
Wexford 2009: Annual Physical Assessment



Prepared for:

Harford County Department
of Public Works

Bureau of Water Resources

Prepared by:

KCI Technologies, Inc.

Natural Resource
Management Group

936 Ridgebrook Road
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21152

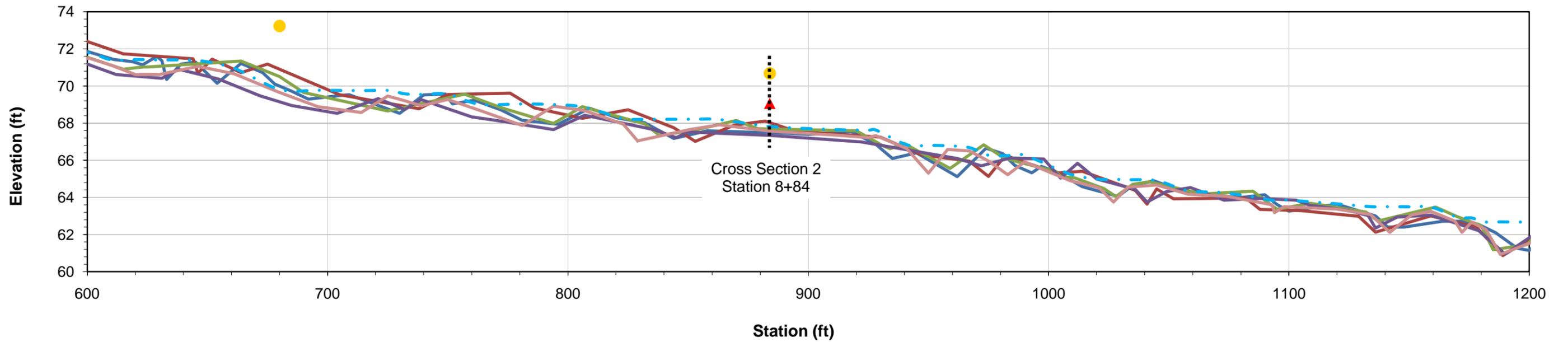
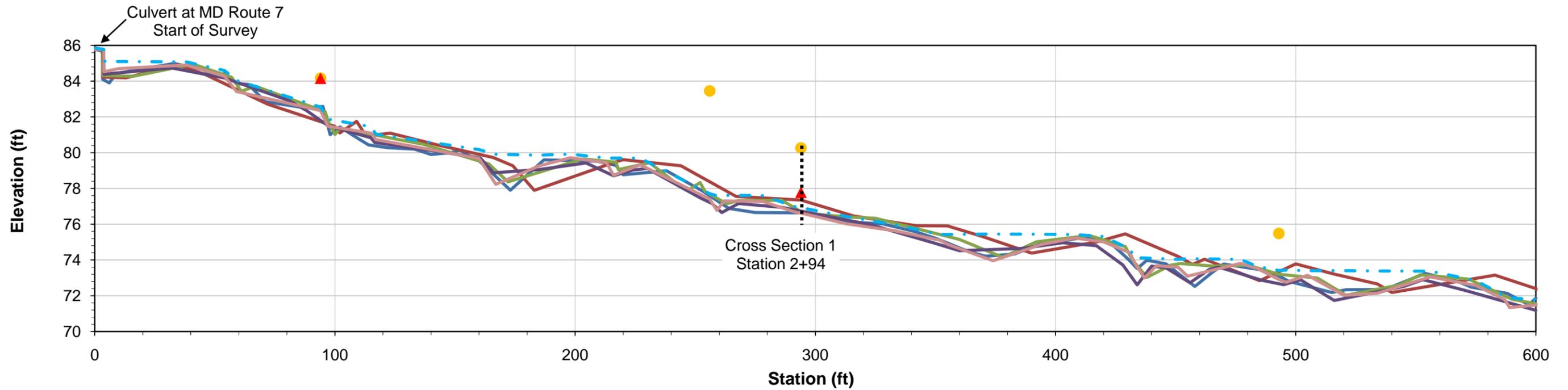
KCI Job Number:
01066041.24

December 2009



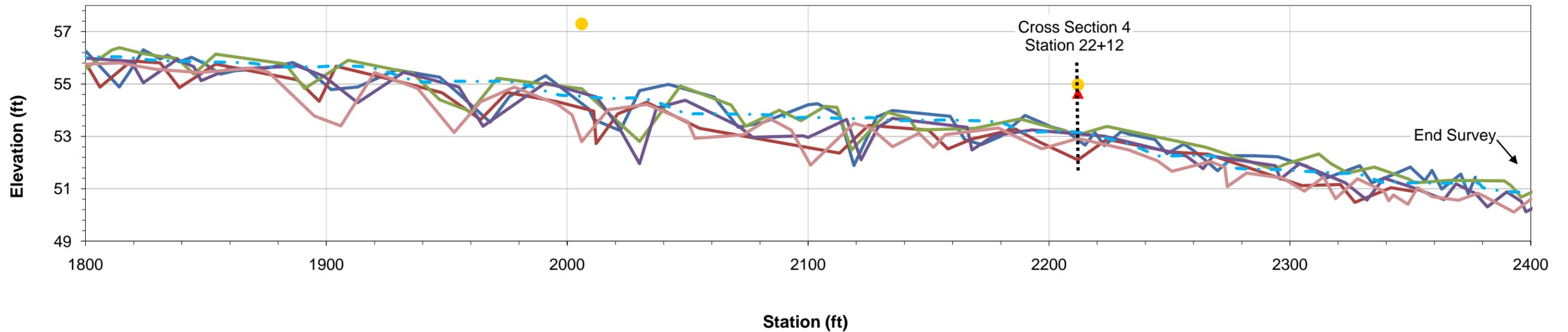
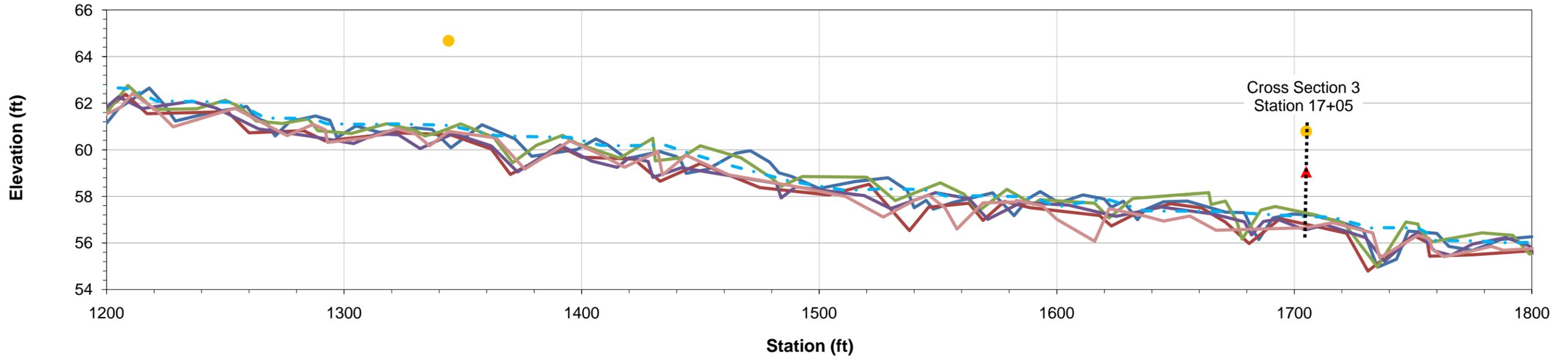
Longitudinal Profile:
Combined Profile (2005-2009) and 2009 Survey Data

Longitudinal Profile Station 0+00 to 12+00



— Thalweg 2005
 — Thalweg 2006
 — Thalweg 2007
 — Thalweg 2008
 — Thalweg 2009
 - · - Water Surface 2009
 ● Top of Bank 2009
 ▲ Bankfull 2009

Longitudinal Profile Station 12+00 to 18+00



— Thalweg 2005 — Thalweg 2006 — Thalweg 2007 — Thalweg 2008 — Thalweg 2009 - · - Water Surface 2009 ● Top of Bank 2009 ▲ Bankfull 2009

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
0+00	85.77	85.85			Edge of culvert
0+3.7	85.76	85.77			Edge of concrete
0+3.8	84.52	85.12			Scour pool
0+10	84.70	85.10			BOP/TOG
0+38	84.90	85.08			BOG/TOR
0+54	84.27	84.59			Riffle
0+59	83.42	84.04			Pool (on high side of mid channel bar)
0+94	82.35	82.55	84.16	84.16	Riffle (on high side of mid channel bar)
0+97	81.48	81.88			Riffle
1+15	81.09	81.45			Riffle
1+17	80.73	81.03			Riffle
1+60	79.68	80.17			BOR/TOP
1+67	78.23	79.91			Mid pool
1+85	79.26	79.86			BOP/TOG
1+98	79.71	79.92			BOG/TOR (on high side of mid channel bar)
2+13	79.44	79.69			BOR/TOP
2+16	78.73	79.69			Pool
2+27	79.33	79.69			BOP/TOR
2+56	77.41	77.71		83.45	BOR/TOP
2+59	76.78	77.59			Mid pool
2+62	77.30	77.61			BOP/TOG/N
2+78	77.27	77.60			TOR
2+92	76.66	76.96			Riffle
2+94	76.62	76.92	77.79	80.26	XS1
3+13	76.02	76.43			Riffle
3+33	75.63	75.97			Riffle
3+52	75.10	75.42			BOR/TOP
3+55	74.88	75.43			BON/TOP
3+74	73.95	75.45			Mid pool
3+94	74.87	75.44			Mid pool
4+08	75.22	75.42			BOP/TOR
4+20	75.01	75.31			Riffle
4+31	74.40	74.60			Riffle
4+33	73.82	74.12			BOR/TOP
4+37	72.99	74.11			Mid pool
4+42	73.67	74.09			BOP/TOG
4+51	73.60	74.03			BOG/TOP
4+55	73.09	74.07			Mid pool
4+77	73.81	74.03			BOP/TOR
4+84	73.52	73.63			Riffle
4+93	72.91	73.41		75.48	BOR/TOP
4+96	72.75	73.43			Mid pool
5+05	73.14	73.40			High point
5+20	72.02	73.40			Mid pool
5+34	72.14	73.38			Mid pool
5+56	73.05	73.37			BOP/TOR
5+75	72.58	72.85			Mid Riffle
5+87	71.78	71.98			BOR/TOP
5+89	71.34	71.88			Mid pool
6+01	71.49	71.77			BOP/TOR
6+10	71.11	71.41			BOR/TOP
6+20	70.62	71.42			Mid pool
6+30	70.62	71.40			Mid pool
6+46	71.06	71.37			BOP/TOR
6+61	70.66	70.95			Riffle
6+80	69.65	69.81		73.23	BOR/TOP
6+96	68.89	69.77			Mid pool
7+14	68.57	69.75			Mid pool
7+25	69.46	69.76			BOP/TOR
7+32	69.21	69.58			BOR/TOP
7+39	68.93	69.54			Mid run
7+50	69.27	69.56			BON/TOR
7+63	68.70	69.02			BOR/TOP
7+81	67.87	69.03			Mid pool
7+94	68.91	69.00			BOP/TOR
8+07	68.67	68.85			Riffle

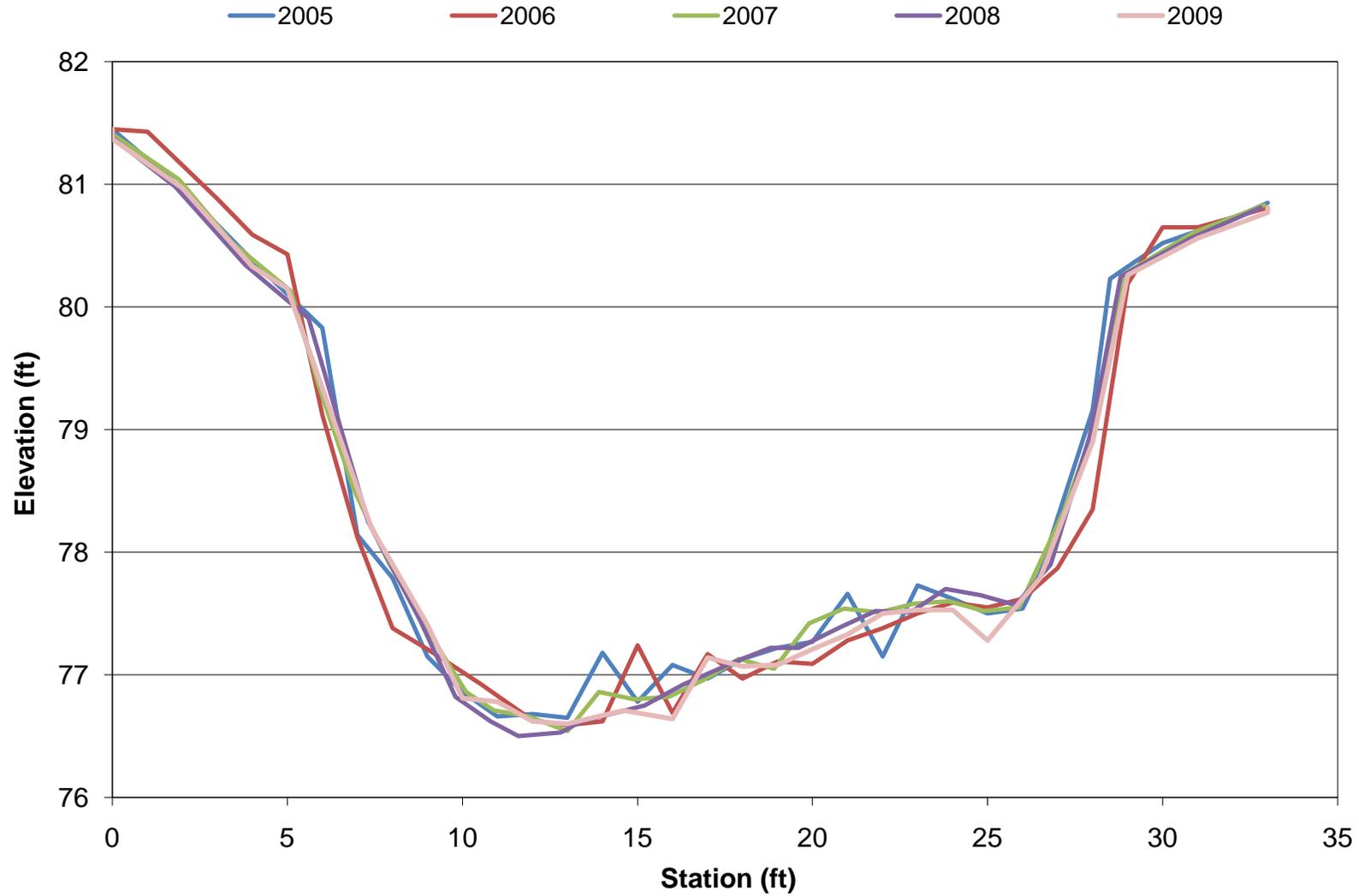
Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
8+23	67.95	68.23			BOR/TOP
8+29	67.04	68.20			Mid pool
8+51	67.66	68.21			BOP/TOG
8+63	67.91	68.19			BOG/TOR
8+84	67.57	67.82	69.01	70.68	XS2
9+11	67.36	67.65			Riffle
9+25	67.22	67.62			Riffle
9+28	67.33	67.63			Riffle
9+41	66.63	66.83			BOR/TOP
9+50	65.30	66.80			Mid pool
9+58	66.58	66.78			BOP/TOR
9+67	66.50	66.68			Riffle
9+75	65.96	66.27			BOR/TOP
9+83	65.22	66.25			Mid pool
9+90	65.91	66.27			above debris dam/Riffle
10+09	64.90	65.25			below debris dam/Riffle
10+21	64.52	64.98			BOR/TOP
10+27	63.75	64.97			Mid pool
10+33	64.55	64.95			BOP/TOR
10+45	64.67	64.90			BON/TOR
10+58	64.17	64.36			BOR/TOR
10+74	64.06	64.24			BON/TOR
10+93	63.60	63.84			BOR/TOP
10+94	63.18	63.83			Mid pool
10+98	63.50	63.86			BOP/TOR
11+20	63.37	63.65			Riffle
11+34	63.08	63.50			BOR/TOP
11+42	62.12	63.50			Mid pool
11+51	63.06	63.49			BOP/TOG
11+59	63.25	63.48			BOG/TOR
11+69	62.73	62.98			BOR/TOP
11+72	62.12	62.88			Mid pool
11+76	62.66	62.89			BOP/TOR
11+82	62.27	62.67			BOR/TOP
11+88	60.93	62.68			Mid pool
12+06	61.83	62.65			BOP/TOG
12+11	62.42	62.60			BOG/TOR
12+21	61.69	62.09			BOR/TOP
12+28	60.98	62.08			Mid pool
12+54	61.78	62.04			BOP/TOR
12+67	61.09	61.36			BOR/TOP
12+76	60.61	61.35			Mid pool
12+87	61.09	61.34			BOP/TOR
12+92	60.86	61.14			BOR/TOP
12+93	60.31	61.11			Mid pool
13+11	60.53	61.09			Mid pool
13+22	60.91	61.11			BOP/TOR
13+30	60.68	61.08			BOR/TOP
13+36	60.17	61.07			Mid pool
13+44	60.79	61.04		64.68	BOP/TOR
13+64	60.51	60.61			BOR/TOP
13+76	59.17	60.57			Mid pool
13+95	60.38	60.53			BOP/TOR
14+08	59.79	60.19			BOR/TOP
14+18	59.25	60.17			Mid pool
14+32	59.92	60.20			US down tree
14+34	58.92	60.24			Pool DS down tree
14+44	59.76	59.90			BOP/TOR
14+62	58.92	59.34			Riffle
14+88	58.46	58.65			Riffle
15+11	58.00	58.26			BOR/TOP
15+27	57.11	58.32			Mid pool
15+40	57.83	58.30			BOP/TOR
15+46	58.06	58.26			BON/TOR
15+53	57.50	58.02			BOR/TOP
15+58	56.60	58.01			Mid pool

