

Attachment IP-5b - Minor Realignment: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type							
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)
2.20	2.20	Reduced MVP-RD-001 and split into MVP-RD-001A and MVP-RD-001B due to change in site plan for Bradshaw compressor station.	WV-WE-4270	No	No	Developed, Open Space; Deciduous Forest; Cultivated Crops	Developed, Open Space; Deciduous Forest; Cultivated Crops	0	0	None	None (S-KL11 (Spanned and protected), S-BB11 (Spanned and protected), W-GH8 (Adjacent), S-AA3 (Adjacent), S-KL11 (Adjacent), S-GH27 (Adjacent))	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-02 MVP-QDAR-H600-02	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-2.83	-1.63	0.00	0.00	0.00	0.00		
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.10	-0.10	0.00	0.00	0.00	0.00		
2.30	2.30	Adjusted orientation of CPG8-01A and associated ATWS (MVP-ATWS-005) per landowner request.	WV-WE-016	No	No	Deciduous Forest; Developed, Open Space	Deciduous Forest; Developed, Open Space	0	0	None	S-A6a (Adjacent - No impact)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WEVW-H600-03	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	0.00	0.00	0.00	0.00	0.00	0.00	
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.33	-0.28	0.00	0.00	0.00	0.00		
7.35	7.35	Eliminated part of MVP-WE-015.	WV-WE-3887	No	No	Deciduous Forest	Deciduous Forest; Cultivated Crops	0	0	None	W-A26 (Eliminated)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAS-H600-05 MVP-ADAS-H600-05	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-1.05	-0.47	0.00	0.00	0.00	0.00	0.00
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.06	0.00	0.00	0.00	0.00	0.00		
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-1.00	-0.45	0.00	0.00	0.00	0.00		
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.59	-0.59	0.00	0.00	0.00	0.00		
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-3.80	-3.80	0.00	0.00	0.00	0.00		
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.04	0.00	0.00	0.00	0.00	0.00		
7.35	7.35	Eliminated MVP-ATWS-750 as part of MVP-WE-015 reduction.	WV-WE-3900	NA	NA	NA	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAS-H600-05 MVP-ADAS-H600-05	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.83	-0.52	0.00	0.00	0.00	0.00	0.00
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.65	-0.49	0.00	0.00	0.00	0.00		
7.35	7.35	Reduced MVP-ATWS-748 to avoid pond.	BWE-R3	No	No	Deciduous Forest	Deciduous Forest	0	0	None	None. No Features affected by adjustment.	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAS-H600-05 MVP-ADAS-H600-05	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.05	0.00	0.00	0.00	0.00	0.00	0.00
12.05	12.05	Trimmed MVP-ATWS-403 off property owner at their request.	WV-HA-018	No	No	Cultivated Crops; Grassland/Herbaceous; Deciduous Forest	Cultivated Crops; Pasture/Hay; Grassland/Herbaceous; Deciduous Forest	0	0	None	S-B74 (Adjacent), S-B75/F49 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-HAWV-H600-03	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00
25.80	25.80	Modified MVP-LY-003 to exclude MVP-STR-049.	WV-HA-100	No	Yes	Developed, Open Space; Deciduous Forest	Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-HAWV-H600-18	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.07	0.00	0.00	0.00	0.00	0.00	0.00
25.87	25.87	Reduced MVP-ATWS-1433 to allow for relocation of structure MVP-STR-060 on property.	WV-HA-102.02	No	Yes	Developed, Medium Intensity; Developed, Low Intensity; Grassland/Herbaceous; Deciduous Forest	Developed, Medium Intensity; Developed, Low Intensity; Grassland/Herbaceous; Deciduous Forest	0	0	None	W-UU3 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-HAWV-H600-18	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.07	0.00	0.00	0.00	0.00	0.00	0.00
27.00	27.00	Modified MVP-LY-013 to exclude structure.	WV-DO-5201	No	No	Deciduous Forest; Developed, Medium Intensity; Developed, Low Intensity; Developed, Open Space	Deciduous Forest; Developed, Medium Intensity; Developed, Low Intensity; Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAS-H600-01 MVP-ADAS-H600-01	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.08	0.00	0.00	0.00	0.00	-0.05	0.00
31.80	31.80	Trimmed MVP-ATWS-769A off existing county route ROW.	WV-DO-003	No	No	Developed, Open Space; Deciduous Forest	Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-12 MVP-ADAR-H600-12	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.05	0.00	0.00	-0.05	0.00	0.00	0.00
32.90	32.90	Trimmed temporary right-of-way to reduce impacts to S-K81.	WV-HA-144	No	No	Pasture/Hay; Grassland/Herbaceous; Developed, Open Space	Pasture/Hay; Deciduous Forest; Grassland/Herbaceous; Developed, Open Space	0	0	None	S-K81 (Reduction), W-CV15	S-K81 (4 ft)	None	MVP will address this in the NTP request.	PA-HAWV-H600-26	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.21	0.00	0.00	0.00	0.00	-0.01	0.00

