Attachment 1

ANNUAL REPORT

Lane County Integrated Vegetation Management Program
2018

Prepared for:

LANE COUNTY BOARD OF HEALTH

Prepared by:

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Road Maintenance Division
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Lane County Department of Public Works has prepared this annual report to comply with the requirements of Lane Code 15.530

I. Herbicide Use

In October 2016, the Board of County Commissioners adopted Ordinance 16-07, the Roadside Integrated Vegetation Management Policy (RIVMP), developed from consensus-based recommendations of the Vegetation Management Task Force for limited, data-driven herbicide use within our Lane County road rights-of-way (ROW). Per the new ordinance, mechanical and manual control methods will continue to be the primary tools used within the Integrated Vegetation Management Program (IVMP). Any herbicide applications will focus on the maintenance of overgrown guardrails, noxious weed control, and any direct stump applications for "stump-sprouting" tree species. All herbicide products used within these high priority areas derives from a Permitted Product List reviewed and approved by the Board of Health for use by the Department of Public Works Road Maintenance Division that meets specific criteria in accordance with Lane Code 15.510(6). These important steps help highlight Lane County Public Works' commitment to a targeted, limited-use herbicide program using the lowest risk products available, while emphasizing control methods that promote environmental health and public safety.

Three herbicide products have been approved by the Board of Health for targeted control of roadside vegetation in accordance with the RIVMP within Lane County rights-of-way: Vastlan (triclopyr), Milestone (aminopyralid) and Ecomazapyr (imazapyr). Table 1 displays the concentrations and quantities of herbicide product applied to County roadways during the reporting period January 1, 2018 to December 31, 2018 for roadside vegetation management. These applications focused on the use of Vastlan for overgrown guardrail maintenance, Milestone for spotted knapweed control in partnership with the Department of Agriculture and the Forest Service, and Ecomazapyr for the knotweed species complex and puncturevine control measures.

Table 1 -- *Herbicide use by treatment type & rate per acre*

Product used	Concentration/Rate per acre	Amount used per treatment type	Treatment type	Total used
Milestone	@7oz/ac	13.50oz	Noxious weed	13.5oz
Ecomazapyr	@48oz/ac	79.57oz	Noxious weed	90.64oz
	@64oz/ac	11.07oz	Noxious weed	
Vastlan	@64oz/ac	138.90oz	Noxious weed	864.70oz
	@64oz/ac	725.80oz	Guardrails	
Total				**968.90oz = 7.6 gallons**

Table 2 further breaks down the total herbicide product used into monthly totals by concentration and treatment types, whether noxious weed control or overgrown guardrail maintenance. Due to the limited nature of qualifying stump-sprouting tree

species, not all trees removed from the ROW are candidates for herbicide stump treatments. As a result, no stump treatments within Lane County ROW's were performed during the 2018 reporting period.

Table 2 -- *Herbicide use by month, rate & treatment type*

Month	Amount used	Product name	Rate per acre used	Treatment type
May	3.39oz	Ecomazapyr	@64oz/ac	Noxious weed
June	7.00oz	Milestone	@7oz/ac	Noxious weed
July	6.50oz	Milestone	@7oz/ac	Noxious weed
	34.78oz	Vastlan	@64oz/ac	guardrails
August	60.57oz	Ecomazapyr	@48oz/ac	Noxious weed
	178.86oz	Vastlan	@64oz/ac	guardrails
September	7.68oz	Ecomazapyr	@64oz/ac	Noxious weed
	368.59oz	Vastlan	@64oz/ac	Rails + Noxious weed
October	19.00oz	Ecomazapyr	@48oz/ac	Noxious weed
	282.47oz	Vastlan	@64oz/ac	guardrails
Total	**968.9 oz = 7.6 gallons**			

Rates are based on label specifications for use on targeted species within the ROW.

II. Proposed Non-Listed Herbicide Use

No non-listed herbicides are proposed for use during the 2019 reporting period. During this reporting period use of any non-listed herbicide products could only occur by specific authorization by the Board of Health after the Director of Public Works has determined that a specific condition or emergency exists in accordance with Lane Code 15.510(3)(d) warranting its use.

III. Proposed Herbicide Use

Proposed herbicide uses for the 2019 reporting period will be in accordance with the Lane County Right-of-Way Management Prescription Plan (2018), limiting uses to priority noxious and invasive plant control, management of overgrown guardrail vegetation and any necessary stump treatments after tree removal within the right-of-way. Guardrail maintenance, typically the control of aggressive growth and subsequent encroachment into the roadway of Himalayan blackberries, proves to be the number one issue with vegetation control faced by the Road Maintenance Division. Control efforts are anticipated to show an initial increase of guardrail treatments over the early years of the program before seeing a yearly decline in needed treatments as better vegetation control is gained with improved management associated with

herbicide use. Proposed noxious and invasive weed control will focus on areas defined through working partnerships and priority species such as the knapweed and knotweed complexes found within Lane County rights-of-way.