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
15+69	57.72	58.02			BOP/TOG
15+83	57.76	57.99			BOG/TOR
15+83	57.83	58.03			Riffle
15+94	57.59	57.81			BOR/TON
16+00	57.01	57.55			BON/TOP
16+16	56.07	57.83			Mid pool
16+22	57.47	57.85			BOP/TOR
16+37	57.16	57.38			BOR/TOP
16+45	56.94	57.37			Mid pool
16+56	57.16	57.37			Mid pool
16+67	56.55	57.35			Mid pool
17+05	56.65	57.13	59.06	60.79	XS3
17+16	56.87	57.11			BOP/TOR
17+33	56.43	56.63			BOR/TOP
17+36	55.36	56.66			Mid pool
17+52	56.33	56.64			BOP/TOR
17+57	56.17	56.37			BOR/Above log
17+58	55.73	56.11			Below log
17+63	55.41	56.10			Mid pool
17+76	55.69	56.09			BOP/TOG
17+83	55.85	56.06			BOG/TOR
17+88	55.69	56.01			BOR/TON
17+98	55.75	56.02			Mid run
18+14	55.81	56.04			BON/TOR
18+29	55.57	55.91			BOR/TOP
18+47	55.44	55.86			Mid pool
18+69	55.60	55.80			BOP/TOR
18+76	55.45	55.67			BOR/TOP
18+95	53.78	55.66			Mid pool
19+06	53.40	55.70			Mid pool
19+20	55.44	55.60			BOP/TOR
19+38	54.83	55.11			BOR/TOP
19+53	53.15	55.11			Mid pool
19+64	54.32	55.10			Mid pool
19+78	54.88	55.07			BOP/TOR
19+96	54.22	54.60			BOR/TOP
20+02	53.82	54.57			Mid pool
20+06	52.80	54.53		57.30	Mid pool
20+17	54.02	54.46			BOP
20+33	54.22	54.42			TOR
20+50	53.57	53.85			BOR/TOP
20+53	52.93	53.87			Mid pool
20+73	53.06	53.85			Mid pool
20+84	53.68	53.82			BOP/TOR
20+93	53.24	53.72			BOR/TOP
21+01	51.91	53.73			Mid pool
21+19	53.50	53.68			BOP/TOR
21+26	53.32	53.72			BOR/TOP
21+35	52.61	53.61			Mid pool
21+46	53.12	53.62			High point
21+52	52.58	53.62			Mid pool
21+57	53.07	53.63			BOP/TOG
21+79	53.32	53.54			BOG/TOR
21+89	52.87	53.17			BOR/TOP
21+97	52.53	53.18			Mid pool
22+12	52.92	53.16	54.66	54.98	XS4/TOR
22+33	52.49	52.71			Mid riffle
22+45	52.07	52.27			BOR/TOP
22+51	51.67	52.26			Mid pool
22+67	52.04	52.26			BOP/TOR
22+73	51.82	52.00			BOR/log
22+74	51.08	51.84			below log
22+82	51.60	51.76			TOR
22+97	51.41	51.73			BOR/TOP
23+06	50.91	51.67			Mid pool
23+14	51.45	51.64			BOP/TON

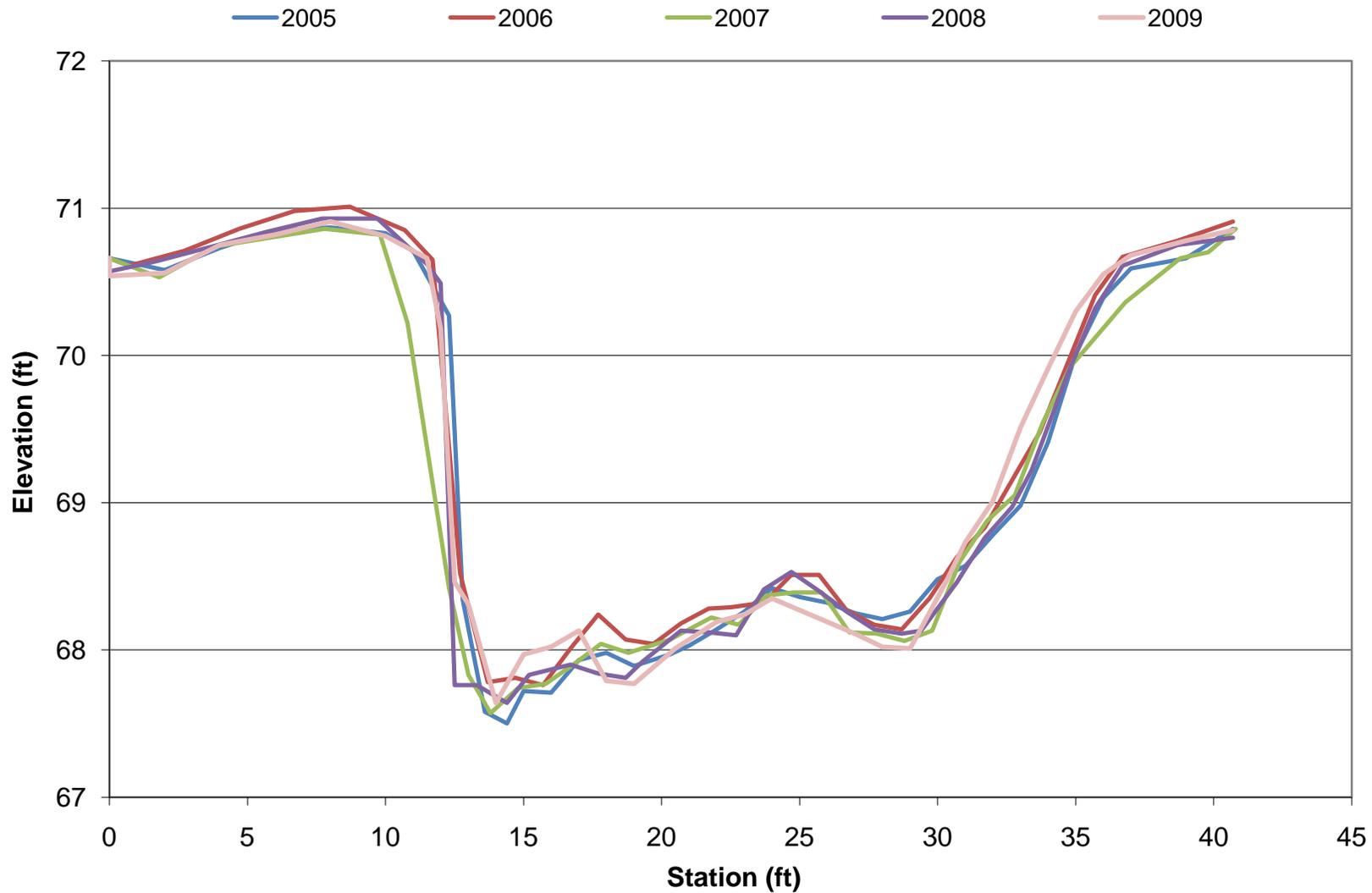
Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
23+19	50.62	51.58			Run
23+28	51.38	51.57			BON/TOR
23+39	50.91	51.23			BOR/TOP
23+41	50.54	51.23			Mid pool
23+43	50.76	51.26			High point
23+49	50.41	51.22			Mid pool
23+53	51.04	51.25			BOP/TON
23+59	50.70	51.22			BON/TOP
23+70	50.56	51.22			Mid pool
23+78	50.83	51.22			Top concrete
23+81	50.70	51.02			Bottom concrete
23+93	50.11	50.88			Mid pool
24+00	50.60	50.92			TOR

Cross Section:
Combined Cross-sections (2005-2009) and 2009 Survey Data

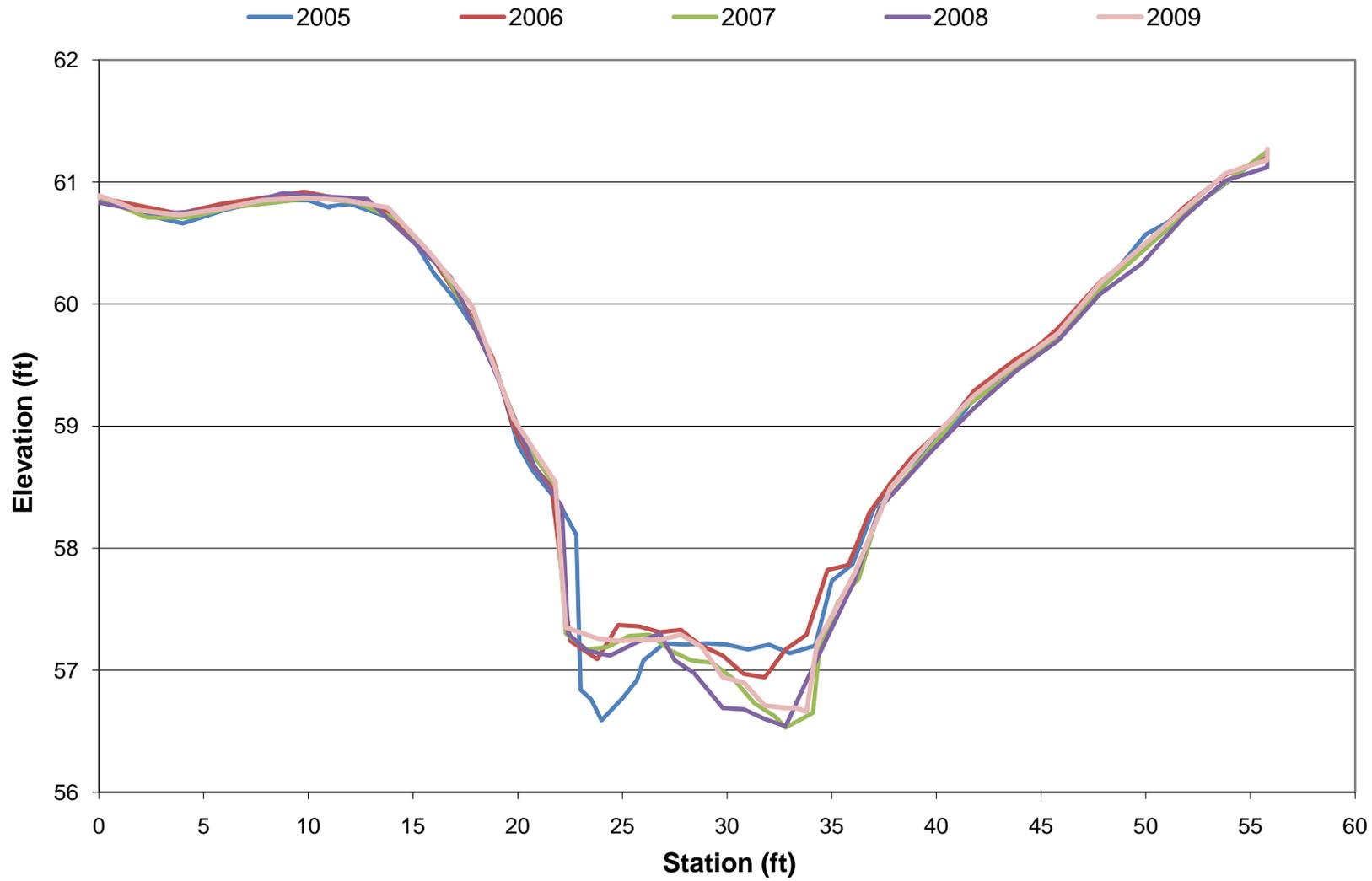
**Cross Section 1
Station 2+94**



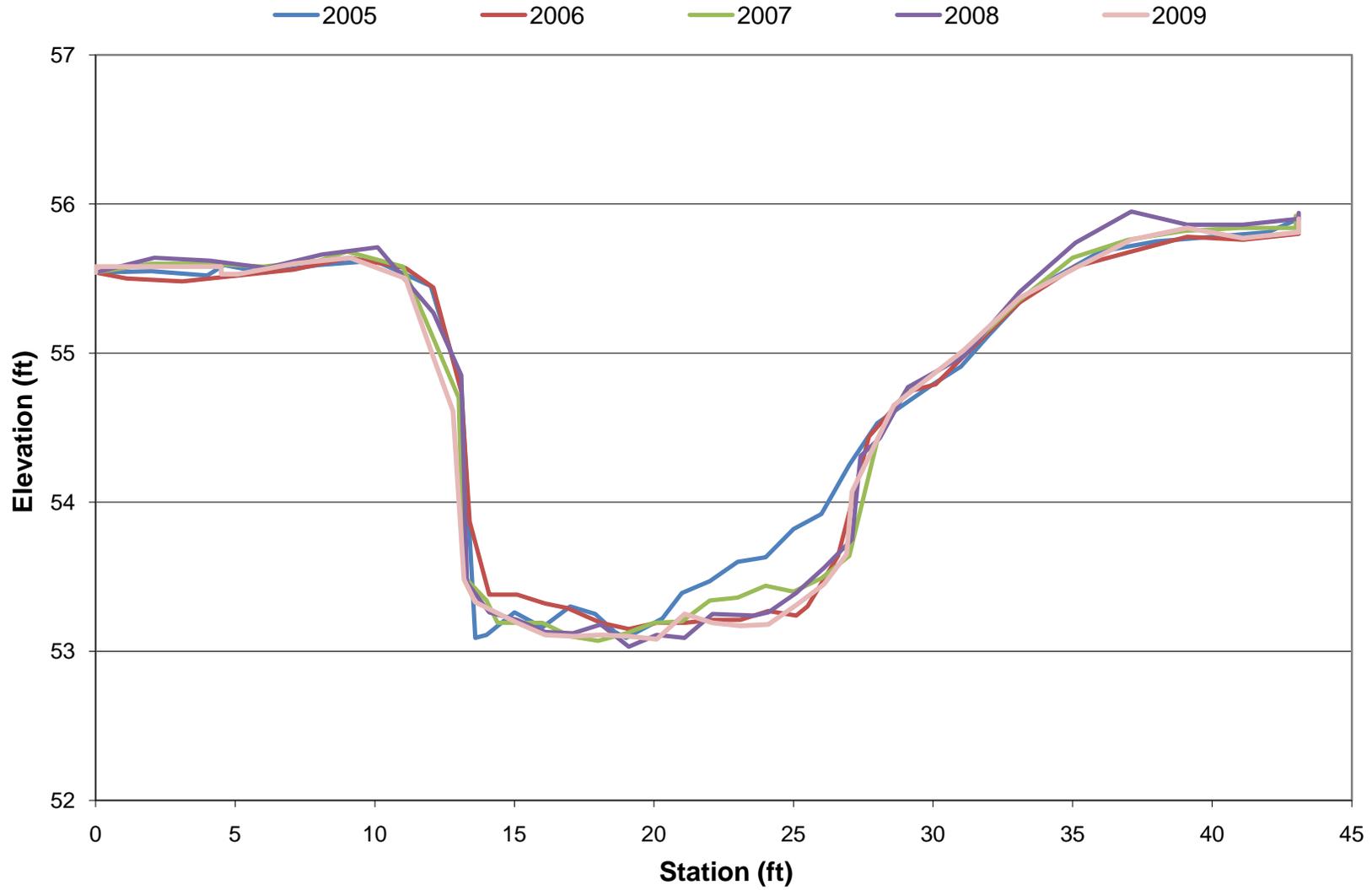
**Cross Section 2
Station 8+84**



**Cross Section 3
Station 17+05**



**Cross Section 4
Station 22+12**



WEXFORD
 Annual Physical Assessment
 Cross section data

Cross Section 1 at Profile Station 2+94

Surveyed on November 5, 2009

Station	Bed Surface	Description
0.0	81.45	LPIN
0.0	81.37	Ground at pin
2.0	80.97	
4.0	80.33	
5.0	80.15	LTOB
7.4	78.20	
9.0	77.41	
10.0	76.81	LEW
11.0	76.78	
12.0	76.62	
13.0	76.60	Thalweg WD= 0.30
14.6	76.71	
16.0	76.64	
17.0	77.14	
18.0	77.07	
19.0	77.08	
20.0	77.21	
21.0	77.33	
22.0	77.50	
23.0	77.53	
24.0	77.53	
25.0	77.28	REW
26.5	77.79	RBF
28.0	78.90	
29.0	80.26	RTOB
31.0	80.56	
33.0	80.77	Ground at pin
33.0	80.81	RPIN

