NC

Large Filing Separator Sheet

CASE NUMBER: 10-420-EL-BLN

FILE DATE: 03/31/10

SECTION: PART 2 OF 3

NUMBER OF PAGES: 170

DESCRIPTION OF DOCUMENT:

APPLICATION

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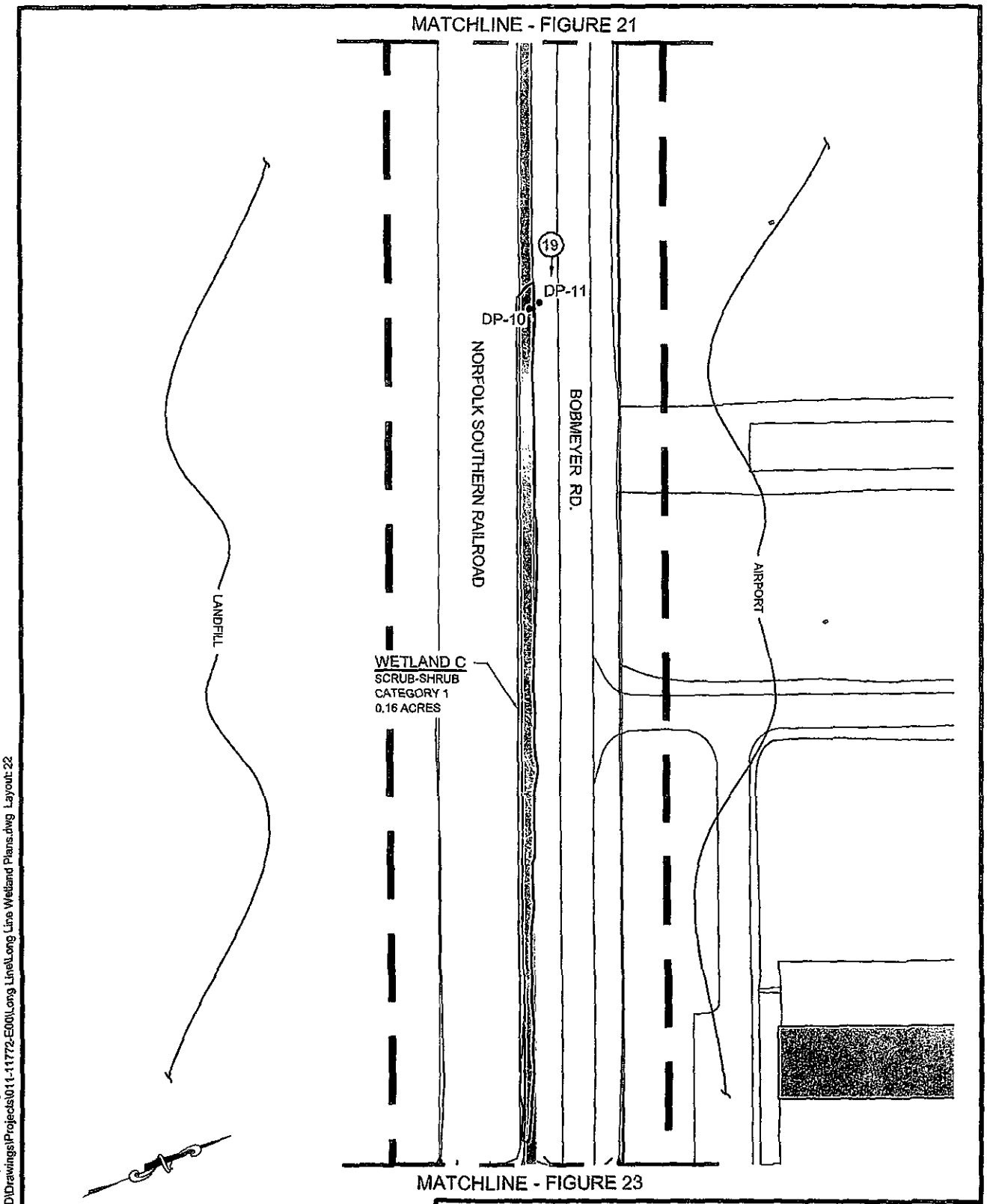
Technician DMM Date Processed 03/31/10



LEGEND

ALTERNATE ROUTE

100' RADIUS

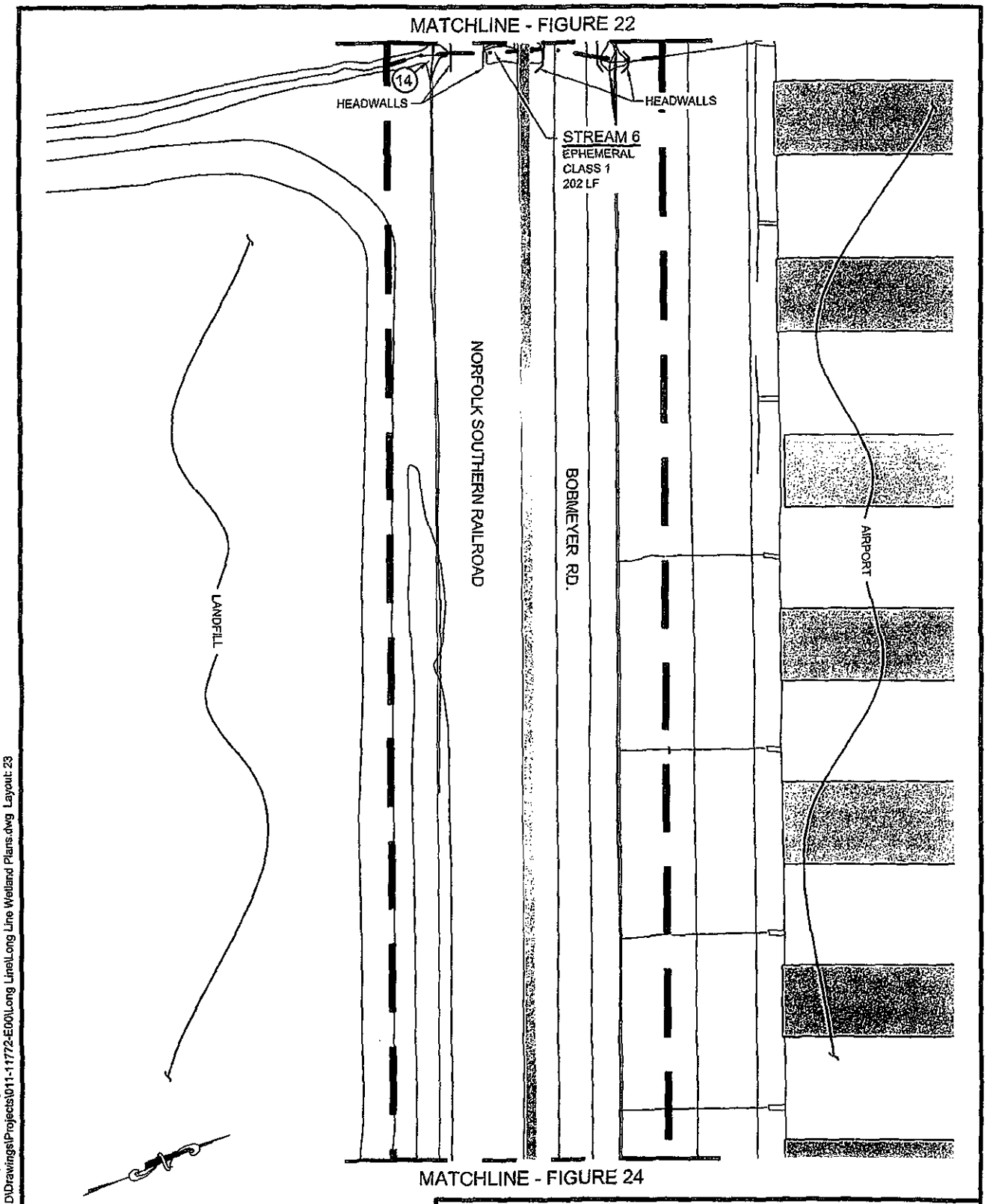
JURISDICTIONAL WATERS PLAN - FIGURE 22

138 KV LONG LINE
HAMILTON, BUTLER CO., OHIO

Project: 011-11772-E00	Drawn By: NWB
Drawing Date: 12-22-08	Approved By: MES
Last Updated: 1-8-2009	Scale: 1" = 100' 1:1

BBC&M
SOLUTIONS TO BUILD ON
Columbus (614) 793-2226
Cleveland (216) 901-1000
Cincinnati (513) 771-8471
Dayton (937) 424-1011

Images: ~ZoningFairfield.jpg ~Aerial.tif
Xrefs: ~Long Line Base.dwg ~Aerial.dwg
File Last Updated: Jan 08, 2009
Plot Info: 1-8-2009 @ 10:36am By: TMcKelvey
BBC&M Filename: H:\DEPTS\CADD\Drawings\Projects\011-11772-E00\Long Line\Long Line Wetland Plans.dwg Layout: 22



LEGEND

ALTERNATE ROUTE

100' RADIUS

JURISDICTIONAL WATERS PLAN - FIGURE 23

138 KV LONG LINE
HAMILTON, BUTLER CO., OHIO

Project: 011-11772-E00	Drawn By: NWB	
Drawing Date: 12-22-08	Approved By: MES	
Last Updated: 1-8-2009	Scale: 1" = 100'	1:1

BBCM
SOLUTIONS TO BUILD ON
Columbus (614) 793-2226
Cleveland (216) 901-1000
Cincinnati (513) 771-8471
Dayton (937) 424-1011

Images: ~ ZoningFairfield.jpg ~ Aerial.tif
Xrefs: ~Long Line Base.dwg ~ Aerial.dwg
File Last Updated: Jan 08, 2009
Plot Info: 1-8-2009 @ 10:36am By: TMcKelvey
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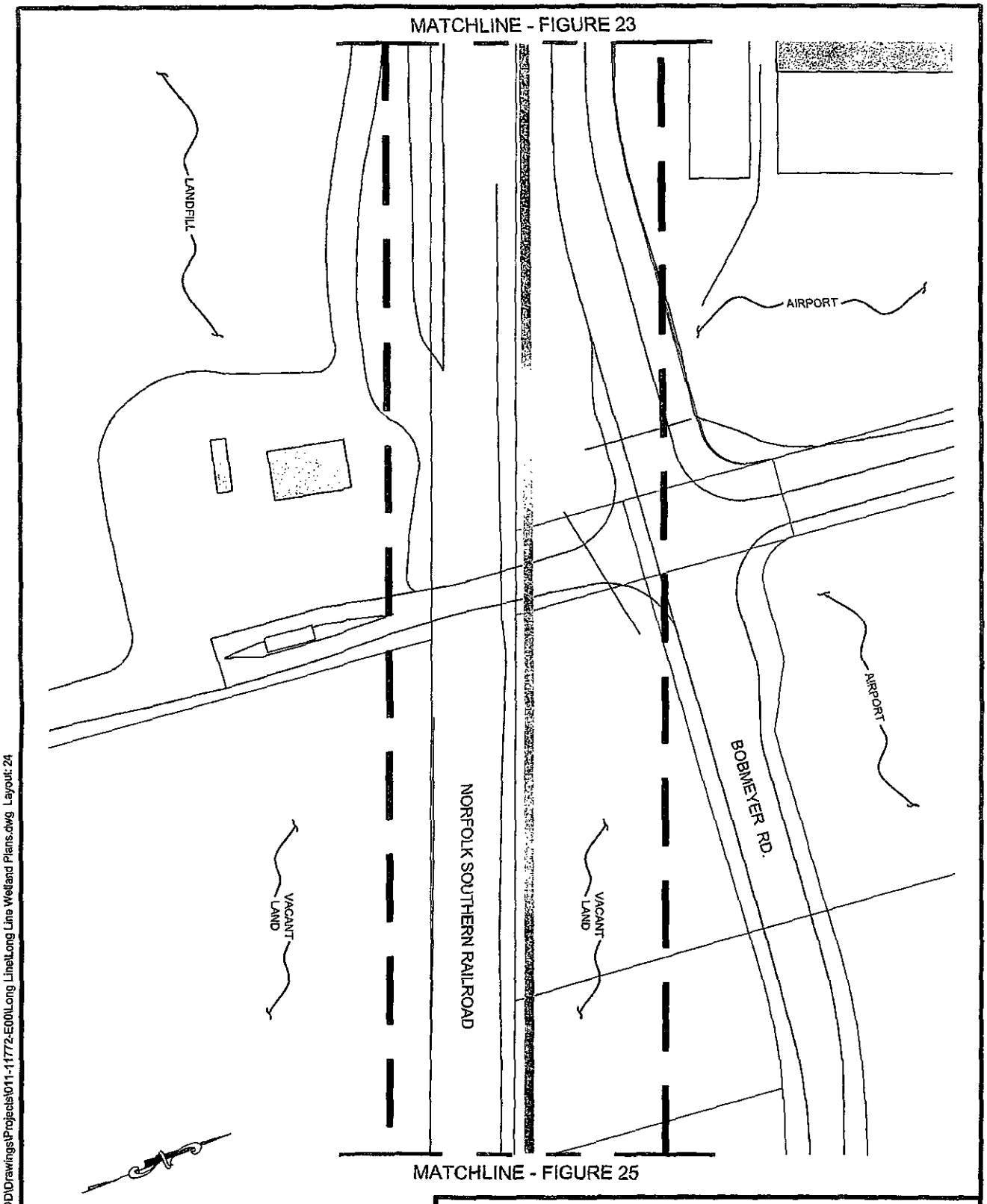

LEGEND

ALTERNATE ROUTE

100' RADIUS

JURISDICTIONAL WATERS PLAN - FIGURE 24

138 KV LONG LINE
HAMILTON, BUTLER CO., OHIO

Project: 011-11772-E00	Drawn By: NWB
Drawing Date: 12-22-08	Approved By: MES
Last Updated: 1-8-2009	Scale: 1" = 100' 1:1

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SOLUTIONS TO BUILD ON
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Cleveland (216) 901-1000
Cincinnati (513) 771-8471
Dayton (937) 424-1011

Images: ~ZoningFairfield.jpg ~Aerial.tif
Xrefs: ~Long Line Base.dwg ~Aerial.dwg
File Last Updated: Jan 08, 2009
Plot Info: 1-8-2009 @ 10:36am By: TMcKelvey
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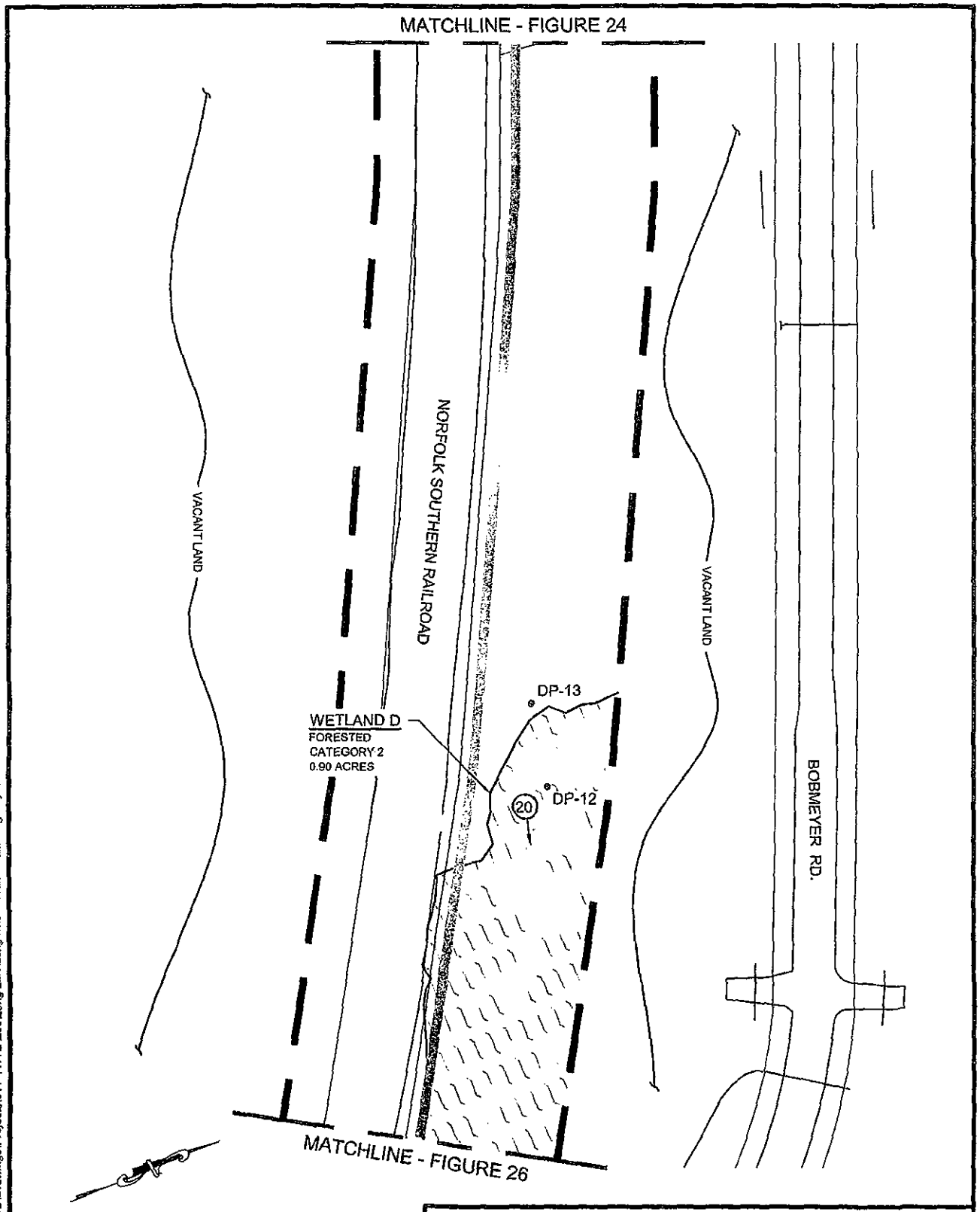

