



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 81

Stream & Location: Cuyahoga R, Upstream of Rockside Road

RM: 13.15 Date: 07/03/24

Mark Matteson

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: 019-001-000 STORET #: 502020 Lat./Long.: 41.3735 / 81.6295

Office verified location ☐

1] **SUBSTRATE** Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
	POOL RIFFLE		POOL RIFFLE				
☐ BLDR /SLABS [10]	☐	☐ HARDPAN [4]	☐	☐ LIMESTONE [1]	☐	☐ HEAVY [-2]	Substrate 16.5 Maximum 20
☐ BOULDER [9]	☒	☐ DETRITUS [3]	☐	☒ TILLS [1]	☐	☒ MODERATE [-1]	
☒ COBBLE [8]	☒	☐ MUCK [2]	☐	☐ WETLANDS [0]	☐	☐ NORMAL [0]	
☐ GRAVEL [7]	☒	☐ SILT [2]	☐	☐ HARDPAN [0]	☐	☐ FREE [1]	
☒ SAND [6]	☒	☐ ARTIFICIAL [0]	☒	☐ SANDSTONE [0]	☐	☐ EXTENSIVE [-2]	
☐ BEDROCK [5]	☐			☐ RIP/RAP [0]	☐	☐ MODERATE [-1]	
(Score natural substrates; ignore sludge from point-sources)				☐ LACUSTURINE [0]	☐	☒ NORMAL [0]	
				☐ SHALE [-1]	☐	☐ NONE [1]	
				☐ COAL FINES [-2]	☐		

NUMBER OF BEST TYPES: ☒ 4 or more [2] ☐ 3 or less [0]

Comments

8+6+2+1-0.5

2] **INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

☐ UNDERCUT BANKS [1]	<u>2</u> POOLS > 70cm [2]	☐ OXBOWS, BACKWATERS [1]	☐ EXTENSIVE >75% [11]
☐ OVERHANGING VEGETATION [1]	<u>2</u> ROOTWADS [1]	☐ AQUATIC MACROPHYTES [1]	☒ MODERATE 25-75% [7]
☐ SHALLOWS (IN SLOW WATER) [1]	<u>1</u> BOULDERS [1]	<u>3</u> LOGS OR WOODY DEBRIS [1]	☐ SPARSE 5-<25% [3]
<u>1</u> ROOTMATS [1]			☐ NEARLY ABSENT <5% [1]

Comments

3+1+1+2+1+1+7

Cover
Maximum
20

14

3] **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☒ NONE [6]	☐ HIGH [3]
☒ MODERATE [3]	☒ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]
☐ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Comments

3+5+6+2

Channel
Maximum
20

16

4] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

EROSION		RIPARIAN WIDTH		FLOOD PLAIN QUALITY		CONSERVATION TILLAGE	
L	R	L	R	L	R	L	R
☐ NONE / LITTLE [3]	☐	☐ WIDE > 50m [4]	☐	☐ FOREST, SWAMP [3]	☐	☐ CONSERVATION TILLAGE [1]	☐
☒ MODERATE [2]	☐	☒ MODERATE 10-50m [3]	☐	☐ SHRUB OR OLD FIELD [2]	☐	☐ URBAN OR INDUSTRIAL [0]	☐
☐ HEAVY / SEVERE [1]	☐	☐ NARROW 5-10m [2]	☐	☒ RESIDENTIAL, PARK, NEW FIELD [1]	☐	☐ MINING / CONSTRUCTION [0]	☐
		☐ VERY NARROW < 5m [1]	☐	☐ FENCED PASTURE [1]	☐		
		☐ NONE [0]	☐	☐ OPEN PASTURE, ROWCROP [0]	☐		

Indicate predominant land use(s) past 100m riparian.

Riparian
Maximum
10

6

Comments

2.25+3+0.75

5] **POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH

Check ONE (ONLY!)

- ☒ > 1m [6]
- ☐ 0.7-<1m [4]
- ☐ 0.4-<0.7m [2]
- ☐ 0.2-<0.4m [1]
- ☐ < 0.2m [0]

CHANNEL WIDTH

Check ONE (Or 2 & average)

- ☒ POOL WIDTH > RIFFLE WIDTH [2]
- ☐ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY

Check ALL that apply

- ☐ TORRENTIAL [-1]
- ☒ SLOW [1]
- ☒ VERY FAST [1]
- ☐ INTERSTITIAL [-1]
- ☒ FAST [1]
- ☐ INTERMITTENT [-2]
- ☒ MODERATE [1]
- ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool /
Current
Maximum
12

12

Comments

6+2+4

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
☒ BEST AREAS > 10cm [2]	☒ MAXIMUM > 50cm [2]	☐ STABLE (e.g., Cobble, Boulder) [2]	☒ NONE [2]
☐ BEST AREAS 5-10cm [1]	☐ MAXIMUM < 50cm [1]	☒ MOD. STABLE (e.g., Large Gravel) [1]	☒ LOW [1]
☐ BEST AREAS < 5cm [metric=0]		☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☐ MODERATE [0]
			☐ EXTENSIVE [-1]

Riffle /
Run
Maximum
8

6.5

Comments

2+2+1+1.5

6] **GRADIENT** (6.93 ft/mi)

DRAINAGE AREA

(703 mi²)

- ☐ VERY LOW - LOW [2-4]
- ☐ MODERATE [6-10]
- ☒ HIGH - VERY HIGH [10-6]

%POOL:

%GLIDE:

%RUN:

%RIFFLE:

Gradient
Maximum
10

10

Comment RE: Reach consistency/Is reach typical of stream?, Recreation/Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

AJ SAMPLED REACH

Check ALL that apply

METHOD STAGE

- ☐ BOAT ☐ WADE ☐ L' LINE ☐ OTHER
- ☐ DISTANCE
- ☐ 0.5 Km ☐ 0.2 Km ☐ 0.15 Km ☐ 0.12 Km ☐ OTHER

CLARITY

- 1st --sample pass-- 2nd
- ☐ < 20 cm ☐ 20-40 cm ☐ 40-70 cm ☐ > 70 cm/ CTB
- ☐ SECCHI DEPTH
- meters

CANOPY

- ☐ > 85%- OPEN ☐ 55%-<85% ☐ 30%-<55% ☐ 10%-<30% ☐ <10%- CLOSED

CJ RECREATION

AREA DEPTH
POOL: ☐ >100ft² ☐ >3ft

FJ MEASUREMENTS

- EJ ISSUES**
- WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H₂O / TILE / H₂O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY
- FJ MEASUREMENTS**
- $\bar{x}$ width
 $\bar{x}$ depth
max. depth
 $\bar{x}$ bankfull width
bankfull $\bar{x}$ depth
W/D ratio
bankfull max. depth
floodprone $\bar{x}^2$ width
entrench. ratio
Legacy Tree:

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

BJ AESTHETICS

- ☐ NUISANCE ALGAE
☐ INVASIVE MACROPHYTES
☐ EXCESS TURBIDITY
☐ DISCOLORATION
☐ FOAM / SCUM
☐ OIL SHEEN
☐ TRASH / LITTER
☐ NUISANCE ODOR
☐ SLUDGE DEPOSITS
☐ CSOs/SSOs/OUTFALLS

Stream Drawing:





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:

65

Stream & Location: Cuyahoga R. Downstream Confluence w/ Mill Creek RM: 1.30 Date: 7/3/24

JUSTIN TELEP

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer DistrictRiver Code: 019-001-000 STORET #: 501510 Lat./Long.: 41.4179 / 81.6446 Office verified location ☐

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		POOL RIFFLE		OTHER TYPES		POOL RIFFLE		ORIGIN		QUALITY	
☐ BLDR /SLABS [10]	☒	☒	☒	☐ HARDPAN [4]	☐	☐ LIMESTONE [1]	☐	☐ TILLS [1]	☐	☐ HEAVY [-2]	Substrate Maximum 20
☐ BOULDER [9]	☒	☒	☐	☐ DETRITUS [3]	☐	☒	☐	☐ WETLANDS [0]	☐	☒ MODERATE [-1]	
☐ COBBLE [8]	☐	☒	☐	☐ MUCK [2]	☐	☐ HARDPAN [0]	☐	☐ SANDSTONE [0]	☐	☐ NORMAL [0]	
☒ GRAVEL [7]	☒	☒	☐	☐ SILT [2]	☒	☐ RIP/RAP [0]	☐	☐ LACUSTURINE [0]	☐	☐ FREE [1]	
☒ SAND [6]	☒	☐	☐	☐ ARTIFICIAL [0]	☐	☐ SHALE [-1]	☐	☐ COAL FINES [-2]	☐	☐ EXTENSIVE [-2]	
☐ BEDROCK [5]	☐	☐	☐	(Score natural substrates; ignore sludge from point-sources)		☐	☐	☐	☐	☒ MODERATE [-1]	
NUMBER OF BEST TYPES: ☒ 4 or more [2]		☐ 3 or less [0]								☐ NORMAL [0]	
Comments										☐ NONE [1]	

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

☐ UNDERCUT BANKS [1]	☒ POOLS > 70cm [2]	☐ OXBOWS, BACKWATERS [1]	☐ EXTENSIVE >75% [11]
☐ OVERHANGING VEGETATION [1]	☐ ROOTWADS [1]	☐ AQUATIC MACROPHYTES [1]	☐ MODERATE 25-75% [7]
☒ SHALLOWS (IN SLOW WATER) [1]	☒ BOULDERS [1]	☐ LOGS OR WOODY DEBRIS [1]	☒ SPARSE 5-<25% [3]
☐ ROOTMATS [1]			☐ NEARLY ABSENT <5% [1]

Comments

Cover
Maximum 20

8

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]
☐ MODERATE [3]	☒ GOOD [5]	☒ RECOVERED [4]	☒ MODERATE [2]
☒ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Comments

Channel
Maximum 20

13

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

EROSION	RIPIARIAN WIDTH	FLOOD PLAIN QUALITY
☐ NONE / LITTLE [3]	☐ WIDE > 50m [4]	☐ FOREST, SWAMP [3]
☒ MODERATE [2]	☐ MODERATE 10-50m [3]	☐ SHRUB OR OLD FIELD [2]
☐ HEAVY / SEVERE [1]	☒ NARROW 5-10m [2]	☐ RESIDENTIAL, PARK, NEW FIELD [1]
	☐ VERY NARROW < 5m [1]	☐ FENCED PASTURE [1]
	☐ NONE [0]	☐ OPEN PASTURE, ROWCROP [0]