WEXFORD
 Annual Physical Assessment
 Cross section data

Cross Section 2 at Profile Station 8+84

Surveyed on November 5, 2009

Station	Bed Surface	Description
0.0	70.66	LPIN
0.0	70.54	Ground at pin
2.0	70.56	
4.0	70.75	
6.0	70.82	
8.0	70.91	
10.0	70.81	
11.5	70.66	LTOB
12.0	70.18	
12.5	68.46	on debris in channel
13.0	68.31	
14.0	67.64	Thalweg WD=0.25
15.0	67.97	
16.0	68.02	
17.0	68.13	
18.0	67.79	
19.0	67.77	
20.5	68.01	
22.0	68.19	
23.0	68.24	
24.0	68.35	
25.0	68.27	
26.0	68.19	
27.0	68.11	
28.0	68.02	
29.0	68.01	
30.3	68.46	REW
31.0	68.73	
32.0	69.01	BKF
33.0	69.51	
34.0	69.91	
35.0	70.30	
36.0	70.55	
37.0	70.68	RTOB
39.0	70.78	
40.7	70.85	Ground at pin
40.7	70.85	RPIN

Description key: L=left, R=right, B=bank, BKF=bankful,
 EW=edge of water, WD=water depth, BO=bottom, TO=top

WEXFORD
 Annual Physical Assessment
 Cross section data

Cross Section 3 at Profile Station 17+05

Surveyed on November 6, 2009

Station	Bed Surface	Description
0.0	60.87	LPIN
0.0	60.89	Ground at pin
1.8	60.77	
3.8	60.73	
5.8	60.78	
7.8	60.85	
9.8	60.87	
11.8	60.85	
13.8	60.79	LTOB
15.8	60.42	
17.8	59.99	
19.8	59.06	RBF
21.8	58.54	REW
22.3	57.35	
23.8	57.26	Thalweg WD= 0.48
24.8	57.24	
25.8	57.25	
26.8	57.25	
27.8	57.29	
28.8	57.19	LEW
29.8	56.94	Bar
30.8	56.9	Bar
31.8	56.71	Bar
32.8	56.69	Bar
33.3	56.69	Bar
33.8	56.66	Bar/BOB
34.3	57.22	
36.1	57.8	
37.8	58.49	
39.8	58.9	
41.8	59.25	
43.8	59.51	
45.8	59.76	
47.8	60.17	
49.8	60.47	
51.8	60.77	
53.8	61.07	
55.8	61.18	Ground at pin
55.8	61.27	RPIN

Description key: L=left, R=right, B=bank, BKF=bankful,
 EW=edge of water, WD=water depth, BO=bottom, TO=top

WEXFORD
 Annual Physical Assessment
 Cross section data

Cross Section 4 at Profile Station 22+12

Surveyed on November 6, 2009

Station	Bed Surface	Description
0	55.54	LPIN
0	55.58	Ground at pin
4.5	55.58	
4.5	55.53	
5.1	55.53	
7.1	55.6	
9.1	55.64	
11.1	55.5	
12.1	54.97	LTOB
12.8	54.61	
13.2	53.48	BOB
13.6	53.33	LEW
15.1	53.19	
16.1	53.11	
17.1	53.1	
18.1	53.11	
19.1	53.1	
20.1	53.08	Thalweg WD= 0.24
21.1	53.25	
22.1	53.19	
23.1	53.17	
24.1	53.18	
25.1	53.31	REW
26.1	53.45	
26.9	53.65	
27.1	54.07	
28.6	54.65	RBKF
31.1	55.02	
33.1	55.37	
35.1	55.57	
37.1	55.76	
39.1	55.84	
41.1	55.77	
43.1	55.81	Ground at pin
43.1	55.9	RPIN

Photographic Log

Wexford
Annual Physical Assessment
Representative Site Photographs



Facing upstream at culvert at MD Route 7 at start of survey at station 0+00



Facing downstream from culvert at MD Route 7 at start of survey at station 0+00



Upstream view at station 2+25



Left bank of cross section 1 at station 2+94

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Annual Physical Assessment
Representative Site Photographs



Right bank of cross section 1 at station 2+94



Downstream view of cross section 1 at station 2+94



Upstream view of cross section 1 at station 2+94



Upstream view at station 5+02

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Annual Physical Assessment
Representative Site Photographs



Downstream view at meander at station 5+02



Downstream view at station 5+20



Upstream view at station 6+64



Downstream view at station 8+00

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Annual Physical Assessment
Representative Site Photographs



Left bank of cross section 2 at station 8+84



Right bank of cross section 2 at station 8+84



Upstream view of cross section 2 at station 8+84



Downstream view of cross section 2 at station 8+84

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Annual Physical Assessment
Representative Site Photographs



Upstream view at station 12+44



Downstream view at station 12+44



Left bank of cross section 3 at station 17+05



Right bank of cross section 3 at station 17+05

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Annual Physical Assessment
Representative Site Photographs



Downstream view of cross section 3 at station 17+05



Upstream view of cross section 3 at station 17+05



Downstream view at station 19+05



Upstream view at station 19+05

Wexford
Annual Physical Assessment
Representative Site Photographs



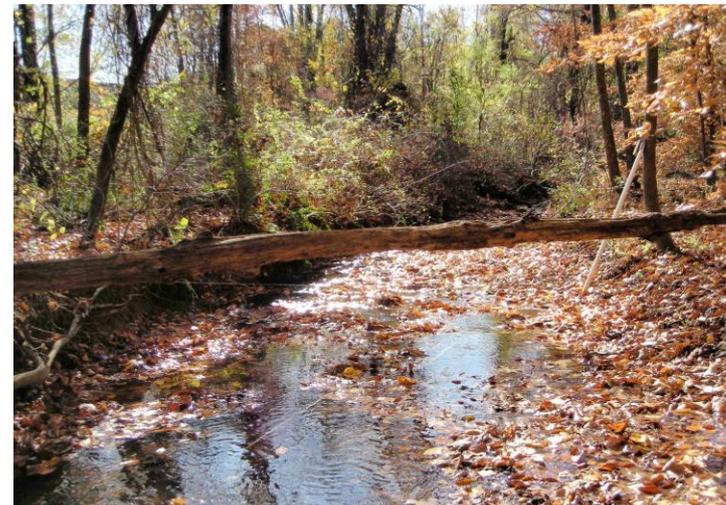
Left bank of cross section 4 at station 22+12



Right bank of cross section 4 at station 22+12



Upstream view of cross section 4 at station 22+12



Downstream view of cross section 4 at station 22+12

Wexford
Annual Physical Assessment
Representative Site Photographs



Facing upstream at profile end at station
24+00

Wexford 2010 Annual Physical Assessment



Prepared for:

Harford County Department
of Public Works

Bureau of Water Resources

Prepared by:

URS Corporation
4 North Park Drive
Suite 300
Hunt Valley, MD 21030

URS Project Number:
20834482

January 2011

The URS logo, consisting of the letters "URS" in a bold, blue, sans-serif font, is displayed within a white rectangular box.

WEXFORD
Annual Physical Assessment
Summary

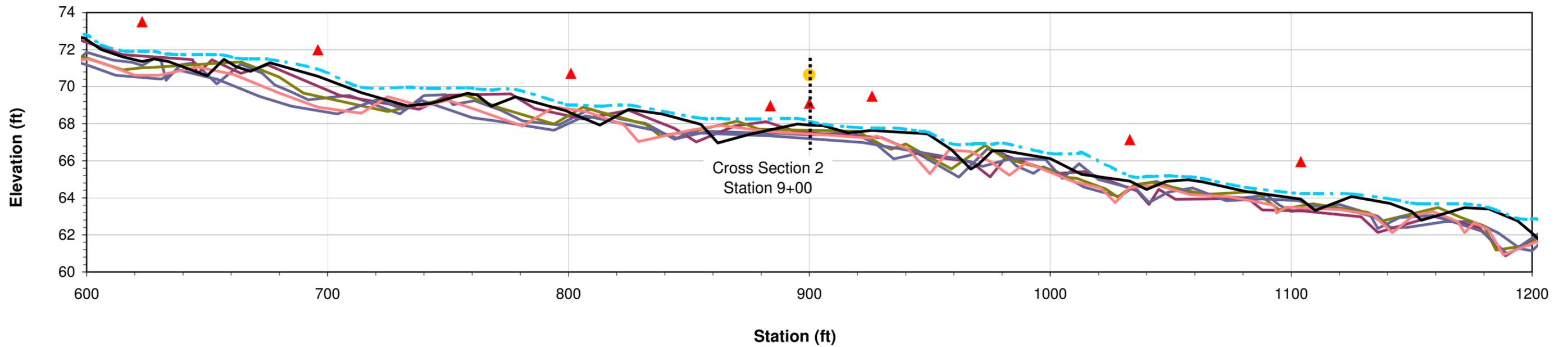
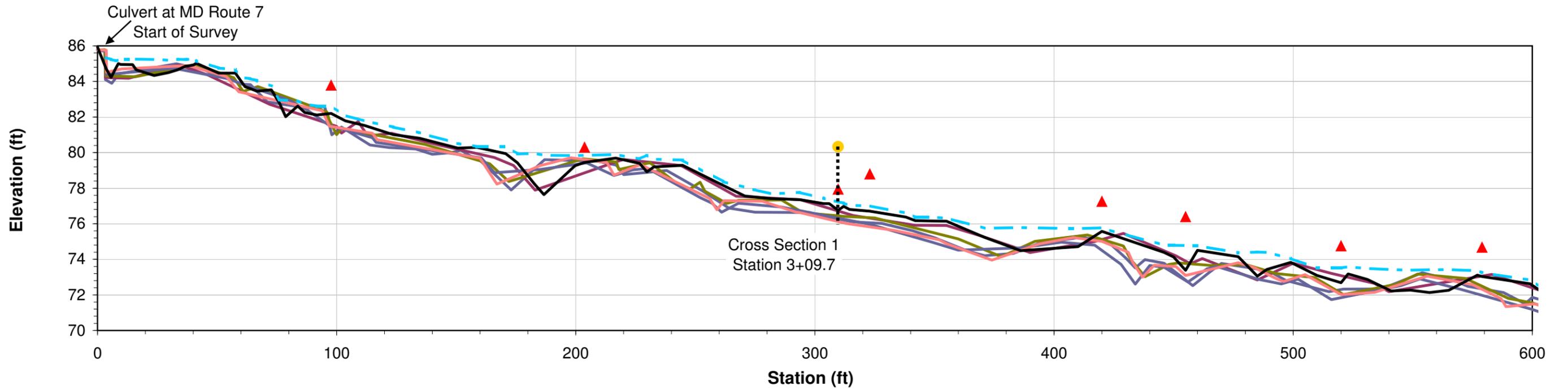
For the 2010 Wexford Annual Physical Assessment, a geomorphic survey was conducted on December 2 and 3, 2010 to prepare a 2,400-foot long stream profile and four cross sections. The purpose of the data collection was to compare the 2010 data with data collected since 2005 to see if any changes to the stream's condition, either aggradation or degradation, is occurring. Stream bed and water surface elevations, in addition to various bankfull elevations, were obtained along the profile and stream bed features were identified and noted at each data collection point along the profile. Elevations along the cross sections were obtained from the previously set bench marks on the left side of the stream (facing downstream) to the bench marks on the right side of the stream. Top of bank, bankfull, left and right edges of water, and thalweg locations were noted on the cross sections.

The profile and cross section data collected for 2010 were superimposed over the data collected for years 2005 to 2009. The 2010 data is generally consistent with data collected in previous years, and no discernible change in the stream's overall condition is evident from the data. The stream remains degraded, and there are some notable changes in stream bed elevations, but on average the stream does not appear to be degrading further. In addition, the cross section data shows that there is little change in the stream bank locations, indicating that the stream does not appear to be widening further, at least in the short term of five years. However, there does appear to be some change in the stream bed elevations at the cross section locations, indicating shifting of sediment as it is transported downstream.

Included in this report is the longitudinal profile data, presented by station, along with combined graphics showing the profile data from 2005 to 2010. Also attached is the survey data for each of the four cross sections, along with combined graphics that show the cross section data for 2005 to 2010. A photographic log of cross section locations and representative site photographs of key stream features along the profile is also included.

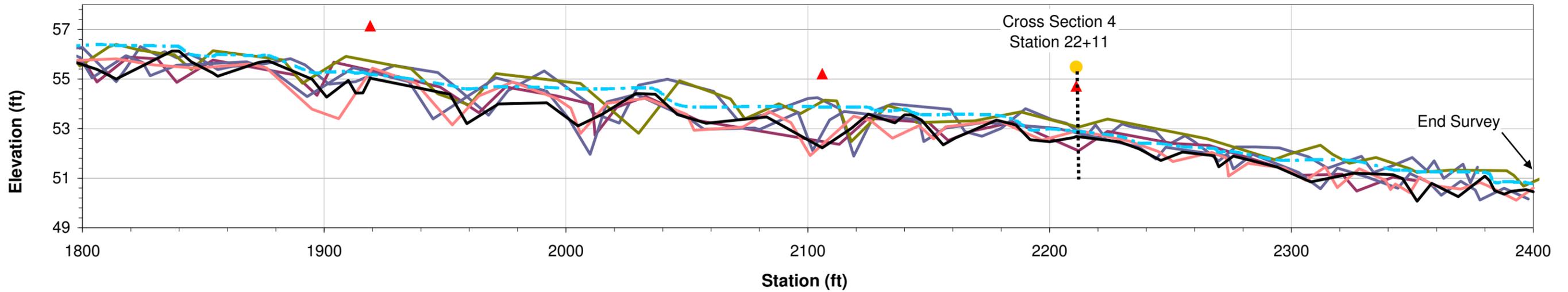
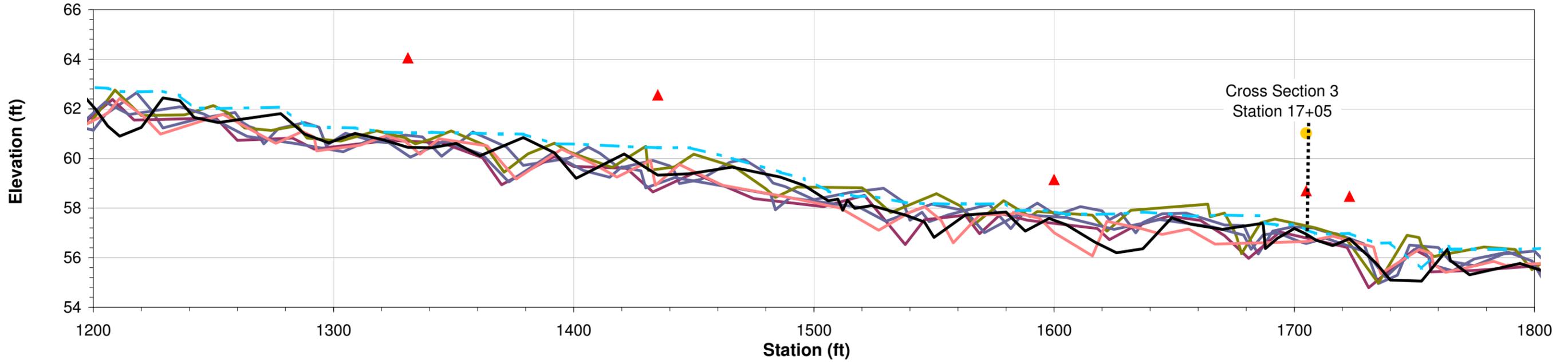
Longitudinal Profile:
Combined Profile (2005-2010) and 2010 Survey Data

Longitudinal Profile Station 0+00 to 12+00



— Thalweg 2005
 — Thalweg 2006
 — Thalweg 2007
 — Thalweg 2008
 — Thalweg 2009
 — Thalweg 2010
 - - Water Surface 2010
 ● Top of Bank 2010
 ▲ Bankfull 2010

Longitudinal Profile Station 12+00 to 24+00



— Thalweg 2005 — Thalweg 2006 — Thalweg 2007 — Thalweg 2008 — Thalweg 2009 — Thalweg 2010 — - - - Water Surface 2010 ● Top of Bank 2010 ▲ Bankfull 2010