LEGEND

ALTERNATE ROUTE

100' RADIUS

JURISDICTIONAL WATERS PLAN - FIGURE 25

138 KV LONG LINE
HAMILTON, BUTLER CO., OHIO

Project: 011-11772-E00	Drawn By: NWB
Drawing Date: 12-22-08	Approved By: MES
Last Updated: 1-8-2009	Scale: 1" = 100' 1:1

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SOLUTIONS TO BUILD ON
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Cleveland (216) 901-1600
Cincinnati (513) 771-8471
Dayton (937) 424-1011

Images: ~ZoningFairfield.jpg ~Aerial.tif
Xrefs: ~Long Line Base.dwg ~Aerial.dwg
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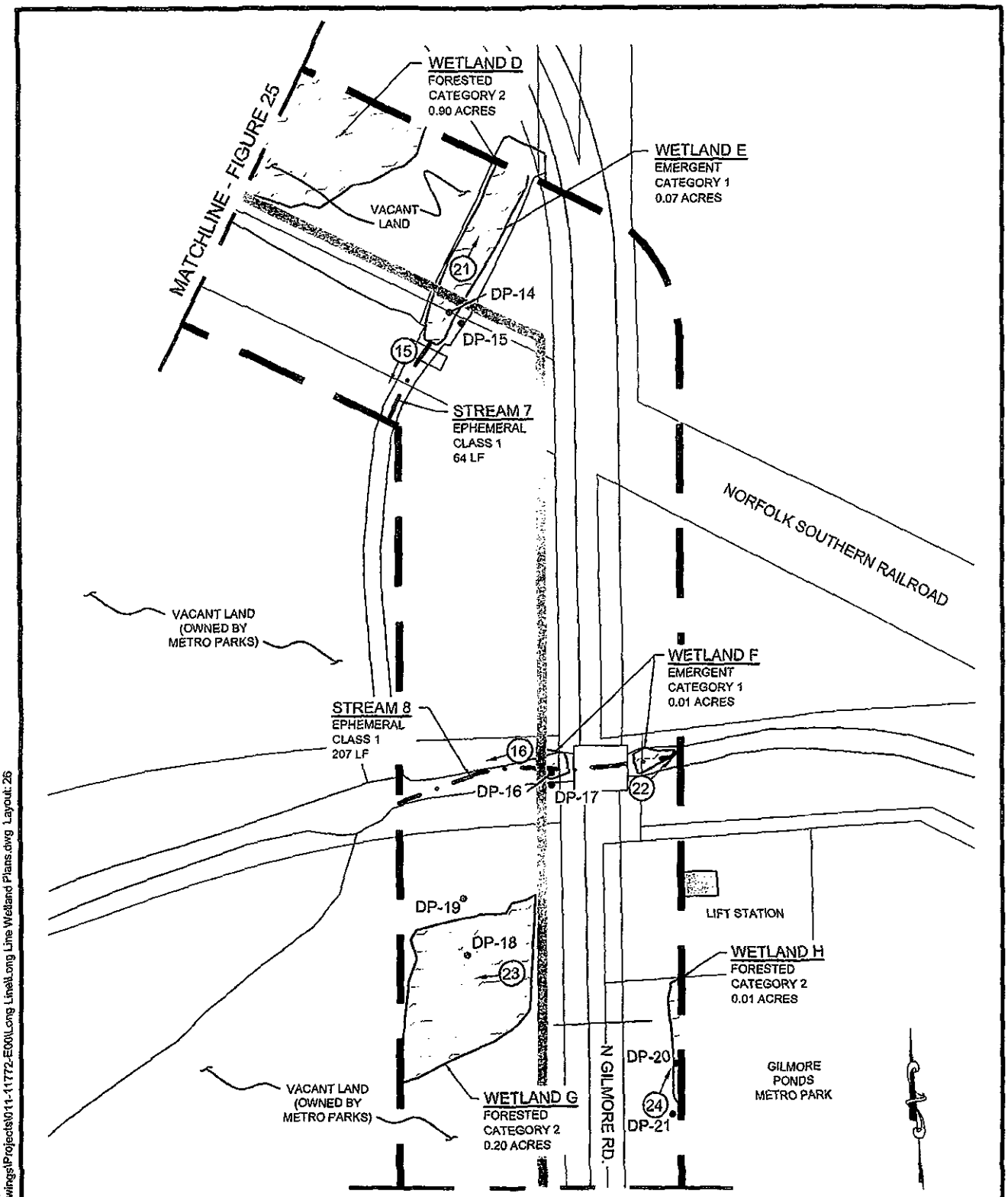

JURISDICTIONAL WATERS PLAN - FIGURE 26

138 KV LONG LINE
HAMILTON, BUTLER CO., OHIO

LEGEND

- ALTERNATE ROUTE
- 100' RADIUS
- DP-1 DATA POINT NUMBER AND LOCATION

Project: 011-11772-E00	Drawn By: NWB
Drawing Date: 12-22-08	Approved By: MES
Last Updated: 1-8-2009	Scale: 1" = 100' 1:1

BBCM
SOLUTIONS TO BUILD ON
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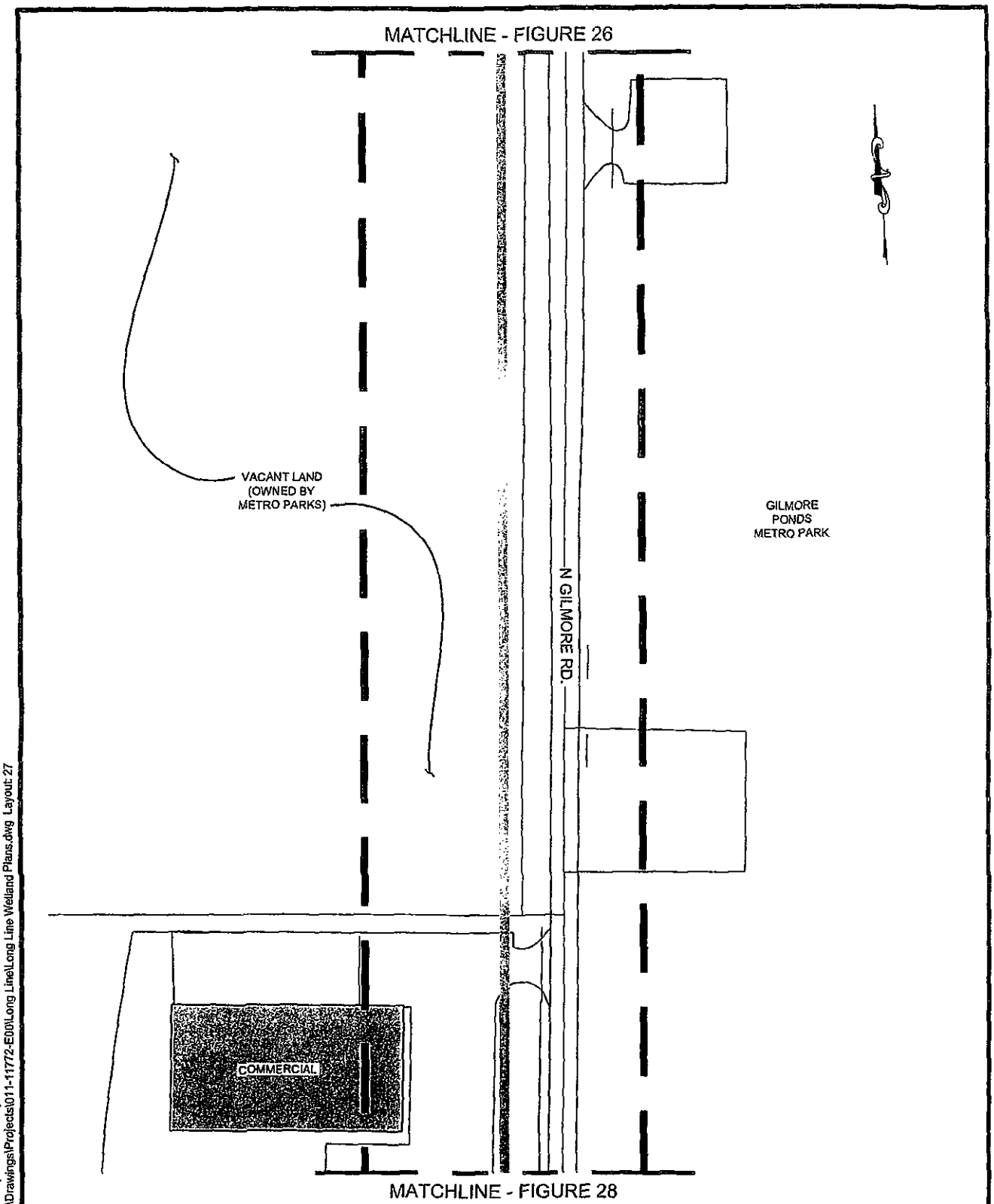
Cincinnati (513) 771-8471
Dayton (937) 424-1011

Images: ~ZoningFairfield.jpg ~Aerial.tif
Xrefs: ~Long Line Base.dwg ~Aerial.dwg
File Last Updated: Jan 08, 2009
Plot Info: 1-8-2009 @ 10:37am By: TMcKelvey
BBC&M Filename: I:\DEPTS\CADD\Drawings\Projects\011-11772-E00\Long Line\Long Line Wetland Plans.dwg Layout: 26



LEGEND

ALTERNATE ROUTE

100' RADIUS

JURISDICTIONAL WATERS PLAN - FIGURE 27

138 KV LONG LINE
HAMILTON, BUTLER CO., OHIO

Project: 011-11772-E00	Drawn By: NWB	
Drawing Date: 12-22-08	Approved By: MES	
Last Updated: 1-8-2009	Scale: 1" = 100'	1:1

BBC&M
SOLUTIONS TO BUILD ON

Columbus (614) 793-2226
Cleveland (216) 991-1000
Cincinnati (513) 771-8471
Dayton (937) 424-1011

Images: ~ZoningFairfield.jpg ~Aerial.tif
Xrefs: ~Long Line Base.dwg ~Aerial.dwg
File Last Updated: Jan 08, 2009
Plot Info: 1-8-2009 @ 10:37am By: TMcKelvey
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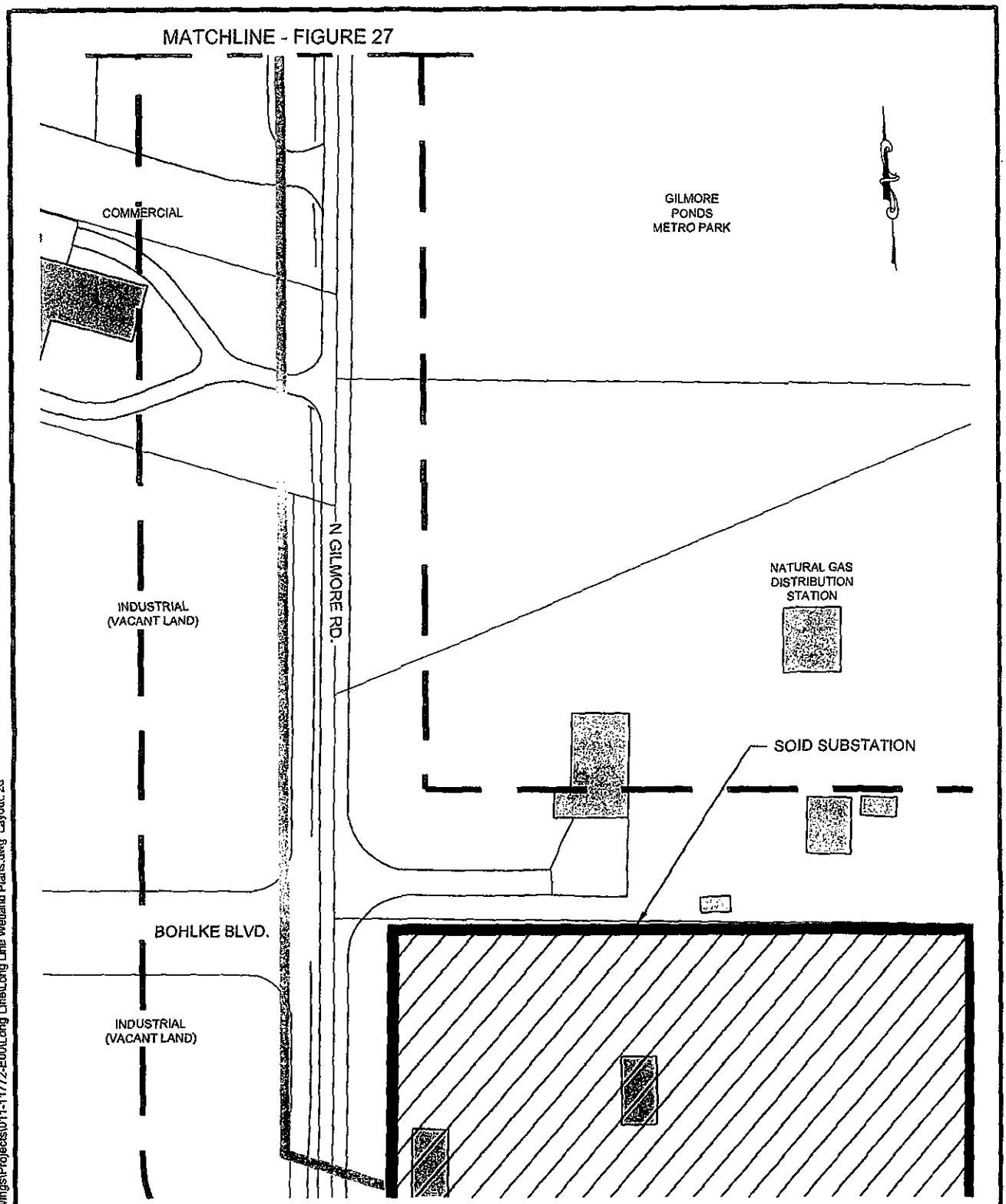

JURISDICTIONAL WATERS PLAN - FIGURE 28

138 KV LONG LINE
HAMILTON, BUTLER CO., OHIO

Project: 011-11772-E00	Drawn By: NWB	
Drawing Date: 12-22-08	Approved By: MES	
Last Updated: 1-8-2009	Scale: 1" = 100'	1:1

BBCM
SOLUTIONS TO BUILD ON
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Cleveland (216) 901-1000
Cincinnati (513) 771-8471
Dayton (937) 424-1011

Images: ~ZoningFairfield.jpg ~Aerial.tif
Xrefs: ~Long Line Base.dwg ~Aerial.dwg
File Last Updated: Jan 07, 2009
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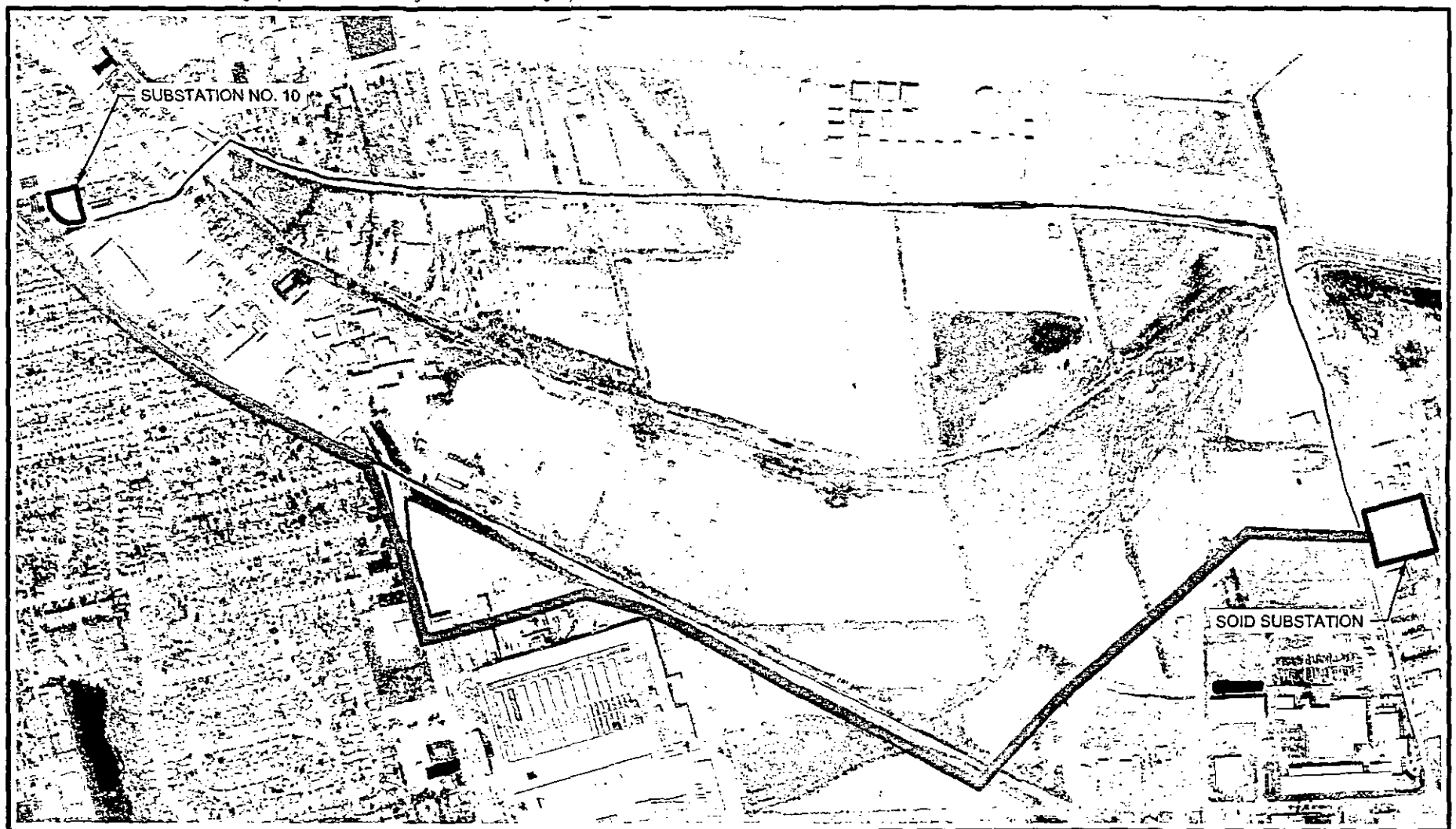


