

BSDMS Summary Report

79 Auglaize River at S.R. 198 near Wapakoneta

Site Location:

Site ID: 79

Site Name: Auglaize River at S.R. 198 near Wapakoneta

County: Auglaize

Nearest City: Wapakoneta

State: OH

Latitude: 404037

Longitude: 841552

USGS Station ID:

Route Number: 198

Route Class: State

Service Level: Mainline

Route Direction: NA

Highway Mile Point: 9.71

Stream Name: Auglaize River

River Mile:

Contact:
Scott Jackson
U.S. Geological Survey
614-469-5553
75 West Third Ave.
Columbus, Ohio 43212
or
William Krouse
Ohio Department of Transportation
614-466-2398
25 South Front St.
Columbus, Ohio 43216

Publication:
Jackson, K.S., 1996, Evaluation of
bridge-scour data at selected
sites in Ohio: U.S. Geological
Survey Water-Resources
Investigations Report 97-4182.

Site Description:

This site is located at the State Route 198 bridge crossing the Auglaize River North of Wapakoneta, Auglaize County, Ohio. The Ohio Department of Transportation (ODOT) bridge identification is BUT-198-0971. The site is located 2 miles upstream of Two Mile Creek.

Notes: All piers are referenced numerically, increasing from left to right, when viewing the upstream face of the bridge while facing downstream. Slope in Vicinity (reported in Stream Site Data) is estimated from USGS 7.5 minute quadrangle topographic maps. Water-surface slope (if reported in Pier Scour Data comments section) is the measured slope between water surfaces at the approach and bridge section during the scour measurement.

Elevation Reference

Datum: MSL

MSL (ft):

Description of Reference Elevation:

RM1 - Chisled square on streamward side of right upstream wingwall.
MSL elevation = 830.96

BSDMS Summary Report

79 Auglaize River at S.R. 198 near Wapakoneta

Stream Data

Drainage Area (sq mi):	200	Floodplain Width:	Narrow
Slope in Vicinity(ft/ft):	0.0006	Natural Levees:	Little
Flow Impact:	Straight	Apparent Incision:	None
Channel Evolution	Premodified	Channel Boundary:	Alluvial
Armoring:	Partial	Banks Tree Cover:	Medium
Debris Frequency:	Occasional	Sinuosity:	Sinuous
Debris Effect:	Local	Braiding:	None
Stream Size:	Medium	Anabranching:	None
Flow Habit:	Perennial	Bars:	Unknown
Bed Material:	Gravel	Stream Width Variability:	Equiwidth
Valley Setting:	Low		

Roughness Data

Manning's n Values

	Left Overbank	Channel	Right Overbank
High:	0.075	0.042	0.08
Typical	0.07	0.04	0.07
Low:	0.065	0.04	0.06

Bed Material

Measurement Number	Yr	Mo	Dy	Sampler	D95 (mm)	D84 (mm)	D50 (mm)	D16 (mm)	SP	Shape	Cohesion
AP-1	1993	7	6		40	30	15	0.5	2.65		Unknown
AP-2	1994	6	23		59	38	2.5	0.34	2.65		Unknown
BR-1	1990	9	26		26	17	3.55	0.63	2.65		Unknown

BSDMS Summary Report

79 Auglaize River at S.R. 198 near Wapakoneta

BR-2	1991	7	10	70	59	2.5	0.28	2.65	Unknown
BR-3	1992	9	30	10.5	3.3	0.84	0.25	2.65	Unknown
BR-4	1993	7	6	65	50	18	2	2.65	Unknown
BR-5	1994	6	23	47	28	6.8	0.14	2.65	Unknown
P1-1	1990	9	29	0.95	0.5	0.16	0.05	2.65	Unknown
P1-2	1991	7	10	0.9	0.3	0.11	0.03	2.65	Unknown
P1-3	1992	6	30	5.8	2.4	0.12	0.006	2.65	Unknown
P1-4	1993	7	6	38	28	18	2.3	2.65	Unknown
P1-5	1994	6	23	0.45	0.3	0.15	0.03	2.65	Unknown
P2-1	1990	9	26	46	42	11.6	9	2.65	Unknown
P2-2	1991	7	10	42	17	0.52	0.08	2.65	Unknown
P2-3	1992	6	30	88	66	28	4.2	2.65	Unknown
P2-4	1993	7	6	1.6	1	0.52	0.17	2.65	Unknown
P2-5	1994	6	23	62	45	23	4.4	2.65	Unknown