Comments

Indicate predominant land use(s)
past 100m riparian.Riparian
Maximum 10

4

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

Check ONE (ONLY)

- ☒ > 1m [6]
☐ 0.7-<1m [4]
☐ 0.4-<0.7m [2]
☐ 0.2-<0.4m [1]
☐ < 0.2m [0]

CHANNEL WIDTH

Check ONE (Or 2 & average)

- ☒ POOL WIDTH > RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [0]
☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY

Check ALL that apply

- ☐ TORRENTIAL [-1] ☒ SLOW [1]
☐ VERY FAST [1] ☐ INTERSTITIAL [-1]
☒ FAST [1] ☐ INTERMITTENT [-2]
☒ MODERATE [1] ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential

Primary Contact

Secondary Contact

(circle one and comment on back)

Pool /
Current
Maximum 12

11

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
☒ BEST AREAS > 10cm [2]	☒ MAXIMUM > 50cm [2]	☐ STABLE (e.g., Cobble, Boulder) [2]	☐ NONE [2]
☐ BEST AREAS 5-10cm [1]	☐ MAXIMUM < 50cm [1]	☒ MOD. STABLE (e.g., Large Gravel) [1]	☐ LOW [1]
☐ BEST AREAS < 5cm [metric=0]		☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☒ MODERATE [0]
			☐ EXTENSIVE [-1]

Riffle /
Run
Maximum 8

5

6] GRADIENT (4.77 ft/mi)

DRAINAGE AREA

(730 mi²)

- ☐ VERY LOW - LOW [2-4]
☐ MODERATE [6-10]
☒ HIGH - VERY HIGH [10-6]

%POOL:

%GLIDE:

%RUN:

%RIFFLE:

Gradient
Maximum 10

10

Stream & Location: Cuyahoga R., upstream of Southern WWP effluent channel RM: 10.75 Date: 08/23/21

Seth Nathan

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: 019-001-000 STORET #: F01A25 Lat./Long.: 41.4196 / 81.6597

Office verified location ☐

1) SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES	POOL RIFFLE	OTHER TYPES	POOL RIFFLE
☐ BLDR /SLABS [10]	☒	☐ HARDPAN [4]	☐
☐ BOULDER [9]	☒	☐ DETRITUS [3]	☐
☐ COBBLE [8]	☒	☐ MUCK [2]	☐
☒ GRAVEL [7]	☒	☐ SILT [2]	☒
☒ SAND [6]	☒	☐ ARTIFICIAL [0]	☒
☐ BEDROCK [5]	☐		

ORIGIN
☐ LIMESTONE [1]
☒ TILLS [1]
☐ WETLANDS [0]
☐ HARDPAN [0]
☐ SANDSTONE [0]
☐ RIP/RAP [0]
☐ LACUSTURINE [0]
☐ SHALE [-1]
☐ COAL FINES [-2]

QUALITY
☐ HEAVY [-2]
☒ MODERATE [-1]
☐ NORMAL [0]
☐ FREE [1]
☐ EXTENSIVE [-2]
☒ MODERATE [-1]
☐ NORMAL [0]
☐ NONE [1]

Substrate

Maximum 20

NUMBER OF BEST TYPES: ☒ 4 or more [2] ☐ 3 or less [0]

Comments

2) INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

☒ UNDERCUT BANKS [1]	☒ POOLS > 70cm [2]	☐ OXBOWS, BACKWATERS [1]
☐ OVERHANGING VEGETATION [1]	☐ ROOTWADS [1]	☐ AQUATIC MACROPHYTES [1]
☒ SHALLOWS (IN SLOW WATER) [1]	☐ BOULDERS [1]	☒ LOGS OR WOODY DEBRIS [1]
☐ ROOTMATS [1]		

☐ EXTENSIVE >75% [11]
☒ MODERATE 25-75% [7]
☐ SPARSE 5-<25% [3]
☐ NEARLY ABSENT <5% [1]

Cover

Maximum 20

Comments

3) CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☒ NONE [6]	☐ HIGH [3]
☒ MODERATE [3]	☒ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]
☐ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Channel
Maximum 20

Comments

4) BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY	
☐ NONE / LITTLE [3]	☒ WIDE > 50m [4]	☐ FOREST, SWAMP [3]	☐ CONSERVATION TILLAGE [1]
☒ MODERATE [2]	☐ MODERATE 10-50m [3]	☐ SHRUB OR OLD FIELD [2]	☒ URBAN OR INDUSTRIAL [0]
☐ HEAVY / SEVERE [1]	☐ NARROW 5-10m [2]	☐ RESIDENTIAL, PARK, NEW FIELD [1]	☐ MINING / CONSTRUCTION [0]
	☐ VERY NARROW < 5m [1]	☐ FENCED PASTURE [1]	
	☒ NONE [0]	☐ OPEN PASTURE, ROWCROP [0]	

Indicate predominant land use(s) past 100m riparian.

Riparian
Maximum 10

Comments

5) POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

Check ONE (ONLY!)

☒ > 1m [6]
☐ 0.7-<1m [4]
☐ 0.4-<0.7m [2]
☐ 0.2-<0.4m [1]
☐ < 0.2m [0]

CHANNEL WIDTH

Check ONE (Or 2 & average)

☒ POOL WIDTH > RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY

Check ALL that apply

☐ TORRENTIAL [-1]	☒ SLOW [1]
☐ VERY FAST [1]	☐ INTERSTITIAL [-1]
☒ FAST [1]	☐ INTERMITTENT [-2]
☒ MODERATE [1]	☒ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)Pool /
Current
Maximum 12

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
☒ BEST AREAS > 10cm [2]	☒ MAXIMUM > 50cm [2]	☐ STABLE (e.g., Cobble, Boulder) [2]	☐ NONE [2]
☐ BEST AREAS 5-10cm [1]	☐ MAXIMUM < 50cm [1]	☒ MOD. STABLE (e.g., Large Gravel) [1]	☒ LOW [1]
☐ BEST AREAS < 5cm [metric=0]		☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☒ MODERATE [0]
			☐ EXTENSIVE [-1]

Riffle /
Run
Maximum 8

Comments

6) GRADIENT (1.75 ft/mi) ☐ VERY LOW - LOW [2-4] ☒ MODERATE [6-10] ☐ HIGH - VERY HIGH [10-6]

DRAINAGE AREA

(743 mi²)

%POOL:

%GLIDE:

%RUN:

%RIFFLE:

Gradient
Maximum 10

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

AJ SAMPLED REACH

Check ALL that apply

METHOD

1st sample pass-- 2nd

- ☒ BOAT
☐ WADE
☐ LINE
☐ OTHER
- ☐ DISTANCE

STAGE

- ☐ HIGH
☐ UP
☒ NORMAL
☐ LOW
☐ DRY

CLARITY

- 1st --sample pass-- 2nd
- ☐ < 20 cm
☐ 20-40 cm
☒ 40-70 cm
☐ > 70 cm/CTB
- ☐ SECCHI DEPTH

meters

CANOPY

- ☒ > 85% - OPEN
☐ 55%-<85%
☐ 30%-<55%
☐ 10%-<30%
☐ <10% - CLOSED

CJ RECREATION

POOL: ☐ >100ft² ☐ >3ft

EJ ISSUES

WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT & GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H₂O / TILE / H₂O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

DJ MAINTENANCE

PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE-SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

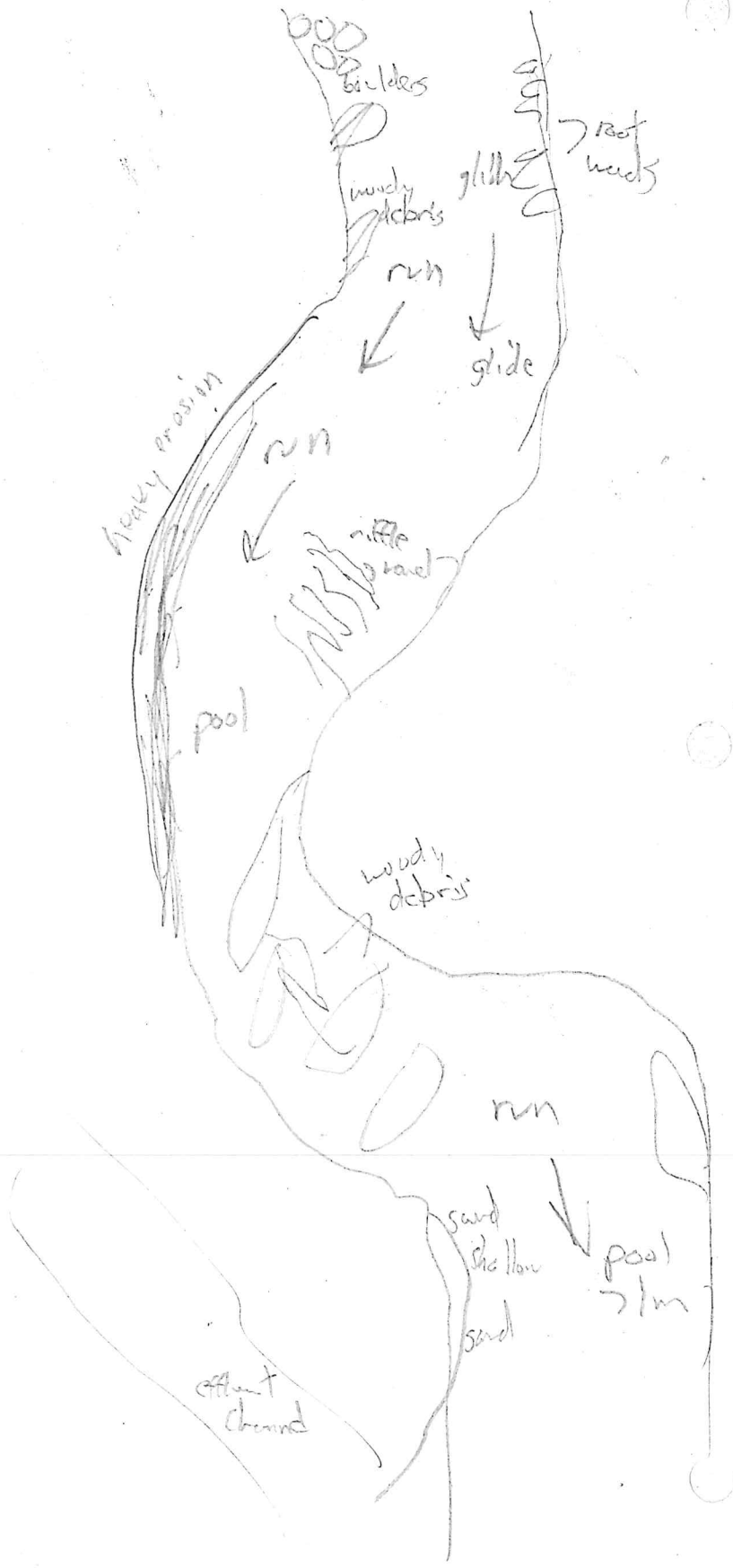
BJ AESTHETICS

- ☐ NUISANCE ALGAE
☐ INVASIVE MACROPHYTES
☐ EXCESS TURBIDITY
☐ DISCOLORATION
☐ FOAM / SCUM
☐ OIL SHEEN
☐ TRASH / LITTER
☐ NUISANCE ODOR
☐ SLUDGE DEPOSITS
☐ CSOs/SSOs/OUTFALLS