LEGEND

PREFERRED ROUTE

ALTERNATE ROUTE

BASE MAP SOURCE: BUTLER COUNTY AUDITOR

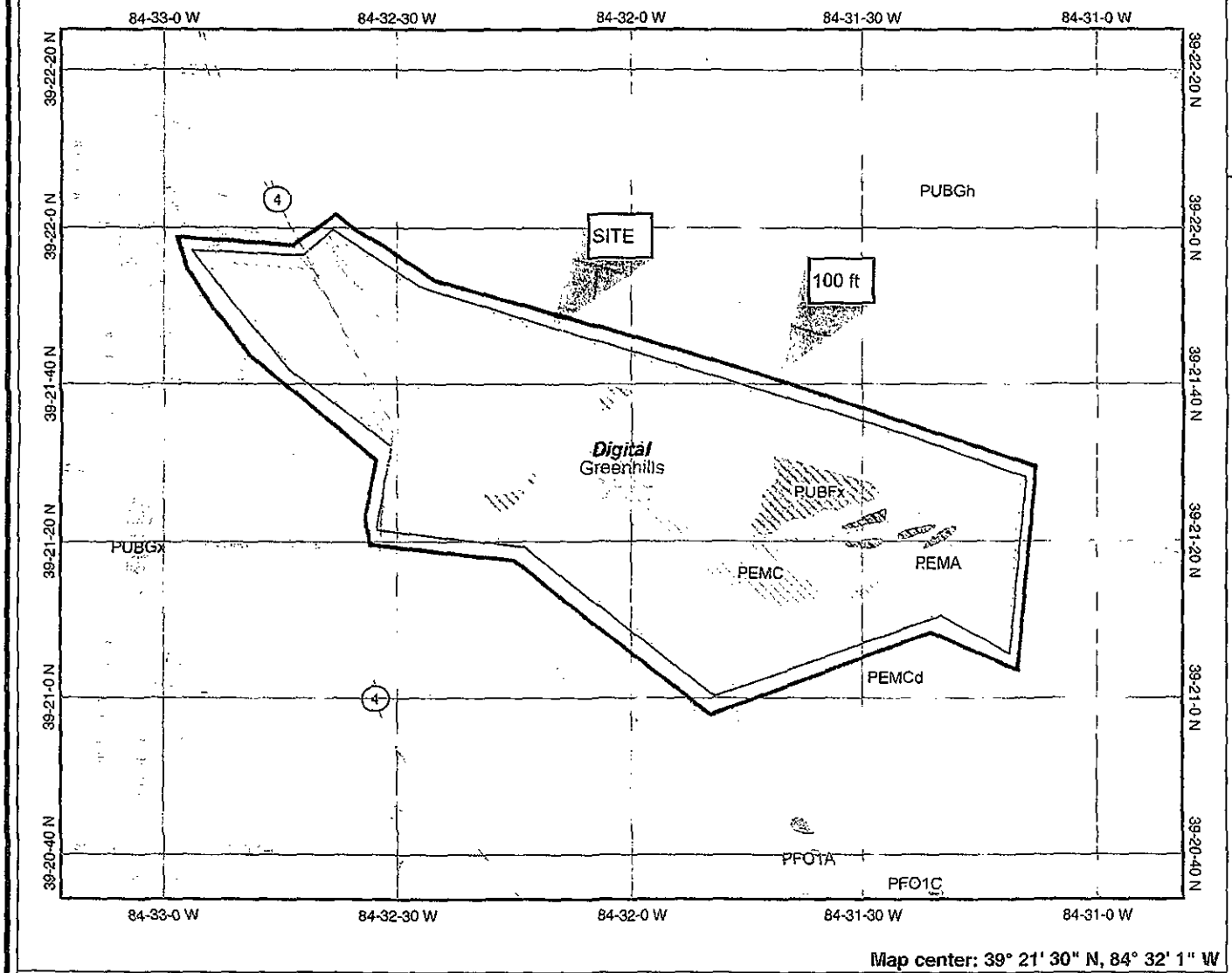
2005 AERIAL PHOTOGRAPH

138 KV LONG LINE
HAMILTON, BUTLER CO., OHIO

Project: 011-11772-E00		Drawn By: NWB	
Drawing Date: 12-30-2008		Approved By: MES	
Last Updated: 1-7-2009		Scale: 1" = 1000'	1:1

BBCM
SOLUTIONS TO BUILD ON
Columbus (614) 793-2226
Cleveland (216) 901-1000
Cincinnati (513) 771-8471
Dayton (937) 424-1011

NWI - 138 kV Long Line



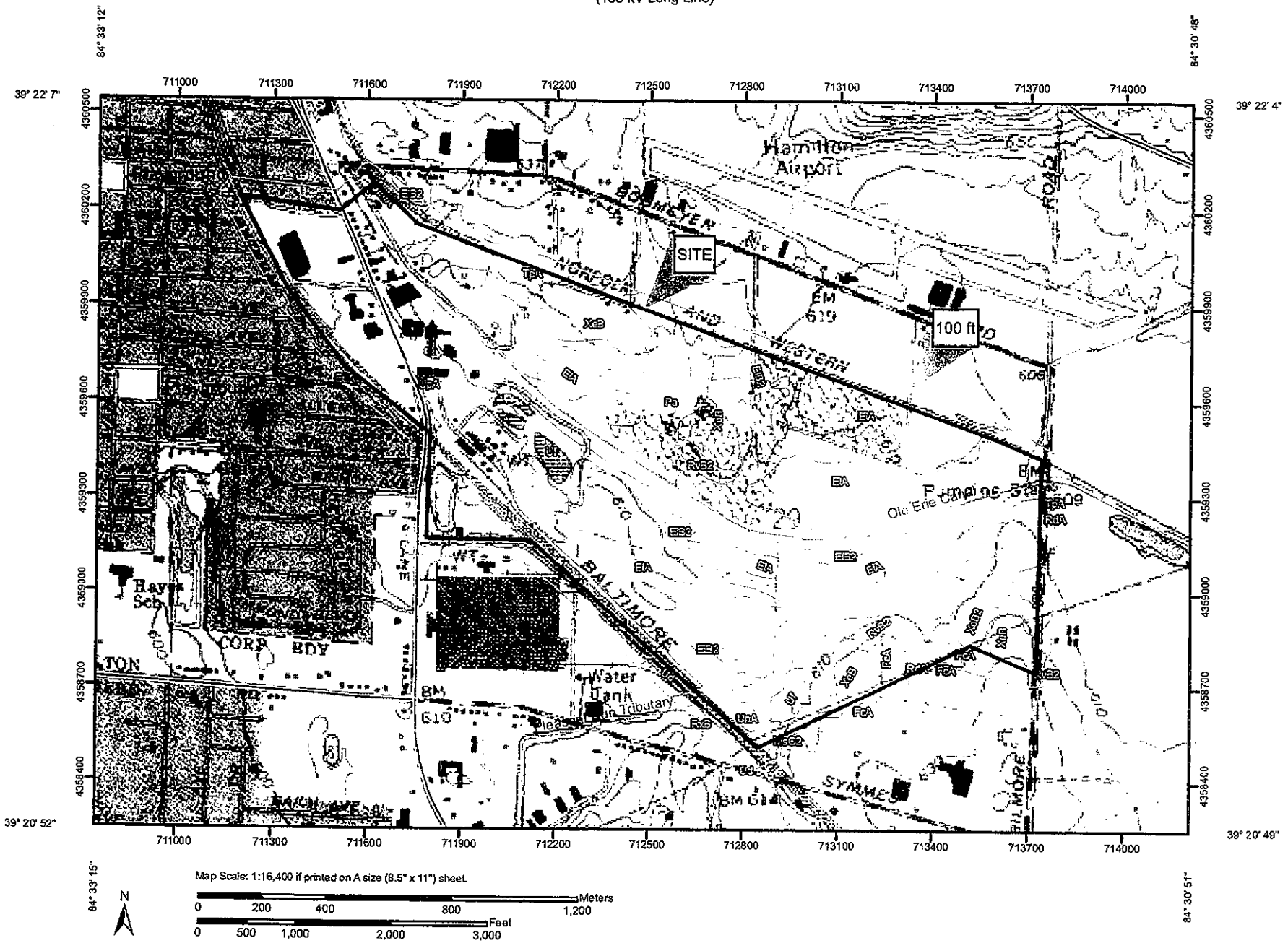
Map center: 39° 21' 30" N, 84° 32' 1" W

Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Streams
- Counties 100K
- States 100K
- South America
- North America

Scale: 1:24,000

Soil Map—Butler County, Ohio
(138 kV Long Line)



USDA Natural Resources Conservation Service

Web Soil Survey 2.1
National Cooperative Soil Survey

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Oceans
- Streams and Canals

Transportation
- Interstate Highways
- US Routes
- Major Roads

MAP INFORMATION

Map Scale: 1:16,400 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:15,840.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL. http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 16N NAD83

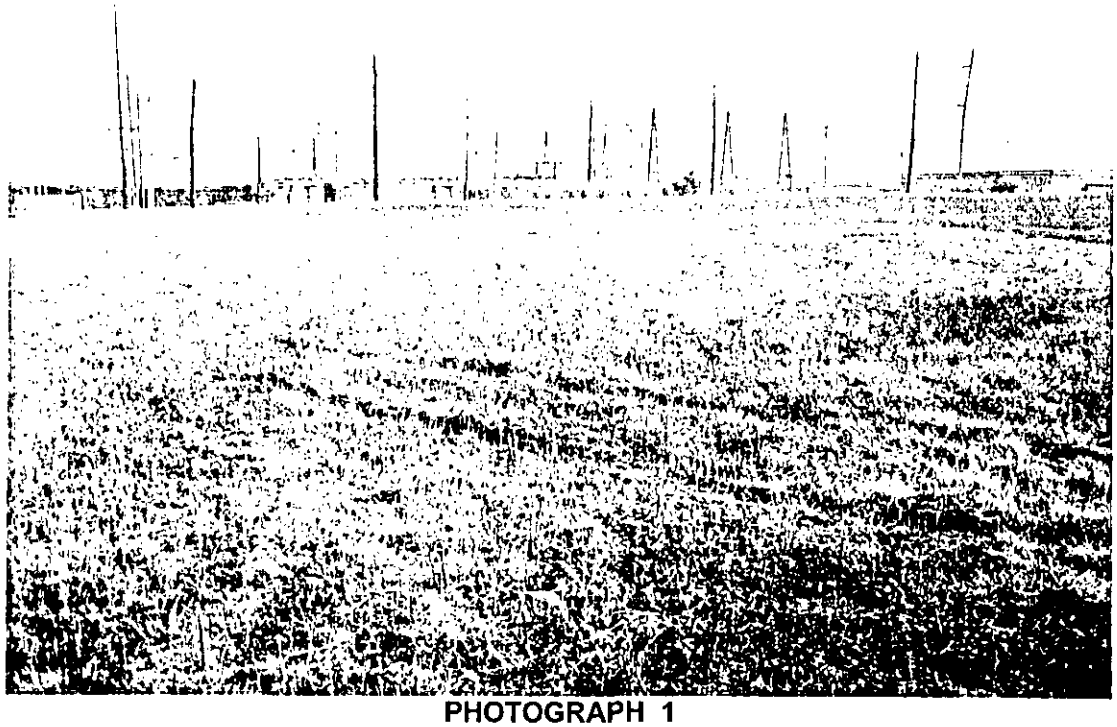
This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Butler County, Ohio
Survey Area Data: Version 8, Dec 7, 2007

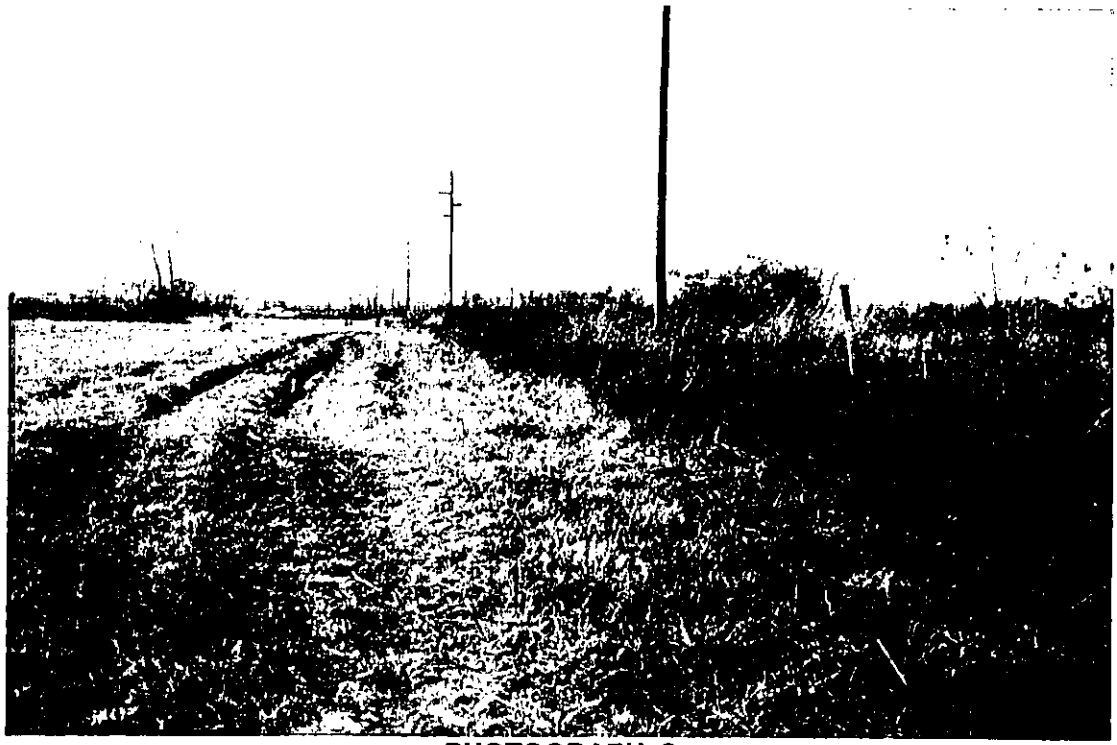
Map Unit Legend

Butler County, Ohio (OH017)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ElA	Eldean loam, 0 to 2 percent slopes	115.8	18.7%
ElB2	Eldean loam, 2 to 6 percent slopes, moderately eroded	28.9	4.7%
EuA	Eldean-Urban land complex, nearly level	19.8	3.2%
EuB	Eldean-Urban land complex, gently sloping	2.1	0.3%
FcA	Fincastle silt loam, 0 to 2 percent slopes	10.5	1.7%
MsC2	Miamian-Russell silt loams, 6 to 12 percent slopes, moderately eroded	0.9	0.1%
Pa	Patton silty clay loam	173.5	28.1%
RdA	Raub silt loam, 0 to 2 percent slopes	2.3	0.4%
RvB2	Russell-Miamian silt loams, 2 to 6 percent slopes, moderately eroded	16.8	2.7%
RxB	Russell-Urban land complex, gently sloping	0.3	0.0%
TpA	Tippecanoe silt loam, 0 to 2 percent slopes	24.1	3.9%
Ud	Udorthents	4.0	0.6%
Uf	Udorthents and Dumps	13.2	2.1%
UnA	Uniontown silt loam, 0 to 2 percent slopes	1.0	0.2%
UpA	Urban land-Eldean complex, nearly level	137.4	22.2%
XeB	Xenia silt loam, 2 to 6 percent slopes	53.8	8.7%
XeB2	Xenia silt loam, 2 to 6 percent slopes, moderately eroded	13.7	2.2%
Totals for Area of Interest		**617.8**	**100.0%**

APPENDIX B



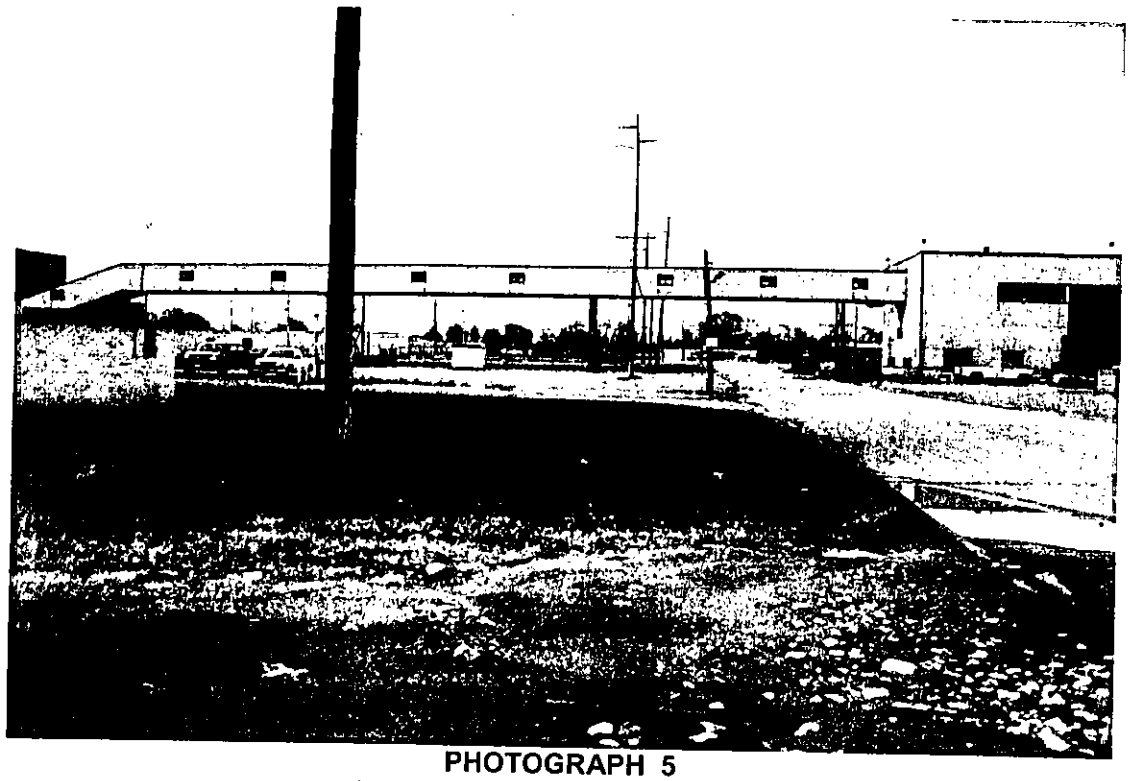
PHOTOGRAPH 1
View of Preferred Route corridor



