BSDMS Summary Report

40 Delaware River at Route 6 at Port Jervis, NY

Site Location:

Site ID: 40

Site Name: Delaware River at Route 6 at Port Jervis, NY

County: Orange

Nearest City: Port Jervis

State: NY

Latitude: 412218

Longitude: 744236

USGS Station ID: 1434000

Route Number: 6

Route Class: City

Service Level: Business

Route Direction: NA

Highway Mile Point: 1

Stream Name: Delaware River

River Mile:

Contact:
Tom Soya, Pennsylvania Department of Transportation (PENNDOT), Bridge inspection coordinator (717) 963-3078.

Publication:

Site Description:

The site is located at the Route 6 bridge crossing the Delaware River in Port Jervis, New York. The bridge, 649 ft long and 58 ft wide with one pier, is 250 ft upstream from a USGS streamflow gage. There is significant regulation of flow by upstream reservoirs. There is no general scour based on the USGS gage rating, and there is no apparent contraction scour. The streambed is armored by gravel. The local-scour hole does not refill after high flow. Clear-water scour is common. Local scour occurred before the initial scour measurements. Therefore, the 1955 flood (peak of record with a recurrence interval (RI) of 100+ years) is assumed to have produced all the scour. However, high flows during 1942 (RI about 30 years), 1940 (RI about 12 years), 1973 (RI about 10 years), and 1986 (RI about 8 years could have contributed to the scour measured from 1986-1992. Local scour is based on the ambient bed and is an average of measurements 1989, 1991, and 1992. The cross sections at the downstream side of the bridge show little change in elevation from 1942-1989.

Bed-material samples were collected in a shallow area of the channel near the bridge. The D16, D50, and D84 were analyzed. The D90 and D95 were not analyzed because of the accuracy of the limited data set.

Significant ice jams may occur during severe winters and low flow.

Elevation Reference

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Datum: MSL

MSL (ft):

Description of Reference Elevation:

USSB: RP = Top vertical railing support at station #57, painted yellow.
ELEVATION = 451.27 ft.
Right abutment = station 0
RP = station 57
RE pier = station 318
LE pier = station 328
Left abutment = station 649
DSSB: RM = Bolt set vertically in right abutment at station -2.
ELEVATION = 446.32 ft.
RP = Wire-weight gage at station 54.
ELEVATION = 449.49 ft.
APPR: RP = Bolt set in tree about 650 ft upstream, right bank.
ELEVATION = 448.09 ft.
EXIT: RP = Bolt set in pole about 650 ft downstream, right bank.
ELEVATION = 439.22 ft.

Stream Data

Drainage Area (sq mi):	3070	**Floodplain Width:**	Little
Slope in Vicinity(ft/ft):	0.00114	**Natural Levees:**	Both
Flow Impact:	Straight	**Apparent Incision:**	Apparent
Channel Evolution	Constructed	**Channel Boundary:**	Alluvial
Armoring:	High	**Banks Tree Cover:**	Medium
Debris Frequency:	Occasional	**Sinuosity:**	Sinuous
Debris Effect:	Unknown	**Braiding:**	None
Stream Size:	Wide	**Anabranching:**	None
Flow Habit:	Flashy	**Bars:**	Narrow
Bed Material:	Gravel	**Stream Width Variability:**	Equiwidth
Valley Setting:	Moderate		

Roughness Data

Manning's n Values

	Left Overbank	Channel	Right Overbank
High:			

Typical 0.03

Low:

Bed Material

Measurement Number	Yr	Mo	Dy	Sampler	D95 (mm)	D84 (mm)	D50 (mm)	D16 (mm)	SP	Shape	Cohesion
1	1990	7	11	GRID	142	103	45	14	2.65		Alluvial_Over
2	1990	7	11	SHOVEL		49	15	0.38	2.65		Alluvial_Over

Bed Material Comments

Measurement No: 1

Bed-material samples were collected in a shallow area of the channel near the bridge. Sizes based on 100 samples using the grid-sampling technique.

Measurement No: 2

Bed-material samples were collected in a shallow area of the channel near the bridge. The D16, D50, and D84 were analyzed. The D90 and D95 were not analyzed because of the accuracy of the limited data set.

Bridge Data

Structure No:

Length(ft): 649

Width(ft): 58

Number of Spans: 2

Vertical Configuration: Horizontal

Low Chord Elev (ft): 446

Upper Chord Elev (ft): 446

Overtopping Elev (ft):

Skew (degrees): 0

Guide Banks: Unknown

Waterway Classification: Main

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Year Built: 1939

Avg Daily Traffic:

Plans on File: Yes

Parallel Bridges No

Upstream/Downstream: N/A

Continuous Abutment: No

Distance Between Centerlines:

Distance Between Pier Faces:

Bridge Description:

Abutment Data

Left Station: 649

Right Station: 0

Left Skew (deg): 0

Right Skew (deg) 0

Left Abutment Length (ft): 58

Right Abutment Length (ft) 58

Left Abutment to Channel Bank (ft): 0

Right Abutment to Channel Bank (ft): 0

Left Abutment Protection:

Right Abutment Protection

Contracted Opening Type: II

Embankment Skew (deg): 0

Embankment Slope (ft/ft):

Abutment Slope (ft/ft)

Wingwalls: Yes

Wingwall Angle (deg): 0

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Pier Data

Pier ID	Bridge Station(ft)	Alignment	Highway Station	PierType	# Of Piles	Pile Spacing(ft)
1	324	0	324	Single	0	

Pier ID	Pier Width(ft)	Pier Shape	Shape Factor	Length(ft)	Protection	Foundation
1	10	Round		58	None	Piles

Pier ID	Top Elevation(ft)	Bottom Elevation(ft)	Foot or Pile Cap Width(ft)	Cap Shape	Pile Tip Elevation(ft)
1	409			Unknown	

Pier Description

Pier ID 1

The footing was not exposed.

Pier Scour Data

Pier ID	Date	Time	USOrDS
1	9/16/92	0:00	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	3.1	0.5	5.4	25	14.7	25.1	10	0

PierID	Sediment Transport	Bed Material	BedForm	Trough (ft)	Crest (ft)	Sigma	Debris Effects
1	Clear-water	Non-cohesive	Unknown			2.7	Unknown

PierID	D95 (mm)	D84 (mm)	D50 (mm)	D16 (mm)
1	142	103	45	14

Pier Scour Comments

Pier ID 1 **Time:** 0:00 **US/DS:** Upstream

The measurements in 1989-92 all indicate about 3.1 ft of scour.
The scour is assumed to have occurred during the 1955 flood.

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Abutment Scour

ContractionScour

Stage and Discharge Data

Peak Discharge					Flow		Peak Stage					Stage	Water	Return
year	mo	dy	hr	mi	(cfs)	Qacc	year	mo	dy	hr	mi	(ft)	Temp (C)	Period(yr)
1955	8	19		0	233000	95	1955	8	19		0	439.3		500

Hydrograph

Hydrograph Number	Year	Month	Day	Hr	Min	Sec	Stage(ft)	Discharge (cfs)

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Supporting Files