

Unit Cost Estimate Update

Prepared for:
Oregon Department of Aviation



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WHPacific

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UNIT COST ESTIMATE UPDATE

Introduction and General Information

The Oregon Department of Aviation (ODA) periodically updates statewide unit costs for construction elements as part of the Oregon Continuous Aviation System Plan, which is partially funded with grants from the Federal Aviation Administration (FAA). For the 2009 update, ODA contracted with WHPacific to collect data, perform a data analysis and present a summary of unit cost estimates.

The purpose of the update is to provide ODA and Airport Sponsors with a tool to estimate construction projects throughout the state.

Methodology

The unit costs are presented in groups, as delineated by the Oregon Department of Transportation's (ODOT's) five regions. **Exhibit 1** gives a graphical depiction of the regions in relation to Oregon's airports. A textual representation of the breakdown of airports by ODOT region is shown in **Table 1**.

Bid Tabulations for airport improvement projects from 2003 to 2008 were collected from ODA and airport consultants. The Bid Tabulations for each region were summarized to identify the number of bids received, as well as the high, low and average bid amount by item (*i.e.*, asphaltic concrete, pavement striping, excavation, etc).

The bid items were combined to create a unit of construction. Examples of this are:

- Runway Paving includes - clearing and grubbing, excavation, aggregate subbase, aggregate base and bituminous surface course.
- Medium Intensity Runway Lighting (MIRL) includes - trenching, conduit, cable and light fixtures.

The spreadsheet titled "Cost Estimating Unit Prices" gives the estimator the average cost for specific construction items, in addition to regional costs. Those construction items are further broken down in the next spreadsheet (pp 8-17) to give the estimator better information on the data used to develop the cost estimates. Finally the bid tabulation summary gives an overview of all bid tabs used to create this unit cost estimate update.

Appendices 1-5 include all bid tabs gathered, which were analyzed to create the cost estimates.

