

LOR-252-3.65 (OHWM = 764.26')

StreamStats was used at this location to calculate peak flow and monthly flow rates.

The treatment is to replace the existing twin 5' x 5' stone box culvert with a 10' x 5' reinforced concrete box culvert.

Statistic	Value	Unit	SE	ASEp
January Mean Flow	1.64	ft ³ /s	16.6	16.6
February Mean Flow	2.51	ft ³ /s	11.9	11.9
March Mean Flow	2.8	ft ³ /s	14	14
April Mean Flow	2.34	ft ³ /s	11.2	11.2
May Mean Flow	1.71	ft ³ /s	19.5	19.5
June Mean Flow	0.794	ft ³ /s	27	27
July Mean Flow	0.455	ft ³ /s	28.2	28.2
August Mean Flow	0.237	ft ³ /s	36.8	36.8
September Mean Flow	0.158	ft ³ /s	43.6	43.6
October Mean Flow	0.554	ft ³ /s	50.8	50.8
November Mean Flow	1.05	ft ³ /s	37.5	37.5
December Mean Flow	1.85	ft ³ /s	21.8	21.8

Per StreamStats the largest monthly flow rate is 2.8 ft³/s.

Standard temporary discharge per L&D Volume 2, Section 1010:

$$2.8 \text{ ft}^3/\text{s} \times 2 = 5.6 \text{ ft}^3/\text{s}$$

The water surface elevation was determined using the FHWA HY-8 hydraulic modeling software:

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Pr. 10x5 Box Discharge (cfs)	Roadway Discharge (cfs)	Iterations
764.26	2 year	116.00	116.00	0.00	1
765.40	5 year	198.00	198.00	0.00	1
766.21	10 year	263.00	263.00	0.00	1
767.36	25 year	355.00	355.00	0.00	1
768.37	50 year	430.00	430.00	0.00	1
769.61	100 year	511.00	511.00	0.00	1
771.34	Overtopping	606.90	606.90	0.00	Overtopping

The standard temporary discharge does not create a rise in back water greater than the OHWM; therefore, the TAF is acceptable.

WAY-585-6.20 (OHWM = 1091.32')

StreamStats was used at this location to calculate peak flow and monthly flow rates.

The treatment will replace the existing 5' span x 3' rise box culvert with a 6' x 4' box culvert.

Monthly Flow Statistics Flow Report [Low Flow LatLE 41.2 wri02 4068]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
January Mean Flow	0.388	ft ³ /s	16.6	16.6
February Mean Flow	0.509	ft ³ /s	11.9	11.9
March Mean Flow	0.547	ft ³ /s	14	14
April Mean Flow	0.53	ft ³ /s	11.2	11.2
May Mean Flow	0.307	ft ³ /s	19.5	19.5
June Mean Flow	0.207	ft ³ /s	27	27
July Mean Flow	0.127	ft ³ /s	28.2	28.2
August Mean Flow	0.0751	ft ³ /s	36.8	36.8
September Mean Flow	0.0412	ft ³ /s	43.6	43.6
October Mean Flow	0.0535	ft ³ /s	50.8	50.8
November Mean Flow	0.127	ft ³ /s	37.5	37.5
December Mean Flow	0.27	ft ³ /s	21.8	21.8

Per StreamStats the largest monthly flow rate is 0.547 ft³/s.

Standard temporary discharge per L&D Volume 2, Section 1010:

$$0.547 \text{ ft}^3/\text{s} \times 2 = 1.094 \text{ ft}^3/\text{s}$$

The water surface elevation was determined using the FHWA HY-8 hydraulic modeling software:

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Pr. 6'x4' Box Discharge (cfs)	Roadway Discharge (cfs)	Iterations
1091.32	2 year	35.30	35.30	0.00	1
1092.14	5 year	62.80	62.80	0.00	1
1092.71	10 year	84.50	84.50	0.00	1
1093.42	25 year	115.00	115.00	0.00	1
1093.97	50 year	140.00	140.00	0.00	1
1094.56	100 year	166.00	166.00	0.00	1
1095.62	Overtopping	205.70	205.70	0.00	Overtopping

The standard temporary discharge does not create a rise in back water greater than the OHWM; therefore, the TAF is acceptable.

WAY-250-25.67 (OHWM = 1139.55')

StreamStats was used at this location to calculate peak flow and monthly flow rates.

The treatment will replace the existing outlet headwall.

Monthly Flow Statistics Flow Report [Low Flow LatLE 41.2 wri02 4068]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other — see report)

Statistic	Value	Unit	SE	ASEp
January Mean Flow	0.308	ft ³ /s	16.6	16.6
February Mean Flow	0.421	ft ³ /s	11.9	11.9
March Mean Flow	0.449	ft ³ /s	14	14
April Mean Flow	0.438	ft ³ /s	11.2	11.2
May Mean Flow	0.253	ft ³ /s	19.5	19.5
June Mean Flow	0.17	ft ³ /s	27	27
July Mean Flow	0.107	ft ³ /s	28.2	28.2
August Mean Flow	0.0645	ft ³ /s	36.8	36.8
September Mean Flow	0.0348	ft ³ /s	43.6	43.6
October Mean Flow	0.0434	ft ³ /s	50.8	50.8
November Mean Flow	0.104	ft ³ /s	37.5	37.5
December Mean Flow	0.221	ft ³ /s	21.8	21.8

Per StreamStats the largest monthly flow rate is 0.449 ft³/s.

Standard temporary discharge per L&D Volume 2, Section 1010:

$$0.449 \text{ ft}^3/\text{s} \times 2 = 0.898 \text{ ft}^3/\text{s}$$

The water surface elevation was determined using the FHWA HY-8 hydraulic modeling software:

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
1139.55	2 year	67.00	67.00	0.00	1
1139.55	5 year	67.00	67.00	0.00	1
1140.22	10 year	92.60	92.60	0.00	1
1141.09	25 year	130.00	130.00	0.00	1
1141.76	50 year	160.00	160.00	0.00	1
1142.50	100 year	192.00	192.00	0.00	1
1144.82	200 year	275.00	275.00	0.00	1
1154.31	Overtopping	479.17	479.17	0.00	Overtopping

The standard temporary discharge does not create a rise in back water greater than the OHWM; therefore, the TAF is acceptable.