

BSDMS Summary Report

70 Wakatomika Creek at S.R. 16 near Frazeyburg, OH

Site Location:

Site ID: 70

Site Name: Wakatomika Creek at S.R. 16 near Frazeyburg, OH

County: Muskingum

Nearest City: Frazeyburg

State: OH

Latitude: 400710

Longitude: 820810

USGS Station ID:

Route Number: 16

Route Class: State

Service Level: Mainline

Route Direction: East

Highway Mile Point: 3.5

Stream Name: Wakatomika Creek

River Mile:

Contact:
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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 SR 16 bridge crossing Wakatomika Creek, .3 mi W of Frazeyburg, Ohio. Site is approximately 2.5 mi. east of the intersection of State Routes 16 and 586. Site is located approximately one mile downstream of USGS streamgage Wakatomika Creek near Frazeyburg (03144000): streamgage data available from 1936 to current year. The Ohio Department of Transportation bridge identification is "MUS-16-0350".

Bed-material samples were collected during an annual low-flow survey.

Notes: All piers are referenced numerically, from the left to right, when viewing the upstream face of the bridge while facing in the downstream direction.

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 sections during the scour measurement.

Elevation Reference

Datum: MSL

MSL (ft): 0

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Description of Reference Elevation:

R1 = Chiseled square located on top of east upstream abutment.
MSL elevation = 758.21 ft

Stream Data

Drainage Area (sq mi):	140	Floodplain Width:	Wide
Slope in Vicinity(ft/ft):	0.00062	Natural Levees:	Little
Flow Impact:	Right	Apparent Incision:	None
Channel Evolution	Premodified	Channel Boundary:	Alluvial
Armoring:	None	Banks Tree Cover:	Medium
Debris Frequency:	Frequent	Sinuosity:	Sinuuous
Debris Effect:	Both	Braiding:	Locally
Stream Size:	Medium	Anabranching:	Locally
Flow Habit:	Perennial	Bars:	Narrow
Bed Material:	Gravel	Stream Width Variability:	Random
Valley Setting:	Moderate		

Roughness Data

Manning's n Values

	Left Overbank	Channel	Right Overbank
High:	0.075	0.055	0.085
Typical	0.07	0.05	0.075
Low:	0.065	0.045	0.07

Bed Material

Measurement Number	Yr	Mo	Dy	Sampler	D95 (mm)	D84 (mm)	D50 (mm)	D16 (mm)	SP	Shape	Cohesion
AP-1	1993	7	9		32	11	1.1	0.28	2.65		Unknown
AP-2	1994	6	28		26	4.2	0.89	0.07	2.65		Unknown

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BR-1	1992	12	18	19	9.5	1.4	0.68	2.65	Unknown
BR-2	1993	7	9	50	12	2.2	0.56	2.65	Unknown
BR-3	1994	6	28	20	14	3.25	0.32	2.65	Unknown
P1-1	1992	12	18	1.5	1.1	0.63	0.28	2.65	Unknown
P1-2	1993	7	9	15	7.2	0.83	0.12	2.65	Unknown
P1-3	1994	6	28	1.9	0.5	0.25	0.08	2.65	Unknown
P2-1	1992	12	18	16	7.4	0.59	0.17	2.65	Unknown
P2-2	1993	7	9	15	6.4	0.92	0.33	2.65	Unknown
P2-3	1994	6	28	14	6.1	1.07	0.3	2.65	Unknown
P3-1	1992	12	18	15.5	7.8	0.42	0.005	2.65	Unknown
P3-2	1993	7	9	23	17	6.2	0.2	2.65	Unknown
P3-3	1994	6	28	79	70	16	1.5	2.65	Unknown
P4-1	1992	12	18	1.5	0.7	0.15	0.04	2.65	Unknown
P4-2	1993	7	9	0.3	0.1	0.03	0.007	2.65	Unknown
P4-3	1994	6	28	0.38	0.1	0.03	0.007	2.65	Unknown

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Bed Material Comments

Measurement No: AP-1

Approach-section composite sample

Measurement No: AP-2

Approach-section composite sample

Measurement No: BR-1

Bridge-section composite sample, collected along the upstream bridge face.

