to Manage Riparian Areas. More information on these project types and rationale for priorities is provided in the district IP.

Projects can be implemented opportunistically (when operating near streams that would benefit from restoration efforts) or with a more complex and typically larger scale approach both of which will be evaluated for ecological benefits. For the Astoria District the goals are to:

- Implement 2-5 larger scale projects over a 10-year period if resources and partners are available.
- Implement 2-3 opportunistic projects per year if resources and partners are available.
- Contribute to fish passage improvement and hydrologic disconnection.
- There are stream enhancement opportunities identified in association with sales in this sale plan.
- Potential log placement on Boiler Fleet, Hawkeye, Long Walker, and Pancho.

Before determining if these potential projects will go into a full planning process, more field review is needed. For stream restoration the ODF Aquatic and Riparian Specialist and the ODFW District Fish Biologist will perform a field evaluation to make sure that the stream will benefit from the proposed project and meets screening criteria (see below). This evaluation will also include reviewing findings, recommendations, modeled conditions, and fish species distribution from available sources such as watershed analyses, ODFW aquatic inventories and fish distribution data, intrinsic potential models, and federal/state recovery and restoration implementation plans where available.

Some screening criteria used to help determine if a potential stream wood placement project should be further considered include:

- Good access to stream (e.g. either cable over stream or road/tractor ground near stream).
- Trees of sufficient size (meet ODFW diameter and length criteria) or with root wad attached are available in the harvest area.
- Operation is adjacent to a salmon or steelhead stream.

- Operation is adjacent to stream with an active channel width between 10 and 20 feet.
- Wider channels may work, but are more challenging because of the length of wood required (two times channel width). Projects in narrower channels can work as well, but are considered a lower priority-especially if the stream is steep and only contains cutthroat trout.
- Personnel are available to administer implementation of the project.
- Address one or more of the habitat restoration priorities.

Restoration accomplishments are reported to OWEB using the OWRI electronic filing process and reported by ODF annually in our report to the counties, Board of Forestry, and DSL.

Aquatic and Riparian Conditions: Watershed assessments have been completed on 11 basins on this district. In addition the Oregon Department of Fish and Wildlife completed Fish Habitat Assessments and summarized the findings by district (ODFW 2005-2006). Limiting factors have largely been identified in the ODFW conservation strategy, the 2005 State of Oregon Coastal Coho Assessment (OCCA) (State of Oregon 2005), and ODF watershed analyses. Common limiting factors include: a lack of large wood in streams, increased fine sediment in riffles, a lack of complex pool habitat, and a need for more off-channel habitat.

Several strategies, described in the Forest Management Plan dictate protection measures designed to protect, maintain, and restore aquatic and riparian functions. These strategies are employed during harvest activities and include but are not limited to, leaving trees adjacent to streams to protect stream temperature, provide nutrients, protect stream banks, and eventually provide wood to improve fish habitat. Best management practices for road construction, reconstruction, and maintenance minimize impacts to water quality. Aquatic Anchors have been established on five watersheds where additional aquatic conservation measures are applied. The Aquatic Anchors include: Buster Creek, Upper North Fork Nehalem River, Upper Rock Creek, Coal Creek, and Northrup Creek.

### **Land Exchange**

The District does not anticipate commencing any land exchanges in FY18 due to budget and staffing limitations. Although we have no deliberate plans to begin any land exchanges in FY18, if high priority land exchange opportunities presents themselves, they will be evaluated on a case by case basis.

### **Law Enforcement and Public Safety**

Law enforcement for the District ATV program is provided by the Clatsop County Sheriff's Office which has one officer dedicated approximately half time to ATV enforcement. Law enforcement for other district general recreation will be provided by a seasonal law enforcement officer during the heavy recreation use season.

## **Firewood Cutting Program**

The primary objective of the District Firewood Cutting Program is to provide a source of firewood from State Forests to the public for personal use and secondarily to reduce fuel hazards, improve visibility along roads, and provide a recreational opportunity. The District's Firewood Cutting Program is primarily tied to the completion of timber sales. Timber sale contracts require any non-merchantable wood or cull material that has been yarded to the landing and is suitable for firewood to be placed in a pile.

The District typically sells 700-1,000 woodcutting permits each year.

## **Non-Timber Forest Products**

The Astoria District currently administers a Special Forest Products program which consists of issuing Commercial Use Permits to individuals who wish to collect larger quantities of various forest products with the intent for the products to be re-sold. There is a fee charged to individuals for a Commercial Use Permit, which is based on the type of forest product and quantity. Revenues during FY2016 yielded approximately \$18,700 from the sale of 174 permits. It is anticipated that FY2017 and FY2018 will yield approximately the same results. Special Forest Products include: mushrooms, salal, moss, and ferns. Additionally, the public has the ability to gather smaller quantities of these forest products, free of charge, for personal use.

# Planning

## **Stand Level Inventory and Other Vegetation Inventories**

The District, through a Salem inventory contract, is anticipating to have 50 stands inventoried in an effort to make progress in updating our inventory with current information. Many of the stands inventoried in the early 2000's have been operated in and need to be re-inventoried to obtain post-harvest condition. It is likely that district staff will also be conducting inventory as the need arises.

## **Fish and Wildlife Surveys**

All of the proposed sales in this AOP have been reviewed by ODF and ODFW biologists. Survey requirements are based on current policy, protocol, and biologist recommendations.

Fish Distribution Surveys: Streams are classified in part as supporting fish (Type F) or not supporting fish (Type N). Riparian protection measures depend in part on the presence of fish. Fish distribution information varies across the district. Many streams have been surveyed with electro fishing techniques that established the upper extent of fish use. However many very small streams have not yet been surveyed for fish presence. These streams will be evaluated with either an electro-fishing method (through contractual arrangements with private consultants or support from ODFW) or with a Physical Habitat Survey. The physical methodology was developed in conjunction with Oregon Department of Fish and Wildlife.

The Astoria District will continue its northern spotted owl (NSO) survey program, in order to effectively comply with federal and state Endangered Species Acts and to contribute to the Forest Management Plan (FMP) goals. Survey requirements for each sale are determined in accordance with the State Forest Division Northern Spotted Owl Policy, Procedures, and Guidance (January 2012).

A private contractor will continue the annual surveying for northern spotted owls near planned operations and to monitor the status of occupied sites. It is estimated that this will entail approximately 1,000 survey stations; each station is called for the NSO six times over the survey season yielding 6,000 individual nighttime surveys conducted. Approximately four daytime follow-up surveys are expected to follow up any NSO detection during the night calling.

In FY2018, the district will continue its marbled murrelet survey program in order to comply with federal and state Endangered Species Acts and to contribute to Forest Management Plan goals. Survey requirements are determined in accordance with ODF Policy and Guidance. Operations fall into either the Operational Survey Zone or the Systematic Survey Zone. The Operational Survey Zone is closest to the coast where all known occupied sites are located. East of the Operational Survey Zone is the Systematic Survey Zone, where potential murrelet habitat is being surveyed systematically and operational surveys are not being conducted.

Table 9. Summary of Surveys for Northern Spotted Owls

<b>Operation*</b>	<b>Survey Years<sup>1</sup></b>	<b>BA<sup>2</sup> Required</b>	<b>Special Considerations</b>
Boiler Fleet	2014-2016		
Cole Soap	2016-2017		
Daisy Chain	2016-2017		
Dino	2016-2017		
Harkin Larkin	2015-2017		
Hawkeye	2016-2017		
Long Walker	2016-2017		
Nicolai	2016-2017	Yes	
Oswego	2015-2017		
Pancho	2016-2017		
Pied Piper	2015-2017		
Sassy Sally	2015-2017		
Spruce Run Ridge	2015-2017		
Vesper View	2015-2016		

\* Indicates operations surveyed using the Density Survey Protocols

<sup>1</sup>Years that surveys have been completed or are planned.

<sup>2</sup>A Biologic Assessment is required for this operation due to the presence of NSO in the vicinity of the operation.

Table 10. Summary of Surveys for Marbled Murrelets

<b>Operation</b>	<b>Survey Years<sup>1</sup></b>	<b>BA<sup>2</sup> Required</b>	<b>Special Considerations</b>
Boiler Fleet	N/A		Systematic Survey Zone
Cole Soap	2016-2017		
Crawfish Corner	N/A		Systematic Survey Zone
Daisy Chain	N/A		Systematic Survey Zone
Dino	N/A		Systematic Survey Zone
Harkin Larkin	N/A		Systematic Survey Zone
Hawkeye	2016-2017		
Long Walker	N/A		Systematic Survey Zone
Nicolai	N/A		Systematic Survey Zone
Oswego	N/A		Systematic Survey Zone
Pancho	N/A		Systematic Survey Zone
Pied Piper	N/A		Systematic Survey Zone
Sassy Sally	2014-2016	Yes	
Spruce Run Ridge	N/A		Systematic Survey Zone
Vesper View	N/A		Systematic Survey Zone

<sup>1</sup> Years that surveys have been completed or are planned.

<sup>2</sup> A Biologic Assessment is required for this operation due to the presence of MM in the vicinity of the operation

## Public Information and Education

A number of district employees annually participate in the local school Career Day, Clatsop County Job & Career Fair, Sixth Grade Forestry Tour and Field Day, demonstration forest tours, Clatsop County Fair booth, State Fair booth, Society of American Forestry meetings and tours, and many public school presentations. The district has representatives who attend local watershed council meetings, including the Upper Nehalem Watershed, and the Nicolai-Wickiup Watershed. The Assistant District Forester is on the Board of Directors of the North Coast Watershed Association and the District Forester is an elected officer on the Clatsop Forest Economic Development Committee (CFEDC).

## Administration

The State Forest Program in the Astoria District is organized into four separate functional work units. They are managed by a Unit Forester or Unit Supervisor/Manager, and directly supervised by the Assistant District Forester (Operations Manager). The four work units include:

Administration includes the District Forester, Assistant District Forester, Office Manager and clerical staff. The administrative function provides policy and planning direction, budgeting, coordination between units and programs, oversight to the field units, public contact and clerical support. The office manager and clerical staff are split funded from all programs they are involved in.

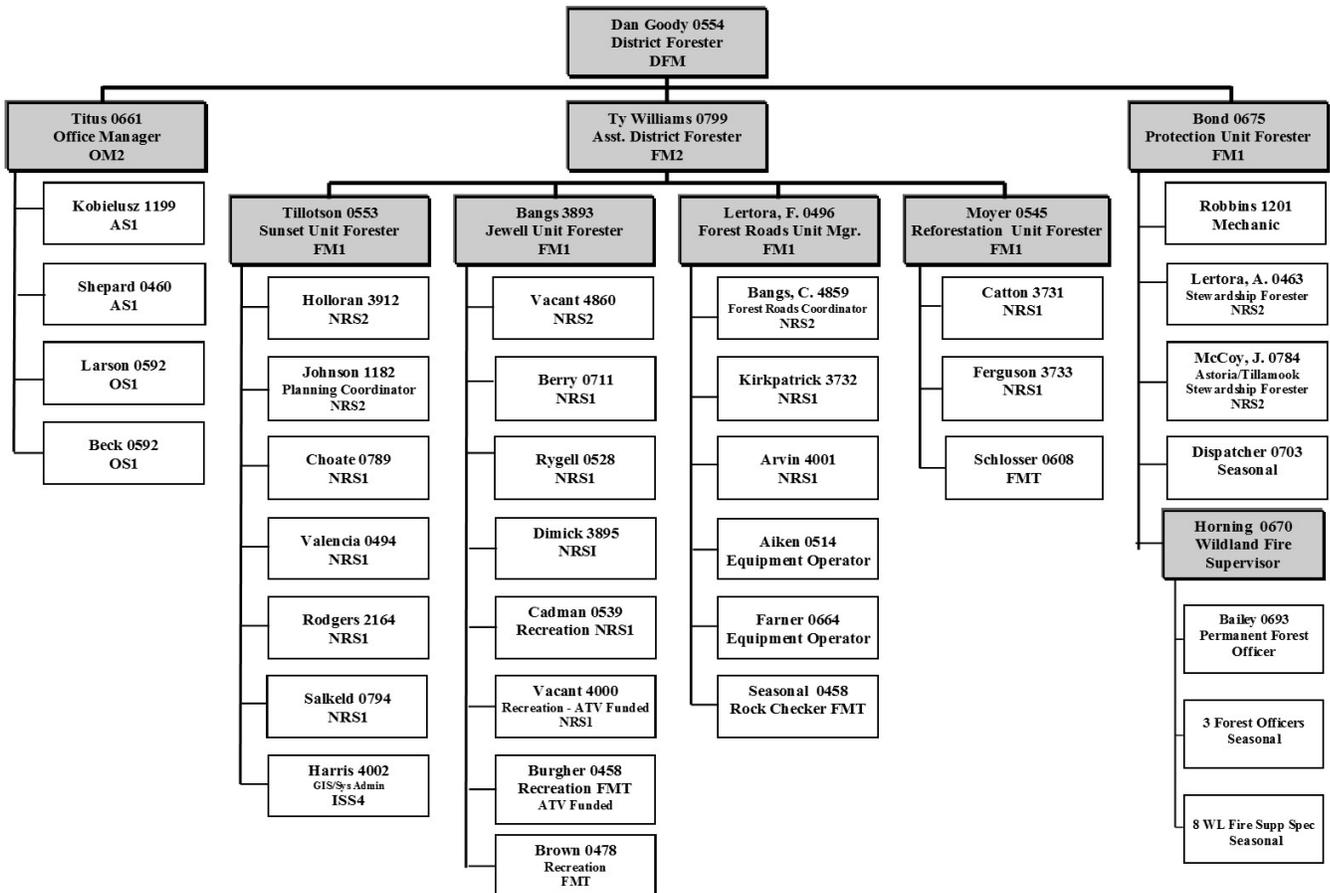
The Forest Roads Unit is responsible for the road and project support, establishment and maintenance of property line surveys, and supervision of the district road maintenance crew.