PHOTOGRAPH 2
View of Preferred Route corridor

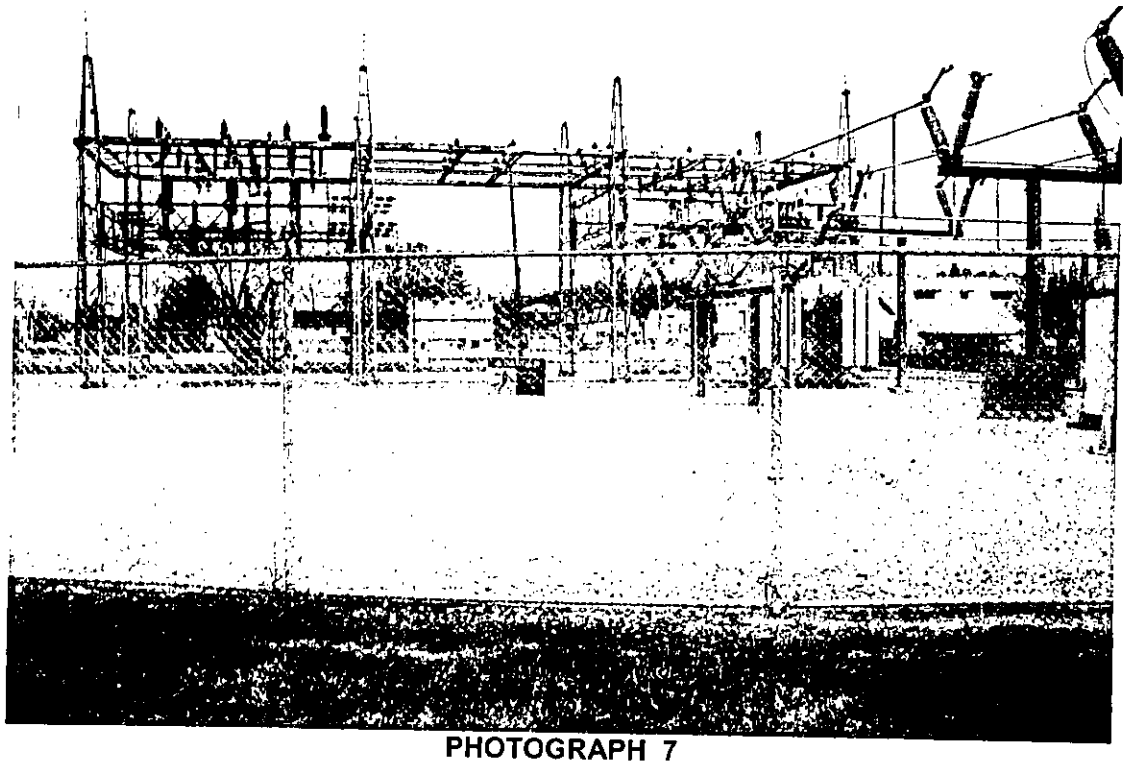
PHOTOGRAPH 3
View of Preferred Route corridor

PHOTOGRAPH 4
View of Preferred Route corridor

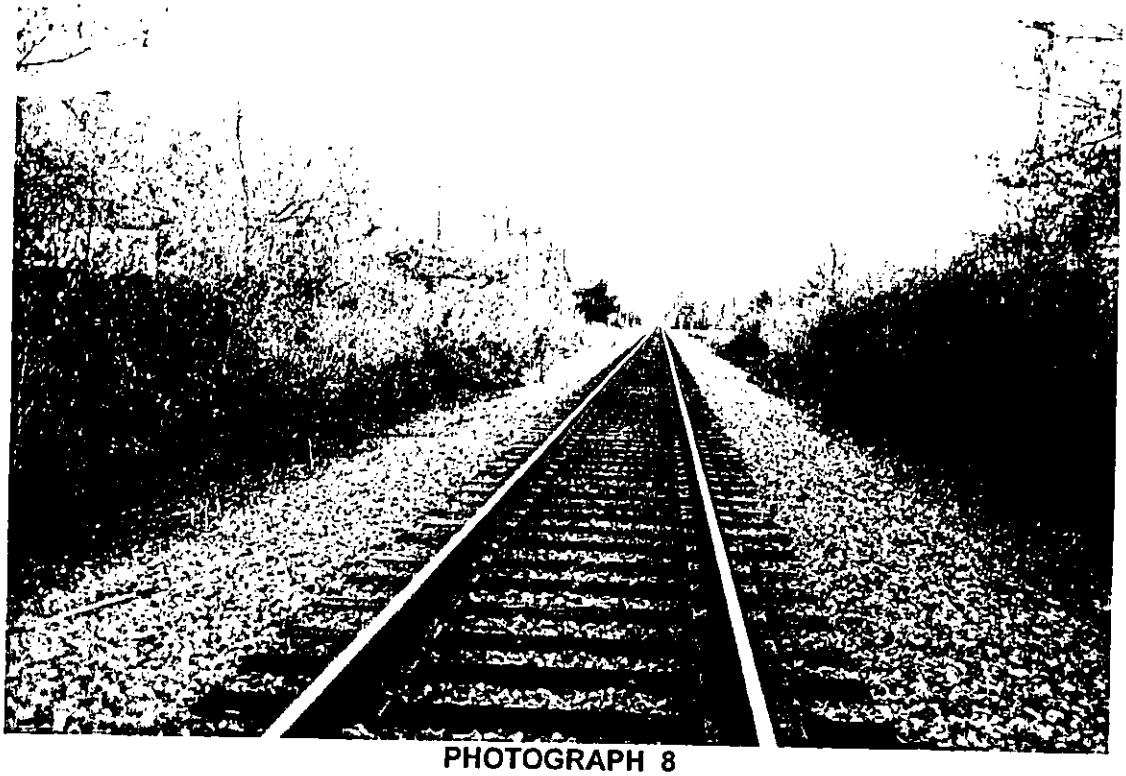


PHOTOGRAPH 5
View of Preferred Route corridor

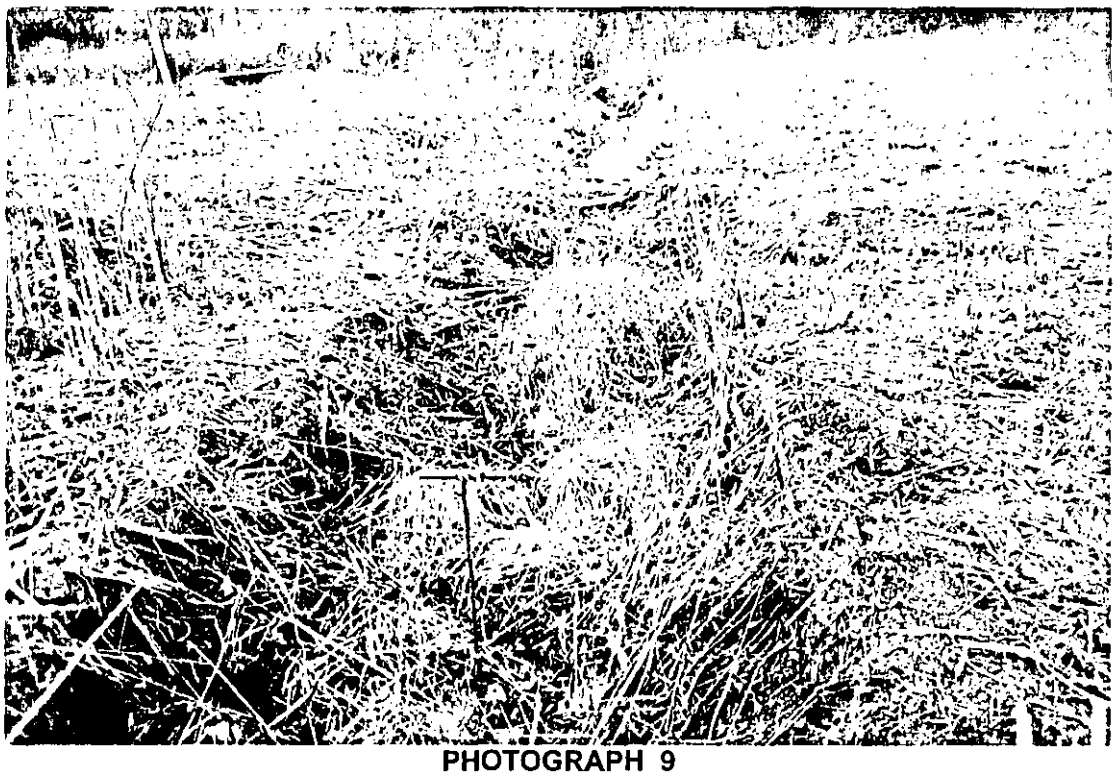
PHOTOGRAPH 6
View of Preferred Route corridor



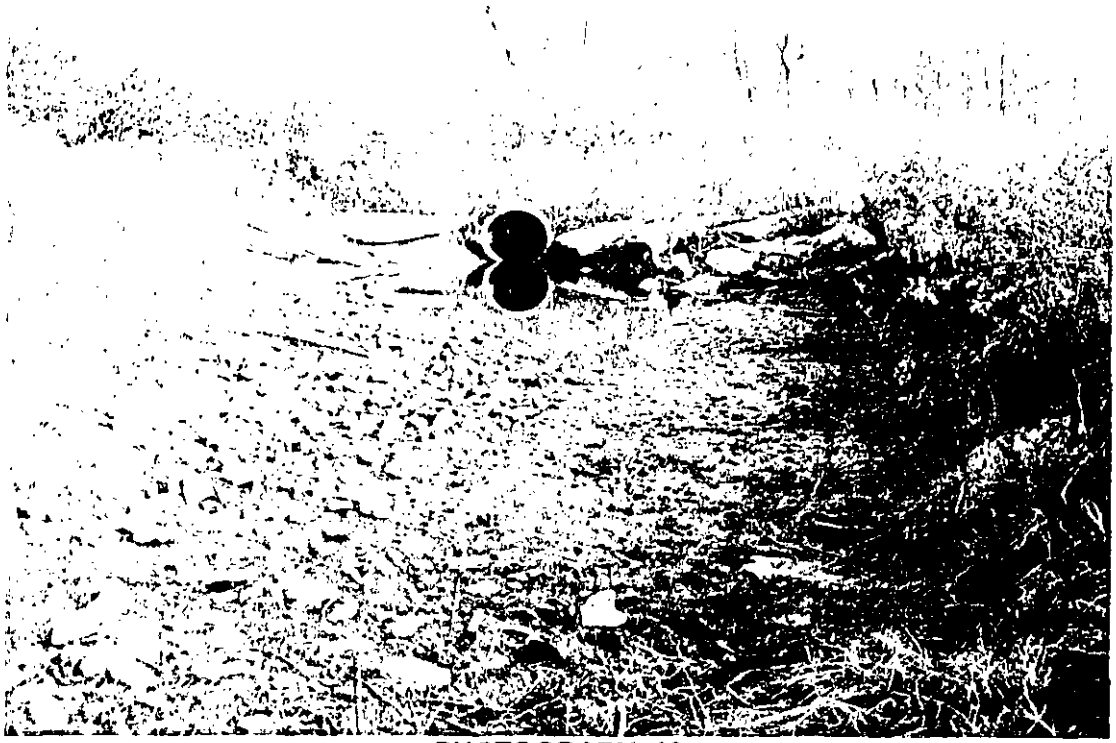
PHOTOGRAPH 7
Substation No. 10



PHOTOGRAPH 8
View of Alternate Route corridor



PHOTOGRAPH 9
Stream 1 (downstream view) and upland data point (DP-3) location

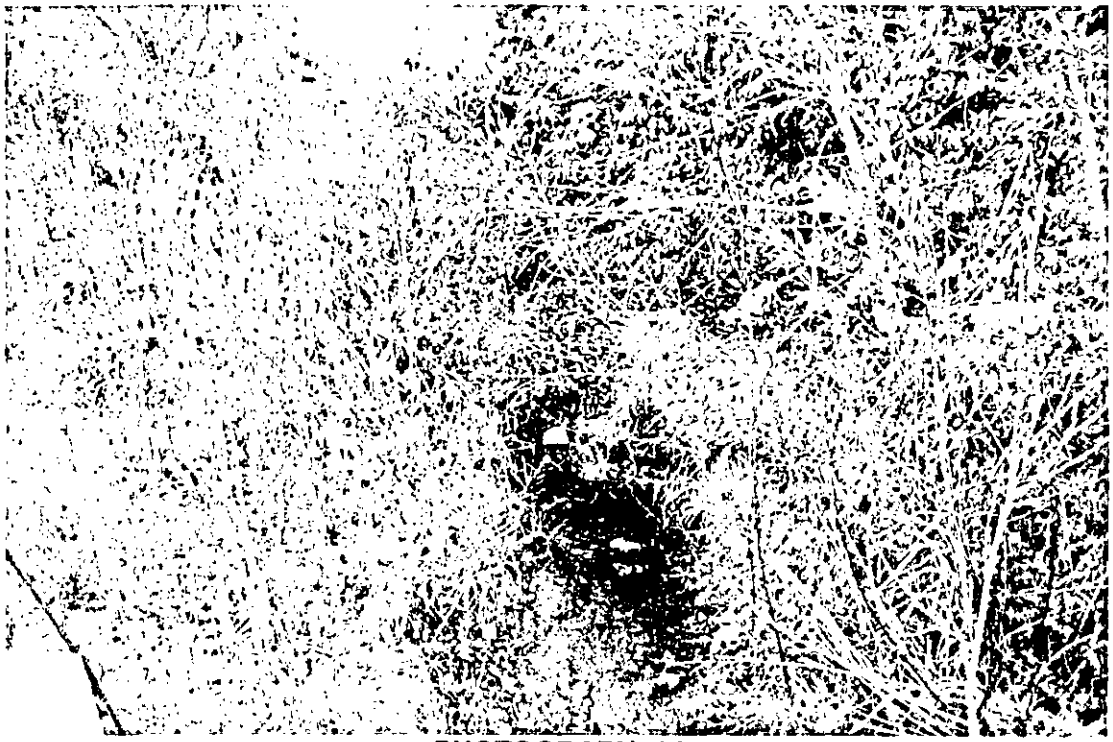


PHOTOGRAPH 10
Stream 2 (upstream view) and culvert plunge pool

PHOTOGRAPH 11
Stream 3 (upstream view)

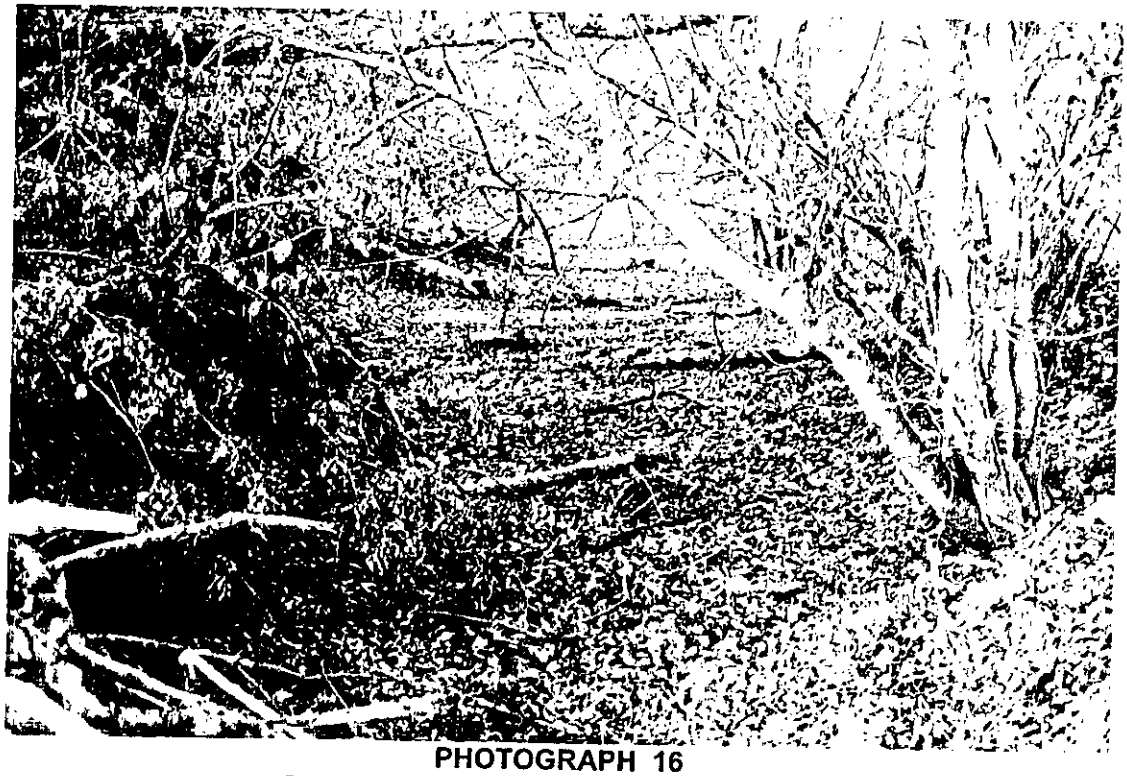
PHOTOGRAPH 12
Stream 4 (downstream view)

