

APPENDIX P -1
RESOURCE-SPECIFIC AVOIDANCE AND MINIMIZATION
MEASURES

**Attachment P-1, Appendix P-1
Resource-Specific Avoidance and Minimization Measures
Columbia County: CPL North**

Resource Type (Stream or Wetland)	Resource Name	Resource ID	MP	Chapter 93 Classification, Wetland Classification	Stream Type (Perennial, Intermittent, Ephemeral)	Stream Trout Status (Class A Wild Trout, Wild Trout, Trout Stocked)	Wetland (Cowardin Classification)	Limits of Disturbance (LOD) Adjustments	Field Routing Adjustments within 600-foot Wide Corridor*
Wetland	N/A	W-T02-15001A/ W-T02-15001C	0.20	None	N/A	N/A	PEM, PFO	LOD has been reduced to 75' to minimize impacts to W-T02-15001.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.
Stream	UNT to Fishing Creek	WW-T91-15001	0.21	CWF, MF	Perennial	Wild Trout Waters	R3	WW-T91-15001 encroaches within the southern margin of the LOD. The LOD at this location was reduced to 75 feet to minimize impacts to the adjacent wetland W-T02-15001A. Further LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.	The pipeline was routed in this location to parallel existing ROW and to avoid crossing the stream channel with the pipeline.
Wetland	N/A	W-T02-15002	0.55	None	N/A	N/A	PEM	The LOD has been modified to eliminate impacts to W-T02-15002.	This feature is no longer impacted based on LOD reductions.
Wetland	N/A	W-T02-15003A/ W-T02-15003C	0.59	EV	N/A	N/A	PEM, PFO	LOD has been reduced to 80' to minimize impacts to W-T02-15003. Further LOD reduction was not possible due to the adjacent stream.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.
Stream	UNT to Fishing Creek	WW-T02-15002	0.59	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T02-15002.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.
Wetland	N/A	W-T02-15004A/ W-T02-15004C	M-0155 0.08	None	N/A	N/A	PEM, PFO	LOD has been reduced to 75' to minimize impacts to W-T02-15004. The LOD reduction also results in the elimination of impacts to the forested portion of the wetland (W-T02-15004C).	The pipeline was routed in this location to parallel an existing pipeline ROW. The route was adjusted in the field to crossover the existing pipeline in order to cross the wetland at a perpendicular angle and to avoid the forested portion of the wetland (W-T02-15004C).
Stream	UNT to Fishing Creek (WW-T02-15004)	WW-T02-15004	M-0155 0.10	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 85' to minimize impacts to WW-T02-15004.	The pipeline was routed in this location to parallel an existing pipeline ROW. The route was adjusted in the field to crossover the existing pipeline in order to cross the stream at a perpendicular angle in an area where the riparian corridor has been partially cleared by the existing pipeline.
Wetland	N/A	W-T02-15005	1.12	None	N/A	N/A	PEM	W-T02-15005 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. In addition, an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.	The pipeline was routed at this location to crossover the existing pipeline from the north to the south side. The crossover was necessary to align the pipeline for a perpendicular crossing of stream WW-T02-15007. Workspace requirements for the crossover make avoidance of W-T02-15005 infeasible. Additionally, the crossover location was selected to avoid impact to stream WW-T91-15003.
Stream	UNT to Fishing Creek	WW-T02-15006	1.16	CWF, MF	Perennial	Wild Trout Waters	R3	Per justification provided for wetland W-T02-15006 crossing, LOD reduction not possible at this crossing.	The pipeline was routed at this location to avoid impacts to stream WW-T91-15003 and avoid impacts to the forested portions of wetland W-T02-15006. The pipeline was also routed to maintain colocation with the existing pipeline.
Wetland	N/A	W-T02-15006A / W-T02-15006A-1	1.17	EV	N/A	N/A	PEM	LOD was adjusted to avoid impacting the forested portion of this wetland (W-T02-15006C). Full LOD reduction to 75' was not possible because additional workspace is needed to successfully complete the road crossing of Camp Lavigne Rd. due to the confined workspace between the road and environmental features. The additional workspace will provide storage for spoil within the wetland and will result in less impact than transporting material to a stockpile area outside the wetland.	The pipeline was routed at this location to avoid impacts to stream WW-T91-15003 and avoid impacts to the forested portions of wetland W-T02-15006. The pipeline was also routed to maintain colocation with the existing pipeline.
Stream	UNT to Fishing Creek	WW-T92-15001B	1.26	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 75' to minimize impacts to WW-T92-15001B.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.

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Wetland	N/A	W-T02-15007	1.26	EV	N/A	N/A	PFO	LOD has been reduced to 75' to minimize impacts to W-T02-15007.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.
Stream	Fishing Creek	WW-T02-15007	1.31	CWF, MF	Perennial	Approved Trout Waters; Wild Trout Waters	R3	Full ROW width needed to complete a safe and efficient crossing of this large stream.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.
Stream	UNT to Fishing Creek	WW-T02-15008	1.99	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T02-15008.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.
