

The tank on this spray truck holds 1500 gallons. It is equipped with booms and hose for hand spraying. The county also has a 2100 gallon and a 1450 gallon tank trucks.

LANE COUNTY ROADSIDE PROGRAM

Vegetation Maintenance What Does It Cost In Oregon?

By **STEVE PUETT**

Weed And Brush Control Supervisor
Lane County Dept. Of Public Works

THE COUNTY weed and brush control program in Oregon has shown the value of good program planning and persistent followup.

A high growth of brush or weeds along the edge of roads can cause a great many highway maintenance problems and accidents. The re-

moval of brush and weeds makes the area look cleaner; it enables tourists to enjoy scenery that might otherwise be hidden. Wildlife, pedestrians and cars are hidden from motorists' sight by tall roadside brush and weeds.

By keeping drainage ditches clean,

road maintenance costs are greatly reduced. Clean drainage ditches are important to both the Lane County Department of Public Works and to property owners whose fields are next to county roadways. Fire danger is, of course, reduced when weed and brush areas are removed.

There is also the added bonus of good will and co-operation between the Public Works Department and the people it serves.

PROGRAMS AND COSTS

Basically, our programs are divided into five areas: 1. Clear right-of-way of brush by mechanical means; 2. Basal or stump spray; 3. Foliage spray; 4. Correct drainage by mechanical means; and 5. soil residual spraying.

There are six full-time men on the spraying crew plus two temporary men during the summer months. The equipment includes 2100 gallon, 1500 gallon and 1450 gallon truck-mounted tanks with three 200 gallon pull-tanks.

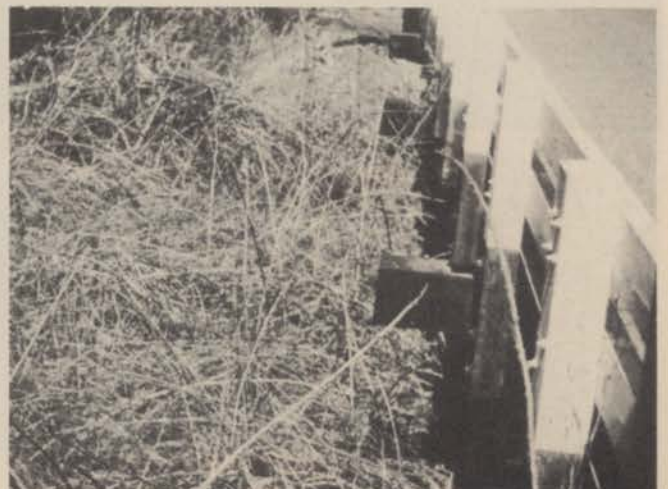
Clear right-of-way of brush by mechanical means The cost of maintenance brushing with an eight-man crew using the air saw and brush chipper for top trimming is \$834.92 per acre. Using the same crew and doing cutting on the ground with chain saws is \$1,180.00 per acre.

Initial brushing for the first time, like new right-of-way clearing with the above crew and mechanical machinery, is \$2,436.00 per acre. The county also has a BC-100 series brush cutter with two rotary blades which is mounted on a gradall. This machine is used on small brush species at a cost of \$237.00 per acre.

Basal or stump spraying Brush cutting reports from zone foremen
(continued on page 16)



Stump spraying with 2,4,5-T and/or Banvel has been effective in holding regrowth in check. This maple stump has been treated with 2,4,5-T.

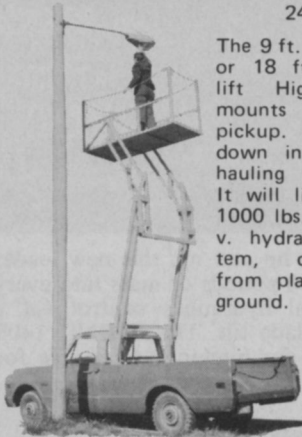


Foliage spraying around this bridge abutment will keep berries and weeds from hiding the view by the passing motorist. Note dead canes above.

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Johnsongrass can become a real problem on roadsides. Note how it is encroaching onto the highway above. We've tried a number of compounds for control. One new material that holds promise is Roundup, still an experimental herbicide.

VEGETATION MAINTENANCE

(from page 10)

and agencies determine the extent of stump spraying.

During the year, Lane County has a policy that requires all agencies cutting on county rights-of-way to obtain a brushing permit which reads in part: "All trees and brush will be cut down to stump level and the agencies will send a cutting report to the Public Works Department".

Hereafter, the spray crews stump spray all cut areas and continue to maintain the county right-of-way. This mutual co-operation between the different agencies and Lane County reflects a substantial savings to all parties as well as promoting good public relations.

The basal spraying program begins on a spot basis. During the

foliage spraying program all dwellings, orchards and adjoining crops are skipped because of drift or volatility. Then those areas will be basal sprayed in the fall and winter months.

The basal or stump formulations are: one gallon of 2,4,5-T low volatile ester brush killer, four pounds acid equivalent to twenty-four gallons diesel or Banvel brush killer oil soluble. Use one quart (one pound active) with two pounds acid equivalent of 2,4,5-T ester or four pounds acid equivalent of 2,4-D ester in 100 gallons of oil.

Again, it is very important to cover the plants or stumps with a chemical run-off. The cost of stump or basal spraying is \$1.10 per stump or patch of brush.

Foliage spray As a prerequisite to any spraying program, an orientation session is necessary to familiarize the spray crew personnel with



Alder tree to the right above has been sprayed with 2,4-D and 2,4,5-T low volatile ester formulation. Motorists will be able to see around curve with tree out.

the objectives of the program. Formulations, pressure regulations and road spraying reports, together with the public relations and county spraying policies, are necessary to the program. Printed literature designed to explain the safety of the chemicals used is carried in the trucks with the spray crews.

A field survey determines the extent of the schedule and particularly a co-ordination of spraying with dwelling, orchards and adjoining domestic crops. This spraying starts about the first of May. In 1972, 1,014.4 miles or 3,550 acres were foliage sprayed at a cost of \$25.01 per mile or 7.15 per acre. The foliage spraying is spot spraying of all weeds and brush within an acre. Were the job to be done by hand maintenance brushing crews, the costs would be \$1,007.00 per acre.

The foliage spraying program, since its start, has reduced the number of brush crew personnel from 30 men to the 8 men who make up the spraying crew. They cut most of the brush on rainy days in each of the six zones. Each zone does some brushing, but this is minor.

Noxious weeds spraying programs begin in mid-May. Here, again, the program begins with a field survey and determination of the need. The county spraying crew sprays the noxious weeds on county-owned lands and rights-of-ways. Weeds such as Canadian thistle, poison oak, conifers, cattails, morningglory, Johnsongrass and Bermudagrass are controlled with Amitrol-T, 24D, Tordon, Banvel and others.

The basic foliage spraying formulation is one gallon 2,4-D/2,4,5-T low-volatile ester brush killer, two pounds actual acid each, plus 8 ounces of X-77 Surfactant per 100 gallons of water. Spray is applied until plants are wet. We have also mixed one-half gallon odorless 170 with one-half gallon 2,4-D/2,4,5-T low-volatile ester. This formulation has been very effective for our public relations program.

Around the first of August, 1½ gallons brush killer 170 or 2,4-D/-2,4,5-T low-volatile ester in 10 gallons diesel and 88½ gallons water are sprayed.

In the winter months, the county uses Casaron G-10 at 50 pounds per acre. This chemical looks good on Canadian thistle, horsetail rush and morning glory. This should be used in the hard-to-control areas with heavy stands of weeds.

When spraying for weed and brush control, it is the policy of the county's Public Works Department

to avoid the various native wild flowers, Oregon grape, and other natural attractive plants unless they obstruct the view of the traveling public or impair drainage in ditches.

Correct drainage by mechanical means When Lane County's maintenance crew reshapes and cleans ditches and slopes with the use of two graders, three dump trucks, one scoop, one water wagon, plus two flagmen, the cost is \$381.00 per mile per year. The savings Lane County has had in grading gravel shoulders that have had soil residual chemicals sprayed on them is \$9,000.00 per

year. This means the grading operation is much faster without any vegetation in the shoulders; also, this reduces mowing costs which are 8-10 dollars per acre. These roads were to be mowed twice a year.

Soil residual spraying The first field survey of roads to be sprayed is made in January. The reports on soil conditions, weed and grass problems and topography of the road area are analyzed and the spraying program scheduled.

The soil residual program begins about February 1st. After the or-
(continued on page 20)

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VEGETATION MAINTENANCE

(from page 17)

ientation session, spray crews take their trucks into the field to calibrate the spraying equipment. We believe the difference between a good and bad residual program is proper calibration.

The soil residual program is divided into two phases. There is the initial spraying of road areas to be sprayed for the first time. And their trucks into the field to calibrate of the areas which has been previously sprayed, each requiring special consideration of the formulation to be used. The cost for initial spraying in 1972 was \$80.15 per mile or \$26.72 per acre. The cost of maintenance spraying is \$57.48 per mile or \$19.19 per acre. In 1972, 39.6 miles or 118.8 acres received initial treatment while 637.0 miles or 1,911 acres were sprayed for maintenance.

Approximately 80 per cent of all maintenance activities involves the maintenance of proper drainage facilities. Three distinct types of drainage which must be considered are:

Roadside drainage: This involves maintaining adequate ditches parallel to the roadways. A good, well-timed soil residual program can save a county highway department money. Here is a comparison of costs for a spraying program versus county maintenance crews. It costs \$381.00 per year to reshape and clean slopes and ditches. The cost of a spraying program is \$68.76 per mile per year. The latter program eliminates the periodical cleaning of ponded or standing water. This water eventually saturates the subgrade of the roadway causing pavement settlement, slides and other undesirable conditions that cause considerable hazards to the motorist.

Road surface drainage: This consists of maintaining an adequate crown or transverse slope on the travelled way and shoulder areas. Surface areas which do not drain properly result in potholding, traffic safety hazards, and pavement breaking at the shoulder joint.

Cross drainage: This is provided by means of culverts and bridges and must be kept clear to provide protection to adjacent properties as well as the roadbed itself. The cost of a bridge and culvert soil residual program is .54¢ per structure versus hand cleaning of structures at \$3.87 per structure. Plugged culverts can very easily result in loss of large roadbed sections.

Inadequate maintenance of drainage results in abnormal maintenance costs, traffic hazards and short life

for road facilities.

Proper and economical maintenance begins during the location, design and construction stages of any highway. Curvature, gradient, drainage, base and surfacing, when adequately designed, result in maintenance economy. Highways constructed to proper specifications by following acceptable construction practices, result in low maintenance costs and longer life for the roadways. A roadbed and surface will be stable if proper drainage is supplied

maps of Lane County using a map legend with colored pins. This shows the progression of the spraying program.

The Lane County spraying program has the full co-operation and support of the Board of County Commissioners: Al Driver, director of Public Works; Charles E. Angermayer, operations superintendent as well as the Oregon State University farm crops department, chemical industries and many other related agencies.□

INITIAL APPLICATION

Krovar I	80W,	6 pounds,	plus 6 ounces X-77 Surfactant/per acre
Karmex	80W,	9 pounds,	plus 6 ounces X-77 Surfactant/per acre
Hyvar-X	80W,	4 pounds,	plus 6 ounces X-77 Surfactant/per acre
Princep	80W,	9 pounds,	plus 6 ounces X-77 Surfactant/per acre
AAtrex	80W,	9 pounds,	plus 6 ounces X-77 Surfactant/per acre
Atratul	80W,	9 pounds,	plus 6 ounces X-77 Surfactant/per acre

If there is foliage within the area to be treated, two-thirds gallons Amitrol-T is added per acre.

MAINTENANCE APPLICATION

AAtrex	80W,	12 pounds,	plus 6 ounces X-77 Surfactant/per acre
Princep	80W,	12 pounds,	plus 6 ounces X-77 Surfactant/per acre
Atratul	80W,	12 pounds,	plus 6 ounces X-77 Surfactant/per acre
Karmex	80W,	12 pounds,	plus 6 ounces X-77 Surfactant/per acre
Hyvar-X	80W,	6 pounds,	plus 6 ounces X-77 Surfactant/per acre
Krovar I	80W,	9 pounds,	plus 6 ounces X-77 Surfactant/per acre

If there is foliage within the area to be treated, one gallon of Amitrol-T is added per acre.

and compaction of materials is sufficient during construction.

A sound highway maintenance and soil residual program will result in better and safer roadways at a minimum cost, improved public relations and public acceptance of your road program.

The following soil residual formulations are used in the proportions shown below:

All of the above soil residual formulations are used in combinations and are used separately. Weather, soil and type of foliage within the area to be sprayed are factors which determine whether combinations or single products are used.

Keeping good records on all roads and County-owned lands is very important for a successful spraying program. It furnishes the statistics needed to analyze the cost benefits ratio, estimating cost and establishing budgets as well as permanent records for the data processing program for future reference. Records of all pesticides sprayed on county-owned lands are kept. The pesticide records have also proved beneficial in establishing responsibility in courts of claim.

In addition to this, there are two

WSSA Assoc. Membership Is Now Available

Specialized information on weed problems and their control is now available to associate members of the Weed Science Society of America.

This new membership classification is designed for anyone in applied weed control—chemical dealers or distributors, custom applicators, grounds maintenance managers, agri-fieldmen, regulatory officials, extension agents, farm managers and others.

Associate membership in WSSA will help those interested in practical and scientific aspects of weed control through the exchange of current information on new products and scientific developments.

Until now, only Regular Membership was available in WSSA. This category is open to anyone interested in weed control, but is primarily designed for research-oriented personnel.

Membership application forms and more details are available from the WSSA Special Office, 3123 Ligon Road, Raleigh, N.C. 27607.