Annual Physical Assessment

Longitudinal Profile Data

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
0+00	85.93	-			Top of concrete slab
0+3.7	84.70	85.34			Bottom of concrete slab
0+5.7	84.23	85.23			Scour pool
0+7.7	84.76	85.16			Scour pool
0+8.7	85.00	85.21			Begin riffle
0+9.7	84.95	85.24			Riffle
0+14.7	84.94	85.24			Begin glide
0+16.2	84.65	85.25			Glide
0+23.7	84.33	85.23			Glide
0+29.7	84.50	85.20			Glide
0+33.7	84.66	85.24			End glide
0+36.7	84.86	85.23			Begin riffle
0+37.8	84.87	85.24			Riffle
0+40.1	84.92	85.22			Riffle
0+41.3	85.02	85.16			Riffle
0+50.7	84.47	84.75			Riffle
0+57.7	84.47	84.67			Riffle
0+61.7	83.70	84.20			End riffle/begin pool
0+63.7	83.61	84.16			Pool
0+66.7	83.45	84.05			End pool/begin riffle
0+72.7	83.53	83.73			Riffle
0+76.2	82.76	82.96			End riffle/begin pool
0+78.7	82.02	82.94			Pool
0+83.7	82.62	82.92			End pool/begin riffle
0+86.7	82.25	82.71			End riffle/begin pool
0+91.7	82.11	82.62			Pool
0+97.7	82.20	82.62	83.80		End pool/begin riffle
1+03.7	81.78	82.08			Riffle
1+11.7	81.52	81.77			Riffle
1+23.7	81.01	81.44			Riffle
1+34.7	80.81	81.11			Riffle
1+50.7	80.25	80.51			Riffle
1+58.7	80.29	80.34			End riffle/begin run
1+70.7	79.94	80.33			End run/begin riffle
1+75.7	79.42	79.92			End riffle/begin pool
1+82.7	78.24	79.95			Pool
1+86.7	77.64	79.85			Pool
1+99.7	79.26	79.84			Begin run
2+03.7	79.45	79.85	80.31		Run
2+16.7	79.69	79.89			Run
2+26.7	79.39	79.64			End run/begin pool
2+29.7	78.92	79.87			Pool
2+32.7	79.20	79.62			End pool/begin run
2+44.7	79.28	79.58			End run/begin riffle
2+61.7	78.15	78.36			Riffle
2+70.7	77.56	78.04			End riffle/begin run
2+81.7	77.41	77.68			Run
2+93.7	77.36	77.76			End run/begin riffle
3+03.7	77.13	77.43			Riffle
3+06	77.13	77.34			Begin pool
3+09.7	76.75	77.23	77.96	80.33	XS1
3+12	76.98	77.16			Top riffle

Annual Physical Assessment

Longitudinal Profile Data

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
3+14.5	76.80	77.04			Bottom riffle/top of pool
3+23	76.71	77.01	78.81		Begin pool
3+38	76.38	76.60			Top riffle
3+42	76.17	76.37			Begin pool
3+49	76.15	76.37			Top riffle
3+55	76.14	76.32			Top run
3+71	75.23	75.75			Begin pool
3+86	74.49	75.79			Middle pool
4+10	74.71	75.73			Middle pool
4+20	75.57	75.77	77.27		Top glide/begin riffle
4+46	74.39	74.79			Top run
4+50	74.13	74.79			Top pool
4+55	73.38	74.78	76.41		Pool
4+60	74.51	74.77			Top glide
4+77	74.15	74.37			Bottom riffle
4+85	73.05	74.41			Middle pool
4+89	73.43	74.39			Front of debris jam
4+99	73.83	74.05			Top riffle
5+10	73.09	73.51			Bottom riffle
5+20	72.68	73.52	74.77		Middle pool
5+23	73.18	73.58			End glide
5+31	72.87	73.49			Bottom run
5+41	72.22	73.42			Pool
5+49	72.27	73.39			Pool
5+57	72.13	73.41			Pool
5+65	72.26	73.42			Bottom glide
5+77	73.11	73.35			Top glide/begin riffle
5+79	73.03	73.26	74.69		Bankfull measurement location
5+99	72.63	72.83			Riffle
6+06	72.01	72.27			Riffle
6+15	71.61	71.93			Bottom riffle/begin pool
6+23	71.36	71.90	73.51		Middle pool/bankfull top of point bar
6+28	71.50	71.90			Top riffle
6+34	71.36	71.76			Bottom riffle/begin pool
6+50	70.59	71.75			Pool
6+57	71.48	71.70			Top glide
6+62	71.08	71.54			Begin pool
6+68	70.83	71.51			Pool
6+76	71.29	71.47			Top riffle
6+96	70.56	70.94	72.00		Riffle
7+14	69.68	69.98			Bottom riffle
7+33	68.97	69.97			Pool
7+43	69.10	69.90			Pool
7+58	69.64	69.94			Top glide
7+62	69.56	69.88			Riffle
7+68	68.95	69.83			Pool
7+78	69.45	69.85			Middle pool
7+99	68.70	69.04			Riffle
8+01	68.58	69.02	70.73		Top of point bar
8+13	67.93	68.97			Middle pool
8+25	68.78	69.00			Top glide
8+39	68.52	68.68			Riffle

Annual Physical Assessment

Longitudinal Profile Data

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
8+55	67.96	68.30			Bottom riffle
8+62	66.96	68.28			Bottom pool
8+76	67.45	68.25			Glide
8+95	67.98	68.28			Top glide
9+00	67.93	68.13	69.11	70.63	XS2
9+06	67.89	67.97			Riffle
9+16	67.51	67.83			Riffle
9+26	67.64	67.76	69.49		Riffle
9+36	67.56	67.76			Riffle
9+46	67.48	67.60			Riffle
9+49	67.45	67.57			Top run
9+59	66.60	66.92			Bottom run
9+67	65.55	66.91			Middle pool
9+70	65.79	66.93			Bottom glide
9+76	66.55	66.91			Riffle
9+81	66.54	66.94			End riffle
10+00	66.12	66.40			Pool
10+12	65.33	66.41			Pool
10+13	65.27	66.45			Top riffle
10+33	64.90	65.18	67.15		Bottom riffle
10+40	64.45	65.15			Middle pool
10+48	64.89	65.17			Top riffle
10+57	64.98	65.14			Riffle
10+63	64.87	65.05			Top run
10+81	64.35	64.57			Run
11+04	63.93	64.23	65.96		End run
11+10	63.32	64.24			Pool
11+25	64.07	64.21			Top glide
11+41	63.70	63.94			Riffle
11+50	63.26	63.72			Top pool
11+54	62.79	63.69			Pool
11+72	63.47	63.67			Top glide
11+82	63.40	63.48			Top run
11+94	62.75	62.89			Begin pool
12+01	61.98	62.86			Pool
12+06	61.31	62.83			Pool
12+11	60.90	62.70			Pool
12+20	61.25	62.69			Pool
12+29	62.44	62.71			Top glide
12+36	62.33	62.53			Top run
12+42	61.65	62.03			End run
12+52	61.45	62.01			Pool
12+78	61.81	62.07			Top riffle
12+88	60.98	61.35			End riffle
12+98	60.63	61.25			Pool
13+09	61.01	61.23			Top riffle
13+21	60.74	61.06			Bottom riffle
13+31	60.45	61.03	64.06		Pool/bankfull top of point bar
13+41	60.43	61.05			Pool
13+51	60.61	61.03			Pool
13+61	60.11	61.01			Pool
13+79	60.84	60.98			Top riffle

Annual Physical Assessment

Longitudinal Profile Data

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
13+92	60.23	60.59			Begin pool
14+01	59.20	60.58			Middle pool
14+21	60.18	60.48			Pool
14+35	59.33	60.43	62.57		Pool/bankfull top of point bar
14+48	59.38	60.44			Middle pool
14+66	59.65	60.01			End pool
14+86	59.25	59.45			Riffle
14+96	58.91	59.18			Riffle
15+06	58.29	58.69			Riffle
15+10	58.36	58.54			End riffle
15+12	57.91	58.51			Pool in front of boulder
15+14	58.32	58.58			Other side of boulder
15+17	57.99	58.47			Pool
15+24	58.10	58.48			Top glide
15+38	57.72	58.22			Bottom riffle
15+46	57.44	58.18			Middle pool
15+50	56.82	58.18			Middle pool in front of log
15+63	57.72	58.16			Middle pool
15+80	57.84	58.18			Riffle
15+83	57.54	57.90			End riffle
15+88	57.07	57.91			Pool
15+98	57.59	57.89			Top glide
16+00	57.51	57.85	59.16		Top of point bar
16+05	57.33	57.75			End riffle
16+17	56.63	57.75			Pool
16+26	56.20	57.76			Pool
16+37	56.36	57.84			Pool
16+49	57.61	57.75			Top glide
16+57	57.35	57.67			Bottom riffle
16+70	57.14	57.71			Pool
16+87	57.39	57.69			Top glide/log
16+88	56.37	57.39			Pool below log
16+93	56.78	57.32			Begin glide
17+00	57.18	57.34			Begin riffle
17+05	56.95	57.13	58.71	61.02	XS3
17+09	56.71	56.97			Begin pool
17+16	56.49	56.95			Middle pool
17+23	56.76	56.98	58.48		Top glide
17+34	55.78	56.58			Top pool
17+40	55.10	56.60			Middle pool
17+53	55.06	55.56			Middle pool
17+64	56.36	56.56			Top glide
17+65	55.89	56.33			Downstream of log
17+73	55.31	56.33			Pool
17+94	55.77	56.33			Pool
18+06	55.39	56.39			Pool
18+14	55.00	56.36			Pool
18+37	56.12	56.32			Top glide
18+40	56.12	56.30			Riffle
18+45	55.69	55.99			Bottom riffle
18+54	55.24	55.92			Pool
18+56	55.11	55.99			Glide

Annual Physical Assessment

Longitudinal Profile Data

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
18+73	55.67	55.93			Begin riffle
18+77	55.73	55.95			Begin pool
18+95	54.99	55.27			Pool
19+01	54.27	55.29			Pool
19+10	54.94	55.30			Top glide
19+13	54.43	55.23			Top pool
19+16	54.44	55.26			Pool
19+19	55.03	55.19	57.15		Top glide/bankfull top of point bar
19+33	54.76	55.04			Riffle
19+52	54.38	54.74			Top pool
19+59	53.20	54.60			Pool
19+72	53.99	54.69			Pool
19+92	54.04	54.66			Pool
20+05	53.11	54.61			Pool
20+15	53.58	54.60			Pool
20+29	54.42	54.64			Top glide
20+37	54.38	54.58			End riffle
20+46	53.57	53.97			Bottom run
20+58	53.21	53.87			Pool
20+83	53.47	53.89			Pool
21+06	52.22	53.88	55.22		Bankfull top of point bar
21+18	53.01	53.87			Glide
21+25	53.58	53.86			Top glide
21+28	53.48	53.74			End riffle
21+36	53.23	53.73			Pool
21+40	53.55	53.79			Top glide
21+43	53.55	53.67			Riffle
21+47	53.34	53.56			Bottom riffle
21+56	52.34	53.56			Pool
21+61	52.62	53.58			Pool
21+78	53.34	53.54			Top glide
21+86	53.15	53.33			Riffle/top run
21+92	52.55	52.95			End run
22+00	52.47	52.99			Pool
22+10	52.64	52.90			Top glide
22+11	52.68	52.90	54.72	55.48	XS4
22+29	52.46	52.68			Riffle
22+37	52.18	52.42			End riffle
22+46	51.71	52.39			Pool
22+55	52.05	52.27			Top glide
22+68	51.90	52.20			End riffle at log
22+70	51.46	52.06			Pool below log
22+76	51.89	52.07			Top glide
22+94	51.45	51.73			End riffle
23+08	50.85	51.73			Pool
23+26	51.20	51.70			Top glide
23+42	51.14	51.34			Riffle
23+46	50.98	51.32			End riffle
23+52	50.07	51.27			Pool
23+58	50.79	51.25			Pool
23+69	50.25	51.25			Pool
23+80	51.08	51.24			Back edge of concrete

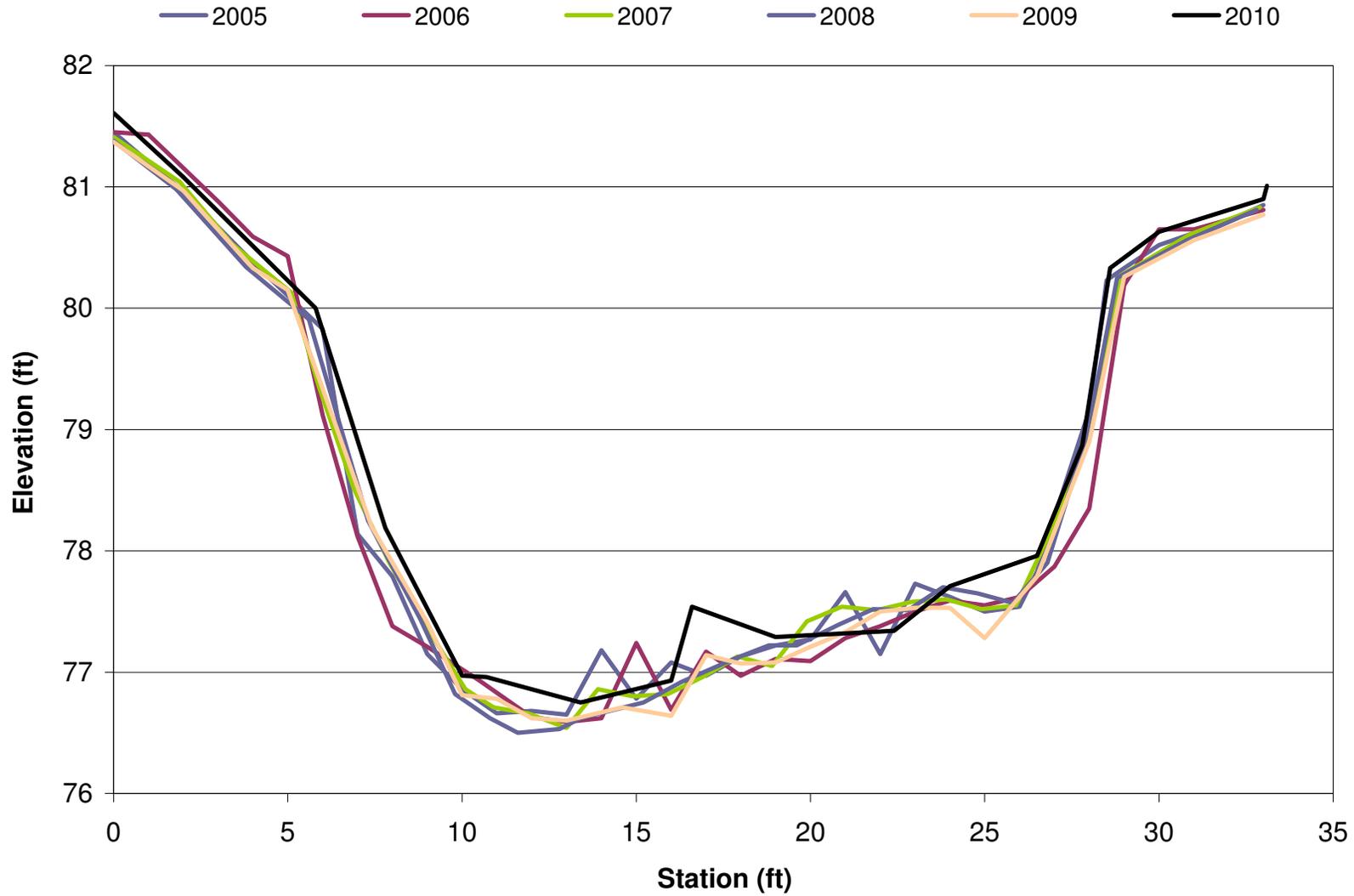
Annual Physical Assessment

Longitudinal Profile Data

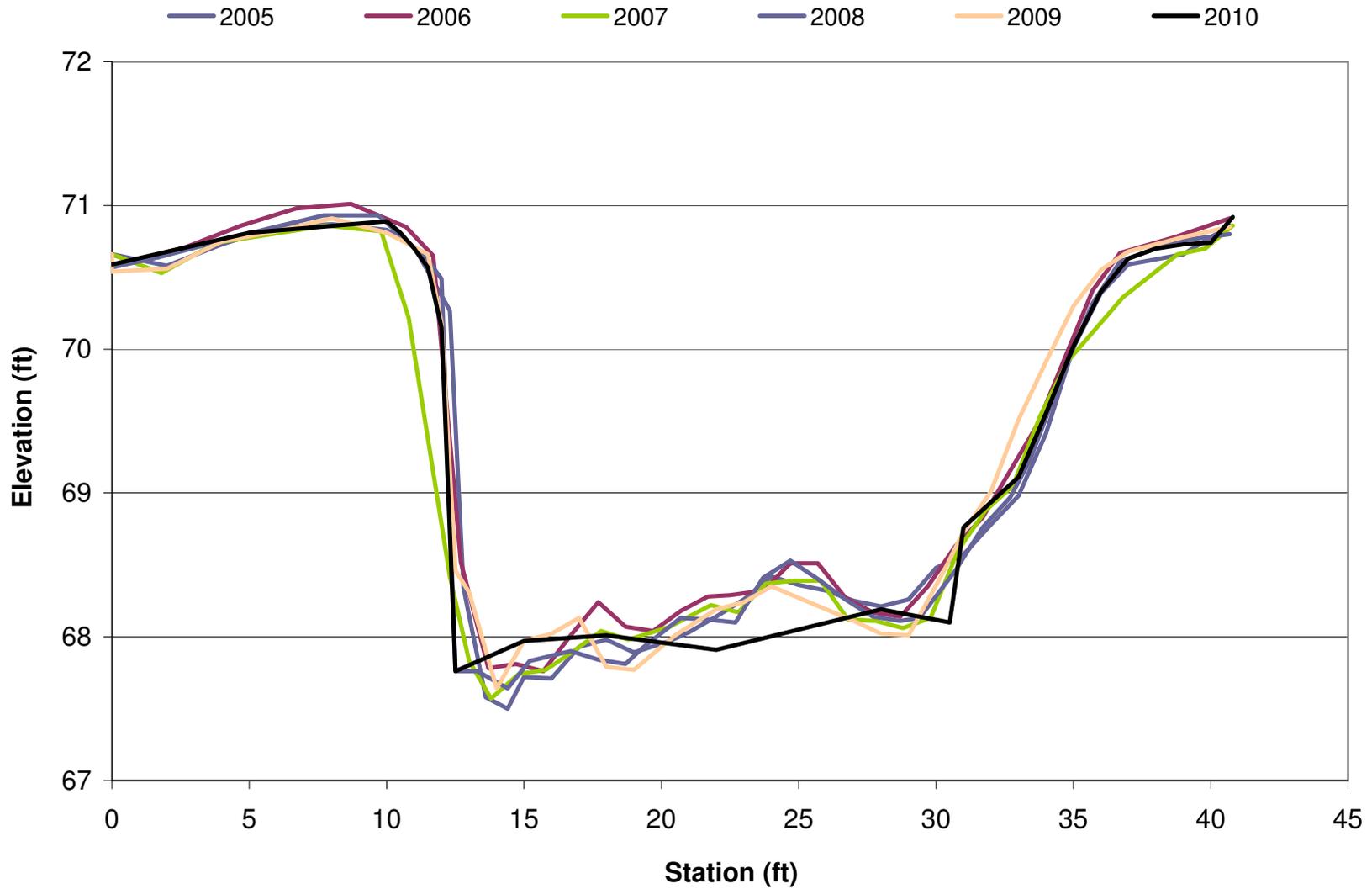
Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
23+82	50.90	51.16			Middle of concrete
23+84	50.50	50.84			Downstream edge of concrete
23+88	50.35	50.85			Pool
23+91	50.47	50.85			Top glide
23+97	50.54	50.82			Riffle
24+00	50.45	50.75			Riffle