Wetland	N/A	W-T02-15008A/ W-T02-15008B/ W-T02-15008C	2.12	None	N/A	N/A	PEM, PSS, PFO	LOD has been modified to eliminate impacts to W-T02-15008.	This feature is no longer impacted based on LOD reductions.
Stream	UNT to Coles Creek	WW-T91-15004	M-0086 0.21	CWF, MF	Intermittent	Wild Trout Waters	R4	Full ROW width needed to accommodate adjacent PI's.	The pipeline was rerouted in this location to deviate from the existing ROW in order to avoid a documented population of northeastern bulrush, a threatened species, in wetland W-T02-15008. The pipeline crosses perpendicular to stream WW-T91-15004 on a route to resume colocation with the existing pipeline.
Wetland	N/A	W-T02-15009A/ W-T02-15009C	2.26	None	N/A	N/A	PEM, PFO	LOD has been reduced to 75' for the portion of W-T02-15009 that crosses the full width of the LOD. Additional LOD reduction for the portion of the wetland encroaching on the northern end of the LOD would only be possible in the adjacent upland area and would not result in additional minimization of wetland impacts.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.
Stream	UNT to Coles Creek	WW-T02-15009	2.29	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 75' to minimize impacts to WW-T02-15009.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.
Stream	Hess Hollow	WW-T02-15010	2.87	HQ-CWF	Perennial	Class A Wild Trout Waters;	R3	LOD has been reduced to 75' to minimize impacts to WW-T02-15010.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.
Stream	UNT to Hess Hollow	WW-T92-15001	2.88	HQ-CWF	Perennial	Class A Wild Trout Waters; Wild Trout Waters	R3	LOD has been reduced to 75' to minimize impacts to WW-T02-15001.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.
Wetland	N/A	W-T02-15010A/ W-T02-15010C	2.89	EV	N/A	N/A	PEM, PFO	LOD has been reduced to 75' to minimize impacts to W-T02-15010.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.
Stream	UNT to Hess Hollow	WW-T02-15011	2.92	HQ-CWF	Perennial	Class A Wild Trout Waters; Wild Trout Waters	R3	LOD has been reduced to 75' to minimize impacts to WW-T02-15011.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.
Wetland	N/A	W-T02-15013A	3.33	EV	N/A	N/A	PEM	W-T02-15013A does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. In addition, an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.
Stream	UNT to Coles Creek	WW-T02-15013	3.35	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T02-15013.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.

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Wetland	N/A	W-T02-15014A / W-T02-15014A-1 / W-T02-15014A-2 / W-T02-15014C-2	3.77	EV	N/A	N/A	PEM, PFO	The majority of W-T02-15014 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. In addition, an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland. A crossover of the existing pipeline was considered to reduce impacts, but was not adopted as this would result in greater impacts to the forested portion of the wetland.
Stream	Ashelman Run (WW-T02-15014)	WW-T02-15014	3.82	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T02-15014.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.
Wetland	N/A	W-T02-15015A / W-T02-15015C	3.96	None	N/A	N/A	PEM, PFO	LOD has been reduced to 75' to minimize impacts to W-T02-15015.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland. A crossover of the existing pipeline was considered to reduce impacts, but was not adopted as this would result in greater impacts to the forested portion of the wetland.
Stream	UNT to Coles Creek	WW-T02-15012C	4.12	HQ-CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T02-15012C.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.
Stream	Coles Creek	WW-T02-15012	4.13	HQ-CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimize impacts to WW-T02-15012.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this stream.
Wetland	N/A	W-T02-15012A / W-T02-15012C / W-T02-15012C-1 / W-T02-15012C-2	4.15	EV	N/A	N/A	PEM, PFO	LOD has been reduced to 75' and 80' for the portion of W-T02-15012 that crosses the full width of the LOD. Additional LOD reduction for the portion of the wetland encroaching on the northern end of the LOD would only be possible in the adjacent upland area and would not result in additional minimization of wetland impacts.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland. A crossover of the existing pipeline was considered to reduce impacts, but was not adopted as this would result in greater impacts to the forested portion of the wetland. The proposed alignment also avoids impacts to stream WW-T02-15012A.
Stream	UNT to Coles Creek	WW-T92-15002	4.22	HQ-CWF, MF	Intermittent	Wild Trout Waters	R4	Full ROW width needed to complete a safe and efficient crossing of this stream and adjacent wetland.	The pipeline was routed in this location to parallel existing ROW.
Wetland	N/A	W-T02-15016A / W-T02-15016C	4.66	None	N/A	N/A	PEM, PFO	W-T02-15016 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. In addition, an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland.
Stream	UNT to Marsh Run (WW-T93-15001)	WW-T93-15001	4.80	CWF, MF	Intermittent	Wild Trout Waters	R4	WW-T93-15001 does not extend across the full width of the LOD. An LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of stream impacts.	The pipeline was routed in this location to parallel existing ROW.
Wetland	N/A	W-T02-15016A-1 / W-T02-15016C	4.80	EV	N/A	N/A	PEM, PFO	W-T02-15016 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. In addition, an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.	The pipeline was routed in this location to parallel existing ROW and provides a perpendicular crossing of this wetland. A crossover of the existing pipeline was considered to reduce impacts, but was not adopted as this would result in greater impacts to the forested portion of the wetland. The proposed alignment also avoids impacts to stream WW-T02-15015.

Note:
*The FERC Alignment Sheets provided in Attachment H-1 show field delineated streams and wetlands within the 300-foot wide environmental survey corridor, and surrounding land use features on an aerial base map.

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Stream	South Branch Roaring Creek (WW-T45-11001)	WW-T45-11001	90.99	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T45-11001.	The pipeline was routed through agricultural fields in this area to minimize forest impact, and the route provides a perpendicular crossing of the stream.
Stream	UNT to South Branch Roaring Creek (WW-T51-11001)	WW-T51-11001	91.01	HQ-CWF, MF	Intermittent	Class A Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T45-11001.	The pipeline was routed through agricultural fields in this area to minimize forest impact, and the route provides a perpendicular crossing of the stream.
Wetland	N/A	W-T49-11002	91.03	EV	N/A	N/A	PEM	LOD reduced to 90' to minimize impacts to W-T49-11002. Further LOD reduction was not possible due to the steep terrain on both sides of the wetland leading into adjacent stream WW-T51-11001. The additional workspace will be used for equipment crossing and spoil storage to accommodate a safe and efficient stream crossing.	The pipeline was routed through agricultural fields in this area to minimize forest impact. Avoidance of wetland W-T49-11002 was not feasible due to the linear nature of the wetland, extending north and south beyond the routing corridor.
Stream	UNT to South Branch Roaring Creek (WW-T47-11001)	WW-T47-11001	91.74	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	Full construction ROW width is needed due to the surrounding terrain and adjacent road crossing.	The pipeline was routed in this location to avoid impacting wetland W-T47-11001, located immediately north of the LOD, and to provide a perpendicular crossing of the stream.
Stream	South Branch Roaring Creek (WW-T44-11001)	WW-T44-11001	M-0437 0.06	HQ-CWF, MF	Perennial	Class A Wild Trout Waters	R3	Full construction ROW width is needed due to the surrounding terrain and adjacent road crossing.	The pipeline was routed in this location to avoid impacting wetland W-T47-11001, located immediately north of the LOD, and to provide a perpendicular crossing of the stream.
Wetland	N/A	W-T49-11003-1	M-0271 0.10	EV	N/A	N/A	PEM	The LOD for W-T49-11003-1 has been modified to eliminate impacts.	This feature is no longer impacted based on LOD reductions.
Stream	UNT to Mugser Run (WW-T31-11001)	WW-T31-11001	94.13	HQ-CWF, MF	Intermittent	Approved Trout Waters, Trout Stocked Stream, Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T31-11001.	The pipeline was routed in this location to provide a perpendicular crossing of the stream, and to avoid impacting stream WW-T31-11001A and a spring located immediately west and east of the proposed LOD, respectively.
Wetland	N/A	W-T04-11004	94.32	None	N/A	N/A	PEM	The LOD for W-T04-11004 has been modified to eliminate impacts.	This feature is no longer impacted based on LOD reductions.
Stream	Mugser Run (WW-T04-11001) UNT to Mugser Run (WW-T04-11001A)	WW-T04-11001 WW-T04-11001A	94.43	HQ-CWF, MF	Perennial/ Intermittent	Approved Trout Waters; Trout Stocked Stream; Wild Trout Waters	R3/R4	LOD has been reduced to 90' to minimize impacts to WW-T04-11001 and WW-T04-11001A.	Pipeline routing was significantly constrained in this location by adjacent water resources. The pipeline was routed in this location to avoid impact to a vernal pool located west of the proposed route and to avoid impact to an additional stream, WW-T04-11001B, located immediately east of the proposed route.
Stream	UNT to Roaring Creek (WW-T04-11002)	WW-T04-11002	94.96	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T04-11002.	The pipeline and temporary workspace was routed in this location to provide a perpendicular crossing of the stream. Immediately north of the stream crossing, the pipeline was re-routed to turn northwest to avoid construction immediately parallel to the stream, which bends north beyond the crossing location.
Stream	UNT to Roaring Creek (WW-T28-12005)	WW-T28-12005	95.29	TSF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T28-12005.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T28-12005. Additionally, the pipeline was routed to minimize forest impact by routing within existing agricultural fields to the greatest extent possible.
Stream	UNT to Roaring Creek (WW-T28-12004)	WW-T28-12004	95.44	TSF, MF	Intermittent	Approved Trout Waters, Trout Stocked Stream, Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T28-12004.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T28-12004. Additionally, the pipeline was routed to minimize forest impact by routing within existing agricultural fields to the greatest extent possible.

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Slough	WB-T35-11001	WB-T35-11001	95.83	None	N/A	N/A	PUB	LOD has been reduced to 90' to minimize impacts to WB-T35-11001.	The pipeline was routed in this location to minimize forest impact by following an agricultural field located north of the crossing, and to provide a perpendicular crossing of nearby stream WW-T35-11001. Slough WB-T35-11001 extends east and west beyond the limits of the routing corridor, making avoidance impractical.
Stream	Roaring Creek (WW-T35-11001)	WW-T35-11001	95.85	TSF, MF	Perennial	Approved Trout Waters, Trout Stocked Stream, Wild Trout Waters	R3	The current LOD configuration for WW-T35-11001 is required due to the feature being a navigable water requiring Aids To Navigation (ATON).	The pipeline was routed in this location to minimize forest impact by following an agricultural field located north of the crossing, and to provide a perpendicular crossing of stream WW-T35-11001.
Stream	Susquehanna River (WW-T04-12001)	WW-T04-12001	99.66	WWF	Perennial	WWCW Fisheries Streams	R3	WW-T04-12001 is being crossed via HDD.	The pipeline was routed in this location to provide a safe and effective HDD crossing of the Susquehanna River (WW-T04-12001).
Wetland	N/A	W-T04-12001C	99.83	None	N/A	N/A	PFO	WW-T04-12001C is being crossed via HDD.	The pipeline was routed in this location to provide a safe and effective HDD crossing of the Susquehanna River (WW-T04-12001).
Wetland	N/A	W-T74-12001A-1/ W-T74-12001C	M-0495 0.68	None	N/A	N/A	PEM, PFO	W-T74-12001 does not cross the full width of the LOD, and any LOD reductions at this crossing would only be possible in adjacent upland areas and would not result in minimization of wetland impacts.	The pipeline alignment was not significantly changed in this area during field routing. The original alignment is collocated with an existing transmission line in this area and crosses the wetland along a small portion of its western margin only.
Wetland	N/A	W-T04-12002A/ W-T04-12002C	101.50	None	N/A	N/A	PEM, PFO	LOD reduction to 75' was not possible due to the saturated nature of the wetland complex, unconsolidated soils in area, and adjacent streams. The additional workspace will provide storage for spoil within the wetland and will result in less impact than transporting material to a stockpile area outside the wetland.	Pipeline routing was significantly constrained in this location by adjacent water resources and residential development. The pipeline was routed in this location to avoid impact to a pond located west of the proposed route. The pipeline was also routed to avoid construction parallel to streams WW-T04-12002 and WW-T28-12002, which flank and run parallel to the pipeline in this area. Additionally, the route selected avoids crossing streams WW-T04-12003 and WW-T04-12004, which abut the workspace to the east, and the route provides perpendicular crossings of streams WW-T04-12002, WW-T04-12005, and WW-T04-12005A. Construction to the east or west of the proposed route was considered, but was not feasible due to the locations of existing homes and the aforementioned water resources.
Stream	UNT to Montour Run (WW-T04-12002)	WW-T04-12002	101.61	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T04-12002.	The pipeline was routed in this location to provide a perpendicular crossing of the stream, and to avoid the features noted for the W-T04-12002 crossing.
Stream	UNT to Montour Run (WW-T04-12003)	WW-T04-12003	101.61	CWF, MF	Intermittent	None	R4	LOD reduced by 90' to minimize impacts to WW-T04-12003. Further LOD reduction to completely avoid the stream is not possible because a minimum of 25' of LOD is required on the spoil side of the LOD, where the stream is present	The pipeline was routed in this location to avoid a direct crossing of stream WW-T04-12003.
Stream	UNT to Montour Run (WW-T04-12004)	WW-T04-12004	101.62	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T04-12004.	The pipeline was routed in this location to avoid a direct crossing of stream WW-T04-12004.
Stream	Montour Run (WW-T04-12005)	WW-T04-12005	101.65	CWF, MF	Perennial	None	R3	LOD has been reduced to 90' to minimize impacts to WW-T04-12005.	The pipeline was routed in this location to cross the stream at its narrowest point at a 90 degree angle.

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Wetland	W-T04-12004 / W-T04-12004-1	W-T04-12004/ W-T04-12004-1	101.65	None	N/A	N/A	PSS	LOD has been reduced to 75' to minimize impacts to W-T04-12004.	The pipeline was routed in this location to provide a perpendicular crossing of the wetland, and to avoid the features noted for the W-T04-12002 crossing.
Stream	UNT to Montour Run (WW-T04-12005A)	WW-T04-12005A	101.68	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T04-12005A.	The pipeline was routed in this location to provide a perpendicular crossing of the stream, and to avoid the features noted for the W-T04-12002 crossing.
Pond	Unnamed pond	WB-T89-001	101.98	CWF, MF	N/A	None	PUB	LOD has been reduced to 80' to minimize impacts to WB-T89-001.	The pipeline was routed in this location to avoid impacting wetland W-T04-12006 and a residence located immediately east and west of the LOD, respectively.
Stream	UNT to Montour Run	WW-T89-001	102	CWF, MF	Perennial	None	R3	LOD has been reduced to 80' to minimize impacts to WW-T89-001.	The pipeline was routed in this location to avoid impacting wetland W-T04-12006 and a residence located immediately east and west of the LOD, respectively.
Stream	UNT to Montour Run (WW-T04-12006)	WW-T04-12006	102.02	CWF, MF	Perennial	None	R3	LOD has been reduced to 80' to minimize impacts to WW-T04-12006.	The pipeline was routed in this location to avoid impacting wetland W-T04-12006 and a residence located immediately east and west of the LOD, respectively.
Stream	UNT to Montour Run (WW-T04-12007)	WW-T04-12007	M-0423 0.30	CWF, MF	Intermittent	None	R4	Full construction ROW width is needed due to the steep terrain and close proximity of PI under an Overhead Power Line transmission utility crossing.	The pipeline was routed in this location to cross the stream at a perpendicular angle while maintaining collocation with an existing transmission line. Additionally, a previous alignment was collocated on the west side of the existing transmission line in this area. A crossover to the east side of the transmission line was added during field routing to avoid a braided section of this stream located 300' to the west of the current alignment.
Stream	Hemlock Creek (WW-T70-12003)	WW-T70-12003	M-0423 1.48	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T70-12003.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T70-12003.
Wetland	N/A	W-T70-12005A/ W-T70-12005B	M-0423 1.50	None	N/A	N/A	PEM, PSS	LOD has been reduced to 75' to minimize impacts to W-T70-12005A.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T70-12003 and to align the route to avoid wetlands W-T70-12001 and W-T70-12002, located on both sides of the route north of this crossing. Avoidance of wetland W-T70-12005 was not feasible due to the linear nature of the wetland, extending east and west beyond the routing corridor.
Wetland	N/A	W-T70-12009	M-0423 1.76	None	N/A	N/A	PEM	This wetland encroaches within the southern portion of the LOD only, and this portion of the LOD was reduced by 10' to minimize impacts to W-T04-12004-1.	The pipeline was routed in this location to complete a perpendicular crossing of the public road located west of wetland W-T70-12009. The road crossing location was selected to avoid impact to streams WW-T70-12005 and WW-T70-12005A, located north of the proposed route. Impact to wetland W-T70-12009 was minimized and habitat fragmentation avoided by limiting impact to the margin of the wetland and avoiding impact to the wetland's water source - a spring located south of the proposed route.
Stream	UNT to Fishing Creek (WW-T70-12011)	WW-T70-12011	M-0423 3.01	CWF, MF	Perennial	None	R3	Full construction ROW width is needed to accommodate the adjacent Interstate 80 HDD. LOD for the HDD setup has been reduced to avoid additional impacts to this feature (e.g. the stream is crossed by the open trench portion of the alignment only).	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T70-12011.
Wetland	N/A	W-T70-12010A-1 / W-T70-12010A-2	M-0423 3.02	None	N/A	N/A	PEM	LOD reduction to 75' was not possible as additional workspace is required at this location for the HDD entry associated with the Interstate 80 crossing.	The pipeline was routed in this location to provide a geotechnically-safe and efficient HDD crossing of Interstate 80.
Stream	Fishing Creek (WW-T70-12006)	WW-T70-12006	M-0423 3.07	WWF, MF	Perennial	WWCW Fisheries Streams	R3	The current LOD configuration at WW-T70-12006 is required for the water withdrawal location.	The proposed adjacent HDD location will use stream WW-T70-12006 for water withdrawal during construction. Routing has limited the workspace to the minimum disturbance required for pump installation and maintenance.

**Attachment P-1, Appendix P-1
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Resource Type (Stream or Wetland)	Resource Name	Resource ID	MP	Chapter 93 Classification, Wetland Classification	Stream Type (Perennial, Intermittent, Ephemeral)	Stream Trout Status (Class A Wild Trout, Wild Trout, Trout Stocked)	Cowardin Classification	Limits of Disturbance (LOD) Adjustments	Field Routing Adjustments within 600-foot Wide Corridor
Stream	Little Fishing Creek (WW-T70-12010-1)	WW-T70-12010-1	M-0423 3.28	CWF, MF	Perennial	WWCW Fisheries Streams	R3	WW-T70-12010-1 is being crossed via HDD.	The pipeline was routed at this location to provide a safe and effective crossing of Interstate 80.
Wetland	N/A	W-T70-12008	M-0423 3.28	None	N/A	N/A	PEM	W-T70-12008 is being crossed via HDD.	The pipeline was routed at this location to provide a safe and effective crossing of Interstate 80.
Wetland	N/A	W-T70-12007	M-0423 3.57	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T70-12007.	The pipeline was routed in this location to provide a perpendicular crossing of wetland W-T70-12007. Avoidance of this wetland was not feasible due to the linear nature of the wetland, extending north and south beyond the routing corridor.
Stream	Little Fishing Creek (WW-T70-12010)	WW-T70-12010	M-0423 3.58	CWF, MF	Perennial	WWCW Fisheries Streams	R3	Full construction ROW width is needed due to deep excavations and steep slope to allow for safe and efficient construction.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T70-12010.
Stream	UNT to Little Fishing Creek (WW-T70-12012)	WW-T70-12012	M-0423 3.83	CWF, MF	Ephemeral	None	R6	LOD has been reduced to 90' to minimize impacts to WW-T70-12012.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T70-12012.
Wetland	N/A	W-T01-12004	M-0423 4.76	None	N/A	N/A	PEM	LOD reduced to 90' to minimize impacts to W-T49-11002. Further LOD reduction was not possible due to the steep terrain on both sides of the wetland leading into adjacent stream WW-01-12005. The additional workspace will be used for equipment crossing and spoil storage to accommodate a safe and efficient stream crossing.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T01-12005, avoid a residence immediately west of the LOD, and minimize forest clearing.
Stream	UNT to Little Fishing Creek (WW-T01-12005)	WW-T01-12005	M-0423 4.77	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T01-12005.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T01-12005.
Stream	Little Fishing Creek (WW-T81-13001)	WW-T81-13001	107.03	CWF	Perennial	None	R3	Full construction ROW width is needed for the PI and adjacent public road crossing.	The pipeline was routed in this location to cross the stream at a perpendicular angle and to avoid parallel impacts that would occur if the alignment was located further to the east or west.
Wetland	N/A	W-T61-13001A	107.12	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T61-13001A.	The pipeline was routed in this location to impact the western margin of the wetland only and to maximize the distance from stream WW-T81-13001, which runs parallel to the pipeline route.
Stream	UNT to Little Fishing Creek (WW-T52-13001C)	WW-T52-13001C	M-0214 0.17	CWF, MF	Intermittent	None	R4	WW-T52-13001C does not cross the full width of the LOD, and any LOD reductions at this crossing would only be possible in adjacent upland areas and would not result in minimization of stream impacts.	The pipeline was routed in this location perpendicular to a steep hill, avoiding the increased disturbance and potential erosional issues associated with side slope construction.
Stream	UNT to Little Fishing Creek (WW-T52-13001)	WW-T52-13001	M-0214 0.17	CWF, MF	Perennial	None	R3	LOD has been reduced to 90' to minimize impacts to WW-T52-13001.	The pipeline was routed in this location perpendicular to a steep hill, avoiding the increased disturbance and potential erosional issues associated with side slope construction.
Stream	UNT to Little Fishing Creek (WW-T01-13002)	WW-T01-13002	108.67	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T01-13002.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T01-13002.
Stream	UNT to Little Fishing Creek (WW-T01-13003)	WW-T01-13003	108.75	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T01-13003.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T01-13003.
Wetland	N/A	W-T01-13001	109.16	None	N/A	N/A	PEM	LOD has been modified to eliminate impacts to W-T01-13001.	This feature is no longer impacted based on LOD reductions.
Stream	UNT to Little Fishing Creek (WW-T01-13004)	WW-T01-13004	109.17	CWF, MF	Intermittent	None	R4	LOD has been reduced to 90' to minimize impacts to WW-T01-13004.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T01-13004.

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Resource Type (Stream or Wetland)	Resource Name	Resource ID	MP	Chapter 93 Classification, Wetland Classification	Stream Type (Perennial, Intermittent, Ephemeral)	Stream Trout Status (Class A Wild Trout, Wild Trout, Trout Stocked)	Cowardin Classification	Limits of Disturbance (LOD) Adjustments	Field Routing Adjustments within 600-foot Wide Corridor
Stream	UNT to Deerlick Run (WW-T06-13001)	WW-T06-13001	109.93	CWF, MF	Intermittent	Wild Trout Waters (Under Review)	R4	LOD has been reduced to 90' to minimize impacts to WW-T06-13001.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T06-13001.
Wetland	N/A	W-T06-13002	109.96	EV	N/A	N/A	PEM	This wetland encroaches within the eastern portion of the LOD only, and this portion of the LOD was reduced by 10' to minimize impacts to W-T06-13002.	The route was moved west during routing to avoid a no access property. A further shift west to avoid this wetland is not possible due to a nearby residence. The wetland is crossed along its margin to minimize impacts.
Stream	UNT to Deerlick Run (WW-T06-13002)	WW-T06-13002	110.20	CWF, MF	Perennial	Wild Trout Waters (Under Review)	R3	LOD has been reduced to 75' to minimize impacts to WW-T06-13002.	The pipeline was routed at this location to minimize impacts to wetland W-T06-13003 by crossing in the narrowest section while also avoiding multiple stream crossings (WW-T06-13002A and WW-T06-13002B) to the west.
Wetland	N/A	W-T06-13003A/ W-T06-13003B/ W-T06-13003C	110.19	EV	N/A	N/A	PEM, PSS, PFO	LOD has been reduced to 75' to minimize impacts to W-T06-13003.	The pipeline was routed at this location to minimize impacts to wetland W-T06-13003 by crossing in the narrowest section while also avoiding multiple stream crossings (WW-T06-13002A and WW-T06-13002B) to the west.
