

## Materials Sourcing & Estimate Exercise

UWREN Capstone Winter 2009

Due January 30, 2009

As Word document on class bulletin board

For all materials needed to execute the tasks set out in your work plan provide a table that summarizes the quantity, cost per unit, subtotal, delivery/shipping fees, taxes (sales @ 8.6%), and total estimated cost. Please provide the name and contact information for each vendor in a list after the table. Also show your calculations for densities, area & volume by polygon in table format for each material. Each material listed must be referenced to a task in the table. See examples below.

TASK	MATERIAL	QUANTITY	COST/UNIT	SUBTOTAL	DELIVERY FEE	EST. TAX	EST. TOT	VENDOR
1-2A	Woodchips	7 yd <sup>3</sup>	free	0.00	free	0.00	0.00	Ballard Tree Service
1-2A	12-18" 2-0 <i>Pseudotsuga menziesii</i>	150	2.25	337.50	15	29.03	381.53	Pilchuck Tree Farm
1-2A	4-6' B/B <i>Acer macrophyllum</i>	5	17.50	87.50	40	10.97	138.47	WACD PMC

### Vendor List

Ballard Tree Service, 9708 14<sup>th</sup> Ave NW, Seattle WA 98117, 206.782.4847

WACD Plant Materials Center, 16564 Bradley Rd., Bow WA 98232, 360.757.1094

Pilchuck Tree Farm, 1624 300th St. NW, Stanwood WA, 360.629.6800

### Calculations

#### *Mulch*

polygon	Area applied (ft <sup>2</sup> )	Depth (ft)	Unit factor	Volume (yd <sup>3</sup> )
1	50	0.5 ft	1 yd <sup>3</sup> /27 ft <sup>3</sup>	0.93
5	325	0.5 ft		6.02
total	375			6.95

#### *Cardboard*

polygon	Area applied (m <sup>2</sup> )
1	15
5	110
total	125

## Plants

polygon	Area planted (m <sup>2</sup> )	Species	Spacing	Form/size	Number
1	15	<i>A. rubra</i>	2 m	Bare root/1-0	2
		<i>A. macrophyllum</i>	2 m	B/B/4-6 ft	1
		<i>P. balsamifera</i>	2 m	Bare root/1-0	1
		<i>S. albus</i>	1 m	Bare root/1-1	3
		<i>P. capitatus</i>	1 m	Bare root/1-1	4
		<i>R. spectabilis</i>	1 m	Bare root/1-1	3
<b>Total – P1</b>					<b>15</b>
2	450	<i>P. menziesii</i>	2.5 m	B/B/5-7 ft	72
<b>Total – P2</b>					<b>72</b>

### Calculating plant densities

When calculating # plants/unit area envision each plant occupying the center of a square. The side of the square is equal to the spacing and the area of that square is (the spacing)<sup>2</sup>. Therefore in order to calculate the number of slots available at that spacing you divide the area to be planted by the area of that spacing square. For example, a 15 m<sup>2</sup> area has approximately 4 spaces for plants planted on 2 m centers,  $15 \text{ m}^2 / (2 \text{ m})^2 = 3.75$ . That is the TOTAL number of 2 m spacing slots available to be allotted to whatever species mix assigned. Next you calculate the number of the next smaller spacing slots. At 1 m spacing you have 15 slots. However you already have 4 of those slots occupied by the 2 m spacing plants, so you actually have 11 available slots to fill with your chosen species. And so on.