PHOTOGRAPH 13
Stream 5 (downstream view)



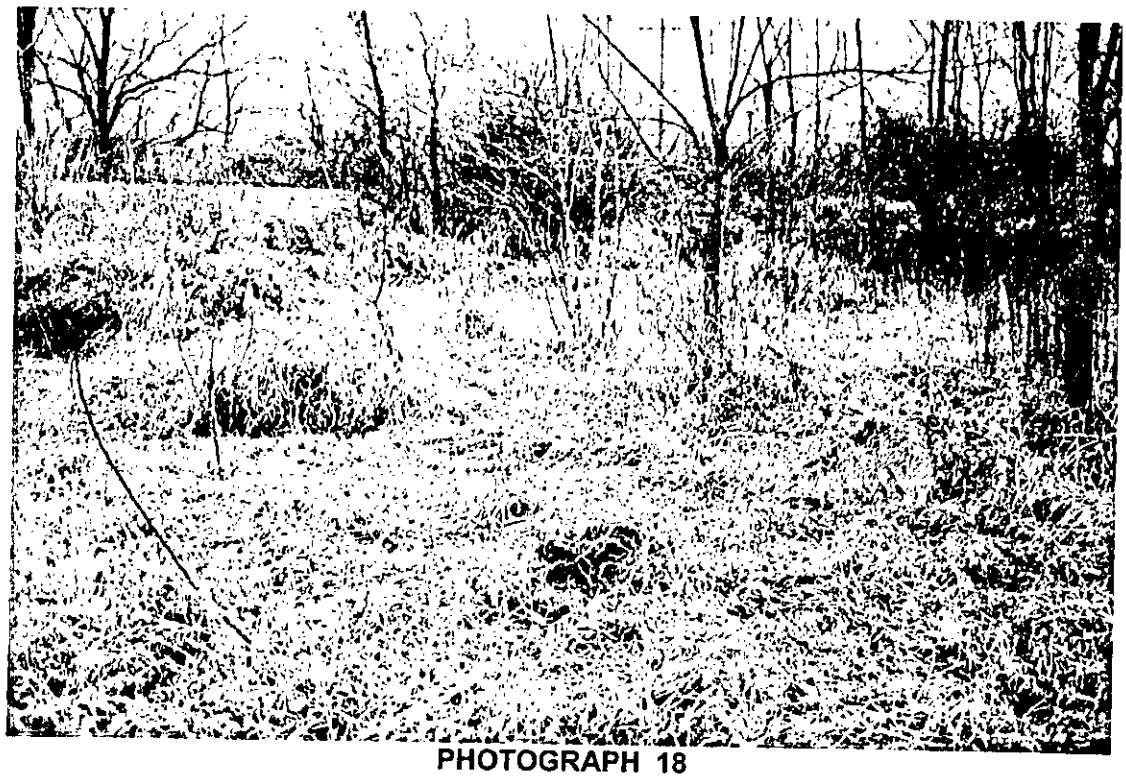
PHOTOGRAPH 14
Stream 6 (downstream view)

PHOTOGRAPH 15
Stream 7 (downstream view)

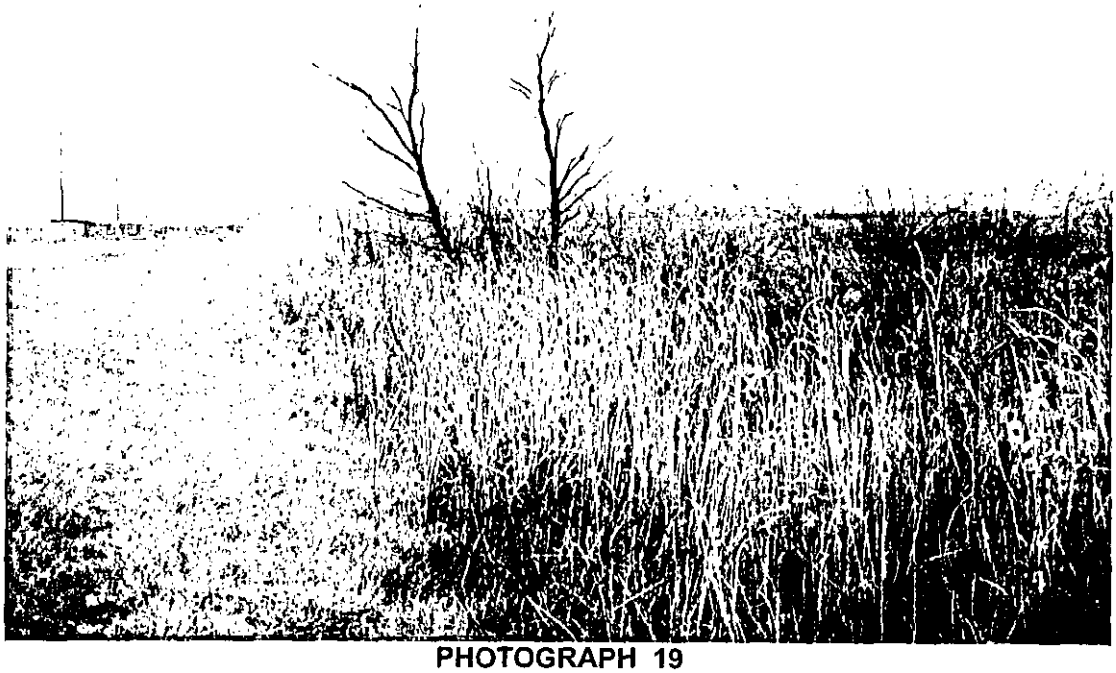


PHOTOGRAPH 16
Stream 8 (upstream view); abandoned canal

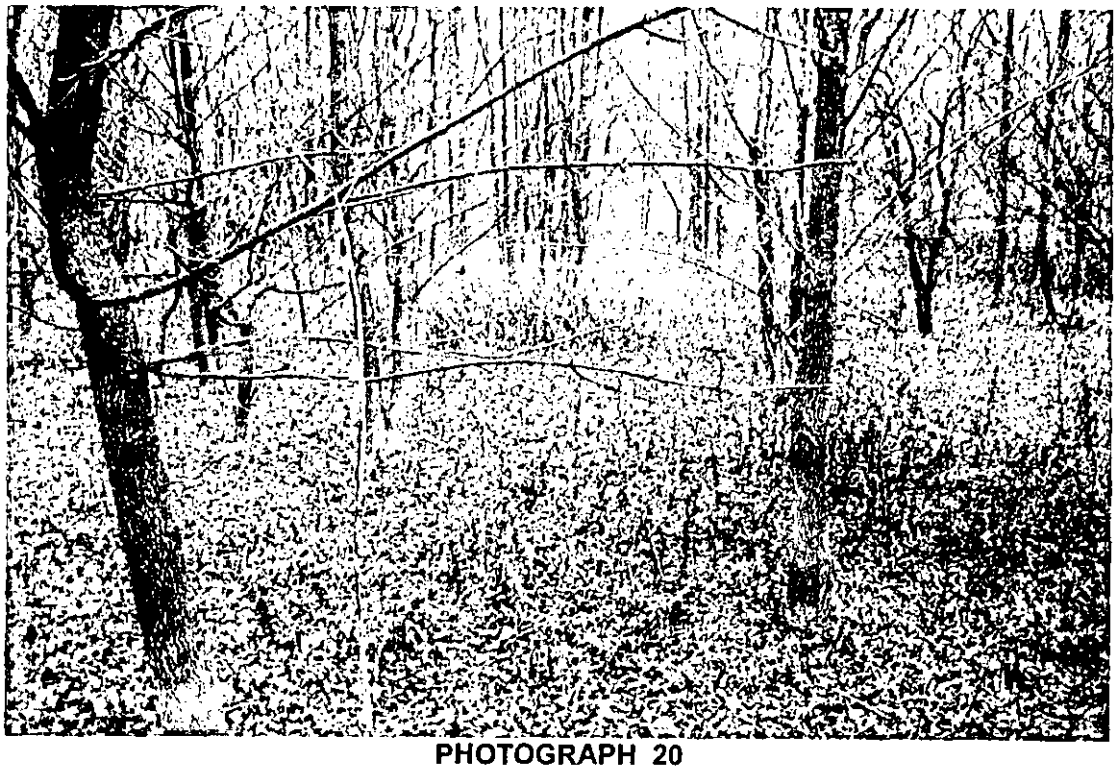
PHOTOGRAPH 17
Wetland A



PHOTOGRAPH 18
Wetland B



PHOTOGRAPH 19
Wetland C

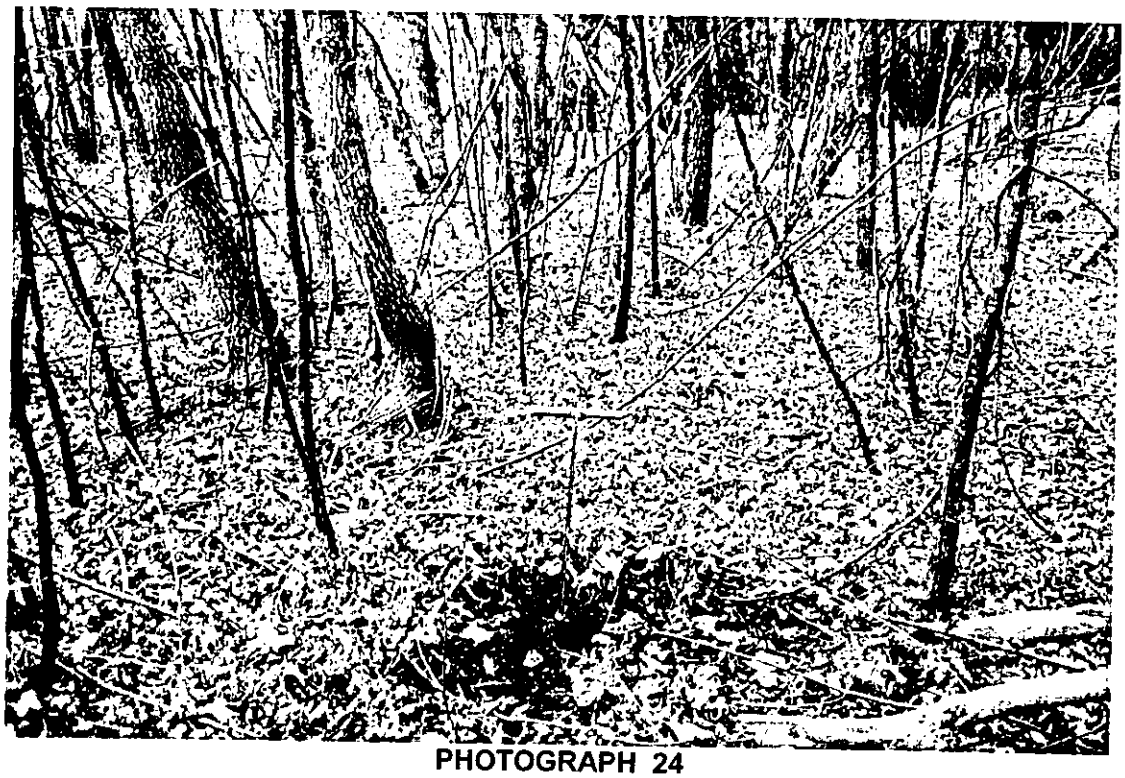


PHOTOGRAPH 20
Wetland D

PHOTOGRAPH 21
Wetland E

PHOTOGRAPH 22
Wetland F; Stream 8 pictured in background

PHOTOGRAPH 23
Wetland G



PHOTOGRAPH 24
Wetland H; wetland data point (DP-19)

APPENDIX C

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 1

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 13, 2008
County: Butler
State: Ohio
Community ID: Upland
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Cirsium arvense*	Thistle,Creeping		FACU
X	*Dipsacus sylvestris*	Teasel		NI

% Species that are OBL, FACW, or FAC (except FAC-): 0
Cowardin Classification:

Remarks
Hydrophytic vegetation less than or equal to 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >10
- Depth to Saturated Soils(in.): >10

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [ ] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [ ] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely not inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: **Xenia silt loam, 2 to 6% slopes**
Drainage Class: **Moderately Well Drained**
Taxonomy:
[ ] Field Observations match map

Remarks
Fill.

Wetland Determination

[False] Hydrophytic Vegetation Present
[False] Hydric Soils Present
[False] Wetland Hydrology Present
[False] This Data Point is a Wetland

Remarks
Upland data point.

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 2

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 13, 2008
County: Butler
State: Ohio
Community ID: Upland
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Cirsium arvense*	Thistle,Creeping		FACU
X	*Dipsacus sylvestris*	Teasel		NI
X	*Aster sp.*	Aster		FAC
X	*Solidago canadensis*	Golden-Rod,Canada		FACU
Shrub				
X	*Lonicera maackii*	Honeysuckle,Amur		NI
X	*Cornus stolonifera*	Dogwood,Red-Osier		FACW+

% Species that are OBL, FACW, or FAC (except FAC-): 50 Cowardin Classification:

Remarks
Hydrophytic vegetation less than or equal to 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >10
- Depth to Saturated Soils(in.): >10

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [ ] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [ ] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely not inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
-						

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: Xenia silt loam, 2 to 6% slopes, moderatel Taxonomy:
Drainage Class: Moderately Well Drained [ ] Field Observations match map

Remarks
Fill.

Wetland Determination

[False] Hydrophytic Vegetation Present
[False] Hydric Soils Present
[False] Wetland Hydrology Present

[False] This Data Point is a Wetland

Remarks
Upland data point.

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 3

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 13, 2008
County: Butler
State: Ohio
Community ID: Swale
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Juncus sp.*	Rush		FACW
X	*Dipsacus sylvestris*	Teasel		NI

% Species that are OBL, FACW, or FAC (except FAC-): 100
Cowardin Classification:

Remarks
Hydrophytic vegetation greater than 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 1
- Depth to Free Water in Pit(in.): 0
- Depth to Saturated Soils(in.): 0

Primary Wetland Hydrology Indicators
- [X] Inundated
- [X] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [ ] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
9-18	B	10YR 4/3	10YR 5/1	few	faint	

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: Xenia silt loam, 2 to 6% slopes
Drainage Class: Moderately Well Drained
Taxonomy:
[X] Field Observations match map

Remarks
Matrix chroma greater than two.

Wetland Determination

[True] Hydrophytic Vegetation Present
[False] Hydric Soils Present
[True] Wetland Hydrology Present

[False] This Data Point is a Wetland

Remarks
Upland data point; drainage swale.

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 4

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 13, 2008
County: Butler
State: Ohio
Community ID: Upland
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Festuca rubra*	Fescue,Red		FACU
X	*Poa sp.*	Bluegrass		FACU
X	*Daucus carota*	Queen Ann's Lace		FACU
X	*Solidago canadensis*	Golden-Rod,Canada		FACU

% Species that are OBL, FACW, or FAC (except FAC-): 0 Cowardin Classification:

Remarks
Hydrophytic vegetation less than or equal to 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >12
- Depth to Saturated Soils(in.): >12

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [ ] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [ ] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely not inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: **Urban land-Eldean complex, nearly level** Taxonomy:
Drainage Class: **Well Drained**
[ ] Field Observations match map

Remarks
Fill.

Wetland Determination

[False] Hydrophytic Vegetation Present
[False] Hydric Soils Present
[False] Wetland Hydrology Present

[False] This Data Point is a Wetland

Remarks
Upland data point.

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 5

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 20, 2008
County: Butler
State: Ohio
Community ID: Upland
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Festuca rubra*	Fescue,Red		FACU
X	*Poa sp.*	Bluegrass		FACU
X	*Cirsium arvense*	Thistle,Creeping		FACU
X	*Taraxacum officinale*	Dandelion,Common		FACU-

% Species that are OBL, FACW, or FAC (except FAC-): 0
Cowardin Classification:

Remarks
Hydrophytic vegetation less than or equal to 50%.

Hydrology

[ ] Recorded Data (describe in remarks)
[ ] Stream, Lake, or Tide Gage
[X] Aerial Photograph
[ ] Other (describe in remarks)

Field Observations:
Depth of Surface Water(in.): 0
Depth to Free Water in Pit(in.): >10
Depth to Saturated Soils(in.): >10

Primary Wetland Hydrology Indicators
[ ] Inundated
[ ] Saturated in upper 12 inches
[ ] Water marks
[ ] Drift lines
[ ] Sediment deposits
[ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
[ ] Oxidized root channels
[ ] Water-stained leaves
[ ] Local soil survey data
[ ] FAC-Neutral test
[ ] Other (explain in remarks)

Remarks
Ground surface is likely not inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
-						

Hydric Soils Indicators
[ ] Histosol
[ ] Histic Epipedon
[ ] Sulfidic Odor
[ ] Probable Aquatic Moist Regime
[ ] Reducing Conditions
[ ] Gleyed or Low-Chroma Colors
[ ] Concretions
[ ] High Organic % in Surface Layer in Sandy Soils
[ ] Organic Streaking in Sandy Soils
[ ] Listed on Local Hydric Soils List
[ ] Listed on National Hydric Soils List
[ ] Other (explain in remarks)

Unit Name: **Urban land-Eldean complex, nearly level**
Drainage Class: **Moderately Well Drained**
Taxonomy:
[ ] Field Observations match map

Remarks
Fill.

Wetland Determination

[False] Hydrophytic Vegetation Present
[False] Hydric Soils Present
[False] Wetland Hydrology Present

[False] This Data Point is a Wetland

Remarks
Upland data point.

