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Location Milwaukee / Waukesha Date 9/21-12

Project / Client MMSD Phase IV USGS
Lwaukesha Diversion

Waypoints and Photographs

Channel Type and channel Morphology
Dominant Bedform
Dominant Planform
Amount of Flow
Bed substrate
Aquatic Vegetation
Fish
Banks
Depositional Bars
Riparian corridor Vegetation
Floodplain Width
Water Temp - °C

Alterations
Additional WPs
Sewers
Culverts/Bridges
Bank Erosion Rocs
Grade controls
Infrastructure Failures

Air Temp - 48°F
Crew: JDB, Ben Yang, and Nic Beur.
Planning on Each taking 1 Section
Downstream of confluence
- Very foul smell at confluence + Down
- Scout walk down to Swan Bridge
Begin Walk upstream at 0921.

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From Bridge upstream - Right Bank is Engineered. .5 - 1.5 meter Boulders. Right half of channel Bed is Protected by Sheetrock/ flag stone

Picture # = 147 + 148

WP - 187

Channel width at Bridge - 20 Yards

thalwag - 36 cm

No Vegetation Caps - left Bank ~~[illegible]~~ RCG + forbes

Animals - crayfish, birds, frogs, Right Bank - Buckthorn / trees

Meandering / channelized / engineered

Riffle - Pool Sequences.

Bed substrate - Boulders 128+, Rip Rap, and flagstone

Bank height 1.55m - ~~[illegible]~~ Right 1.2m left

28 Yard long submerged / concrete encased cable

Photos 149 - 151

WP 188

Riffle - Pool sequence Begins.

Riffle 13 yards

End of Boulders and flagstone - WP 189

Pool - 7.5m substrate change to VCS and Med. Cobbles

Photo # 152-153

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Running Thalwag Est. - Averages - ① 36cm WP - 187

45

59

73 - 35 yards from Bridge

36

WP 188 15 - Riffle

Running channel width: 20 WP 187

18 WP 188

19m WP 189

18 yards	WP 190	70cm	WP 189
18 yards	~~WP~~	Unwadeable 1.xx+ cm	WP 190
22 ~~[illegible]~~ yards	WP 191	47 cm	—
22 yards	WP 193	28 cm	WP 192
20 yards	WP 194	39	
13 yards	WP 196	38	WP 193
15	WP 198	70cm	WP 196
		R 12 cm	WP 198
		P 52cm	198
		P 40	+
		D 65	+
		55	WP 204+

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Large woody Debris - WP -190 Photo # 154-155
and Large Bank erosion - length ≈ 30m 1.5m + .60m undercut
(Right Bank) (Before cement/flag stone)

WP 191 - LWD - Bank erosion on left Bank
BH - 1.80m
Photos # 156+157

Riffle - length - 11 yards Algae + Macrophytes
WP-192 Twag 2.8cm some Refuse

Bed substrate changes - Silt and cs.
occasional Boulder - No More cobbles

Riffle (small) - vcs, gravel, small cobbles, RipRap
WP 193 - length - 3 yards
Twag - 38
Some undercutting Photo # 158 ~~[illegible]~~

Culvert - Two. of them - (Don't seem to be connected to
WP 194 60cm diam Anything)
Photo # ~~[illegible]~~ 159
* photo ~~[illegible]~~ 160 - wide shot upstream

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Silt (and organic) Depth - Both L+R ≈ 5-10 cm
very deep + very stinky.

Past culvert channel too deep to wade
+ 1.8m = Thalwegs are over.
substrate vcs.

Channel width same 18-22 yards
BH Right - 1.8m BH Left - 2.5m
Photo 161 looking upstream from
* WP194 - 153 yards to Next Bend
and LWD. - No longer Riffle Pool
Straight channel

* lots of undercutting - fluvial.
Photos 162 Rb + 163 lb
forbout ≈ 30m
silt width on each side 1-1.8m then leaves +
organic Material
WP 195 - start of Boulders on Right Bank
undercutting on left Bank.
Photos 164-167
Rb height - 1.5m lb height ≈ 3m
Steep Drop off After Boulders - ~~[illegible]~~
Overtopped Waders ~~[illegible]~~

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→ Bank Light (Left) 1.95m

Photo 168 + 169 - LWD Across Channel
WP 196 - still smells Aweful - fecal Matter
Photos 170 + 171 1.2m Scour into Bank.
from felled tree.
* End of Boulders lining Rb at Tree (WP196)
Channel width - 13 yards
Changes back to semi-Natural channel →
Riffle - Pool
substrate Coase Sand And
Cobbles - No Boulders

WP197 left Bank undercut/erosion 30m
23 yards channel width
lb TWAG - 45 cm
2m of Erosion, TBH - 2.3m
Photos - 172 - 175

Rb Depositional Bar - 50 yards
- silt depth - 8 cm Along
Photo 176 - 177, 178 - Tyre

WP 198 - Riffle - 10 yards - [illegible]
Boulders on lb - similar to before
TWAG - 12cm Riffle
Pool - 52 [illegible]
channel width 15y

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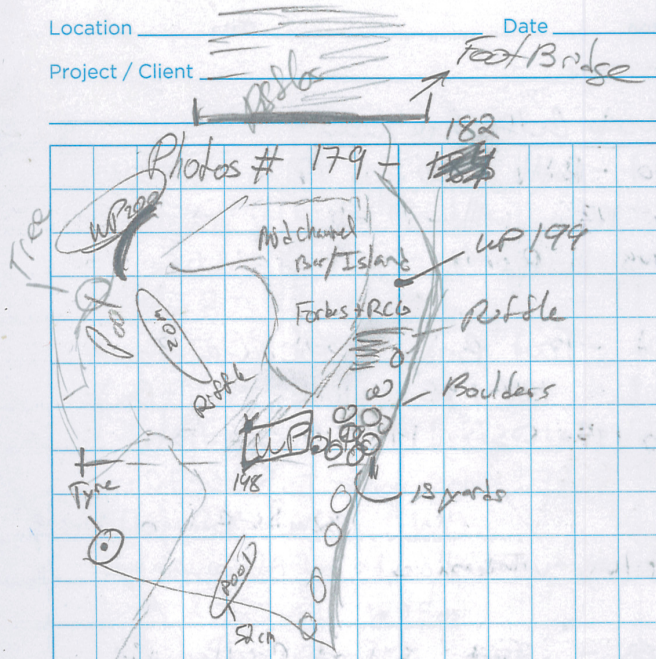
Photos # 179 - 182



Pool Above Riffle - 20m length
65cm deep

WP199 - Culvert + Riffle - Photos 183 - 185
Left side of mid-channel Island
Boulders line left Bank - BH 1.1m
TWAG - 18cm
(Right Bank)
WP200 - Massive erode Bank BH - 3 meters - 3.2m
photos # 186 - 189 + 190, 191 - Island shots
width 14 yards
Twag - 60cm
192 - Tree
cobble substrate

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Next to Golf course Now

WP 201 - Riffle 20 yards long
Photo 193 width - 19 yards
Grass in Riparian.

WP 202 - Foot Bridge (Golf course Property)
Photos 194-196 - Trash, Tire, + Bridge
Photo 197 - DS, 198 - UP, 199 - Trash
60-70 cm
Smells Bad, oil Present

* Thalweg - unwadeable under + After Bridge.

WP 203 - culvert, End of Boulders lb
T-Way 41cm, LBH - 1.55m c. width - 17 yards
Photos 200 + 201

Begin long Riffle to confluence
WP203 - Photo 202
Riffle width - 5, 12, 8, 5, 13
Rbh 1.3m forkes + willow Saplings, RCG
WP204 Thalweg - 20 cm lbh - 75cm
Substrate 90 - 128 mm

WP205 - Pool After confluence -
course sand Depth 72cm
width 4m length - 8m

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WP205 - confluence - TWAG - 8cm
lb 1.3m Rb 1.6m RCG width - 12 yards
substrate - Gravel + small cobbles
Photo 203 + 204
ups downs

WP206 - Eroded Bank - left - height 1.63
T-WAG - 52cm Right - .92
2 Channel Bars + LWD
mid l 6m W - 2m T-Way - 16cm
R-l - 20 yards W - 5m
Photos - 205 - 209
Snapping Turtle

WP-207 eroded Bank + Exposed
concrete on RB. 2.2m Height
Photos 210 - 113
length 26 yards - Eroded Bank
Pool - length 25 yards
Depth 1.1m - unwadeable
width 8m
Finished and Back to truck at 11:55.
* Rain Picked up - Waiting for Ben.

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OP1 -

HI - 5.28

HR - 5.3

X set — maybe above

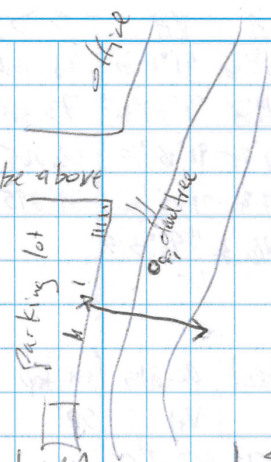
1 - edge parking lot

↳ 95 ft 87°V

2 - 89 ft

3 - 78 ft

4 - 70.7 ft



		HA	VA	SD
	5 -			
	6 -	227°35'00	98°08'50"	57.855
turag ~3 m below	7 -	279°01'15'	100°17'25"	53.375
	8 -	279°02'35"	100°40'05"	46.960
	9 -	276°26'40"	98°42'20"	33.965
known	10 -	274°08'05"	96°30'55"	24.990
7 ft	11 -	262°49'50	93°54'40"	14.945
from center	12 -	232°21'10	89°54'15"	6.820

1-4 high near office

12 - flat near total

=IF(ISBLANK(