IV. Cost of Herbicide Application

Lane County Department of Public Works has incurred costs stemming from labor, equipment and product use associated with the herbicide portion of the Integrated Vegetation Management Program. These costs include tasks related to the herbicide applications themselves, as well as efforts in signing roads for advance public notice. Table 3 breaks down cost descriptions into personnel costs, which include labor and benefits for the individual staff, operation overhead, which includes the costs per employee to run Lane County operations and lastly, additional equipment costs which include hardware/supplies, vehicle use and fuels. Costs associated with the actual amount of herbicide product applied have been tallied separately and displayed in Table 4. Those costs have been broken down into dollar amounts per ounce of product used and the total costs associated with each product.

Table 3 – *Total costs associated with herbicide applications*

Herbicide Application Type	Personnel Costs	Operation Overhead	Equipment Costs	Totals	Labor Hours	Cost per Hour
Guardrail	$13,828.22	$13,229.23	$1213.94	**$28,271.39**	417.25	$67.76
Noxious Weed	$4107.33	$4509.15	$483.74	**$9100.22**	125.5	$72.51
Totals	**$17,935.55**	**$17,738.38**	**$1386.81**	**$37,371.61**	**542.75**	**$68.86**

Table 4 -- *Cost per ounce of herbicide product used*

Product	Cost per Ounce	Ounces Used	Total Cost
Vastlan	$0.56	864.7	$484.23
Milestone	$2.16	13.5	$29.16
Ecomazapyr	$0.34	90.7	$30.84
Total		**968.9**	**$544.23**

V. Non-herbicide Control Methods

The majority of non-herbicide vegetation management accomplishments that occurred throughout the 2018 reporting period were comprised of routine roadside vegetation maintenance activities such as mechanical mowing and brushing activities. Table 5 provides the major mechanical control methods utilized and the roadside mile accomplishments associated with each.

Table 5 -- *Non-herbicide routine maintenance activities*

Routine Maintenance Activities	Roadside Miles
Mechanical Brushing	455
Safety Strip Mowing	2455
Full Width Mowing	2032
Top-trimming Activities	152

In recent years, several alternative management techniques and methods outside the scope of routine vegetation maintenance have been explored by the Lane County Road Maintenance Division with varied results. These included excavation projects (noxious weed vegetation and soil removal and disposal), Waipuna hot foam applications, textile fabrics and even an attempt at seed bank removal by vacuuming. The overall success of control methods were ultimately driven by scale, with large scale projects proving costly and logistically ineffective, while some methods just simply did not work. Small scale site methods utilizing manual controls, grubbing and textile fabrics proved feasible but were dependent on project logistics and targeted species present. Lane County continues to monitor and review the long term effectiveness of past projects while remaining knowledgeable on current control methods through ongoing educational opportunities. Table 6, found on page 6, provides an overview of both successful and unsuccessful non-herbicide control methods utilized by the IVMP.

As herbicide use is only one small part of the IVMP, the broader view constitutes the promotion of vegetation management practices which emphasize safeguards that reduce impacts on the environment and public health and provide an overall reduction in future maintenance activities. The integration of various elements and information into the program through continued monitoring and education are crucial to setting management objectives, prevention measures and treatment thresholds, understanding economic and ecological impacts, and creating outreach opportunities.

Although there has been no further testing of non-herbicide control methods during 2018, it has been a year of implementations for the new program. The County has begun utilization and fulfillment of the Vegetation Management Task Force recommendations by focusing on species monitoring and development of a GIS

database. This includes publically accessible data in order to improve transparency by providing accurate information for interested residents through our website. To further increase public service, county staff has focused continuing education efforts on relevant issues based on concerns raised through public feedback, including topics such as those related to pollinator protection measures. With these inputs, the County continues to utilize the adaptive management approach inherent to the IVMP by making changes that consistently better County practices.

Continued research and testing of necessary applicator's equipment and the detailed exploration of available herbicide products allowed the first full season of guardrail applications to ensue during the reporting period. In addition to measures directly related to the vegetation program, the Road Maintenance Division also took steps to reduce emissions and minimize overall environmental impacts through the conversion of most diesel fleet vehicles to gasoline.

Table 6 -- *Projects in review*

Non-herbicide Control Methods	
Successful	
Seeding Projects	Use of preferred seed types following shoulder construction and restoration, culver installations
Public Outreach & Education	Website expansion and development Partnerships for noxious weed control and management Staff training and education
Management Alternatives	Small scale, limited use alternative control methods -- manual control, use of textile fabrics
Unsuccessful	
Mechanical/Manual Controls	Long-term, large-scale use for control of specific noxious weed species such as knapweed complex, knotweed complex, blackberry and false brome
Management Alternatives	Large scale textile fabric control Large scale excavation and disposal Mulching for noxious weed control Seed bank vacuuming

As described in Table 7, the IVMP has implemented several programs and strategies that facilitate accuracy and accountability, benefiting both county staff and the public. The reestablishment of the No Spray Area Program provides residents on County roadways with a voice in any proposed herbicide applications adjacent to their

property, buffering their properties from adjacent right-of-way applications. By reaching out to County school districts, this same option has been given to parents of Lane County school bus riders to provide buffers to their children's bus stops from any adjacent herbicide applications. All No Spray Area enrolled parcels are mapped and locations readily available to road crews through our GPS enabled devices. Data collection is facilitated through real time uploads and offline syncing, providing accurate reflections of treatments and species inventories to publically accessible mapped databases. The IVMP website is still a work in progress, but currently provides the public with access to posted advance notices for proposed treatment areas and monthly reports detailing previous applications.