Exhibit 1. Oregon System Airports by ODOT Region

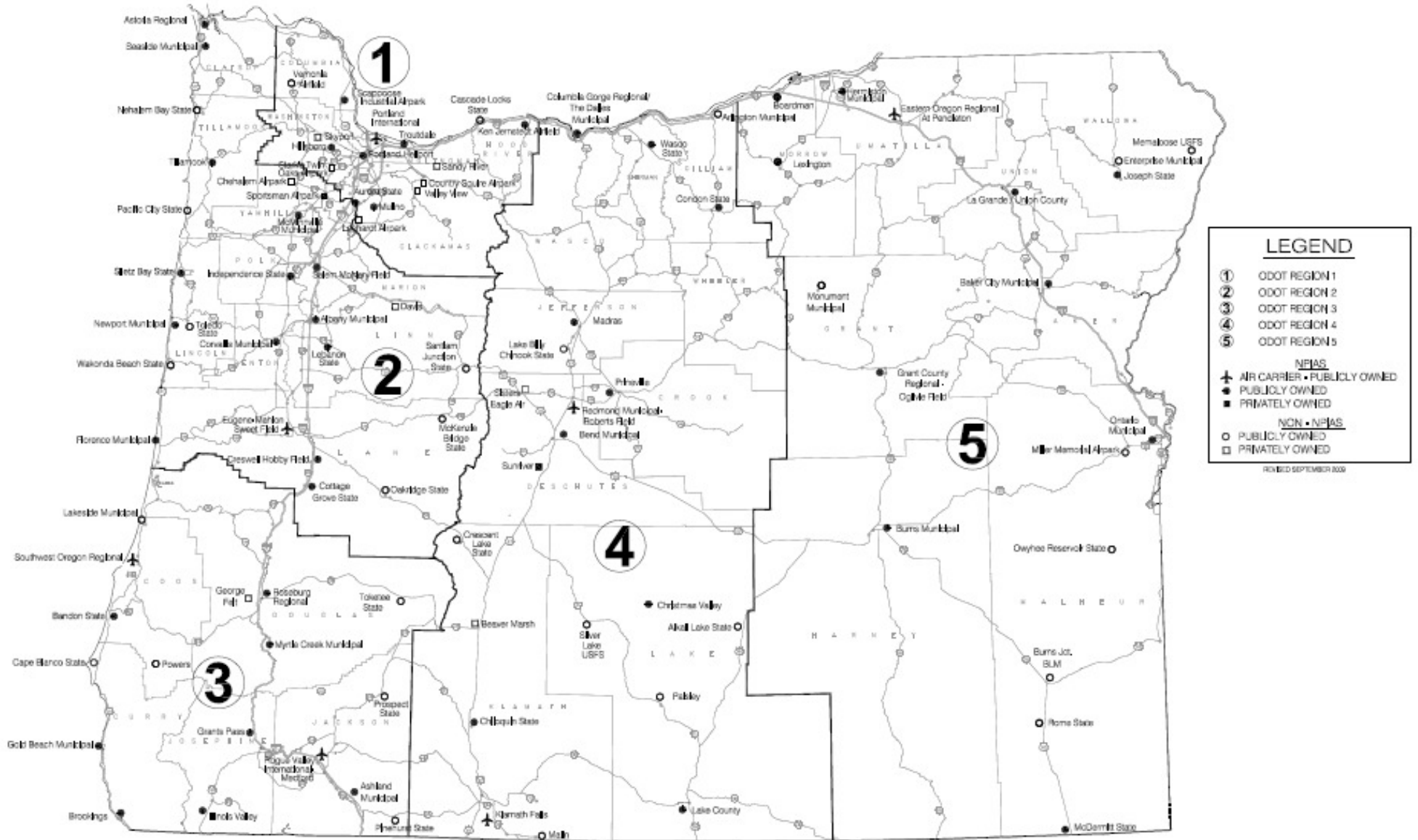


Table 1. Oregon System Airports by ODOT Region

Airport Name	ODOT Region	Airport Name	ODOT Region
Cascade Locks State	1	Lakeside Municipal	3
Country Squire Airpark	1	Myrtle Creek Municipal	3
Hillsboro	1	Southwest Oregon Regional	3
Ken Jernstedt Airfield	1	Pinehurst State	3
Lenhardt Airpark	1	Powers Hayes Field	3
Mulino	1	Prospect State	3
Portland Downtown Heliport	1	Rogue Valley International-Medford	3
Portland International	1	Roseburg Regional	3
Sandy River	1	Toketee State	3
Scappoose Industrial Airpark	1	Alkali Lake State	4
Skyport	1	Arlington Municipal	4
Stark's Twin Oaks Airpark	1	Beaver Marsh	4
Troutdale	1	Bend Municipal	4
Valley View	1	Chiloquin State	4
Vernonia Municipal	1	Christmas Valley	4
Albany Municipal	2	Columbia Gorge Reg (The Dalles)	4
Astoria Regional	2	Condon State Pauling Field	4
Aurora State	2	Crescent Lake State	4
Chehalem Airpark	2	Klamath Falls	4
Corvallis Municipal	2	Lake Billy Chinook State	4
Cottage Grove State	2	Lake County	4
Creswell Hobby Field	2	Madras	4
Davis Field	2	Malin	4
Eugene Municipal	2	Paisley	4
Florence Municipal	2	Prineville	4
Independence State	2	Redmond Municipal-Roberts Field	4
Lebanon State	2	Silver Lake USFS Strip	4
McKenzie Bridge State	2	Sisters Eagle Air	4
McMinnville Municipal	2	Sunriver	4
Nehalem Bay State	2	Wasco State	4
Newport Municipal	2	Baker City Municipal	5
Oakridge State	2	Boardman	5
Pacific City State	2	Burns Junction (BLM)	5
Salem McNary Field	2	Burns Municipal	5
Santiam Junction State	2	Eastern Oregon Regional at Pendleton	5
Seaside Municipal	2	Enterprise Municipal	5
Siletz Bay State	2	Grant County Regional-Ogilvie Field	5
Sportsman Airpark	2	Hermiston Municipal	5
Tillamook	2	Joseph State	5
Toledo State	2	La Grande/Union County	5
Wakonda Beach State	2	Lexington	5
Ashland Muni-Sumner Parker Field	3	McDermitt State	5
Bandon State	3	Memaloose (USFS)	5
Brookings	3	Miller Memorial Airpark	5
Cape Blanco State	3	Monument Municipal	5
George Felt	3	Ontario Municipal	5
Gold Beach Municipal	3	Owyhee Reservoir State	5
Grants Pass	3	Rome State	5
Illinois Valley	3		

How to Use the Systemⁱ

Step 1:

The estimator develops a list of major construction items for the project by the region (*i.e.*, runway extension, MIRL, parallel taxiway and replacing the wind cone in Region 2).

Step 2:

The estimator then estimates the units for each major item:

1. Runway extension of 1000' by 75' wide
 - a. $(1000' * 75') / 9 = 8333$ S.Y. use 8400 S.Y.
2. Painting for 75' non-precision runway (1000')
3. Drainage (6" PVC Underdrains)
 - a. 1000 L.F. * 2 = 2000 L.F.
4. MIRL Extension
 - a. = 1000 L.F.
5. Parallel Taxiway Extension and Connector Taxiway
 - a. $(1200' * 25') / 9 = 3333$ S.Y. use 3400 S.Y.
6. Wind Cone 1 each (E.A.)

Step 3:

Using the Cost Estimating Unit Prices, apply the appropriate cost per item by region to each unit (below example is for Region 2):

Runway Extension (8400 S.Y. * \$21.00/S.Y.)	\$ 176,400
Painting (1000')	\$ 40,700
Drainage (2000 L.F.* \$19.17/L.F.)	\$ 38,340
MIRL Extension (1000 L.F.)	\$ 69,000
Parallel Taxiway Extension (3400 S.Y. * \$21.00/S.Y.)	\$ 71,400
Wind Cone (1 * \$8,800/ea)	\$ 8,800
<i>Sub Total</i>	<i>\$ 404,640</i>

Step 4:

To the subtotaled amount add, as a percentage, the Lump Sum items for mobilization, construction staking and temporary marking and signing, as needed. This amount represents the total construction cost.

Mobilization (\$404,640 * 0.087)	\$ 35,204
Surveying (\$404,640 * 0.037)	\$ 14,972
Temporary Marking & Signing (\$404,640 * 0.02)	<u>\$ 8,093</u>
<i>Sub Total</i>	\$ 58,269

Construction Total \$ 462,909

Step 5:

To determine the Total Project cost the “Soft Costs” are added, as a percentage of construction, engineering, inspection, administration and contingency.

Engineering (\$462,909 x 0.10)	\$ 46,291
Inspection (\$462,909 x 0.10)	\$ 46,291
Administration (\$462,909 x 0.05)	\$ 23,145
Contingency (\$462,909 x 0.20)	<u>\$ 92,582</u>
<i>Sub Total</i>	\$ 208,309

Total Project \$ 671,218

ⁱ *Notes to Estimator:*

1. *The unit costs presented and the methodology as outlined is considered accurate for planning level use only. The total project cost obtained could be used for pre-application discussions with FAA and ODA. Additional detailed engineering is required to refine the project costs.*
2. *In many cases, the same items from one project to another reflect a different scope of work (i.e., PAPI could mean replacement of an existing PAPI unit or include the new PAPI unit plus trenching, conduit and cable for a new power source).*
3. *Unit prices for land acquisition were not presented because of the variability of this item. We suggest you contact the ODOT right-of-way office for assistance with this item.*
4. *Unit prices for navigational aids such as approach lighting system, instrument landing systems and very-high frequency omni-directional range (VOR) were not included because they are generally installed by the FAA. Contact your FAA representative for guidance.*