Attachment IP-5b - Minor Realignments: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type							
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)
32.95	32.97	Trimmed temporary right-of-way to environmentally sensitive area.	WV-HA-144	No	No	Pasture Hay	Pasture Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-HAWV-H600-26	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.14	0.00	0.00	0.00	0.00	0.00	0.00
33.97	33.97	Reduced MVP-ATWS-771A per landowner request.	WV-DO-006	No	No	Deciduous Forest; Developed, Open Space	Deciduous Forest; Developed, Open Space	0	0	None	S-UU6 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-12 MVP-ADAR-H600-12	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.21	0.00	0.00	-0.21	0.00	0.00	0.00
34.83	34.83	Relocated MLV-05 to avoid encroaching on foreign utility with valve. Shortened and renamed access road to MVP-DO-048.01.	WV-DO-014	No	No	Cultivated Crops; Deciduous Forest	Cultivated Crops; Deciduous Forest	0	0	None	S-A110/K62 (Adjacent, no change), W-A23 (No change), S-A109 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-HAWV-H600-28	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.07	0.00	0.00	0.00	0.00	0.00	0.00
37.19	37.19	Eliminated MVP-ATWS-1063 to avoid impacts to stream S-A108.	WV-HA-154	NA	NA	NA	Grassland/Herbaceous	0	0	None	S-A108 (Reduction)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-13 MVP-ADAR-H600-13	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.20	0.00	0.00	0.00	0.00	0.00	0.00
39.83	39.83	Adjusted access road MVP-LE-054 to correctly match county route right-of-way.	WV-LE-3941	No	Yes	Deciduous Forest; Developed, Open Space	Deciduous Forest; Developed, Open Space	0	0	None	S-K91 (Eliminated)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-14 MVP-ADAR-H600-14	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.13	0.00	0.00	0.00	0.00	-0.13	0.00
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.11	0.00	0.00	0.00	0.00	-0.11	0.00	
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.02	0.00	0.00	0.00	0.00	-0.02	0.00	
47.39	47.40	Eliminated temporary workspace to avoid existing well structure.	WV-LE-052	NA	NA	NA	Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-LEWV-H600-10	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.99	0.00	0.00	0.00	0.00	-0.99	0.00
47.97	47.97	Reduced MVP-ATWS-075 to avoid wetland W-I22-PEM-2.	WV-LE-3464	No	No	Deciduous Forest; Developed, Open Space	Deciduous Forest; Developed, Open Space	0	0	None	TTWV-S-217 (Eliminated), W-I22-PEM-2 (Eliminated)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-LEWV-H600-11	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-1.78	0.00	0.00	0.00	0.00	-0.07	0.00
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.11	0.00	0.00	0.00	0.00	-0.07	0.00	
53.93	53.94	Adjusted temporary right-of-way to avoid existing well structure.	WV-LE-093	No	No	Deciduous Forest	Deciduous Forest	56	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-LEWV-H600-17	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.01	0.00	0.00	0.00	0.00	-0.02	0.00
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	0.00	0.00	0.00	0.00	0.00	0.00		
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.01	0.00	0.00	0.00	0.00	-0.01	0.00	
59.93	59.93	Adjusted MVP-LE-076 and MVP-ATWS-878 to match existing road alignment.	WV-LE-126	No	No	Deciduous Forest	Deciduous Forest	0	0	None	W-UU8 (No change), W-L36 (No change)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-LEWV-H600-24	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.07	0.00	0.00	0.00	0.00	-0.07	0.00
61.80	61.80	Adjusted MVP-LE-077.01 alignment and LOD to avoid impacts to environmentally sensitive area.	WV-LE-133	No	No	Deciduous Forest; Developed, Open Space	Deciduous Forest; Developed, Open Space	0	0	None	W-CD34 (E&S BMP Protection for W-CD34. No impact.), W-CD31 (Adjacent), S-VV13a (No Change), S-CD20 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-21 MVP-ADAR-H600-21	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.09	0.00	0.00	0.00	0.00	-0.09	0.00
65.29	65.29	Adjusted edge of MVP-LE-084 to align with county route right-of-way.	WV-LE-1661	No	No	Deciduous Forest; Developed, Open Space; Pasture/Hay	Deciduous Forest; Developed, Open Space; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-22 MVP-ADAR-H600-22	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.01	0.00	0.00	0.00	0.00	-0.01	0.00
69.96	69.96	Reduced MVP-ATWS-1395 to avoid environmentally sensitive area.	WV-BR-5630	No	No	Deciduous Forest	Deciduous Forest; Developed, Open Space	0	0	BX-0351 - Losch Farmstead. Treatment Plan to be implemented. No additional impact.	S-U28 (Adjacent)	S-U28 (8 ft)	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-26 MVP-ADAR-H600-26	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.07	0.00	0.00	0.00	0.00	-0.07	0.00
73.69	73.69	Reduced size of groundbed MVP-CPGB-08.	WV-BR-032	No	No	Deciduous Forest; Developed, Open Space	Pasture/Hay; Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-BRWV-H600-09	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.41	0.00	0.00	0.00	0.00	0.01	0.00
74.83	74.83	Reduced MVP-ATWS-119.	WV-BR-038	No	No	Deciduous Forest	Deciduous Forest	0	0	None	S-H132 (Adjacent), W-QR13 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-BRWV-H600-10	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.59	0.00	0.00	0.00	0.00	0.00	-0.59
74.88	74.88	Reduced LOD of MVP-BR-103.01 to avoid existing bridge over Little Kanawha River.	WV-BR-5856	No	No	Deciduous Forest; Developed, Open Space; Mixed Forest; Evergreen Forest	Deciduous Forest; Developed, Open Space; Mixed Forest; Evergreen Forest	0	0	None	S-H132b-Braid (Reduction), S-H132b (Reduction)	S-H132b-Braid (15 ft) S-H132b (100 ft)	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-28 MVP-ADAR-H600-28	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.03	0.00	0.00	0.00	0.00	-0.03	0.00
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.01	0.00	0.00	0.00	0.00	0.00		
77.34	77.34	Adjusted alignment of suction and discharge lines at Harris Compressor Station.	WV-BR-0457.01	No	No	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-BRWV-H600-13	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Attachment IP-5b - Minor Realignment: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type							
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)
79.75	79.75	Trimmed limits of MVP-ATWS-137 per landowner request.	WV-BR-046.16.1	No	No	Deciduous Forest; Mixed Forest	Deciduous Forest; Mixed Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-BRWV-H600-15 PA-BRWV-H600-16	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.25	0.00	0.00	0.00	0.00	-0.25	0.00
83.68	83.68	Eliminated part of access road MVP-WB-117 and ATWS MVP-ATWS-920, MVP-ATWS-921, MVP-ATWS-922, MVP-ATWS-142, MVP-ATWS-923, MVP-ATWS-924, MVP-ATWS-925, MVP-ATWS-443A, and MVP-ATWS-443.	WV-WB-5174	NA	NA	NA	Deciduous Forest; Developed, Open Space; Mixed Forest	0	0	None	S-R5, S-R4 (Eliminated impacts)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WBVV-H600-04 MVP-QDAR-H600-32 MVP-ADAR-H600-32	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.07	0.00	0.00	0.00	0.00	-0.07	0.00
			WV-WB-4190 (AR WB-117)											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.27	0.00	0.00	0.00	0.00	-0.27	0.00
			WV-WB-5909											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.02	0.00	0.00	0.00	0.00	-0.02	0.00
			WV-WB-3994 (AR WB-117)											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.39	0.00	0.00	0.00	0.00	-0.39	0.00
			WV-WB-5908											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.01	0.00	0.00	0.00	0.00	-0.01	0.00
			WV-WB-5907											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.04	0.00	0.00	0.00	0.00	-0.04	0.00
			WV-WB-5906											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.07	0.00	0.00	0.00	0.00	-0.07	0.00
			WV-BR-3993 (AR BR-117)											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.54	0.00	0.00	0.00	0.00	-0.54	0.00
			WV-WB-5929											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.01	0.00	0.00	0.00	0.00	-0.01	0.00
			WV-WB-5905											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			WV-WB-5904											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.09	0.00	0.00	0.00	0.00	-0.09	0.00
			WV-WB-5903											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.14	0.00	0.00	0.00	0.00	-0.14	0.00
			WV-WB-5902											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.06	0.00	0.00	0.00	0.00	-0.06	0.00
			WV-WB-3990 (AR WB-117)											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-1.66	0.00	0.00	0.00	0.00	-1.66	0.00
			WV-WB-001.20											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-7.73	0.00	0.00	-0.33	0.00	-7.40	0.00
WV-BR-046.18	Additional impacts to USACE Jurisdictional Features will not occur.	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-1.03	0.00	0.00	-0.35	0.00	-0.69	0.00														
WV-WB-001.19	Additional impacts to USACE Jurisdictional Features will not occur.	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-1.40	0.00	0.00	0.00	0.00	-1.40	0.00														
83.94	83.94	Adjusted MVP-ATWS-972 and MVP-ATWS-973 and end of access road MVP-WB-117.01 to match county route right-of-way.	WV-WB-001.18	No	No	Developed, Open Space; Deciduous Forest	Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-32 MVP-ADAR-H600-32	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.03	0.00	0.00	0.00	0.00	-0.03	0.00
84.40	84.40	Narrowed LOD of MVP-WB-119 to stay within existing easement.	WV-WB-2416	No	No	Deciduous Forest; Mixed Forest	Deciduous Forest; Mixed Forest	0	0	None	S-B67a (Protected. Existing Bridge Present at crossing. No Impact), S-B62 (Adjacent, no change)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-34 MVP-ADAR-H600-34	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-1.11	0.00	0.00	0.00	0.00	-0.31	0.00
			WV-WB-5734											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.01	0.00	0.00	0.00	0.00	-0.01	0.00
			WV-WB-5396											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.04	0.00	0.00	0.00	0.00	-0.04	0.00
90.50	90.50	Eliminated access road MVP-WB-121 due to existing slides on road.	WV-WB-001.32	NA	NA	NA	Deciduous Forest	0	0	None	W-TS (Reduction), S-T23 (Protected), S-T24 (Protected), S-T25 (Protected), S-T27 (Protected), S-T28 (Protected)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-36 MVP-ADAR-H600-36 MVP-QDAR-H600-37 MVP-ADAR-H600-37	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (12)	-8.95	0.00	0.00	0.00	0.00	-8.95	0.00
90.70	90.70	Eliminated access road MVP-WB-122 due to existing slides on road.	WV-WB-001.32	NA	NA	NA	Deciduous Forest	0	0	None	S-T34, S-T29, P-T1, S-T33, W-T6, S-T32, S-T30, S-T31, W-T7 (All Protected)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-36 MVP-ADAR-H600-36 MVP-QDAR-H600-37 MVP-ADAR-H600-37	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (12)	-5.11	0.00	0.00	0.00	0.00	-5.11	0.00
90.70	90.70	Eliminated MVP-ATWS-942 due to elimination of MVP-WB-122.	WV-WB-001.32	NA	NA	NA	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-36 MVP-ADAR-H600-36	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (12)	-0.53	0.00	0.00	0.00	0.00	-0.53	0.00
90.70	90.70	Eliminated MVP-ATWS-943 due to elimination of MVP-WB-122 and MVP-WB-121.	WV-WB-001.32	NA	NA	NA	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-36 MVP-ADAR-H600-36	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (12)	-0.25	0.00	0.00	0.00	0.00	-0.25	0.00
95.30	95.30	Reduced MVP-ATWS-167 according to landowner agreement.	WV-WB-018	No	No	NA	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WBVV-H600-18	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (12)	-0.42	0.00	0.00	0.00	0.00	-0.42	0.00