FJ MEASUREMENTS

$\bar{x}$ width
 $\bar{x}$ depth
max. depth
 $\bar{x}$ bankfull width
bankfull $\bar{x}$ depth
W/D ratio
bankfull max. depth
floodprone $\bar{x}^2$ width
entrench. ratio
Legacy Tree:

Stream Drawing:





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: **71.5**

Stream & Location: Cuyahoga R. Downstream of Southernly WWTP RM: 10.10 Date: 2/23/24

J. R. R. R. R.

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: 019-001-000 STORET #: F99Q02 Lat./ Long.: 41.4249 / 81.6637 (NAD 83 - decimal °) Office verified location ☐

1] **SUBSTRATE** Check **ONLY** Two substrate **TYPE BOXES**; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES **POOL RIFFLE** **OTHER TYPES** **POOL RIFFLE**

☐ BLDG / SLABS [10]	☐	☐ HARDPAN [4]	☐
☐ BOULDER [9]	☐	☐ DETRITUS [3]	☐
☐ COBBLE [8]	☐	☐ MUCK [2]	☐
☒ GRAVEL [7]	☒	☐ SILT [2]	☒
☒ SAND [6]	☒	☐ ARTIFICIAL [0]	☐
☐ BEDROCK [5]	☐		

ORIGIN

☐ LIMESTONE [1]
☒ TILLS [1]
☐ WETLANDS [0]
☐ HARDPAN [0]
☐ SANDSTONE [0]
☐ RIP/RAP [0]
☐ LACUSTURINE [0]
☐ SHALE [-1]
☐ COAL FINES [-2]

QUALITY

☐ HEAVY [-2]
☐ MODERATE [-1]
☒ NORMAL [0]
☐ FREE [1]
☐ EXTENSIVE [-2]
☐ MODERATE [-1]
☒ NORMAL [0]
☐ NONE [1]

Substrate
Maximum
20
16

NUMBER OF BEST TYPES: ☒ 4 or more [2] ☐ 3 or less [0] (Score natural substrates; ignore sludge from point-sources)

Comments

2] **INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

1 UNDERCUT BANKS [1] 3 POOLS > 70cm [2] 1 OXBOWS, BACKWATERS [1]
1 OVERHANGING VEGETATION [1] 1 ROOTWADS [1] 1 AQUATIC MACROPHYTES [1]
1 SHALLOWS (IN SLOW WATER) [1] 3 BOULDERS [1] 1 LOGS OR WOODY DEBRIS [1]
1 ROOTMATS [1]

☐ EXTENSIVE >75% [1]
☐ MODERATE 25-75% [1]
☒ SPARSE 5-<25% [3]
☐ NEARLY ABSENT <5% [1]

Cover
Maximum
20
12

3] **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☒ NONE [6]	☐ HIGH [3]
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]
☒ LOW [2]	☒ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Channel
Maximum
20
13

4] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for **EACH BANK** (Or 2 per bank & average)

River right looking downstream

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
☒ NONE / LITTLE [3]	☐ WIDE > 50m [4]	☐ FOREST, SWAMP [3]
☐ MODERATE [2]	☒ MODERATE 10-50m [3]	☐ SHRUB OR OLD FIELD [2]
☐ HEAVY / SEVERE [1]	☐ NARROW 5-10m [2]	☒ RESIDENTIAL, PARK, NEW FIELD [1]
	☒ VERY NARROW < 5m [1]	☐ FENCED PASTURE [1]
	☐ NONE [0]	☐ OPEN PASTURE, ROWCROP [0]

Indicate predominant land use(s) past 100m riparian.

Riparian
Maximum
10
5.5

Comments

5] **POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH

Check ONE (ONLY!)

☒ > 1m [6]
☐ 0.7-<1m [4]
☐ 0.4-<0.7m [2]
☐ 0.2-<0.4m [1]
☐ < 0.2m [0]

CHANNEL WIDTH

Check ONE (Or 2 & average)

☐ POOL WIDTH > RIFFLE WIDTH [2]
☒ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY

Check ALL that apply

☐ TORRENTIAL [-1] ☒ SLOW [1]
☐ VERY FAST [1] ☐ INTERSTITIAL [-1]
☒ FAST [1] ☐ INTERMITTENT [-2]
☒ MODERATE [1] ☒ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool /
Current
Maximum
12
11

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH

RUN DEPTH

RIFFLE / RUN SUBSTRATE

RIFFLE / RUN EMBEDDEDNESS

☒ BEST AREAS > 10cm [2]
☐ BEST AREAS 5-10cm [1]
☐ BEST AREAS < 5cm [metric=0]

☒ MAXIMUM > 50cm [2]
☐ MAXIMUM < 50cm [1]

☐ STABLE (e.g., Cobble, Boulder) [2]
☒ MOD. STABLE (e.g., Large Gravel) [1]
☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

☐ NONE [2]
☒ LOW [1]
☐ MODERATE [0]
☐ EXTENSIVE [-1]

Riffle /
Run
Maximum
8
6

Comments

6] **GRADIENT** (0.90 ft/mi)
DRAINAGE AREA
(744 mi²)

☐ VERY LOW - LOW [2-4]
☒ MODERATE [6-10]
☐ HIGH - VERY HIGH [10-6]

%POOL: %GLIDE:
%RUN: %RIFFLE:

Gradient
Maximum
10
8

A1 SAMPLED REACH

Check ALL that apply

METHOD

☒ BOAT	☐ HIGH	☐
☐ WADE	☐ UP	☐
☐ L.I.N.E	☒ NORMAL	☐
☐ OTHER	☐ LOW	☐
☐ DISTANCE	☐ DRY	☐

STAGE

1st -sample pass- 2nd

☐	HIGH	☐
☐	UP	☐
☒	NORMAL	☐
☐	LOW	☐
☐	DRY	☐

CLARITY

1st --sample pass-- 2nd

☐ < 20 cm
☐ 20-40 cm
☐ 40-70 cm
☒ > 70 cm/ CTB

CANOPY

☐ > 85%- OPEN
☐ 55%-<85%
☐ 30%-<55%
☐ 10%-<30%
☐ <10%- CLOSE

C1 RECREATION

POOL: ☐ >100ft² ☒ >3ft

B1 AESTHETICS

- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ OIL SHEEN
- ☐ TRASH / LITTER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

D1 MAINTENANCE

PUBLIC / PRIVATE / BOTH / NA
 ACTIVE / HISTORIC / BOTH / NA
 YOUNG-SUCCESSION-OLD
 SPRAY / SNAG / REMOVED
 MODIFIED / DIPPED OUT / NA
 LEVEED / ONE SIDED
 RELOCATED / CUTOFFS
 MOVING-BEDLOAD-STABLE
 ARMOUR'D / SLUMPS
 ISLANDS / SCOUR'D
 IMPOUNDED / DESICCATED
 FLOOD CONTROL / DRAINAGE

7 ISSUES

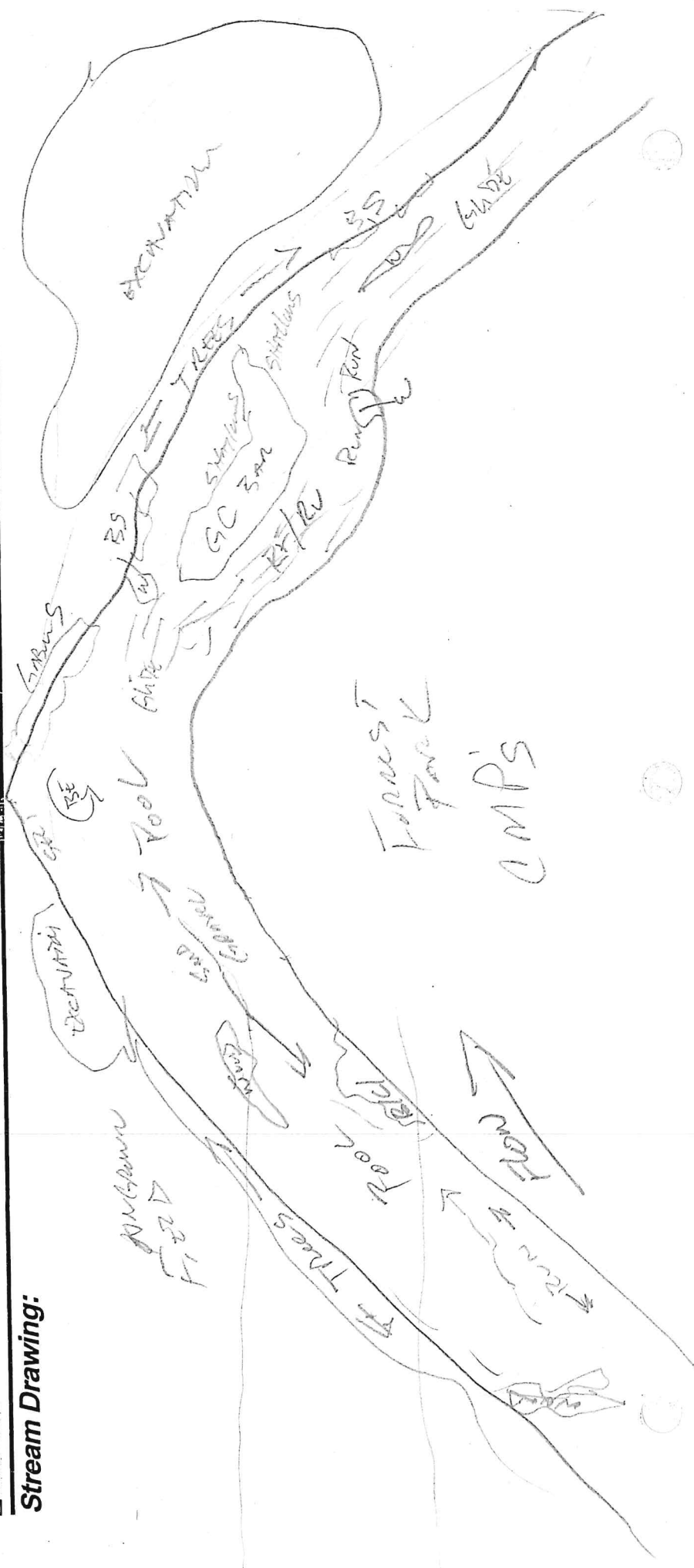
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H₂O / TILE / H₂O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F7 MEASUREMENTS

