

Stream & Location: Abram Creek Ust of RR Track, west of Plant Lane RM: 3.72 Date: 8/30/19

Scorers Full Name & Affiliation: Matteson Northeast Ohio Regional Sewer District

River Code: 13-002-000 STORET #: 501760 Lat./Long.: 41.3915/81.8368 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES: BLDR /SLABS [10], BOULDER [9], COBBLE [8], GRAVEL [7], SAND [6], BEDROCK [5]. OTHER TYPES: HARDPAN [4], DETRITUS [3], MUCK [2], SILT [2], ARTIFICIAL [0]. 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

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. AMOUNT: EXTENSIVE >75% [11], MODERATE 25-75% [7], SPARSE 5-<25% [3], NEARLY ABSENT <5% [1]. UNDERCUT BANKS [1], OVERHANGING VEGETATION [1], SHALLOWS (IN SLOW WATER) [1], ROOTMATS [1]. POOLS > 70cm [2], ROOTWADS [1], BOULDERS [1]. OXBOWS, BACKWATERS [1], AQUATIC MACROPHYTES [1], LOGS OR WOODY DEBRIS [1]. Cover Maximum 20

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY: HIGH [4], MODERATE [3], LOW [2], NONE [1]. DEVELOPMENT: EXCELLENT [7], GOOD [5], FAIR [3], POOR [1]. CHANNELIZATION: NONE [6], RECOVERED [4], RECOVERING [3], RECENT OR NO RECOVERY [1]. STABILITY: HIGH [3], MODERATE [2], LOW [1]. Channel Maximum 20

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). EROSION: NONE / LITTLE [3], MODERATE [2], HEAVY / SEVERE [1]. RIPARIAN WIDTH: WIDE > 50m [4], MODERATE 10-50m [3], NARROW 5-10m [2], VERY NARROW < 5m [1], NONE [0]. FLOOD PLAIN QUALITY: FOREST, SWAMP [3], SHRUB OR OLD FIELD [2], RESIDENTIAL, PARK, NEW FIELD [1], FENCED PASTURE [1], OPEN PASTURE, ROWCROP [0]. CONSERVATION TILLAGE [1], URBAN OR INDUSTRIAL [0], MINING / CONSTRUCTION [0]. Riparian Maximum 10

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH: > 1m [6], 0.7-<1m [4], 0.4-<0.7m [2], 0.2-<0.4m [1], < 0.2m [0]. CHANNEL WIDTH: POOL WIDTH > RIFFLE WIDTH [2], POOL WIDTH = RIFFLE WIDTH [1], POOL WIDTH < RIFFLE WIDTH [0]. CURRENT VELOCITY: TORRENTIAL [-1], VERY FAST [1], FAST [1], MODERATE [1], SLOW [1], INTERSTITIAL [-1], INTERMITTENT [-2], EDDIES [1]. Recreation Potential: Primary Contact, Secondary Contact. 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). RIFFLE DEPTH: BEST AREAS > 10cm [2], BEST AREAS 5-10cm [1], BEST AREAS < 5cm [0]. RUN DEPTH: MAXIMUM > 50cm [2], MAXIMUM < 50cm [1]. RIFFLE / RUN SUBSTRATE: STABLE [2], MOD. STABLE [1], UNSTABLE [0]. RIFFLE / RUN EMBEDDEDNESS: NONE [2], LOW [1], MODERATE [0], EXTENSIVE [-1]. Riffle / Run Maximum 8

6] GRADIENT (6.76 ft/mi) DRAINAGE AREA (7.29 mi^2) VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. % POOL: % GLIDE: % RUN: % RIFFLE: Gradient Maximum 10

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

STAGE

- 1st--sample pass--2nd
- HIGH
- UP
- NORMAL
- LOW
- DRY

DISTANCE

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

CLARITY

- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ C/T/B
- SECCHI DEPTH

meters

CANOPY

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

CJ RECREATION

- AREA DEPTH
- > 100ft
- > 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
- ARMOURED / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