Attachment IP-5b - Minor Realignments: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type							
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)
98.13	98.13	Reduced MVP-ATWS-1405 per landowner request.	WV-WB-5675	No	No	Developed, Open Space; Deciduous Forest	Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-42 MVP-ADAR-H600-42	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (12)	-0.01	0.00	0.00	0.00	0.00	0.00	0.00
			MVP-ATWS-956																		-0.32	0.00	0.00	0.00	0.00	-0.12	0.00
98.13	98.13	Adjusted MVP-ATWS-485 based on survey data.	WV-WB-025.01	No	No	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WBWW-H600-21	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (12)	-0.01	0.00	0.00	0.00	0.00	-0.01	0.00
98.67	98.71	Adjusted alignment to match county route right-of-way.	WV-WB-029.01	No	No	Deciduous Forest; Developed, Open Space	Deciduous Forest; Developed, Open Space	211	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WBWW-H600-22	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
103.43	103.43	Adjusted edge of MVP-WB-131 to match county route right-of-way.	WV-WB-044	No	No	Developed, Open Space; Deciduous Forest; Barren Land; Evergreen Forest	Developed, Open Space; Deciduous Forest; Barren Land; Evergreen Forest	0	0	None	W-F18 (Reduction), P-F3 (Adjacent)	None	PEM (10.8 ft)	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-43 MVP-ADAR-H600-43	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.02	0.00	0.00	-0.02	0.00	0.00	0.00
104.88	104.88	Eliminated spur of MVP-WB-132.01 per landowner request.	WV-WB-053.01	No	No	Pasture/Hay; Developed, Open Space	Pasture/Hay; Developed, Open Space	0	0	None	W-F31 (Reduction), S-F36a (Reduction)	S-F36a (5 ft)	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-WBWW-H600-29	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
107.49	107.49	Eliminated MVP-ATWS-961 per landowner request.	WV-WB-076	NA	NA	NA	Deciduous Forest; Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-44 MVP-ADAR-H600-44	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.02	0.00	0.00	-0.02	0.00	0.00	0.00
			WV-WB-4022																		-0.29	0.00	0.00	-0.26	0.00	0.00	0.00
107.49	107.49	Reduced MVP-ATWS-960 per landowner request.	WV-WB-076	No	No	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-QDAR-H600-44 MVP-ADAR-H600-44	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-0.03	0.00	0.00	-0.03	0.00	0.00	0.00
			WV-WB-4022																		-0.26	0.00	0.00	-0.26	0.00	0.00	0.00
109.40	109.40	Removed laydown yard MVP-LY-023 based on survey data.	WV-WB-5642	NA	NA	NA	Pasture/Hay; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAS-H600-03 MVP-QDAS-H600-03	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range and adjacent to stream (Stroud Creek) with suitable CD habitat. Elimination of MVP-LY-023	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (4)	-6.48	0.00	0.00	0.00	0.00	-0.90	0.00
111.00	111.00	Reduced extents of laydown yard MVP-LY-022 per landowner request.	WV-NI-5191	No	No	Developed, Low Intensity, Developed, Open Space, Deciduous Forest, Barren Land	Developed, Low Intensity, Developed, Open Space, Deciduous Forest, Barren Land	0	0	None	W-U41 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAS-H600-03 MVP-QDAS-H600-03	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	-0.05	0.00	0.00	0.00	0.00	0.00	0.00
			WV-NI-5190																		No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00
			WV-NI-5192																		No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00
111.52	111.57	Reduced temporary right-of-way and MVP-ATWS-1474.	WV-NI-004	No	No	Deciduous Forest	Deciduous Forest	264	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-01	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	-0.05	0.00	0.00	0.00	0.00	-0.05	0.00
111.61	111.64	Reduced temporary right-of-way.	WV-NI-004	No	No	NA	Deciduous Forest	68	91	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-01	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	-0.11	0.00	0.00	0.00	0.00	-0.11	0.00
111.79	111.79	Reduced MVP-ATWS-1453 to avoid impacts to wetland W-U52.	WV-NI-004	No	No	Cultivated Crops; Barren Land	Cultivated Crops; Barren Land	0	0	None	W-U52 (Eliminated)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-02	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	-0.08	0.00	0.00	0.00	0.00	-0.08	0.00
112.21	112.60	Reduced temporary right-of-way.	WV-NI-006	No	No	NA	Deciduous Forest	474	1585	None	S-U60 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-02 PA-NIWW-H600-03	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	-0.61	0.00	0.00	0.00	0.00	-0.61	0.00
			WV-NI-007																		-1.17	0.00	0.00	0.00	0.00	-1.17	0.00

Attachment IP-5b - Minor Realignment: Reductions within the Certificated LOD (updated 2/15/18)																						Total Change (+/-) in clearing of trees by species habitat type					
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)
112.62	112.70	Reduced temporary right-of-way.	WV-NI-007	No	No	NA	Deciduous Forest	422	0	None	S-U60 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-03	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	-0.26	0.00	0.00	0.00	0.00	-0.21	0.00
			WV-NI-008																		0.00	0.00	0.00	0.00	0.00	0.00	
112.67	112.67	Reduced LOD on MVP-NI-140 to avoid MVP-STR-716.	WV-NI-5326	No	No	Developed, Open Space, Deciduous Forest, Pasture/Hay, Cultivated Crops	Developed, Open Space, Deciduous Forest, Pasture/Hay, Cultivated Crops	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-03 MVP-ADAR-H600-45 MVP-QDAR-H600-45	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.67	112.67	Reduced LOD on MVP-NI-140 to avoid MVP-STR-712.	WV-NI-5321	No	No	Developed, Open Space, Deciduous Forest, Pasture/Hay, Cultivated Crops	Developed, Open Space, Deciduous Forest, Pasture/Hay, Cultivated Crops	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-03 MVP-ADAR-H600-45 MVP-QDAR-H600-45	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	-0.02	0.00	0.00	0.04	0.00	-0.32	0.00
			WV-NI-4027																		-0.05	0.00	0.00	-0.01	0.00	0.00	0.00
			WV-NI-4026																		-0.04	0.00	0.00	-0.04	0.00	0.00	0.00
			WV-NI-5667																		0.00	0.00	0.00	0.00	0.00	0.00	0.00
			WV-NI-5322																		0.00	0.00	0.00	0.00	0.00	0.00	0.00
114.79	114.80	Reduced pipeline temporary right-of-way to avoid fence line.	WV-NI-025	No	No	NA	Deciduous Forest	53	0	None	S-A75 (Reduction)	S-A75 (10 ft)	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-05	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	-0.02	0.00	0.00	-0.01	0.00	0.00	0.00
			WV-NI-025.01																		0.00	0.00	0.00	0.00	0.00	0.00	
115.00	115.00	Eliminated laydown yard MVP-LY-007 to avoid impacts to environmentally sensitive areas.	WV-NI-4294	NA	NA	NA	Deciduous Forest, Developed, Open Space, Pasture/Hay, Developed, Low Intensity	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAS-H600-03 MVP-QDAS-H600-03	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	-17.84	0.00	0.00	0.00	0.00	-0.25	0.00
116.74	116.74	Reduced LOD of MVP-NI-147 per landowner request and to minimize impacts to environmentally sensitive area.	WV-NI-039	No	Yes	NA	Deciduous Forest	0	0	None	S-ST26, S-ST27, S-ST28, S-ST29, W-ST24, W-ST26 (E&S BMP Protection for all. No impact), W-ST25 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-07 MVP-ADAR-H600-47 MVP-QDAR-H600-47	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	-0.14	0.00	0.00	-0.04	0.00	0.00	0.00
			WV-NI-5332																		-0.03	0.00	0.00	-0.03	0.00	0.00	0.00
			WV-NI-5330																		-0.29	0.00	0.00	-0.07	0.00	0.00	0.00
			WV-NI-4038																		-0.11	0.00	0.00	-0.03	0.00	0.00	0.00
			WV-NI-036.011																		-0.03	0.00	0.00	0.00	0.00	0.00	0.00
			WV-NI-4037																		-0.03	0.00	0.00	0.00	0.00	0.00	0.00
			WV-NI-4036																		-0.10	0.00	0.00	0.00	0.00	0.00	0.00
116.74	116.74	Removed MVP-ATWS-1052 per landowner request.	WV-NI-036.01	NA	NA	NA	Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-07	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	-0.09	0.00	0.00	-0.09	0.00	0.00	0.00
116.74	116.74	Removed MVP-ATWS-1051 per landowner request.	WV-NI-036.01	NA	NA	Pasture/Hay, Developed, Open Space, Deciduous Forest	Pasture/Hay, Developed, Open Space, Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-07	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	-0.02	0.00	0.00	0.00	0.00	0.00	0.00

Attachment IP-5b - Minor Realignments: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type							
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)
123.34	123.34	Adjusted entrance of MVP-NI-156 to match existing county route right-of-way.	WV-NI-061.001	No	No	Developed, Open Space, Mixed Forest, Deciduous Forest; Grassland/Herbaceous	Developed, Open Space, Mixed Forest, Deciduous Forest; Grassland/Herbaceous	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-53 MVP-QDAR-H600-53	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00
125.36	125.36	Carved out MVP-ATWS-699 to avoid impacts to environmentally sensitive area.	WV-NI-068.02	No	No	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-NIWW-H600-15	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (8)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00
			WV-NI-068.03											Additional impacts to USACE Jurisdictional Features will not occur.							No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00
136.79	136.79	Adjusted end of access road MVP-GB-174.03 to match existing county route right-of-way.	WV-GR-006	No	No	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-60 MVP-QDAR-H600-60	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (3)	-0.02	0.00	0.00	0.00	0.00	-0.01	0.00
138.87	138.88	Reduced temporary right-of-way to avoid MVP-STR-269.	WV-GR-009	No	Yes	NA	Deciduous Forest	53	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GRWV-H600-05	No Effect - Outside RLP range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (3)	-0.02	0.00	0.00	0.00	0.00	-0.02	0.00
143.90	143.90	Trimmed MVP-GB-183 off property owner per landowner request.	WV-GR-5822	No	Yes	Developed, Open Space; Deciduous Forest; Pasture/Hay	Developed, Low Intensity; Developed, Open Space; Deciduous Forest; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GRWV-H600-11	No Effect - Outside RLP range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (3)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
144.02	144.02	Reduced MVP-ATWS-237A to avoid impacts to wetland W-QR3.	WV-GR-3583	No	No	Deciduous Forest	Deciduous Forest	0	0	None	W-QR3 (Protected)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GRWV-H600-11	No Effect - Outside RLP range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (3)	-0.14	0.00	0.00	0.00	0.00	-0.14	0.00
			WV-GR-025											Additional impacts to USACE Jurisdictional Features will not occur.							-0.14	0.00	0.00	0.00	0.00	-0.14	0.00
149.94	149.94	Reduced LOD of access road MVP-GB-189 to avoid MVP-STR-283.	WV-GR-4066	No	Yes	Deciduous Forest; Emergent Herbaceous Wetlands; Developed, Low Intensity	Deciduous Forest; Emergent Herbaceous Wetlands; Developed, Low Intensity	0	0	None	W-KL30 (Adjacent, no change), W-KL29-PEM (Adjacent, no change)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-66 MVP-QDAR-H600-66	No Effect - Outside RLP range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (3)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
154.92	154.92	Eliminated MVP-ATWS-1437 to avoid impacts to environmentally sensitive area and wetlands W-U38, W-U28, and W-UV9.	WV-GR-067.005	NA	NA	NA	Developed, Open Space; Pasture/Hay; Emergent Herbaceous Wetlands; Mixed Forest	0	0	None	W-U28 (Adjacent), W-U38 (Adjacent), W-UV9 (Reduction), W-UV10 (Reduction)	None	PEM (566 ft)	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GRWV-H600-23	No Effect - Outside RLP range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (3)	-8.68	0.00	0.00	-8.68	0.00	0.00	0.00
154.92	154.92	Eliminated MVP-GB-190.02 to avoid impacts to environmentally sensitive area and wetlands W-U38, W-U28, and W-UV9.	WV-GR-067.005	NA	NA	NA	Developed, Low Intensity; Developed, Open Space; Pasture/Hay; Mixed Forest; Emergent Herbaceous Wetlands	0	0	None	W-U28 (Adjacent), W-U38 (Adjacent), W-U37 (Adjacent), S-K17 (Protected)	S-K17 (25 ft)	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GRWV-H600-23	No Effect - Outside RLP range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (3)	-1.30	0.00	0.00	-1.30	0.00	0.00	0.00
155.63	155.63	Adjusted access road MVP-GB-193 to align with existing road and reduced LOD to avoid impacts to stream S-UV4.	WV-GR-068	No	No	Cultivated Crops; Deciduous Forest	Cultivated Crops; Deciduous Forest	0	0	None	S-UV4 (Adjacent), W-UV5 (No change), W-UV6 (No change)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GRWV-H600-23	No Effect - Outside RLP range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (3)	-0.05	0.00	0.00	0.00	0.00	-0.05	0.00
155.63	155.63	Reduced LOD of access road MVP-GB-193 to avoid MVP-STR-295.	WV-GR-068	No	Yes	Pasture/Hay	Pasture/Hay	0	0	None	W-UV5 (No Change)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GRWV-H600-24	No Effect - Outside RLP range	No effect to candy darter - variance occurs within candy darter - variegated darter hybridization range and does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (3)	-0.01	0.00	0.00	0.00	0.00	0.00	0.00
163.30	163.30	Reduced LOD to avoid impacts to S-ST35a.	WV-SU-014	No	No	NA	Deciduous Forest	0	0	None	S-ST35a (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-07	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (5)	-0.06	0.00	0.00	0.00	0.00	-0.06	0.00
167.10	167.10	Reduced MVP-ATWS-308 to avoid existing overhead power line.	WV-SU-024	No	No	Deciduous Forest	Mixed Forest; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-11	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (5)	-1.37	0.00	0.00	-1.37	0.00	0.00	0.00

Attachment IP-5b - Minor Realignment: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type								
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)	
172.21	172.21	Eliminated MVP-SU-208 per landowner request.	WV-SU-051.002 (AR SU-208)	NA	NA	NA	Mixed Forest; Deciduous Forest; Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-17 MVP-ADAR-H600-71 MVP-QDAR-H600-71	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (5)	-0.03	0.00	0.00	0.00	0.00	0.00	0.00	
			WV-SU-051													No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (5)	-2.35	0.00	0.00	0.00	0.00	0.00	-0.80	0.00
			WV-SU-051.001 (AR SU-208)													No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (5)	-0.16	0.00	0.00	0.00	0.00	0.00	-0.02	0.00
			WV-SU-4098 (AR SU-208)													No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (5)	-0.22	0.00	0.00	0.00	0.00	0.00	-0.11	0.00
172.21	172.21	Eliminated MVP-ATWS-1169 per landowner request.	WV-SU-051.002 (AR SU-208)	NA	NA	NA	Developed, Open Space; Developed, Low Intensity; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-SUWV-H600-17	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (5)	-0.03	0.00	0.00	0.00	0.00	0.00	0.00	
			WV-SU-050													No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (5)	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	
			WV-SU-051													No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (5)	-0.16	0.00	0.00	0.00	0.00	0.00	-0.16	0.00
177.06	177.06	Adjusted alignment of access road MVP-MO-213 to follow existing road.	WV-MO-012.020	No	No	Deciduous Forest	Deciduous Forest	0	0	None	S-Q19 (Reduction), S-PP12 (Adjacent), S-CD24 (Adjacent), W-CD41 (Adjacent)	S-Q19 (4 ft)	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-03 MVP-ADAR-H600-72 MVP-QDAR-H600-72	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.08	0.00	0.00	-0.08	0.00	0.00	0.00	
179.24	179.24	Eliminated access road MVP-MO-216 to avoid impacts to ponds P-OP1, P-OP2, and P-OP3.	WV-MO-3504	NA	NA	NA	Evergreen Forest; Deciduous Forest; Open Water; Developed, Open Space	0	0	None	W-CD39, W-CD40, W-CD37, W-CD38 (Eliminated impacts); P-OP1, P-OP2, P-OP3, S-CDD22 (Adjacent, not impacted)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-06	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.29	0.00	-0.11	0.00	0.00	0.00	0.00	0.00
			WV-MO-012.055													No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.61	0.00	-0.61	0.00	0.00	0.00	0.00	0.00
184.08	184.08	Reduced MVP-ATWS-1315 to avoid impacts to streams S-F18 and S-D25.	WV-MO-012.125	No	No	Developed, Open Space; Pasture/Hay; Deciduous Forest	Developed, Open Space; Pasture/Hay; Deciduous Forest	0	0	None	S-D25 (Adjacent), S-F18 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-12	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	
186.37	186.37	Reduced MVP-ATWS-338 based on existing landowner agreement.	WV-MO-012.175	No	No	Deciduous Forest; Pasture/Hay	Deciduous Forest; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-14	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-1.26	0.00	-0.19	0.00	0.00	0.00	0.00	
187.19	187.19	Reduced access road MVP-MO-225 LOD to existing road near entry from county route.	WV-MO-012.180	No	No	Deciduous Forest; Evergreen Forest; Mixed Forest	Deciduous Forest; Evergreen Forest; Mixed Forest	0	0	None	S-H59 (Protected - Span), S-H60 (Protected - Culvert), W-H30 (Adjacent), W-H29 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-76 MVP-QDAR-H600-76	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.68	0.00	-0.67	0.00	0.00	0.00	0.00	
191.45	191.45	Removed MVP-ATWS-647A from landowner per request.	WV-MO-5203 (Removed from project)	NA	NA	NA	Developed, Medium Intensity	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-19	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00	
191.45	191.45	Changed design of groundbed MVP-CPGB-20 to deep well design.	WV-MO-012.285	No	No	Developed, Open Space (off property)	Developed, Low Intensity; Developed, Open Space; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOWV-H600-19	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.56	0.00	0.00	-0.56	0.00	0.00	0.00	
196.69	196.71	Reduced TWS to avoid impacts to stream.	VA-GI-001	No	No	Deciduous Forest	Deciduous Forest	0	105	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-01	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.15	0.00	0.00	0.00	-0.15	0.00	0.00	
196.73	196.78	Reduced TWS to 100' to avoid impacts to environmentally sensitive area.	VA-GI-001	No	No	Deciduous Forest	Deciduous Forest	0	260	44GS241	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-01	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.14	0.00	0.00	0.00	-0.14	0.00	0.00	
196.80	196.82	Reduced TWS to avoid impacts to environmentally sensitive area.	VA-GI-001	No	No	Deciduous Forest	Deciduous Forest	0	106	44GS241	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-01	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.08	0.00	0.00	0.00	-0.08	0.00	0.00	
197.70	197.81	Reduced TWS to avoid impacts to environmentally sensitive area.	VA-GI-002	No	No	Deciduous Forest	Deciduous Forest	0	581	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-02	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.11	0.00	0.00	0.00	-0.11	0.00	0.00	
198.91	198.91	Shortened extent of MVP-GI-234 to meet edge of existing state road right-of-way.	VA-GI-008.01	No	Yes	Deciduous Forest	Deciduous Forest	0	0	None	S-Q14 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-81 MVP-QDAR-H600-81	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.04	0.00	0.00	0.00	-0.04	0.00	0.00	
200.60	200.60	Reduced footprint of MVP-CPGB-21 due to change to deep well design.	VA-GI-013	No	No	Developed, Low Intensity	Developed, Low Intensity, Developed, High Intensity	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-06	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.49	0.00	0.00	0.00	0.00	0.00	0.00	

Attachment IP-5b - Minor Realignment: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type								
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)	
200.65	200.65	Adjusted edge of MVP-GI-238 to match existing state road right-of-way.	VA-GI-013	No	No	Developed, Low Intensity, Developed, High Intensity; Cultivated Crops; Barren Land; Pasture/Hay; Deciduous Forest	Developed, Low Intensity, Developed, High Intensity; Cultivated Crops; Barren Land; Pasture/Hay; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-81 MVP-QDAR-H600-81	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	
201.60	201.60	Adjusted MVP-ATWS-1134 based on landowner request.	VA-GI-4413	No	No	Developed, Open Space; Deciduous Forest	Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-82 MVP-QDAR-H600-82	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.03	0.00	0.00	0.00	0.00	0.00	0.00	
201.60	201.60	Shortened extent of MVP-MLV-AR-24 to meet edge of existing state road right-of-way.	VA-GI-017	No	Yes	Developed, Open Space; Deciduous Forest	Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-82 MVP-QDAR-H600-82	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.10	0.00	0.00	0.00	-0.03	0.00	0.00	
			VA-GI-015.01											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.06	0.00	0.00	0.00	0.00	0.00	0.00	
			VA-GI-4243											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.91	0.00	0.00	0.00	-0.43	0.00	0.00	
			VA-GI-4413											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.49	0.00	0.00	0.00	-0.24	0.00	0.00	
			VA-GI-013											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-2.54	0.00	0.00	0.00	-2.32	0.00	0.00	
201.60	201.60	Adjusted MVP-ATWS-1133 to match adjustment of MVP-MLV-AR-24 and existing state road right-of-way.	VA-GI-013	No	No	Developed, Open Space; Deciduous Forest	Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-82 MVP-QDAR-H600-82	No Effect - Outside RLP range	No effect to candy darter - variance occurs within CD range but does not occur at stream crossing with suitable CD habitat	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.02	0.00	0.00	0.00	-0.01	0.00	0.00	
204.45	204.49	Reduced MVP-ATWS-464 to avoid impacts to stream S-214	VA-GI-035	No	No	Deciduous Forest; Pasture/Hay	Deciduous Forest; Pasture/Hay	4	0	None	S-214 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-09	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.06	0.00	0.00	0.00	-0.03	0.00	0.00	
205.54	205.54	Reduced MVP-ATWS-466 based on landowner request.	VA-GI-039	No	No	Developed, Open Space; Deciduous Forest	Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-11	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.76	0.00	0.00	0.00	-0.76	0.00	0.00	
205.92	205.92	Reduced MVP-ATWS-1360 to protect riparian buffer.	VA-GI-039	No	No	Deciduous Forest; Pasture/Hay	Deciduous Forest; Pasture/Hay	0	0	None	S-A32 (Adjacent - No change)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-11	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.33	0.00	0.00	0.00	-0.33	0.00	0.00	
206.84	206.84	Reduced MVP-ATWS-471 to avoid impacts to environmentally sensitive area.	VA-GI-048	No	No	Deciduous Forest	Deciduous Forest	0	0	None	S-Y2 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-12	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.12	0.00	-0.12	0.00	0.00	0.00	0.00	0.00
			VA-GI-3668											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.30	0.00	-0.30	0.00	0.00	0.00	0.00	
208.40	208.40	Reduced extent of MVP-GI-243.01 based on existing state road right-of-way.	VA-GI-3673	No	No	Developed, Open Space; Deciduous Forest; Pasture/Hay	Developed, Open Space; Deciduous Forest; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-83 MVP-QDAR-H600-83	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			VA-GI-5699											Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
208.63	208.63	Reduced LOD of MVP-GI-244 to reduce impacts on stream S-U19.	VA-GI-058	No	No	Deciduous Forest; Developed, Open Space; Mixed Forest	Deciduous Forest; Developed, Open Space; Mixed Forest	0	0	None	S-U19 (Reduction), S-U18 (Adjacent, no change)	S-U19 (4 ft)	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-13 MVP-ADAR-H600-83 MVP-QDAR-H600-83	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.02	0.00	-0.02	0.00	0.00	0.00	0.00	
208.63	208.63	Reduced MVP-ATWS-1145 and MVP-ATWS-1146 to reduce impacts on stream S-U19.	VA-GI-058	No	No	Deciduous Forest; Mixed Forest; Developed; Open Space; Pasture Hay	Deciduous Forest; Mixed Forest; Developed; Open Space; Pasture Hay	0	0	None	S-U19 (Reduction), S-U18 (Adjacent, no change)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-13 MVP-ADAR-H600-83 MVP-QDAR-H600-83	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.10	0.00	-0.10	0.00	0.00	0.00	0.00	
211.17	211.17	Adjusted edge of MVP-GI-249 to match existing state road right-of-way.	VA-GI-069	No	No	Deciduous Forest; Developed, Low Intensity; Evergreen Forest; Cultivated Crops; Mixed Forest	Deciduous Forest; Developed, Low Intensity; Evergreen Forest; Cultivated Crops; Mixed Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-16	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
														Additional impacts to USACE Jurisdictional Features will not occur.		No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	See above	see above	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00	
211.22	211.22	Changed MVP-CPGB-22 to deep well and adjusted MVP-ATWS-1369 to accommodate.	VA-GI-070	No	No	Pasture/Hay; Deciduous Forest	Pasture/Hay; Deciduous Forest	0	0	None Not Eligible 10/25/2017	S-NN17 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-16	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.74	0.00	-0.03	0.00	0.00	0.00	0.00	
213.83	213.83	Shortened extent of MVP-GI-253.02 to match existing state road right-of-way.	VA-GI-4249	No	No	Developed, Open Space; Deciduous Forest; Pasture/Hay	Developed, Open Space; Deciduous Forest; Pasture/Hay	0	0	None	P-MM2 (Adjacent), W-MM10 (Adjacent), S-MM17 (Protected, no change)	S-MM17 (2 ft)	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-18	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (11)	-0.10	0.00	-0.01	0.00	0.00	0.00	0.00	0.00
			Additional impacts to USACE Jurisdictional Features will not occur.											No Effect - Outside RLP range		No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (2)	No effect (11)	-0.02	0.00	-0.02	0.00	0.00	0.00	0.00		



Attachment IP-5b - Minor Realignments: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type								
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)	
217.10	217.10	Reduced LOD of MVP-CR-258.01 per landowner request.	VA-GI-5673	No	No	Deciduous Forest; Pasture/Hay	Deciduous Forest; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-GIVA-H600-21	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.10	0.00	-0.10	0.00	0.00	0.00	0.00	0.00
			VA-GI-200.043													Additional impacts to USACE Jurisdictional Features will not occur.	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.01	0.00	0.00	0.00	0.00	0.00	0.00
			VA-GI-200.047													Additional impacts to USACE Jurisdictional Features will not occur.	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (11)	-0.02	0.00	-0.01	0.00	0.00	0.00	0.00
226.90	226.90	Reduced MVP-ATWS-1157 based on pipeline reroute.	VA-MO-053	No	No	Developed, Open Space	Pasture/Hay; Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOVA-H600-10	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (9)	-0.16	0.00	0.00	0.00	-0.16	0.00	0.00	
226.90	226.90	Eliminated MVP-ATWS-1158 based on pipeline reroute.	VA-MO-053	NA	NA	NA	Cultivated Crops; Developed, Open Space; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOVA-H600-10	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (9)	-0.07	0.00	0.00	0.00	-0.07	0.00	0.00	
227.38	227.38	Adjusted edges of MVP-MN-268 and MVP-ATWS-1159 and MVP-ATWS-1160 to match existing state road right-of-way.	VA-MO-053	No	No	Pasture/Hay; Developed, Open Space; Deciduous Forest	Pasture/Hay; Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-88 MVP-QDAR-H600-88	No effect to Roanoke loggerch - variance occurs adjacent a stream crossing with suitable RLP habitat and is a reduction in land disturbance.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (9)	-0.02	0.00	0.00	0.00	-0.02	0.00	0.00	
228.48	228.48	Eliminated MVP-ATWS-1165 based on landowner request.	VA-MO-4257 (AR MN-270)	NA	NA	NA	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-90 MVP-QDAR-H600-90	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (9)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00	
230.69	230.69	Reduced MVP-ATWS-703 based on pipeline adjustment.	VA-MO-074	No	No	Pasture/Hay; Developed, Open Space; Developed, Low Intensity	Pasture/Hay; Developed, Open Space; Developed, Low Intensity	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOVA-H600-15	No effect to Roanoke loggerch - variance occurs adjacent a stream crossing with suitable RLP habitat and is a reduction in land disturbance.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (10)	-0.22	0.00	0.00	0.00	-0.22	0.00	0.00	
232.79	232.79	Reduced MVP-ATWS-1374 based on adjustment of access road MVP-MN-276.03.	VA-MO-082	No	No	Deciduous Forest	Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOVA-H600-16	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (10)	-0.33	0.00	0.00	-0.22	-0.12	0.00	0.00	
234.88	234.88	Reduced LOD of MVP-MLV-AR-27 to avoid existing fence line.	VA-RO-5720	No	No	Deciduous Forest; Pasture/Hay	Deciduous Forest; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-MOVA-H600-19	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No direct effect (1)	No effect (10)	-0.01	0.00	0.00	-0.01	0.00	0.00	0.00	
239.10	239.10	Reduced LOD of MVP-RO-279.01 to minimize impacts to VDF easement.	VA-RO-5149	No	No	Deciduous Forest; Developed, Open Space	Deciduous Forest; Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-96 MVP-QDAR-H600-96	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.44	0.00	0.00	0.00	0.00	-0.37	0.00	