1 $\bar{x}$ width
 $\bar{x}$ depth
max. depth
 $\bar{x}$ bankfull width
bankfull $\bar{x}$ depth
W/D ratio
bankfull max. depth
floodprone x^2 width
entrench. ratio
Legacy Tree:

Legacy Tree:

Stream Drawing:





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:

76.75

Stream & Location: Cuyahoga R, Upstream of Big Creek

RM: 03.60 Date: 07/09/24

Seth Hothem

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: 019-001-000 STORET #: 200025 Lat./Long.: 41.4392 / 81.6700

Office verified location: ☐

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES	
POOL RIFFLE	POOL RIFFLE	POOL RIFFLE	POOL RIFFLE
☐ BLDR /SLABS [10]	☒ ☒	☐ HARDPAN [4]	☒ ☒
☐ BOULDER [9]	☒ ☒	☐ DETRITUS [3]	☒ ☒
☐ COBBLE [8]	☒ ☒	☐ MUCK [2]	☒ ☒
☒ GRAVEL [7]	☒ ☒	☐ SILT [2]	☒ ☒
☐ SAND [6]	☒ ☒	☐ ARTIFICIAL [0]	☒ ☒
☐ BEDROCK [5]	☒ ☒	(Score natural substrates; ignore sludge from point-sources)	

ORIGIN	
☐ LIMESTONE [1]	☐ TILLS [1]
☐ WETLANDS [0]	☐ HARDPAN [0]
☐ SANDSTONE [0]	☐ RIP/RAP [0]
☐ LACUSTURINE [0]	☐ SHALE [-1]
☐ COAL FINES [-2]	

QUALITY	
☐ HEAVY [-2]	☐ MODERATE [-1]
☐ NORMAL [0]	☐ FREE [1]
☐ EXTENSIVE [-2]	☐ MODERATE [-1]
☐ NORMAL [0]	☐ NONE [1]

Substrate
Maximum
20
14

NUMBER OF BEST TYPES: ☒ 4 or more [2] ☐ 3 or less [0]

Comments

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

☒ UNDERCUT BANKS [1]	☒ POOLS > 70cm [2]	☐ OXBOWS, BACKWATERS [1]
☒ OVERHANGING VEGETATION [1]	☒ ROOTWADS [1]	☐ AQUATIC MACROPHYTES [1]
☒ SHALLOWS (IN SLOW WATER) [1]	☒ BOULDERS [1]	☒ LOGS OR WOODY DEBRIS [1]
☐ ROOTMATS [1]		

☐ EXTENSIVE >75% [11]
☐ MODERATE 25-75% [7]
☐ SPARSE 5-<25% [3]
☐ NEARLY ABSENT <5% [1]

Cover
Maximum
20
14

Comments

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☒ NONE [6]	☐ HIGH [3]
☒ MODERATE [3]	☒ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]
☐ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Channel
Maximum
20
16

Comments

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY	CONSERVATION TILLAGE
☒ NONE / LITTLE [3]	☒ WIDE > 50m [4]	☐ FOREST, SWAMP [3]	☒ URBAN OR INDUSTRIAL [0]
☐ MODERATE [2]	☐ MODERATE 10-50m [3]	☐ SHRUB OR OLD FIELD [2]	☐ MINING / CONSTRUCTION [0]
☐ HEAVY / SEVERE [1]	☐ NARROW 5-10m [2]	☒ RESIDENTIAL, PARK, NEW FIELD [1]	
	☐ VERY NARROW < 5m [1]	☐ FENCED PASTURE [1]	
	☐ NONE [0]	☐ OPEN PASTURE, ROWCROP [0]	

Indicate predominant land use(s) past 100m riparian.

Riparian
Maximum
10
6.25

Comments

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

☒ > 1m [6]
☐ 0.7-<1m [4]
☐ 0.4-<0.7m [2]
☐ 0.2-<0.4m [1]
☐ < 0.2m [0]

☒ POOL WIDTH > RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE WIDTH [0]

☐ TORRENTIAL [-1]	☒ SLOW [1]
☐ VERY FAST [1]	☐ INTERSTITIAL [-1]
☒ FAST [1]	☐ INTERMITTENT [-2]
☒ MODERATE [1]	☒ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool /
Current
Maximum
12
12

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
☒ BEST AREAS > 10cm [2]	☒ MAXIMUM > 50cm [2]	☒ STABLE (e.g., Cobble, Boulder) [2]	☐ NONE [2]
☐ BEST AREAS 5-10cm [1]	☐ MAXIMUM < 50cm [1]	☒ MOD. STABLE (e.g., Large Gravel) [1]	☐ LOW [1]
☐ BEST AREAS < 5cm [metric=0]		☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☐ MODERATE [0]
			☒ EXTENSIVE [-1]

Riffle /
Run
Maximum
8
4.5

Comments

6] GRADIENT (2.03 ft/mi) ☐ VERY LOW - LOW [2-4]
DRAINAGE AREA (745 mi²) ☒ MODERATE [6-10]
☐ HIGH - VERY HIGH [10-6]

%POOL: %GLIDE:
%RUN: %RIFFLE:

Gradient
Maximum
10
10

Comment RE: Reach consistency/Is reach typical of stream?, Recreation/Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

AJ SAMPLED REACH

Check ALL that apply

METHOD STAGE

1st - sample pass-- 2nd

- ☒ BOAT ☐ WADE ☐ L. LINE ☐ OTHER
- ☐ DISTANCE
- ☐ CLARITY
- ☐ 0.5 Km ☐ 0.2 Km ☐ 0.15 Km ☐ 0.12 Km ☐ OTHER
- ☐ HIGH ☐ UP ☒ NORMAL ☐ LOW ☐ DRY

CLARITY

- 1st - sample pass-- 2nd
- ☐ < 20 cm ☐ 20-40 cm ☐ 40-70 cm ☐ > 70 cm/CTB
- ☐ SECCHI DEPTH

meters

CANOPY

- ☒ > 85%-OPEN ☐ 55%-<85% ☐ 30%-<55% ☐ 10%-<30% ☐ <10%-CLOSED

CJ RECREATION

POOL: ☐ >100ft² ☐ >3ft

BJAESTHETICS

- ☐ NUISANCE ALGAE ☐ INVASIVE MACROPHYTES ☐ EXCESS TURBIDITY ☐ DISCOLORATION ☐ FOAM / SCUM ☐ OIL SHEEN ☐ TRASH / LITTER ☐ NUISANCE ODOR ☐ SLUDGE DEPOSITS ☐ CSOs/SSOs/OUTFALLS

CJ RECREATION

POOL: ☐ >100ft² ☐ >3ft

DJ MAINTENANCE

- ☐ PUBLIC / PRIVATE / BOTH / NA ☐ ACTIVE / HISTORIC / BOTH / NA ☐ YOUNG-SUCCESSION-OLD ☐ SPRAY / SNAG / REMOVED ☐ MODIFIED / DIPPED OUT / NA ☐ LEVEED / ONE SIDED ☐ RELOCATED / CUTOFFS ☐ MOVING-BEDLOAD-STABLE ☐ ARMOURD / SLUMPS ☐ ISLANDS / SCOURED ☐ IMPOUNDED / DESICCATED ☐ FLOOD CONTROL / DRAINAGE

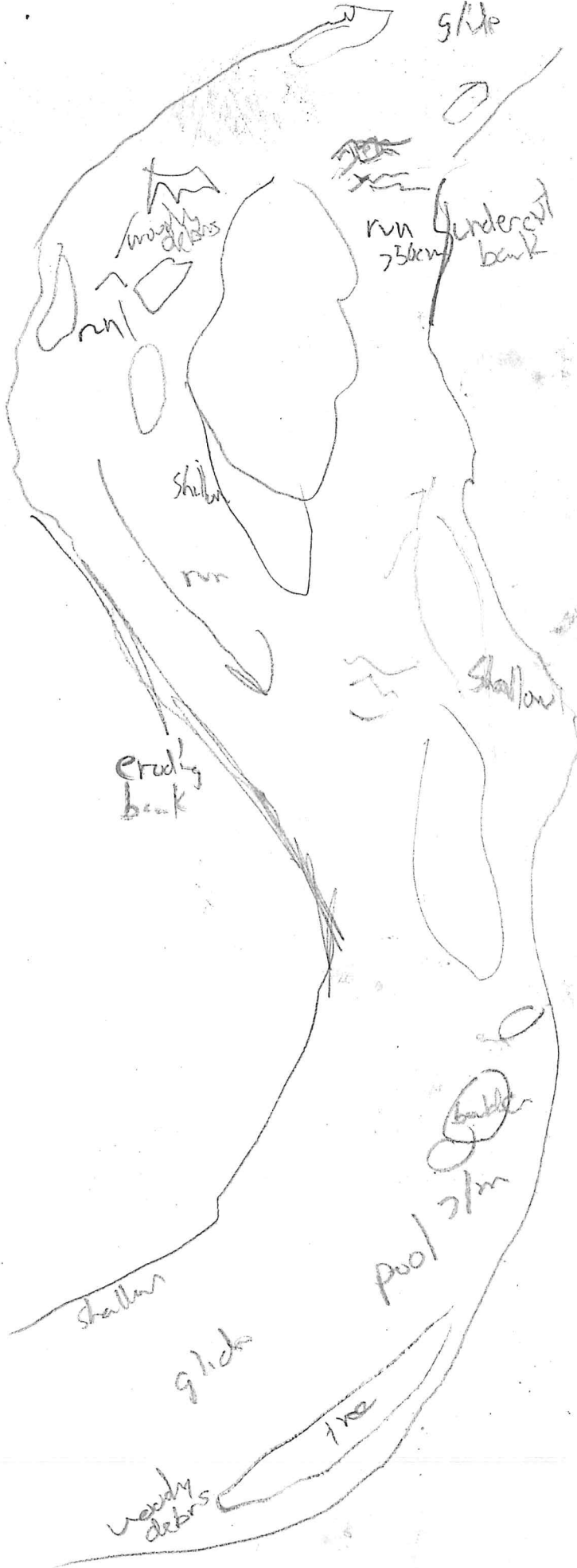
EJ ISSUES

- ☐ WWTP / CSO / NPDES / INDUSTRY ☐ HARDENED / URBAN / DIRT&GRIME ☐ CONTAMINATED / LANDFILL ☐ BMPs-CONSTRUCTION-SEDIMENT ☐ LOGGING / IRRIGATION / COOLING ☐ BANK / EROSION / SURFACE ☐ FALSE BANK / MANURE / LAGOON ☐ WASH H₂O / TILE / H₂O TABLE ☐ ACID / MINE / QUARRY / FLOW ☐ NATURAL / WETLAND / STAGNANT ☐ PARK / GOLF / LAWN / HOME ☐ ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- ☐ $\bar{x}$ width ☐ $\bar{x}$ depth ☐ max. depth ☐ $\bar{x}$ bankfull width ☐ bankfull $\bar{x}$ depth ☐ W/D ratio ☐ bankfull max. depth ☐ floodprone $\bar{x}^2$ width ☐ entrench. ratio ☐ Legacy Tree:

Stream Drawing:



Stream & Location: Cuyahoga R Head of Navigation ChannelRM: 05.90 Date: 07/09/24

Seth Hottem Shawn Robinson

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: 019-001-000 STORET #: F01W43 Lat./Long.: 41.4651 / 81.6738Office verified location ☐1] **SUBSTRATE** Check ONLY Two substrate TYPE BOXES;
estimate % or note every type present

Check ONE (Or 2 & average)

- | BEST TYPES | POOL RIFFLE | OTHER TYPES | POOL RIFFLE |
|---|-------------------------------------|--|-------------------------------------|
| ☐ BLDR /SLABS [10] | ☐ | ☐ HARDPAN [4] | ☐ |
| ☐ BOULDER [9] | ☒ | ☐ DETRITUS [3] | ☒ |
| ☐ COBBLE [8] | ☐ | ☒ MUCK [2] | ☒ |
| ☐ GRAVEL [7] | ☒ | ☒ SILT [2] | ☒ |
| ☐ SAND [6] | ☒ | ☐ ARTIFICIAL [0] | ☒ |
| ☐ BEDROCK [5] | ☐ | | |

(Score natural substrates; ignore

NUMBER OF BEST TYPES: ☐ 4 or more [2] sludge from point-sources)

Comments

☒ 3 or less [0]

- | ORIGIN |
|---|
| ☐ LIMESTONE [1] |
| ☒ TILLS [1] |
| ☐ WETLANDS [0] |
| ☐ HARDPAN [0] |
| ☐ SANDSTONE [0] |
| ☐ RIP/RAP [0] |
| ☐ LACUSTURINE [0] |
| ☐ SHALE [-1] |
| ☐ COAL FINES [-2] |

SILT

EMBEDDEDNESS

- | QUALITY |
|--|
| ☒ HEAVY [-2] |
| ☐ MODERATE [-1] |
| ☐ NORMAL [0] |
| ☐ FREE [1] |
| ☒ EXTENSIVE [-2] |
| ☐ MODERATE [-1] |
| ☐ NORMAL [0] |
| ☐ NONE [1] |

Substrate

Maximum 20

2] **INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

- | | | |
|--|--|---|
| ☒ UNDERCUT BANKS [1] | ☒ POOLS > 70cm [2] | ☐ OXBOWS, BACKWATERS [1] |
| ☒ OVERHANGING VEGETATION [1] | ☐ ROOTWADS [1] | ☐ AQUATIC MACROPHYTES [1] |
| ☐ SHALLOWS (IN SLOW WATER) [1] | ☐ BOULDERS [1] | ☐ LOGS OR WOODY DEBRIS [1] |
| ☐ ROOTMATS [1] | | |

- | |
|---|
| ☐ EXTENSIVE >75% [11] |
| ☐ MODERATE 25-75% [7] |
| ☒ SPARSE 5-<25% [3] |
| ☐ NEARLY ABSENT <5% [1] |

Comments

Cover
Maximum 203] **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

- | SINUOSITY | DEVELOPMENT | CHANNELIZATION | STABILITY |
|---|--|---|--|
| ☐ HIGH [4] | ☐ EXCELLENT [7] | ☐ NONE [6] | ☒ HIGH [3] |
| ☐ MODERATE [3] | ☐ GOOD [5] | ☐ RECOVERED [4] | ☐ MODERATE [2] |
| ☒ LOW [2] | ☐ FAIR [3] | ☐ RECOVERING [3] | ☐ LOW [1] |
| ☐ NONE [1] | ☒ POOR [1] | ☒ RECENT OR NO RECOVERY [1] | |

Comments

Channel
Maximum 204] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

- | EROSION | RIPARIAN WIDTH | FLOOD PLAIN QUALITY |
|---|---|---|
| ☒ NONE / LITTLE [3] | ☐ WIDE > 50m [4] | ☐ FOREST, SWAMP [3] |
| ☐ MODERATE [2] | ☐ MODERATE 10-50m [3] | ☐ SHRUB OR OLD FIELD [2] |
| ☐ HEAVY / SEVERE [1] | ☐ NARROW 5-10m [2] | ☐ RESIDENTIAL, PARK, NEW FIELD [1] |
| | ☐ VERY NARROW < 5m [1] | ☐ FENCED PASTURE [1] |
| | ☒ NONE [0] | ☐ OPEN PASTURE, ROWCROP [0] |

Indicate predominant land use(s)
past 100m riparian.Riparian
Maximum 10

Comments

5] **POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

- | | |
|--|---|
| ☒ > 1m [6] | ☐ POOL WIDTH > RIFFLE WIDTH [2] |
| ☐ 0.7-<1m [4] | ☒ POOL WIDTH = RIFFLE WIDTH [1] |
| ☐ 0.4-<0.7m [2] | ☐ POOL WIDTH < RIFFLE WIDTH [0] |
| ☐ 0.2-<0.4m [1] | |
| ☐ < 0.2m [0] | |

- | | |
|--|--|
| ☐ TORRENTIAL [-1] | ☒ SLOW [1] |
| ☐ VERY FAST [1] | ☐ INTERSTITIAL [-1] |
| ☐ FAST [1] | ☐ INTERMITTENT [-2] |
| ☐ MODERATE [1] | ☐ EDDIES [1] |

Indicate for reach - pools and riffles.

Comments

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)Pool /
Current
Maximum 12Indicate for functional riffles; Best areas must be large enough to support a population
of riffle-obligate species:

Check ONE (Or 2 & average).

☒ NO RIFFLE [metric=0]

- | RIFFLE DEPTH | RUN DEPTH | RIFFLE / RUN SUBSTRATE | RIFFLE / RUN EMBEDDEDNESS |
|--|---|---|--|
| ☐ BEST AREAS > 10cm [2] | ☐ MAXIMUM > 50cm [2] | ☐ STABLE (e.g., Cobble, Boulder) [2] | ☐ NONE [2] |
| ☐ BEST AREAS 5-10cm [1] | ☐ MAXIMUM < 50cm [1] | ☐ MOD. STABLE (e.g., Large Gravel) [1] | ☐ LOW [1] |
| ☐ BEST AREAS < 5cm [metric=0] | | ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0] | ☐ MODERATE [0] |
| | | | ☒ EXTENSIVE [-1] |

Riffle /
Run
Maximum 86] **GRADIENT** (0.10 ft/mi)
DRAINAGE AREA
(787 mi²)

- | |
|--|
| ☒ VERY LOW - LOW [2-4] |
| ☐ MODERATE [6-10] |
| ☐ HIGH - VERY HIGH [10-6] |

%POOL:

%GLIDE:

Gradient
Maximum 10

%RUN:

%RIFFLE:

Stream & Location: Cuyahoga R, mid-Nav & GLRI Habitat rest.

RM: 02.75 Date: 7/18/24

Scorers Full Name & Affiliation: J. Telep* Northeast Ohio Regional Sewer District

River Code: 019-001-000 STORET #: 200005 Lat./Long.: 41.4918 / 81.6933

Office verified location ☐

1) SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

- | BEST TYPES | POOL RIFFLE | OTHER TYPES | POOL RIFFLE |
|---|-------------------------------------|--|-------------------------------------|
| ☐ BLDR /SLABS [10] | ☒ | ☐ HARDPAN [4] | ☐ |
| ☐ BOULDER [9] | ☐ | ☐ DETRITUS [3] | ☐ |
| ☐ COBBLE [8] | ☐ | ☒ MUCK [2] | ☒ |
| ☐ GRAVEL [7] | ☐ | ☒ SILT [2] | ☒ |
| ☐ SAND [6] | ☐ | ☐ ARTIFICIAL [0] | ☒ |
| ☐ BEDROCK [5] | ☐ | | |

- ORIGIN
- ☐ LIMESTONE [1]
- ☐ TILLS [1]
- ☐ WETLANDS [0]
- ☐ HARDPAN [0]
- ☐ SANDSTONE [0]
- ☐ RIP/RAP [0]
- ☐ LACUSTURINE [0]
- ☐ SHALE [-1]
- ☐ COAL FINES [-2]

- QUALITY
- ☒ HEAVY [-2]
- ☐ MODERATE [-1]
- ☐ NORMAL [0]
- ☐ FREE [1]
- ☒ EXTENSIVE [-2]
- ☐ MODERATE [-1]
- ☐ NORMAL [0]
- ☐ NONE [1]

SILT

EMBEDDEDNESS



Maximum 20

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☒ 3 or less [0]

Comments

4 + 0 + 0 + -2 -2

2) INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

- | | | |
|--|--|---|
| ☐ UNDERCUT BANKS [1] | ☒ POOLS > 70cm [2] | ☐ OXBOWS, BACKWATERS [1] |
| ☒ OVERHANGING VEGETATION [1] | ☐ ROOTWADS [1] | ☒ AQUATIC MACROPHYTES [1] |
| ☒ SHALLOWS (IN SLOW WATER) [1] | ☒ BOULDERS [1] | ☐ LOGS OR WOODY DEBRIS [1] |
| ☐ ROOTMATS [1] | | |

- ☐ EXTENSIVE >75% [11]
- ☐ MODERATE 25-75% [7]
- ☒ SPARSE 5-<25% [3]
- ☐ NEARLY ABSENT <5% [1]

Comments

1 + 2 + 1 + 3 + 3

Cover
Maximum
20

3) CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

- | SINUOSITY | DEVELOPMENT | CHANNELIZATION | STABILITY |
|---|--|---|--|
| ☐ HIGH [4] | ☐ EXCELLENT [7] | ☐ NONE [6] | ☐ HIGH [3] |
| ☐ MODERATE [3] | ☐ GOOD [5] | ☐ RECOVERED [4] | ☒ MODERATE [2] |
| ☒ LOW [2] | ☐ FAIR [3] | ☐ RECOVERING [3] | ☐ LOW [1] |
| ☐ NONE [1] | ☒ POOR [1] | ☒ RECENT OR NO RECOVERY [1] | |

Comments

2 + 1 + 1 + 2

Channel
Maximum
20

4) BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

- | EROSION | RIPARIAN WIDTH | FLOOD PLAIN QUALITY | CONSERVATION TILLAGE |
|---|---|---|---|
| ☒ NONE / LITTLE [3] | ☐ WIDE > 50m [4] | ☐ FOREST, SWAMP [3] | ☒ URBAN OR INDUSTRIAL [0] |
| ☐ MODERATE [2] | ☐ MODERATE 10-50m [3] | ☐ SHRUB OR OLD FIELD [2] | ☐ MINING / CONSTRUCTION [0] |
| ☐ HEAVY / SEVERE [1] | ☐ NARROW 5-10m [2] | ☐ RESIDENTIAL, PARK, NEW FIELD [1] | |
| | ☐ VERY NARROW < 5m [1] | ☐ FENCED PASTURE [1] | |
| | ☒ NONE [0] | ☐ OPEN PASTURE, ROWCROP [0] | |

Comments

3 + 0 + 0

Indicate predominant land use(s) past 100m riparian.

Riparian
Maximum
10

5) POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

- ☒ > 1m [6]
- ☐ 0.7-<1m [4]
- ☐ 0.4-<0.7m [2]
- ☐ 0.2-<0.4m [1]
- ☐ < 0.2m [0]
- ☐ POOL WIDTH > RIFFLE WIDTH [2]
- ☒ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH < RIFFLE WIDTH [0]

- ☐ TORRENTIAL [-1]
- ☐ VERY FAST [1]
- ☐ FAST [1]
- ☐ MODERATE [1]
- ☒ SLOW [1]
- ☐ INTERSTITIAL [-1]
- ☐ INTERMITTENT [-2]
- ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential

Primary Contact

Secondary Contact

(circle one and comment on back)

Comments

6 + 1 + 1

Pool /
Current
Maximum
12

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☒ NO RIFFLE [metric=0]

- | RIFFLE DEPTH | RUN DEPTH | RIFFLE / RUN SUBSTRATE | RIFFLE / RUN EMBEDDEDNESS |
|--|---|---|--|
| ☐ BEST AREAS > 10cm [2] | ☐ MAXIMUM > 50cm [2] | ☐ STABLE (e.g., Cobble, Boulder) [2] | ☐ NONE [2] |
| ☐ BEST AREAS 5-10cm [1] | ☐ MAXIMUM < 50cm [1] | ☐ MOD. STABLE (e.g., Large Gravel) [1] | ☐ LOW [1] |
| ☐ BEST AREAS < 5cm [metric=0] | | ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0] | ☐ MODERATE [0] |
| | | | ☒ EXTENSIVE [-1] |

Comments

Riffle /
Run
Maximum
86) GRADIENT (0.10 ft/mi) ☒ VERY LOW - LOW [2-4]
DRAINAGE AREA (806 mi²) ☐ MODERATE [6-10]
☐ HIGH - VERY HIGH [10-6]%POOL: %GLIDE: 100
%RUN: %RIFFLE: Gradient
Maximum
10

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.
 One long slide RR hardened with bulkhead and rip-rap. Backwaters and shallows available behind bulkheads and bridge piers. Provided much needed shallow habitat for lotic species. Aq veg. Now growing in these shallow areas with a diverse array of habitat features (for a navigation channel). Other than the shallow habitat created by GRL, Shad (pelagic) were the predominance species throughout the rest of the zone.

AJ SAMPLED REACH

Check ALL that apply

METHOD

1st sample pass-- 2nd

☒ BOAT
☐ WADE
☐ L. LINE
☐ OTHER

DISTANCE

☒ 0.5 Km
☐ 0.2 Km
☐ 0.15 Km
☐ 0.12 Km
☐ OTHER

CLARITY

1st --sample pass-- 2nd
☐ < 20 cm
☐ 20-40 cm
☐ 40-70 cm
☒ > 70 cm/ CTB
☐ SECCHI DEPTH

meters

CANOPY

☒ > 85%- OPEN
☐ 55%-<85%
☐ 30%-<55%
☐ 10%-<30%
☐ <10%- CLOSED

CJ RECREATION

AREA DEPTH
 POOL: ☒ >100ft² ☐ >3ft

BJ AESTHETICS

☐ NUISANCE ALGAE
☐ INVASIVE MACROPHYTES
☐ EXCESS TURBIDITY
☐ DISCOLORATION
☐ FOAM/ SCUM
☐ OIL SHEEN
☒ TRASH/ LITTER
☐ NUISANCE ODOR
☐ SLUDGE DEPOSITS
☐ CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

☐ PUBLIC / PRIVATE / BOTH / NA
☐ ACTIVE / HISTORIC / BOTH / NA
☐ YOUNG-SUCCESSION-OLD
☐ SPRAY / SNAG / REMOVED
☐ MODIFIED / DIPPED OUT / NA
☐ LEVEED / ONE SIDED
☐ RELOCATED / CUTOFFS
☐ MOVING-BEDLOAD-STABLE
☒ ARMORED/ SLUMPS
☐ ISLANDS / SCOURED
☐ IMPOUNDED / DESICCATED
☐ FLOOD CONTROL / DRAINAGE

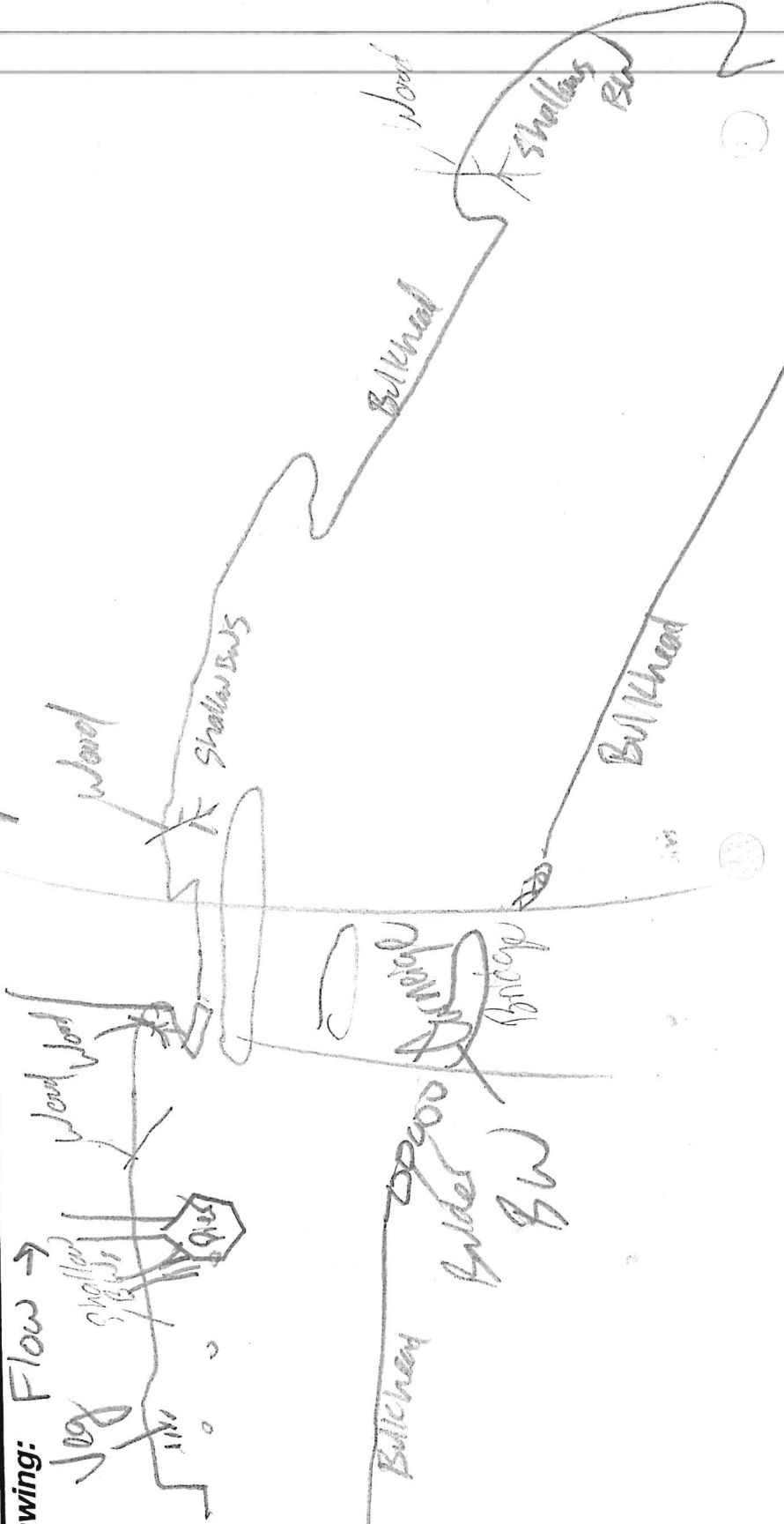
EJ ISSUES

WWTP / CSO / NPDES / INDUSTRY
 HARDENED / URBAN / DIRT & GRIME
 CONTAMINATED / LANDFILL
 BMPs-CONSTRUCTION-SEDIMENT
 LOGGING / IRRIGATION / COOLING
 BANK / EROSION / SURFACE
 FALSE BANK / MANURE / LAGOON
 WASH H₂O / TILE / H₂O TABLE
 ACID / MINE / QUARRY / FLOW
 NATURAL / WETLAND / STAGNANT
 PARK / GOLF / LAWN / HOME
 ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

☐ width
☐ depth
☐ max. depth
☐ bankfull width
☐ bankfull x depth
☐ W/D ratio
☐ bankfull max. depth
☐ floodprone x² width
☐ entrench. ratio
 Legacy Tree:

Stream Drawing:



Stream & Location: Cuyahoga R. Upstream Detroit & Superior Bridge RM: 01.20 Date: 7/18/12

JUSTIN TELEP*

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: 019-001-000 STORET #: 200002 Lat./Long.: 41.4913 / 81.7046

Office verified location ☐

1] **SUBSTRATE** Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

- | BEST TYPES | POOL RIFFLE | OTHER TYPES | POOL RIFFLE |
|--|-------------------------------------|--|-------------------------------------|
| ☐ BLDR / SLABS [10] | ☒ | ☐ HARDPAN [4] | ☐ |
| ☐ BOULDER [9] | ☒ | ☐ DETRITUS [3] | ☐ |
| ☐ COBBLE [8] | ☐ | ☒ MUCK [2] | ☒ |
| ☐ GRAVEL [7] | ☒ | ☒ SILT [2] | ☒ |
| ☐ SAND [6] | ☐ | ☐ ARTIFICIAL [0] | ☐ |
| ☐ BEDROCK [5] | ☐ | | |

- ORIGIN
- ☐ LIMESTONE [1]
☐ TILLS [1]
☐ WETLANDS [0]
☐ HARDPAN [0]
☐ SANDSTONE [0]
☐ RIP/RAP [0]
☒ LACUSTURINE [0]
☐ SHALE [-1]
☐ COAL FINES [-2]

- QUALITY
- ☒ HEAVY [-2]
☒ MODERATE [-1]
☐ NORMAL [0]
☐ FREE [1]
☒ EXTENSIVE [-2]
☐ MODERATE [-1]
☐ NORMAL [0]
☐ NONE [1]

Substrate
0.5
Maximum
20

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☒ 3 or less [0]

Comments

4 + 0 - 1.5 - 2

2] **INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

- | | | |
|---|---|---|
| ☐ UNDERCUT BANKS [1] | ☐ POOLS > 70cm [2] | ☐ OXBOWS, BACKWATERS [1] |
| ☐ OVERHANGING VEGETATION [1] | ☐ ROOTWADS [1] | ☐ AQUATIC MACROPHYTES [1] |
| ☐ SHALLOWS (IN SLOW WATER) [1] | ☐ BOULDERS [1] | ☐ LOGS OR WOODY DEBRIS [1] |
| ☐ ROOTMATS [1] | | |

- ☐ EXTENSIVE >75% [11]
☐ MODERATE 25-75% [7]
☐ SPARSE 5-<25% [3]
☒ NEARLY ABSENT <5% [1]

Comments

2 + 1 + 1 + 1

Cover
Maximum
20

3] **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

- | SINUOSITY | DEVELOPMENT | CHANNELIZATION | STABILITY |
|---|--|---|--|
| ☐ HIGH [4] | ☐ EXCELLENT [7] | ☐ NONE [6] | ☐ HIGH [3] |
| ☐ MODERATE [3] | ☐ GOOD [5] | ☐ RECOVERED [4] | ☒ MODERATE [2] |
| ☒ LOW [2] | ☐ FAIR [3] | ☐ RECOVERING [3] | ☒ LOW [1] |
| ☐ NONE [1] | ☒ POOR [1] | ☒ RECENT OR NO RECOVERY [1] | |

Comments

2 + 1 + 1 + 1.5

Channel
Maximum
20

4] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

- | EROSION | RIPARIAN WIDTH | FLOOD PLAIN QUALITY | CONSERVATION TILLAGE |
|--|---|---|--|
| ☐ NONE / LITTLE [3] | ☐ WIDE > 50m [4] | ☐ FOREST, SWAMP [3] | ☐ URBAN OR INDUSTRIAL [0] |
| ☒ MODERATE [2] | ☐ MODERATE 10-50m [3] | ☐ SHRUB OR OLD FIELD [2] | ☐ MINING / CONSTRUCTION [0] |
| ☐ HEAVY / SEVERE [1] | ☐ NARROW 5-10m [2] | ☐ RESIDENTIAL, PARK, NEW FIELD [1] | |
| | ☐ VERY NARROW < 5m [1] | ☐ FENCED PASTURE [1] | |
| | ☒ NONE [0] | ☐ OPEN PASTURE, ROWCROP [0] | |

Comments

2.5 + 0 + 0

Indicate predominant land use(s) past 100m riparian.

Riparian
Maximum
10

5] **POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

- ☒ > 1m [6]
☐ 0.7-<1m [4]
☐ 0.4-<0.7m [2]
☐ 0.2-<0.4m [1]
☐ < 0.2m [0]

- ☐ POOL WIDTH > RIFFLE WIDTH [2]
☒ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE WIDTH [0]

- ☐ TORRENTIAL [-1] ☒ SLOW [1]
☐ VERY FAST [1] ☐ INTERSTITIAL [-1]
☐ FAST [1] ☐ INTERMITTENT [-2]
☐ MODERATE [1] ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Comments

6 + 1 + 1

Pool / Current
Maximum
12

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☒ NO RIFFLE [metric=0]

RIFFLE DEPTH

RUN DEPTH

RIFFLE / RUN SUBSTRATE

RIFFLE / RUN EMBEDDEDNESS

- ☐ BEST AREAS > 10cm [2]
☐ BEST AREAS 5-10cm [1]
☐ BEST AREAS < 5cm [metric=0]

- ☐ MAXIMUM > 50cm [2]
☐ MAXIMUM < 50cm [1]

- ☐ STABLE (e.g., Cobble, Boulder) [2]
☐ MOD. STABLE (e.g., Large Gravel) [1]
☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

- ☐ NONE [2]
☐ LOW [1]
☐ MODERATE [0]
☐ EXTENSIVE [-1]

Riffle / Run
Maximum
8

Comments

6] **GRADIENT** (0.10 ft/mi)
DRAINAGE AREA
 (807 mi²)

- ☒ VERY LOW - LOW [2-4]
☐ MODERATE [6-10]
☐ HIGH - VERY HIGH [10-6]

%POOL:

%GLIDE:

100

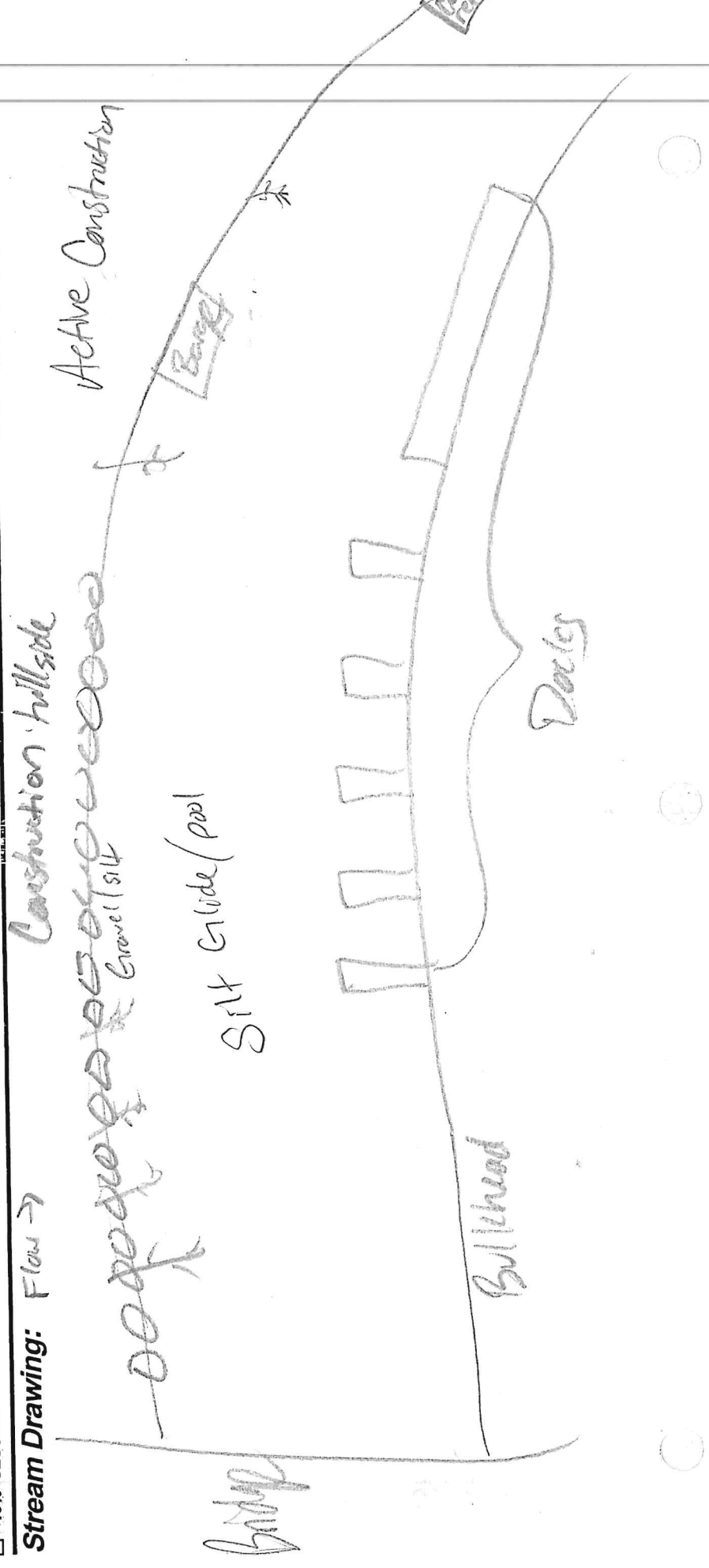
%RUN:

%RIFFLE:

Gradient
Maximum
10

Comment RE: Reach consistency? Is reach typical of stream? Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.
 One, 500M long glide. Armored steel breakwall on river right for the entire reach. River left is a combination of gravel and boulder with a thick silt layer. Active construction ongoing on RL - right-hand bank bank stabilization. No shallows or refugia for any cover-oriented fish. Oil spill observed from construction barge on RL. They were working on cleaning it up. Decks on RR deep and do not provide much habitat. The low-water zone.