The Forest Management Units, include the Jewell Unit (central Clatsop County) and the Sunset Unit (remaining state forest lands along the western and northern portions of Clatsop County). They are responsible for the planning, preparation and administration of all State Forest timber sales. The Jewell Unit Forester is responsible for the management of the District's recreation facilities and trails, which includes the management of two Recreation Specialists (one of which is currently vacant) and two Recreation Technicians. Two recreation positions are funded through State Forest Development Fund, and two are motorized recreation positions that are currently funded through Oregon Parks and Recreation funds.

The Reforestation Unit is responsible for young stand management. The reforestation unit consists of a Reforestation Unit Forester, two Reforestation Foresters, and a Reforestation Technician.

# District Organization

## *Astoria District* Organization FY 18



# APPENDIXES

## A. Summary Tables

- a. Harvest Operations – Financial Summary
- b. Harvest Operations – Forest Resource Summary
- c. Forest Road Management Summary
- d. Reforestation and Young Stand Management Summary
- e. Recreation Management Summary

## B. Map Section

- a. Harvest Operations Vicinity Map
- b. Include other maps that support the AOP

## C. Consultations with Other State Agencies

This appendix summarizes the results of consultations with the Oregon Department of Fish and Wildlife and other agencies, as appropriate. This appendix contains any written comments that we received from state agencies.

## D. Public Involvement

This appendix describes the results of the public involvement process of this AOP and will be added prior to its approval.

## E. Pre-Operations Reports

Pre-Operations Reports are available from the district upon request.

## F. Minor Modification to the Astoria District Implementation Plan

This appendix describes the minor modification to the district landscape design.

Appendix A - Summary Tables

**TIMBER HARVEST OPERATIONS - FINANCIAL SUMMARY**

District: Astoria

Fiscal Year: 2018

Date: 03/19/2017

Primary Operation	Fund %		County	Sale Quarter	Net Acres		Volume (MMBF)			Value		
	BOF	CSL			Partial Cut	Clear-cut	Con-ifer	Hard-woods	Total	Gross	Projects	Net
Boiler Fleet	100%		Clatsop (100.0%)	3	157	225	5.8	0.7	6.5	\$2,145,875	\$411,500	\$1,734,375
Cole Soap	34%	66%	Clatsop (100.0%)	3	0	102	3.3	0.9	4.1	\$1,911,600	\$225,000	\$1,686,600
Daisy Chain	100%		Clatsop (100.0%)	2	0	162	6.4	0.4	6.7	\$2,914,540	\$310,400	\$2,604,140
Dino	100%		Clatsop (100.0%)	2	0	234	7.1	1.4	8.5	\$3,666,300	\$125,050	\$3,541,250
Harkin Larkin	100%		Clatsop (100.0%)	1	0	110	4.3	0.2	4.5	\$2,198,625	\$286,950	\$1,911,675
Hawkeye	100%		Clatsop (100.0%)	4	0	76	4.1	0.1	4.1	\$1,723,680	\$110,700	\$1,612,980
Long Walker	100%		Clatsop (100.0%)	2	34	190	9.3	0.3	9.6	\$4,550,160	\$468,200	\$4,081,960
Nicolai	100%		Clatsop (100.0%)	1	0	101	2.3	0.2	2.5	\$1,136,250	\$155,400	\$980,850
Oswego	100%		Clatsop (100.0%)	1	0	139	3.2	1.2	4.4	\$1,869,000	\$151,800	\$1,717,200
Pancho	100%		Clatsop (100.0%)	4	0	165	5.1	0.3	5.4	\$2,155,440	\$326,850	\$1,828,590
Pied Piper	100%		Clatsop (100.0%)	3	0	180	4.2	2.7	6.9	\$2,734,400	\$428,240	\$2,306,160
Sassy Sally	100%		Clatsop (100.0%)	3	64	111	4.4	0.9	5.3	\$2,243,875	\$332,900	\$1,910,975
Spruce Run Ridge	100%		Clatsop (100.0%)	2	220	3	1.0	1.0	2.1	\$783,180	\$84,900	\$698,280
Vesper View	100%		Clatsop (100.0%)	1	118	80	3.3	0.3	3.5	\$1,430,880	\$536,150	\$894,730
<b>Total:</b>					<b>593</b>	<b>1,878</b>	<b>63.8</b>	<b>10.6</b>	<b>74.1</b>	<b>\$31,463,805</b>	<b>\$3,954,040</b>	<b>\$27,509,765</b>

**Alternate Operations**

Cal Barr	100%		Clatsop (100.0%)		58	59	1.6	0.2	1.8	\$607,200	\$158,280	\$448,920
Davis Ridge Combo	100%		Clatsop (100.0%)		38	24	0.9	0.1	1	\$340,500	\$72,060	\$268,440
East Summit Combination	100%		Clatsop (100.0%)		146	56	2.3	0.3	2.5	\$925,335	\$225,300	\$700,035
El Nino	100%		Clatsop (100.0%)		0	162	4.5	1.1	5.6	\$2,117,740	\$243,700	\$1,874,040
Flintstone	100%		Clatsop (100.0%)		0	165	3.6	1.7	5.2	\$2,260,440	\$80,350	\$2,180,090
Foster Sort	100%		Clatsop (100.0%)		0	35	0.8	0.5	1.3	\$569,800	\$5,600	\$564,200
Plympton East	100%		Clatsop (100.0%)		39	45	1.2	0.1	1.2	\$438,330	\$171,150	\$267,180
Popeye	100%		Clatsop (100.0%)		325	24	2	0.3	2.3	\$873,680	\$156,900	\$716,780
Quartz Run	100%		Clatsop (100.0%)		0	200	5.7	0.3	6	\$2,299,760	\$141,600	\$2,158,160
Seuss Split	100%		Clatsop (100.0%)		21	8	0.4	0.1	0.6	\$255,000	\$17,450	\$237,550
Sliver Picker	100%		Clatsop (100.0%)		0	51	2	0	2	\$980,670	\$34,150	\$946,520
Vesper Bell	100%		Clatsop (100.0%)		0	156	4.5	0.6	5.2	\$2,163,000	\$122,500	\$2,040,500
West Sager	100%		Clatsop (100.0%)		0	67	3.2	0.3	3.5	\$1,672,800	\$52,030	\$1,620,770
Woody Woodpecker	100%		Clatsop (100.0%)		289	106	4.6	2.5	7.1	\$2,558,250	\$729,100	\$1,829,150

<b>Total:</b>					<b>916</b>	<b>1,158</b>	<b>37.3</b>	<b>8.1</b>	<b>45.3</b>	<b>\$18,062,505</b>	<b>\$2,210,170</b>	<b>\$15,852,335</b>
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## Appendix A - Summary Tables

### PRIMARY HARVEST OPERATIONS - FOREST RESOURCE SUMMARY

**District: Astoria**

**Fiscal Year 2018**

**Date: 03/19/2017**

This table lists Forest Resources and other issues addressed within Pre-Operations Report due to their presence within or near harvest operations

Primary Harvest Operations	Unit (Optional)	Forest Health Issues <sup>1</sup>	Invasive Species	LYR/OFS Structures <sup>2</sup>	Landcape Design LYR/OFS <sup>3</sup>	Install/Replace Culverts on Fish Bearing / Perennial Streams	Harvesting within 100' of Fish Bearing Stream	Domestic Water Source	Potential Stream Habitat Improvement <sup>4</sup>	Within Aquatic Anchor	Within Terrestrial Anchor	Operating within a NSO Provincial Circle (BA Required)	Operating within a MMMA (BA Required)	Murrelet Timber Sale Screening Process Required (MM Policy 2.27)	T&E Fish Adjacent to Harvest Unit / Haul Route <sup>5</sup>	T&E Plants	Geotechnical Issues Needing Field Review	Recreation Sites	Cultural Resources	Scenic Resources	Other Resources or Issues	
Boiler Fleet			X	X			X	X	X						X		X				X	
Cole Soap			X	X						X							X					
Daisy Chain				X					X	X					X		X	X				
Dino			X	X					X	X					X		X	X				
Harkin Larkin			X	X																		X
Hawkeye			X						X					X	X		X					
Long Walker				X		X			X	X					X							
Nicolai			X									X						X			X	
Oswego				X					X						X							X
Pancho				X		X			X	X					X							
Pied Piper			X												X		X	X				
Sassy Sally			X	X	X		X		X	X		X	X	X	X		X					
Spruce Run Ridge			X		X													X				
Vesper View						X									X		X					

<sup>1</sup> A 'x' (in any column) indicates yes the resource or other issue occurs within or near the harvest operation and is addressed by the Pre-Operations Report

<sup>2</sup> A 'x' indicates the harvest operation contains stands that are currently in a Layered or Older Forest Stand Structure

<sup>3</sup> A 'x' indicate that the operation contains areas that have been designated for the development of complex forest stands (LYR/OFS)

<sup>4</sup> The final decision on these projects will occur during sale preparation and in consultation with ODFW.

## Appendix A - Summary Tables

<sup>5</sup> This table lists harvest operations (units or log haul routes) that are adjacent to streams that are known to contain T&E fish. The Pre-Operation Report identifies whether T&E fish are present in the basin.

### ALTERNATE HARVEST OPERATIONS - FOREST RESOURCE SUMMARY

This table lists Forest Resources and other issues addressed within Pre-Operations Report due to their presence within or near harvest operations

Alternate Harvest Operations	Unit (Optional)	Forest Health Issues <sup>1</sup>	Invasive Species	LYR/OFS Structures <sup>2</sup>	Landscape Design LYR/OFS <sup>3</sup>	Install/Replace Culverts on Fish Bearing / Perennial Streams	Harvesting within 100' of Fish Bearing Stream	Domestic Water Source	Potential Stream Habitat Improvement <sup>4</sup>	Within Aquatic Anchor	Within Terrestrial Anchor	Operating within a NSO Provincial Circle	Operating within a MMTA (BA Required)	Murrelet Timber Sale Screening Process Required (MM Policy 2.27)	T&E Fish Adjacent to Harvest Unit / Haul Route <sup>5</sup>	T&E Plants	Geotechnical Issues Needing Field Review	Recreation Sites	Cultural Resources	Scenic Resources	Other Resources or Issues	
Cal Barr			X				X		X				X				X					
Davis Ridge Combo				X			X								X			X			X	
East Summit Combination			X	X			X		X	X					X			X	X			
El Nino				X					X						X		X		X			
Flintstone									X	X					X			X				
Foster Sort			X							X					X		X	X				
Plympton East		X	X	X	X		X		X			X							X			
Popeye															X		X				X	
Quartz Run			X	X											X		X		X			
Seuss Split			X		X			X							X				X			
Sliver Picker		X	X	X													X					
Vesper Bell			X	X					X						X				X			
West Sager			X						X						X		X				X	
Woody Woodpecker			X	X	X				X	X	X		X	X	X		X		X	X		

<sup>1</sup> A 'x' (in any column) indicates yes the resource or other issue occurs within or near the harvest operation and is addressed by the Pre-Operations Report

<sup>2</sup> A 'x' indicates the harvest operation contains stands that are currently in a Layered or Older Forest Stand Structure

<sup>3</sup> A 'x' indicate that the operation contains areas that have been designated for the development of complex forest stands (LYR/OFS)

<sup>4</sup> The final decision on these projects will occur during sale preparation and inconspicuous consultation with ODFW.

<sup>5</sup> This table lists harvest operations (units or log haul routes) that are adjacent to streams that are known to contain T&E fish. The Pre-Operation Report identifies whether T&E fish are present in the basin.

Appendix A - Summary Tables

**FOREST ROADS SUMMARY**

District: Astoria

Fiscal Year: 2018

Date: 03/19/2017

Primary Operations	Construction		Improvement		Other Projects	Total Project Costs	Gross Value of Operation	Total Cost as a percent of Gross Value	Comments
	Miles	Cost	Miles	Cost					
Boiler Fleet *	3.0	\$123,000	6.3	\$153,900	\$134,600	\$411,500	\$2,145,875	19%	
Cole Soap	0.0	\$0	4.8	\$54,000	\$171,000	\$225,000	\$1,911,600	12%	
Daisy Chain	0.2	\$8,200	2.0	\$34,000	\$268,200	\$310,400	\$2,914,540	11%	
Dino	0.5	\$28,000	5.1	\$86,700	\$10,350	\$125,050	\$3,666,300	3%	
Harkin Larkin *	0.0	\$0	1.6	\$27,200	\$259,750	\$286,950	\$2,198,625	13%	
Hawkeye	0.2	\$11,200	4.6	\$86,000	\$13,500	\$110,700	\$1,723,680	6%	
Long Walker	1.6	\$107,600	4.0	\$147,600	\$213,000	\$468,200	\$4,550,160	10%	
Nicolai *	0.5	\$28,000	5.2	\$88,400	\$39,000	\$155,400	\$1,136,250	14%	
Oswego	0.7	\$39,200	2.3	\$39,100	\$73,500	\$151,800	\$1,869,000	8%	
Pancho	0.8	\$44,800	4.9	\$83,300	\$198,750	\$326,850	\$2,155,440	15%	
Pied Piper	0.7	\$36,200	4.7	\$165,450	\$226,590	\$428,240	\$2,734,400	16%	
Sassy Sally	0.8	\$44,800	4.8	\$94,600	\$193,500	\$332,900	\$2,243,875	15%	
Spruce Run Ridge *	0.6	\$32,400	1.6	\$48,000	\$4,500	\$84,900	\$783,180	11%	
Vesper View	2.8	\$152,000	2.1	\$35,700	\$348,450	\$536,150	\$1,430,880	37%	
<b>Total</b>	<b>12.4</b>	<b>\$655,400</b>	<b>54.0</b>	<b>\$1,143,950</b>	<b>\$2,154,690</b>	<b>\$3,954,040</b>	<b>\$31,463,805</b>	<b>12.6%</b>	

**Alternate Operations**

Cal Barr	1.1	\$55,600	4.9	\$83,300	\$19,380	\$158,280	\$607,200	27.0%	
Davis Ridge Combo *	0	\$0	1.8	\$54,000	\$18,060	\$72,060	\$340,500	22.0%	
East Summit Combination	1	\$56,000	7.4	\$125,800	\$43,500	\$225,300	\$925,335	25.0%	
El Nino	1.2	\$67,200	2.3	\$43,000	\$133,500	\$243,700	\$2,117,740	12.0%	
Flintstone *	0	\$0	3.6	\$78,100	\$2,250	\$80,350	\$2,260,440	4.0%	
Foster Sort	0.1	\$5,600	0	\$0	\$0	\$5,600	\$569,800	1.0%	
Plympton East	0.2	\$11,200	7	\$130,700	\$29,250	\$171,150	\$438,330	41.0%	
Popeye	0.9	\$50,400	4.1	\$84,000	\$22,500	\$156,900	\$873,680	23.0%	
Quartz Run	0.1	\$5,600	8	\$136,000	\$0	\$141,600	\$2,299,760	6.0%	
Seuss Split *	0.1	\$5,600	0.3	\$5,100	\$6,750	\$17,450	\$255,000	7.0%	
Sliver Picker *	0	\$0	1.4	\$23,800	\$10,350	\$34,150	\$980,670	4.0%	
Vesper Bell	0.6	\$33,600	4.7	\$79,900	\$9,000	\$122,500	\$2,163,000	6.0%	
West Sager	0.4	\$5,200	0.9	\$27,000	\$19,830	\$52,030	\$1,672,800	4.0%	
Woody Woodpecker	1.2	\$67,200	12.2	\$207,400	\$454,500	\$729,100	\$2,558,250	30.0%	
<b>Total</b>	<b>6.9</b>	<b>\$363,200</b>	<b>58.6</b>	<b>\$1,078,100</b>	<b>\$768,870</b>	<b>\$2,210,170</b>	<b>\$18,062,505</b>	<b>12.2%</b>	

**Road Projects Not Associated with Harvest Operations in this AOP: None**

**Road Projects Planned to be Completed as a Work Order Contract are Annotated with an Asterisks (\*)**

Operation	Total Project Costs	Funding Source	Comments
Primary Projects	\$899,750		
Alternate Projects	\$204,010		
<b>Total</b>	<b>\$1,103,760</b>		

Appendix A - Summary Tables

**REFORESTATION AND YOUNG STAND MANAGEMENT SUMMARY**

District: Astoria

Fiscal Year: 2018

Date: 12/01/2016

Projects Conducted by ODF Staff or Contractors	Board of Forestry			Common School Forest Lands			District	
	Acres Planned	Average Cost*/Acre	BOF Cost	Acres Planned	Average Cost*/Acre	CSL Cost	Total Acres	Total Cost
Seedling / Nursery Costs	1,800	\$210.00	\$378,000.00			\$0.00	1,800	\$378,000.00
Initial Planting	1,800	\$128.00	\$230,400.00			\$0.00	1,800	\$230,400.00
Interplanting	300	\$95.00	\$28,500.00			\$0.00	300	\$28,500.00
Underplanting	0		\$0.00			\$0.00	0	\$0.00
Tree Protection - Barriers	50	\$116.00	\$5,800.00			\$0.00	50	\$5,800.00
Tree Protection - Direct Control	1,000	\$75.00	\$75,000.00			\$0.00	1,000	\$75,000.00
Site Prep - Chemical - Aerial	1,700	\$60.00	\$102,000.00			\$0.00	1,700	\$102,000.00
Site Prep - Chemical - Hand	0		\$0.00			\$0.00	0	\$0.00
Site Prep - Broadcast Burning	0	\$0.00	\$0.00			\$0.00	0	\$0.00
Site Prep - Piling Burning	1,800	\$10.00	\$18,000.00			\$0.00	1,800	\$18,000.00
Site Prep - Mechanical	0		\$0.00			\$0.00	0	\$0.00
Release - Chemical - Aerial	600	\$65.00	\$39,000.00			\$0.00	600	\$39,000.00
Release - Chemical - Hand	0		\$0.00			\$0.00	0	\$0.00
Release - Mechanical - Hand	0		\$0.00			\$0.00	0	\$0.00
Precommercial Thinning	600	\$95.00	\$57,000.00			\$0.00	600	\$57,000.00
Pruning	0		\$0.00			\$0.00	0	\$0.00
Invasive Species	49	\$150.00	\$7,350.00	1	\$150.00	\$150.00	50	\$7,500.00
Road Side Spraying	294	\$192.00	\$56,448.00	6	\$192.00	\$1,152.00	300	\$57,600.00
Stocking Surveys	2,900	\$1.00	\$2,900.00			\$0.00	2,900	\$2,900.00
Other			\$0.00			\$0.00	0	\$0.00
<b>Totals</b>	<b>12,893</b>	<b>--</b>	<b>\$1,000,398.00</b>	<b>7</b>	<b>--</b>	<b>\$1,302.00</b>	<b>12,900</b>	<b>\$1,001,700.00</b>

\* Work to be completed by ODF staff; cost are for materials only

Appendix A - Summary Tables

Projects Conducted by Inmates	Board of Forestry			Common School Forest Lands			District	
	Acres Planned	Average Cost*/Acre	BOF Cost	Acres Planned	Average Cost*/Acre	CSL Cost	Total Acres	Total Cost
Initial Planting	0		\$0.00			\$0.00	0	\$0.00
Interplanting	0		\$0.00			\$0.00	0	\$0.00
Underplanting	0		\$0.00			\$0.00	0	\$0.00
Tree Protection - Barriers	650	\$147.00	\$95,550.00			\$0.00	650	\$95,550.00
Tree Protection - Direct Control	600	\$75.00	\$45,000.00			\$0.00	600	\$45,000.00
Site Prep. - Chemical Aerial	0		\$0.00			\$0.00	0	\$0.00
Site Prep - Chemical - Hand	100	\$189.00	\$18,900.00			\$0.00	100	\$18,900.00
Site Prep - Broadcast Burning	0		\$0.00			\$0.00	0	\$0.00
Site Prep - Piling Burning	0		\$0.00			\$0.00	0	\$0.00
Site Prep - Mechanical	0		\$0.00			\$0.00	0	\$0.00
Release - Chemical - Hand	200	\$189.00	\$37,800.00			\$0.00	200	\$37,800.00
Release - Mechanical - Hand	400	\$75.00	\$30,000.00			\$0.00	400	\$30,000.00
Precommercial Thinning	0		\$0.00			\$0.00	0	\$0.00
Pruning	0		\$0.00			\$0.00	0	\$0.00
Invasive Species	200	\$150.00	\$30,000.00			\$0.00	200	\$30,000.00
Other			\$0.00			\$0.00	0	\$0.00
<b>Totals</b>	<b>2,150</b>	<b>--</b>	<b>\$257,250.00</b>	<b>0</b>	<b>--</b>	<b>\$0.00</b>	<b>2,150</b>	<b>\$257,250.00</b>

Grant Funded Activities	Board of Forestry			Common School Forest Lands			District		Funding
	Acres Planned	Average Cost*/Acre	Cost	Acres Planned	Average Cost*/Acre	Cost	Total Acres	Total Cost	
Project			\$0.00			\$0.00	0	\$0.00	
			\$0.00			\$0.00	0	\$0.00	
			\$0.00			\$0.00	0	\$0.00	
			\$0.00			\$0.00	0	\$0.00	

Appendix A - Summary Tables

**RECREATION SITE MANAGEMENT SUMMARY**

District: Astoria

Fiscal Year: 2018

Date : 12/01/2016

Project	Construction Cost (Funding)		Improvement Cost (Funding)		Operations/Maint. (Funding)		Total Costs	Comments
	ODF (\$)	Other (\$)	ODF (\$)	Other (\$)	ODF (\$)	Other (\$)		
<b>Campgrounds</b>								
Henry Reiersen Spruce Run					\$15,000		\$15,000	Sewer & Sanitary Service/Maintenance**
Northrup Creek Horse Camp					\$5,000		\$5,000	Sewer & Sanitary Service/Maintenance**
Gnat Creek Campground					\$3,000		\$3,000	Sewer & Sanitary Service/Maintenance**
Beaver Eddy					\$3,000		\$3,000	Sewer & Sanitary Service/Maintenance**
<b>Designated Dispersed Campsites</b>								
Misc. Improvements					\$2,000		\$2,000	
*Viewpoint Quarry						\$500	\$500	Sewer & Sanitary Service/Maintenance**
*Kerry Road						\$600	\$600	Sewer & Sanitary Service/Maintenance**
*Plympton Ridge Road						\$600	\$600	Sewer & Sanitary Service/Maintenance**
<b>Day Use Areas</b>								
Lost Lake					\$1,500		\$1,500	Sewer & Sanitary Service/Maintenance**
*Shingle Mill OHV Staging Area						\$1,000	\$1,000	Sewer & Sanitary Service/Maintenance**
<b>Trailheads</b>								
Bloom Lake					\$1,000		\$1,000	Maintenance**
Soapstone					\$1,000		\$1,000	Maintenance**
<b>Interpretive Sites</b>								
Demonstration Forest					\$3,000		\$3,000	Interpretive Signs**
<b>Other Operations</b>								
Law Enforcement					\$30,000		\$30,000	Clatsop County Sheriff's Contract
Clatsop Recreation Brochures					\$3,000		\$3,000	Update/Printing of CSF Rec. Brochures
Dumpsites Cleanup					\$2,000		\$2,000	Annual & Misc. Forest Cleanup**
Special Projects					\$5,000		\$5,000	Kiosk Repairs & Maintenance**
Misc. Maintenance Supplies & Repairs					\$3,000		\$3,000	Misc. Supplies/CG Envelopes/Etc.
District Total							\$77,500	
Other Total							\$2,700	
<b>TOTAL</b>							<b>\$80,200</b>	

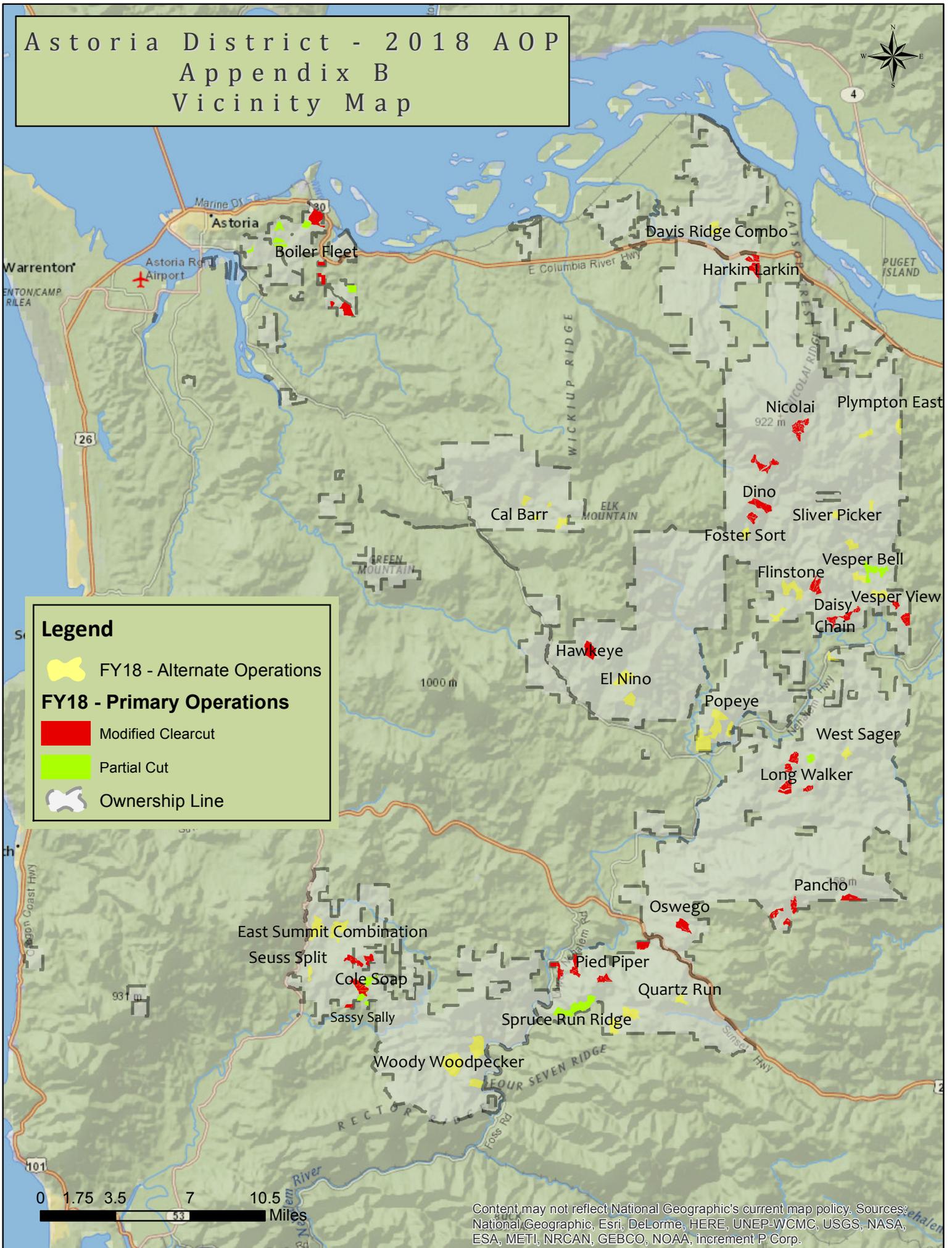
\*A portion of the motorized recreation costs are funded through OPRD transfer funds.

\*\* All Maintenance Work to be performed by South Fork and ODF Staff





# Astoria District - 2018 AOP Appendix B Vicinity Map



## Legend

- FY18 - Alternate Operations
- FY18 - Primary Operations**
- Modified Clearcut
- Partial Cut
- Ownership Line

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## Appendix C – Consultations with Other State Agencies

The Annual Operations Plan is prepared in a preliminary form by District Staff two years in advance of it becoming finalized. During this time the District reviews the plan with Department Staff Specialists as well as Staff from The Oregon Department of Fish and Wildlife (ODFW) and the Oregon Department of Transportation (ODOT).

This Appendix summarizes results of consultations with the ODFW, and ODOT.

### **Oregon Department of Fish and Wildlife – Assistant District Wildlife Biologist Review – Paul Atwood:**

#### **Green Trees**

Optimal green tree (GT) placement for wildlife is scattered or clumped distribution in the upland portions of the harvest units; this is especially true for GTs left in lieu of created down wood or snags. Some of the pre-op reports specify that GTs are to be left in or adjacent to RMAs and/or within GTAs. RMA prescriptions for GTs should stand alone in their adequacy, and not need additional GTs for augmentation. Green trees in GTAs offer minimal value to wildlife unless protecting sensitive wildlife sites (e.g. nests) from wind-throw or edge effects.

#### **Snags**

Strategies for addressing snag standards in the FMP are not specifically mentioned in this AOP. Current conditions indicate that most stands in this AOP are not meeting FMP standards. How will standards be met? If larger diameter (e.g. > 20" dbh) trees are in the stand that is deficient in hard snags, ODFW recommends creating snags (topping is best method) rather than leaving extra GTs. If GTs are left in lieu of snag creation, they should be scattered or clumped in the harvest unit.

#### **Down Wood**

Strategies for meeting down wood standards in the FMP are generally not mentioned in this AOP. Current conditions indicate that most of the stands in this AOP are not meeting FMP standards. How will standards be met? If GTs are left in lieu of down wood creation, they should be scattered or clumped in the harvest unit.

#### **Roads**

ODFW recommends physical closure for rocked spurs, especially if they have no immediate need in further management and/or maintenance (e.g. culverts). If new spur roads have immediate further needs, consider closing them physically in later AOPs to keep open road densities down.

#### **Layered Stands**

ODFW also noticed several examples where layered stands with larger diameter trees have a proposed treatment of modified clearcut (MC). We recognize the financial situation of ODF, but these habitats provide some of the highest quality wildlife habitat on the district. We encourage modified clearcuts to be focused in closed single canopy (CSC) or understory development (UD) stands.

Astoria staff will take these comments into consideration when performing the detailed sale layout work in the AOP.

### **Oregon Department of Transportation - Archeological Review:**

Archaeologists from the Oregon Department of Transportation (ODOT) have reviewed the proposed timber harvests, road construction and recreation projects to review potential impacts to cultural resources. No known historical or archaeological sites were found during this review. However, ODOT's review of historic maps and other information indicates there was human activity near some of our planned operation that could have led to the presence of cultural artifacts today.

It has been recommended that the following operations should be further reviewed on the ground during field reconnaissance to determine if any trail and/or cabin remains still exist: East Summit Combination, El Nino, Plympton East, Quartz Run, Sues Split, Vesper Bell, and Woody Woodpecker.

## Appendix D – Public Involvement and Summary of Changes

The Oregon Department of Forestry held a formal 45 day public comment period for the 2018 Annual Operations Plans from March 20, 2017 through May 4, 2017.

The purpose of the Public Comment Period was to provide an opportunity for the public to review the AOPs, ask questions, make recommendations and offer comments. As a public agency, ODF strives to operate in the best interest of Oregonians. We provide opportunities for public participation to assist us in securing the greatest permanent value from state forests for all Oregonians.

Changes made as a result of public comment and/or made during proofing the final draft consist of:

- Operations by Basin – pages 12-19: Ensure all operations have stand ages listed.
- Operations by Basin – pages 12-19: Ensure any operation requiring a Biological Assessment be identified in this section.
- Recreation Management – page 27: Update narrative for the Northrup Creek Campground to eliminate the proposal of a Special Use Permit/Reservation system for the period of May 22 to September 11, 2017. In addition, include language identifying the partnership with the North Coast Chapter of OET.

Public comments and responses are available upon request.

## Appendix E – Pre-Operations Reports

Individual pre-operations reports for this AOP are available from the district upon request.

## Appendix F - Changes to Landscape Design – Minor Modification to the Astoria District Implementation Plan

The Landscape Design for the Astoria District consists of 30 percent of the land base which is designated to achieve a Desired Future Condition (DFC) of either Layered (LYR) or Older Forest Structure (OFS). The 30 percent landscape design was adopted in July of 2011 as part of the revised Astoria District Implementation Plan (IP). The IP describes the purpose of the landscape design is to achieve landscape objectives set forth in the Northwest Forest Management Plan (FMP).

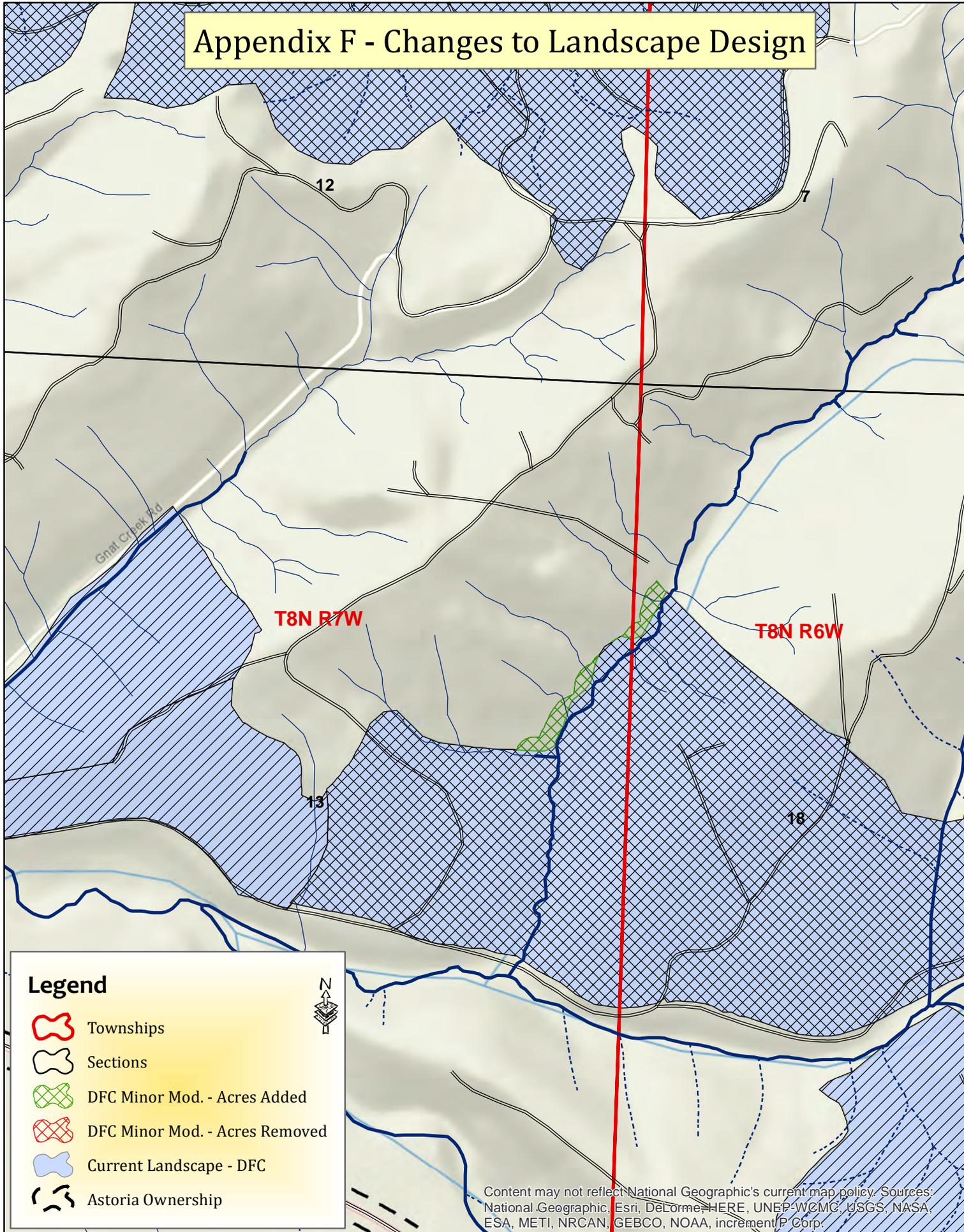
In order to adapt to new information such as: updated forest inventory, new threatened and endangered species sites, forest land management classification updates, landscape changes due to storm damage, insect and/or disease or other significant events; the landscape design was anticipated to change over time. In addition, various GIS layers including the DFC are always in need of aligning and fine tuning as part of the improvement and maintenance of the data. Changes of up to 240 acres annually are considered minor changes and can be approved by the District Forester concurrent with the Annual Operation Planning (AOP) process. Changes that are greater than 240 acres are considered major and require a public comment period and are approved by the State Forester.

Edits made for this minor modification consisted of aligning and fine tuning the DFC boundary with riparian area boundaries, stand type boundaries, road edges, wildlife areas, or high landslide potential areas. A total of 237 acres were modified; 140 acres were added to the DFC and 97 acres were removed.

Total LYR acres after this modification are 20,573 (15.03% of District Acres), and total OFS acres are 20,543 (15.01% of District Acres).

Summary of Minor Landscape Design Changes			
Acres Removed		Acres Added	
Current Stand Condition	Acres	Current Stand Condition	Acres
NF		NF	6
REG	1	REG	1
CSC	14	CSC	2
UDS	47	UDS	105
LYR	35	LYR	26
OFS		OFS	
Total Acres Removed	97	Total Acres Added	140

# Appendix F - Changes to Landscape Design



## Legend

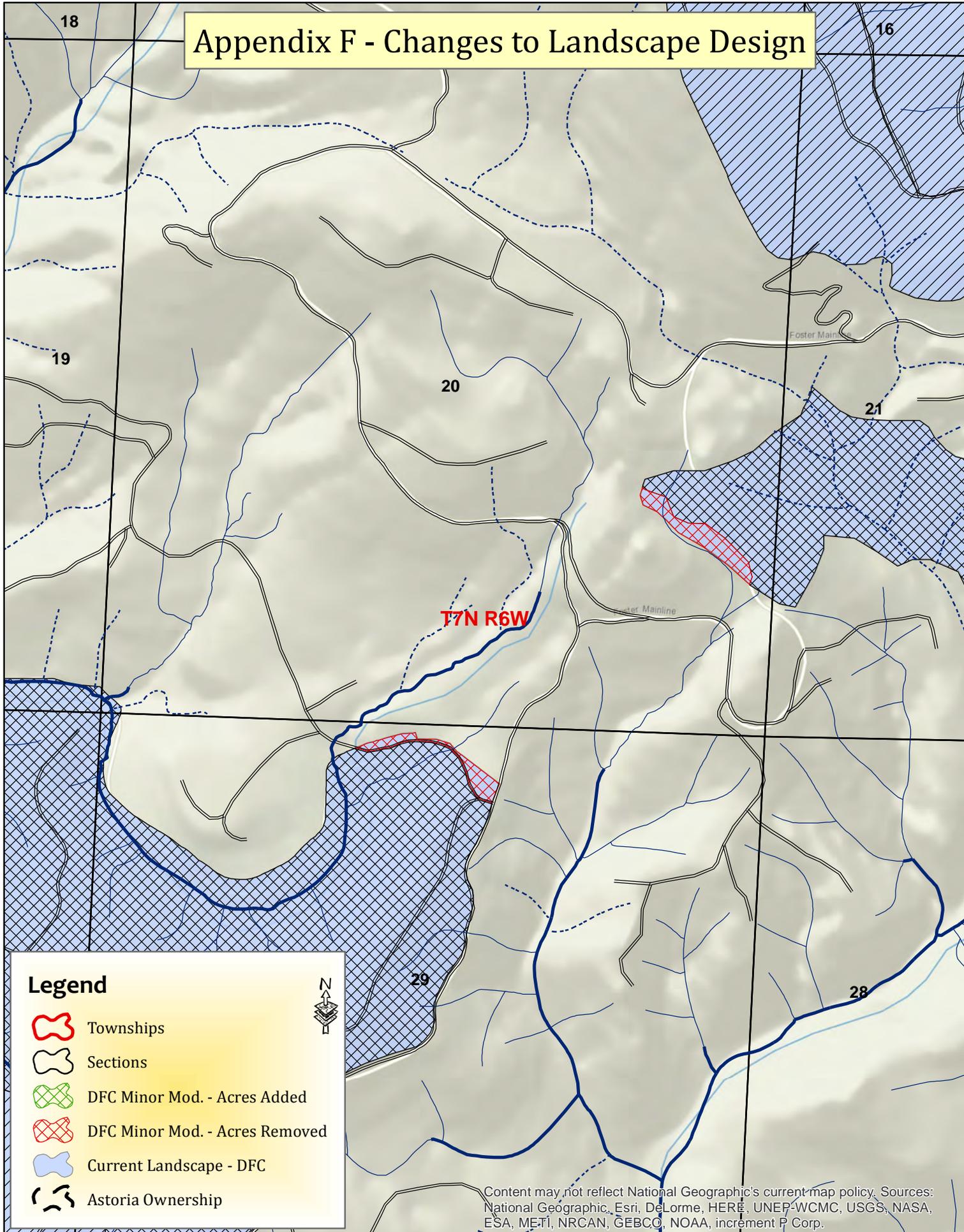
- Townships
- Sections
- DFC Minor Mod. - Acres Added
- DFC Minor Mod. - Acres Removed
- Current Landscape - DFC
- Astoria Ownership



0 290 580 1,160 1,740 Feet

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# Appendix F - Changes to Landscape Design



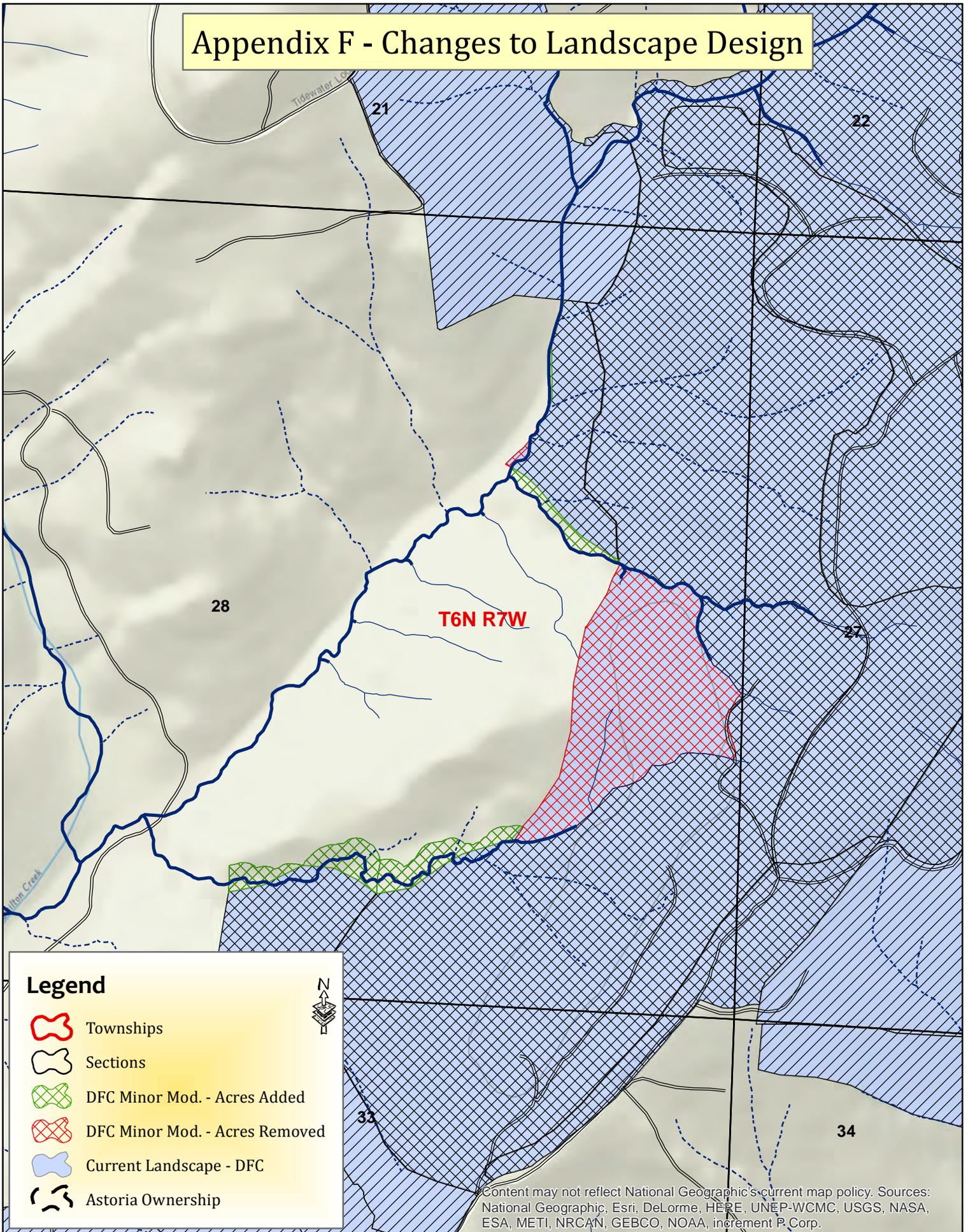
**Legend**

- Townships
- Sections
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- Astoria Ownership

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# Appendix F - Changes to Landscape Design



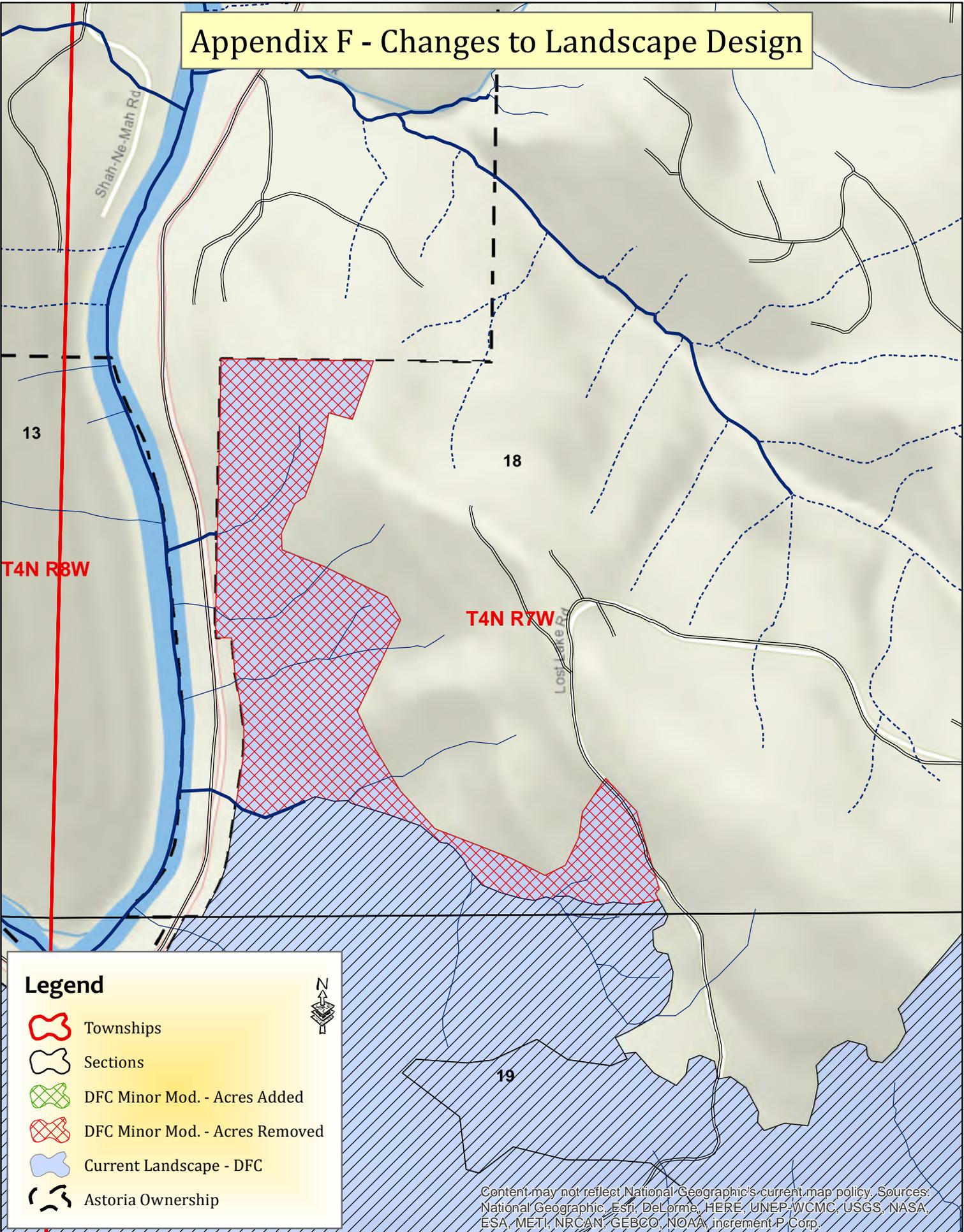
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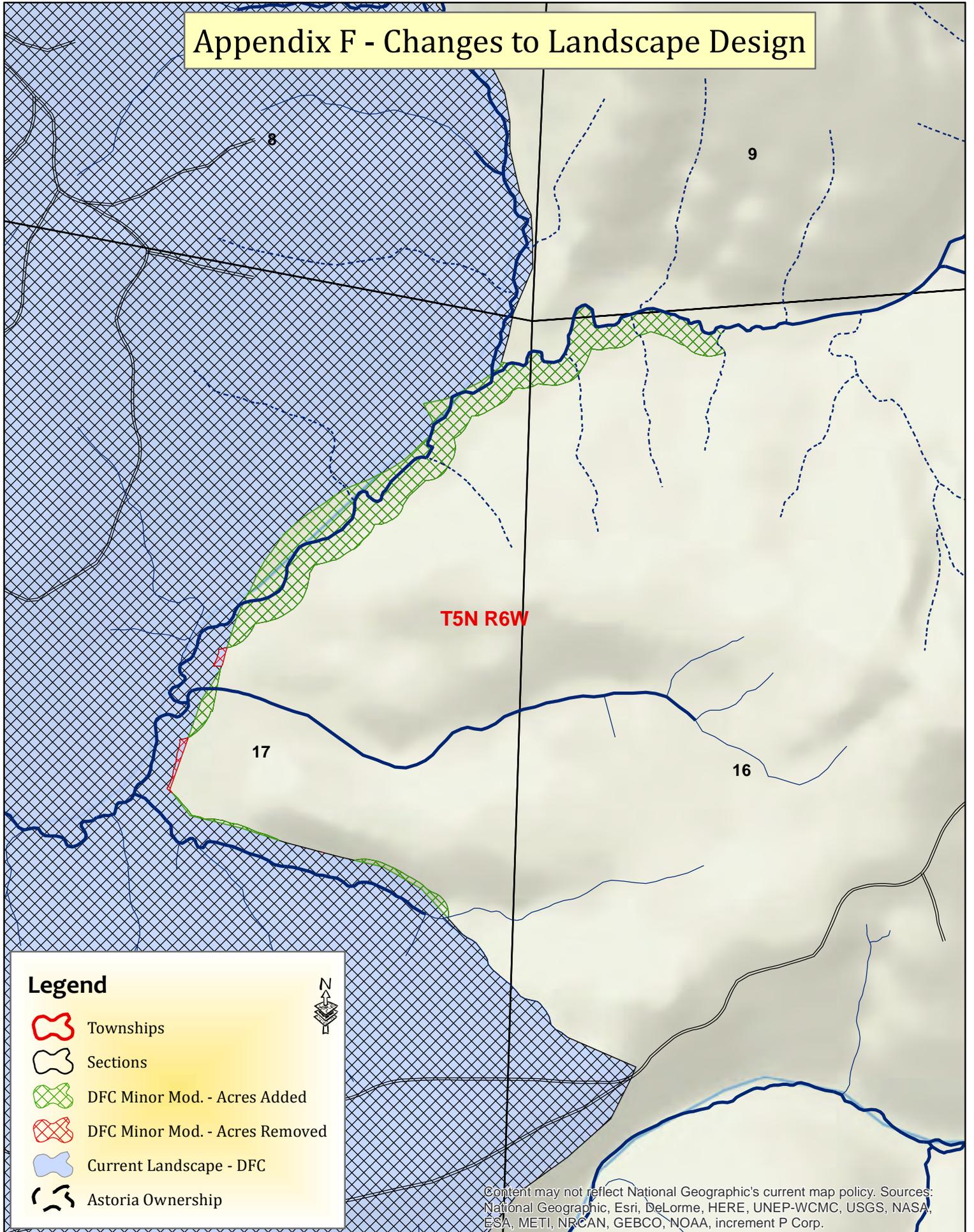


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# Appendix F - Changes to Landscape Design



**Legend**

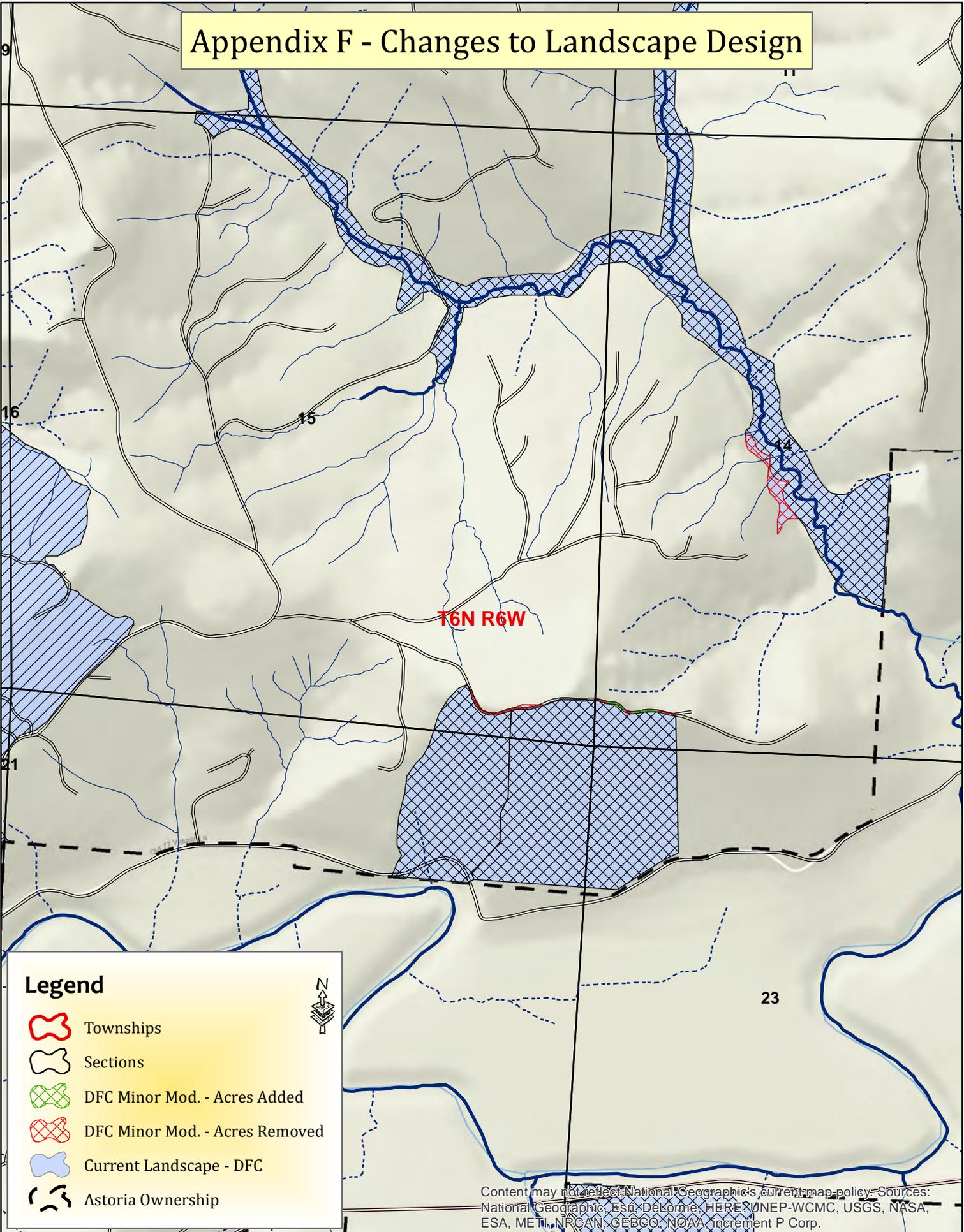
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# Appendix F - Changes to Landscape Design



## Legend

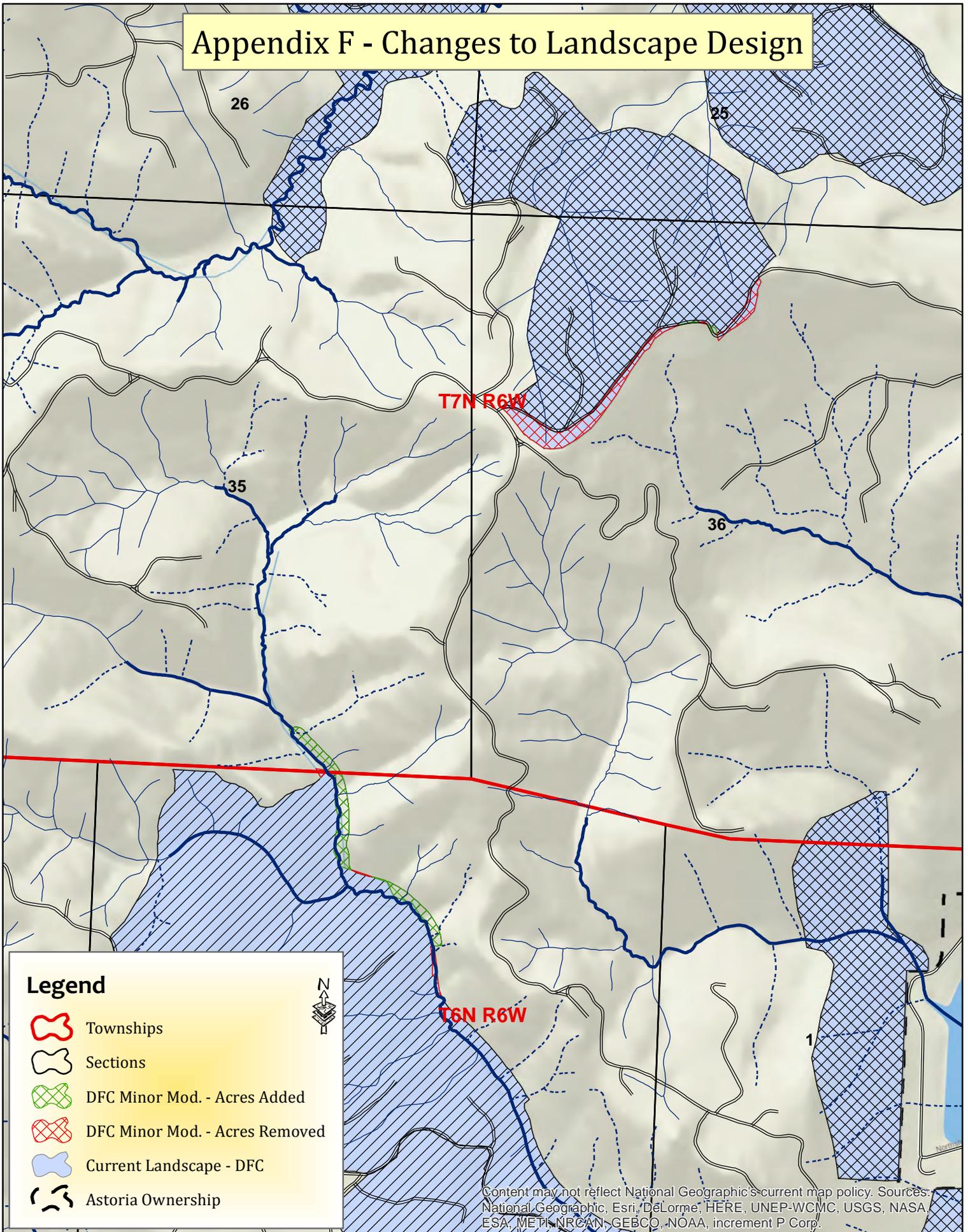
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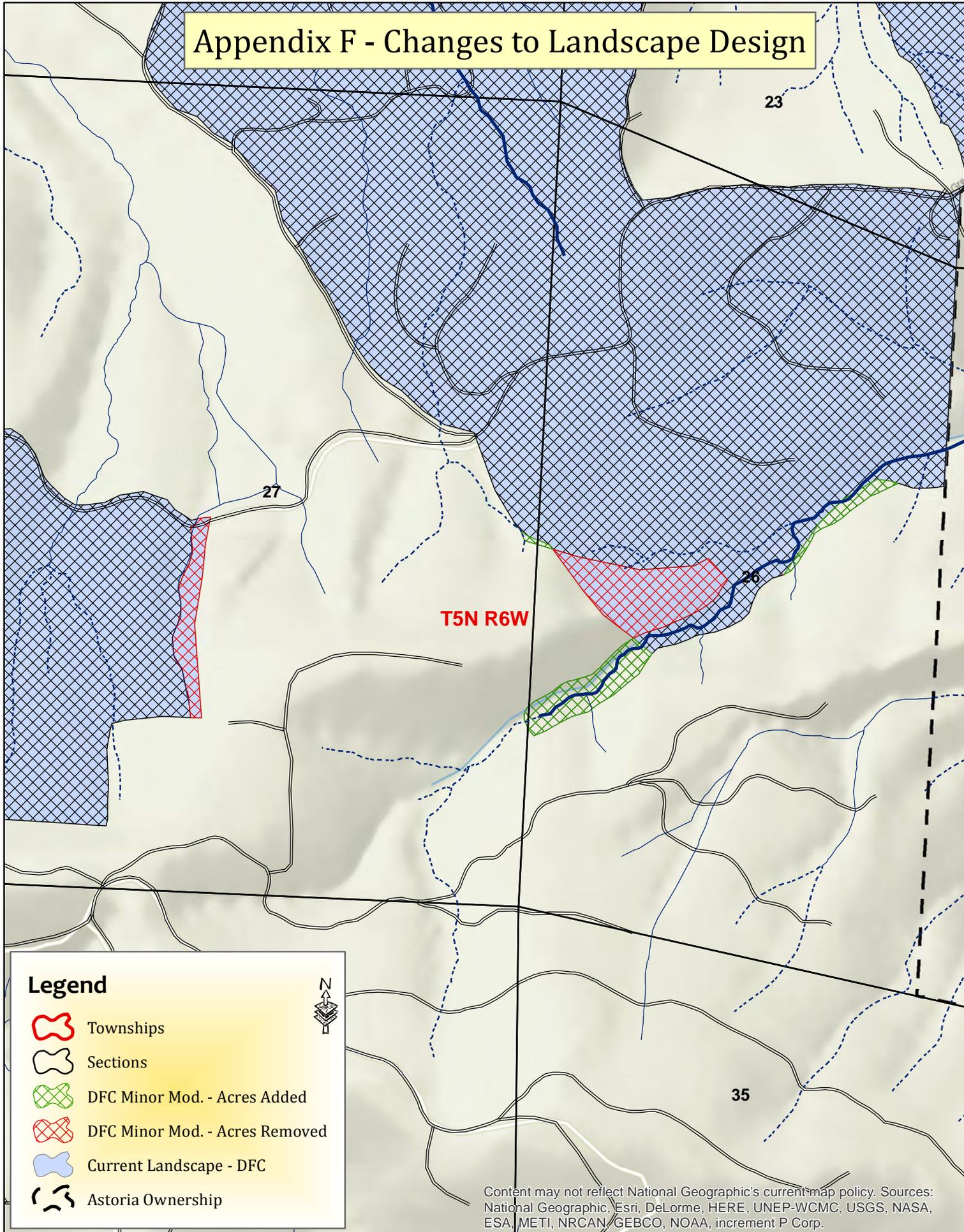
0 485 970 1,940 2,910 Feet

# Appendix F - Changes to Landscape Design



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# Appendix F - Changes to Landscape Design



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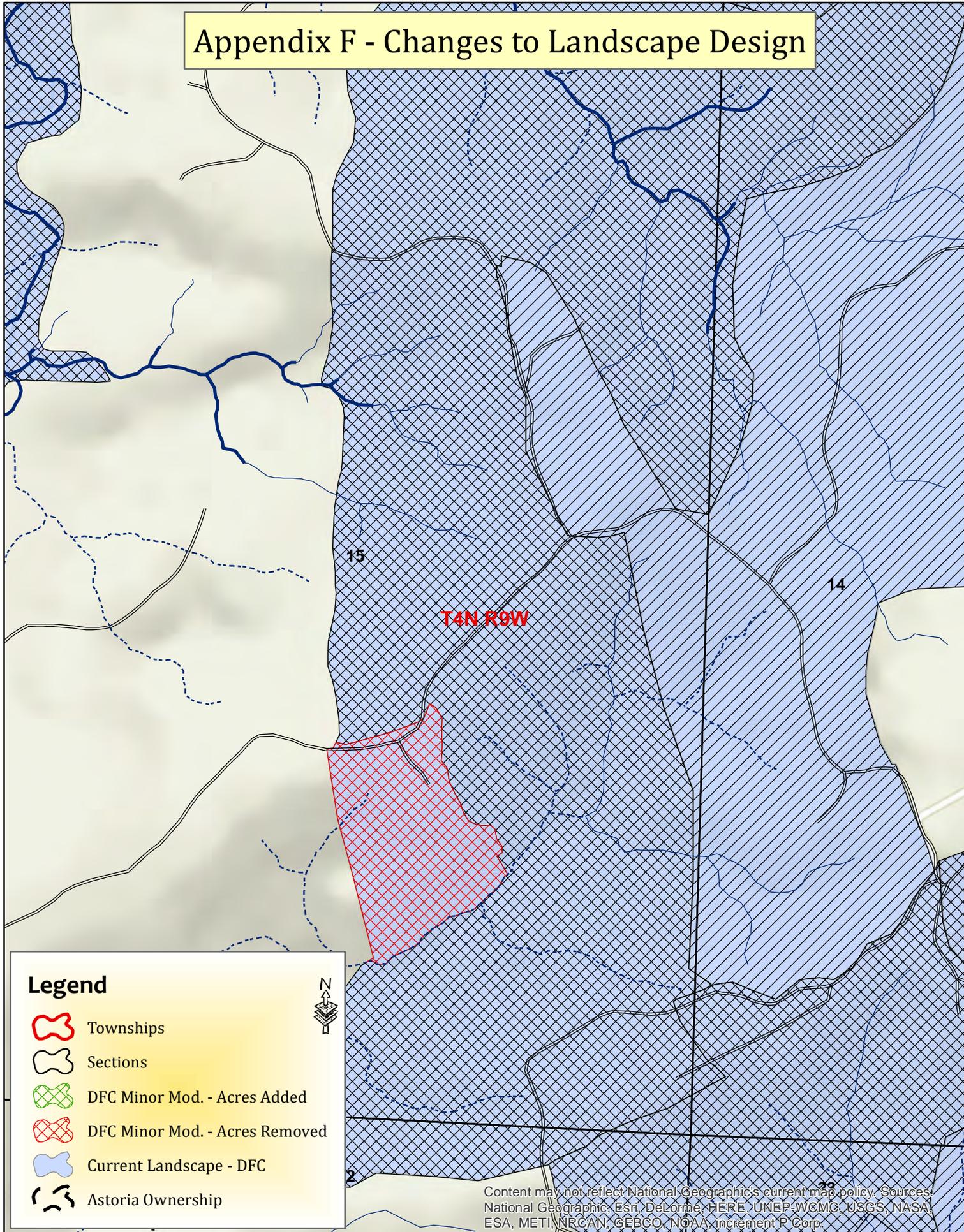
**Legend**

- Townships
- Sections
- DFC Minor Mod. - Acres Added
- DFC Minor Mod. - Acres Removed
- Current Landscape - DFC
- Astoria Ownership

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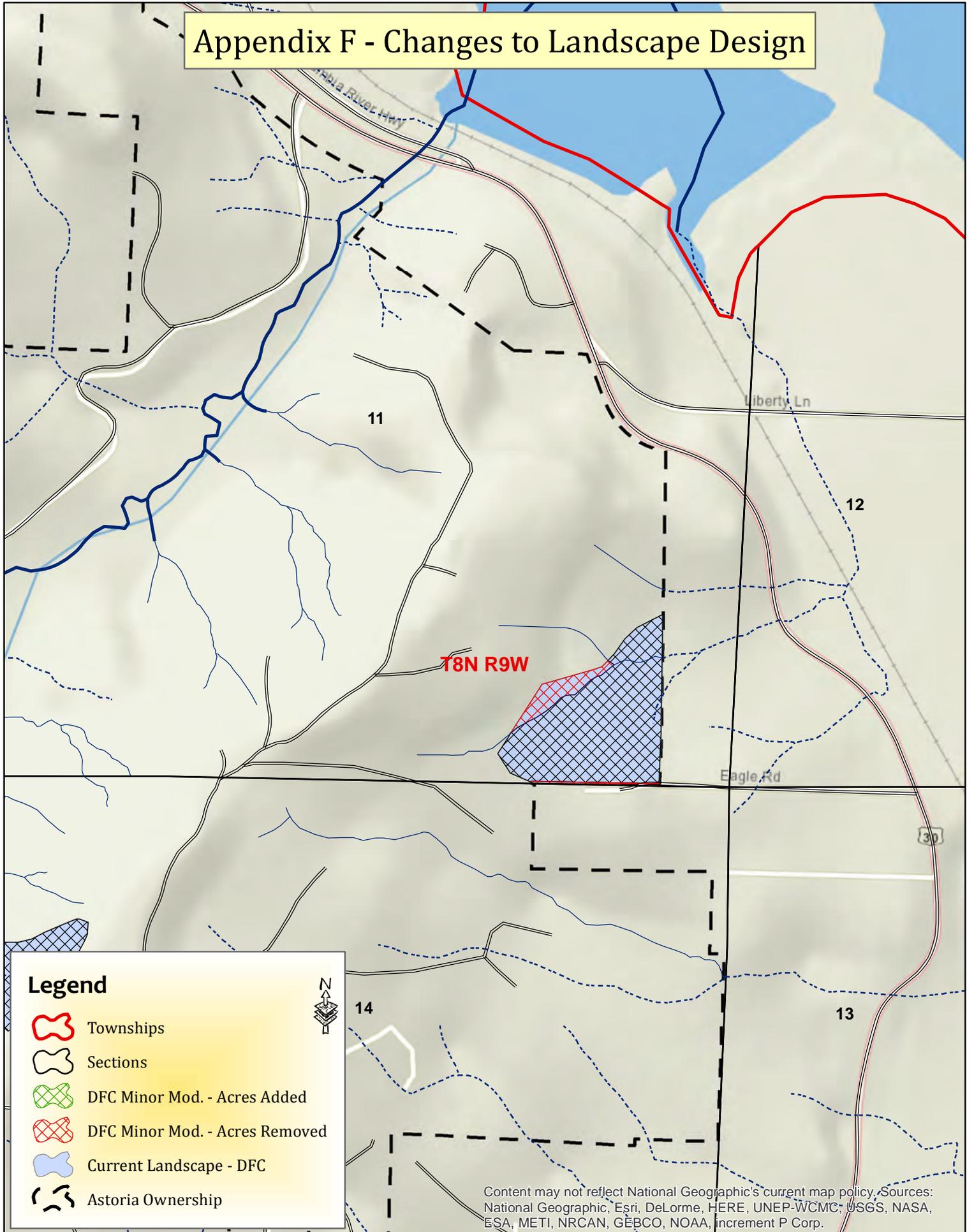


# Appendix F - Changes to Landscape Design



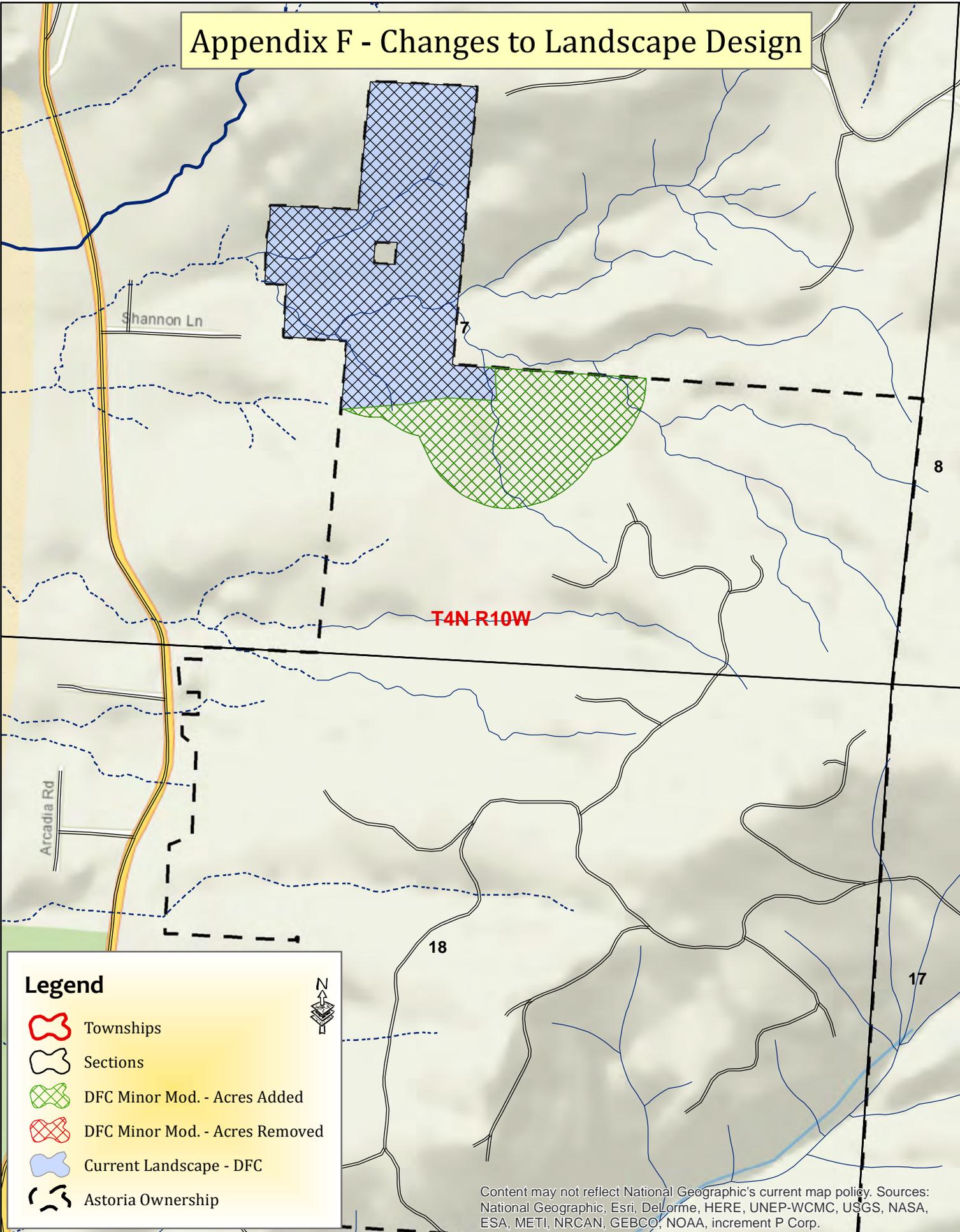
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# Appendix F - Changes to Landscape Design



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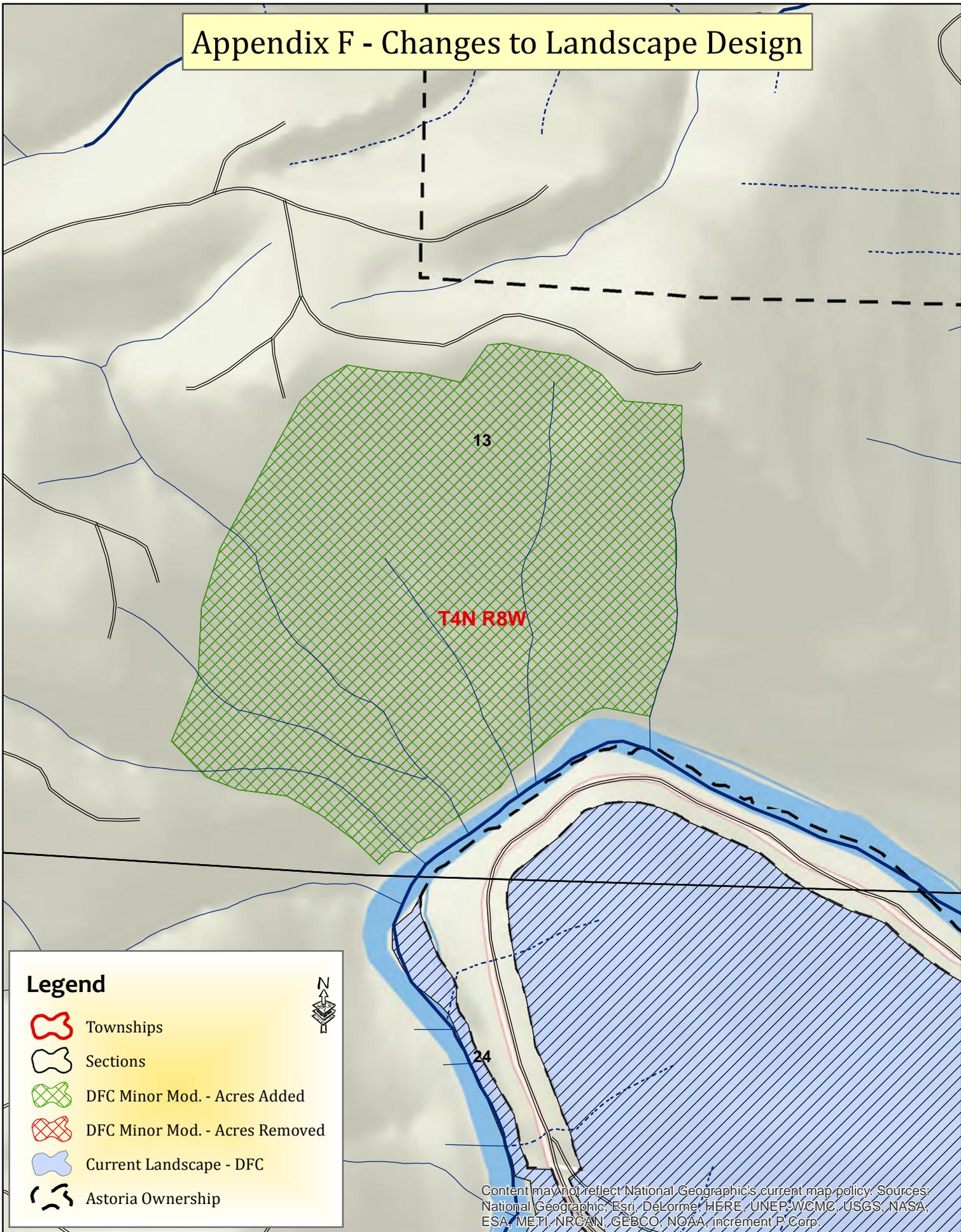
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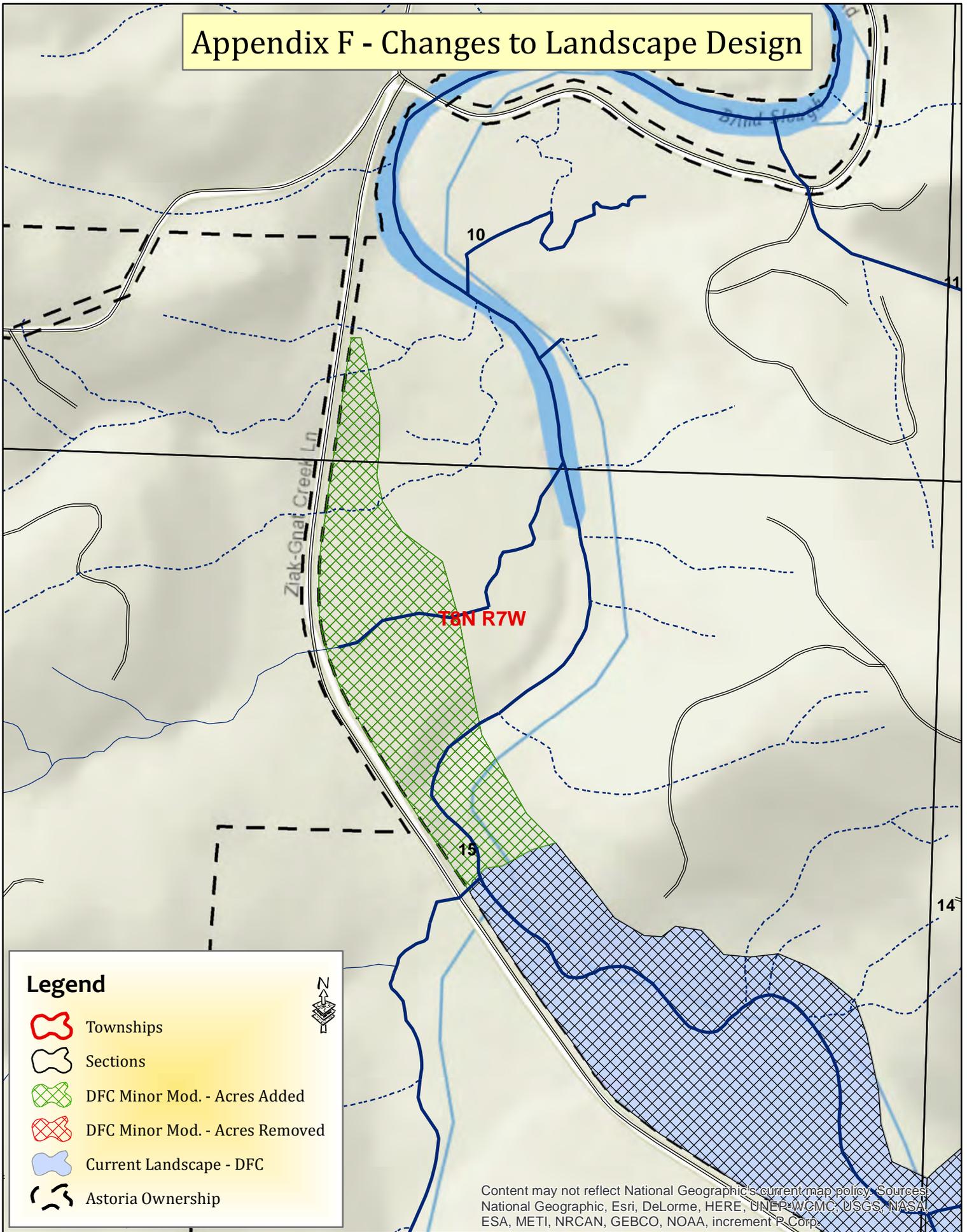
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# Appendix F - Changes to Landscape Design



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