Table 7 -- *Newly implemented 2018 projects*

2018 Implementations	
Survey & Inventory	County wide GIS mapping of noxious weed and protected species at 3 year intervals Partnerships with agencies and local non-profits
Public Outreach & Education	Website expansion and development Increase in transparency -- public notices and herbicide spray reports No Spray Area Program for County school bus stops and ROW adjacent homeowner parcels Public input and feedback

VI. Planned Non-herbicide Control Methods

For the upcoming reporting period of 2019, Lane County Department of Public Works will continue to utilize mechanical tools as the primary method to manage roadside vegetation concerns. We will continue to investigate new tools that become available over the next twelve month period and continue with testing and evaluation of other non-herbicide control methods. Prioritization of management needs will determine what projects occur over the next 12 month reporting period.

Planned Routine Non-Herbicide Control Methods:

- **Mechanical Control:** This involves using brush mowers, grass mowers and the aerial lift truck to manage roadside vegetation, including noxious weed management and roadside tree care/management.

- **Manual Control:** This involves using County crews to manage roadside vegetation using manual tools and methods and includes small weed site management, Threatened and Endangered plant site preservation and other roadside vegetation management needs.

- **Seeding**: Lane County Public Works has continued to experiment with seeding efforts to minimize weed infestations and restore project areas after construction projects. We will continue these efforts for ongoing ditch maintenance to establish preferred community types over the coming annual reporting period.

- **Plantings and Restoration**: Lane County Public Works continues to plant and restore project areas after construction and large culvert projects. We will continue with these efforts over the coming annual reporting period.

- **Training and Education**: Lane County Public Works continues to utilize training and educational opportunities for staff members that work the Integrated Vegetation Management program at Lane County. These efforts will continue over the coming annual reporting period.

- **Biological Control**: This method employs biological control agents to manage weed populations that have established in areas within Lane County rights-of-way. There have been no new releases for several years but new agents are up for release on some high priority noxious weed species in the near future. Periodic monitoring of past agent releases (as it may take 10-20 years for a biocontrol agent to show control at a regional scale) and continuing education on future biocontrol opportunities will continue over the next annual reporting period.

- **Education & Public Outreach**: Lane County is working to improve and continue forward with efforts involving public education and outreach. We are developing strategies to educate the public about the County's worst weed invaders and develop projects to assist in management of these plant species County wide. These efforts include the development and expansion of the website as a public resource and to increase transparency through public notices and access to herbicide application data.

- **Partnerships**: Lane County Public Works has maintained both large and small partnerships over the years to assist in our County wide management efforts. We will continue to develop and expand these efforts over the coming annual reporting period.

VII. Herbicide Uses

As mentioned previously in this report, herbicide use within Lane County rights-of-way are limited to overgrown guardrail maintenance, noxious weed management and direct stump applications for "stump-sprouting" tree species. To help furnish an understanding of the limited nature of the herbicide program, Table 8 provides a breakdown of the total number of herbicide applications by treatment type in relation

to the overall system counts. Guardrail herbicide applications are performed only on rails which meet certain criteria when surveyed prior to application. They can fall into one of three categories, treated high, treated medium or untreated guardrails. A high or medium vegetation ranking describes conditions behind and adjacent to the guardrail which exhibits aggressive or weedy vegetation that is either overgrowing the rail or encroaching within three to four feet of the rail feature, therefore receiving an herbicide application. Those marked as untreated exhibit low growing, non-aggressive or native vegetation, or fall within a right-of-way enrolled in the No Spray Area Program and therefore receive no herbicide application.

The decision to utilize herbicides within the IVMP is guided by numerous factors and considered only one tool in the toolbox of Lane County's vegetation management approach. Although a small part of the overall vegetation program, herbicide use is the most regulated portion and deserves the most transparency regarding accessible information and resulting management prescriptions. Decision matrixes for each treatment type can be found within the Lane County Rights-of-Way Management Description Plan (2018) as a way to assist in furthering these transparency efforts. Lane County will continue to present accessible and accurate information in the hopes of providing insight on our vegetation management processes from planning and implementation through monitoring and review.

Table 8 -- *Number of herbicide applications by treatment type*

Treatment Type Activity	Number Surveyed	Number Treated	Total in System	% Surveyed	% Treated
Guardrails	432	311	1643	26%	19%
Noxious Weed Sites	--	41	1431	--	3%
Stump Treatments	--	--	--	--	--

VIII. Report Availability

Copies of this report are available at the Lane County Department of Public Works offices at 3040 N. Delta Highway, Eugene, Oregon, 97408. This report is also available from the Lane County website: http://www.lanecounty.org/vegetation