Cross Section:
Combined Cross Sections (2005-2010) and 2010 Survey Data

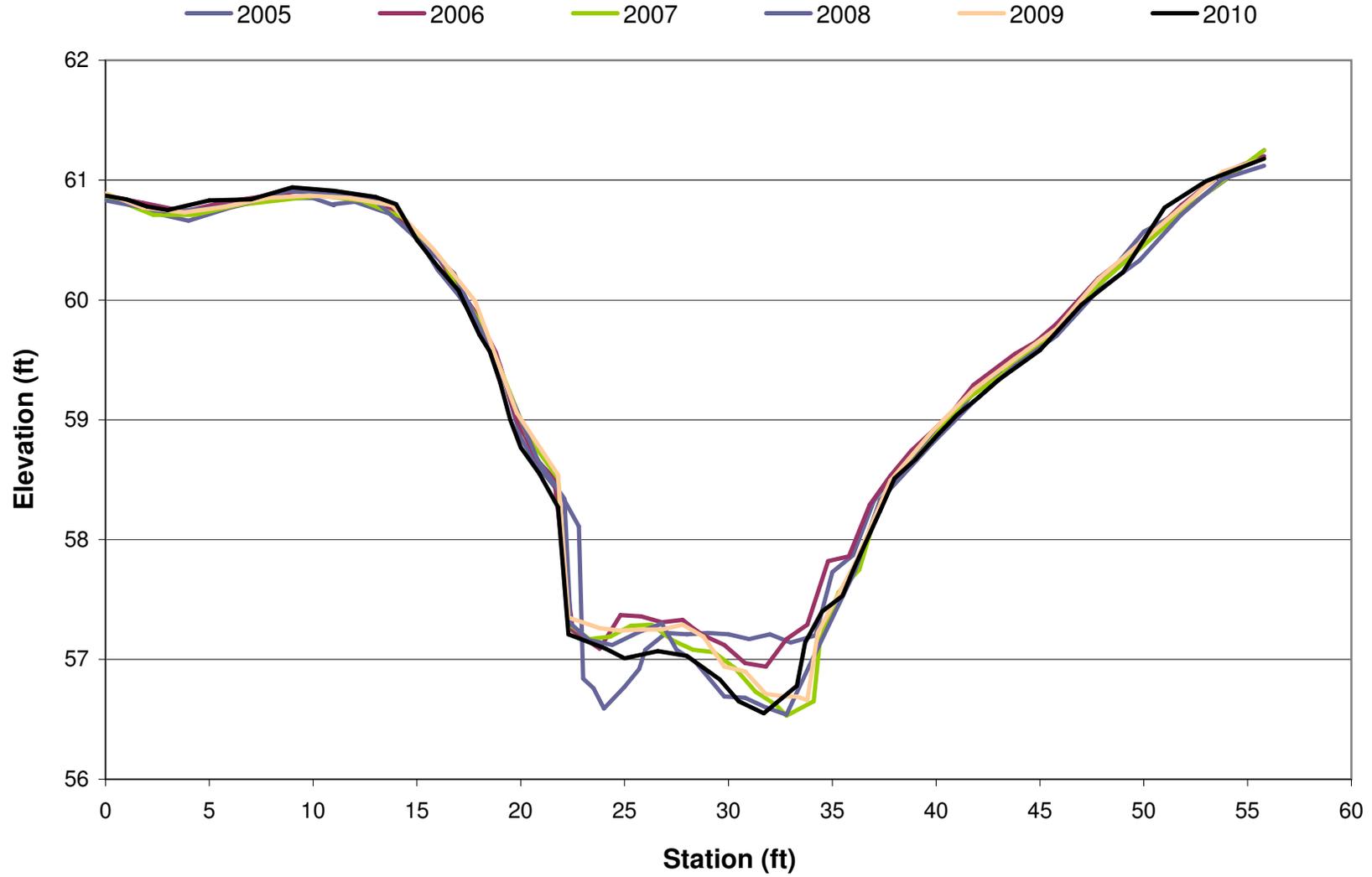
Cross Section 1
Station 3+09.7 (Previous Station 2+94)



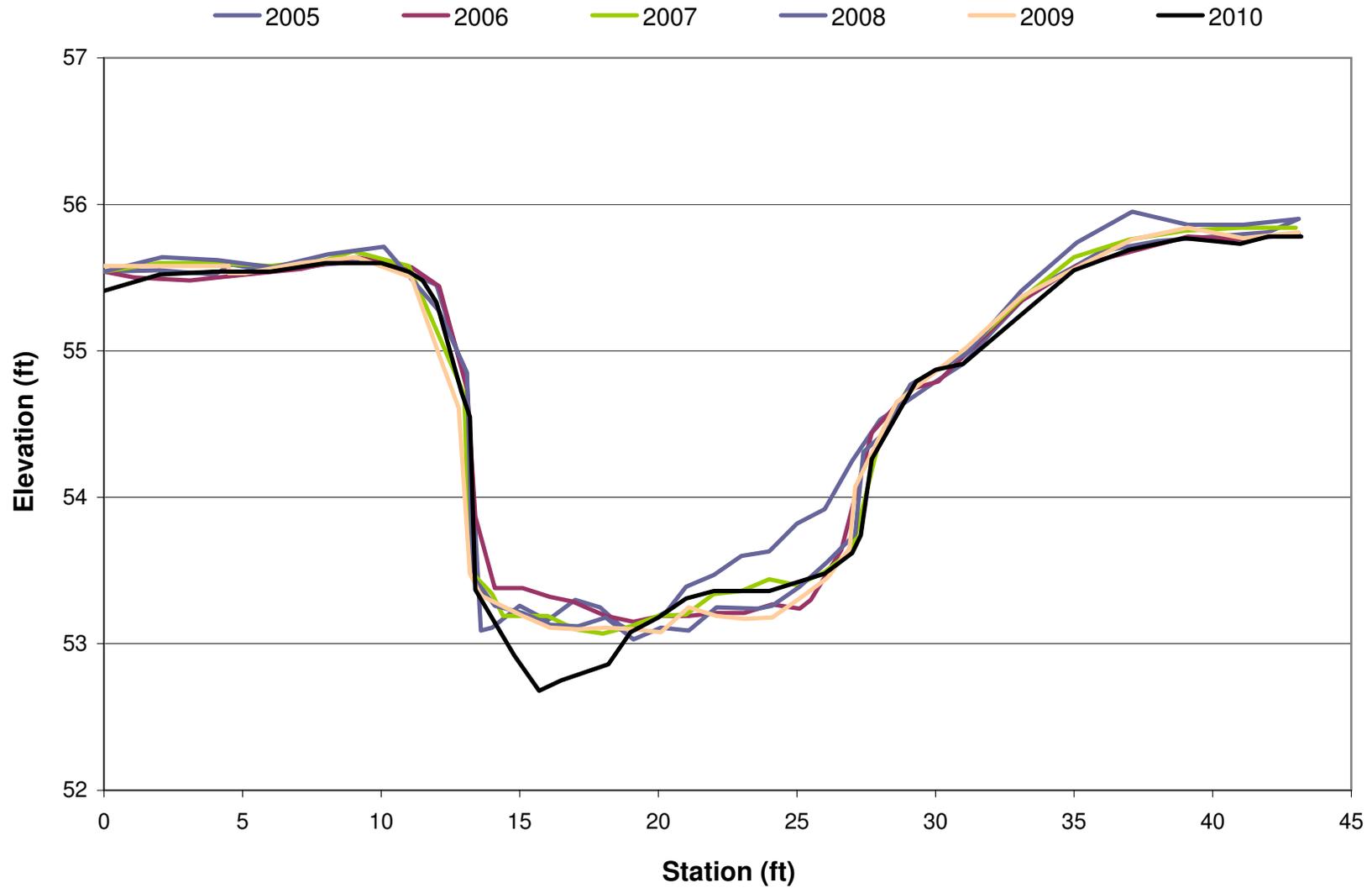
Cross Section 2
Station 9+00 (Previous Station 8+84)



**Cross Section 3
Station 17+05**



Cross Section 4
Station 22+11 (Previous Station 22+12)



WEXFORD
Annual Physical Assessment
 Cross section data

Cross Section 1 at Profile Station 3+09.7

Surveyed on December 2, 2010

Station	Bed Surface	Description
0.0	81.69	LPIN
0.0	81.61	Ground at pin
2.0	81.08	
5.8	80.00	LTOB
7.8	78.19	
10.0	76.97	
10.7	76.96	LEOW
13.4	76.75	Thalweg
16.0	76.93	
16.6	77.54	
19.0	77.29	
22.4	77.34	REOW
24.0	77.71	
26.5	77.96	BKF
27.8	78.87	
28.6	80.33	RTOB
30.0	80.63	
33.0	80.90	
33.0	81.01	Ground at pin
33.1	81.05	RPIN

Description key: L=left, R=right, B=bank, BKF=bankful,
 EOW=edge of water, TO=top

WEXFORD
Annual Physical Assessment
 Cross section data

Cross Section 2 at Profile Station 9+00

Surveyed on December 2, 2010

Station	Bed Surface	Description
0.0	70.59	Left ground at pin
5.0	70.81	
10.0	70.89	LTOB
10.5	70.81	
11.0	70.70	
11.5	70.57	
12.0	70.15	
12.5	67.76	LEOW
15.0	67.97	Thalweg
18.0	68.01	
22.0	67.91	
28.0	68.19	
30.5	68.10	REOW
31.0	68.76	
33.0	69.11	BKF
34.0	69.55	
35.0	70.02	
36.0	70.40	
37.0	70.63	RTOB
38.0	70.70	
39.0	70.73	
40.0	70.74	
40.8	70.92	Right ground at pin

Description key: L=left, R=right, B=bank, BKF=bankful,
 EOW=edge of water, TO=top

WEXFORD
 Annual Physical Assessment
 Cross section data

Cross Section 3 at Profile Station 17+05

Surveyed on December 3, 2010

Station	Bed Surface	Description
0.0	60.87	Left ground at pin
1.0	60.84	
2.0	60.78	
3.0	60.75	
5.0	60.83	
7.0	60.84	
9.0	60.94	
11.0	60.91	
13.0	60.86	LTOB
14.0	60.80	
15.0	60.50	
16.0	60.28	
17.0	60.08	
18.0	59.71	
18.5	59.57	
19.0	59.31	
19.5	59.00	
20.0	58.77	
20.9	58.55	BKF
21.8	58.27	
22.3	57.21	
24.1	57.09	LEOW
25.0	57.01	
26.6	57.07	Bar
28.0	57.03	Bar
29.6	56.83	Bar
30.5	56.65	
31.7	56.55	Thalweg
33.3	56.78	REOW
33.7	57.14	
34.5	57.40	
35.5	57.53	
36.0	57.74	
37.3	58.24	BKF
38.0	58.51	RTOB
39.0	58.67	
40.0	58.86	
41.0	59.04	
42.0	59.18	
43.0	59.33	
45.0	59.58	
47.0	59.96	
49.0	60.23	
51.0	60.77	
53.0	60.99	
55.8	61.18	Right ground at pin

Description key: L=left, R=right, B=bank, BKF=bankful,
 EOW=edge of water, TO=top

WEXFORD
 Annual Physical Assessment
 Cross section data

Cross Section 4 at Profile Station 22+11

Surveyed on December 3, 2010

Station	Bed Surface	Description
0.0	55.41	Left ground at pin
2.0	55.52	
4.0	55.54	
6.0	55.54	
8.0	55.60	
10.0	55.60	
11.0	55.54	
11.5	55.48	LTOB
12.0	55.33	
12.9	54.72	BKF
13.2	54.55	
13.4	53.37	
14.8	52.92	LEOW
15.7	52.68	Thalweg
16.5	52.75	
18.2	52.86	REOW
19.0	53.08	Bar
20.0	53.18	Bar
21.0	53.31	Bar
22.0	53.36	Bar
24.0	53.36	Bar
26.0	53.48	Bar
27.0	53.62	
27.3	53.74	
27.7	54.26	
29.3	54.79	BKF
30.0	54.87	
31.0	54.91	
33.3	55.28	
35.0	55.55	RTOB
37.0	55.69	
39.0	55.77	
41.0	55.73	
42.0	55.78	
43.2	55.78	Right ground at pin

Description key: L=left, R=right, B=bank, BKF=bankful,
 EOW=edge of water, TO=top

Photographic Log

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Annual Physical Assessment
Representative Site Photographs



Downstream view at station 3+06



Left bank of cross section 1 at station 3+09.7



Right bank of cross section 1 at station 3+09.7



Downstream view of cross section 1 at station 3+09.7

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Annual Physical Assessment
Representative Site Photographs



Upstream view of cross section 1 at station 3+09.7



Erosion at station 4+73



Mass wasting at station 4+84



Debris jam at station 4+93

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Annual Physical Assessment
Representative Site Photographs



Debris jam at station 4+93 (additional photo)



Riffle at station 6+06



Log across stream at station 7+78



Bank erosion at station 8+01

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Annual Physical Assessment
Representative Site Photographs



Downstream view of cross section 2 at station 9+00



Upstream view of cross section 2 at station 9+00



Debris jam at station 10+14



Debris jam at station 10+14 (additional photo)

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Annual Physical Assessment
Representative Site Photographs



Upstream view at station 13+86



Middle of pool in front of log at station 15+50



Left bank of cross section 3 at station 17+05



Right bank of cross section 3 at station 17+05

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Annual Physical Assessment
Representative Site Photographs



Downstream view of cross section 3 at station 17+05



Upstream view of cross section 3 at station 17+05



Upstream view at station 17+28



Deep pool at station 17+41

Wexford
Annual Physical Assessment
Representative Site Photographs



Erosion at station 18+06



Left bank of cross section 4 at station 22+11



Right bank of cross section 4 at station 22+11



Downstream view of cross section 4 at station 22+11

Wexford
Annual Physical Assessment
Representative Site Photographs



Upstream view of cross section 4 at station 22+11



Upstream view at station 22+98



Concrete at station 23+84

Wexford 2011 Annual Physical Assessment



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WEXFORD
Annual Physical Assessment
Summary

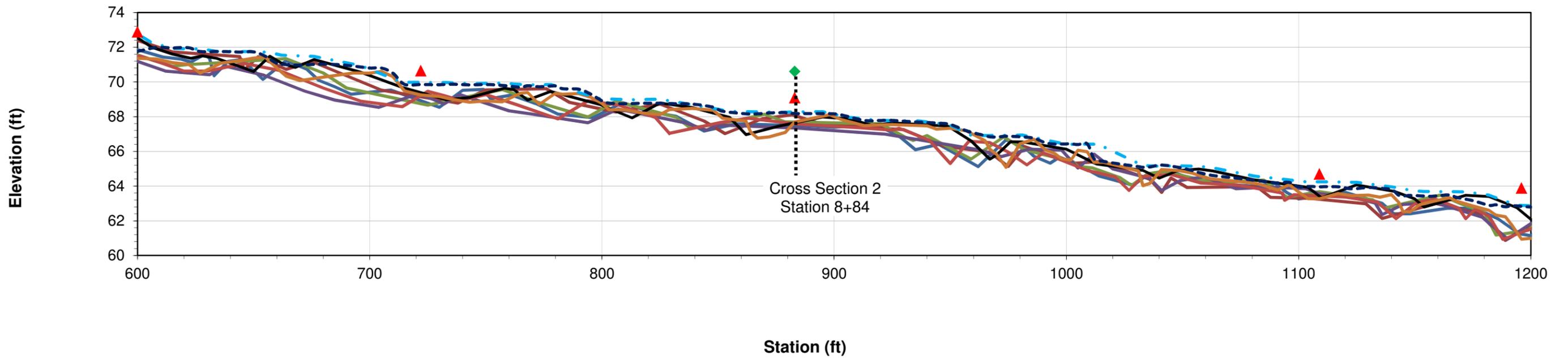
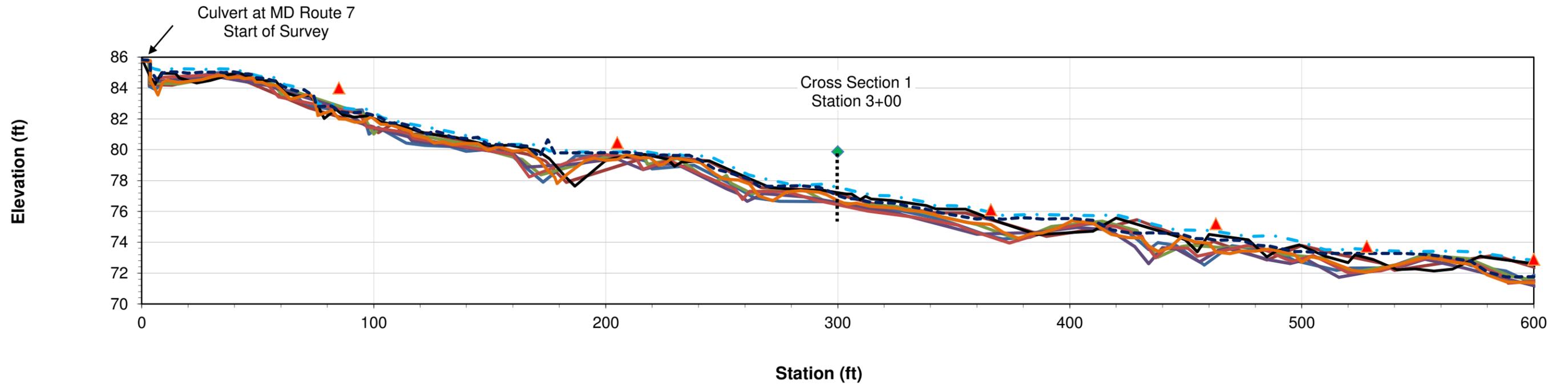
For the 2011 Wexford Annual Physical Assessment, a geomorphic survey was conducted on December 14 and 15, 2011 to prepare a 2,400-foot long stream profile and four cross sections. The purpose of the data collection was to compare the 2011 data with data collected since 2005 to see if any changes to the stream's condition, either aggradation or degradation, is occurring. Stream bed and water surface elevations, in addition to various bankfull elevations, were obtained along the profile and stream bed features were identified and noted at each data collection point along the profile. Elevations along the cross sections were obtained from the previously set bench marks on the left side of the stream (facing downstream) to the bench marks on the right side of the stream. Top of bank, bankfull, left and right edges of water, and thalweg locations were noted on the cross sections.

The profile and cross section data collected for 2011 were superimposed over the data collected for years 2005 to 2010. The 2011 data is generally consistent with data collected in previous years, and no discernible change in the stream's overall condition is evident from the data. The stream remains degraded, and there are some notable changes in stream bed elevations, but on average the stream does not appear to be degrading further. In addition, the cross section data shows that there is little change in the stream bank locations, indicating that the stream does not appear to be widening further, at least in the short term of five years. However, there does appear to be some change in the stream bed elevations at the cross section locations, indicating shifting of sediment as it is transported downstream. One notable change is located at cross section 4, where the stream has down cut 0.3 feet (3.6 inches) since the 2010 assessment.

Included in this report is the longitudinal profile data, presented by station, along with combined graphics showing the profile data from 2005 to 2011. Also attached is the survey data for each of the four cross sections, along with combined graphics that show the cross section data for 2005 to 2011. A photographic log of cross section locations and representative site photographs of key stream features along the profile is also included.

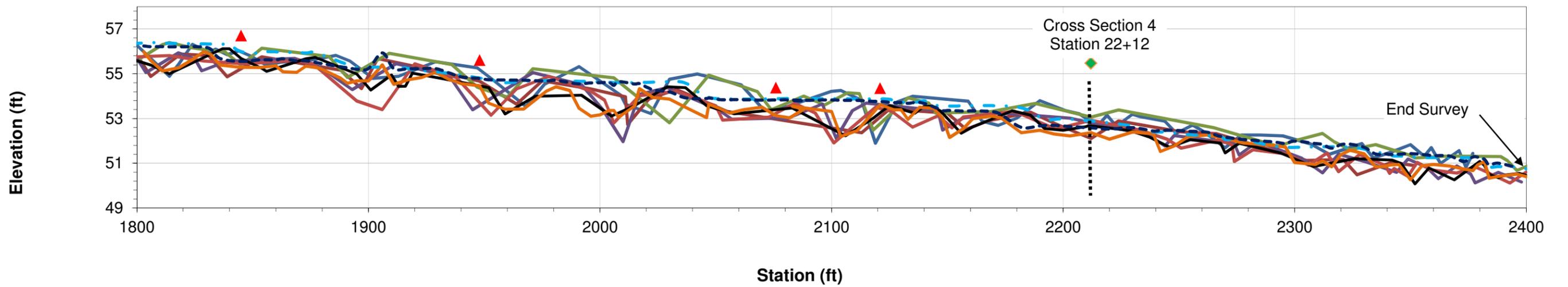
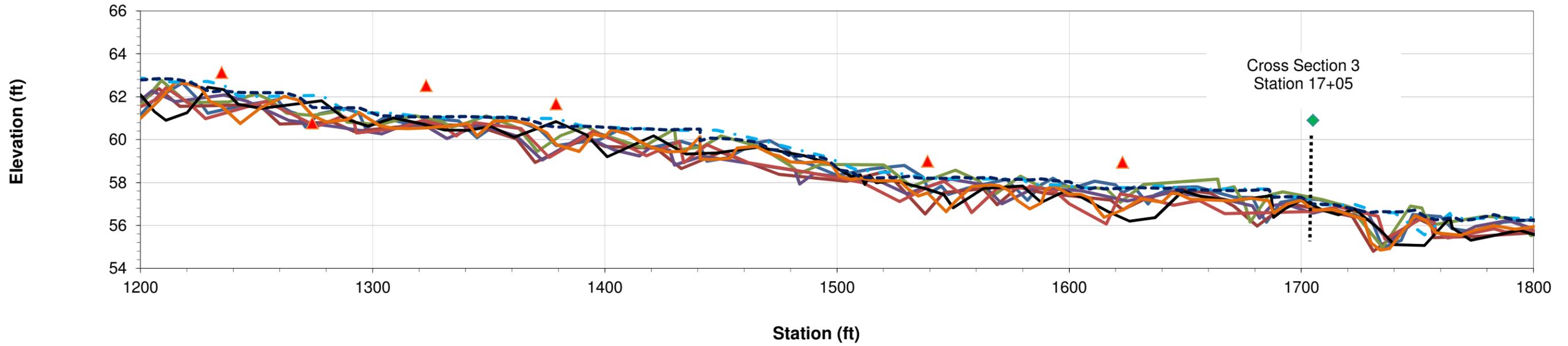
Longitudinal Profile:
Combined Profile (2005-2011) and 2011 Survey Data

Longitudinal Profile Station 0+00 to 12+00



- Thalweg 2005
- Thalweg 2006
- Thalweg 2007
- Thalweg 2008
- Thalweg 2009
- Thalweg 2010
- Thalweg 2011
- . - . Water Surface 2010
- - - Water Surface 2011
- ▲ Bankfull 2011
- ◆ Top of Bank 2011

Longitudinal Profile Station 12+00 to 24+00



- Thalweg 2005
- Thalweg 2006
- Thalweg 2007
- Thalweg 2008
- Thalweg 2009
- Thalweg 2010
- . - Water Surface 2010
- - - Water Surface 2011
- ▲ Bankfull 2011
- ◆ Top of Bank 2011

Annual Physical Assessment

Longitudinal Profile Data

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
0+00	85.77	85.83			End of Ex. Pipe
0+3.7	85.73	85.79			Top of concrete
0+3.7	84.51	85.13			Pool (scour)
0+7	83.55	84.43			Pool (scour)
0+9	84.35	84.98			
0+11	84.51	85.02			
0+12	84.46	85.05			
0+16	84.35	85.04			
0+20	84.43	84.96			
0+26	84.54	85.03			
0+30	84.71	85.03			
0+33	84.80	85.04			
0+35.5	84.80	84.99			Begin riffle
0+37	84.64	85.01			Riffle
0+39.5	84.69	85.05			Riffle
0+42	84.70	84.98			Riffle
0+44	84.60	84.91			Riffle
0+46	84.64	84.91			Riffle
0+48	84.65	84.85			Riffle
0+49	84.38	84.68			Riffle
0+52	84.37	84.63			Riffle
0+54	84.21	84.59			Riffle
0+58	84.16	84.42			Riffle
0+61	83.76	84.10			Riffle
0+64	83.27	83.93			Riffle
0+67	83.38	83.80			Riffle
0+70	83.51	83.88			Riffle
0+72	83.65	83.68			Riffle
0+74	83.37	83.57			Riffle
0+75.5	82.59	82.79			Riffle
0+76	82.21	82.80			Riffle
0+82	82.54	82.82			Riffle
0+85	82.00	82.48	84		Riffle/Bank Full
0+88	81.98	82.40			Riffle
0+92	81.78	82.40			Riffle
0+95	81.79	82.43			Riffle
0+99	82.13	82.27			Riffle
1+03	81.65	82.07			Riffle
1+07	81.62	81.74			Riffle
1+12	81.38	81.69			Riffle
1+16	81.18	81.53			Riffle
1+18	80.93	81.42			Riffle
1+23	80.74	81.02			Riffle
1+26	80.43	81.22			Riffle
1+30	80.51	81.06			Riffle
1+34	80.33	80.79			Riffle
1+40	80.40	80.72			Riffle
1+45	80.39	80.80			Riffle
1+49	79.98	80.36			Riffle
1+54	80.20	80.32			Riffle
1+57	80.04	80.32			Riffle
1+60	79.90	80.31			Riffle

Annual Physical Assessment

Longitudinal Profile Data

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
1+66	80.00	80.23			Riffle
1+71.5	79.31	79.54			End Riffle/Begin Pool
1+75	78.65	80.64			Pool
1+78	78.21	79.76			Pool
1+79	77.81	79.79			Pool
1+83	78.36	79.79			End of Pool
1+91	79.27	79.80			
1+95	79.46	79.78			
2+00	79.31	79.80			
2+05	79.36	79.79	80.46		
2+09	79.67	79.85			Begin Riffle
2+15	79.47	79.74			Riffle
2+19	79.49	79.65			End Riffle/Begin Pool
2+23	78.99	79.64			Pool
2+25	79.06	79.66			Begin Glide
2+29	79.49	79.63			End Glide/Begin Riffle
2+36	79.31	79.64			Riffle
2+41	79.16	79.31			Riffle
2+47	78.44	78.74			
2+51	78.10	78.60			
2+57	78.03	78.33			
2+62	77.76	78.08			
2+66	76.99	77.62			End Of Riprap
2+72	76.69	77.63			
2+78	77.26	77.65			
2+84	77.34	77.66			Begin Riffle
2+92	77.24	77.57			Riffle
2+95	77.09	77.39			Riffle
3+00	76.70	77.03		79.87	Riffle
3+04	76.46	76.83			Riffle
3+08	76.53	76.81			Riffle
3+14	76.32	76.60			Riffle
3+25	76.21	76.53			Riffle
3+30	76.06	76.34			Riffle
3+38	75.96	76.15			Riffle
3+45	75.62	75.90			Riffle
3+56	75.27	75.60			Riffle
3+60	75.22	75.50			End Riffle/Begin Run
3+66	75.15	75.59	76.1		End Run/Begin Pool;Downed Tree
3+71	74.66	75.49			Pool
3+78	74.26	75.58			Pool
3+83	74.54	75.57			Pool
3+88	74.60	75.50			Emd Pool/Begin Glide
3+95	74.92	75.52			End Of Downed Tree
4+01	75.40	75.55			End Of Glide Begin Riffle
4+07	75.30	75.45			Riffle
4+10	75.23	75.42			Riffle
4+18	74.51	74.81			Riffle
4+25	74.30	74.62			Riffle
4+31	74.28	74.58			End Riffle/Begin Run
4+34	73.76	74.61			End Run/Begin Pool
4+38	73.40	74.60			Pool

WEXFORD
Annual Physical Assessment
 Longitudinal Profile Data

Conducted: December 14 and 15, 2011

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
4+43	73.62	74.57			End Pool/Begin Glide
4+48	74.33	74.53			End Glide/Begin Riffle
4+54	74.02	74.24			Riffle
4+60	73.94	74.21			Riffle
4+63	73.37	74.12	75.2		End Riffle
4+69	73.26	74.14			Tree Blocking Stream
4+74	73.43	74.12			
4+80	73.42	73.82			Begin Riffle
4+86	73.56	73.75			Riffle
4+97	73.20	73.39			Riffle
5+00	72.71	73.40			Riffle
5+04	73.07	73.36			Riffle
5+10	72.86	73.26			End Riffle/Begin Pool
5+22	72.18	73.29			Pool
5+28	72.05	73.27	73.73		Pool
5+44	72.65	73.27			End Pool/Begin Glide
5+53	73.02	73.21			End Glide/Begin Riffle
5+60	72.88	73.11			Riffle
5+66	72.69	72.94			Riffle
5+73	72.57	72.76			Riffle
5+80	71.87	72.08			Riffle
5+88	71.43	71.75			End Riffle
6+00	71.36	71.76	72.9		Riffle
6+08	71.32	71.98			
6+15	71.11	71.96			
6+22	71.01	71.97			
6+27	70.50	71.75			
6+36	71.08	71.75			
6+44	71.23	71.72			
6+50	71.37	71.73			Begin Riffle
6+55	71.43	71.48			Riffle
6+60	70.80	71.07			Riffle
6+64	70.33	71.00			End Riffle/Begin Pool
6+70	70.08	70.97			Pool
6+78	70.23	71.02			Pool
6+87	70.40	70.99			End Pool
6+93	70.51	70.91			Begin Riffle
7+00	70.50	70.80			Riffle
7+05	70.60	70.80			Riffle
7+10	70.30	70.50			Riffle
7+15	69.48	69.86			End Riffle
7+22	69.25	69.85	70.66		
7+30	69.16	69.84			
7+35	69.01	69.87			
7+43	68.83	69.83			
7+50	68.90	69.85			
7+57	68.85	69.80			
7+65	69.35	69.69			Begin Riffle
7+68	69.39	69.78			End Riffle/Begin Pool
7+73	68.70	69.72			Pool
7+80	69.35	69.77			Pool
7+83	69.29	69.61			End Pool/Begin Riffle

Annual Physical Assessment

Longitudinal Profile Data

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
7+90	69.33	69.58			Riffle
7+95	69.13	69.31			Riffle
8+00	68.76	68.91			End Riffle
8+03	68.39	68.78			
8+10	68.39	68.74			
8+17	68.21	68.77			
8+25	68.12	68.77			
8+29	68.40	68.75			
8+39	68.47	68.72			Begin Riffle
8+48	68.36	68.54			Riffle
8+52	67.91	68.31			Riffle
8+62	67.74	68.16			End Riffle/Begin Pool
8+64	67.11	68.16			Pool
8+67	66.76	68.16			Pool
8+72	66.83	68.21			Pool
8+79	67.09	68.23			Pool
8+83	67.69	68.18	69.11	70.61	End Pool
8+98	68.11	68.17			Begin Riffle
9+03	67.84	68.10			Riffle
9+13	67.48	67.78			Riffle
9+20	67.53	67.78			Riffle
9+25	67.54	67.78			Riffle
9+34	67.50	67.70			Riffle
9+40	67.47	67.66			Riffle
6+44	67.28	67.63			Riffle
9+50	67.33	67.55			Riffle
9+57	67.18	67.18			Riffle
9+65	66.61	66.90			End Riffle/Begin Run
9+67	66.13	66.84			End Run/Begin Pool
9+70	65.83	66.82			Pool
9+74	65.08	66.87			End Pool/Begin Glide
9+80	66.43	66.84			End Glide/Begin Riffle
9+86	66.69	66.76			Riffle
9+91	66.08	66.49			Riffle
9+95	65.88	66.42			End Riffle/Begin Pool
9+98	65.57	66.42			Pool
10+02	65.51	66.43			Pool
10+05	66.07	66.39			End Pool/Begin Riffle
10+09	65.98	66.43			Riffle
10+12	65.37	65.56			Riffle
10+16	65.37	65.42			Riffle
10+25	65.08	65.23			Riffle
10+31	64.87	65.12			End Riffle/Begin Run
10+33	64.03	65.08			End Run/Begin Pool
10+36	64.15	65.10			End Pool/Begin Glide
10+41	64.95	65.21			End Glide/Begin Riffle
10+49	64.88	65.06			Riffle
10+54	64.75	64.90			Riffle
10+62	64.41	64.63			Riffle
10+75	64.25	64.43			Riffle
10+83	64.11	64.30			Riffle
10+91	63.78	64.18			Riffle

Annual Physical Assessment

Longitudinal Profile Data

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
10+96	64.08	64.21			Riffle
11+00	63.66	63.95			End Riffle/Begin Pool
11+04	63.28	63.98			Pool
11+09	63.27	63.96	64.71		Pool
11+17	63.57	63.96			End Pool/Begin Riffle
11+23	63.45	63.84			Riffle
11+30	63.48	63.92			Riffle
11+35	63.36	63.87			Riffle
11+40	63.51	63.80			Riffle
11+43	63.08	63.48			End Riffle/Begin Pool
11+45	62.53	63.43			Pool
11+48	62.51	63.46			Pool
11+52	62.92	63.44			End Pool/Begin Glide
11+57	63.09	63.41			Glide
11+65	63.33	63.49			End Glide/Begin Riffle
11+68	63.13	63.35			Riffle
11+75	62.85	63.16			Riffle
11+82	62.60	62.89			Riffle
11_85	62.32	62.92			End Riffle/Begin Pool
11+89	62.23	62.81			Pool
11+92	61.72	62.87			Pool
11+96	60.94	62.83	63.9		Pool
12+00	60.99	62.79			Pool
12+08	61.82	62.84			End Pool/Begin Glide
12+15	62.67	62.83			End Glide/Begin Riffle
12+21	62.59	62.69			Riffle
12+26	62.43	62.46			Riffle
12+30	61.78	62.22			End Riffle/Begin Pool
12+35	61.55	62.27	63.13		Pool
12+43	60.75	62.20			Pool
12+52	61.50	62.19			End Pool/Begin Glide
12+62	62.02	62.19			End Glide/Begin Riffle
12_68	61.85	62.01			Riffle
12+74	61.13	61.50	60.78		End Riffle/Begin Pool
12+80	60.83	61.49			Pool
12+89	60.92	61.49			End Pool/Begin Glide
12+94	61.27	61.49			End Glide/Begin Riffle
13+03	60.65	61.11			Riffle
13+09	60.53	61.10			End Riffle
13+15	60.51	61.07			
13+23	60.55	61.05	62.52		
13+33	60.63	61.07			
13+41	60.76	61.08			Begin Pool
13+45	60.17	61.06			Pool
13+52	60.85	61.04			End Pool/Begin Riffle
13+60	60.90	61.04			Riffle
13+68	60.72	60.9			Riffle
13+75	60.32	60.66			End Riffle/Begin Pool
13+79	59.77	60.58	61.67		Pool
13+89	59.45	60.63			Pool
13+95	60.26	60.61			End Pool/Begin Glide
14+00	60.13	60.57			End Glide/Begin Riffle

WEXFORD
Annual Physical Assessment
 Longitudinal Profile Data

Conducted: December 14 and 15, 2011

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
14+03	60.47	60.56			Riffle
14+10	60.25	60.49			Riffle
14+15	59.92	60.51			End Riffle/Begin Pool
14+20	59.65	60.5			Pool
14+27	59.43	60.45			Pool
14+35	59.47	60.49			Pool
14+41	60.14	60.49			Top Log Dam Pool
14+41	59.10	59.95			Bottom Log Dam Pool
14+45	59.07	60.07			Pool
14+54	59.13	60.03			Pool
14+57	59.61	60.01			End Pool/Begin Riffle
14+65	59.69	59.89			Riffle
14+72	59.31	59.53			Riffle
14+75	59.24	59.52			Riffle
14 80	58.96	59.23			Riffle
14+86	58.92	59.24			Riffle
14+92	58.98	59.2			Riffle
14+95	58.93	59.11			Riffle
14+98	58.81	58.88			Riffle
15+01	58.30	58.58			Riffle
15+06	58.14	58.5			Riffle
15+10	58.21	58.25			Riffle
15+17	58.08	58.22			Riffle
15+27	58.08	58.24			End Riffle/Begin Run
15+31	57.66	58.29			End Run/Begin Pool
15+35	57.37	58.22			Pool
15+39	57.51	58.2	59		Pool
15+47	56.64	58.19			Pool
15+51	57.12	58.25			Pool
15+58	57.81	58.21			End Pool/Begin Glide
15+66	57.89	58.23			End Glide/Begin Riffle
15+70	57.85	58.15			Riffle
15+74	57.63	58.13			End Riffle/Begin Pool
15+78	57.15	58.15			Pool
15+83	56.77	58.12			Pool
15+88	57.05	58.17			Pool
15+90	57.67	58.14			End Pool/Begin Glide
15+93	57.85	58.09			End Glide/Begin Riffle
16+00	57.46	58.04			Riffle
16+05	57.45	57.77			End Riffle/Begin Run
16+09	57.27	57.7			End Run/Begin Pool
16+12	56.78	57.78			Pool
16+15	56.38	57.7			Pool
16+23	56.72	57.73	58.95		Pool
16+31	57.24	57.76			Pool
16+40	57.08	57.73			End Pool/Begin Glide
16+44	57.49	57.74			End Glide/Begin Riffle
16+47	57.48	57.64			Riffle
16+52	57.23	57.65			End Riffle
16+57	57.20	57.65			
16+70	57.15	57.62			
16+78	57.27	57.64			

WEXFORD
Annual Physical Assessment
 Longitudinal Profile Data

Conducted: December 14 and 15, 2011

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
16+86	57.15	57.67			
16+88	56.58	57.31			
16+94	57.00	57.34			Begin Riffle
17+00	57.18	57.31			Riffle
17+05	56.71	57		60.9	Riffle
17+14	56.74	56.97			Riffle
17+27	56.28	56.65			Riffle
17+30	55.19	56.61			End Riffle/Begin Pool
17+34	54.85	56.65			Pool
17+38	54.92	56.63			Pool
17+43	55.62	56.63			Pool
17+49	56.46	56.71			End Pool/Begin Riffle
17+54	56.20	56.37			Riffle
17+58	55.65	56.26			End Riffle/Begin Pool
17+66	55.57	56.37			Pool
17+69	55.54	56.22			Pool
17+74	55.76	56.28			Pool
17+83	55.99	56.5			End Pool/Begin Riffle
17+92	55.82	56.24			Riffle
18+03	55.98	56.24			End Riffle/Begin Pool
18+06	55.59	56.21			Pool
18+11	55.12	56.21			Pool
18+18	55.26	56.2			Pool
18+24	55.63	56.21			End Pool/Begin Glide
18+29	55.99	56.19			End Glide/Begin Riffle
18+32	55.86	56.09			Riffle
18+36	55.39	55.68			Riffle
18+45	55.29	55.55	56.71		Riffle
18+53	55.28	55.62			Riffle
18+60	55.36	55.62			End Riffle/Begin Pool
18+63	55.09	55.67			Pool
18+69	55.06	55.58			End Pool/Begin Glide
18+73	55.34	55.58			End Glide/Begin Riffle
18+79	55.25	55.47			Riffle
18+88	54.80	55.31			End Riffle/Begin Pool
18+91	54.57	55.27			Pool
18+95	54.68	55.2			Pool
19+00	54.68	55.23			Pool
19+06	55.40	55.93			Pool
19+11	54.53	55.22			Pool
19+17	54.73	55.22			End Pool/Begin Glide
19+23	54.83	55.23			Glide
19+29	55.06	55.23			End Glide/Begin Riffle
19+35	54.74	55.03			Riffle
19+40	54.56	54.86			Riffle
19+48	54.46	54.79	55.61		End Riffle/Begin Pool
19+52	53.68	54.73			Pool
19+59	53.41	54.72			Pool
19+67	53.42	54.71			Pool
19+72	53.83	54.69			Pool
19+77	54.23	54.68			End Pool
19+81	54.42	54.71			Begin Riffle

Annual Physical Assessment

Longitudinal Profile Data

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
19+87	54.25	54.6			End Riffle/Begin Pool
19+91	53.45	54.55			Pool
19+96	53.10	54.59			Pool
20+00	53.16	54.6			Pool
20+04	53.36	54.61			Pool
20+06	53.36	54.48			Pool
20+08	53.05	54.65			Pool
20+15	53.56	54.54			End Pool
20+17	54.33	54.56			Begin Riffle
20+23	53.94	54.28			Riffle
20+30	53.87	54.19			Riffle
20+37	53.50	53.92			Riffle
20+46	53.04	53.89			Riffle
20+47	53.63	53.92			Riffle
20+52	53.43	53.84			End Riffle/Begin Pool
20+56	53.24	53.84			Pool
20+62	53.39	53.84			Pool
20+70	53.51	53.82			Pool
20+76	53.12	53.83	54.38		Pool
20+82	53.03	53.83			Pool
20+88	53.41	53.8			Pool
20+93	53.55	53.8			Pool
21+00	53.31	53.83			Pool
21+04	52.19	53.81			Pool
21+11	52.45	53.81			Pool
21+17	53.15	53.77			End Pool/BeginGlide
21+21	53.62	53.76	54.36		End Glide/Begin Riffle
21+27	53.39	53.71			Riffle
21+30	53.39	53.71			End Riffle/Begin Pool
21+33	52.96	53.68			Pool
21+38	53.50	53.72			End Pool/Begin Riffle
21+44	53.45	53.53			Riffle
21+48	53.03	53.35			End Riffle/Begin Pool
21+51	52.15	53.36			Pool
21+57	52.55	53.33			Pool
21+61	52.99	53.34			End Pool/Begin Glide
21+69	53.11	53.31			End Glide/Begin Riffle
21+73	53.04	53.19			Riffle
21+82	52.36	52.6			Riffle
21+90	52.47	52.67			Riffle
21+96	52.31	52.69			Riffle
22+03	52.22	52.64			Riffle
22+12	52.36	52.58		55.47	Riffle
22+20	52.07	52.53			Riffle
22+30	52.39	52.59			Riffle
22+39	52.31	52.44			End Riffle/Begin Pool
22+42	51.52	52.46			Pool
22+48	51.77	52.47			End Pool/Begin Glide
22+54	52.18	52.43			End Glide/Begin Riffle
22+62	52.26	52.39			Riffle
22+68	52.15	52.2			Riffle
22+78	51.90	52.06			Riffle

Annual Physical Assessment

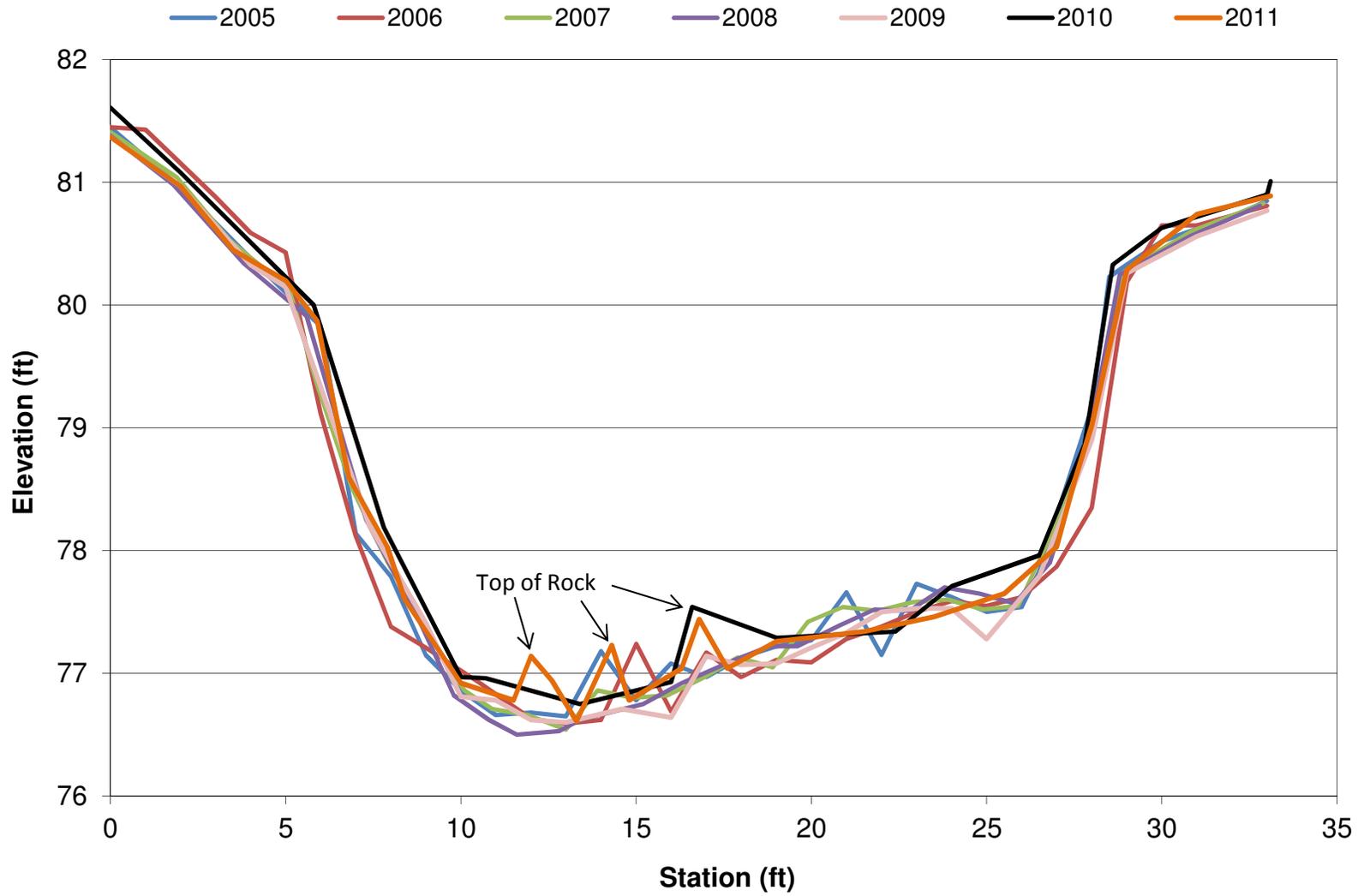
Longitudinal Profile Data

Station	Bed Surface	Water Surface	Bankfull	Top of Bank	Description
22+91	51.79	51.95			Riffle
22+96	51.72	51.88			End Riffle/Begin Pool
23+00	51.03	51.99			Pool
23+09	50.94	51.88			Pool
23+12	51.10	51.84			Pool
23+16	50.84	51.67			Pool
23+20	51.38	51.83			End Pool/Begin Glide
23+24	51.58	51.85			End Glide/Begin Riffle
23+30	51.42	51.71			Riffle
23+35	50.84	51.41			End Riffle/Begin Glide
23+39	50.86	51.42			Pool
23+41	50.92	51.39			Pool
23+45	50.94	51.4			Pool
23+50	50.26	51.43			Pool
23+55	50.89	51.39			End Pool/Begin Riffle
23+60	50.94	51.34			Riffle
23+67	50.87	51.32			End Riffle/Begin Pool
23+73	50.74	51.08			Pool
23+77	50.67	51.28			Pool
23+79	50.92	51.27			Begin Riffle, Concrete
23+82	51.07	51.17			Riffle, Concrete
23+84	50.33	50.93			Riffle
23+88	50.41	51			Riffle
23+96	50.51	50.8			Riffle
24+00	50.4	50.75			End Riprap

Cross Section:
Combined Cross Sections (2005-2011) and 2011 Survey Data

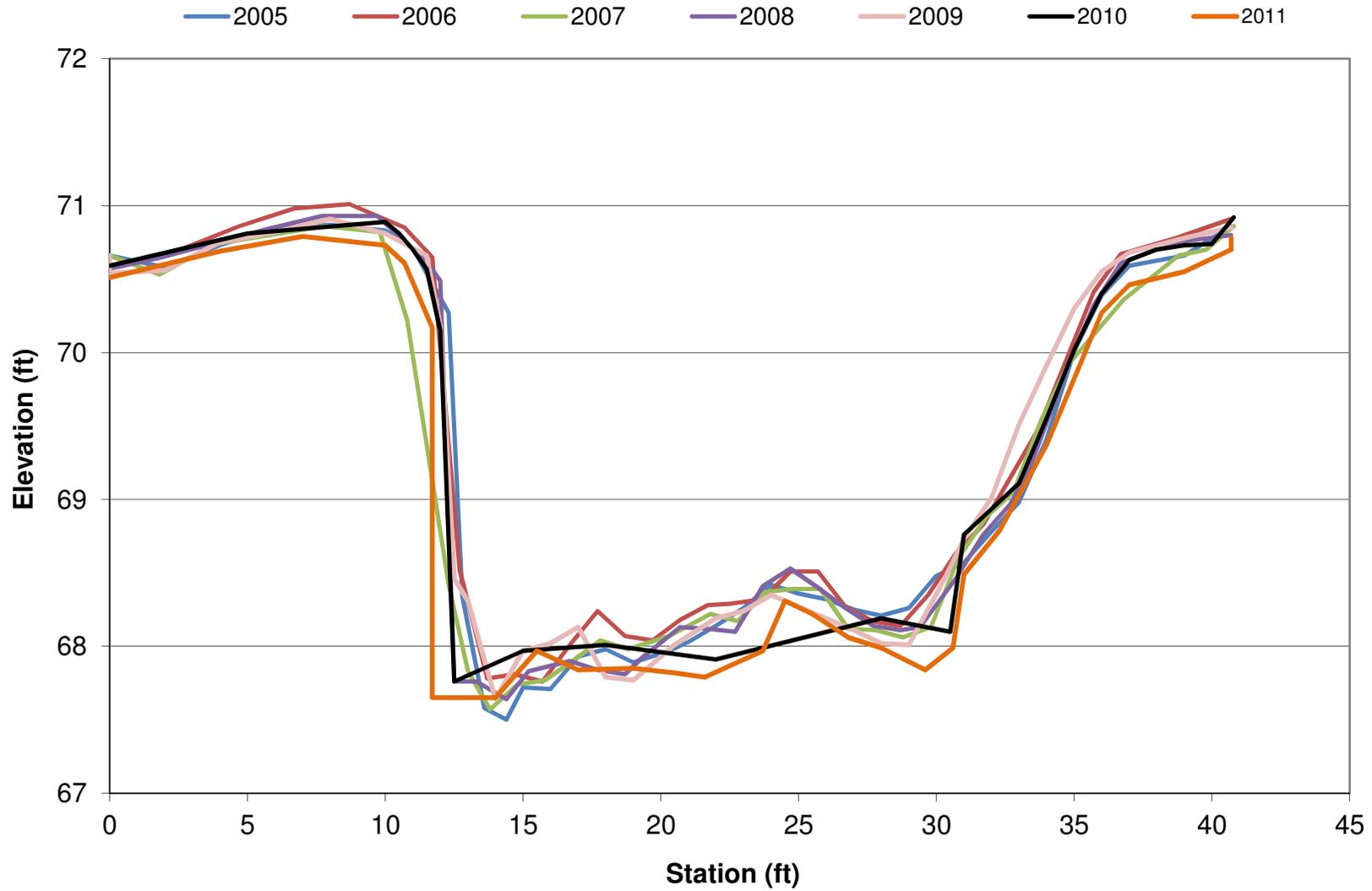
WEXFORD
Annual Physical Assessment

Cross Section 1
Station 3+00



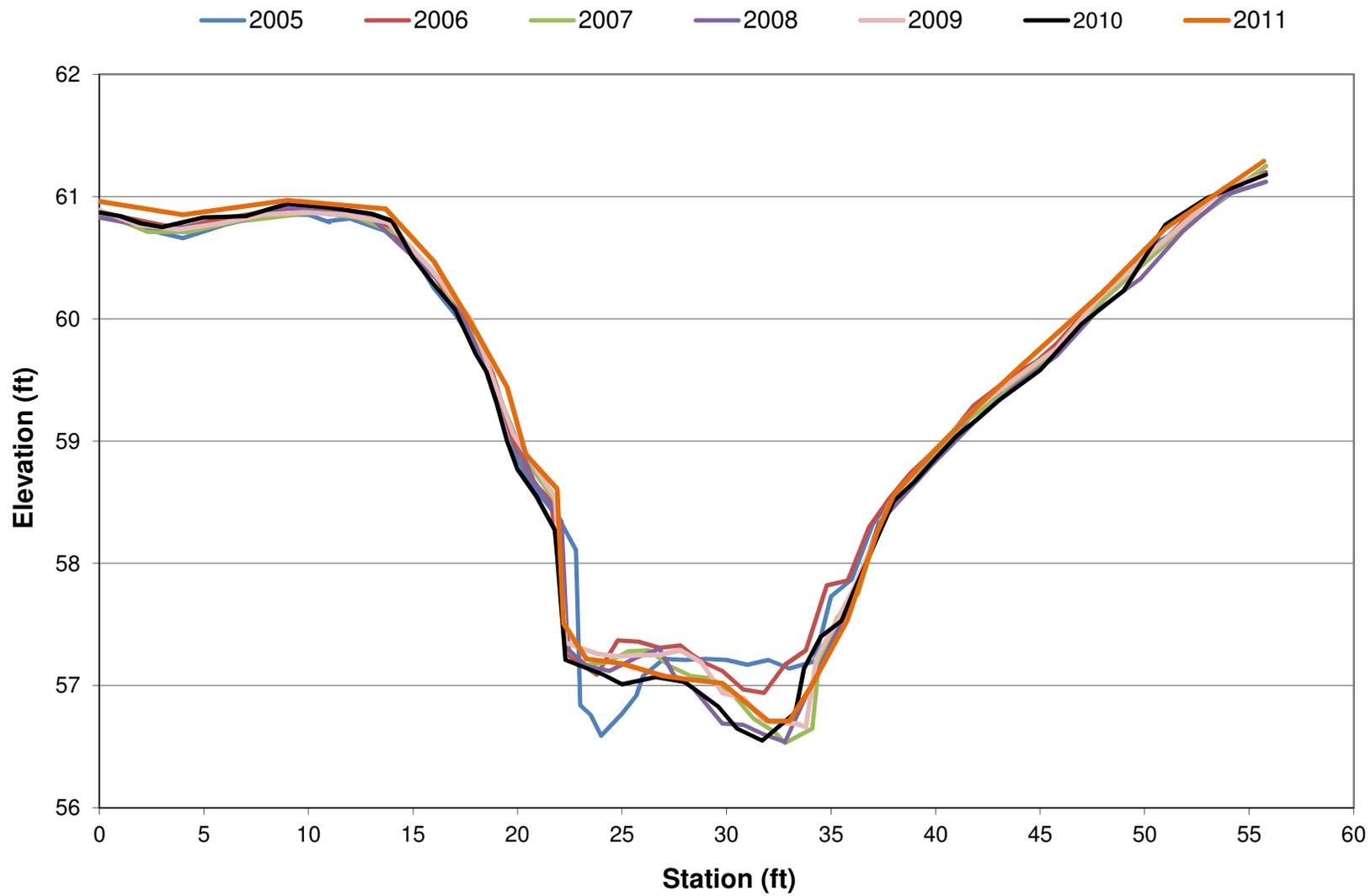
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Cross Section 2
Station 8+84



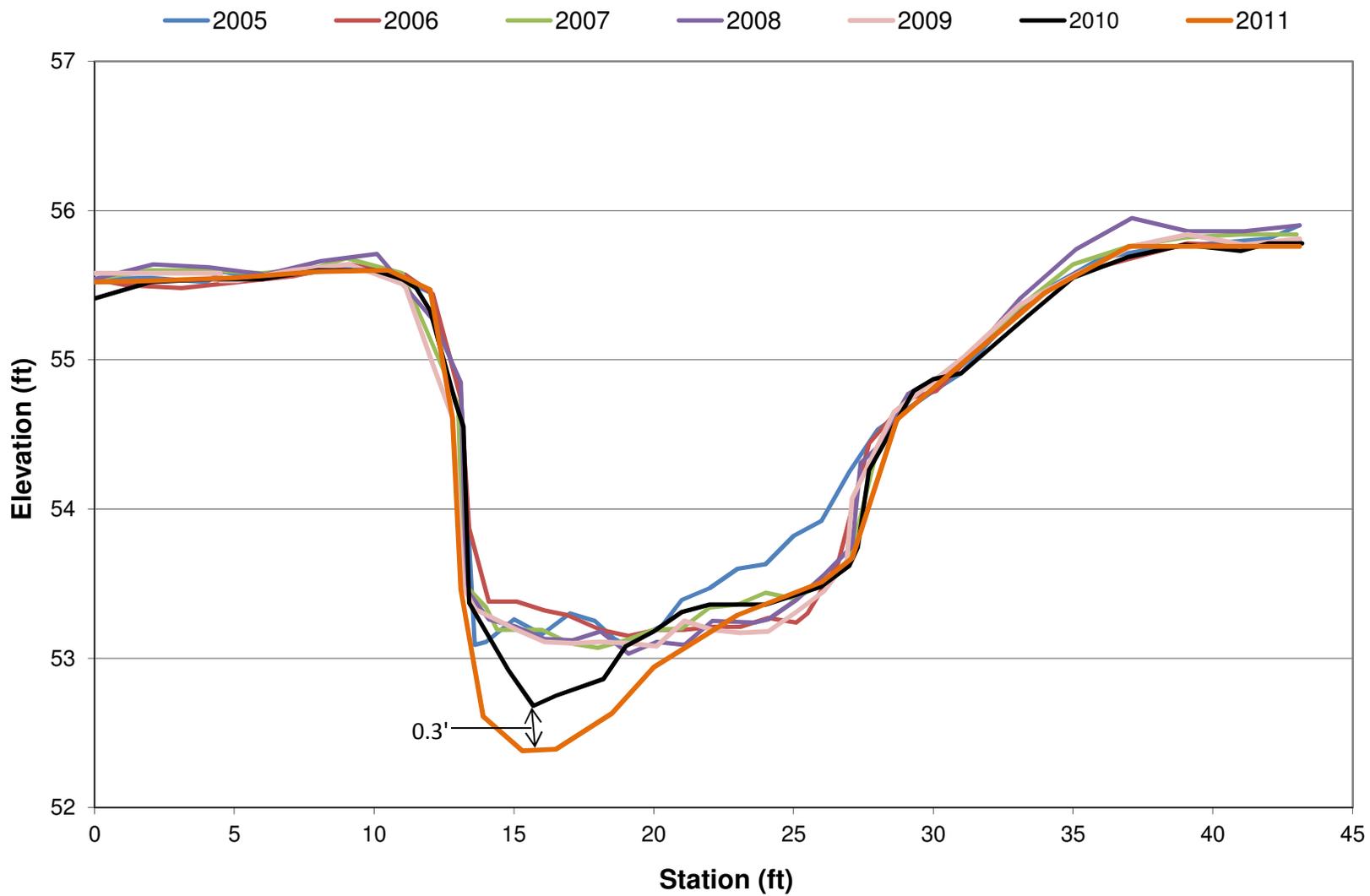
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Cross Section 3
Station 17+05



WEXFORD
Annual Physical Assessment

Cross Section 4
Station 22+12



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Annual Physical Assessment
 Cross section data

Cross Section 1 at Profile Station 3+00

Surveyed on December 14, 2011

Station	Bed Surface	Description
0.0	81.46	LB Top Of Pin
0.0	81.37	LB Ground At Pin
2.0	80.97	Ground
3.5	80.45	Ground
5.0	80.20	Ground
5.9	79.87	Top Of Bank
6.8	78.60	Ground On Bank
7.9	78.03	Ground On Bank
8.4	77.60	
10.0	76.92	Edge Of Water
11.5	76.78	
12.0	77.14	Top Of Rock
12.6	76.94	
13.3	76.61	Thalweg
14.3	77.23	Top Of Rock
14.8	76.78	
16.3	77.04	
16.8	77.44	Top Of Rock
17.6	77.04	
19.0	77.26	
21.5	77.34	
23.5	77.46	
25.5	77.65	Edge Of Water
27.0	78.03	
27.5	78.56	
28.0	79.02	
29.0	80.29	Top Of Bank
31.0	80.74	Ground
33.1	80.89	RB Ground At Pin
33.1	80.96	RB Top Of Pin

Description key: L=left, R=right, B=bank, BKF=bankful,
 EOW=edge of water, TO=top

WEXFORD
Annual Physical Assessment
 Cross section data

Cross Section 2 at Profile Station 8+84

Surveyed on December 15, 2011

Station	Bed Surface	Description
0.0	70.58	LB Top Of Pin
0.0	70.51	LB Ground At Pin
4.0	70.69	Ground
7.0	70.79	Ground
10.0	70.73	Ground
10.7	70.61	Top Of Bank
11.7	70.17	
11.7	67.65	Edge Of Water
14.0	67.65	Thalweg
15.5	67.97	
17.0	67.84	
19.0	67.85	
20.5	67.82	
21.6	67.79	
23.7	67.97	
24.5	68.31	
25.5	68.22	
26.8	68.06	
28.0	67.99	
29.6	67.84	
30.6	67.99	Edge Of Water
31.0	68.49	
32.3	68.79	
34.0	69.37	
36.0	70.27	Top Of Bank
37.0	70.46	Ground
39.0	70.55	Ground
40.7	70.70	RB Ground At Pin
40.7	70.78	RB Top Of Pin

Description key: L=left, R=right, B=bank, BKF=bankful,
 EOW=edge of water, TO=top

WEXFORD
Annual Physical Assessment
 Cross section data

Cross Section 3 at Profile Station 17+05

Surveyed on December 15, 2011

Station	Bed Surface	Description
0.0	60.96	LB Top Of Pin
0.0	60.96	LP Ground At Pin
4.0	60.85	Ground
9.0	60.97	Ground
13.7	60.90	Top Of Bank
16.0	60.47	
18.0	59.90	
19.5	59.44	
20.4	58.89	
21.9	58.61	
22.2	57.51	
23.3	57.22	Edge Of Water
25.0	57.18	
27.0	57.08	
28.2	57.05	
29.8	57.02	
32.0	56.71	Thalweg
33.0	56.71	
34.0	56.98	Edge Of Water
35.8	57.54	
37.2	58.25	
38.0	58.56	
39.7	58.88	
42.0	59.28	Top Of Bank
44.0	59.60	Ground
48.0	60.22	Ground
51.0	60.74	Ground
55.7	61.29	RB Ground At Pin
55.7	61.33	RB Top Of Pin

Description key: L=left, R=right, B=bank, BKF=bankful,
 EOW=edge of water, TO=top

WEXFORD
Annual Physical Assessment
 Cross section data

Cross Section 4 at Profile Station 22+12

Surveyed on December 15, 2011

Station	Bed Surface	Description
0.0	55.56	LB Top Of Pin
0.0	55.52	LB Ground At Pin
2.0	55.53	Ground
5.0	55.55	Ground
8.0	55.59	Ground
10.5	55.60	Ground
12.0	55.47	Top Of Bank
12.8	54.61	
13.1	53.46	
13.9	52.61	Edge Of Water
15.3	52.38	Thalweg
16.5	52.39	
18.5	52.63	Edge Of Water
20.0	52.94	
23.0	53.29	
26.0	53.51	
27.1	53.67	
28.7	54.60	Top Of Bank
30.0	54.81	Ground
34.0	55.45	Ground
37.0	55.76	Ground
40.0	55.76	Ground
43.1	55.76	RB Ground At Pin
43.1	55.89	RB Top Of Pin

Description key: L=left, R=right, B=bank, BKF=bankful,
 EOW=edge of water, TO=top

Photographic Log

Wexford
Annual Physical Assessment
Representative Site Photographs



Upstream view at station 1+0



Downstream view a station 1+0



Upstream view at 3+00 (cross section 1)



Downstream view at 3+00 (cross section 1)

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Annual Physical Assessment
Representative Site Photographs



Left Bank at 3+00 (cross section 1)



Right Bank at 3+00 (cross section 1)



Downstream view at 3+60 showing downed tree



Upstream view at 5+0 showing downed tree

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Annual Physical Assessment
Representative Site Photographs



Downstream view at 5+0



Upstream view at 6+0



Downstream view at 6+0



Upstream view at 8+0

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Annual Physical Assessment
Representative Site Photographs



Downstream view at 8+0



Upstream view at station 8+84 (cross section 2)



Downstream view at 8+84 (cross section 2)



Left Bank at 8+84 (cross section 2)

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Annual Physical Assessment
Representative Site Photographs



Right Bank at 8+84 (cross section 2)



Downstream view at 10+02



Downstream view at 11+0



Upstream view at 12+0

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Annual Physical Assessment
Representative Site Photographs



Upstream view at 13+0



Downstream view at 16+0



Upstream view at station 17+05 (cross section 3)



Downstream view at station 17+05 (cross section 3)

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Representative Site Photographs



Left Bank at station 17+05 (cross section 3)



Right Bank at station 17+05 (cross section 3)



Upstream view at station 19+0



Downstream view of pool at station 20+0

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Annual Physical Assessment
Representative Site Photographs



Upstream view at station 22+12 (cross section 4)



Downstream view at station 22+12 (cross section 4)



Left Bank at station 22+12 (cross section 4)



Right Bank at station 22+12 (cross section 4)