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 6

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 13, 2008
County: Butler
State: Ohio
Community ID: PEM
Station ID:
Plot ID:

Vegetation

Dominant Species	Common Name / CofC	% Cover	Indicator
Herbaceous			
X *Typha angustifolia*	Cattail,Narrow-Leaf		OBL

% Species that are OBL, FACW, or FAC (except FAC-): 100
Cowardin Classification:

Remarks
Hydrophytic vegetation greater than 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 3
- Depth to Free Water in Pit(in.): 0
- Depth to Saturated Soils(in.): 0

Primary Wetland Hydrology Indicators
- [X] Inundated
- [X] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [X] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
9-20	B	10YR 2/1				

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [X] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: **Tippecanoe silt loam, 0 to 2% slopes**
Drainage Class: **Moderately Well Drained**
Taxonomy:
[ ] Field Observations match map

Remarks
Matrix chroma less than or equal to two.

Wetland Determination

[True] Hydrophytic Vegetation Present
[True] Hydric Soils Present
[True] Wetland Hydrology Present

[True] This Data Point is a Wetland

Remarks
Emergent wetland (Wetland A).

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 7

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 13, 2008
County: Butler
State: Ohio
Community ID: Upland
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
X				

% Species that are OBL, FACW, or FAC (except FAC-): 0

Cowardin Classification:

Remarks
No vegetation (railroad bed)

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >10
- Depth to Saturated Soils(in.): >10

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [ ] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [ ] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely not inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
-						

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: **Tippecanoe silt loam, 0 to 2% slopes**
Drainage Class: **Moderately Well Drained**

Taxonomy:
[ ] Field Observations match map

Remarks
Fill (railroad bed).

Wetland Determination

[False] Hydrophytic Vegetation Present
[False] Hydric Soils Present
[False] Wetland Hydrology Present

[False] This Data Point is a Wetland

Remarks
Upland data point.

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 8

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 13, 2008
County: Butler
State: Ohio
Community ID: Palustrian shrub/scru
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Phalaris arundinacea*	Grass,Reed Canary		FACW+
X	*Solidago altissima*	Golden-Rod,Tall		FACU-
Shrub				
X	*Fraxinus pennsylvanica*	Ash,Green		FACW
X	*Acer rubrum*	Maple,Red		FAC

% Species that are OBL, FACW, or FAC (except FAC-): 75
Cowardin Classification:

Remarks
Hydrophytic vegetation greater than 50%.

Hydrology

[X] Recorded Data (describe in remarks)
[ ] Stream, Lake, or Tide Gage
[X] Aerial Photograph
[ ] Other (describe in remarks)

Field Observations:
Depth of Surface Water(in.): 0
Depth to Free Water in Pit(in.): >20
Depth to Saturated Soils(in.): 4

Primary Wetland Hydrology Indicators
[ ] Inundated
[X] Saturated in upper 12 inches
[ ] Water marks
[ ] Drift lines
[ ] Sediment deposits
[ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
[ ] Oxidized root channels
[ ] Water-stained leaves
[ ] Local soil survey data
[ ] FAC-Neutral test
[ ] Other (explain in remarks)

Remarks
Ground surface is likely inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
9-20	B	10YR 2/1	10YR 6/3	few	distinct	

Hydric Soils Indicators
[ ] Histosol
[ ] Histic Epipedon
[ ] Sulfidic Odor
[ ] Probable Aquatic Moist Regime
[ ] Reducing Conditions
[X] Gleyed or Low-Chroma Colors
[ ] Concretions
[ ] High Organic % in Surface Layer in Sandy Soils
[ ] Organic Streaking in Sandy Soils
[ ] Listed on Local Hydric Soils List
[ ] Listed on National Hydric Soils List
[ ] Other (explain in remarks)

Unit Name: Eldean loam, 2 to 6% slopes, moderately e Taxonomy:
Drainage Class: Well Drained
[ ] Field Observations match map

Remarks
Matrix chroma less than or equal to two.

Wetland Determination

[True] Hydrophytic Vegetation Present
[True] Hydric Soils Present
[True] Wetland Hydrology Present
[True] This Data Point is a Wetland

Remarks
Scrub-shrub wetland (Wetland B).

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 9

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 20, 2008
County: Butler
State: Ohio
Community ID: Upland
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Poa sp.*	Bluegrass		FACU
Shrub				
X	*Lonicera maackii*	Honeysuckle,Amur		NI
Tree				
X	*Fraxinus pennsylvanica*	Ash,Green		FACW

% Species that are OBL, FACW, or FAC (except FAC-): 50 Cowardin Classification:

Remarks
Hydrophytic vegetation less than or equal to 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >20
- Depth to Saturated Soils(in.): >20

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [ ] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [ ] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely not inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
10-20	B	10YR 3/1				

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [X] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: Eldean loam, 2 to 6% slopes, moderately e Taxonomy:
Drainage Class: Well Drained
[ ] Field Observations match map

Remarks
Matrix chroma less than or equal to two.

Wetland Determination

[False] Hydrophytic Vegetation Present
[True] Hydric Soils Present
[False] Wetland Hydrology Present

[False] This Data Point is a Wetland

Remarks
Upland data point.

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: **Hamilton**
Wetland Data Point: **10**

Project/Site: **138 kV Long Line**
Applicant/Owner: **City of Hamilton**
Investigator: **Scott C. Ross**
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: **November 20, 2008**
County: **Butler**
State: **Ohio**
Community ID: **Palustrian shrub/scru**
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Typha angustifolia*	Cattail,Narrow-Leaf		OBL
X	*Equisetum hyemale*	Horsetail,Rough		FACW
X	*Juncus sp.*	Rush		FACW
X	*Dipsacus sylvestris*	Teasel		NI
Shrub				
X	*Salix sp.*	Willow		FACW

% Species that are OBL, FACW, or FAC (except FAC-): **100** Cowardin Classification:

Remarks
Hydrophytic vegetation greater than 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): **0**
- Depth to Free Water in Pit(in.): **>14**
- Depth to Saturated Soils(in.): **0**

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [X] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [X] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
9-18	B	10YR 5/2	10YR 5/6	common	faint	

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [X] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: **Eldean loam, 2 to 6% slopes, moderately e** Taxonomy:
Drainage Class: **Well Drained** [ ] Field Observations match map

Remarks
Matrix chroma less than or equal to two.

Wetland Determination

[True] Hydrophytic Vegetation Present
[True] Hydric Soils Present
[True] Wetland Hydrology Present

[True] This Data Point is a Wetland

Remarks
Scrub-shrub wetland (Wetland C).

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 11

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 20, 2008
County: Butler
State: Ohio
Community ID: Upland
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Poa sp.*	Bluegrass		FACU
X	*Festuca rubra*	Fescue,Red		FACU
X	*Glecoma hederacea*	Ivy,Ground		FACU

% Species that are OBL, FACW, or FAC (except FAC-): 0 Cowardin Classification:

Remarks
Hydrophytic vegetation less than or equal to 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >20
- Depth to Saturated Soils(in.): >20

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [ ] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [ ] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely not inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: Eldean loam, 2 to 6% slopes, moderately e Taxonomy:
Drainage Class: Well Drained
[ ] Field Observations match map

Remarks
Fill.

Wetland Determination

[False] Hydrophytic Vegetation Present
[False] Hydric Soils Present
[False] Wetland Hydrology Present

[False] This Data Point is a Wetland

Remarks
Upland data point.

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 12

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 20, 2008
County: Butler
State: Ohio
Community ID: PFO
Station ID:
Plot ID:

Vegetation

Dominant Species	Common Name / CofC	% Cover	Indicator
Herbaceous			
X *Solidago gigantea*	Golden-Rod,Giant		FACW
Shrub			
X *Fraxinus pennsylvanica*	Ash,Green		FACW
X *Acer rubrum*	Maple,Red		FAC

% Species that are OBL, FACW, or FAC (except FAC-): 100 Cowardin Classification:

Remarks
Hydrophytic vegetation greater than 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >14
- Depth to Saturated Soils(in.): >14

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [ ] Saturated in upper 12 inches
- [X] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [X] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
9-14	B	10YR 4/2	10YR 4/6	few	faint	

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [X] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: Eldean loam, 0 to 2% slopes
Drainage Class: Well Drained

Taxonomy:
[ ] Field Observations match map

Remarks
Matrix chroma less than or equal to two.

Wetland Determination

[True] Hydrophytic Vegetation Present
[True] Hydric Soils Present
[True] Wetland Hydrology Present

[True] This Data Point is a Wetland

Remarks
Forested wetland (Wetland D).

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 13

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 20, 2008
County: Butler
State: Ohio
Community ID: Upland
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Solidago canadensis*	Golden-Rod,Canada		FACU
X	*Dipsacus sylvestris*	Teasel		NI
X	*Rubus sp.*	Blackberry		FACU
Shrub				
X	*Populus deltoides*	Cotton-Wood,Eastern		FAC

% Species that are OBL, FACW, or FAC (except FAC-): 33
Cowardin Classification:

Remarks
Hydrophytic vegetation less than or equal to 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >14
- Depth to Saturated Soils(in.): >14

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [ ] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [ ] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely not inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
9-14	B	10YR 4/6	10YR 4/2	few	faint	

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: **Eldean loam, 0 to 2% slopes**
Drainage Class: **Well Drained**
Taxonomy:
[X] Field Observations match map

Remarks
Matrix chroma greater than two.

Wetland Determination

[False] Hydrophytic Vegetation Present
[False] Hydric Soils Present
[False] Wetland Hydrology Present

[False] This Data Point is a Wetland

Remarks
Upland data point.

Data Form
Routine Wetland Determination

Job Number: **011-11772-E00**
Town/Village/City: **Hamilton**
Wetland Data Point: **14**

Project/Site: **138 kV Long Line**
Applicant/Owner: **City of Hamilton**
Investigator: **Scott C. Ross**
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: **November 20, 2008**
County: **Butler**
State: **Ohio**
Community ID: **PEM**
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Phalaris arundinacea*	Grass,Reed Canary		FACW+

% Species that are OBL, FACW, or FAC (except FAC-): **100**
Cowardin Classification:

Remarks
Hydrophytic vegetation greater than 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): **0**
- Depth to Free Water in Pit(in.): **>20**
- Depth to Saturated Soils(in.): **0**

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [X] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [ ] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
9-20	B	10YR 4/1				

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [X] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [X] Listed on Local Hydric Soils List
- [X] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: **Patton silty clay loam**
Drainage Class: **Poorly Drained**
Taxonomy:
[X] Field Observations match map

Remarks
Matrix chroma less than or equal to two.

Wetland Determination

[True] Hydrophytic Vegetation Present
[True] Hydric Soils Present
[True] Wetland Hydrology Present
[True] This Data Point is a Wetland

Remarks
Emergent wetland (Wetland E).

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 15

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 20, 2008
County: Butler
State: Ohio
Community ID: Upland
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Poa sp.*	Bluegrass		FACU
X	*Trifolium repens*	Clover,White		FACU-
Shrub				
X	*Fraxinus pennsylvanica*	Ash,Green		FACW

% Species that are OBL, FACW, or FAC (except FAC-): 33
Cowardin Classification:

Remarks
Hydrophytic vegetation less than or equal to 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >20
- Depth to Saturated Soils(in.): >20

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [ ] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [ ] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely not inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: **Patton silty clay loam**
Drainage Class: **Poorly Drained**
Taxonomy:
[ ] Field Observations match map

Remarks
Fill.

Wetland Determination

[False] Hydrophytic Vegetation Present
[False] Hydric Soils Present
[False] Wetland Hydrology Present

[False] This Data Point is a Wetland

Remarks
Upland data point.

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 16

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 20, 2008
County: Butler
State: Ohio
Community ID: PEM
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Typha angustifolia*	Cattail,Narrow-Leaf		OBL

% Species that are OBL, FACW, or FAC (except FAC-): 100 Cowardin Classification:

Remarks
Hydrophytic vegetation greater than 50%.

Hydrology

[X] Recorded Data (describe in remarks)
[ ] Stream, Lake, or Tide Gage
[X] Aerial Photograph
[ ] Other (describe in remarks)

Field Observations:
Depth of Surface Water(in.): 0
Depth to Free Water in Pit(in.): >20
Depth to Saturated Soils(in.): 0

Primary Wetland Hydrology Indicators
[ ] Inundated
[X] Saturated in upper 12 inches
[ ] Water marks
[ ] Drift lines
[ ] Sediment deposits
[ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
[X] Oxidized root channels
[X] Water-stained leaves
[ ] Local soil survey data
[ ] FAC-Neutral test
[ ] Other (explain in remarks)

Remarks
Ground surface is likely inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
9-20	B	10YR 5/1				

Hydric Soils Indicators
[ ] Histosol
[ ] Histic Epipedon
[ ] Sulfidic Odor
[ ] Probable Aquatic Moist Regime
[ ] Reducing Conditions
[X] Gleyed or Low-Chroma Colors
[ ] Concretions
[ ] High Organic % in Surface Layer in Sandy Soils
[ ] Organic Streaking in Sandy Soils
[ ] Listed on Local Hydric Soils List
[ ] Listed on National Hydric Soils List
[ ] Other (explain in remarks)

Unit Name: **Patton silty clay loam**
Drainage Class: **Poorly Drained**
Taxonomy:
[X] Field Observations match map

Remarks
Matrix chroma less than or equal to two.

Wetland Determination

[True] Hydrophytic Vegetation Present
[True] Hydric Soils Present
[True] Wetland Hydrology Present
[True] This Data Point is a Wetland

Remarks
Emergent wetland (Wetland F).

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 17

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 20, 2008
County: Butler
State: Ohio
Community ID: Upland
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Solidago canadensis*	Golden-Rod,Canada		FACU
Shrub				
X	*Lonicera maackii*	Honeysuckle,Amur		NI
X	*Acer negundo*	Box-Elder		FAC+

% Species that are OBL, FACW, or FAC (except FAC-): 50 Cowardin Classification:

Remarks
Hydrophytic vegetation less than or equal to 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >10
- Depth to Saturated Soils(in.): >10

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [ ] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [ ] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely not inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
-						

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: Patton silty clay loam
Drainage Class: Poorly Drained

Taxonomy:
[ ] Field Observations match map

Remarks
Fill.

Wetland Determination

[False] Hydrophytic Vegetation Present
[False] Hydric Soils Present
[False] Wetland Hydrology Present

[False] This Data Point is a Wetland

Remarks
Upland data point.

Job Number: 011-11772-E00

Data Form
Routine Wetland Determination

Town/Village/City: Hamilton
Wetland Data Point: 18

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 21, 2008
County: Butler
State: Ohio
Community ID: PFO
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Aster sp.*	Aster		FAC
Shrub				
X	*Acer rubrum*	Maple,Red		FAC
X	*Fraxinus pennsylvanica*	Ash,Green		FACW
Tree				
X	*Fraxinus pennsylvanica*	Ash,Green		FACW
X	*Populus deltoides*	Cotton-Wood,Eastern		FAC

% Species that are OBL, FACW, or FAC (except FAC-): 100
Cowardin Classification:

Remarks
Hydrophytic vegetation greater than 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >20
- Depth to Saturated Soils(in.): 0

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [X] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [X] Oxidized root channels
- [X] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
9-20	B	10YR 4/1	10YR 4/6	few	distinct	

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [X] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: Xenia silt loam, 2 to 6% slopes
Drainage Class: Moderately Well Drained

Taxonomy:
[ ] Field Observations match map

Remarks
Matrix chroma less than or equal to two.

Wetland Determination

[True] Hydrophytic Vegetation Present
[True] Hydric Soils Present
[True] Wetland Hydrology Present

[True] This Data Point is a Wetland

Remarks
Forested wetland (Wetland G).

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 19

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 21, 2008
County: Butler
State: Ohio
Community ID: Forest
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Alliaria petiolata*	Mustard,Garlic		FACU-
Shrub				
X	*Lonicera maackii*	Honeysuckle,Amur		NI
X	*Celtis occidentalis*	Hackberry,Common		FACU
Tree				
X	*Fraxinus pennsylvanica*	Ash,Green		FACW

% Species that are OBL, FACW, or FAC (except FAC-): 33
Cowardin Classification:

Remarks
Hydrophytic vegetation less than or equal to 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >20
- Depth to Saturated Soils(in.): >20

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [ ] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [ ] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely not inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
9-18	B	10YR 4/3	10YR 4/1	few	faint	

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: ***Xenia silt loam, 2 to 6% slopes***
Drainage Class: **Moderately Well Drained**

Taxonomy:
[X] Field Observations match map

Remarks
Matrix chroma greater than two.

Wetland Determination

[False] Hydrophytic Vegetation Present
[False] Hydric Soils Present
[False] Wetland Hydrology Present

[False] This Data Point is a Wetland

Remarks
Upland data point.

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 20

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 20, 2008
County: Butler
State: Ohio
Community ID: PFO
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Shrub				
X	*Acer rubrum*	Maple,Red		FAC
X	*Populus deltoides*	Cotton-Wood,Eastern		FAC
X	*Fraxinus pennsylvanica*	Ash,Green		FACW
Tree				
X	*Populus deltoides*	Cotton-Wood,Eastern		FAC

% Species that are OBL, FACW, or FAC (except FAC-): 100 Cowardin Classification:

Remarks
Hydrophytic vegetation greater than 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >20
- Depth to Saturated Soils(in.): >20

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [ ] Saturated in upper 12 inches
- [X] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [X] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
9-20	B	10YR 4/2	10YR 5/8	few	distinct	

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [X] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: Tippecanoe silt loam, 0 to 2% slopes
Drainage Class: Moderately Well Drained
Taxonomy:
[ ] Field Observations match map

Remarks
Matrix chroma less than or equal to two.