Stream	UNT to Deerlick Run (WW-T90-13001)	WW-T90-13001	110.51	CWF, MF	Intermittent	None	R4	LOD has been modified to eliminate impacts to WW-T90-13001	This feature is no longer impacted based on LOD reductions.
Wetland	N/A	W-T06-13005	110.54	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T06-13003.	The pipeline was routed at this location to minimize impacts by crossing in the narrowest section while also minimizing the tree clearing east and west of the LOD.
Wetland	N/A	W-T63-14001	111.19	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T63-14001.	The pipeline was routed at this location to minimize impacts to the wetland by crossing the margin of the wetland. Complete avoidance was not possible due to a residence east of the LOD.
Stream	Deerlick Run (WW-T35-13002)	WW-T35-13002	111.23	CWF, MF	Perennial	Wild Trout Waters (Under Review)	R3	LOD has been reduced to 75' to minimize impacts to WW-T35-13002.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T35-13002.
Wetland	N/A	W-T35-13002	111.24	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T35-13002.	The pipeline was routed at this location to minimize impacts by crossing the narrowest section of the wetland.
Stream	UNT to Deerlick Run (WW-T35-13001)	WW-T35-13001	111.59	CWF, MF	Perennial	Wild Trout Waters (Under Review)	R3	LOD has been reduced to 75' to minimize impacts to WW-T35-13001.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T35-13001 and to minimize tree clearing.
Wetland	N/A	W-T35-13001	111.60	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T35-13001.	The pipeline was routed at this location to minimize impacts by crossing the narrowest section of the wetland, and to minimize tree clearing.
Pond	WB-T21-13001	WB-T21-13001	113.11	None	N/A	N/A	PUB	LOD has been modified to eliminate impacts to WB-T21-13001	This feature is no longer impacted based on LOD reductions.
Stream	UNT to Mud Run (WW-T90-14003)	WW-T90-14003	113.37	TSF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 75' to minimize impacts to WW-T90-14003.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T90-14003.
Wetland	N/A	W-T21-13002	113.37	EV	N/A	N/A	PSS	LOD has been reduced to 75' to minimize impacts to W-T21-13002.	The pipeline was routed at this location to provide a perpendicular crossing of wetland W-T21-13002.
Wetland	N/A	W-T21-13001	113.42	EV	N/A	N/A	PEM	This wetland encroaches within the western portion of the LOD only, and this portion of the LOD was reduced by 10' to minimize impacts to W-T21-13001.	The pipeline was routed at this location to go between wetlands W-T21-13001 and W-T90-14006. All impacts to W-T90-14006 are avoided; impacts to W-T21-13001 are minimized by crossing the margin of the wetland, while also minimizing tree clearing and crossing the adjacent stream at a 90 degree angle.
Stream	Mud Run (WW-T21-13001)	WW-T21-13001	113.43	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T21-13001.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T21-13001.

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Stream	UNT to Mud Run (WW-T21-13001A)	WW-T21-13001A	113.54	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T21-13001A.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T21-13001A and minimize tree clearing within the forested riparian buffer.
Wetland	N/A	W-T90-14005/ W-T90-14005A/ W-T90-14005A/ W-T90-14005A-1	113.54	EV	N/A	N/A	PEM, PFO	This wetland encroaches within the western portion of the LOD only, and this portion of the LOD was reduced by 10' to minimize impacts to W-T90-14005.	The pipeline was routed at this location to avoid larger forested wetland area west of the LOD and to minimize tree clearing within the forested riparian buffer of stream WW-T21-13001.
Stream	Little Green Creek (WW-T16-14003)	WW-T16-14003	115.44	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T16-14003.	The pipeline was routed at this location to minimize impacts to a much larger portion of wetland W-T16-14001 west of the LOD.
Wetland	N/A	W-T16-14001A / W-T16-14001A	115.46	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T16-14001A.	The pipeline was routed at this location to minimize impacts to a much larger portion of the wetland west of the LOD.
Wetland	N/A	W-T16-14002	115.46	EV	N/A	N/A	PSS	LOD has been modified to eliminate impacts to W-T16-14002	This feature is no longer impacted based on LOD reductions.
Wetland	N/A	W-T44-14001A	115.51	EV	N/A	N/A	PEM	This wetland encroaches within the western portion of the LOD only, and this portion of the LOD was reduced by 10' to minimize impacts to W-T44-14001A.	The pipeline was routed at this location to minimize impacts to a much larger portion of wetland W-T16-14001 west of the LOD.
Wetland	N/A	W-T44-14001B	115.51	EV	N/A	N/A	PSS	LOD has been modified to eliminate impacts to W-T44-14001B	This feature is no longer impacted based on LOD reductions.
Stream	UNT to Green Creek (WW-T16-14001)	WW-T16-14001	116.01	TSF, MF	Ephemeral	Wild Trout Waters	R6	WW-T16-14001 does not cross the full width of the LOD, and any LOD reductions at this crossing would only be possible in adjacent upland areas and would not result in minimization of stream impacts.	The alignment was not significantly changed in this area during field routing. The original alignment allows for the pipeline trench and permanent ROW to avoid the stream channel passing to the east. The original alignment also allows for a slight PI to be executed on relatively level ground in order to cross a forested slope at a perpendicular angle, avoiding possible side slope construction and any need for additional workspace in a forested area.
Wetland	N/A	W-T10-14001A/ W-T10-14001B	118.07	EV	N/A	N/A	PEM, PSS	LOD has been reduced to 75' to minimize impacts to W-T16-14001.	The pipeline was routed at this location to cross the narrowest section of the wetland and avoid paralleling a stream immediately west of the LOD.
Stream	UNT to Green Creek (WW-T16-14002)	WW-T16-14002	118.06	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 75' to minimize impacts to WW-T16-14002.	The pipeline was routed at this location to cross the narrowest section of the adjacent wetland and avoid paralleling a stream immediately west of the LOD.
Stream	UNT to Green Creek (WW-T15-14003)	WW-T15-14003	119.26	TSF, MF	Perennial	Wild Trout Waters	R3	Full construction ROW width is needed due to steep slopes, the adjacent road crossing, and approaching PI.	The pipeline was routed at this location to avoid crossing stream WW-T15-14004 immediately east of the LOD.
Stream	UNT to Green Creek (WW-T15-14005)	WW-T15-14005	119.90	TSF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T15-14005.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T55-14005.
Stream	UNT to Green Creek (WW-T15-14006)	WW-T15-14006	119.90	TSF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T15-14006.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T55-14006.

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Wetland	N/A	W-T15-14003	120.09	EV	N/A	N/A	PEM	W-T15-14003 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. In addition, an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.	The pipeline was routed at this location to avoid impacting a much larger wetland to the south of the LOD (wetland W-T15-14002). Shifting the route north to avoid this crossing would result in additional tree clearing and encroach on residences.
Stream	Green Creek (WW-T15-14007)	WW-T15-14007	120.11	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T15-14007.	The pipeline was routed at this location to avoid impacting a much larger wetland to the south of the LOD (wetland W-T15-14002).
Stream	UNT to Green Creek (WW-T15-14007A)	WW-T15-14007A	120.12	TSF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T15-14007A.	The pipeline was routed at this location to avoid impacting a much larger wetland to the south of the LOD (wetland W-T15-14002).
Stream	UNT to Green Creek (WW-T15-14008)	WW-T15-14008	121.28	TSF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 75' to minimize impacts to WW-T15-14008.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T15-14008.
Wetland	N/A	W-T15-14004	121.28	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T15-14004.	The pipeline was routed in this location to provide a perpendicular crossing of wetland W-T15-14004. Avoidance of this wetland was not feasible due to the linear nature of the wetland, extending north and south beyond the routing corridor.
Stream	UNT to York Hollow (WW-T17-14001)	WW-T17-14001	122.62	CWF, MF	Perennial	Wild Trout Waters	R3	Full construction ROW width is needed due to the adjacent road crossing.	The pipeline was routed in this location to avoid paralleling the reach of stream WW-T17-14001 east of the LOD.
Stream	UNT to York Hollow (WW-T17-14002)	WW-T17-14002	123.12	CWF, MF	Intermittent	Wild Trout Waters	R4	LOD has been reduced to 90' to minimize impacts to WW-T17-14002.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T17-14002.
Stream	York Hollow (WW-T17-14003)	WW-T17-14003	123.20	CWF, MF	Ephemeral	Wild Trout Waters	R6	Full construction ROW width is needed due to the adjacent road crossing and approaching PI.	The pipeline was routed in this location to avoid paralleling the reach of stream WW-T17-14003 west of the LOD.
Wetland	N/A	W-T02-14001	123.34	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimize impacts to W-T02-14001.	The pipeline was routed at this location to cross the narrowest section of the wetland.
Stream	West Creek (WW-T06-14002)	WW-T06-14002	124.60	CWF, MF	Perennial	Approved Trout Waters; Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T06-14002.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T06-14002.
Stream	UNT to West Creek (WW-T06-14001)	WW-T06-14001	124.67	CWF, MF	Perennial	Approved Trout Waters; Wild Trout Waters	R3	LOD has been reduced to 90' to minimize impacts to WW-T06-14001.	The pipeline was routed at this location to provide a perpendicular crossing of stream WW-T06-14001.
Wetland	N/A	W-T06-14001	124.70	EV	N/A	N/A	PEM	This wetland encroaches within the eastern portion of the LOD only, and this portion of the LOD was reduced by 10' to minimize impacts to W-T06-14001.	The pipeline was routed at this location to provide a perpendicular crossing of stream wetland W-T06-14001, and to cross the margin of the wetland.

Note:
*The FERC Alignment Sheets provided in Attachment H-1 show field delineated streams and wetlands within the 300-foot wide environmental survey corridor, and surrounding land use features on an aerial base map.