Measurement No: BR-2

Bridge-section composite sample, collected along the upstream bridge face.

Measurement No: BR-3

Bridge-section composite sample, collected along the upstream bridge face.

Measurement No: P1-1

Sample collected at the upstream face of pier 1

Measurement No: P1-2

Sample collected at the upstream face of pier 1

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Measurement No: P1-3

Sample collected at the upstream face of pier 1

Measurement No: P2-1

Sample collected at the upstream face of pier 2

Measurement No: P2-2

Sample collected at the upstream face of pier 2

Measurement No: P2-3

Sample collected at the upstream face of pier 2

Measurement No: P3-1

Sample collected at the upstream face of pier 3

Measurement No: P3-2

Sample collected at the upstream face of pier 3

Measurement No: P3-3

Sample collected at the upstream face of pier 3

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Measurement No: P4-1

Sample collected at the upstream face of pier 4

Measurement No: P4-2

Sample collected at the upstream face of pier 4

Measurement No: P4-3

Sample collected at the upstream face of pier 4

Bridge Data

Structure No: MUS-16-0350

Length(ft): 244.4

Width(ft):

Number of Spans: 5

Vertical Configuration: Horizontal

Low Chord Elev (ft): 756.8

Upper Chord Elev (ft): 759.3

Overtopping Elev (ft): 759.3

Skew (degrees): 30

Guide Banks: None

Waterway Classification: Main

Year Built: 1983

Avg Daily Traffic: 4960

Plans on File: Yes

Parallel Bridges: No

Upstream/Downstream: Unknown

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Continuous Abutment: No

Distance Between Centerlines:

Distance Between Pier Faces:

Bridge Description:

This bridge is a five span continuous concrete bridge resting on capped pile substructures. The site plans are dated 1964. All piers are referenced from the left to right abutments when looking downstream.

Abutment Data

Left Station: 187.3294

Right Station: 184.8856

Left Skew (deg): 0

Right Skew (deg) 0

Left Abutment Length (ft): 65

Right Abutment Length (ft) 65

Left Abutment to Channel Bank (ft): 40

Right Abutment to Channel Bank (ft): 60

Left Abutment Protection:

Right Abutment Protection

Contracted Opening Type: III

Embankment Skew (deg): 30

Embankment Slope (ft/ft): 2

Abutment Slope (ft/ft) 2

Wingwalls: No

Wingwall Angle (deg): 0

Pier Data

Pier ID	Bridge Station(ft)	Alignment	Highway Station	PierType	# Of Piles	File Spacing(ft)
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1	42	30	0	Group	11	4.6
2	94.5	30	0	Group	11	4.6
3	147	30	0	Group	11	4.6
4	199.5	30	0	Group	11	4.6

Pier ID	Pier Width(ft)	Pier Shape	Shape Factor	Length(ft)	Protection	Foundation
1	1.2	Round		45	Unknown	Piles
2	1.2	Round		45	Unknown	Piles
3	1.2	Round		45	Unknown	Piles
4	1.2	Round		45	Unknown	Piles

Pier ID	Top Elevation(ft)	Bottom Elevation(ft)	Foot or Pile Cap Width(ft)	Cap Shape	File Tip Elevation(ft)
1				Unknown	
2				Unknown	
3				Unknown	
4				Unknown	

Pier Description

Pier ID 1

Round steel casing with concrete fill.

Pier ID 2

Round steel casing with concrete fill.

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Pier ID 3

Round steel casing with concrete fill.

Pier ID 4

Round steel casing with concrete fill.

Pier Scour Data

Abutment Scour

Contraction Scour

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Stage and Discharge Data

Hydrograph

Supporting Files