Wetland Determination

[True] Hydrophytic Vegetation Present
[True] Hydric Soils Present
[True] Wetland Hydrology Present

[True] This Data Point is a Wetland

Remarks
Forested wetland (Wetland H).

Data Form
Routine Wetland Determination

Job Number: 011-11772-E00
Town/Village/City: Hamilton
Wetland Data Point: 21

Project/Site: 138 kV Long Line
Applicant/Owner: City of Hamilton
Investigator: Scott C. Ross
[True] Do normal circumstances exist on the site?
[False] Is the site significantly disturbed (Atypical Situation)?
[False] Is the area a potential problem area?

Date: November 20, 2008
County: Butler
State: Ohio
Community ID: Forest
Station ID:
Plot ID:

Vegetation

Dominant	Species	Common Name / CofC	% Cover	Indicator
Herbaceous				
X	*Alliaria petiolata*	Mustard,Garlic		FACU-
Shrub				
X	*Lonicera maackii*	Honeysuckle,Amur		NI
Tree				
X	*Acer negundo*	Box-Elder		FAC+
X	*Acer rubrum*	Maple,Red		FAC

% Species that are OBL, FACW, or FAC (except FAC-): 66
Cowardin Classification:

Remarks
Hydrophytic vegetation greater than 50%.

Hydrology

[X] Recorded Data (describe in remarks)
- [ ] Stream, Lake, or Tide Gage
- [X] Aerial Photograph
- [ ] Other (describe in remarks)

Field Observations:
- Depth of Surface Water(in.): 0
- Depth to Free Water in Pit(in.): >10
- Depth to Saturated Soils(in.): >10

Primary Wetland Hydrology Indicators
- [ ] Inundated
- [ ] Saturated in upper 12 inches
- [ ] Water marks
- [ ] Drift lines
- [ ] Sediment deposits
- [ ] Drainage patterns in wetlands

Secondary Hydrology Indicators
- [ ] Oxidized root channels
- [ ] Water-stained leaves
- [ ] Local soil survey data
- [ ] FAC-Neutral test
- [ ] Other (explain in remarks)

Remarks
Ground surface is likely not inundated or saturated for significant periods during the growing season.

Soils

Depth (in.)	Hor.	Matrix Color	Mottle / 2nd Mottle Color	Abundance	Contrast	Texture, Structure, etc.
-						

Hydric Soils Indicators
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Probable Aquatic Moist Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic % in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (explain in remarks)

Unit Name: Xenia silt loam, 2 to 6% slopes
Drainage Class: Moderately Well Drained

Taxonomy:
[ ] Field Observations match map

Remarks
Fill.

Wetland Determination

[True] Hydrophytic Vegetation Present
[False] Hydric Soils Present
[False] Wetland Hydrology Present

[False] This Data Point is a Wetland

Remarks
Upland data point.

APPENDIX D

Wetlands A through H

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/odnr/dnap/. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is a legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Reynoldsburg Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is the saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a

#	Question	Circle one	
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b
8b	**Mature forested wetlands.** Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands.** Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 9d	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	**Relict Wet Prairies.** Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio, Erie County, and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

ORAM v. 5.0 Field Form Quantitative Rating

Wetland A

Site: SOID Station to Station ID | Rater(s): Scott C. Ross | Date: 11/13/08

Transmission Line

max 6 pts.	subtotal
0	0

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [x] <0.1 acres (0.04ha) (0 pts)

max 14 pts.	subtotal
2	2

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- 2 [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

max 30 pts.	subtotal
6	8

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [x] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- 2 [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] other_____

max 20 pts.	subtotal
5	13

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- 2 [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

subtotal this page
13

ORAM v. 5.0 Field Form Quantitative Rating

Wetland A

Site: SOI) Station to Station 10 Transmission Line | Rater(s): Scott C. Ross | Date: 11/13/08

-3
subtotal this page

Ø | 13 **Metric 5. Special Wetlands.**

max 10 pts. | subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-3 | 10 **Metric 6. Plant communities, interspersion, microtopography.**

max 20 pts. | subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [Ø] Aquatic bed
- [1] Emergent
- [Ø] Shrub
- [Ø] Forest
- [Ø] Mudflats
- [Ø] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [✓] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [✓] Extensive >75% cover (-5) (Typha angustifolia)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [1] Vegetated hummucks/tussucks
- [Ø] Coarse woody debris >15cm (6in)
- [Ø] Standing dead >25cm (10in) dbh
- [Ø] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

10 **GRAND TOTAL(max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Wetland A

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	*YES* Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	*Rater has the option of assigning the wetland to the higher* of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

ORAM v. 5.0 Field Form Quantitative Rating

Wetland B

Site: SOID Station to Station ID Transmission Line | Rater(s): Scott C. Ross | Date: 11/20/08

Metric 1. Wetland Area (size).

1 | 1 (max 6 pts. | subtotal)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

3 | 4 (max 14 pts. | subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [x] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

2

Metric 3. Hydrology.

6 | 10 (max 30 pts. | subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [x] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [x] Recent or no recovery (1)

2

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [x] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

8 | 18 (max 20 pts. | subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [x] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

18 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland B

Site: SOI Station to Station 10 Transmission Line | Rater(s): Scott C. Ross | Date: 11/20/08

3
subtotal this page

max 10 pts.	subtotal
0	18

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

max 20 pts.	subtotal
3	21

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [2] Emergent
- [1] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [✓] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

(Phalaris arundinacea)

- [ ] Extensive >75% cover (-5)
- [✓] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [1] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

21	**GRAND TOTAL(max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Wetland B

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

ORAM v. 5.0 Field Form Quantitative Rating

Wetland C

Site: SOID Station to Station ID Transmission Line | Rater(s): Scott C. Ross | Date: 11/20/08

Metric 1. Wetland Area (size).

1 (max 6 pts.) | 1 (subtotal)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

2 (max 14 pts.) | 3 (subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

2

Metric 3. Hydrology.

7 (max 30 pts.) | 10 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [x] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [x] Recent or no recovery (1)

2

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

6 (max 20 pts.) | 16 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [x] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [x] Recent or no recovery (1)

2

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

16

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland C

Site: SOI Station to Station 10 Transmission Line | Rater(s): Scott C. Ross | Date: 11/20/08

4 subtotal this page

Metric 5. Special Wetlands.

0 max 10 pts. | 16 subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

4 max 20 pts. | 20 subtotal

6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [2] Emergent
- [1] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion. Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [✓] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [✓] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

Typha angustifolia, Phragmites australis

6d. Microtopography. Score all present using 0 to 3 scale.

- [1] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

20 **GRAND TOTAL(max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Wetland C

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

ORAM v. 5.0 Field Form Quantitative Rating

Wetland D

Site: SOID Station to Station ID Transmission Line | Rater(s): Scott C. Ross | Date: 11/20/08

Metric 1. Wetland Area (size).

2 | 2 (max 6 pts. | subtotal)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

7 | 9 (max 14 pts. | subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [x] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- 3 [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

7 | 16 (max 30 pts. | subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [x] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

8 | 24 (max 20 pts. | subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

24 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland D

Site: SOI Station to Station 10 Transmission Line | Rater(s): Scott C. Ross | Date: 11/20/08

6
subtotal this page

0 | 24 **Metric 5. Special Wetlands.**

max 10 pts. | subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

6 | 30 **Metric 6. Plant communities, interspersion, microtopography.**

max 20 pts. | subtotal

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [2] Shrub
- [2] Forest
- [0] Mudflats
- [0] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [✓] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

(Phalaris arundinacea)

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [✓] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphiblan breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

30 **GRAND TOTAL(max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Wetland D

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold (*including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

ORAM v. 5.0 Field Form Quantitative Rating

Wetland E

Site: SOID Station to Station 10 Transmission Line | Rater(s): Scott C. Ross | Date: 11/20/08

Metric 1. Wetland Area (size).

0 | 0 (max 6 pts. | subtotal)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [x] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

5 | 5 (max 14 pts. | subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [x] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)

4

- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

4 | 9 (max 30 pts. | subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [x] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [x] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

5 | 14 (max 20 pts. | subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)

2

- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

14 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland E

Site: SOI) Station to Station 10 Transmission Line | Rater(s): Scott C. Ross | Date: 11/20/08

-3
subtotal this page

max 10 pts.	subtotal
0	14

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

max 20 pts.	subtotal
-3	11

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [0] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [✓] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

(Phalaris arundinacea)

- [✓] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [1] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

11	GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Wetland E

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold (*including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category			
Choose one	(Category 1)	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

ORAM v. 5.0 Field Form Quantitative Rating

Wetland F

Site: SOID Station to Station ID Transmission Line | Rater(s): Scott C. Ross | Date: 11/20/08

Metric 1. Wetland Area (size).

max 6 pts. | subtotal: 0 | 0

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [x] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal: 8 | 8

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [x] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4

Metric 3. Hydrology.

max 30 pts. | subtotal: 7 | 15

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [x] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal: 6 | 21

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [x] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

21

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland F

Site: SOID Station to Station 10 Transmission Line | Rater(s): Scott C. Ross | Date: 11/20/08

-4
subtotal this page

Metric 5. Special Wetlands.

0 (max 10 pts.) | 21 (subtotal)

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

-4 (max 20 pts.) | 17 (subtotal)

6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [0] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [ ] Other_____

6b. Horizontal (plan view) Interspersion. Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [✓] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

Typha angustifolia

- [✓] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography. Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [1] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

17 GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Wetland F

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

ORAM v. 5.0 Field Form Quantitative Rating

Wetland G

Site: SOID Station to Station ID Transmission Line | Rater(s): Scott C. Ross | Date: 11/21/08

Metric 1. Wetland Area (size).

max 6 pts. | subtotal: 2 | 2

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal: 8 | 10

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [x] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4

Metric 3. Hydrology.

max 30 pts. | subtotal: 9 | 19

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [x] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

5

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal: 10.5 | 29.5

4a. Substrate disturbance. Score one or double check and average.

- [x] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

3

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

4.5

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

29.5

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland G

Site: SOI Station to Station 10 Transmission Line | Rater(s): Scott C. Ross | Date: 11/21/08

7 subtotal this page

Ø | 29.5 **Metric 5. Special Wetlands.**

max 10 pts. | subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

7 | 36.5 **Metric 6. Plant communities, interspersion, microtopography.**

max 20 pts. | subtotal

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [Ø] Aquatic bed
- [1] Emergent
- [2] Shrub
- [1] Forest
- [Ø] Mudflats
- [Ø] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [✓] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [✓] Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- [1] Vegetated hummucks/tussucks
- [Ø] Coarse woody debris >15cm (6in)
- [Ø] Standing dead >25cm (10In) dbh
- [Ø] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

36.5 **GRAND TOTAL(max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Wetland G

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was not categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

ORAM v. 5.0 Field Form Quantitative Rating

Wetland H

Site: SOID Station to Station ID Transmission Line | Rater(s): Scott C. Ross | Date: 11/20/08

Metric 1. Wetland Area (size).

max 6 pts. | subtotal: 2 | 2

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal: 8 | 10

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [x] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4

Metric 3. Hydrology.

max 30 pts. | subtotal: 11 | 21

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [x] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [x] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

5

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging.
- [ ] other_____

Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal: 11 | 32

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

2.5

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [x] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

4.5

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

32

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland H

Site: SOD Station to Station 10 Transmission Line | Rater(s): Scott C. Ross | Date: 11/20/08

8 subtotal this page

Metric 5. Special Wetlands.

0 max 10 pts. | 32 subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

8 max 20 pts. | 40 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [0] Emergent
- [2] Shrub
- [2] Forest
- [0] Mudflats
- [0] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [✓] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [✓] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [1] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [ ] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

40 **GRAND TOTAL(max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Wetland H

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

but persons using these scoring ranges and breakpoints should keep in mind that they have been calibrated based on biological data obtained from predominately depressional wetlands located in the Eastern Corn Belt Plains Ecoregion. Thus, they should be applied with caution to wetlands located in other ecoregions of the state and to wetlands of other vegetation types and other landscape settings. Ohio EPA has found significant ecoregional differences in streams, and this may also be the case for wetlands (Ohio EPA 1988a, 1988b, 1989). Ohio EPA will be studying wetlands in the Erie-Ontario Lake Plains (including the glaciated Allegheny Plateau) in 2001 and 2002, and in the Huron-Erie Lake Plains and Western Allegheny Plateau Ecoregions in subsequent years.

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM and VIBI scores.

category	ORAM v. 5.0 score	VIBI score
1	0 - 29.9	0 - 21
1 or 2 gray zone	30 - 34.9	----
modified 2	35 - 44.9	22 - 44
2	45 - 59.9	45 - 66
2 or 3	60 - 64.9	----
3	65 - 100	67 - 100

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 21

SITE NAME/LOCATION: SOID Substation to Substation No. 10 Transmission Line - Hamilton, Butler Co., Ohio

SITE NUMBER: S-1 RIVER BASIN: Mill Creek DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 179 LAT.: 39.35055 LONG.: -84.52742 RIVER CODE: RIVER MILE:

DATE: 11/13/08 SCORER: SCR COMMENTS:

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

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

HHEI Metric Points

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
☐☐	BLDR SLABS [16 pts]	0%	☐☐	SILT [3 pt]	15%
☐☐	BOULDER (>256 mm) [16 pts]	0%	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐☐	BEDROCK [16 pt]	0%	☐☐	FINE DETRITUS [3 pts]	0%
☐☐	COBBLE (65-256 mm) [12 pts]	10%	☐☑	CLAY or HARDPAN [0 pt]	40%
☐☐	GRAVEL (2-64 mm) [9 pts]	15%	☐☐	MUCK [0 pts]	0%
☑☐	SAND (<2 mm) [6 pts]	20%	☐☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

Substrate Max = 40: 11

A + B

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):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ > 5 cm - 10 cm [15 pts]
☑ < 5 cm [5 pts]
☐ NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth Max = 30: 5

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 5

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

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

Bankfull Width Max=30: 5

COMMENTS: **AVERAGE BANKFULL WIDTH (meters):** 0.80

This information must also be completed

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

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

COMMENTS:

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

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☑ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS: Previous precipitation within 24 hours of evaluation - likely ephemeral channel

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

☐ None ☑ 1.0 ☐ 2.0 ☐ 3.0
☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >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: Mill Creek — Distance from Evaluated Stream 3.75

☐ 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: Greenhills NRCS Soil Map Page: _____ NRCS Soil Map Stream Order 1

County: Butler Township / City: Hamilton

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 11/13/08 Quantity: 0.30

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

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: _____

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)

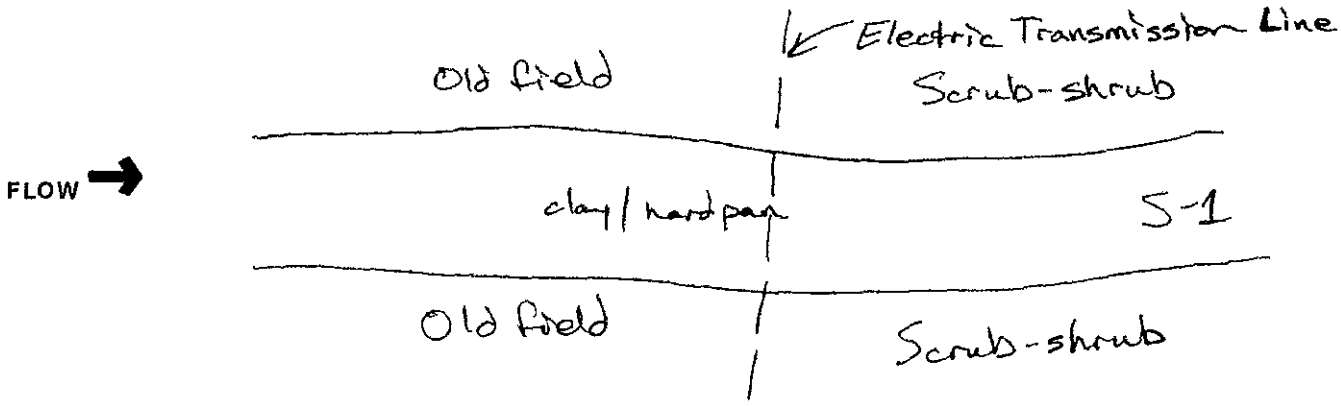
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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



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OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **28**

SITE NAME/LOCATION: SOID Substation to Substation No. 10 Transmission Line - Hamilton, Butler Co., Ohio

SITE NUMBER: S-2 | RIVER BASIN: Great Miami | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.35104 | LONG.: -84.53221 | RIVER CODE: | RIVER MILE:

DATE: 11/13/08 | SCORER: SCR | COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH 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
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	25%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☑	CLAY or HARDPAN [0 pt]	40%
☐	GRAVEL (2-64 mm) [9 pts]	10%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	15%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 | TOTAL NUMBER OF SUBSTRATE TYPES: 5

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):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | MAXIMUM POOL DEPTH (centimeters): 4

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

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

COMMENTS: | AVERAGE BANKFULL WIDTH (meters): 1.50

HHEI Metric Points

	Max	Score
Substrate	40	8
A + B		
Pool Depth	30	5
Bankfull Width	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 (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☑	☑	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

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

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: Previous precipitation within 24 hours of evaluation - likely ephemeral channel

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

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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: Pleasant Run Distance from Evaluated Stream 2.20

☐ 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: Greenhills NRCS Soil Map Page: _____ NRCS Soil Map Stream Order 1

County: Butler Township / City: Hamilton

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 11/13/08 Quantity: 0.30

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

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: _____

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)

