

It's Not All Asphalt: Washington State Department of Transportation's Use of Native Plants[©]

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The Washington State Department of Transportation (WSDOT) spends most of its time and energy planning for, building, improving, and maintaining highways and other modes of transportation. What most people don't know is that our work also includes planting hundreds of thousands of mostly native plants in a variety of locations in several different kinds of projects.

Transportation impacts to aquatic resources are often unavoidable, since the area we have to work in is so limited and our state has so many wetlands, streams, and rivers. These unavoidable impacts must be mitigated, or compensated for, usually by creating or improving a similar resource nearby. This leads to a lot of native plants being installed in mitigation projects.

As well, our own policy requires us to repair or replace roadside elements disturbed or removed in the course of our work. That's true for sidewalks, lights, or plants. Disturbed vegetation is restored to a self-sustainable plant community that will keep out weeds, hold the soil, block or enhance views, reduce noise levels, and perform a host of other roadside functions, as well as be low maintenance to save money. In most situations this means planting native plants.

The right-of-way along a highway is part of the functional roadway, just like the traveling lanes, and has roles to fill as well. Among these jobs are preserving surface drainage, allowing traffic visibility, control of noxious and invasive weeds, maintaining visibility of signs, and providing erosion control and slope stability. A roadside plant has a tough job — it has to perform in disturbed soil, glaring sun, droughty conditions, where highways are a heat sink in the summer and channel cold winds in the winter, and there is a constant influx of weed seeds to battle.

As important as “Right Plant, Right Place” is in the garden, it's even more so in a mitigation site or on the roadside, where conditions are severe and follow-up care is minimal. Our landscape designers and biologists use nature as their template, taking climate, soil type and structure, water holding capacity, aspect, hydrology, and a host of other environmental factors into account when they choose species to use.

In order to do all that, we buy a lot of native plants. Actually the majority are not purchased directly by WSDOT but by the contractors who install our projects.

I used information on WSDOT's website to estimate the number of native plants bought from January 2005 through about July 2010 (Table 1). Using this system, I calculated that WSDOT has planted approximately 2 million native plants in the last 5 years. I didn't try to count the non-native plants, but they're a small fraction of the total, used mostly in highly urbanized areas or in community gateways. If you would like more detail, the website address is at the bottom of the table.

The USDA Forest Service has created a database of native plant propagation protocols that can be found at <www.Nativeplantnetwork.org>. Information about subscribing to the Native Plants Journal (NPJ) can also be found there. The NPJ is a journal for those interested in the practical aspects of growing and planting-

Table 1. Top 25 species purchased by WSDOT from January 2005 to July 2010.

Species	Common Name	Qty	Form
<i>Gaultheria shallon</i>	salal	160,800	shrub
<i>Symphoricarpos albus</i>	snowberry	118,400	shrub
<i>Salix sitchensis</i>	Sitka willow	100,600	shrub
<i>Cornus sericea</i>	red osier dogwood	96,000	shrub
<i>Rosa nutkana</i>	Nootka rose	74,300	shrub
<i>Carex obnupta</i>	slough sedge	66,000	emergent
<i>Schoenoplectus acutus</i>	hardstem bulrush	65,700	emergent
<i>Rosa pisocarpa</i>	peafruit rose	55,200	shrub
<i>Rubus spectabilis</i>	salmonberry	55,200	shrub
<i>Acer circinatum</i>	vine maple	54,500	shrub
<i>Salix scouleriana</i>	Scouler's willow	52,300	tree/shrub
<i>Thuja plicata</i>	western red cedar	48,100	tree
<i>Mahonia aquifolium</i>	tall Oregon grape	47,800	shrub
<i>Scirpus microcarpus</i>	small-fruited bulrush	47,000	emergent
<i>Lonicera involucrata</i>	black twinberry	43,400	shrub
<i>Pseudotsuga menziesii</i>	Douglas-fir	43,400	tree
<i>Rubus parviflorus</i>	thimbleberry	42,600	shrub
<i>Salix lucida</i>	Pacific willow	39,700	tree
<i>Sambucus racemosa</i>	red elderberry	38,500	shrub
<i>Corylus cornuta</i>	beaked hazelnut	37,400	shrub
<i>Amelanchier alnifolia</i>	western serviceberry	34,800	shrub
<i>Physocarpus capitatus</i>	Pacific ninebark	32,400	shrub
<i>Schoenoplectus taebernaemontanii</i>	softstem bulrush	25,400	emergent
<i>Holodiscus discolor</i>	oceanspray	24,100	shrub

Summarized from: <http://www.wsdot.wa.gov/Design/ProjectDev/EngineeringApplications/UnitBidHistory.htm>

natives. It comes out three times a year and the summer issue includes a national native plant nursery directory. Links to a variety of other websites concerned with native plants are also available there.

I know that you are all familiar with the American Standards for Nursery Stock (ASNS). Don't rely on these alone; WSDOT has specifications that supersede these standards. Plants can be and have been rejected at the job site for failing to meet WSDOT standards, which focus on plant health and root structure.

The first place to look for plant specifications is in the Standard Specifications, at this link: <<http://www.wsdot.wa.gov/Publications/Manuals/M41-10.htm>>. Here, you'll find details that don't change from project to project. You won't find species and quantities, since these change. But you will find all the basic details that apply to every project. The plant specifications are in Division 9, Section 9-14.6. Seed specifications are in Section 9-14.2

Check for revisions to the specs by going to this link: <<http://www.wsdot.wa.gov/Design/ProjectDev/Specifications.htm>>. Look for the latest update package; this will have the amendments to the Standard Specifications. They are organized by Division as well.

The second place to find specifications is on the plan sheets for the individual project. If you are bidding on a project, you'll have the plan sheets with the plant materials tables, or plant schedules. If a contractor sends you a bid request for plants, make sure s/he has included the whole table from the plan sheet, including the scientific name, quantity, size, type or root condition, and remarks. Otherwise, you may deliver to the job site and discover that your plants don't meet specifications and are rejected. The plans will have tables similar to the excerpt below in Table 2.

For more information, please consult the WSDOT Roadside and Site Development webpage at: <<http://www.wsdot.wa.gov/Design/Roadside/>>

QUESTIONS AND ANSWERS

Bob Buzzo: At what point did DOT change their mission to recognize native plants? When I lived in Olympia 35 years ago they landscaped the highways with plants that have fallen out of favor.

Susan Buis: English ivy fell out of favor when maintenance showed management how much they were spending trying to keep it out of trees. *Rosa rugosa* fell out of favor when all of that long stretch of planting on I-5 through Tumwater and parts of Olympia got a virus and died. We can't afford to try to control diseases in highway plantings. When that happens we have to remove the diseased plants and find replacements. Washington State Department of Transportation has made a huge shift from ornamentals to natives in the past 15–30 years. They've shifted to natives because people started paying more attention to what was succeeding on the roadside and what wasn't. What they found was that non-native ornamentals did fine initially, but they didn't hold up over time. Certain natives do, but not all natives. There's nothing native about roadside. It's a highly disturbed, highly impacted environment so some natives work well and some don't. And, some ornamentals work well. The ones that do are still being used.

Douglas Justice: Susan, you mentioned grasses. Are you talking strictly about native grasses?

Susan Buis: On the east side of the state we have found that it's worthwhile to use native grasses with specific genetic provenance. We found they perform best in the long-run. On the west side of the state we still use standard erosion-control grasses because they perform adequately in the milder westside climate.

Table 2. Plant Materials List.

Botanical Name	Common Name	Qty	Size (in. HT)	Type	Remarks
<i>Carex obnupta</i>	slough sedge	100	8	10 in. ³ plug	
<i>Corylus cornuta</i>	beaked hazelnut	55	24–36	#2 container	
<i>Holodiscus discolor</i>	oceanspray	120	12–18	Bareroot	
<i>Mahonia aquifolium</i>	tall Oregon grape	70	24–36	#1 container	
<i>Rubus parviflorus</i>	thimbleberry	95	12–18	Bareroot	2 cane minimum
<i>Symphoricarpos albus</i>	snowberry	165	12–18	Bareroot	
<i>Pseudotsuga menziesii</i>	Douglas-fir	25	12–18	#1 container	No sheared trees