Bed Material Comments

BSDMS Summary Report

79 Auglaize River at S.R. 198 near Wapakoneta

Measurement No: AP-1

Measurement No: AP-2

Measurement No: BR-1

Measurement No: BR-2

Measurement No: BR-3

Measurement No: BR-4

Measurement No: BR-5

BSDMS Summary Report

79 Auglaize River at S.R. 198 near Wapakoneta

Measurement No: P1-1

Measurement No: P1-2

Measurement No: P1-3

Measurement No: P1-4

Measurement No: P1-5

Measurement No: P2-1

Measurement No: P2-2

BSDMS Summary Report

79 Auglaize River at S.R. 198 near Wapakoneta

Measurement No: P2-3

Measurement No: P2-4

Measurement No: P2-5

Bridge Data

Structure No: AUG-198-0971
Length(ft): 234
Width(ft): 30
Number of Spans: 3
Vertical Configuration: Horizontal
Low Chord Elev (ft): 824.6
Upper Chord Elev (ft): 828.4
Overtopping Elev (ft): 828.4
Skew (degrees): 30
Guide Banks: None
Waterway Classification: Main
Year Built: 1966
Avg Daily Traffic: 770
Plans on File: Yes
Parallel Bridges: No
Upstream/Downstream: N/A

BSDMS Summary Report

79 Auglaize River at S.R. 198 near Wapakoneta

Continuous Abutment: No

Distance Between Centerlines:

Distance Between Pier Faces:

Bridge Description:

The bridge is constructed of concrete and steel I-beams, and it has solid-wall round-nose piers. The site plans are dated 1964. The piers are referenced from the left to the right abutments when looking downstream.

Abutment Data

Left Station: 456.8853

Right Station: 454.545

Left Skew (deg): 0

Right Skew (deg) 0

Left Abutment Length (ft): 53.5

Right Abutment Length (ft) 59.5

Left Abutment to Channel Bank (ft): 20.7

Right Abutment to Channel Bank (ft): 59.5

Left Abutment Protection: Unknown

Right Abutment Protection Unknown

Contracted Opening Type: I

Embankment Skew (deg): 0

Embankment Slope (ft/ft): 3.5

Abutment Slope (ft/ft) 2

Wingwalls: No

Wingwall Angle (deg):

Pier Data

Pier ID	Bridge Station(ft)	Alignment	Highway Station	PierType	# Of Piles	File Spacing(ft)
---------	--------------------	-----------	-----------------	----------	------------	------------------

BSDMS Summary Report

79 Auglaize River at S.R. 198 near Wapakoneta

1	72	0	456.1652	Single
2	162	0	455.2651	Single

Pier ID	Pier Width(ft)	Pier Shape	Shape Factor	Length(ft)	Protection	Foundation
1	2.5	Round		30.7	None	Poured
2	2.5	Round		31.7	None	Poured

Pier ID	Top Elevation(ft)	Bottom Elevation(ft)	Foot or Pile Cap Width(ft)	Cap Shape	File Tip Elevation(ft)
1	805.5	803	7.5	Square	
2	805.5	803	7.5	Square	

Pier Description

Pier ID 1

The concrete pier is a solid wall with round nose.

Pier ID 2

The concrete pier is a solid wall with round nose.

Pier Scour Data

Pier ID	Date	Time	USOrDS					
1	7/13/92	14:30	Upstream					
1	7/17/92	16:10	Upstream					
Pier ID	Scour Depth	Accuracy (ft)	Side Slope (ft/ft)	TopWidth (ft)	Apprch Vel (ft/s)	Apprch Depth(ft)	Effective Pier Width	Skew to Flow(deg)
1	1.8	0.5	4.4	15	1.7	10.6	2.5	40.1
1	0.5	0.5	6.1	7	0.9	7.1	2.5	49.5
PierID	Sediment Transport	Bed Material	BedForm	Trough (ft)	Crest (ft)	Sigma	Debris Effects	
1	Clear-water	Non-cohesive	Unknown			20.34	Insignificant	
1	Clear-water	Non-cohesive	Unknown			20.34	Insignificant	

BSDMS Summary Report

79 Auglaize River at S.R. 198 near Wapakoneta

Stage and Discharge Data

Peak Discharge					Flow (cfs)	Qacc	Peak Stage					Stage (ft)	Water Temp (C)	Return Period(yr)
year	mo	dy	hr	mi			year	mo	dy	hr	mi			
1992	7	17	16:10		2530							24	2	
1992	7	13	14:30		6680							25	10	

Hydrograph

Supporting Files