ODA - Cost Estimating Unit Prices¹

Updated: July 17, 2009

No.	Item	Unit ^{2,3}	Region					Avg. ⁴
			1	2	3	4	5	
1.00	Construction Items:							
1.1.0	Airfield Paving:							
	Small Aircraft < 12,500 lb							
1.1.1	Runway/Taxiway New Const. (AC)	SY	\$ 31.00	\$ 21.00	\$ 24.00	\$ 16.00	\$ 18.00	\$22.00
1.1.2	Runway/Taxiway New Const. (PCC)	SY	\$ -	\$ 77.00	\$ -	\$ -	\$ 87.00	\$82.00
1.1.3	Runway/Taxiway Overlay (2")	SY	\$ 14.00	\$ 14.00	\$ 15.00	\$ 13.00	\$ 12.00	\$13.60
	Larger Aircraft > 12,500 lb <100,000 lb	SY						
1.1.4	Runway/Taxiway New Const. (AC)	SY	\$ 38.40	\$ 32.40	\$ 37.80	\$ 18.30	\$ 20.50	\$29.00
1.1.5	Runway/Taxiway New Const. (PCC)	SY	\$ -	\$ -	\$ -	\$ -	\$ -	\$0.00
1.1.6	Runway Grooving	SY	\$ -	\$ 0.90	\$ 1.06	\$ -	\$ -	\$1.00
	Apron Construction:							
1.1.7	New Const.	SY	\$ 32.60	\$ 22.10	\$ 25.20	\$ 16.80	\$ 18.90	\$23.00
1.1.8	Tie-Down Positions	EA	\$ 12.00	\$ 997.00	\$ 644.00	\$ 661.00	\$ 851.00	\$633.00
1.2.0	Painting:	SF	\$ 0.60	\$ 1.81	\$ 1.60	\$ 2.42	\$ 1.28	\$1.54
1.2.1	60 Ft. Visual Runway:							
		1000'	\$ 1,700.00	\$ 5,200.00	\$ 4,600.00	\$ 6,900.00	\$ 3,700.00	\$4,400.00
		2000'	\$ 2,100.00	\$ 6,300.00	\$ 5,500.00	\$ 8,400.00	\$ 4,400.00	\$5,300.00
		3000'	\$ 2,500.00	\$ 7,400.00	\$ 6,500.00	\$ 9,800.00	\$ 5,200.00	\$6,300.00
		4000'	\$ 2,800.00	\$ 8,400.00	\$ 7,500.00	\$ 11,300.00	\$ 6,000.00	\$7,200.00
		5000'	\$ 3,200.00	\$ 9,500.00	\$ 8,400.00	\$ 12,700.00	\$ 6,700.00	\$8,100.00
1.2.2	75 Ft. Non-Precision Runway:							
		1000'	\$ 13,600.00	\$ 40,700.00	\$ 36,000.00	\$ 54,400.00	\$ 28,800.00	\$34,700.00
		2000'	\$ 14,200.00	\$ 42,400.00	\$ 37,400.00	\$ 56,600.00	\$ 30,000.00	\$36,100.00
		3000'	\$ 14,700.00	\$ 44,000.00	\$ 38,800.00	\$ 58,800.00	\$ 31,100.00	\$37,500.00
		4000'	\$ 15,200.00	\$ 45,600.00	\$ 40,300.00	\$ 61,000.00	\$ 32,300.00	\$38,900.00
		5000'	\$ 15,800.00	\$ 47,200.00	\$ 41,700.00	\$ 63,100.00	\$ 33,400.00	\$40,200.00
1.2.3	150 Ft. Precision Runway:							
		1000'	\$ 29,500.00	\$ 88,200.00	\$ 77,900.00	\$ 117,900.00	\$ 62,400.00	\$75,200.00
		2000'	\$ 34,200.00	\$ 102,300.00	\$ 90,400.00	\$ 136,700.00	\$ 72,300.00	\$87,200.00
		3000'	\$ 38,900.00	\$ 116,400.00	\$ 102,800.00	\$ 155,600.00	\$ 82,300.00	\$99,200.00
		4000'	\$ 43,600.00	\$ 130,500.00	\$ 115,300.00	\$ 174,400.00	\$ 92,300.00	\$111,200.00
		5000'	\$ 48,300.00	\$ 144,600.00	\$ 127,700.00	\$ 193,300.00	\$ 102,300.00	\$123,200.00
1.3.0	Runway Lighting:							
1.3.1	High Intensity Runway Edge Lighting ⁵							
1.3.2	Medium Intensity Runway Edge Lighting							
		1000'	\$56,300.00	\$69,000.00	\$62,100.00	\$65,000.00	\$62,600.00	\$63,000.00
		2000'	\$97,900.00	\$126,300.00	\$111,900.00	\$117,700.00	\$113,000.00	\$113,360.00
		3000'	\$139,500.00	\$183,600.00	\$161,600.00	\$170,400.00	\$163,400.00	\$163,700.00
		4000'	\$181,100.00	\$240,900.00	\$211,400.00	\$223,000.00	\$213,800.00	\$214,040.00
		5000'	\$222,800.00	\$298,200.00	\$261,100.00	\$275,700.00	\$264,200.00	\$264,400.00
	Wind Cone	EA	\$ 10,000.00	\$ 8,800.00	\$ 13,800.00	\$ 15,000.00	\$ 22,200.00	\$14,000.00
	Segmented Circle	EA	\$ -	\$ -	\$ 4,000.00	\$ 20,200.00	\$ -	\$12,100.00
	Beacon	EA	\$ -	\$ 10,900.00	\$ 7,500.00	\$ -	\$ -	\$9,200.00
	Beacon Tower	EA	\$ -	\$ 40,600.00	\$ 34,200.00	\$ -	\$ 93,800.00	\$56,200.00
	Radio Control Equipment	EA	\$ -	\$ 6,000.00	\$ -	\$ 4,200.00	\$ -	\$5,100.00
	PAPI	EA	\$ -	\$ 13,600.00	\$ 14,700.00	\$ 23,700.00	\$ 20,700.00	\$18,200.00
	REIL	EA	\$ -	\$ 22,300.00	\$ 17,000.00	\$ 14,700.00	\$ 9,200.00	\$15,800.00
	Regulator Building	EA	\$ -	\$ 33,300.00	\$ 93,100.00	\$ 51,800.00	\$ 41,600.00	\$55,000.00
1.3.3	Regulators	0.5 KW/1000'	\$ 150.00	\$ 200.00	\$ 60.00	\$ 100.00	\$ 40.00	\$110.00
1.4.0	Drainage:							
	6" PVC Underdrain	LF	\$ -	\$ 19.17	\$ 11.25	\$ 16.80	\$ 23.67	\$17.72
	48" Manholes	EA	\$ 3,400.00	\$ 2,600.00	\$ 2,900.00	\$ 2,700.00	\$ 2,800.00	\$2,880.00
	8" Conc. Pipe	LF	\$ 45.00	\$ -	\$ 37.00	\$ -	\$ -	\$41.00
	12" Conc. Pipe	LF	\$ 44.00	\$ 46.00	\$ 42.00	\$ 33.00	\$ 27.00	\$38.00
	Catch Basins (Standard Duty)	EA	\$ 2,100.00	\$ 2,000.00	\$ 1,500.00	\$ 2,400.00	\$ 1,700.00	\$1,900.00
	Catch Basins (Aircraft Rated)	EA	\$ -	\$ 2,700.00	\$ 3,500.00	\$ -	\$ -	\$3,100.00

ODA - Cost Estimating Unit Prices¹

Updated: July 17, 2009

No.	Item	Unit ^{2,3}	Region					Avg. ⁴
			1	2	3	4	5	
1.5.0	Fencing:							
	Barbed Wire Fence	LF	\$ -	\$ 4.00	\$ -	\$ -	\$ -	\$4.00
	6' Security Fence	LF	\$ 19.00	\$ 24.00	\$ 25.00	\$ 13.00	\$ 20.00	\$20.00
	Wildlife Fence	LF	\$ -	\$ 25.00	\$ 15.00	\$ -	\$ -	\$20.00
	Double Swing Gates	EA	\$ 1,900.00	\$ 1,320.00	\$ 2,470.00	\$ 2,740.00	\$ 1,210.00	\$1,930.00
	Automatic Vehicle Gates	EA	\$ 22,000.00	\$ 18,200.00	\$ 23,500.00	\$ -	\$ 17,500.00	\$20,300.00
1.6.0	Seeding	AC	\$ 2,900.00	\$ 1,900.00	\$ 2,100.00	\$ 2,600.00	\$ 4,800.00	\$2,900.00
1.7.0	Auto Parking Area	SY	\$ 72.00	\$ 40.00	\$ 61.00	\$ 20.00	\$ 23.00	\$43.00
1.8.0	24' Access Road (No Curbs)	LF	\$ 136.00	\$ 82.00	\$ 120.00	\$ 49.00	\$ 55.00	\$88.00
1.9.0	Mobilization (% of Total Const.)	8.7%						
1.10.0	Surveying (% of Total Const.)	3.8%						
1.11.0	Temporary Flagging & Marking	2.0%	(Not from Bid Tabs)					
2.0	Soft Costs							
2.1.0	Engineering	10.0%						
2.2.0	Inspection	10.0%						
2.3.0	Administration	5.0%						
3.0	Contingency	15%	to	25%	(Depending on Confidence)			

Notes:

¹ Unit prices were developed by compiling bid information from Airport Improvement Projects in Oregon between 2003 and 2008

² Bid tabulation information was manipulated to maintain consistent unit price information.

³ See unit price table for thickness and design assumptions

⁴ Blanks indicate no unit price information available from the Region, use average.

⁵ Costs for HIRL were not markedly different from MIRL Systems

P:\Oregon Department of Aviation\034279\Study\Cost Estimates\ODA-2009-Proj Costs.xlsx\Unit Prices

ODA - Cost Estimating Unit Prices

Update By: **WHPacific, Inc.**
 Date: **7/17/2009**

Background:

- 1 Unit prices were developed by compiling bid information from 172 airport improvement projects in Oregon between 2003 and 2008.
- 2 Bid tabulation information was manipulated to maintain consistent unit price information.

1.10 Airfield Paving:

Small Aircraft < 12,500 lb:

1.1.1 Asphalt New Construction:

Bid Summary Line Item	Asphalt (in)	Base (in)	Subbase (in)	Excavation (in)	
	37	31	27	17	
	2	3	7	1.5	
Unit Weight (lb/ft ³)	150				
Unit	Ton	CY	CY	CY	
Quantity/SY	0.11	0.08	0.19	0.50	Total/SY
Region 1 Cost	\$ 8.63	\$ 7.38	\$ 3.76	\$ 10.81	\$ 30.58
Region 2 Cost	\$ 8.17	\$ 1.95	\$ 4.47	\$ 6.48	\$ 21.06
Region 3 Cost	\$ 8.65	\$ 5.64	\$ 4.95	\$ 5.19	\$ 24.44
Region 4 Cost	\$ 6.77	\$ -	\$ 4.77	\$ 4.72	\$ 16.26
Region 5 Cost	\$ 7.27	\$ -	\$ 4.54	\$ 5.97	\$ 17.78

Assumptions: 1 Figure 5-2 AC150/5320-6D
 2 CBR 6-7 (Soil Classification)

1.1.2 Portland Cement Concrete New Construction:

Bid Summary Line Item	Concrete (in)	Base (in)	Excavation (in)	
	43	31	17	
Thickness	6	4	1.5	
Unit	SY	CY	CY	
Quantity/SY	1.00	0.11	0.50	Total/SY
Region 1 Cost		\$ 9.84	\$ 5.41	\$ 15.25
Region 2 Cost	\$ 68.00	\$ 2.60	\$ 6.48	\$ 77.08
Region 3 Cost		\$ 7.52	\$ 5.19	\$ 12.72
Region 4 Cost		\$ -	\$ 4.72	\$ 4.72
Region 5 Cost	\$ 81.00	\$ -	\$ 5.97	\$ 86.97

Assumptions: 1 Figure 5-2 AC150/5320-6D
 2 CBR 6-7 (Soil Classification)
 3 No bid information available for Regions 1,3&4

1.1.3 Runway/Taxiway Overlay

Asphalt (in)	Crack Seal (lf)
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ODA - Cost Estimating Unit Prices

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Date: 7/17/2009

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Bid Summary Line Item	37	11		
	3			
Unit Weight (lb/ft ³)	150			
Unit	Ton	lf		
Quantity/SY	0.17	1.00	Total	
Region 1 Cost	\$ 12.94	\$ 1.08	\$	14.02
Region 2 Cost	\$ 12.25	\$ 1.62	\$	13.87
Region 3 Cost	\$ 12.98	\$ 1.67	\$	14.65
Region 4 Cost	\$ 10.16	\$ 2.51	\$	12.68
Region 5 Cost	\$ 10.90	\$ 1.15	\$	12.05
Average			\$	13.00

Assumptions: 1 Nominal 2" overlay w/extra 1" for paving fabric

Larger Aircraft > 12,500 lb <100,000 lb:

1.1.4 Asphalt Paving:

	Asphalt (in)	Base (in)	Subbase (in)	Excavation (in)		
Bid Summary Line Item	37	31	27	17		
	4	4	11	1.5		
Unit Weight (lb/ft ³)	150					
Unit	Ton	CY	CY	CY		
Quantity/SY	0.23	0.11	0.31	0.50	Total	
Region 1 Cost	\$ 17.26	\$ 9.84	\$ 5.91	\$ 5.41	\$	38.42
Region 2 Cost	\$ 16.34	\$ 2.60	\$ 7.02	\$ 6.48	\$	32.43
Region 3 Cost	\$ 17.31	\$ 7.52	\$ 7.78	\$ 5.19	\$	37.81
Region 4 Cost	\$ 13.55	\$ -	\$ -	\$ 4.72	\$	18.27
Region 5 Cost	\$ 14.54	\$ -	\$ -	\$ 5.97	\$	20.51

Assumptions: 1 Figure 3-2 AC150/5320-6D
 2 CBR 6-7
 3 45,000 lb single wheel at 5000 Departures

1.1.5 PCC Paving:

	Concrete (in)	Base (in)	Excavation (in)	
Bid Summary Line Item	42	31	17	
Thickness	14	4	2	
Unit	SY	CY	CY	
Quantity/SY	1.00	0.11	0.67	Total

ODA - Cost Estimating Unit Prices

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Region 1 Cost	\$	-	\$	2.64	\$	7.21	\$	-
Region 2 Cost	\$	-	\$	2.60	\$	8.63	\$	-
Region 3 Cost	\$	-	\$	7.52	\$	6.92	\$	-
Region 4 Cost	\$	-	\$	-	\$	6.29	\$	-
Region 5 Cost	\$	-	\$	-	\$	7.96	\$	-

- Assumptions:
- 1 Figure 5-2 AC150/5320-6D
 - 2 CBR 6-7
 - 3 No bid information available for Regions 1,3&4

1.1.8 Tie-down Positions:

Bid Summary Line Item	Anchors		Paint		Total	
	56	51	51	51		
Unit	EA	SF	SF	SF		
Quantity/Per Position	3.00	20.50				
Region 1 Cost	\$	-	\$	12.39	\$	12.39
Region 2 Cost	\$	960.00	\$	37.08	\$	997.08
Region 3 Cost	\$	611.00	\$	32.74	\$	643.74
Region 4 Cost	\$	611.00	\$	49.55	\$	660.55
Region 5 Cost	\$	825.00	\$	26.22	\$	851.22

Note: Region 3 & 4 estimated to be average of other regions

1.2.0 Runway Painting:

Runway Width (ft)	<u>60</u>	<u>75</u>	<u>100</u>	<u>150</u>	
Numbers (16-34)	2270	2270	2270	2270	SF
Aiming Points	7200	9000	12000	18000	SF
Threshold Bars	6900	10350	13800	20700	SF
Threshold	600	750	1000	1500	SF
Centerline/1000 LF:					
12"	0.6	SF/LF	Visual		
18"	0.9	SF/LF	Non-Precision		
36"	1.8	SF/LF	Precision		
Edge Stripes/1000 L	3	3	6	6	SF/LF
Displaced Threshold	822	822	1096	1096	SF/End

1.2.1 Visual Runway: (Numbers and 12" Centerline Stripes)

ODA - Cost Estimating Unit Prices

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1000	2870	2870	2870	2870
2000	3470	3470	3470	3470
3000	4070	4070	4070	4070
4000	4670	4670	4670	4670
5000	5270	5270	5270	5270

1.2.2 Non-Precision: (Threshold Bars, Numbers, Aiming Points and 18" Centerline Stripes)

1000	17270	22520	28970	41870
2000	18170	23420	29870	42770
3000	19070	24320	30770	43670
4000	19970	25220	31670	44570
5000	20870	26120	32570	45470

1.2.3 Precision: (Threshold Bars, Numbers, Aiming Points, Edge Stripes and 36" centerline Stripes)

1000	21170	26420	35870	48770
2000	25970	31220	43670	56570
3000	30770	36020	51470	64370
4000	35570	40820	59270	72170
5000	40370	45620	67070	79970

1.3.0 Runway Lighting:

1.3.1 HIRL

	Threshold Lts.	Edge Lts.
Bid Summary Line Item	126	125
Quantity	16	10
Unit	/1000'	/1000'

	16	10	Total	2000	3000	4000	5000
Lights/1000'	16	10	Total	2	3	4	5
Region 1	\$15,680.00	\$9,800.00	\$57,950.00	\$67,885.98	\$77,821.95	\$87,757.93	\$97,693.90
Region 2	\$6,400.00	\$4,000.00	\$60,472.40	\$64,608.37	\$68,744.35	\$72,880.32	\$77,016.30
Region 3	\$0.00	\$0.00	\$0.00	\$135.98	\$271.95	\$407.93	\$543.90
Region 4	\$0.00	\$0.00	\$0.00	\$135.98	\$271.95	\$407.93	\$543.90
Region 5	\$0.00	\$0.00	\$0.00	\$135.98	\$271.95	\$407.93	\$543.90

1.3.2 MIRL

	Threshold Lts.	Edge Lts.	Conduit	#8 5KV	Ground	Regulator				
Bid Summary Line Item	126	125	137	147	148					
Quantity	16	10	2000	2000	2000	0.045				
Unit	Per 1000'	Per 1000'	Per 1000'	Per 1000'	Per 1000'	KW/LT	(Note: KW = Kilowatt)			
1000		10	2,000	2,130	2,000	1.17		2000	3000	4000
										5000

ODA - Cost Estimating Unit Prices

Update By: **WHPacific, Inc.**
Date: **7/17/2009**

Background:

- 1 Unit prices were developed by compiling bid information from 172 airport improvement projects in Oregon between 2003 and 2008.
- 2 Bid tabulation information was manipulated to maintain consistent unit price information.

<u>Number per 1000'</u>	16	10	2,000	1,050	2,000	0.45	Total	2	3	4	5
Region 1	\$14,426.67	\$9,016.67	\$ 26,800.00	\$3,080.00	\$2,590.00	\$353.54	\$56,266.87	\$97,889.51	\$139,512.15	\$181,134.79	\$222,757.44
Region 2	\$11,364.96	\$7,103.10	\$ 42,876.57	\$3,482.50	\$3,713.33	\$462.38	\$69,002.84	\$126,314.31	\$183,625.79	\$240,937.26	\$298,248.74
Region 3	\$12,372.00	\$7,732.50	\$ 34,460.00	\$3,712.00	\$3,713.33	\$129.84	\$62,119.67	\$111,873.48	\$161,627.29	\$211,381.10	\$261,134.90
Region 4	\$12,266.67	\$7,666.67	\$ 36,839.33	\$4,292.00	\$3,730.00	\$238.50	\$65,033.17	\$117,697.14	\$170,361.12	\$223,025.09	\$275,689.07
Region 5	\$12,182.40	\$7,614.00	\$ 34,037.78	\$5,034.00	\$3,593.33	\$89.99	\$62,551.50	\$112,966.59	\$163,381.67	\$213,796.76	\$264,211.84

1.3.3 Regulators:		Region 1		Region 2		Region 3		Region 4		Region 5	
<u>KW</u>	<u>Unit Price</u>	<u>\$/KW</u>	<u>Unit Price</u>	<u>\$/KW</u>	<u>Unit Price</u>	<u>\$/KW</u>	<u>Unit Price</u>	<u>\$/KW</u>	<u>Unit Price</u>	<u>\$/KW</u>	
7.5	\$ 4,532.50	\$604.33	\$ 1,807.43	\$240.99	\$ 2,496.88	\$332.92	\$ 1,879.33	\$250.58	\$ 1,730.56	\$230.74	
10	\$ -	\$0.00	\$ 10,000.00	\$1,000.00	\$ -	\$0.00	\$ -	\$0.00	\$ -	\$0.00	
15	\$ -		\$ -	\$0.00	\$ 10,546.25		\$ 11,530.00	\$768.67	\$ -	\$ -	
20	\$ -		\$ 14,700.00	\$735.00	\$ -	\$0.00	\$ -	\$0.00	\$ -	\$ -	
30	\$ -		\$ -	\$0.00	\$ 12,620.00		\$ -	\$0.00	\$ -	\$0.00	
Average \$/KW		\$302.17		\$395.20		\$110.97		\$203.85		\$76.91	

1.7.0 Auto Parking Area

Bid Summary Line Item	Asphalt (in)	Base (in)	Subbase (in)	Excavation (in)	Lighting	Drainage	Curbs	Total
	37	31	27	17				
	3	12	1.5					
Unit Weight (lb/ft ³)	150							
Unit	Ton	CY	CY	Subtotal				
Quantity/SY	0.17	0.33	0.50	Pvmt				
Region 1 Cost	\$ 12.94	\$ 29.53	\$ 10.81	\$ 53.29	10%	10%	15%	\$ 71.94
Region 2 Cost	\$ 12.25	\$ 7.80	\$ 6.48	\$ 26.53	10%	25%	15%	\$ 39.79
Region 3 Cost	\$ 12.98	\$ 22.57	\$ 5.19	\$ 40.74	10%	25%	15%	\$ 61.12
Region 4 Cost	\$ 10.16	\$ -	\$ 4.72	\$ 14.88	10%	10%	15%	\$ 20.09
Region 5 Cost	\$ 10.90	\$ -	\$ 5.97	\$ 16.87	10%	10%	15%	\$ 22.78

1.8.0 24' Access Road (No Curbs)

Bid Summary Line Item	Asphalt (in)	Base (in)	Subbase (in)	Excavation (in)	Total
	37	31	27	17	
	4	12	1.5		
Unit Weight (lb/ft ³)	150				
Unit	Ton	CY	CY		
Quantity/LF	0.60	0.89	1.33	Total	

ODA - Cost Estimating Unit Prices

Update By:

WHPacific, Inc.

Date:

7/17/2009

Background:

- 1 Unit prices were developed by compiling bid information from 172 airport improvement projects in Oregon between 2003 and 2008.
- 2 Bid tabulation information was manipulated to maintain consistent unit price information.

Region 1 Cost	\$	46.02	\$	78.76	\$	10.81	\$	135.59
Region 2 Cost	\$	43.56	\$	20.80	\$	17.27	\$	81.63
Region 3 Cost	\$	46.15	\$	60.20	\$	13.84	\$	120.19
Region 4 Cost	\$	36.13	\$	-	\$	12.58	\$	48.71
Region 5 Cost	\$	38.76	\$	-	\$	15.92	\$	54.69

2003-2008 Bid Tabulation Summary

Line	Bid Item	Unit	Region 1		Region 2		Region 3		Region 4		Region 5	
			13		21		21		21		21	
			Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount
1	Mobilization (% of Total Const.)			0.0%		12.1%		8.0%		11.7%		11.5%
2	Surveying (% of Total Const.)			3.9%		2.7%		4.5%		4.0%		4.1%
3												
4	P-151											
5	Clearing & Grubbing	AC	3	\$ -	46	\$ 9,643.33	30	\$ 4,196.67	26	\$ 2,334.00	38	\$ 2,234.91
6												
7	P-101											
8	Asphalt Pavement Grinding (Unknown Depth)	SY	0	\$ -	12578	\$ 4.00	2852	\$ 8.58	25180	\$ 5.03	12754	\$ 4.34
9	Asphalt Pavement Removal (Unknown Depth)	SY	27431	\$ 10.01	54813	\$ 4.34	157470	\$ 4.16	124496	\$ 2.13	33481	\$ 5.73
10	Concrete Pavement Removal (Unknown Depth)	SY	430	\$ 5.12	300	\$ 13.00	133	\$ 8.00	1915	\$ 3.25	44995	\$ 6.24
11	Pavement Crack Sealing	LF	58925	\$ 1.08	341038	\$ 1.62	255613	\$ 1.67	245068	\$ 2.51	336261	\$ 1.15
12	Petrotac	SY	0	\$ -	8063	\$ 2.80	0	\$ -	0	\$ -	0	\$ -
13	AC Pulverization	SY	36318	\$ 0.55	98475	\$ 0.50	15025	\$ 1.00	56490	\$ 2.35	71073	\$ 1.50
14	Pavement Milling 3-4"	SY	26263	\$ 21.29	85200	\$ 4.00	0	\$ -	4850	\$ 3.10	5817	\$ 2.27
15												
16	P-152											
17	Unclassified Excavation	CY	45486	\$ 10.81	674776	\$ 12.95	136881	\$ 10.38	225763	\$ 9.43	122687	\$ 11.94
18	Unsuitable Excavation	CY	3713	\$ 19.70	17852	\$ 19.01	62666	\$ 10.55	3860	\$ 12.00	24205	\$ 20.58
19	Rock Excavation	CY	0	\$ -	0	\$ -	0	\$ -	4680	\$ 21.80	1645	\$ 50.74
20	Top Soil	CY	8432	\$ 19.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -
21	AC Pavement Removal	SY	19640	\$ 3.00	0	\$ -	0	\$ -	0	\$ -	440	\$ 6.00
22	Geotextile Fabric	SY	83584	\$ 0.85	439064	\$ 0.95	57417	\$ 1.16	122791	\$ 1.37	6630	\$ 1.50
23	Shoulder Grading	LF	0	\$ -	7350	\$ 1.50	2780	\$ 1.00	0	\$ -	25200	\$ 3.90
24	Rip-Rap	TN	0	\$ -	1300	\$ 59.10	789	\$ 54.00	335	\$ 32.00	0	\$ -
25												
26	P-154											
27	Subbase Course	CY	7897	\$ 19.33	345878	\$ 22.98	54512	\$ 25.47	87843	\$ 20.18	49992	\$ 31.06
28												
29	P-209											
30	Aggregate Base (37.5mm-0)	CY	24155	\$ 23.74	62817	\$ 29.48	28433	\$ 36.55	56752	\$ 25.76	45897	\$ 28.90
31	Aggregate Base (19.0mm-0)	CY	13	\$ 88.60	465	\$ 23.40	922	\$ 67.72	0	\$ -	0	\$ -
32												
33	P-304											
34	Cement Treated Base	SY	55360	\$ 8.55	289155	\$ 12.01	18430	\$ 11.91	10500	\$ 85.00	0	\$ -
35												
36	P-401											
37	Bituminous Surface Course	TN	29370	\$ 76.71	113751	\$ 72.60	105006	\$ 76.92	26585	\$ 60.22	41614	\$ 64.61
38												
39	Emulsified Asphalt Pavement (Cold Mix AC)	SY	0	\$ -	1802	\$ 12.63	132051	\$ 0.85	0	\$ -	0	\$ -
40												
41	P-501											
42	PCC Pavement - 14"	SY	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
43	PCC Pavement - 6"	SY	0	\$ -	2310	\$ 68.00	11970	\$ 184.97	555	\$ 53.00	3365	\$ 81.00
44												
45	P-605											
46	PCC Joint Sealing (New PCC)	LF	0	\$ -	0	\$ -	0	\$ -	3200	\$ 6.71	0	\$ -
47	PCC Joint Sealing (Exist. PCC)	LF	0	\$ -	20466	\$ 5.00	48692	\$ 2.05	257	\$ 5.06	0	\$ -
48	Spall Repair	SF	0	\$ -	368	\$ 50.00	1100	\$ 19.00	0	\$ -	9	\$ 125.00
49												
50	P-620											
51	Runway/Taxiway Painting	SF	165598	\$ 0.60	564295	\$ 1.81	440110	\$ 1.60	323523	\$ 2.42	558802	\$ 1.28

2003-2008 Bid Tabulation Summary

Line	Bid Item	Unit	Region 1		Region 2		Region 3		Region 4		Region 5	
			Bid Tabs 13		Bid Tabs 21		Bid Tabs 21		Bid Tabs 21		Bid Tabs 21	
			Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount
52	Paint Removal	SF	5466	\$ 3.93	207492	\$ 1.47	103283	\$ 2.28	81014	\$ 1.98	132166	\$ 2.89
53												
54	Misc:											
55	Pavement Grooving	SY	0	\$ -	86378	\$ 0.90	138982	\$ 1.06	0	\$ -	0	\$ -
56	Tie-Down Anchors (AC)	EA	0	\$ -	9	\$ 320.00	68	\$ 312.50	244	\$ 193.73	48	\$ 275.00
57	Tie-Down Anchors (PCC)	EA	0	\$ -	42	\$ 500.00	0	\$ -	0	\$ -	0	\$ -
58	Retaining Wall - Econo Block	SF	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
59	Jet Fuel Resistant Seal Coat	SY	0	\$ -	0	\$ -	0	\$ -	0	\$ -	168310	\$ 62.08
60	Aircraft Washdown Pad (PCC-6")	LS	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
61	Tree Removal	EA	411	\$ 237.00	8	\$ 1,483.33	0	\$ -	0	\$ -	0	\$ -
62	Terminal Area Parking Lot	SY	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
63												
64	P-626											
65	Slurry Seal	SY	0	\$ -	124098	\$ 1.68	356597	\$ 1.42	383106	\$ 1.17	110334	\$ 1.37
66												
67	D-701											
68	8" Concrete Pipe	LF	640	\$ 45.00	0	\$ -	117	\$ 37.38	0	\$ -	0	\$ -
69	8" Ductile Iron Pipe	LF	0	\$ -	120	\$ 33.35	0	\$ -	0	\$ -	311	\$ 49.13
70	8" PVC Pipe	LF	5907	\$ 7.50	1362	\$ 24.63	0	\$ -	2880	\$ 12.30	155	\$ 39.97
71	12" Concrete Pipe	LF	1126	\$ 43.50	1537	\$ 45.96	2494	\$ 42.29	1753	\$ 33.20	1095	\$ 27.33
72	12" Ductile Iron Pipe	LF	0	\$ -	120	\$ 130.00	2055	\$ 82.62	1915	\$ 29.67	447	\$ 30.00
73	12" HDPE Pipe	LF	178	\$ 43.00	284	\$ 44.80	558	\$ 27.50	1540	\$ 45.00	0	\$ -
74	12" PVC Pipe	LF	0	\$ -	1347	\$ 31.32	180	\$ 19.44	0	\$ -	1300	\$ 37.14
75	15" Concrete Pipe	LF	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
76	15" HDPE Pipe	LF	1754	\$ 34.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -
77	15" PVC Pipe	LF	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
78	18" Concrete Pipe	LF	265	\$ 46.50	1008	\$ 65.10	2511	\$ 47.75	4705	\$ 38.00	0	\$ -
79	18" HDPE Pipe	LF	679	\$ 45.00	110	\$ 58.00	110	\$ 39.25	0	\$ -	0	\$ -
80	21" Concrete Pipe	LF	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
81	21" HDPE Pipe	LF	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
82	24" Concrete Pipe	LF	772	\$ 54.00	155	\$ 78.00	1564	\$ 68.67	1357	\$ 46.67	0	\$ -
83	24" HDPE Pipe	LF	1262	\$ 60.50	0	\$ -	0	\$ -	0	\$ -	0	\$ -
84	27" Concrete Pipe	LF	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
85	30" Concrete Pipe	LF	0	\$ -	70	\$ 110.00	0	\$ -	0	\$ -	0	\$ -
86	30" HDPE Pipe	LF	0	\$ -	0	\$ -	124	\$ 62.50	0	\$ -	0	\$ -
87	36" Concrete Pipe	LF	0	\$ -	0	\$ -	170	\$ 104.00	1797	\$ 90.00	0	\$ -
88	42" Concrete Pipe	LF	0	\$ -	0	\$ -	0	\$ -	187	\$ 88.00	0	\$ -
89	42" PVC Pipe	LF	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
90	48" Concrete Pipe	LF	0	\$ -	0	\$ -	0	\$ -	80	\$ 206.00	0	\$ -
91	60" Concrete Pipe	LF	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
92	Trench Excavation	LF	56	\$ 42.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -
93	Trench Drain	LF	2	\$ 900.00	255	\$ 98.67	0	\$ -	0	\$ -	0	\$ -
94	Valley Gutter	LF	0	\$ -	0	\$ -	1764	\$ 41.25	140	\$ 66.20	0	\$ -
95							0	\$ -				
96	D-705											
97	6" PVC Underdrain	LF	0	\$ -	62246	\$ 19.17	14718	\$ 11.25	15500	\$ 16.80	11803	\$ 23.67
98												
99	D-751											
100	Type 1 Catch Basin	EA	6	\$ 2,060.00	28	\$ 2,027.10	33	\$ 1,505.00	32	\$ 2,448.93	10	\$ 1,702.50
101	Type 1L Catch Basin	EA	0	\$ -	5	\$ 1,600.00	24	\$ 1,603.75	6	\$ 1,050.00	0	\$ -
102	Heavy Aircraft Rated Catch Basins	EA	0	\$ -	31	\$ 2,725.00	3	\$ 3,500.00	0	\$ -	0	\$ -