Attachment IP-5b - Minor Realignments: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type							
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)
241.89	241.91	Reduced LOD to avoid impacts to S-IJ81 and W-IJ93	VA-RO-045	No	No	Deciduous Forest	Deciduous Forest	106	0	None	S-IJ81 (Adjacent), W-IJ93 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-ROVA-H600-05	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.17	0.00	0.00	0.00	0.00	-0.17	0.00
242.02	242.15	Reduced LOD to avoid impacts to several aquatic resources.	VA-RO-045	No	No	Deciduous Forest	Deciduous Forest	475	211	None	W-IJ94-PEM (Reduction), S-IJ82 (Reduction), W-IJ94-PSS (Reduction), S-IJ83 (Reduction), S-IJ83 (Reduction), W-IJ95 (Adjacent)	S-IJ82 (15 ft), S-IJ83 (5 ft)	PEM (118 ft) PSS (150 ft)	Additional impacts to USACE Jurisdictional Features will not occur.	PA-ROVA-H600-05	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.72	0.00	0.00	0.00	0.00	-0.72	0.00
242.29	242.29	Eliminated MVP-ATWS-1303 to eliminate impacts to W-IJ99 and S-IJ87.	VA-RO-4118	NA	NA	NA	Deciduous Forest; Developed, Open Space	0	0	None	W-IJ99 (Adjacent), S-IJ87 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-97 MVP-QDAR-H600-97	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.36	0.00	0.00	0.00	0.00	-0.12	0.00
242.29	242.40	Reduced LOD to avoid impacts to several aquatic resources.	VA-RO-046	No	No	Deciduous Forest; Evergreen Forest	Deciduous Forest; Evergreen Forest	581	0	None	W-IJ105 (Adjacent), S-IJ88 (Adjacent), W-IJ100 (Adjacent), S-IJ89 (Reduction), S-IJ90 (Reduction), W-IJ101 (Adjacent)	S-IJ89 (10 ft), S-IJ90 (7 ft)	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-ROVA-H600-05	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.42	0.00	0.00	0.00	0.00	-0.25	0.00
243.95	243.95	Reduced MVP-ATWS-1236 to avoid impact to wetland W-KJ54.	VA-RO-054	No	No	Pasture/Hay	Deciduous Forest; Pasture/Hay	0	0	44RN0401	W-KL54 (Reduction), W-KL53 (Reduction)	None	PEM (144.6 ft)	Additional impacts to USACE Jurisdictional Features will not occur.	PA-ROVA-H600-07	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.67	0.00	0.00	0.00	0.00	-0.24	0.00
245.12	245.17	Reduced TWS to avoid sensitive environmental area.	VA-RO-061	No	No	Deciduous Forest	Deciduous Forest	240	24	080-5677-0006	S-Y8 (Adjacent), S-Y7 (No Change), W-Y2 (Adjacent), S-Y9 (No Change)	S-Y8 (4 ft), S-Y7 (4 ft)	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-ROVA-H600-08	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.09	0.00	0.00	0.00	0.00	-0.09	0.00
247.12	247.12	Reduced extents of access roads MVP-FR-289 and MVP-FR-290 and MVP-ATWS-1247 to match existing state road right-of-way.	VA-FR-001	No	No	Deciduous Forest; Developed, Open Space; Mixed Forest; Evergreen Forest; Pasture Hay	Deciduous Forest; Developed, Open Space; Mixed Forest; Evergreen Forest; Pasture Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-99 MVP-QDAR-H600-99	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.02	0.00	0.00	-0.02	0.00	0.00	0.00
			VA-FR-016											Additional impacts to USACE Jurisdictional Features will not occur.		No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.02	0.00	0.00	0.00	0.00	0.00	
251.10	251.10	Reduced extent of MVP-FR-293.01 to match existing state road right-of-way.	VA-FR-017.01	No	No	Deciduous Forest; Developed, Open Space	Deciduous Forest; Developed, Open Space	0	0	None	S-MM27 (Eliminated)	S-MM27 (None)	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-06	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.02	0.00	0.00	0.00	0.00	0.00	0.00

Attachment IP-5b - Minor Realignments: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type							
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)
			BV-FR-4											Additional impacts to USACE Jurisdictional Features will not occur.		No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	0.00	0.00	0.00	0.00	0.00	0.00	
253.64	253.64	Reduced MVP-ATWS-1351 to match existing state road right-of-way.	VA-FR-017.15	No	No	Deciduous Forest; Developed, Open Space; Pasture/Hay	Deciduous Forest; Developed, Open Space; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-08	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.01	0.00	0.00	0.00	0.00	0.00	0.00
255.18	255.18	Reduced MVP-CPGB-26 and MVP-ATWS-1413 to match existing state road right-of-way.	VA-FR-017.21	No	No	Pasture/Hay; Evergreen Forest; Developed, Open Space; Deciduous Forest	Pasture/Hay; Evergreen Forest; Developed, Open Space; Deciduous Forest	0	0	None	S-IJ10 (Adjacent), W-IJ8 (Adjacent), W-IJ6 (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-10	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.14	0.00	0.00	-0.27	0.00	0.00	0.00
255.25	255.36	Reduced temporary right-of-way to avoid landowner per request.	VA-FR-017.22	No	No	NA	Mixed Forest; Deciduous Forest; Pasture/Hay	228	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-10	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.02	0.00	0.00	-0.02	0.00	0.00	0.00
255.69	255.69	Reduced MVP-ATWS-1414 to avoid impacts to wetland W-EF43.	VA-FR-017.25	No	No	Deciduous Forest; Pasture/Hay	Deciduous Forest; Pasture/Hay	0	0	None	W-EF43 (Eliminated)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-10	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.03	0.00	0.00	-0.03	0.00	0.00	0.00
256.09	256.09	Reduced MVP-ATWS-1255 per landowner request.	VA-FR-4129	No	No	Pasture/Hay; Developed, Open Space	Pasture/Hay; Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-100 MVP-QDAR-H600-100	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.13	0.00	0.00	0.00	0.00	0.00	0.00
256.74	256.74	Reduced TWS to avoid existing barbed wire fence.	VA-FR-017.38	No	No	NA	Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-11	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.01	0.00	0.00	0.00	0.00	0.00	0.00
258.88	258.88	Reduced MVP-ATWS-562 to avoid impacts to environmentally sensitive area.	VA-FR-049	No	No	Pasture/Hay; Developed Open Space	Pasture/Hay; Developed Open Space	0	0	None	None	None	PEM (262.8 ft)	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-14	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.25	0.00	0.00	0.00	0.00	0.00	0.00
259.95	259.95	Reduced MVP-ATWS-566 to match existing state road right-of-way.	VA-FR-053	No	No	Mixed Forest; Developed, Open Space; Deciduous Forest	Mixed Forest; Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-15	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00

Attachment IP-5b - Minor Realignments: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type							
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)
259.96	259.96	Reduced MVP-ATWS-1444 to match existing state road right-of-way.	VA-FR-057	No	No	Developed, Open Space; Deciduous Forest	Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-15	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
260.15	260.15	Reduced extent of MVP-FR-299 to match existing state road right-of-way.	VA-FR-5424	No	Yes	Pasture/Hay; Deciduous Forest	Pasture/Hay; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-102 MVP-QDAR-H600-102	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00
263.12	263.12	Reduced MVP-ATWS-698C to avoid environmentally sensitive area.	VA-FR-080	No	No	Pasture/Hay; Mixed Forest	Pasture/Hay; Mixed Forest	0	0	44FR0372	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-19	No direct effect to Roanoke loggerch - variance occurs within RLP range and adjacent to a stream (Little Creek) with suitable RLP habitat and is a reduction in land disturbance.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.32	0.00	0.00	-0.06	0.00	0.00	0.00
263.55	263.55	Reduced MVP-ATWS-1264 per landowner request.	VA-FR-4138.001	No	No	NA	Developed, Low Intensity	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-19	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.01	0.00	0.00	0.00	0.00	-0.01	0.00
264.96	264.96	Adjusted edges of access road MVP FR-306.04 and MVP-ATWS-1467 and MVP-ATWS-1468 to match existing state road right-of-way.	VA-FR-5479	No	No	Developed, Low Intensity; Deciduous Forest	Developed, Low Intensity; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-20	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
265.33	265.33	Adjusted edge of MVP-ATWS-1469 to match existing state road right-of-way.	VA-FR-5479	No	No	Developed, Open Space	Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-21	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.01	0.00	0.00	0.00	0.00	0.00	0.00
265.35	265.35	Adjusted edge of MVP-ATWS-1470 to match existing state road right-of-way.	VA-FR-5482	No	No	Developed, Open Space; Pasture/Hay	Developed, Open Space; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-21	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.01	0.00	0.00	0.00	0.00	0.00	0.00
265.45	265.50	Reduced temporary right-of-way to avoid landowner per request.	VA-FR-5483											Additional impacts to USACE Jurisdictional Features will not occur.		No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	fect - Outside candy darter	variance does not occur at in	No effect (2)	No effect (10)	-0.08	0.00	0.00	0.00	0.00	-0.08	0.00
265.45	265.50	Reduced temporary right-of-way to avoid landowner per request.	VA-FR-5484	No	No	NA	Mixed Forest; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-21	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.04	0.00	0.00	0.00	0.00	-0.04	0.00

