

APPENDIX C

Baseline Stream Information

Zoom To: ▼



Policies and Notices

urvey
ewer.htm

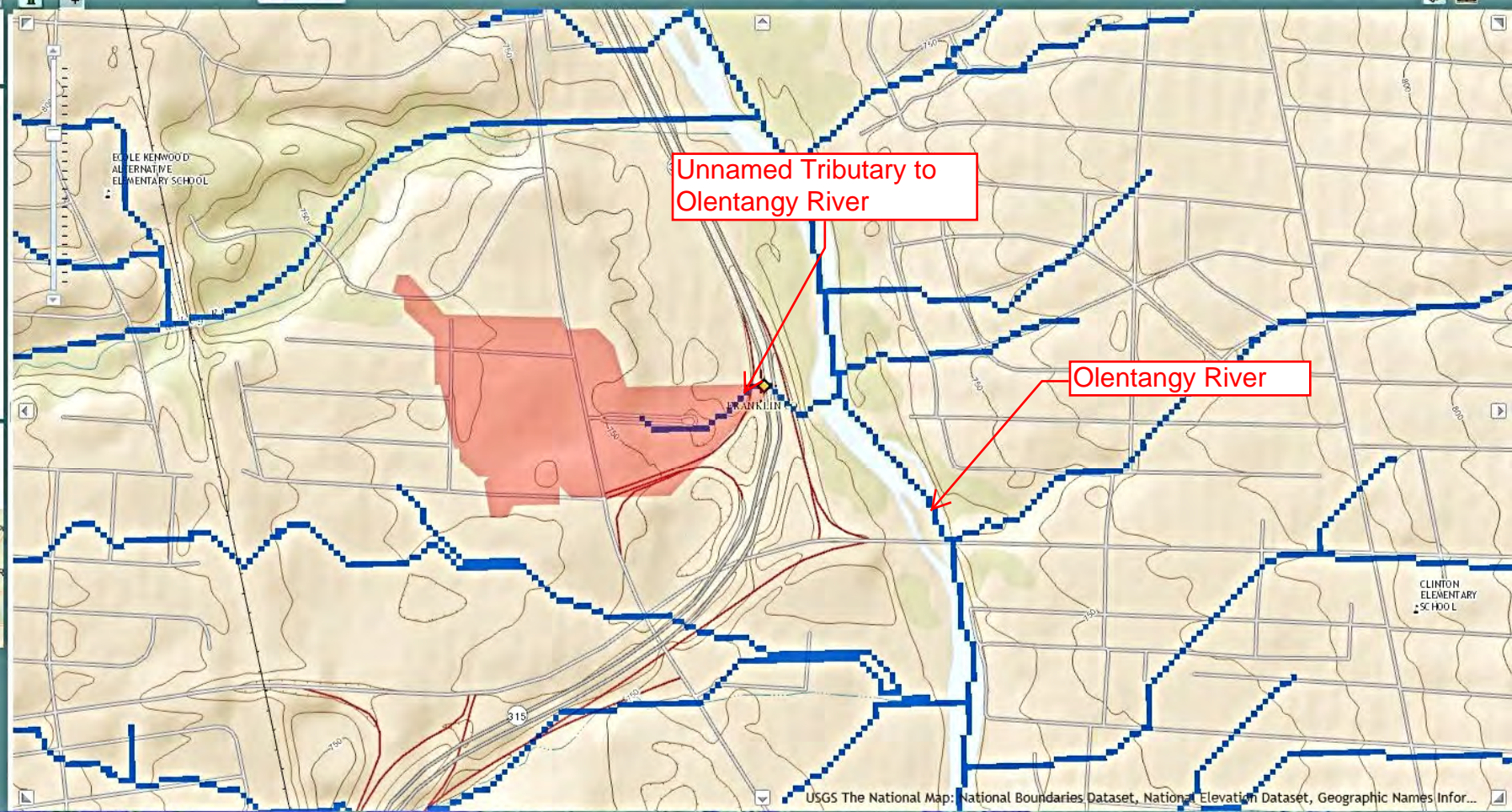
Select on a tool on the toolbar. If the icon remains depressed, click on the map to perform the desired action.

OH Map Layers

- Streamgages
- Area of limited functionality
- Ohio outline
- Stream Grid
- Study Area Bndys
- Base Layers
 - Imagery
 - Street Map
 - World Topo
 - USA Topo
 - Canadian Topo
 - TNM Topo

Scale: 1 : 9,028

Latitude: 40.03257
Longitude: -83.03692





Basin Characteristics Ungaged Site Report

Date: Fri Oct 7, 2016 12:22:09 PM GMT-4

Study Area: Ohio

NAD 1983 Latitude: 40.0342 (40 02 03)

NAD 1983 Longitude: -83.0283 (-83 01 42)

Label	Value	Units	Definition
OHREGA	1	dimensionless	Ohio Region A Indicator
OHREGC	0	dimensionless	Ohio Region C Indicator
DRNAREA	0.0452	square miles	Area that drains to a point on a stream
LAT_CENT	40.0339	decimal degrees	Latitude of Basin Centroid
CSL1085LFP	79.5	feet per mi	Change in elevation divided by length between points 10 and 85 percent of distance along the longest flow path to the basin divide, LFP from 2D grid
LONG_CENT	83.0323	decimal degrees	Longitude Basin Centroid
PRECIP	37	inches	Mean Annual Precipitation
STREAM_VARG	0.71	dimensionless	Streamflow variability index as defined in WRIR 02-4068, computed from regional grid
FOREST	8.63	percent	Percentage of area covered by forest
LC92STOR	1.54	percent	Percentage of water bodies and wetlands determined from the NLCD
LC11IMP	54.5	percent	Average percentage of impervious area determined from NLCD 2011 impervious dataset
LC11DEV	100	percent	Percentage of developed (urban) land from NLCD 2011 classes 21-24

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[Privacy](#)
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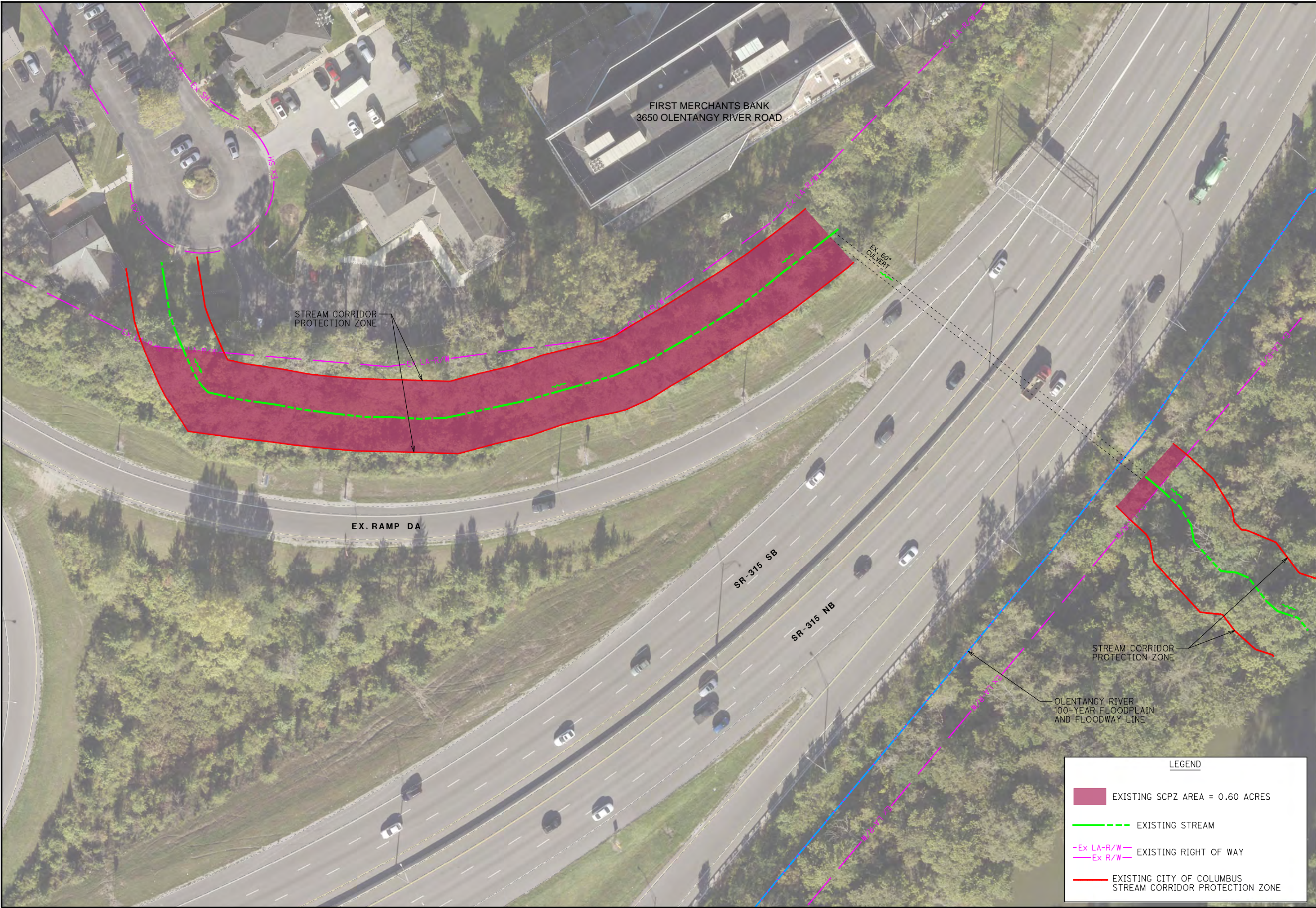
U.S. Department of the Interior | U.S. Geological Survey
 URL: http://streamstatsags.cr.usgs.gov/v3_beta/BCreport.htm
 Page Contact Information: [StreamStats Help](#)
 Page Last Modified: 01/26/2016 12:44:09 (Web2)

[Streamstats Status](#)

[News](#)



P:\PR55286\FRA\103970\Design\Roadway\Basemaps\Working\SCPZ_Alternatives\Exhibits\SCPZ_Existing Area Exhibit.dgn Sheet 4/2/2018 7:58:40 AM soroka



CALCULATED
DSS
CHECKED
KEF

0 30 60
15
HORIZONTAL
SCALE IN FEET

**SR-315 INTERCHANGE
EXISTING CONDITION**

SCPZ VARIANCE

LEGEND

- EXISTING SCPZ AREA = 0.60 ACRES
- EXISTING STREAM
- Ex LA-R/W-
- EXISTING RIGHT OF WAY
- EXISTING CITY OF COLUMBUS
STREAM CORRIDOR PROTECTION ZONE

CITY OF COLUMBUS
FRA-315-6.37
SR 315 & NORTH BROADWAY INTERCHANGE MODIFICATIONS
UNNAMED TRIBUTARY TO OELNTANGY RIVER
OCTOBER 2016
MAY 2017



Photo 1: Looking upstream at head of unnamed tributary emerging from culvert on adjacent property.



Photo 2: Looking downstream from Photo 1 location. Tributary flows into SR 315 ROW at fence.



Photo 3: Looking downstream along historically channelized segment of unnamed tributary flowing in SR 315 ROW ditch.



Photo 4: Looking upstream along historically channelized segment of unnamed tributary flowing in SR 315 ROW ditch. Typical conditions.



Photo 5: Incoming storm water pipe connected to Wetlands A & B in interchange islands.



Photo 6: Looking downstream from Photo 5 location.



Photo 7: Inlet to existing 60 inch culvert routing tributary east under SR 315. I



Photo 8: Looking downstream from 60-inch culvert outlet on east side of SR 315. From here, tributary flows to Olentangy River. Proposed new 60-inch storm culvert paralleling existing will also outfall to this location. Rock channel protection will be placed at outfalls.



Primary Headwater Habitat Evaluation Form

61

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION Unnamed Tributary (UT) to Olentangy River

SITE NUMBER _____ RIVER BASIN Olentangy DRAINAGE AREA (mi²) 0.05

LENGTH OF STREAM REACH (ft) 540 LAT. 40.03401 LONG. -83.02879 RIVER CODE _____ RIVER MILE _____

DATE 05/11/17 SCORER K. Fontaine COMMENTS Small ephemeral UT to Olentangy in SR 315 SB ROW

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> Bldr Slabs [16 pts]	0%	<input type="checkbox"/> Silt [3 pt]	6%
<input type="checkbox"/> Boulder (>256 mm) [16 pts]	0%	<input type="checkbox"/> Leaf Pack/Woody Debris [3 pts]	0%
<input type="checkbox"/> Bedrock [16 pt]	0%	<input type="checkbox"/> Fine Detritus [3 pts]	7%
<input type="checkbox"/> Cobble (65-256 mm) [12 pts]	8%	<input type="checkbox"/> Clay or Hardpan [0 pt]	0%
<input checked="" type="checkbox"/> Gravel (2-64 mm) [9 pts]	53%	<input type="checkbox"/> Muck [0 pts]	0%
<input checked="" type="checkbox"/> Sand (<2 mm) [6 pts]	20%	<input type="checkbox"/> Artificial [3 pts]	6%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **8.00%** (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES: 6**

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input checked="" type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____ **MAXIMUM POOL DEPTH (centimeters): 18**

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS _____ **AVERAGE BANKFULL WIDTH (meters): 1.50**

HHEI Metric Points

Substrate Max = 40

21
A + B

Pool Depth Max = 30

25

Bankfull Width Max=30

15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)		Conservation Tillage	
Wide >10m		Mature Forest, Wetland		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field		Urban or Industrial	
Moderate 5-10m		Residential, Park, New Field		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture		Open Pasture, Row Crop	
Narrow <5m				<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>			Mining or Construction	
None					

COMMENTS Narrow wooded corridor with dense honeysuckle understory. Office/highway beyond

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS Stream flowing but regime appears ephemeral. Exposed riffles w/ little to no flow

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - Yes No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

WWH Name: Olentangy River Distance from Evaluated Stream 0.10
 CWH Name: _____ Distance from Evaluated Stream _____
 EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Northwest Columbus NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____
 County: Franklin Township / City: Columbus

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 09/29/16 Quantity: 0.07
 Photograph Information: _____
 Elevated Turbidity? (Y/N): N Canopy (% open): 10%
 Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____
 Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____
 Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

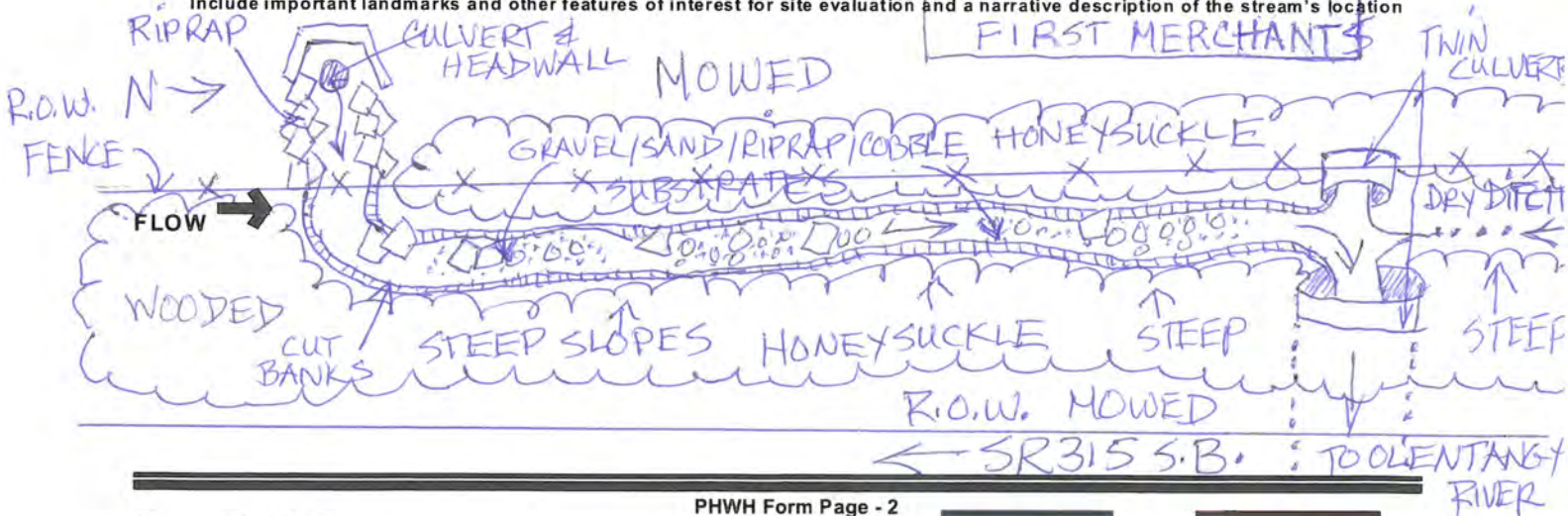
Additional comments/description of pollution impacts: _____
Stream appears to be remnant of historical stream now largely culverted. Stream course appears to have been relocated for SR 315.

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
 Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N
 Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N
 Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



HHEI SUBSTRATE CHARACTERIZATION FIELD FORM (ZIG ZAG METHOD)

Project Site: SR 315 & N. Broadway Interchange Improvements

River/Stream: UT to Olentangy River

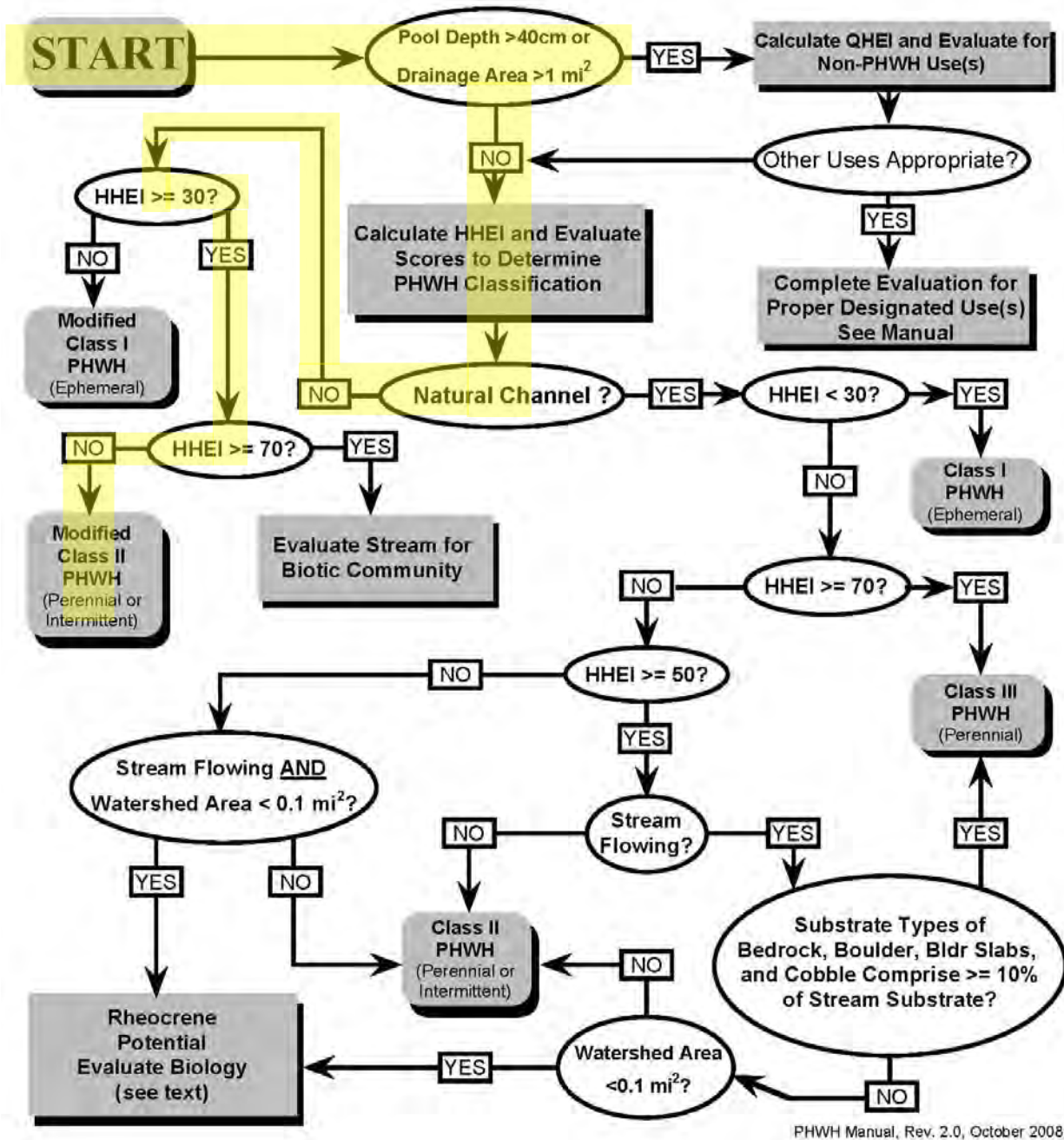
Investigator(s): Katherine E. Fontaine, PWS

Location (Lat/Long): 40.03401_N -83.02879 W

Date: 5/11/17

Particle Size (mm)	Dry Channel	Wetted Channel		Total Wetted Channel	Percent Wetted Channel	Percent Cumulative
		Riffle	Pool			
Bedrock		0	0	0	0	0
Boulder >256 mm		0	0	0	0	0
Large Cobble (129-256 mm)		0	0	0	0	0
Small Cobble (65-128 mm)		4	4	8	8	8
V. Coarse Gravel (33-64 mm)		9	2	11	11	19
Coarse Gravel (17-32 mm)		10	6	16	16	35
Med. Gravel (9-16 mm)		6	7	13	13	48
Fine Gravel (5-8 mm)		0	4	4	4	52
V Fine Gravel (2-4 mm)		4	5	9	9	61
Sand (<2 mm)		5	15	20	20	81
Silt		0	6	6	6	87
Clay or Hardpan		0	0	0	0	87
Leafpack/Woody Debris		0	0	0	0	87
Fine Detritus		3	4	7	7	94
Muck		0	0	0	0	94
Artificial		5	1	6	6	100
TOTALS		46	54	100	100	100

Adapted from: *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams, Version 1.0.* Ohio Environmental Protection Agency, Division of Surface Water. September 2002.



PHWH Manual, Rev. 2.0, October 2008

Figure 15. PHWH stream classification flow chart based on HHEI scoring.
<http://www.epa.ohio.gov/portals/35/wqs/headwaters/HHEIFlowChart.pdf>