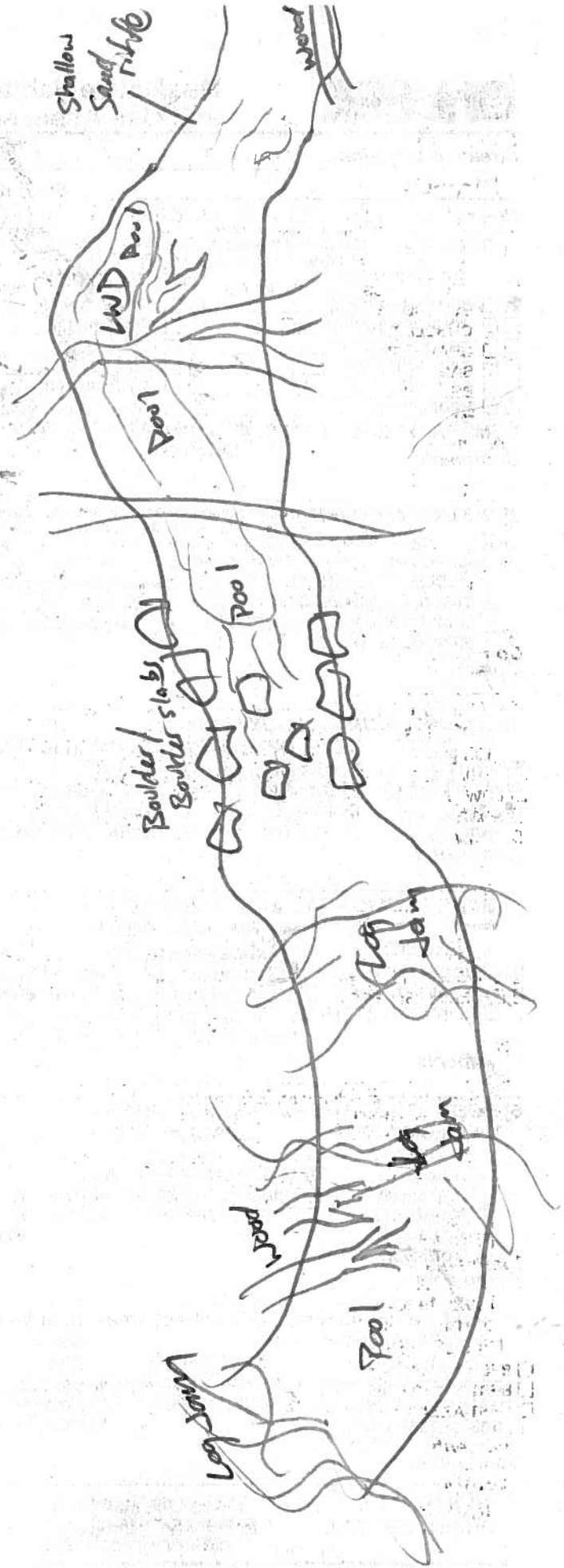
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT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

FJ MEASUREMENTS

- \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: Flow →



Stream & Location: Abram Creek Ust of Rocky River **RM:** 0.04 **Date:** 08/26/19

Seth Notham **Scorers Full Name & Affiliation:** Northeast Ohio Regional Sewer District
River Code: 13-002-000 **STORET #:** T01W79 **Lat./ Long.:** 41.4176181 -86.668 **Office verified location**

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

<p>BEST TYPES</p> <input type="checkbox"/> BLDG /SLABS [10] <input type="checkbox"/> BOULDER [9] <input type="checkbox"/> COBBLE [8] <input type="checkbox"/> GRAVEL [7] <input type="checkbox"/> SAND [6] <input checked="" type="checkbox"/> BEDROCK [5]	<p>POOL RIFFLE</p> <p>— — <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>OTHER TYPES</p> <input type="checkbox"/> HARDPAN [4] <input type="checkbox"/> DETRITUS [3] <input type="checkbox"/> MUCK [2] <input type="checkbox"/> SILT [2] <input type="checkbox"/> ARTIFICIAL [0]	<p>POOL RIFFLE</p> <p>— — <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>ORIGIN</p> <input type="checkbox"/> LIMESTONE [1] <input checked="" type="checkbox"/> TILLS [1] <input type="checkbox"/> WETLANDS [0] <input type="checkbox"/> HARDPAN [0] <input type="checkbox"/> SANDSTONE [0] <input type="checkbox"/> RIP/RAP [0] <input type="checkbox"/> LAGUSTURINE [0] <input type="checkbox"/> SHALE [-1] <input type="checkbox"/> COAL FINES [-2]	<p>QUALITY</p> <input type="checkbox"/> HEAVY [-2] <input checked="" type="checkbox"/> MODERATE [-1] <input type="checkbox"/> NORMAL [0] <input type="checkbox"/> FREE [1] <input type="checkbox"/> EXTENSIVE [-2] <input type="checkbox"/> MODERATE [-1] <input type="checkbox"/> NORMAL [0] <input type="checkbox"/> NONE [1]	<p>Substrate</p> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; width: 40px; text-align: center; margin: 0 auto;">13.5</div> <p>Maximum 20</p>
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Check ONE (Or 2 & average)

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

Comments: Sand close in % to gravel

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.

<p><u>1</u> UNDERCUT BANKS [1] <u>2</u> OVERHANGING VEGETATION [1] <u>2</u> SHALLOWS (IN SLOW WATER) [1] <u>1</u> ROOTMATS [1]</p>	<p>— POOLS > 70cm [2] <u>1</u> ROOTWADS [1] <u>1</u> BOULDERS [1]</p>	<p><u>1</u> OXBOWS, BACKWATERS [1] <u>1</u> AQUATIC MACROPHYTES [1] <u>1</u> LOGS OR WOODY DEBRIS [1]</p>	<p>AMOUNT</p> <p>Check ONE (Or 2 & average)</p> <input type="checkbox"/> EXTENSIVE >75% [11] <input type="checkbox"/> MODERATE 25-75% [7] <input checked="" type="checkbox"/> SPARSE 5-<25% [3] <input type="checkbox"/> NEARLY ABSENT <5% [1] <p>Cover</p> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; width: 40px; text-align: center; margin: 0 auto;">10</div> <p>Maximum 20</p>
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Comments:

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

<p>SINUOSITY</p> <input type="checkbox"/> HIGH [4] <input checked="" type="checkbox"/> MODERATE [3] <input type="checkbox"/> LOW [2] <input type="checkbox"/> NONE [1]	<p>DEVELOPMENT</p> <input type="checkbox"/> EXCELLENT [7] <input type="checkbox"/> GOOD [5] <input checked="" type="checkbox"/> FAIR [3] <input type="checkbox"/> POOR [1]	<p>CHANNELIZATION</p> <input checked="" type="checkbox"/> NONE [8] <input type="checkbox"/> RECOVERED [4] <input type="checkbox"/> RECOVERING [3] <input type="checkbox"/> RECENT OR NO RECOVERY [1]	<p>STABILITY</p> <input type="checkbox"/> HIGH [3] <input type="checkbox"/> MODERATE [2] <input checked="" type="checkbox"/> LOW [1]	<p>Channel</p> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; width: 40px; text-align: center; margin: 0 auto;">13</div> <p>Maximum 20</p>
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Comments:

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

<p>EROSION</p> <input type="checkbox"/> NONE / LITTLE [3] <input checked="" type="checkbox"/> MODERATE [2] <input checked="" type="checkbox"/> HEAVY / SEVERE [1]	<p>RIPARIAN WIDTH</p> <input type="checkbox"/> WIDE > 50m [4] <input type="checkbox"/> MODERATE 10-50m [3] <input type="checkbox"/> NARROW 5-10m [2] <input type="checkbox"/> VERY NARROW < 5m [1] <input type="checkbox"/> NONE [0]	<p>FLOOD PLAIN QUALITY</p> <input type="checkbox"/> FOREST, SWAMP [3] <input type="checkbox"/> SHRUB OR OLD FIELD [2] <input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1] <input type="checkbox"/> FENCED PASTURE [1] <input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	<p>CONSERVATION TILLAGE [1] <input type="checkbox"/> URBAN OR INDUSTRIAL [0] <input type="checkbox"/> MINING / CONSTRUCTION [0]</p> <p>Indicate predominant land use(s) past 100m riparian.</p> <p>Riparian</p> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; width: 40px; text-align: center; margin: 0 auto;">9</div> <p>Maximum 10</p>
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Comments: 2+4+3

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

<p>MAXIMUM DEPTH</p> <p>Check ONE (ONLY!)</p> <input type="checkbox"/> > 1m [6] <input type="checkbox"/> 0.7-<1m [4] <input checked="" type="checkbox"/> 0.4-<0.7m [2] <input type="checkbox"/> 0.2-<0.4m [1] <input type="checkbox"/> < 0.2m [0]	<p>CHANNEL WIDTH</p> <p>Check ONE (Or 2 & average)</p> <input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2] <input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1] <input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<p>CURRENT VELOCITY</p> <p>Check ALL that apply</p> <input type="checkbox"/> TORRENTIAL [-1] <input type="checkbox"/> VERY FAST [1] <input checked="" type="checkbox"/> FAST [1] <input checked="" type="checkbox"/> MODERATE [1] <p>Indicate for reach - pools and riffles.</p>	<p>Recreation Potential</p> <p><u>Primary Contact</u> Secondary Contact</p> <p>(circle one and comment on back)</p> <p>Pool / Current</p> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; width: 40px; text-align: center; margin: 0 auto;">7</div> <p>Maximum 12</p>
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Comments: 45cm deepest pool

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

<p>RIFFLE DEPTH</p> <input type="checkbox"/> BEST AREAS > 10cm [2] <input checked="" type="checkbox"/> BEST AREAS 6-10cm [1] <input type="checkbox"/> BEST AREAS < 5cm [metric=0]	<p>RUN DEPTH</p> <input type="checkbox"/> MAXIMUM > 50cm [2] <input checked="" type="checkbox"/> MAXIMUM < 50cm [1]	<p>RIFFLE / RUN SUBSTRATE</p> <input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2] <input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1] <input checked="" type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<p>RIFFLE / RUN EMBEDDEDNESS</p> <input type="checkbox"/> NONE [2] <input checked="" type="checkbox"/> LOW [1] <input type="checkbox"/> MODERATE [0] <input type="checkbox"/> EXTENSIVE [-1] <p>Riffle / Run</p> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; width: 40px; text-align: center; margin: 0 auto;">3</div> <p>Maximum 8</p>
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Comments:

6] GRADIENT (40 ft/ml) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (10.8 mi²)

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

Gradient

6

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
- STAGE**
- 1st -sample pass- 2nd
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY
- 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

CANOPY

- 1st meters cm
- 2nd cm
- > 85% - OPEN
 - 55% - 85%
 - 30% - 55%
 - 10% - 30%
 - < 10% - CLOSED

CJ RECREATION

- AREA DEPTH POOL: >100ft? >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
- 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

- \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} width
- entrench. ratio

Legacy Tree:

Stream Drawing:

