

## **APPENDICES**

### **Appendix 1: Maps**

**Map 1 – Vicinity Map**

**Map 2 – Trail Segments with NW Forest Plan allocations**

**Map 3 – Trail Segments with Olympic LRMP allocations**

## Appendix 2: Proposed Olympic Discovery Trail Design Standards

Trail Seg's	Description	Land Owner	West Anchor	East Anchor	Segment Length In Ft.	Width Vegetation Cleared	Trail Width	Shoulder Width	Asphalt Surface Width	Reject Surface Width	Road Mtn Level
0-A	Existing Road, FS Rd. 2902-300	ONF	DNR Lands Section 12	FS Road 2902, SE corner of the NW corner of Section 7	*						2
0-B	Existing Road, FS Rd. 2902	ONF, DNR, Prvt.	FS Road 2902, SE corner of the NW corner of Section 7	North Anchor - Mary Clark Road	*						2
1	Reconstruct Railroad Grade north of Cooper Ranch Road	ONF	Cooper Ranch Rd., 0.9 miles south of SR 101	Cooper Ranch Rd., 0.2 miles south of SR 101	3,974	20'	16'	2'	10'	4'	
2	Reconstruct Railroad Grade west and north of FS Rd. 2929	ONF, DNR	Cooper Ranch Rd.	FS Rd. 2929-070	4,066 2,664	20'	16'	2'	10'	4'	
3	Improve Existing FS Rd. 2929-070, which is on top of the Railroad Grade.	ONF	FS Rd. 2929-070	Terminus FS Rd. 2929-070	15,950	20'	16'	2'	12'	4'	2
4	New Construction	ONF, M&R	Terminus FS Rd. 2929-070	FS Non-System Road, no #	1,231 314	20'	16'	2'	10'	4'	
5	Improve Existing Roads, ONF/M&R	ONF, M&R	FS Non-System Road, no #	M&R Bridge Road	1,410 1,281	20'	16'	2'	10'	4'	Non-Sys Road
6	Existing Road, FS Rd. 2918	M&R	M&R Bridge Road	FS Rd. 2918, 0.9 miles south of SR 101	3,962						3
7	Reconstruct Railroad Grade	M&R, ONF, ONP	FS Rd. 2918, 0.3 miles south of SR 101	Railroad Grade NE Corner of Section 27	1,837 2,388 6,670	20'	16'	2'	10'	4'	

8	New Construction	ONP, ONF	Railroad Grade NE Corner of Section 27	Mt. Muller Trail 300' SW of Gravel Pit (Bate's Const)	496 1,236	20'	16'	2'	10'	4'	
9	New Construction (Widen/Improve Existing) Mt. Muller Trail	ONF, DNR	Mt. Muller Trail 300' SW of Gravel Pit (Bate's Const)	Mt. Muller Trail 1200' NE of Gravel Pit at creek crossing	1,607 263	20'	16'	2'	10'	4'	
10	New Construction	ONF, DNR, ONP	Mt. Muller Trail 1200' NE of Gravel Pit at creek crossing	Railroad Grade just east of private property gate	3,898 1,789 1,304	20'	16'	2'	10'	4'	
11	Reconstruct Railroad Grade	ONP	Railroad Grade just east of private property gate	West Trailhead of the ONP Spruce Railroad Trailhead	29,907	20'	16'	2'	10'	4'	
0-C	Improve Road, FS Rd. 3079-011	ONF, ONP	North Center 1/4 of sections 3/10.	Lyre River	*.55	20'	16'	2'	10'	4'	2

\*28,004

Total all three segments on ONF

**Construction Details for each Description**

**NOTE:** All work will require heavy equipment and chainsaws.

Existing = No work done

Improve = Road Width add base rock (pit run) as needed. Trail Width add 3" reject rock. Asphalt Surface Width chip seal 1st year, add 1.8" asphalt at a future date.

New Construction & Widen/Improve = Clear/grub vegetation 20'. Trail Width lay down 8" base rock (pit run) and add 3" reject rock. Asphalt Surface Width add 1.8" asphalt

Reconstruct = Railroad Grade Width add 8" base rock (pit run) to existing base, Trail Width add 3" reject rock.  
Asphalt Surface Width add 1.8" asphalt.

**Abbreviations Used**

- DNR** = Washington State Department of Natural Resources
- FS** = Forest Service Roads, administered by the Olympic National Forest
- M&R** = Merrill & Ring
- ONF** = National Forest System lands, administered by the Olympic National Forest
- ONP** = Olympic National Park Service

Segment Lengths by Ownership								
	Description		Segments Lengths				Total Feet	Total Miles
<b>DNR</b>				2,664	263	1,789	4,716	0.9
<b>M&amp;R</b>			314	1,281	3,962	1,837	7,394	1.4
<b>ONF</b>	Existing	Existing Roads	25,100				25,100	4.8
		<b>Segments</b>	<b>2902-300, 2902</b>					
<b>ONF</b>	Improve	Existing Roads	15,950	1,410		2,904	20,264	3.8
		<b>Segments</b>	<b>3</b>	<b>5</b>		<b>3079-011</b>		
<b>ONF</b>	New Construction	Undeveloped Area & Mt.Muller Trail	1,231	1,236	1,607	3,898	7,972	1.5
		<b>Segments</b>	<b>4</b>	<b>8</b>	<b>9</b>	<b>10</b>		
<b>ONF</b>	Reconstruct	Railroad Grade	3,974	4,066	2,388		10,428	2.0
		<b>Segments</b>	<b>1</b>	<b>2</b>	<b>7</b>			
<b>ONP</b>			6,670	496	1,304	29,907	38,377	7.3

### Appendix 3: Contact List for Olympic Discovery Trail Public Scoping

Last	First
Bell	Art & Martha
Blake	Kenneth
Calhoun	William & Marybelle
Chasman	Paul & Anna
Clallam County Trail Advisors	Kathy
Coney-Smith	Elizabeth
Dahl	Ronald
Doninger	Jeffery
Ellerby	Patricia
Forks Sportsman Club	Club President
Grays Harbor Bowmen	Gary
Grays Harbor Rifle & Pistol Club	Club President
Green Crow Corp.	Sir
Jensen	Kathleen
Johnson	Betty
Keller	Flora
Kelso	Lori
Knutzen	Otto
Leonard	Judith
Merrill & Ring	Sir
Neigel	Sharon
Olympic Peninsula Guide Association	Association President
Pacific Northwest Trail Association	Mike
Palmer	Mark & Deborah
Peterson	Stanley
Public Utility District No 1	Sir
Rayonier Timberlands	Sir
Reachout Expeditions	Rick
Reynolds	Dennis & Tedi
Single Track Mind Bike Club	Mike
The Mountaineers	Conservation Director

Thompson	Marie
Vanderziel	Mark
State of WA, DNR	Rod Larson
Conservation Northwest	Derek Churchill
Olympic Peninsula Audubon Society	Sue Chickman
Olympic Forest Coalition	Jim Scarborough
City of Forks	Rod Fleck
North Olympic Timber Action Committee	Carol Johnson

### Appendix 4: Olympic Discovery Trail Issues Identified

#	Issue as Originally Presented	Issue Edited to Reflect Anticipated Cause and Effect of Proposed Action	Issue Disposition (Clarification or Y/N Significant & Rational)	Action Needed, Changes Incorporated into Proposed Action Alternative	Mitigation Measure #
	<b>An issue is a point of debate, dispute, or disagreement regarding anticipated effects of the proposed action. Each issue statement should point out the controversy embodied in the issue in a cause-effect relationship.</b>		<b>Addressed with clarification incorporated into Proposed Action Alternative OR Significant Issue Yes/No, with brief rationale</b>	<b>Significant Effect - severity of impact, degree to which the proposed action affects...</b>	
1	Use of trail for administrative purposes, fire suppression responses, etc.	Trail design will not allow access by administrative vehicles for emergency response and asphalt surface will be compromised from the weight of the administrative vehicles.	N - Addressed with clarification incorporated into Proposed Action Alternative	Trail design will incorporate removable barriers so vehicles can access the trail for administrative purposes. Trail curve apertures will be navigable by fire apparatus and trail surface designed to hold up under weight of administrative vehicles.	3,4
2	Impact of changing easement language on 2918 so M&R no longer pays to haul across it.		N - Beyond Scope, easement acquired from M&R for 2918 will not be affected by this project.		
3	What will happen if other agencies/owners do not authorize the trail to cross their lands?	If trail segments are constructed across National Forest lands and adjacent landowners do not authorize trail access, isolated trail segments will be constructed that are not utilizable.	N - Addressed with clarification incorporated into Proposed Action Alternative	The County must secure authorization to construct the trail across DNR property before constructing trail segments 1-3 & 9-10 and across M&R property before constructing trail segments 4-8.	
4	Nine private landowners have segments of the Spruce Railroad Grade within their property boundaries. [WSDOT Nov 1997]		N - Beyond Scope, proposed trail route avoids private property utilized for residential purposes.		

5	Private property owners must be assured of their privacy. [WSDOT Nov 1997]	Trail construction will cause an increase in use to areas not currently accessible, causing a decrease in privacy for private landowners.	N - Beyond Scope, proposed trail route avoids private property utilized for residential purposes.		
6	Protection of water supplies, some private property owners pipe in water from above the Spruce Railroad Grade down to their homes. Consequently, they are concerned trail users will vandalize their piping, or degrade their water supply. [WSDOT Nov 1997]	Trail construction will cause an increase in use in areas not currently accessible, causing an increase to vandalism of existing authorized uses.	N - Addressed with clarification incorporated into Proposed Action Alternative	Trail Design, construction, maintenance will protect existing authorized uses.	5
7	Don't limit access for fish releases at Bear Creek and Sweet Hole.	Trail construction will result in road closures limiting current uses and access.	N - Not an issue since there are no road closures being proposed.		
8	Ensure 2929-070 portion of the trail will continue to be accessible to motorized traffic.	Trail construction will result in road closures limiting current uses and access.	N - Not an issue since there are no road closures being proposed.		
9	Limiting Access to areas currently utilized. 2929-070 receives a lot of recreation use, fishing, hunting, brush pickers (ferns) assume a lot of traffic comes over from Klahowa CG.	Trail construction will result in road closures limiting current uses and access.	N - Not an issue since there are no road closures being proposed.		
10	Insure continued multi-use of road segments used for the trail	Trail construction will result in road closures limiting current uses and access.	N - Not an issue since there are no road closures being proposed.		
11	Impact on current recreational uses such as fuelwood gathering?	Trail construction will result in road closures limiting current uses and access.	N - Not an issue since there are no road closures being proposed.		
12	State Route 101 crossing	Trail construction will not meet Washington State Department of Transportation requirements where trail crosses State Route 101.	N - Addressed with clarification incorporated into Proposed Action Alternative	County will secure authorization from WSDOT for trail to cross SR 101, before constructing trail segment 8 and incorporate egress/ingress requirements into trail design	



13	Camp Creek bridge (Easy Bridge) on 2929-070 is a temporary bridge that does not meet standards for stream crossing, don't limit management choices to remove/replace.	Trail construction will result in institutionalizing the use of a temporary bridge as a permanent feature.	N - County is aware of the temporary status of the Camp Creek bridge and is willing to work cooperatively with the Forest to pursue alternate funding sources to replace the Camp Creek Bridge.	Clallam County will pursue alternate funding sources to replace the Camp Creek Bridge. In the interim the County will replace the bridge decking and install an approved handrail system to meet AASHTO standards.	6
14	Drainage structures that need to be replaced because they are beyond their life expectancy or for fish passage issues, or will need replacing in the future after asphalt is laid.	Trail construction will result in natural surface roads being asphalted increasing the cost of future road maintenance.	N - Accepted consequence in the long term. Will request that the County replace those culverts determined to be in less than good condition prior to surfacing road.	Based on the culvert inventory, replace stream pipes/culverts at milepost 1.00, 1.15, 1.30, 1.36, and 1.45 prior to surfacing FS road 2929-070.	7
15	Limiting access to manage resources, land lock AMA	Trail construction will result in changes to the current land allocation management prescriptions further limiting lands available for timber harvest.	N - Not an issue since no amendment to the Forest Plan is being requested with this proposed action.	Authorization will incorporate language that trail establishment will not limit current or future management prescriptions or activities, with no visual buffers established.	1
16	Would the presence of the trail preclude future commercial and non-commercial forest management activities?	Trail construction will result in changes to the current land allocation management prescriptions further limiting lands available for timber harvest.	N - Not an issue since no amendment to the Forest Plan is being requested with this proposed action.	Authorization will incorporate language that trail establishment will not limit current or future management prescriptions or activities, with no visual buffers established.	1
17	Would the presence of the trail require additional or different standard operating procedures for commercial and non-commercial forest management activities?	Trail construction will result in changes to the current land allocation management prescriptions further limiting lands available for timber harvest.	N - Not an issue since no amendment to the Forest Plan is being requested with this proposed action.	Authorization will incorporate language that trail establishment will not limit current or future management prescriptions or activities, with no visual buffers established.	1
18	Will the presence of the trail modify ONF Plan land allocations?	Trail construction will result in changes to the current land allocation management prescriptions further limiting lands available for timber harvest.	N - Not an issue since no amendment to the Forest Plan is being requested with this proposed action.	Authorization will incorporate language that trail establishment will not limit current or future management prescriptions or activities, with no visual buffers established.	1

19	There should be no impacts on USFS timber lands, DNR lands, or private timber lands from the trails existence.	Trail construction will result in changes to the current land allocation management prescriptions further limiting lands available for timber harvest.	N - Not an issue since no amendment to the Forest Plan is being requested with this proposed action.	Authorization will incorporate language that trail establishment will not limit current or future management prescriptions or activities, with no visual buffers established.	1
20	How will the presence of the trail effect the Habitat Development Study?	Trail construction will adversely impact the Habitat Development Study.	N - Habitat Development study will not be affected by project implementation		
21	Consistency with ATM Plan	Trail construction will require changing road standards and maintenance levels as prescribed in the Access and Travel Management Plan (ATM).	N - Since the ATM Plan is not a decision document it will be modified to incorporate any changes resulting from this decision.		
22	Forest Plan Consistency – Management Area C-3, Bald Eagle Management Area (BEMA).	Trail construction will affect the Bald Eagle Management Area (BEMA)	N - The proposed trail location is not within the BEMA. Based on the current activity level the nesting pair tolerates it is assumed any increased activity level will not adversely impact the nest use.	Implement a monitoring plan to evaluate the affect of activity on nesting success before, during, and after the proposed project to document future pairs' responses within the Bald Eagle Management Area.	
23	Increased recreational use may require additional infrastructure, sanitation, parking, trailheads.	Trail use will cause increased resource damage from user created parking areas and dispersed sanitation use.	N - Insufficient information at this time to determine is this will be an issue.	Monitor use to determine if additional infrastructure may be required in the future. If a need is determined to exist address how that need will be met in the O&M Plan.	
24	Infrastructure – construct trailheads/parking areas otherwise they will be user created and not designed/confined to appropriate locations.	Trail use will cause increased resource damage from user created parking areas and dispersed sanitation use.	N - Insufficient information at this time to determine is this will be an issue.	Monitor use to determine if additional infrastructure may be required in the future. If a need is determined to exist address how that need will be met in the O&M Plan.	

25	How will Motorized Access be denied?	Trail construction will cause an increase in resource damage from user created trails by motorized vehicles (ATVs, Motorcycles, 4x4s)	N - Addressed with clarification incorporated into Proposed Action Alternative	Incorporate natural and artificial barriers into the trail design to restrict motorized access.	8
26	Motorized Use – How will trail be maintained & policed to ensure motorized access does not occur? The trail is an open door that will result in increased illegal ATV use because now ATVs will have access to more areas that they previously could not access	Trail construction will cause an increase in resource damage from user created trails by motorized vehicles (ATVs, Motorcycles, 4x4s)	N - Addressed with clarification incorporated into Proposed Action Alternative requiring of an Operation and Maintenance Plan to address Issues #26-35 & 73-76.	Authorization will require review/approval of an Operation and Maintenance (O&M) Plan to address Issues #26-35.	35
27	Currently we immediately close temporary roads so timber theft and garbage dumping doesn't occur. How will this be prevented from occurring in areas the trail will create access to?	Trail construction will provide access to areas not currently available to motorized vehicles resulting in an increase in timber theft, vandalism and garbage dumping.	N - Addressed with clarification incorporated into Proposed Action Alternative requiring of an Operation and Maintenance Plan to address Issues #26-35 & 73-76.	Authorization will require review/approval of an Operation and Maintenance (O&M) Plan to address Issues #26-35.	35
28	What will the effects of the proposed trail route have on vandalism, dumping, and timber theft?	Trail construction will provide access to areas not currently available to motorized vehicles resulting in an increase in timber theft, vandalism and garbage dumping.	N - Addressed with clarification incorporated into Proposed Action Alternative requiring of an Operation and Maintenance Plan to address Issues #26-35 & 73-76.	Authorization will require review/approval of an Operation and Maintenance (O&M) Plan to address Issues #26-35.	35
29	How will the route be policed and maintained to prevent vandalism, dumping and timber theft OR to clean up after them?	Trail construction will provide access to areas not currently available to motorized vehicles resulting in an increase in timber theft, vandalism and garbage dumping.	N - Addressed with clarification incorporated into Proposed Action Alternative requiring of an Operation and Maintenance Plan to address Issues #26-35 & 73-76.	Authorization will require review/approval of an Operation and Maintenance (O&M) Plan to address Issues #26-35.	35
30	How will policing, managing garbage and sanitation be addressed?	Trail use will result in an increase in resource impacts from pollution.	N - Addressed with clarification incorporated into Proposed Action Alternative requiring of an Operation and Maintenance Plan to address Issues #26-35 & 73-76.	Authorization will require review/approval of an Operation and Maintenance (O&M) Plan to address Issues #26-35.	35

31	What will be done about the human waste that will occur along the trail route?	Trail use will result in an increase in resource impacts from pollution.	N - Addressed with clarification incorporated into Proposed Action Alternative requiring of an Operation and Maintenance Plan to address Issues #26-35 & 73-76.	Authorization will require review/approval of an Operation and Maintenance (O&M) Plan to address Issues #26-35.	35
32	How will trail users be informed of change in trail standards, conditions, or closures?		N - Addressed with clarification incorporated into Proposed Action Alternative requiring of an Operation and Maintenance Plan to address Issues #26-35 & 73-76.	Authorization will require review/approval of an Operation and Maintenance (O&M) Plan to address Issues #26-35.	35
33	Signs/Brochures – How will the message be presented that users will be traveling through managed forests that create revenue for Counties & schools so they don't expect pristine forest conditions?		N - Beyond Scope	Authorization will require review/approval of an Operation and Maintenance (O&M) Plan to address Issues #26-35.	35
34	If the trail is constructed, how will the marketing and promotion of the trail and its usage be accomplished?		N - Beyond Scope	Authorization will require review/approval of an Operation and Maintenance (O&M) Plan to address Issues #26-35.	35
35	How will the maintenance cost be addressed?		N - Beyond Scope, the County will be responsible for funding trail construction and the continued operation and maintenance of the trail.	Authorization will require review/approval of an Operation and Maintenance (O&M) Plan to address Issues #26-35.	35
36	Assurance that the development of the ODT will not result in further reductions in recreational maintenance or result in closure of existing recreational facilities.		N - Not an issue since the County will be responsible for funding trail construction and the continued operation and maintenance, this project will not affect federal funding for recreation.		

37	Trail construction/ maintenance should not cause an additional burden on the USFS.		N - Not an issue since the County will be responsible for funding trail construction and the continued operation and maintenance, this project will not affect federal funding for recreation.		
38	How will the Increased risk of abandoned campfires in dispersed sites be addressed?	Trail use will result in an increased risk of abandoned campfires.	N - Conjecture, considering the close proximity of the trail to developed recreation sites there is no indication at this time that project implementation will cause an increase in dispersed camping or abandoned campfires.	Monitor fire occurrence, if it increases address how the issue will be dealt with in the O&M Plan.	
39	2902 & 2902-300 – Are under Cost Share Agreements with DNR, how will the increased recreational use play into distribution of maintenance costs.	Trail use will increase recreational use on roads under Cost Share Agreement with DNR resulting in an increased prorated share of maintenance cost for the Forest Service.	N - Beyond Scope, The County is negotiating with DNR to gain access across DNR lands and easements.		
40	DNR considers the trail an incompatible use on those roads controlled by DNR.		N - Beyond Scope, The County is negotiating with DNR to gain access across DNR lands and easements.		
41	Liability – Currently DNR is not liable for dispersed recreation, if they grant an easement that immunity is gone and the County won't sign an easement with hold harmless clause.		N - Beyond Scope, The County is negotiating with DNR to gain access across DNR lands and easements.		
42	Address how to deal with anticipated Haul traffic on 2918, 2929, 2929-070, 2902, 2902-300	Designating existing Forest Roads as part of the route for the Olympic Discovery Trail will increase the risk of motorized/non-motorized encounters.	N - The standards outlined by the American Association of State Highway and Transportation Officials (AASHTO) in their "guide for the development of bicycle facilities" were developed specifically to address safety.	Utilize AASHTO standards for shared routes. Install signs notifying users the road is a shared route. Reduce the speed limit to 25 mph on shared route that are Forest System roads. Monitor to determine if mitigation is effective.	9, 38

43	Safety is a concern where the proposal places the trail on an open road system	Designating existing Forest Roads as part of the route for the Olympic Discovery Trail will increase the risk of motorized/non-motorized encounters.	N - The standards outlined by the American Association of State Highway and Transportation Officials (AASHTO) in their "guide for the development of bicycle facilities" were developed specifically to address safety.	Utilize AASHTO standards for shared routes. Install signs notifying users the road is a shared route. Reduce the speed limit to 25 mph on shared route that are Forest System roads. Monitor to determine if mitigation is effective.	9, 38
44	Safety of trail users on portions where the trail shares the road.	Designating existing Forest Roads as part of the route for the Olympic Discovery Trail will increase the risk of motorized/non-motorized encounters.	N - The standards outlined by the American Association of State Highway and Transportation Officials (AASHTO) in their "guide for the development of bicycle facilities" were developed specifically to address safety.	Utilize AASHTO standards for shared routes. Install signs notifying users the road is a shared route. Reduce the speed limit to 25 mph on shared route that are Forest System roads. Monitor to determine if mitigation is effective.	9, 38
45	Roads used for trail route should not be roads used for regular vehicle traffic. Not appropriate to mix a high profile bike route with regular traffic.	Designating existing Forest Roads as part of the route for the Olympic Discovery Trail will increase the risk of motorized/non-motorized encounters.	N - The standards outlined by the American Association of State Highway and Transportation Officials (AASHTO) in their "guide for the development of bicycle facilities" were developed specifically to address safety.	Utilize AASHTO standards for shared routes. Install signs notifying users the road is a shared route. Reduce the speed limit to 25 mph on shared route that are Forest System roads. Monitor to determine if mitigation is effective.	9, 38
46	Mary Clark Road and Cooper Ranch Road are not wide enough to accommodate the proposed traffic	Designating existing Forest Roads as part of the route for the Olympic Discovery Trail will increase the risk of motorized/non-motorized encounters.	N - The standards outlined by the American Association of State Highway and Transportation Officials (AASHTO) in their "guide for the development of bicycle facilities" were developed specifically to address safety.	Utilize AASHTO standards for shared routes. Install signs notifying users the road is a shared route. Reduce the speed limit to 25 mph on shared route that are Forest System roads. Monitor to determine if mitigation is effective.	9, 38
47	Determine what is the traffic use on the Mary Clark Road and Cooper Ranch Road to see if it is an acceptable level for users.	Designating existing Forest Roads as part of the route for the Olympic Discovery Trail will increase the risk of motorized/non-motorized encounters.	N - The standards outlined by the American Association of State Highway and Transportation Officials (AASHTO) in their "guide for the development of bicycle facilities" were developed specifically to address safety.	Utilize AASHTO standards for shared routes. Install signs notifying users the road is a shared route. Reduce the speed limit to 25 mph on shared route that are Forest System roads. Monitor to determine if mitigation is effective.	9, 38

48	Need a separate path along Mary Clark Road and Cooper Ranch Road.	Designating existing Forest Roads as part of the route for the Olympic Discovery Trail will increase the risk of motorized/non-motorized encounters.	N - The standards outlined by the American Association of State Highway and Transportation Officials (AASHTO) in their "guide for the development of bicycle facilities" were developed specifically to address safety.	Utilize AASHTO standards for shared routes. Install signs notifying users the road is a shared route. Reduce the speed limit to 25 mph on shared route that are Forest System roads. Monitor to determine if mitigation is effective.	9, 38
49	Cooper Ranch/Mary Clark are the SR 101 Bypass, traffic travels fast on those roads, 55 mph easily, but there is only about 1 vehicle/ 30 minutes. Two lanes, no shoulder. Plus Truck Traffic from private lands.	Designating existing Forest Roads as part of the route for the Olympic Discovery Trail will increase the risk of motorized/non-motorized encounters.	N - The standards outlined by the American Association of State Highway and Transportation Officials (AASHTO) in their "guide for the development of bicycle facilities" were developed specifically to address safety.	Utilize AASHTO standards for shared routes. Install signs notifying users the road is a shared route. Reduce the speed limit to 25 mph on shared route that are Forest System roads. Monitor to determine if mitigation is effective.	9, 38
50	Mtn. Bike, Horse interactions	Trail use will heighten the conflict between Mtn. Bike and equestrian users.	N - Conjecture, trail standards for width and surface were negotiated and concurred to by equestrians, bicyclist, and hikers.		
51	Until a satisfactory easement exchange can be negotiated I can't authorize inclusion of R.D. Merrill Company or Ring Family L.P. lands in the trail system. (Norm Schaaf - M&R)		N - Beyond Scope, County will independently negotiate easements across M&R lands.		
52	Dealing with removed soil.	Soil removal during trail construction, will adversely impact resources at location of removal and disposal.	N - Not an issue since there are no soils anticipated in excess of the cut/fills.		
53	Concern on 2929-070 where the trail surface will be at a higher standard then the existing road surface for a narrower width then the road surface.	Surfacing width on 2929-070 narrower then the road surface will shorten the life expectancy of the surface.	N - Require surfacing on 2929-070 to be increased to 12' to accommodate the full wheel base of timber harvest equipment.	Surfacing width on 2929-070 will be 12'.	

54	Trail surface should not be paved. Paving will effectively preclude use by equestrians and hikers who find such surfaces most unpleasant. Utilize a surface option that accommodates the intended bicycle use and be equally inviting to other non-motorized	Including asphalt surface in the trail design will preclude use by equestrians and hikers.	N - Conjecture, trail standards for width and surface were negotiated and concurred to by equestrians, bicyclist, and hikers.		
55	Change in trail standards for individuals using the Mt. Muller Trail from a 2-3' natural surface tread to a 16' tread with 10' asphalt surface.	Change in trail standards on the Mt. Muller Trail will effect the recreational experience of those utilizing the Mt. Muller Trail.	N - Conjecture, It is assumed this is not an issue since there will be a limited effect on the visitors' experience. The change in trail standards is very limited in duration (5-10 minutes) relative to the whole experience, which is already impacted.		
56	Creating a situation where future Timber Sales might not be economically viable for small operators because they need to replace the asphalt in those trail segments where the trail is on top of the road.	Trail construction standards, where the trail route overlays an existing road and is asphalted, will not hold up to the weight of commercial haul traffic.	N - Addressed with clarification incorporated into Proposed Action Alternative	Proposed shared routes on FS roads, that are proposed to be surfaced, shall be designed to engineering standards so the surface will not degrade with use by timber harvest equipment.	5
57	Trail Standards less then what is required to haul logs on, need at least 3-4" asphalt.	Trail construction standards, where the trail route overlays an existing road and is asphalted, will not hold up to the weight of commercial haul traffic.	N - Addressed with clarification incorporated into Proposed Action Alternative	Proposed shared routes on FS roads, that are proposed to be surfaced, shall be designed to engineering standards so the surface will not degrade with use by timber harvest equipment.	5
58	Issue with surface where railroad grade crosses FS Road 2929. This will receive truck traffic and needs to be able to hold up to that type of use.	Trail construction standards, where the trail route overlays an existing road and is asphalted, will not hold up to the weight of commercial haul traffic.	N - Addressed with clarification incorporated into Proposed Action Alternative	Proposed shared routes on FS roads, that are proposed to be surfaced, shall be designed to engineering standards so the surface will not degrade with use by timber harvest equipment.	5



59	Upgrading surface of roads shared with trail. Truck weigh about 80,000 pounds, if the surface isn't constructed to hold up to that type of traffic it will break up and sink into the soil causing water to come up and turn the road into a mire of muck.	Trail construction standards, where the trail route overlays an existing road and is asphalted, will not hold up to the weight of commercial haul traffic.	N - Addressed with clarification incorporated into Proposed Action Alternative	Proposed shared routes on FS roads, that are proposed to be surfaced, shall be designed to engineering standards so the surface will not degrade with use by timber harvest equipment.	5
60	Will upgraded road surface on 2929-070 be durable enough for vehicle traffic?	Trail construction standards, where the trail route overlays an existing road and is asphalted, will not hold up to the weight of commercial haul traffic.	N - Addressed with clarification incorporated into Proposed Action Alternative	Proposed shared routes on FS roads, that are proposed to be surfaced, shall be designed to engineering standards so the surface will not degrade with use by timber harvest equipment.	5
61	Limit trail width through the Vine Maple Forest on the Mt. Muller Trail	Trail construction through the Vine maple Forest on the Mt. Muller Trail will destroy this unique esthetic value.	N - Addressed with clarification incorporated into Proposed Action Alternative	Trail width will be limited to existing opening through the Vine Maple Forest to protect unique esthetics.	
62	Trail width needs to vary with the trail location and the resources impacted. 2929-070 through cuts are only 8' wide and increasing that would require moving a lot of earth to get the slopes laid back.	Trail construction through the through cuts on 2929-070 will result in removing a lot of soil and exposed unstable slopes.	N - Addressed with clarification incorporated into Proposed Action Alternative	Trail design will maximize the width available at through cuts on 2929-070, but it will not increase the width of the through cuts.	10
63	Trail design, construction and maintenance in compliance with the National Historic Preservation Act. The Spruce Railroad is potentially a significant historic district or cultural landscape.	Trail construction will affect the cultural resources.	N - Protection required by law. Decision will not be implemented until the DOE is completed and the MOA/PA is developed and agreed to by SHPO.	Clallam County will secure a Determine of Eligibility (DOE) for the trail, and enter into a MOA or Programmatic Agreement (PA) with SHPO, which includes treatment plan that will cover design, construction, and maintenance, prior to trail construction.	2
64	Turnouts for wheel chairs on steeper, extended grades.	Trail design will limit trail access by wheel chairs.	N - Addressed with clarification incorporated into Proposed Action Alternative	The trail design will conform to ADA requirements to allow for turnouts for wheel chairs on steeper, extended grades.	11

65	How will the experience for current user change with the proposed improvements on those segments currently used by hikers/bikers on the Spruce Railroad Trail within the Olympic National Park. (Cost to the experience of those who currently use the trail)		N - Beyond Scope, analysis for trail segments within the Olympic National Park were completed under a separate decision document.		
66	The existing Spruce Railroad Trail that merges into the railroad grade within the Olympic National Park is not passable by road bikes so it doesn't make sense to bring those portions of the railroad grade within the Park to a higher standard since road bi		N - Beyond Scope, analysis for trail segments within the Olympic National Park were completed under a separate decision document.		
67	Construction should be undertaken in a manner that allows for continued, natural hillslope hydrology and stream flow.	Trail construction will block the natural hillslope hydrology and stream flow.	N - Addressed with clarification incorporated into Proposed Action Alternative	Trail design will allow for continued, natural hillslope hydrology, hydrologic function of the forested wet area and stream flow. Minimize disruption of natural hydrologic flow paths	12
68	Avoid armoring and/or artificial constraint of stream crossings.	Trail construction will block the natural hillslope hydrology and stream flow.	N - Addressed with clarification incorporated into Proposed Action Alternative	Trail design will avoid armoring and/or artificial constraint of stream crossings.	13
69	Drainage systems must not compromise water quality.	Trail design will incorporate drainage systems that increase sedimentation and compromise water quality.	N - Addressed with clarification incorporated into Proposed Action Alternative	Trail design will ensure drainage systems will not compromise water quality.	14
70	How will the boggy area and stream crossing where the trail meets up with Mt. Muller Trail be dealt with?	Trail construction will adversely impact the boggy area and stream crossing where the trail meets up with Mt. Muller Trail on the east side.	N - Addressed with clarification incorporated into Proposed Action Alternative	Trail design will meet or exceed the Standards and Guidelines for the Northwest Forest Plan.	12, 17

71	Will any wet lands be affected with this proposal?	Trail construction will adversely impact wetlands.	N - The proposed route in segment 10, just before connecting with the Mt. Muller Trail, crosses several streams. These intermittent streams form a forested wet area where they flow onto the valley floor.	Trail design will allow for continued, natural hillslope hydrology, hydrologic function of the forested wet area and stream flow. Minimize disruption of natural hydrologic flow paths	12
71-A	Will any old growth be affected with this proposal?	Trail construction will adversely impact old growth.	N - No old growth will be impacted by project implementation.		
72	Construction should avoid the unnecessary cutting of mature trees.	Trail construction will require the removal of mature trees limiting the attainment of late successional reserve attributes.	N - Not an issue since trail construction is within the Forks Fire burned over area so the oldest trees are 64 years old.	Trail location will be designed to retain larger diameter trees.	15
73	Impact this proposal may have in the future on the natural resources that are culturally important to the tribe if this trail should experience intense usage.	Trail use may cause future adverse impacts on the natural resources that are culturally important to the tribe.	N - Based on the transit type of use there is nothing at this time to indicate adverse impacts on culturally important natural resources. Monitor to address adverse impacts that may result from trail use.	Monitor use and address adverse impacts on culturally important natural resources in the O&M Plan.	34
74	High trail use could disturb foraging elk and deer within sight or smell of humans in this area.	Trail use may cause future adverse impacts on the natural resources that are culturally important to the tribe.	N - Based on the transit type of use there is nothing at this time to indicate adverse impacts on culturally important natural resources. Monitor to address adverse impacts that may result from trail use.	Monitor use and address adverse impacts on culturally important natural resources in the O&M Plan.	34
75	High trail use could impact culturally important plants within close proximity to the trail.	Trail use may cause future adverse impacts on the natural resources that are culturally important to the tribe.	N - Based on the transit type of use there is nothing at this time to indicate adverse impacts on culturally important natural resources. Monitor to address adverse impacts that may result from trail use.	Monitor use and address adverse impacts on culturally important natural resources in the O&M Plan.	34

76	Noxious Weeds	Trail use may cause future adverse impacts on the natural resources that are culturally important to the tribe.	N - Based on the transit type of use there is nothing at this time to indicate adverse impacts on culturally important natural resources. Monitor to address adverse impacts that may result from trail use.	Monitor use and address adverse impacts on culturally important natural resources in the O&M Plan.	34
77	Rock Sources, will they be removing from NFS lands or hauling in from off site location because we need to ensure we are not introducing or spreading invasive species/noxious weeds.	Trail construction and maintenance will increase the spread of invasive species and noxious weeds.	N - Addressed with clarification incorporated into Proposed Action Alternative	Inspect material sources and ensure they are free of invasive plant seeds and before use and transports. Designate equipment cleaning areas; wash equipment before it enters National Forest; collect and incinerate seeds and plant parts from staging and cleaning areas.	20, 21
78	Portion of Railroad Grade north of Cooper Ranch Road was ripped and Coarse Woody Debris (CWD) scattered during the KMark Sale.	Trail construction will remove Coarse Woody Debris (CWD) scattered during the KMark Sale.	N - Addressed with clarification incorporated into Proposed Action Alternative	Retain large Coarse Woody Debris that is disturbed as a result of trail construction. Keep intact and relocate outside the trail prism retaining as natural looking landscape as possible.	22
79	Dealing with removed vegetation.	Vegetation removal during trail construction, will cause a short-term increase in fire risk due to increased slash along the trail route.	N - Requiring complete disposal of all construction debris can mitigate this increased risk.	Require complete disposal of all construction debris.	23
80	What is going to be done with the commercial sized timber that may need to be felled for trail construction?	Vegetation removal during trail construction will cause us to lose an opportunity to provide commercial sized timber for sale or restoration projects.	N - Conjecture that the removed vegetation will have a commercial value. If it is determined that there is commercial value the processing it self will not have environmental impacts beyond those initially analyzed for the removal.		
81	Sensitive plants	Trail construction will adversely impact sensitive plants.	N - Not an issue since none were found during the sensitive plant survey.		

82	Survey Manage	Trail construction will adversely impact Survey Manage Species.	N - Not an issue since the survey was completed and no Survey & Manage species were found		
83	What is going to be done with the commercial sized timber that may need to be felled for removal of future hazard trees?	Trail construction will limit future management options for dealing with commercial sized hazard trees.	N - Beyond Scope, There is not adequate data available to estimate the number or size of hazard trees that may need to be removed in the future.		
84	Trail Mtn in relation to Hazard Tree removal within suitable habitat for Threatened and Endangered Species (TES)	Trail maintenance will adversely impact Threatened and Endangered Species in the future by removal of hazard trees within suitable habitat.	N - Beyond Scope, see Issue Disposition, Issue #81, and not an issue since no suitable habitat for Threatened and Endangered Species exist within harassment distance of the trail.		

### Appendix 5: Culvert Replacement for Olympic Discovery Trail Proposed Route

Road	Milepost	Feature	Condition	Recommendation	Remarks
3079011	0.2	24" cmp	poor	replace	Just North of Park Boundary
3079011	Road summary - flat road with inadequate base for asphalt surfacing - 12' - 14' running surface				
2929000	0.008	18" cmp	good		At road intersection
2929000	0.015	road sign	good		
2929000	Road Summary - flat road with almost no ditchline - inadequate base for asphalt surfacing. 12' - 14' running surface				
2929070	1.00	48" cmp	fair	replace	stream pipe
2929070	1.1	18" cmp	good		ditch relief -less than 10 years old
2929070	1.15	30 cmp	fair	replace	stream pipe
2929070	1.29	gate	good		still can be locked if lifted 3"
2929070	1.3	18" cmp	fair	replace	old pipe with newer downspout added
2929070	1.36	24" concrete	fair	replace	sectional concrete with settling in middle and towards outlet
2929070	1.45	24" cmp	fair	replace	stream pipe
2929070	1.7	Bridge			
2929070	Road summary - First mile of road through flat land with no base and poor drainage. Entire road with 12'- 14" running surface				
2902000	0.01	18" cmp	good		at Mary Clark intersection
2902000	0.8	sign	good		Forest Service boundary sign
2902000	1.1	36" Triple pipe arches	poor	Replace	Three 24" side by side
2902000	1.2	Intersection			Rd 2903 junction
2902000	1.4	Bridge- concrete			14' running surface pavement begins at apron - USFS boundary
2902000	1.5	bridge - concrete			14' running surface pavement end after apron
2902000	1.6	24" pipe arch	poor	Replace	
2902000	1.65	24" cmp	poor	Replace	
2902000	1.7	24" cmp	fair	Replace	
2902000	1.8	18" cmp	poor	Replace	
2902000	1.9	24" twin cmp	poor	Replace	
2902000	2.1	18" cmp	poor	Replace	
2902000	2.2	pavement begins			USFS boundary
2902000	2.25	18" cmp	Poor		Under existing pavement

2902000	2.3	18" cmp	Poor		Under existing pavement
2902000	2.4	18" cmp	Poor		Under existing pavement
2902000	2.5				Becomes 2902300
2902000	Road summary - Flat road bed with poor drainage to 2903 junction. Starts with 20' running surface to 2903 and narrowing to 12'-14' after 2903				
2902300	0.013	sign			road number
2902300	0.02	24" cmp	good		
2902300	0.26	18" cmp	poor	Replace	
2902300	0.32	18" plastic	good		
2902300	0.37	24" cmp	poor	Replace	
2902300	0.46	24' cmp	fair	Replace	
2902300	0.5	16" cmp	poor	Replace	Stream - undersized - rotten - eroding fill
2902300	0.55	18" cmp	poor	Replace	Rotten - too short - eroding fill
2902300	0.6	18" cmp	poor	Replace	Rotten - too short - eroding fill
2902300	0.7	18" plastic	good		
2902300	0.74	24" cmp	poor	Replace	
2902300	0.81	18" plastic	good		
2902300	0.9	18" plastic	good		
2902300	1.00	18" cmp	good		
2902300	1.05	18" plastic	good		
2902300	1.1	gate			Forest boundary
2902300	Road Summary - Average road width 12-14'				

### Appendix 6: Engineering Hazard Analysis for Proposed Shared Roadway

Road	Shared Use	Mtnc Level*	Accident History	Traffic Type	Traffic Volume	User Speed	Roadway Cross Sec	Site Distance	Roadway Alignment	Climatic Conditions
2918-000	Prohibit	3 / 3	Unavailable	Log Truck Light Vehicles	20 ADT	25-35	Fairly Consistent	Limited	Designed for Log Truck Traffic	Heavy Rain, Snow, Ice, Fog
2929-070	Restricted	2 / C & D	Unavailable	Log Truck Light Vehicles	3 ADT	20-25	Varies - Terraced, mainly flat	Varies	Designed for Log Truck Traffic	Heavy Rain, Snow, Ice, Fog
2902-000	Prohibit	1 / D	Unavailable	Log Truck Light Vehicles	Not Available	20-35	Varied ground, slight grade	Limited	Designed for Log Truck Traffic	Heavy Rain, Snow, Ice, Fog
2902-300	Prohibit	2 / 2	Unavailable	Log Truck Light Vehicles	Not Available	15-25	Varied ground, slight grade	Limited	Designed for Log Truck Traffic	Heavy Rain, Snow, Ice, Fog
3079-011	Restricted	2 / 2	Unavailable	Log Truck Light Vehicles	Not Available	15	Varied ground	Limited	Designed for Log Truck Traffic	Heavy Rain, Snow, Ice, Fog

Probability of accident  
 Severity of Accident  
 Different Assessment

Prohibit = High Probability of Accident & Severe Consequences of Accident  
 Note: Camp Creek Bridge on 2929-070 needs separation and railings for pedestrians  
 Note: Two bridges on 2902-000 need separation and railings for pedestrians  
 Recommendation: Replace culverts on 2929-070 before paving



Road	Surface Conditions	Roadside Conditions	Fill height/steepness below roadway
2918-000	Uneven, potholes, slumps, cracks	Recently logged. Adjacent to river potential for drowning	Probability of major damage or serious injury/death as a result of "run-off the road" accidents would be considered high adjacent to the river.
2929-070	Uneven, potholes	Adjacent large trees	Probability of major damage or serious injury/death as a result of "run-off the road" accidents would be considered high adjacent to the river.
2902-000	Uneven, potholes	Adjacent large trees. Adjacent streams potential for drowning.	Probability of major damage or serious injury/death as a result of "run-off the road" accidents would be considered high.
2902-300	Uneven, potholes	Adjacent large trees. Adjacent streams potential for drowning.	Probability of major damage or serious injury/death as a result of "run-off the road" accidents would be considered high.
3079-011	Uneven, potholes	Adjacent large trees. Adjacent streams potential for drowning.	Probability of major damage or serious injury/death as a result of "run-off the road" accidents would be considered high.