Attachment IP-5b - Minor Realignments: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type								
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally List Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)	
			VA-FR-5485											Additional impacts to USACE Jurisdictional Features will not occur.		No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.04	0.00	0.00	0.00	0.00	-0.04	0.00	
265.85	265.86	Reduced temporary right-of-way to avoid landowner per request.	VA-FR-5496	No	Yes	Developed, Open Space; Deciduous Forest	Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-21	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	
265.86	265.88	Reduced temporary right-of-way to maintain access to landowner driveway per request.	VA-FR-5498	No	Yes	Developed, Open Space; Deciduous Forest	Developed, Open Space; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-21	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.03	0.00	0.00	0.00	0.00	-0.03	0.00	
267.90	267.90	Reduced MVP-ATWS-1479 to exclude gravel driveway per landowner request.	VA-FR-115	No	No	Developed, Open Space; Pasture/Hay	Developed, Open Space; Pasture/Hay	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-24	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	-0.08	0.00	0.00	0.01	0.00	0.00	0.00	
272.50	272.50	Reduced extent of access road MVP-FR-315 to match existing state road right-of-way.	VA-FR-4143.001	No	Yes	Developed, Open Space; Pasture/Hay; Deciduous Forest	Developed, Open Space; Pasture/Hay; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-105 MVP-QDAR-H600-105	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			VA-FR-5832											Additional impacts to USACE Jurisdictional Features will not occur.		No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00	
			VA-FR-4143											Additional impacts to USACE Jurisdictional Features will not occur.		No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (10)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00	
283.56	283.56	Reduced MVP-ATWS-1284 to accommodate pipeline adjustment.	VA-PI-001	No	No	Pasture/Hay; Evergreen Forest; Mixed Forest	Pasture/Hay; Evergreen Forest; Mixed Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-FRVA-H600-39	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (7)	-0.01	0.00	0.00	-0.01	0.00	0.00	0.00	
285.44	285.44	Reduced MVP-ATWS-1285 per landowner request.	BVPI-1	No	No	Pasture/Hay; Developed, Open Space	Deciduous Forest; Pasture/Hay; Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-107 MVP-QDAR-H600-107	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (6)	-0.50	0.00	0.00	-0.13	0.00	0.00	0.00	

Attachment IP-5b - Minor Realignments: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type							
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally List Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)
286.04	286.04	Reduced MVP-ATWS-383 based on existing state road right-of-way.	VA-PI-012	No	No	Pasture/Hay; Evergreen Forest	Pasture/Hay; Evergreen Forest; Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H600-02	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (6)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00
286.04	286.04	Reduced MVP-ATWS-383A based on existing state road right-of-way.	VA-PI-012.01	No	No	Pasture/Hay; Deciduous Forest	Pasture/Hay; Deciduous Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H600-02	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (6)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00
286.06	286.06	Reduced MVP-ATWS-384A and MVP-ATWS-384 based on existing state road right-of-way.	VA-PI-013	No	No	Pasture/Hay; Developed, Open Space	Pasture/Hay; Developed, Open Space	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H600-02 PA-PIVA-H600-03	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (6)	0.00	0.00	0.00	0.00	0.00	0.00	

Attachment IP-5b - Minor Realignment: Reductions within the Certificated LOD (updated 2/15/18)																				Total Change (+/-) in clearing of trees by species habitat type							
Begin MP	End MP	Description	Parcel ID	New Landowners Affected?	Residences within 50 feet of Construction Work Area?	Description of New Route Land Use/Cover	Existing Land Use/Cover Type	Length of Forested Area Crossed (feet)	Length of Interior Forested Area Crossed (feet)	Cultural Resource/Federally Listed Species Affected by Deviation	Environmentally Sensitive Areas Within/Abutting Area of Deviation	Waterbodies Crossed and Width (feet)	Length of Wetlands Crossed by Type (PFO, PSS, PEM) (feet)	Nationwide 12 permit modifications	Alignment Sheet Number	Roanoke Loggerch Impact	Candy Darter Impact	Mussel Impact	RPBB Impact	Plant Impact	Total Change +/- in LOD (acres)	MYSO - Known Summer Use Habitat (acres)	MYSO - Known use spring staging/fall swarming habitat (acres)	MYSO - Suitable Unoccupied Summer Habitat (acres)	MYSO - Unknown use spring staging/fall swarming habitat (acres)	MYSO - Unknown Use Summer Habitat (acres)	NLEB known use spring staging/fall swarming habitat (acres)
289.00	289.00	Reduced extents of access road MVP-PI-330 and MVP-ATWS-654 to match existing state road right-of-way.	VA-PI-4150	No	No	Deciduous Forest; Pasture/Hay; Developed, Open Space; Evergreen Forest	Deciduous Forest; Pasture/Hay; Developed, Open Space; Evergreen Forest	0	0	None	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	MVP-ADAR-H600-108 MVP-QDAR-H600-108	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (6)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00
			VA-PI-026											Additional impacts to USACE Jurisdictional Features will not occur.		No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (6)	-3.37	0.00	0.00	-2.86	0.00	0.00	
290.00	290.00	Reduced MVP-ATWS-391 based on landowner request.	VA-PI-029.01	No	No	Pasture/Hay	Pasture/Hay	0	0	None	S-CS (Adjacent)	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H600-06	No direct effect to Roanoke loggerch - variance occurs within RLP range and does not occur at stream crossing with suitable RLP habitat. Reduction in upland acreage disturbed therefore reduction in sedimentation.	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (6)	-0.02	0.00	0.00	0.00	0.00	0.00	
303.40	303.40	Reduced Transco Interconnect LOD to avoid environmentally sensitive area.	VA-PI-112	No	No	Evergreen Forest	Evergreen Forest	0	0	071-5525	None	None	None	Additional impacts to USACE Jurisdictional Features will not occur.	PA-PIVA-H603-01	No Effect - Outside RLP range	No Effect - Outside candy darter range	No effect on mussels - variance does not occur at instream Project crossing	No effect (2)	No effect (6)	No change in LOD within Parcel	0.00	0.00	0.00	0.00	0.00	0.00

- 1 No individuals are currently known to occur near variance. Variance is within historic range and has potential habitat for RPBB; however clearing and revegetation are likely to increase habitat connectivity and quality of foraging habitat, thus benefitting RPBB
- 2 No individuals or populations are known to occur at the variance. Variance is within historic range and has potential habitat for RPBB; however any clearing and revegetation will increase habitat connectivity and quality of foraging habitat, thus benefitting RPBB
- 3 No individuals of running buffalo clover are known to occur at variance. No individuals or potential habitat for shale barren rockcress occur at variance. No individuals of small whorled pogonia known to occur near variance. No individuals or habitat for Virginia spiraea known to occur at variance. Outside of smooth coneflower known range
- 4 No individuals of running buffalo clover known to occur at variance. Outside of shale barren rockcress known range. Outside small whorled pogonia known range. Outside of Virginia spiraea known range. Outside of smooth coneflower known range
- 5 Outside of known range for running buffalo clover. Outside of shale barren rockcress known range. Outside small whorled pogonia known range. No individuals or potential habitat for Virginia spiraea known to occur at variance. Outside of smooth coneflower known range
- 6 Outside running buffalo clover known range. Outside of shale barren rockcress known range. No individuals of small whorled pogonia known to occur at variance. Outside of Virginia spiraea known range. Outside of smooth coneflower known range
- 7 Outside running buffalo clover known range. Outside of shale barren rockcress known range. No individuals of small whorled pogonia occur at variance and no potential habitat for small whorled pogonia. Outside of Virginia spiraea known range. Outside of smooth coneflower known range
- 8 Outside running buffalo clover known range. Outside of shale barren rockcress known range. Outside of small whorled pogonia known range. No individuals or potential habitat for Virginia spiraea occurs at variance. Outside of smooth coneflower known range
- 9 Outside running buffalo clover known range. Outside of shale barren rockcress known range. Outside of small whorled pogonia known range. Outside of Virginia spiraea known range. No direct effects on Smooth Coneflower as no individuals and no habitat occur at variance
- 10 Outside running buffalo clover known range. Outside of shale barren rockcress known range. Outside of small whorled pogonia known range. Outside of Virginia spiraea known range. No direct effects on Smooth Coneflower as no individuals are known to occur at variance
- 11 Outside known range of running buffalo clover, shale barren rockcress, small whorled pogonia, Virginia spiraea, smooth coneflower.
- 12 No habitat or individuals of running buffalo clover occur at variance. Outside of shale barren rockcress known range. Outside small whorled pogonia known range. Outside of Virginia spiraea known range. Outside of smooth coneflower known range.