AJ SAMPLED REACH Check ALL that apply METHOD ☒ BOAT ☐ WADE ☐ L LINE ☐ OTHER DISTANCE ☒ 0.5 Km ☐ 0.2 Km ☐ 0.15 Km ☐ 0.12 Km ☐ OTHER CLARITY 1st sample pass-- 2nd ☐ < 20 cm ☐ 20-40 cm ☒ 40-70 cm ☐ > 70 cm/ CTB ☐ SECCHI DEPTH meters CANOPY ☒ > 85% - OPEN ☐ 55% - < 85% ☐ 30% - < 55% ☐ 10% - < 30% ☐ < 10% - CLOSED	BJ AESTHETICS ☐ NUISANCE ALGAE ☐ INVASIVE MACROPHYTES ☐ EXCESS TURBIDITY ☐ DISCOLORATION ☐ FOAM / SCUM ☐ OIL SHEEN ☐ TRASH / LITTER ☐ NUISANCE ODOR ☐ SLUDGE DEPOSITS ☐ CSOs/SSOs/OUTFALLS POOL: ☐ > 100R2 ☐ > 3ft	DJ MAINTENANCE PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA YOUNG-SUCCESSION-OLD SPRAY / SNAG / REMOVED MODIFIED / DIPPED OUT / NA LEVEED / ONE-SIDED RELOCATED / CUTOFFS MOVING-BEDLOAD-STABLE ARMORED SLUMPS ISLANDS / SCOURED IMPOUNDED / DESICCATED FLOOD CONTROL / DRAINAGE	EJ ISSUES WWTP / CSO / NPDES / INDUSTRY HARDENED / URBAN / DIRT & GRIME CONTAMINATED / LANDFILL BMPs-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING BANK / EROSION / SURFACE FALSE BANK / MANURE / LAGOON WASH H ₂ O / TILE / H ₂ O TABLE ACID / MINE / QUARRY / FLOW NATURAL / WETLAND / STAGNANT PARK / GOLF / LAWN / HOME ATMOSPHERE / DATA PAUCITY	FJ MEASUREMENTS x width x depth max. depth x bankfull width bankfull x depth W/D ratio bankfull max. depth floodprone x ² width entrench. ratio Legacy Tree:
--	---	---	---	--



Stream & Location: Cuyahoga River at mouth

RM: 0.20 Date: 7/23/24

Mark Matteson

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: 19-001-000 STORET #: F01A64 Lat./Long.: 41.5032 181.7116

Office verified location ☐1] SUBSTRATE Check ONLY Two substrate TYPE BOXES;
estimate % or note every type present

Check ONE (Or 2 & average)

- | BEST TYPES | POOL RIFFLE | OTHER TYPES | POOL RIFFLE |
|--|-------------------------------------|--|-------------------------------------|
| ☐ BLDR / SLABS [10] | ☒ | ☐ HARDPAN [4] | ☐ |
| ☐ BOULDER [9] | ☒ | ☐ DETRITUS [3] | ☐ |
| ☐ COBBLE [8] | ☐ | ☒ MUCK [2] | ☒ |
| ☐ GRAVEL [7] | ☐ | ☒ SILT [2] | ☐ |
| ☐ SAND [6] | ☒ | ☐ ARTIFICIAL [0] | ☒ |
| ☐ BEDROCK [5] | ☐ | | |

- | ORIGIN |
|---|
| ☐ LIMESTONE [1] |
| ☐ TILLS [1] |
| ☐ WETLANDS [0] |
| ☐ HARDPAN [0] |
| ☐ SANDSTONE [0] |
| ☐ RIP/RAP [0] |
| ☒ LACUSTURINE [0] |
| ☐ SHALE [-1] |
| ☐ COAL FINES [-2] |

- | QUALITY |
|--|
| ☒ HEAVY [-2] |
| ☐ MODERATE [-1] |
| ☐ NORMAL [0] |
| ☐ FREE [1] |
| ☒ EXTENSIVE [-2] |
| ☐ MODERATE [-1] |
| ☐ NORMAL [0] |
| ☐ NONE [1] |

SILT

EMBEDDEDNESS

Substrate
Maximum
20NUMBER OF BEST TYPES: ☐ 4 or more [2] sludge from point-sources) ☒ 3 or less [0]

Comments

4 + 0 + 0 - 4

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

- | | | |
|---|---|---|
| ☐ UNDERCUT BANKS [1] | ☐ POOLS > 70cm [2] | ☐ OXBOWS, BACKWATERS [1] |
| ☐ OVERHANGING VEGETATION [1] | ☐ ROOTWADS [1] | ☐ AQUATIC MACROPHYTES [1] |
| ☐ SHALLOWS (IN SLOW WATER) [1] | ☐ BOULDERS [1] | ☐ LOGS OR WOODY DEBRIS [1] |
| ☐ ROOTMATS [1] | | |

- | |
|---|
| ☐ EXTENSIVE >75% [11] |
| ☐ MODERATE 25-75% [7] |
| ☐ SPARSE 5-<25% [3] |
| ☒ NEARLY ABSENT <5% [1] |

Comments

4 + 1

Cover
Maximum
20

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

- | SINUOSITY | DEVELOPMENT | CHANNELIZATION | STABILITY |
|--|--|---|--|
| ☐ HIGH [4] | ☐ EXCELLENT [7] | ☐ NONE [6] | ☒ HIGH [3] |
| ☐ MODERATE [3] | ☐ GOOD [5] | ☐ RECOVERED [4] | ☐ MODERATE [2] |
| ☐ LOW [2] | ☐ FAIR [3] | ☐ RECOVERING [3] | ☐ LOW [1] |
| ☒ NONE [1] | ☒ POOR [1] | ☒ RECENT OR NO RECOVERY [1] | |

Comments

Channel
Maximum
20

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

- | EROSION | RIPARIAN WIDTH | FLOOD PLAIN QUALITY |
|---|---|---|
| ☒ NONE / LITTLE [3] | ☐ WIDE > 50m [4] | ☐ FOREST, SWAMP [3] |
| ☐ MODERATE [2] | ☐ MODERATE 10-50m [3] | ☐ SHRUB OR OLD FIELD [2] |
| ☐ HEAVY / SEVERE [1] | ☐ NARROW 5-10m [2] | ☐ RESIDENTIAL, PARK, NEW FIELD [1] |
| | ☐ VERY NARROW < 5m [1] | ☐ FENCED PASTURE [1] |
| | ☒ NONE [0] | ☐ OPEN PASTURE, ROWCROP [0] |

Indicate predominant land use(s)
past 100m riparian.

Comments

3 + 0 + 0

Riparian
Maximum
10

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

Check ONE (ONLY!)

- | |
|--|
| ☒ > 1m [6] |
| ☐ 0.7-<1m [4] |
| ☐ 0.4-<0.7m [2] |
| ☐ 0.2-<0.4m [1] |
| ☐ < 0.2m [0] |

CHANNEL WIDTH

Check ONE (Or 2 & average)

- | |
|---|
| ☐ POOL WIDTH > RIFFLE WIDTH [2] |
| ☒ POOL WIDTH = RIFFLE WIDTH [1] |
| ☐ POOL WIDTH < RIFFLE WIDTH [0] |

CURRENT VELOCITY

Check ALL that apply

- | | |
|--|--|
| ☐ TORRENTIAL [-1] | ☒ SLOW [1] |
| ☐ VERY FAST [1] | ☐ INTERSTITIAL [-1] |
| ☐ FAST [1] | ☐ INTERMITTENT [-2] |
| ☐ MODERATE [1] | ☐ EDDIES [1] |

Indicate for reach - pools and riffles.

Recreation Potential

Primary Contact

Secondary Contact

(circle one and comment on back)

Comments

6 + 1 + 1

Pool /
Current
Maximum
12

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☒ NO RIFFLE [metric=0]

- | RIFFLE DEPTH | RUN DEPTH | RIFFLE / RUN SUBSTRATE | RIFFLE / RUN EMBEDDEDNESS |
|--|---|---|--|
| ☐ BEST AREAS > 10cm [2] | ☐ MAXIMUM > 50cm [2] | ☐ STABLE (e.g., Cobble, Boulder) [2] | ☐ NONE [2] |
| ☐ BEST AREAS 5-10cm [1] | ☐ MAXIMUM < 50cm [1] | ☐ MOD. STABLE (e.g., Large Gravel) [1] | ☐ LOW [1] |
| ☐ BEST AREAS < 5cm [metric=0] | | ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0] | ☐ MODERATE [0] |
| | | | ☒ EXTENSIVE [-1] |

Comments

Riffle /
Run
Maximum
86] GRADIENT (0.10 ft/mi) ☒ VERY LOW - LOW [2-4]
DRAINAGE AREA (813 mi²) ☐ MODERATE [6-10]
☐ HIGH - VERY HIGH [10-6]%POOL: %GLIDE: 100
%RUN: %RIFFLE: Gradient
Maximum
10

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

AJ SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
☐ WADE
☐ L. LINE
☐ OTHER

DISTANCE

- ☐ 0.5 Km
☐ 0.2 Km
☐ 0.15 Km
☐ 0.12 Km
☐ OTHER

CLARITY

- 1st sample pass-- 2nd
☐ < 20 cm
☐ 20-40 cm
☐ 40-70 cm
☐ > 70 cm/ CTB
☐ SECCHI DEPTH

meters

CANOPY

- ☐ > 85%- OPEN
☐ 55%-<85%
☐ 30%-<55%
☐ 10%-<30%
☐ <10%- CLOSED

CJ RECREATION

POOL: ☐ >100ft2 ☐ >3ft

BJAESTHETICS

- ☐ NUISANCE ALGAE
☐ INVASIVE MACROPHYTES
☐ EXCESS TURBIDITY
☐ DISCOLORATION
☐ FOAM / SCUM
☐ OIL SHEEN
☐ TRASH / LITTER
☐ NUISANCE ODOR
☐ SLUDGE DEPOSITS
☐ CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- ☐ PUBLIC / PRIVATE / BOTH / NA
☐ ACTIVE / HISTORIC / BOTH / NA
☐ YOUNG-SUCCESSION-OLD
☐ SPRAY / SNAG / REMOVED
☐ MODIFIED / DIPPED OUT / NA
☐ LEVEED / ONE SIDED
☐ RELOCATED / CUTOFFS
☐ MOVING-BEDLOAD-STABLE
☐ ARMoured / SLUMPS
☐ ISLANDS / SCOURED
☐ IMPOUNDED / DESICCATED
☐ FLOOD CONTROL / DRAINAGE

EJ ISSUES

- WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H₂O / TILE / H₂O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- ☐ width
☐ depth
max. depth
☐ bankfull width
☐ bankfull x depth
W/D ratio
☐ bankfull max. depth
☐ floodprone x width
☐ entrench. ratio
Legacy Tree:

Stream Drawing:

