

I-90 Snoqualmie East Alternatives					
Additional Wildlife Connectivity & Mitigation Measures For Evaluation in Draft EIS			Current DOT Draft Alternatives		
Location	Additional Measure	Rationale	Option A	Option B	Option C
Hyak Creek	Wildlife overpass west of Hyak interchange.	Provide direct connection between areas of late-successional forest, in upper forest zone; connects high ground on both sides of freeway leading to route along Hyak Creek under existing Hwy 906 bridge.	Not in DOT proposal as is just west of current project boundaries; considered in earlier phase.		
Coal Creek	Replace existing box culverts with bridge spans of 125' long by 20' high.	Expanded and more effective crossing needed at higher elevation, primarily for high mobility species.	No design identified in April '04 MDT draft.		
Gold Creek	2 terrestrial crossings: 1 bench adjacent to west abutment of bridge, other separate undercrossing west of main bridge, both 20' high. 1200' eastbound aquatic bridge, 1000' westbound, 25' high.	1 bench needed for low mobility, other crossing satisfactory for high mobility species; extra bridge span needed for aquatic connectivity.	1 terrestrial undercrossing west of main bridge 18' high, 1100' eastbound and 900' westbound spans 25' high.	1 terrestrial bench adjacent to bridge abutment 18' high, 1200' eastbound and 1000' westbound spans 25' high.	1 terrestrial undercrossing separate from main bridge 12' high, 300' east and westbound spans 20' high.*
Rocky Run	None proposed	Assume proposed single span bridge is 125' long.	Single span bridge.	Single span bridge.	Single span bridge.
Wolfe Creek	Large bottomless arch culvert, approximately 10' high and 20' wide.	Provides a larger end area & capacity to pass woody debris & bedload.	Bottomless culvert.	Bottomless culvert.	Bottomless culvert.

Resort Creek	Option A, B, or C, with minimum dimensions of 10' high and 20' wide.	Provides a larger end area and capacity to pass woody debris & bedload.	Tunnels & bridges.	Tunnel & bottomless arch.	4 bottomless arches.
Townsend Creek	3 bottomless arches, 10' high and 20' wide.	Provides for better aquatic and terrestrial connectivity.	1 bottomless arch or 3-sided tunnel.	No other options exist.	No other options exist.
Keechelus Dam Knob	Wildlife bridge spanning freeway cuts through rock.	Provides additional and different crossing for large wildlife species in this area.			
Price & Noble Creeks	Remove rest area; 3 bridges, 20' high, one single span and 2 multi-span; 1 hydrological connectivity zone (HCZ).	One larger bridge may be better still, especially for habitat connectivity.	3 bridges: one single span, two multi-span; remove rest area; 1 HCZ.	3 single span bridges and 8 box culverts; 2 HCZ.	2 single span bridges and 1 box culvert; 2 HCZ.*
Bonnie Creek	None proposed	Assumes Option A with acceptable HCZ facility design and integration with additional bridges in Swamp Creek segment.	600' span that includes 300' over a west fork, 20' high; 1 HCZ.	250' span, 12' high; 2 HCZ.*	3-sided box culvert; 2 HCZ.*
Swamp Creek	Install 5 bridges NW of Stampede Pass interchange (integrating with with Bonnie Creek structures), one of which is 600' long; all bridges 25' high. Consider removal of Kachess Road interchange.	Complex aquatic and terrestrial issues, critical area for best alignment. If removal of interchange is not possible, then another option that meets the objective is needed (current options A, B and C do not meet objective.)	Elevate interchange, 3 bridges 15' high, 3 box culverts, 4 HCZ.*	Retain interchange, 2 single span and 1 multi-span bridge 10-12' high, culverts, 5 HCZ.*	Retain interchange, 1 single span and 1 multi-span bridge 10-12' high, culverts, 6 HCZ.*
Kongsberger Hill	Add wildlife bridge between high ground just west of Cabin Creek Road interchange.	Provide additional crossing for terrestrial species.			

Cabin Creek Road	Remove Cabin Creek Road interchange.	An alternative to removing the Swamp Creek interchange. Evaluate need for connector road between Cabin Creek and Stampede Pass roads.			
Toll Creek	150' single span bridge with fill, or 125' bridge with retaining walls, plus multiple small box culverts.	Because fill from bridge removes undercrossing width, longer bridge needed. If longer bridge not feasible then incorporate retaining walls to widen the undercrossing.	125' single span bridge plus 2 box culverts.	125' single span bridge plus 2 box culverts.	Box Culvert.*
Cedar Creek	3 box culverts plus 1 large bottomless culvert.	Recharge wetlands and surface aquifers for hydrologic connectivity.	Box culvert.	Box culvert.	Box culvert.
Telephone Creek	Large bottomless culvert and a wildlife land bridge.	Needed for terrestrial connectivity.	Box culvert.	Box culvert.	Box culvert.
Hudson Creek	Multi-span bridge longer than Option A, 20' high; plus 2 HCZ.	Longer and higher bridge needed for adequate connectivity for low mobility talus species, as well as large carnivores. Exact length to be determined later.	Multi-span bridge with 10' high clearance; 2 HCZ.	Single span bridge length 125', 10' high; 3 HCZ.	Culvert and 3 HCZ.*
Easton Hill	2 land bridges, one each for west and eastbound lanes; plus single span bridge; and 1 HCZ.	Needed for adequate connectivity for all species.	Westbound single span at 10' high, eastbound at 15' high.	1 land bridge for both directions travel and 1 HCZ.	1 land bridge for westbound, single-span bridge over eastbound, 1 HCZ.
Kachess River	Elevate existing interchange and double length of existing bridge, at least 20' high in combination with fencing.	Current bridge design inadequate for terrestrial connectivity.	Retain existing bridge as is.	Retain existing bridge as is.	Retain existing bridge as is.

* Does not meet objective according to April 2004 MDT report. HCZ = Hydrologic Connectivity Zone

Additional Measures (Not Highway Structures)					
Location	Additional Measure	Rationale			
Coal Creek	Restore creek and at least 200' riparian zone on each side of creek.	Mitigate for impacts of maintenance facility; improve habitat along creek for resident, migratory and dispersing species.			
Hyak	Move DOT Maintenance facility. Restore native vegetation.	This allows for increased effectiveness of crossings.	Not included in project scope.		
Mardee Lake/Coal Creek/Gold Creek	Acquisition of land and near north side of freeway; protect/restore habitat; managed by US Forest Service.	Protection of habitat for terrestrial and aquatic species, including bull trout; increases effectiveness of crossings.			
Keechelus Lake	Keep reservoir lower: maximum pool elevation below 2,515' and normal pool below 2,495'.	This allows restoration of forest and riparian habitat, providing substantially improved effectiveness of crossings. Requires cooperation of Bureau of Reclamation.	Not included in project scope.		
Keechelus Ridge 1	Acquire 80 acres of forest just north of Swamp Lake; managed by US Forest Service	Mitigate for loss of mature forest during widening; increases effectiveness of crossings, by allowing development of late successional forest and prevention of additional cabin development.			
Keechelus Ridge 2	Forest acquisition near Price & Noble Creeks; managed by US Forest Service.	Mitigate for loss of mature forest during widening; increases effectiveness of corridor by allowing development of late successional forest, removal of roads and prevention of cabin development.			

Swamp Creek Facility	Remove maintenance facility. Restore native vegetation	This allows for increased effectiveness of crossings.			
Swamp Creek Wetlands	Restore Swamp Creek wetlands near freeway.	Mitigate for wetland impacts; Improve habitat conditions for wetlands dependent species, providing population stability and dispersal.			

Additional Measures Related to Highway

Location	Additional Measure	Rationale			
Keechelus Rest Stop	Construct rest stop for eastbound traffic on fill in Keechelus Lake near dam spill way. Restore riparian vegetation and littoral habitat.	Provide safety and educational feature in location with relatively low wildlife connectivity impacts, avoiding higher impact locations. While not currently part of project, DOT indicates need for such a facility in this region. The ultimate choice of sites could significantly affect the connectivity and mitigation measures.	Not currently included in project scope.		
Easton Rest Stop	Construct rest stop for westbound traffic north of Easton interchange, such as on WA DNR land south of airstrip.	Provide safety and educational feature in location that avoids higher impact locations to the west. While not currently part of project, DOT indicates need for such a facility in this region. The ultimate choice of sites could significantly affect the connectivity and mitigation measures.	Not currently included in project scope.		