

DESIGN APPROACH:

The design team developed several design guidelines for the work of this project. These provided a basic structure for the decision making as we looked at the design of the Trail.

- Respect historic alignment
- Use as much of the existing Historic Highway as possible
- Direct people to the “Beauty Spots”
- Minimize site disturbance - “lay lightly on the land”
- Minimize trail slopes over 5%
- Avoid straight lines
- Respond to the existing topographic features
- Minimize trail sections adjacent to Interstate 84

DESIGN PROCESS:

The recently completed LIDAR survey work and GIS data gathered by ODOT provided the planning team with detailed topography to determine the most viable route for the Trail. The survey information also allowed the team to undertake extensive fieldwork to pinpoint on the ground where the alignment will be and to fine tune that layout with information on actual field conditions. This refined alignment will allow the Trail to be field staked. Additional on the ground survey work can document existing trees, walls, old building foundations, edges of roads, etc. not captured by the LIDAR survey to allow further refinements of the alignment as the project moves into future phases of design work.

We conducted a site analysis phase to help identify possible trailhead areas and potential expansions to existing OPRD facilities along the trail alignment. The analysis also looked at how existing topography, vegetation, and cultural resources would affect the trail design. The “Beauty Spots” were also identified as part of this process.

AGENCY COORDINATION

Individual Meetings were held with OPRD, ODOT, and USFS to review individual agencies’ particular design and management concerns. The underlining issue shared between all agencies was the need to develop agreements for the design, construction, and management of the State Trail. Negotiations for these agreements between agencies should start immediately so they can be in place as funding becomes available for implementation of the plan.

PUBLIC INVOLVEMENT

- Two public open houses (Hood River and Portland)
- Presentation at the Historic Columbia River Highway Advisory Committee

ENVIRONMENTAL CONSTRAINTS ANALYSIS

A Preliminary Environmental Constraints Analysis was completed for the trail alignment; no fatal flaws were found in the design. The Environmental Constraints Analysis did identify several issues that will need to be addressed as the project moves forward.

- Cultural resources to be identified, documented, and addressed in the final design
- Existing streams with known salmon habitat
- Potential endangered species issues
- Several areas where wetland determinations need to be done



REQUIRED SMA SCENIC STANDARDS		
LANDSCAPE SETTING	LAND USE DESIGNATION	SCENIC STANDARD
Coniferous Woodland, Oak-Pine Woodland	Forest (National Forest Lands), Open Space	Not Visually Evident
River Bottomlands	Open Space	Not Visually Evident
Gorge Walls, Canyonlands, Wildlands	Forest, Agriculture, Public Recreation, Open Space	Not Visually Evident
Coniferous Woodland, Oak-Pine Woodland	Forest, Agriculture, Residential, Public Recreation	Visually Subordinate
Residential	Residential	Visually Subordinate
Pastoral	Forest, Agriculture, Public Recreation, Open Space	Visually Subordinate
River Bottomlands	Forest, Agriculture, Public Recreation	Visually Subordinate

COLUMBIA RIVER GORGE NATIONAL SCENIC AREA MANAGEMENT PLAN ANALYSIS

“Provide for the restoration and connection of the remaining segments of the Historic Columbia River highway in keeping with its National Register status.” Special Management Area Goal 4.

The CRGNSA Management Plan lists the completion of the Historic Columbia River Highway State Trail as one of its major goals, allowing development of the State Trail as a reconnection of the Historic Columbia River Highway. But the goal of completion of the Historic Highway State Trail does not eliminate

the need to comply with the other provisions of the Management Plan.

The entire 11 mile Historic Highway State Trail Plan was developed using the Columbia River Gorge National Scenic Area Management Plan as a guide and decision-making tool. The CRGNSA is divided into two management types; the General Management Area (GMA) and the Special Management Area (SMA), which is typically more restrictive. Both management areas protect scenic resources from designated “Key Viewing Areas.” Within each management area are different land use designations. The land use designation and ownership determines the scenic standard which must be met. All development in

GMA land use designations and some SMA land use designations must meet the “Visually Subordinate” scenic standard. Development in some SMA land use designations must meet the more restrictive “Not Visually Evident” scenic standard.

The project study area is primarily located in the SMA with a 1/2 mile section at the east end of the study area located in the GMA. The proposed trail alignment falls within several land use designations including SMA Forest, SMA Open Space and SMA Public Recreation and GMA Large-Scale Agriculture.

The SMA Scenic Standards matrix outlines what scenic standard applies within SMA land use designations.

In addition to land use designations, there are also landscape settings which determine the overall character of that landscape and provide guidance for new development to be consistent with that character. The Trail falls within several landscape settings including Coniferous Woodlands, River Bottom and Pastoral.

The CRGNSA Management Plan also identifies limits on recreational activities as defined by the Recreation Intensity Classification (RIC). RIC determines the types of recreational activities and the intensity of activities that are allowed at any particular location. RIC’s primary impacts on the HCRH State Trail Plan are at the Trailhead locations, where RIC determines how many parking spaces are allowed and what types of amenities can be provided. Each of the proposed trailheads within the plan address the current RIC and are designed within the existing limits.

The CRGNSA Management Plan guided several areas of the trail design:

- The recreation intensity classes affected the types of facilities and the numbers of vehicles that could be

accommodated at the various trailheads. Proposed trailheads are designed to be consistent with these guidelines

- The relationship of the proposed Trail to Key Viewing Areas will affect the final design of the Trail and trail elements such as walls and other structures
- The plan requires various setbacks and relationships to riparian areas and other important natural features and habitat areas
- Protection and Enhancement of Cultural Resources
- Protection and Enhancement of Natural Resources

Large portions of the 11 mile Trail will be visible from one or more Key Viewing Areas (KVA’s). These include the Columbia River, Interstate 84, Highway 14, and the Historic Columbia River Highway. Due to the challenging topography the proposed trail will involve numerous walls, bridges, and other structures, increasing the visibility of the proposed trail from these KVA’s.

Design Guidelines for trail sections visible from KVA’s:

- Walls located within the I-84 ROW will be constructed to the design standards in compliance with I-84 Corridor Design Guidelines as used at the Warrendale section of I-84
- Proposed structures, such as walls, should be non-reflective and use dark earth tones
- New trails and structures should be screened from KVA’s (using existing topography or existing vegetation as a first option followed by use of berms and finally, vegetation)



STATION	TRAIL SEGMENT	PROJECT COST
0+00 - 64+00	Section A Wyeth Trailhead to Shellrock Mountain	\$3,555,672.00
64+00 - 105+00	Section B Shellrock Mountain to Summit Creek	\$5,428,848.00
105+00 - 168+00	Section C Summit Creek to Lindsey Creek	\$5,967,633.00
168+00 - 235+35	Section D Lindsey Creek to Starvation Creek	\$5,074,648.00
300+45 - 420+60	Section E Viento to Mitchell Creek	\$8,372,923.00
420+60 - 457+00	Section F Mitchell Creek to Mitchell Point East	\$14,346,998.00
457+00 - 546+00	Section G Mitchell Point East to Ruthton Point	\$3,221,887.00
546+00 - 600+20	Section H Ruthton Point to Ruthton Park	\$5,929,497.00
Trail Construction Total (2014 costs)		\$51,898,106.00

SECTION A WYETH TRAILHEAD TO SHELLROCK MOUNTAIN
STATION 0+00 - 64+00 6400 L.F.

STATION	ITEM	QTY.	UNIT	PRICE PER	TOTAL
Trail Construction					
0+00 - 9+50	Entry Road Rehab	950	L.F.	\$35.00	\$33,250.00
9+50 - 64+00	Site Preparation/Clearing	3	Acre	\$8,500.00	\$25,500.00
9+50 - 64+00	Drainage (allowance)				\$15,000.00
9+50 - 64+00	New Trail (paving, base rock)	5,450	L.F.	\$60.00	\$327,000.00
22+00 - 25+00	Grading (cut and fill)	2,000	C.Y.	\$12.00	\$24,000.00
30+50 - 32+00	Retaining Walls (uphill)(8'-10' ht.)	150	L.F.	\$450.00	\$67,500.00
31+50 - 33+90	Retaining Walls (downhill)(6'-8')	240	L.F.	\$300.00	\$72,000.00
33+90 - 37+00	Retaining Wall (downhill) (3' ht.)	310	L.F.	\$230.00	\$71,300.00
31+50 - 37+00	Railing	550	L.F.	\$65.00	\$35,750.00
38+50 - 46+00	Grading (cut and fill)	4,000	C.Y.	\$25.00	\$100,000.00
46+00 - 61+00	Sideslope Construction	1,500	L.F.	\$160.00	\$240,000.00
46+00 - 61+00	Railing	1,500	L.F.	\$50.00	\$75,000.00
62+50 - 64+00	Extend Bin Wall (10'-12')	150	L.F.	\$500.00	\$75,000.00
9+50 - 64+00	Landscape Enhancements	12,000	S.Y.	\$14.50	\$174,000.00
Subtotal					\$1,335,300.00
Trailhead Improvements					
	Site Preparation/Clearing				\$5,000.00
	Grading	600	C.Y.	\$12.00	\$7,200.00
	Drainage				\$30,000.00

Parking Area	17,200	S.F.	\$5.50	\$94,600.00
Misc. Paving	3,000	S.F.	\$8.50	\$25,500.00
Trail Paving (12' wide, multi-use)	200	L.F.	\$42.00	\$8,400.00
Day Use Trail (6'-0" wide)	400	L.F.	\$30.00	\$12,000.00
Stripping (allowance)				\$3,500.00
Signage (allowance)				\$25,000.00
Landscape	6,000	S.Y.	\$22.50	\$135,000.00
Bollards	2	EA.	\$800.00	\$1,600.00
Curbs	400	L.F.	\$15.00	\$6,000.00
Tire Stops	25	EA.	\$150.00	\$3,750.00
Picnic tables	2	EA.	\$1,500.00	\$3,000.00
Benches	2	EA.	\$1,200.00	\$2,400.00
Bike Rack				\$1,800.00
Kiosk				\$15,000.00
Restroom (vault style)				\$80,000.00
R.V. Space with Full Hook Ups				\$65,000.00
Subtotal				\$524,750.00

Raw Construction	\$1,860,050.00	
Engineering & Permits (20%)	\$372,010.00	
Construction Engineering (15%)	\$279,007.50	
Subtotal		\$2,511,067.50
Contingency	\$502,213.50	
Estimated Project Cost (2010 Dollars)	\$3,013,281.00	
Estimated Project Cost (2014 Dollars)	\$3,555,671.58	

SECTION B SHELLROCK MOUNTAIN CROSSING TO SUMMIT CREEK
STATION 64+00 - 105+00 4100 L.F.

STATION	ITEM	QTY.	UNIT	PRICE PER	TOTAL
Trail Construction					
64+00 - 105+00	Site Preparation/Clearing	3	Acre	\$8,500.00	\$21,250.00
64+00 - 105+00	Drainage (allowance)				\$15,000.00
64+00 - 90+25	New Trail (paving, base rock)	2,625	L.F.	\$60.00	\$157,500.00
64+00 - 76+00	Gabion Wall	1,200	L.F.	\$350.00	\$420,000.00
64+00 - 76+00	Grading/Fill	4,600	C.Y.	\$25.00	\$115,000.00



64+00 - 76+00	Railing	1,200	L.F.	\$65.00	\$78,000.00	115+00 - 133+35	Existing HCRH Renovation	1,835	L.F.	\$20.00	\$36,700.00	
	Salvage Existing Rockfall Fence				\$150,000.00	118+30	Overlook					
64+00 - 90+25	Rockfall Protection	2,625	L.F.	\$500.00	\$1,312,500.00		Masonry Wall	60	L.F.	\$350.00	\$21,000.00	
84+25 - 85+50	Retaining Wall (10' ht.)	125	L.F.	\$650.00	\$81,250.00		Paving	400	S.F.	\$30.00	\$12,000.00	
84+25 - 85+50	Railing	125	L.F.	\$50.00	\$6,250.00		Bench	1	EA.	\$1,200.00	\$1,200.00	
90+25 - 103+00	Existing HCRH Renovation	1,275	L.F.	\$20.00	\$25,500.00	121+25	Overlook					
102+75	Viewpoint/Overlook						Trail to Overlook (6' wide)	240	L.F.	\$30.00	\$7,200.00	
	Masonry Wall	60	L.F.	\$350.00	\$21,000.00		Masonry Wall	60	L.F.	\$350.00	\$21,000.00	
	Masonry Paving	500	S.F.	\$30.00	\$15,000.00		Paving	460	S.F.	\$30.00	\$13,800.00	
	Bench	1	EA.	\$1,200.00	\$1,200.00		Bench	1	EA.	\$1,200.00	\$1,200.00	
	Interpretive Signage				\$40,000.00	133+35 - 166+25	New Trail (paving, base rock)	3,290	L.F.	\$60.00	\$197,400.00	
104+31 - 104+90	Bridge at Summit Creek				\$250,000.00	133+35 - 166+25	Grading (cut and fill)	15,000	C.Y.	\$12.00	\$180,000.00	
64+00 - 105+00	Landscape Enhancements	9,000	S.Y.	\$14.50	\$130,500.00	147+00 - 149+00	Retaining Wall (4' -6' ht.)	200	L.F.	\$240.00	\$48,000.00	
					Subtotal	150+00	Overlook					
							Masonry Wall	60	L.F.	\$3,500.00	\$210,000.00	
					Raw Construction		Trail to Overlook	260	L.F.	\$30.00	\$7,800.00	
					Engineering & Permits (20%)		Interpretive Signage				\$20,000.00	
					Construction Engineering (15%)		Fencing	200	L.F.	\$18.00	\$3,600.00	
					Subtotal		Bike parking	1	EA.	\$1,800.00	\$1,800.00	
							Bench				\$1,200.00	
					Contingency		Retaining Wall (4' -6' ht.)	325	L.F.	\$240.00	\$78,000.00	
							Bridge at Lindsey Creek				\$250,000.00	
					Estimated Project Cost (2010 Dollars)		New Trail (paving, base rock)	125	L.F.	\$60.00	\$7,500.00	
					\$4,600,719.00		Retaining Wall (4' -6' ht.)	125	L.F.	\$240.00	\$30,000.00	
					Estimated Project Cost (2014 Dollars)		Landscape Enhancements	16,600	S.Y.	\$14.50	\$240,700.00	
											Subtotal	\$3,121,800.00

SECTION C SUMMIT CREEK TO LINDSEY CREEK
STATION 105+00 - 168+00 6300 L.F.

STATION	ITEM	QTY.	UNIT	PRICE PER	TOTAL
	Trail Construction				
105+00 - 168+00	Site Preparation/Clearing	5	S.Y.	\$8,500.00	\$42,500.00
105+00 - 168+00	Drainage (allowance)				\$30,000.00
105+00 - 112+00	New Trail (paving, base rock)	700	L.F.	\$60.00	\$42,000.00
105+00 - 112+00	Fill	8,000	C.Y.	\$25.00	\$200,000.00
108+00 - 112+00	Retaining Wall (10' ht.+)	400	L.F.	\$650.00	\$260,000.00
107+00 - 112+00	Rock Fall Protection	500	L.F.	\$500.00	\$250,000.00
112+00 - 113+80	Viaduct	180	L.F.	\$5,000.00	\$900,000.00
113+80 - 115+00	New Trail (paving, base rock)	120	L.F.	\$60.00	\$7,200.00

Raw Construction	\$3,121,800.00
Engineering & Permits (20%)	\$624,360.00
Construction Engineering (15%)	\$468,270.00
Subtotal	\$4,214,430.00
Contingency	\$842,886.00
Estimated Project Cost (2010 Dollars)	\$5,057,316.00
Estimated Project Cost (2014 Dollars)	\$5,967,632.88



SECTION D LINDSEY CREEK TO STARVATION CREEK
STATION 168+00 - 235+35 6735 L.F.

STATION	ITEM	QTY.	UNIT	PRICE PER	TOTAL
Trail Construction					
168+00 - 235+35	Site Preparation/Clearing	6	Acre	\$8,500.00	\$51,000.00
168+00 - 235+35	Drainage (allowance)				\$30,000.00
168+00 - 216+00	New Trail (paving, base rock)	4,800	L.F.	\$60.00	\$288,000.00
170+00 - 190+00	Retaining Wall (3' ht.)	2,000	L.F.	\$240.00	\$480,000.00
170+00 - 190+00	Railing	2,000	L.F.	\$65.00	\$130,000.00
170+00 - 174+50	Rockfall Protection	450	L.F.	\$500.00	\$225,000.00
193+67 - 194+00	Bridge at Warren Creek				\$250,000.00
201+00	Overlook at Warren Creek Falls				
	Masonry Wall	50	L.F.	\$350.00	\$17,500.00
	Paving	340	S.F.	\$30.00	\$10,200.00
	Bench	1	EA.	\$1,200.00	\$1,200.00
	Interpretive Signage				\$10,000.00
201+00 - 216+00	Grading (cut and fill)	1,800	C.Y.	\$25.00	\$45,000.00
216+00 - 224+50	Existing HCRH Renovation	850	L.F.	\$20.00	\$17,000.00
217+50	Overlook at Cabin Creek Waterfall				
	Masonry Wall	40	L.F.	\$350.00	\$14,000.00
	Paving	260	S.F.	\$30.00	\$7,800.00
	Bench	1	EA.	\$1,200.00	\$1,200.00
	Interpretive Signage				\$10,000.00
224+50 - 235+35	New Trail (paving, base rock)	1,085	L.F.	\$60.00	\$65,100.00
227+00 - 231+60	Wall at Exist. Berm (3' ht.)	460	L.F.	\$240.00	\$110,400.00
227+00 - 231+60	Rock Fall Fence at Existing Berm	460	L.F.	\$500.00	\$230,000.00
232+00 - 234+00	Retaining Wall at Parking Area	200	L.F.	\$360.00	\$72,000.00
232+00 - 234+00	Railing	200	L.F.	\$65.00	\$13,000.00
232+00 - 234+00	Rock Fall Fence at Parking	200	L.F.	\$500.00	\$100,000.00
168+00 - 235+35	Landscape Enhancements	18,000	S.F.	\$14.50	\$261,000.00
				Subtotal	\$2,439,400.00
Trailhead Improvements					
	Site Preparation	1,400	S.F.	\$4.50	\$6,300.00
	Grading (fill)	500	C.Y.	\$25.00	\$12,500.00
	Drainage (allowance)				\$5,000.00
	Saw Cut Paving	400	L.F.	\$3.00	\$1,200.00

Demo/Remove Existing Paving	1,800	S.F.	\$5.00	\$9,000.00
Retaining Wall	280	L.F.	\$350.00	\$98,000.00
Curbing	160	L.F.	\$15.00	\$2,400.00
Paving (paving and subgrade)	4,000	S.F.	\$6.50	\$26,000.00
Fencing	160	L.F.	\$50.00	\$8,000.00
Striping				\$3,500.00
Signage				\$20,000.00
Landscape	1,600	S.Y.	\$14.60	\$23,360.00
			Subtotal	\$215,260.00

Raw Construction	\$2,654,660.00
Engineering & Permits (20%)	\$530,932.00
Construction Engineering (15%)	\$398,199.00
Subtotal	\$3,583,791.00

Contingency \$716,758.20

Estimated Project Cost (2010 Dollars) \$4,300,549.20
Estimated Project Cost (2014 Dollars) \$5,074,648.06

SECTION E VIENTO TO MITCHELL CREEK
STATION 300+45 - 420+60 12,015 L.F.

SECTION	ITEM	QTY.	UNIT	PRICE PER	TOTAL
Trail Construction					
300+45 - 420+60	Site Preparation/Clearing	6	Acre	\$8,500.00	\$46,750.00
300+45 - 420+60	Drainage (allowance)				\$30,000.00
300+45 - 313+25	New Trail (paving, base rock)	1,280	L.F.	\$60.00	\$76,800.00
307+25	Gate	1	EA.	\$5,000.00	\$5,000.00
310+00 - 313+00	Grading (cut)	400	C.Y.	\$25.00	\$10,000.00
313+25 - 320+00	Existing HCRH Renovation	675	L.F.	\$15.00	\$10,125.00
320+00 - 326+50	New Trail (paving, base rock)	650	L.F.	\$60.00	\$39,000.00
320+00 - 326+50	Retaining Wall	650	L.F.	\$240.00	\$156,000.00
320+00 - 326+50	Railing	650	L.F.	\$65.00	\$42,250.00
326+50 - 330+00	Existing HCRH Renovation	350	L.F.	\$15.00	\$5,250.00
330+00 - 334+60	New Trail (paving, base rock)	460	L.F.	\$60.00	\$27,600.00



330+00 - 334+60	Rock Fall	460	L.F.	\$500.00	\$230,000.00
334+60 - 338+50	Existing HCRH Renovation	390	L.F.	\$15.00	\$5,850.00
338+50 - 343+00	New Trail (paving, base rock)	450	L.F.	\$35.00	\$15,750.00
338+50 - 343+00	Retaining Wall	450	L.F.	\$360.00	\$162,000.00
338+50 - 343+00	Railing	450	L.F.	\$65.00	\$29,250.00
338+50 - 343+00	Rock Fall Protection	450	L.F.	\$500.00	\$225,000.00
343+00 - 348+50	Existing HCRH Renovation	500	L.F.	\$15.00	\$7,500.00
348+50 - 362+00	New Trail (paving, base rock)	1,350	L.F.	\$60.00	\$81,000.00
352+00 - 354+00	Rock Fall Protection	200	L.F.	\$500.00	\$100,000.00
354+00 - 362+00	Grading	2,000	C.Y.	\$25.00	\$50,000.00
354+00 - 362+00	Retaining Wall	800	L.F.	\$340.00	\$272,000.00
354+00 - 362+00	Railing	800	L.F.	\$50.00	\$40,000.00
362+00 - 366+25	Existing HCRH Renovation	425	L.F.	\$20.00	\$8,500.00
366+25 - 384+00	New Trail (paving, base rock)	1,775	L.F.	\$60.00	\$106,500.00
366+25 - 372+00	Grading	1,500	C.Y.	\$25.00	\$37,500.00
370+00 - 371+25	Retaining Wall	125	L.F.	\$340.00	\$42,500.00
370+00 - 371+25	Railing	125	L.F.	\$65.00	\$8,125.00
372+00 - 385+00	Rock Fall	1,300	L.F.	\$500.00	\$650,000.00
384+00 - 388+50	Existing HCRH Renovation	450	L.F.	\$20.00	\$9,000.00
388+50 - 390+20	New Trail (paving, base rock)	170	L.F.	\$60.00	\$10,200.00
389+80	Interpretive Area at Masonry Sign				\$15,000.00
390+20 - 390+80	Bridge at Perham Creek				\$200,000.00
390+80 - 412+50	New Trail (paving, base rock)	2,170	L.F.	\$60.00	\$130,200.00
398+00 - 407+00	Grading	1,600	C.Y.	\$25.00	\$40,000.00
398+00 - 405+00	Retaining Wall	700	L.F.	\$240.00	\$168,000.00
398+00 - 405+00	Railing	700	L.F.	\$65.00	\$45,500.00
412+50 - 420+20	Existing HCRH Renovation	770	L.F.	\$20.00	\$15,400.00
420+20 - 420+60	New Bridge at Mitchell Creek				\$180,000.00
300+45 - 420+60	Landscape Enhancement	24,000	S.Y.	\$14.50	\$348,000.00
				Subtotal	\$3,681,550.00
Viento Trailhead Improvements					
	Site Preparation	2,500	S.F.	\$4.50	\$11,250.00
	Drainage				\$5,000.00
	Saw Cut	200	L.F.	\$3.00	\$600.00
	Demolition	4,000	S.F.	\$5.00	\$20,000.00
	Retaining Wall (4'-6' ht.)	220	L.F.	\$260.00	\$57,200.00
	Railing	220	L.F.	\$50.00	\$11,000.00
	Grading	250	C.Y.	\$12.00	\$3,000.00

Paving (paving and subgrade)	9,200	S.F.	\$6.50	\$59,800.00
Misc Paving	900	S.F.	\$10.50	\$9,450.00
Striping				\$2,400.00
Signage				\$8,000.00
Landscape	1,400	S.Y.	\$22.50	\$31,500.00
			Subtotal	\$219,200.00

Improvements at State Park Campground and Shop/Office Site *

Site Preparation	2,000	S.F.	\$4.50	\$9,000.00
Drainage				\$4,500.00
Saw Cut	120	L.F.	\$3.00	\$360.00
Demolition	2,800	S.F.	\$5.00	\$14,000.00
Grading	800	C.Y.	\$12.00	\$9,600.00
Paving (paving and subgrade)	2,000	S.F.	\$6.50	\$13,000.00
Misc Paving	1,800	S.F.	\$10.50	\$18,900.00
Fencing (automatic gate)	450	L.F.	\$40.00	\$18,000.00
Gate at Shop Area				\$12,000.00
Bollards	4	EA.	\$800.00	\$3,200.00
R.V. Space with Full Hook Ups				\$65,000.00
Landscape	21,500	S.Y.	\$14.50	\$311,750.00
			Subtotal	\$479,310.00

Raw Construction	\$4,380,060.00
Engineering & Permits (20%)	\$876,012.00
Construction Engineering (15%)	\$657,009.00
Subtotal	\$5,913,081.00

Contingency \$1,182,616.20

Estimated Project Cost (2010 Dollars) \$7,095,697.20

Estimated Project Cost (2014 Dollars) \$8,372,922.70

* Cost for State Park Campground improvements not included in State Trail and Trailhead budget. Cost provided for reference only.



SECTION F MITCHELL CREEK TO MITCHELL POINT TUNNEL

STATION 420+60 - 457+00 3,640 L.F.

SECTION	ITEM	QTY.	UNIT	PRICE PER	TOTAL
Trail Construction					
420+60 - 457+00	Site Preparation/Clearing	1	Acre	\$8,500.00	\$8,500.00
420+60 - 457+00	Drainage (allowance)				\$20,000.00
420+60 - 420+88	Existing HCRH Restoration	28	L.F.	\$20.00	\$560.00
420+88 - 426+50	New Trail (paving, base rock)	562	L.F.	\$60.00	\$33,720.00
420+88 - 426+50	Grading	850	C.Y.	\$25.00	\$21,250.00
421+50 - 425+00	Retaining Wall (4'-6' ht.)	350	L.F.	\$260.00	\$91,000.00
426+00 - 443+70	Existing HCRH Restoration	1,770	L.F.	\$20.00	\$35,400.00
443+70 - 444+44	New Trail (paving, base rock)	74	L.F.	\$60.00	\$4,440.00
444+44 - 457+00	Tunnel				\$6,000,000.00
	Paving Through Tunnel	1,256	L.F.	\$60.00	\$75,360.00
	Masonry Tunnel Portals	1,200	F.F.	\$150.00	\$180,000.00
	Rock Fall at West Portal	400	L.F.	\$500.00	\$200,000.00
420+60 - 457+00	Landscape Enhancement	4000	S.Y.	\$14.50	\$58,000.00
	Subtotal				\$6,728,230.00
Viewpoints at Mitchell Point West					
	Masonry Wall	140	L.F.	\$350.00	\$49,000.00
	Paving	860	S.F.	\$30.00	\$25,800.00
	Guardrail	160	L.F.	\$110.00	\$17,600.00
	Signage				\$20,000.00
	Subtotal				\$112,400.00
Trailhead Improvements					
	Site Preparation	15,000	S.F.	\$4.50	\$67,500.00
	Drainage				\$25,000.00
	Saw Cut	300	L.F.	\$160.00	\$48,000.00
	Demolition	5,000	S.F.	\$5.00	\$25,000.00
	Grading	500	C.Y.	\$12.00	\$6,000.00
	Retaining Wall	300	L.F.	\$260.00	\$78,000.00
	Rock fall fence	400	C.Y.	\$500.00	\$200,000.00
	Paving (paving and subgrade)	14,000	S.F.	\$6.50	\$91,000.00
	Misc Paving	2,800	S.F.	\$10.50	\$29,400.00
	Striping				\$3,200.00
	Signage				\$20,000.00

Landscape	1,200	S.Y.	\$22.50	\$27,000.00
Ride Through Gate				\$15,000.00
Bollards	3	EA.	\$800.00	\$2,400.00
Fencing	50	L.F.	\$50.00	\$2,500.00
Bike rack	1	EA.	\$1,800.00	\$1,800.00
Kiosk				\$15,000.00
Benches	4	EA.	\$1,200.00	\$4,800.00
Picnic tables	2	EA.	\$1,500.00	\$3,000.00
			Subtotal	\$664,600.00

Raw Construction	\$7,505,230.00
Engineering & Permits (20%)	\$1,501,046.00
Construction Engineering (15%)	\$1,125,784.50
Subtotal	\$10,132,060.50

Contingency \$2,026,412.10

Estimated Project Cost (2010 Dollars) \$12,158,472.60

Estimated Project Cost (2014 Dollars) \$14,346,997.67

SECTION G EAST SIDE OF MITCHELL POINT TO RUTHTON POINT

STATIONS 457+00 - 546+00 8900 L.F.

	ITEM	QTY.	UNIT	PRICE PER	TOTAL
Trail Construction					
457+00 - 546+00	Site Preparation/Clearing	4	Acre	\$8,500.00	\$34,000.00
457+00 - 546+00	Drainage (allowance)				\$20,000.00
457+00 - 466+40	New Trail (paving, base rock)	940	L.F.	\$60.00	\$56,400.00
457+00 - 466+40	Quarry Reclamation	50,000	S.F.	\$3.50	\$175,000.00
457+00	Overlook				
	Masonry Wall	60	L.F.	\$350.00	\$21,000.00
	Paving	360	S.F.	\$30.00	\$10,800.00
	Trail to Overlook	280	S.F.	\$10.50	\$2,940.00
	Bike Rack	1	EA.	\$1,800.00	\$1,800.00
	Interpretive Signage				\$15,000.00



466+40	Gate/Bollards				\$3,500.00	
466+40	Turnaround				\$15,000.00	
514+00 - 514+60	Ex. Tunnel Signalization				\$50,000.00	
516+00 - 546+00	New Trail (paving, base rock)	3,000	L.F.	\$60.00	\$180,000.00	
516+00 - 536+00	Grading	4,000	C.Y.	\$25.00	\$100,000.00	
519+00 - 525+00	Retaining Wall (4' ht.)	600	L.F.	\$260.00	\$156,000.00	
533+00 - 545+00	Retaining Wall (8'-10' ht.)	1,200	L.F.	\$450.00	\$540,000.00	
519+00 - 545+00	Railing	2,600	L.F.	\$50.00	\$130,000.00	
457+00 - 546+00	Landscape Enhancements	12,000	S.Y.	\$14.50	\$174,000.00	
				Subtotal	\$1,685,440.00	
				Raw Construction	\$1,685,440.00	
				Engineering & Permits (20%)	\$337,088.00	
				Construction Engineering (15%)	\$252,816.00	
				Subtotal	\$2,275,344.00	
				Contingency	\$455,068.80	
				Estimated Project Cost (2010 Dollars)	\$2,730,412.80	
				Estimated Project Cost (2014 Dollars)	\$3,221,887.10	

546+00 - 600+20	Landscape Enhancements	8,600	S.Y.	\$14.50	\$124,700.00	
				Subtotal	\$2,803,150.00	
	Parking Area Improvements					
	Site Preparation	2,800	S.F.	\$4.50	\$12,600.00	
	Drainage				\$15,000.00	
	Grading	400	C.Y.	\$12.00	\$4,800.00	
	Paving (paving and subgrade)	5,400	S.F.	\$6.50	\$35,100.00	
	Cul-de-sac Paving	7,200	S.F.	\$6.50	\$46,800.00	
	Misc. Paving	600	S.F.	\$10.50	\$6,300.00	
	Paths (4'-6' wide)	600	L.F.	\$30.00	\$18,000.00	
	Striping				\$2,400.00	
	Signage				\$10,000.00	
	Landscape	1,800	S.Y.	\$22.50	\$40,500.00	
	Bollards	9	EA.	\$600.00	\$5,400.00	
	Kiosk				\$15,000.00	
	Restroom (vault toilet)				\$80,000.00	
	Bike rack	1	EA.	\$1,800.00	\$1,800.00	
	Relocate Masonry sign				\$5,000.00	
				Subtotal	\$298,700.00	

Raw Construction	\$3,101,850.00
Engineering & Permits (20%)	\$620,370.00
Construction Engineering (15%)	\$465,277.50
Subtotal	\$4,187,497.50

SECTION H RUTHTON POINT TO RUTHTON PARK, HOOD RIVER
SECTION 546+00 - 600+20 5420 L.F.

SECTION	ITEM	QTY.	UNIT	PRICE PER	TOTAL
	Trail Construction				
546+00 - 600+20	Site Preparation/Clearing	3	acre	\$8,500.00	\$21,250.00
546+00 - 600+20	Drainage (allowance)				\$35,000.00
546+00 - 556+00	Historic Road Rehab	1,000	L.F.	\$20.00	\$20,000.00
556+00 - 600+20	New Trail (paving, base rock)	4,420	L.F.	\$60.00	\$265,200.00
561+00 - 589+00	Grading	2,800	L.F.	\$25.00	\$70,000.00
561+00 - 571+00	Retaining Wall	1,000	L.F.	\$800.00	\$800,000.00
577+50 - 586+50	Retaining Wall	900	L.F.	\$800.00	\$720,000.00
588+00 - 595+20	Retaining Wall	720	L.F.	\$800.00	\$576,000.00
561+00 - 595+20	Railings	3,420	L.F.	\$50.00	\$171,000.00

Contingency \$837,499.50

Estimated Project Cost (2010 Dollars) \$5,024,997.00
Estimated Project Cost (2014 Dollars) \$5,929,496.46



ISSUES FOR FURTHER STUDY AND CONSIDERATION AND NEXT STEPS:

**COLUMBIA GORGE MANAGEMENT UNIT
MASTER PLAN UPDATE**

OPRD has recognized the need to update the 1993 Columbia Gorge District Master Plan. The Master Plan could address the following elements or these elements could be addressed in separate planning efforts in partnership with ODOT, USFS and OPRD.

- Development Proposals
- Identify bike camping location
- Identify locations for host sites along the Trail
- Recreational Demand
- Metrics for use
- Day use fees
- Share parking with nearby facilities
- Interpretive Plan
- Incorporate findings from the 2009 Oral History Project
- Sign/Wayfinding Plan
- Signing system and consistent system of mapping will help visitors understand and enjoy the Trail
- Maintenance and Management Plan
- Work with the Cultural Landscape Inventory and Cultural Landscape Report to determine appropriate maintenance activities for the contributing features
- Develop a linear referencing system that could be incorporated in the OPRD “Hub” system
- Revisit the Memorandum of Agreement with ODOT regarding maintenance responsibilities
- Identify appropriate locations for additional host sites

PARK MANAGEMENT PLAN

A Natural Resource Management Plan is needed for the State Trail. Listed below are elements identified during the development of the Historic Columbia River Highway State Trail that should be addressed as part of this larger planning effort. This may or may not be part of the OPRD Master Planning effort. As part of this effort, a Natural Resource Management Plan could include the following areas of emphasis:

- Forest Management Plan
 - Many areas of the forest along the Trail are in poor condition
 - The ODOT Right of Way and adjacent public lands have a history of non-management
 - Cut and fill slopes from the construction of I-84 were allowed to re-grow with no subsequent stand management so the slopes are overgrown with small, closely spaced Douglas fir trees, a closed canopy and no significant understory
 - Many areas present a potential fire danger because of closely spaced canopies with lots of dead and dying trees
 - Recent tree clearings adjacent to I-84 near Shellrock Mountain have left “dead” forest edges
 - Lack of understory provides potential for erosion and/or landslide
 - View shed management, restore historic views, maintain current views
- Invasive Species Management Plan
 - New clearing for trail construction could open up large areas to invasive species

- Identify and map invasive species for improved management
- Develop a comprehensive native plant restoration plan
- Ecosystem Plan
 - Habitat plan for terrestrial and aquatic species
 - Identify opportunities for habitat restoration/creation
 - Identify mitigation opportunities for riparian disturbance
 - Coordinate closely with USFW, ODFW, and USFS biologists
 - Map buffers and propose modifications to buffers in coordination with permitting agencies
 - Monitor habitats to determine potential impacts
- Recreational Demand
 - Metrics for use
 - Day use fees
 - Share parking with nearby facilities
- Interpretive Plan
 - Incorporate findings from the 2009 Oral History Project
- Sign/Wayfinding Plan
 - Signing system and consistent system of mapping will help visitors understand and enjoy the Trail
- Maintenance and Management Plan
 - Revisit the MOA between ODOT and OPRD regarding maintenance responsibilities
- Work with CLI and CLR to determine appropriate maintenance activities for the contributing features
- Develop a linear referencing system that could be incorporated in the OPRD “Hub” system
- Identify appropriate locations for additional host sites

COLUMBIA RIVER GORGE NATIONAL SCENIC AREA ACCESS AND RECREATIONAL DEMAND STUDY

During the development of the HCRH State Trail Plan, the Historic Columbia River Highway Advisory Committee recognized that the parking areas associated with the trailheads proposed in this plan will never meet the demand during peak periods. Crowding can negatively affect the scenic and natural resources for which the Gorge is so precious, and the visitors’ experience. The Columbia River Gorge National Scenic Area Management Plan dictates the recreation intensities for the parking areas associated with recreation sites.

The trailheads proposed in the HCRH State Trail Plan, with the exception of Ruthton Park, (within the UGA of the City of Hood River) are limited by the Recreation Intensity Class (RIC) designated by the CRGNSA Management Plan. Wyeth, Viento, Mitchell Point West and Mitchell Point East are in RIC Class 2 and are limited to a maximum of 25 vehicle parking spaces. Starvation Creek is located in RIC Class 4 and would be limited to 100 vehicle parking spaces, but due to site limitation can only be expanded to 40 vehicle parking spaces.

As a result of constraints on parking, a comprehensive plan that looks at alternative modes of access is required in the future. During discussion, it was realized that this issue is not isolated to the HCRH State Trail but is a larger issue affecting the entirety of Columbia River Gorge National Scenic Area.

Ideas to be explored in this larger planning study include the following:

- System-wide use of recreational facilities within the Gorge
- Staging areas within the urban areas for trips to the Gorge via bike or shuttle



- Investigate how this research relates to the Gorge Indicators Project
- Need for shuttle bus with park and ride areas.
- Metrics – current and proposed recreational use numbers
- Transportation system impacts – will the added development cause queuing onto the freeway ramps?
- Consider the use of technology to assess crowding and demand – variable message signs with the available parking, spots similar to what is found at airport garages
- Consider the use of an online reservation system for more popular destinations
- Use cameras with online video feeds to allow the public to make informed decisions
- Use of parking fees to discourage peak period use
- Historic vehicle use of the Trail

COMPREHENSIVE NATIONAL SCENIC AREA PERMIT

Prior to trail funding it would be helpful to have a better understanding of the scenic, natural, cultural and recreation resources and potential impacts. ODOT is encouraged to work with Hood River County to address early on, as many of the issues related to permitting as possible. This exercise would be helpful as it would inform designers and engineers of important elements that need to be addressed in the Preliminary Engineering Phase. Additionally, this work will make each of the projects increasingly ready for construction upon funding.

Key elements of the planning effort include:

Visual Resource Assessment:

- Identify Key Viewing Areas in relationship to the Trail
- New trail development shall be visually subordinate or not visually evident
- Propose treatments to walls and bridge structures that are in keeping with the design intent of the Historic Highway while respecting the intent of the National Scenic Area Management Plan
- Refer to the HCRH Trail Guidelines

Biological Evaluation

ODOT staff should coordinate with USFS, ODFW and USFW biologists. The biological evaluation should address impacts to habitat buffers and appropriate mitigation strategies. This would follow the standard ODOT outline for a No Effect memo.

Cultural Resource Report

- A cultural resource inventory and report will be required for each NSA permit. ODOT

could commission a study of the cultural resources prior to the NSA submittal to help inform design of the Trail

- This would include a pedestrian survey of the Area of Potential Impact and probing if necessary
- This work should be coordinated with the USFS archaeologist and SHPO
- This information could be included in a future No Effect memo and Section 106 compliance report

Cultural Landscape Report (CLR)

- In 2009 ODOT prepared the Cultural Landscape Inventory. A Cultural Landscape Report will provide management and maintenance direction. It is recommended that ODOT develop a CLR to help guide design and maintenance activities along the Trail. SHPO and OPRD should be consulted during the development of the CLR

Rockfall Mitigation Strategy

- Rockfall is a major issue along the Trail. It is important to develop strategies that meet the NSA standards and address safety. A closer look at what type of strategies need to be implemented prior to trail construction will help the rockfall protection implementation measure comply with NSA standards

Determination of Property Ownership, Boundary and Easement Issues

- ODOT should work with OPRD and USFS to determine property ownership, and easement status for the Trail alignment
- Negotiate agreements between OPRD, ODOT and USFS to guide the design, construction and management of the State Trail





The HISTORIC COLUMBIA RIVER HIGHWAY

STATE TRAIL PLAN - WYETH TO HOOD RIVER

PREPARED FOR:

OREGON PARKS AND RECREATION DEPARTMENT
OREGON DEPARTMENT OF TRANSPORTATION

PREPARED BY:

QUATREFOIL, INC.
PORTLAND, OREGON

WINTER 2010