2003-2008 Bid Tabulation Summary

Line	Bid Item	Unit	Region 1		Region 2		Region 3		Region 4		Region 5	
			Bid Tabs 13		Bid Tabs 21		Bid Tabs 21		Bid Tabs 21		Bid Tabs 21	
			Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount
103	48" Manhole	EA	13	\$ 3,365.00	10	\$ 2,574.00	12	\$ 2,940.00	57	\$ 2,707.20	6	\$ 2,845.00
104	60" Manhole	EA	8	\$ 5,870.00	1	\$ 2,800.00	5	\$ 4,400.00	13	\$ 4,225.00	0	\$ -
105	72" Manhole	EA	0	\$ -	0	\$ -	0	\$ -	8	\$ 5,608.33	0	\$ -
106												
107	F-162											
108	Barbed Wire Fence	LF	0	\$ -	1200	\$ 3.83	0	\$ -	0	\$ -	0	\$ -
109	4' Chain Link Fence	LF	0	\$ -	0	\$ -	0	\$ -	930	\$ 23.00	1433	\$ 22.14
110	6' Chain Link Fence	LF	5508	\$ 18.70	43294	\$ 23.99	11732	\$ 24.77	1900	\$ 13.47	4569	\$ 19.90
111	8' Chain Link Fence	LF	0	\$ -	14844	\$ 17.00	0	\$ -	0	\$ -	0	\$ -
112	10' Game Fence	LF	0	\$ -	6926	\$ 25.00	400	\$ 15.00	0	\$ -	0	\$ -
113	4'-5' Ped. Gate	EA	2	\$ 1,942.50	15	\$ 1,029.85	5	\$ 1,838.33	0	\$ -	1	\$ 380.00
114	12'-16' Single Swing Gate	EA	1	\$ 1,060.00	10	\$ 1,978.80	5	\$ 1,950.00	1	\$ 3,000.00	1	\$ 840.00
115	20'-30' Double Swing Gate	EA	1	\$ 1,900.00	9	\$ 1,319.50	4	\$ 2,470.00	4	\$ 2,743.67	1	\$ 1,208.90
116	Automated Vehicle Gate	EA	2	\$ 22,000.00	9	\$ 18,206.79	1	\$ 23,478.00	0	\$ -	1	\$ 17,502.56
117												
118	T-901											
119	Seeding	AC	59	\$ 2,859.17	397	\$ 1,926.65	99	\$ 2,072.25	160	\$ 2,583.33	33	\$ 4,816.05
120												
121	Electrical:											
122	L-850C Semi-Flush HIRL	EA	9	\$ 1,115.00	3	\$ 1,125.00	0	\$ -	0	\$ -	0	\$ -
123	L-862 Elevated HIRL	EA	5	\$ 980.00	56	\$ 400.00	0	\$ -	0	\$ -	0	\$ -
124	L-862E Elevated Threshold HIRL	EA	0	\$ -	17	\$ 2,712.50	0	\$ -	0	\$ -	0	\$ -
125	L-861 Med. Intensity Elevated Edge Lights	EA	179	\$ 901.67	625	\$ 710.31	236	\$ 773.25	138	\$ 766.67	62	\$ 761.40
126	L-861 Med. Intensity Elevated Edge Lights - Split Len	EA	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
127	L-861 Stake Mounted Elevated Edge Lights	EA	0	\$ -	3	\$ 1,500.00	0	\$ -	0	\$ -	8	\$ 510.00
128	L-867 Junction Can	EA	11	\$ 777.50	64	\$ 635.47	5	\$ 582.50	17	\$ 766.67	56	\$ 551.62
129	Re-install T/W Edge Lights	EA	470	\$ 800.00	178	\$ 850.00	206	\$ 845.00	0	\$ -	0	\$ -
130	Edge Reflectors	EA	30	\$ 15.00	161	\$ 136.25	149	\$ 109.08	549	\$ 83.00	662	\$ 136.87
131	Lighted Guidance Signs	EA	51	\$ 3,374.40	100	\$ 4,392.50	15	\$ 4,889.20	29	\$ 3,035.50	4	\$ 7,600.00
132	Retroreflective Non-Lighted Guidance Signs	EA	3	\$ 350.00	856	\$ 400.17	40	\$ 200.00	19	\$ 420.00	2	\$ 2,450.00
133	Re-install Directional Signs	EA	0	\$ -	95	\$ 250.00	38	\$ 1,618.00	0	\$ -	0	\$ -
134	Runway Distance Remaining Signs	EA	0	\$ -	5	\$ 3,100.00	0	\$ -	0	\$ -	0	\$ -
135	Adjust In-pavement Approach Lights	EA	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
136	Med. Intensity In-pavement edge lights	EA	0	\$ -	1	\$ 1,602.93	0	\$ -	5	\$ 2,775.00	0	\$ -
137	Trenching	LF	1440	\$ 4.50	28086	\$ 14.17	31487	\$ 14.16	27005	\$ 10.90	17835	\$ 9.98
138	Trenching (Paved Areas)	LF	0	\$ -	9732	\$ 23.79	325	\$ 14.98	170	\$ 25.00	632	\$ 44.12
139	Trench Backfill - Gravel	CY	400	\$ 17.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -
140	1" PVC Conduit	LF	300	\$ 8.50	226	\$ 32.00	0	\$ -	0	\$ -	850	\$ 4.45
141	1 1/4" PVC Conduit	LF	16700	\$ 6.80	0	\$ -	0	\$ -	0	\$ -	0	\$ -
142	2" PVC Conduit	LF	16581	\$ 8.90	58905	\$ 7.27	44883	\$ 3.07	45855	\$ 7.52	16920	\$ 7.03
143	3" PVC Conduit	LF	0	\$ -	2390	\$ 9.25	645	\$ 3.62	34225	\$ 9.30	360	\$ 4.45
144	4" PVC Conduit	LF	0	\$ -	1470	\$ 7.37	7330	\$ 4.16	10460	\$ 9.25	1956	\$ 7.78
145	1 1/2" RGS Conduit	LF	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
146	2" RGS Conduit	LF	550	\$ 2.00	0	\$ -	0	\$ -	0	\$ -	0	\$ -
147	#8 5KV Cable	LF	83339	\$ 1.54	104722	\$ 1.74	94877	\$ 1.86	63760	\$ 2.15	20967	\$ 2.52
148	Counterpoise	LF	2200	\$ 1.25	29350	\$ 1.30	8704	\$ 1.86	51460	\$ 1.87	9657	\$ 1.80
149	Concrete Encasement	LF	1125	\$ 46.50	3457	\$ 18.61	4295	\$ 22.10	4060	\$ 23.50	2687	\$ 15.79
150	Hand Hole	EA	22	\$ 4,532.50	96	\$ 1,807.43	100	\$ 2,496.88	69	\$ 1,879.33	18	\$ 1,730.56
151	7.5 KW Regulator	EA	0	\$ -	1	\$ 10,000.00	0	\$ -	0	\$ -	0	\$ -
152	10 KW Regulator	EA	0	\$ -	0	\$ -	4	\$ 10,546.25	3	\$ 11,530.00	0	\$ -
153	15 KW Regulator	EA	0	\$ -	1	\$ 14,700.00	0	\$ -	0	\$ -	0	\$ -

2003-2008 Bid Tabulation Summary

Line	Bid Item	Unit	Region 1		Region 2		Region 3		Region 4		Region 5	
			Bid Tabs 13		Bid Tabs 21		Bid Tabs 21		Bid Tabs 21		Bid Tabs 21	
			Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount	Quantity Represented	Average Bid Amount
154	20 KW Regulator	EA	0	\$ -	0	\$ -	1	\$ 12,620.00	0	\$ -	0	\$ -
155	30 KW Regulator	EA	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
156	Vault Improvements	LS	0	\$ -	3	\$ 2,450.00	10	\$ 4,562.25	0	\$ -	0	\$ -
157	Electrical Building	LS	0	\$ -	3	\$ 33,333.33	2	\$ 93,104.50	2	\$ 51,835.00	1	\$ 41,626.00
158	Rotating Beacon	EA	0	\$ -	4	\$ 10,906.00	2	\$ 7,463.00	0	\$ -	0	\$ -
159	Beacon Tower	EA	0	\$ -	4	\$ 40,589.25	1	\$ 34,194.00	0	\$ -	1	\$ 93,764.30
160	Radio Control Equipment	EA	0	\$ -	3	\$ 6,032.50	0	\$ -	1	\$ 4,200.00	0	\$ -
161	PAPI	EA	1	\$ 29,200.00	6	\$ 13,625.70	2	\$ 14,736.00	1	\$ 23,695.00	5	\$ 20,668.63
162	REIL	EA	0	\$ -	4	\$ 22,336.17	3	\$ 16,970.33	2	\$ 14,693.50	3	\$ 9,169.52
163	Wind Cone & Segmented Circle	EA	0	\$ -	1	\$ 21,436.00	0	\$ -	0	\$ -	0	\$ -
164	Wind Cone 8'	EA	5	\$ 10,000.00	3	\$ 8,750.00	3	\$ 13,770.50	1	\$ 15,000.00	2	\$ 22,155.00
165	Segmented Circle	EA	0	\$ -	0	\$ -	1	\$ 3,950.00	2	\$ 20,225.00	0	\$ -

P:\Oregon Department of Aviation\034279\Study\Cost Estimates\ODA-2009-Proj Costs.xlsx\Unit Prices