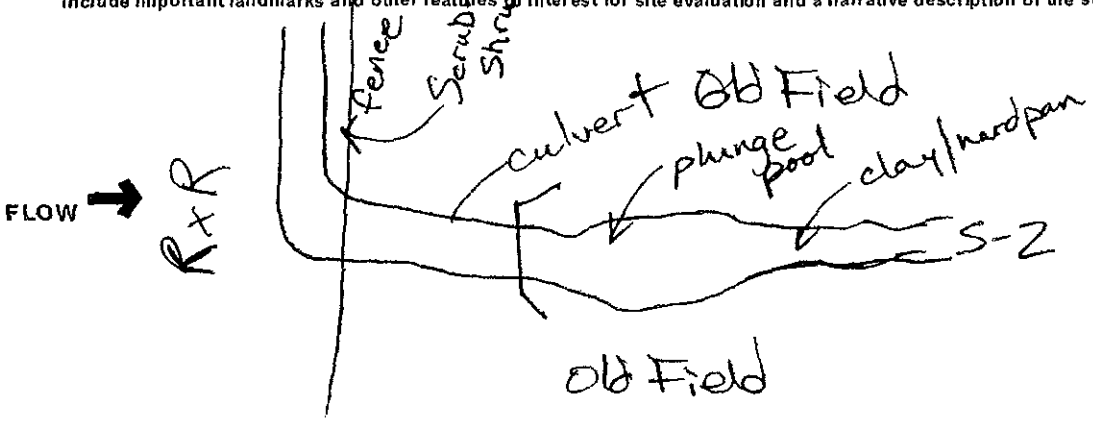
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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



OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 28

SITE NAME/LOCATION: SOID Substation to Substation No. 10 Transmission Line - Hamilton, Butler Co., Ohio

SITE NUMBER: S-3 | RIVER BASIN: Mill Creek | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.36463 | LONG.: -84.54116 | RIVER CODE: | RIVER MILE:

DATE: 11/13/08 | SCORER: SCR | COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH 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
☐☐	BLDR SLABS [16 pts]	0%	☐☐	SILT [3 pt]	15%
☐☐	BOULDER (>256 mm) [16 pts]	0%	☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	30%
☐☐	BEDROCK [16 pt]	0%	☐☐	FINE DETRITUS [3 pts]	0%
☐☐	COBBLE (65-256 mm) [12 pts]	0%	☑☐	CLAY or HARDPAN [0 pt]	35%
☐☐	GRAVEL (2-64 mm) [9 pts]	10%	☐☐	MUCK [0 pts]	0%
☐☐	SAND (<2 mm) [6 pts]	10%	☐☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Total: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

HHEI Metric Points

Substrate Max = 40: **8**

A + B

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):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 4

Pool Depth Max = 30: **5**

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

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

COMMENTS: **AVERAGE BANKFULL WIDTH (meters):** 1.40

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

COMMENTS:

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

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: Previous precipitation within 24 hours of evaluation - likely ephemeral channel

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

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☑ 2.0
- ☑ 2.5
- ☐ 3.0
- ☐ >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: Mill Creek — Distance from Evaluated Stream 4.46

☐ 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: Greenhills NRCS Soil Map Page: _____ NRCS Soil Map Stream Order 1

County: Butler Township / City: Hamilton

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 11/13/08 Quantity: 0.30

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

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: _____

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)

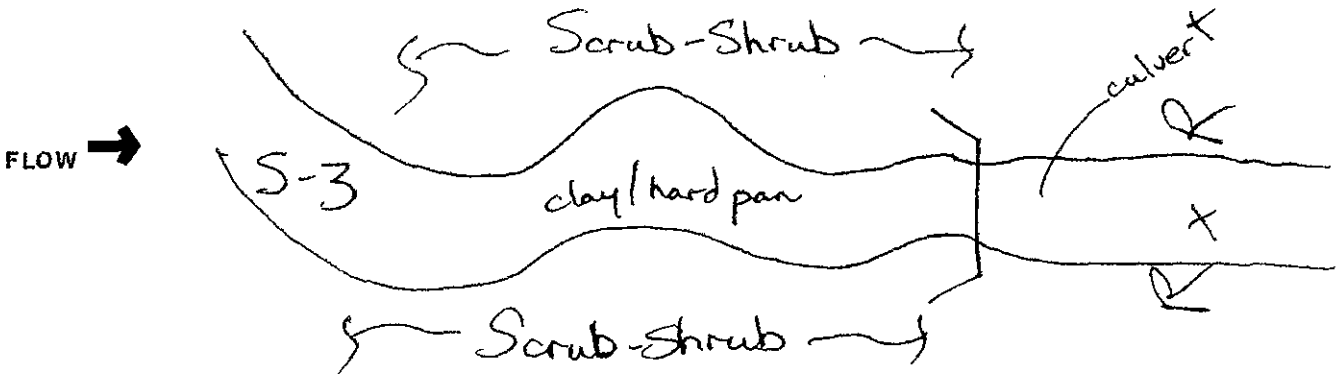
Fish Observed? (Y/N): N Voucher? (Y/N): N Salamanders Observed? (Y/N): N Voucher? (Y/N): N

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



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OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 23

SITE NAME/LOCATION: SOID Substation to Substation No. 10 Transmission Line - Hamilton, Butler Co., Ohio

SITE NUMBER: S-4 | RIVER BASIN: Mill Creek | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.36351 | LONG.: -84.53789 | RIVER CODE: | RIVER MILE:

DATE: 11/13/08 | SCORER: SCR | COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH 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
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	10%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	35%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☑	CLAY or HARDPAN [0 pt]	35%
☐	GRAVEL (2-64 mm) [9 pts]	10%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	10%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Total Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3

TOTAL NUMBER OF SUBSTRATE TYPES: 5

HHEI Metric Points

Substrate Max = 40: **8**

A + B

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):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | MAXIMUM POOL DEPTH (centimeters): 4

Pool Depth Max = 30: **0**

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

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

COMMENTS: | AVERAGE BANKFULL WIDTH (meters): 1.10

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

COMMENTS:

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

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS:

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

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☑ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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: Mill Creek Distance from Evaluated Stream 4.25

☐ 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: Greenhills NRCS Soil Map Page: _____ NRCS Soil Map Stream Order 1

County: Butler Township / City: Hamilton

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 11/13/08 Quantity: 0.30

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 70%

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: _____

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)

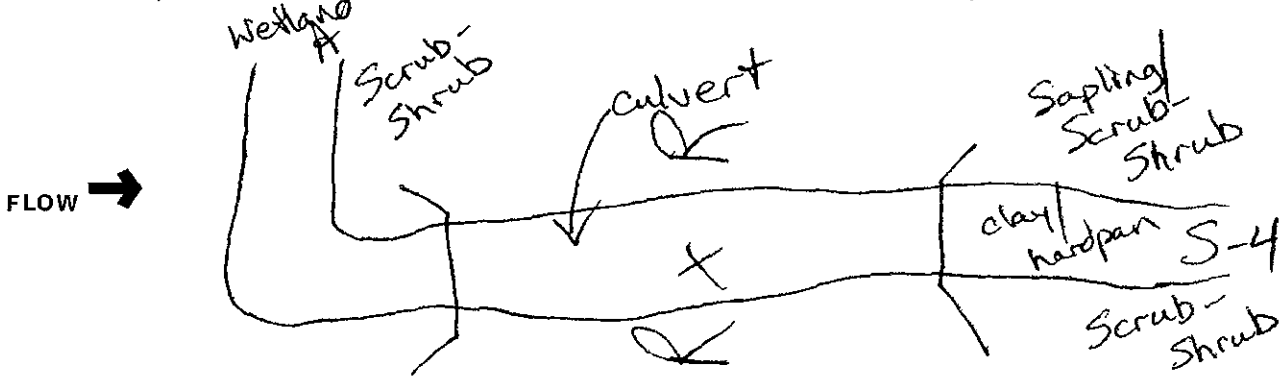
Fish Observed? (Y/N): N Voucher? (Y/N): N Salamanders Observed? (Y/N): N Voucher? (Y/N): N

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



OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 23

SITE NAME/LOCATION: SOID Substation to Substation No. 10 Transmission Line - Hamilton, Butler Co., Ohio

SITE NUMBER: S-5 | RIVER BASIN: Mill Creek | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.36194 | LONG.: -84.53259 | RIVER CODE: | RIVER MILE:

DATE: 11/13/08 | SCORER: SCR | COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH 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
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	15%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	30%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☑	CLAY or HARDPAN [0 pt]	40%
☐	GRAVEL (2-64 mm) [9 pts]	5%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	10%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage (Other): 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3

TOTAL NUMBER OF SUBSTRATE TYPES: 5

HHEI Metric Points

Substrate Max = 40: 8

A + B

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):

☐ > 30 centimeters [20 pts]
☐ ≥ 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ > 5 cm - 10 cm [15 pts]
☐ < 5 cm [5 pts]
☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | MAXIMUM POOL DEPTH (centimeters): 4

Pool Depth Max = 30: 0

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

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

COMMENTS: | AVERAGE BANKFULL WIDTH (meters): 1.40

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

COMMENTS:

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

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

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

☐ None ☐ 0.5 ☐ 1.0 ☐ 1.5 ☑ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: Mill Creek — Distance from Evaluated Stream 4.00

☐ 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: Greenhills NRCS Soil Map Page: _____ NRCS Soil Map Stream Order 1

County: Butler Township / City: Hamilton

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 11/13/08 Quantity: 0.30

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 40%

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: _____

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)

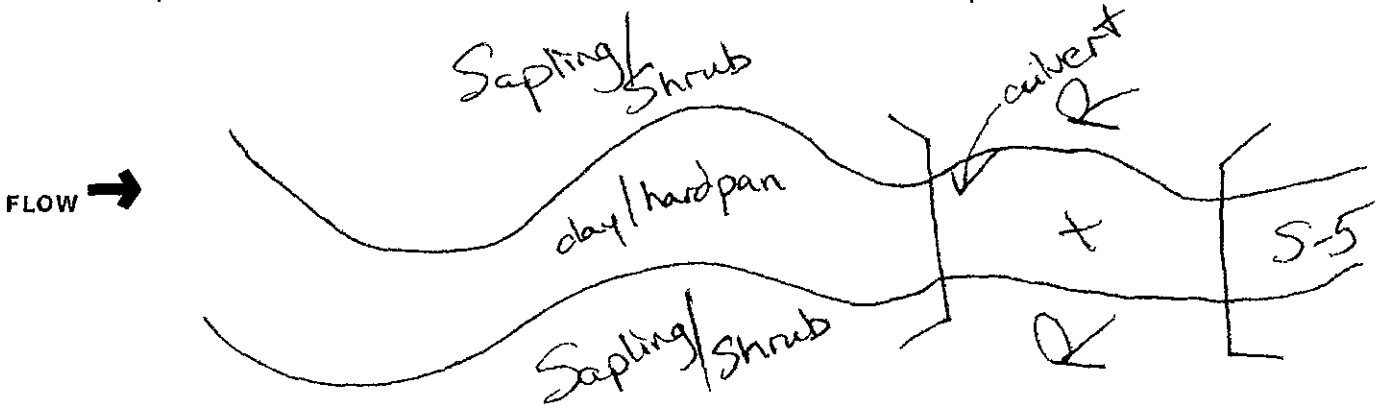
Fish Observed? (Y/N): N Voucher? (Y/N): N Salamanders Observed? (Y/N): N Voucher? (Y/N): N

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



[redacted] [redacted]

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 16

SITE NAME/LOCATION: SOID Substation to Substation No. 10 Transmission Line - Hamilton, Butler Co., Ohio

SITE NUMBER: S-6 RIVER BASIN: Mill Creek DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.36057 LONG.: -84.52792 RIVER CODE: RIVER MILE:

DATE: 11/20/08 SCORER: SCR COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH 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
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	15%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☑	CLAY or HARDPAN [0 pt]	30%
☐	GRAVEL (2-64 mm) [8 pts]	15%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	25%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 5

HHEI Metric Points

Substrate Max = 40: 11

A + B

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):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

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

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

COMMENTS: AVERAGE BANKFULL WIDTH (meters): 0.90

Bankfull Width Max=30: 5

This information must also be completed

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

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

COMMENTS:

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

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: Previous precipitation, highly modified with plunge pools - likely ephemeral channel

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

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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: Mill Creek — Distance from Evaluated Stream 3.72
☐ 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: Greenhills NRCS Soil Map Page: _____ NRCS Soil Map Stream Order 1

County: Butler Township / City: Hamilton

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 11/18/08 Quantity: 0.00

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

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: Highly modified stream with multiple culverts

BIOTIC EVALUATION

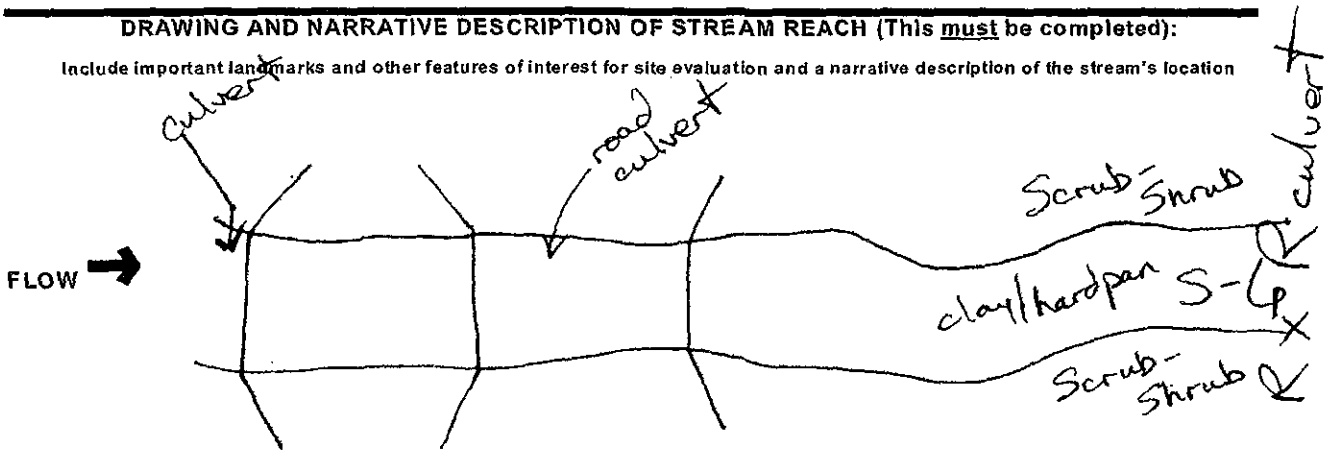
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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



OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 27

SITE NAME/LOCATION: SOID Substation to Substation No. 10 Transmission Line - Hamilton, Butler Co., Ohio

SITE NUMBER: S-7 | RIVER BASIN: Mill Creek | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 64 | LAT.: 39.35783 | LONG.: -84.51961 | RIVER CODE: | RIVER MILE:

DATE: 11/20/08 | SCORER: SCR | COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH 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
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	10%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	35%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☑	CLAY or HARDPAN [0 pt]	45%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	10%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 7

A + B

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):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ ≤ 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

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

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

COMMENTS: **AVERAGE BANKFULL WIDTH (meters):** 2.80

Bankfull Width Max=30: 20

This information must also be completed

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

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

COMMENTS:

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

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, Isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: highly modified channel connected to former canal system - likely ephemeral channel

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

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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: Mill Creek — Distance from Evaluated Stream 2.91

☐ 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: Greenhills NRCS Soil Map Page: _____ NRCS Soil Map Stream Order 1

County: Butler Township / City: Hamilton

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/18/08 Quantity: 0.00

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

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: Suspected to be a part of former canal system

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)

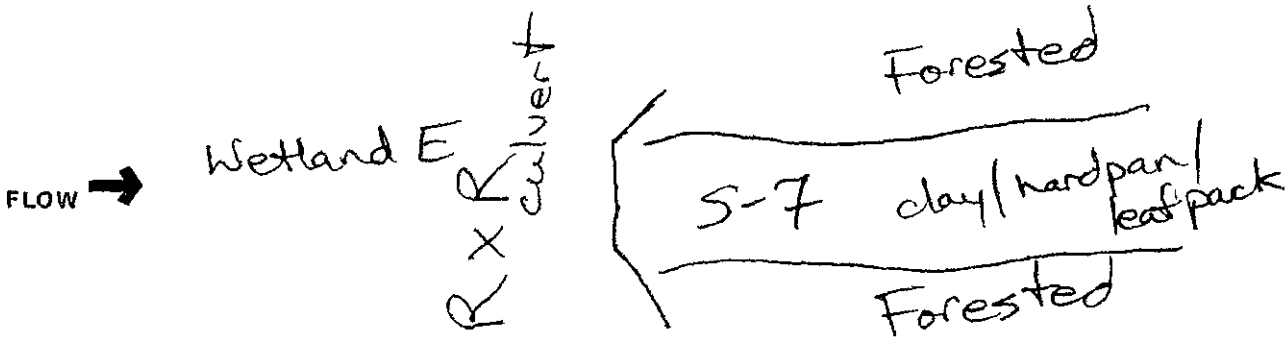
Fish Observed? (Y/N): N Voucher? (Y/N): N Salamanders Observed? (Y/N) N Voucher? (Y/N): N

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



OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 27

SITE NAME/LOCATION: SOID Substation to Substation No. 10 Transmission Line - Hamilton, Butler Co., Ohio

SITE NUMBER: S-8 | RIVER BASIN: Mill Creek | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.35734 | LONG.: -84.51903 | RIVER CODE: | RIVER MILE:

DATE: 11/20/08 | SCORER: SCR | COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH 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
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	10%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	35%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☑	CLAY or HARDPAN [0 pt]	45%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	10%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40

7

A + B

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):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

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

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

COMMENTS: **AVERAGE BANKFULL WIDTH (meters):** 2.60

Bankfull Width Max=30

20

This information must also be completed

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

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

COMMENTS:

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

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: highly modified channel - former canal system - likely ephemeral channel

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

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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: Mill Creek — Distance from Evaluated Stream 2.90

☐ 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: Greenhills NRCS Soil Map Page: _____ NRCS Soil Map Stream Order 2

County: Butler Township / City: Hamilton

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/18/08 Quantity: 0.00

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

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: Suspected to be former canal

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)

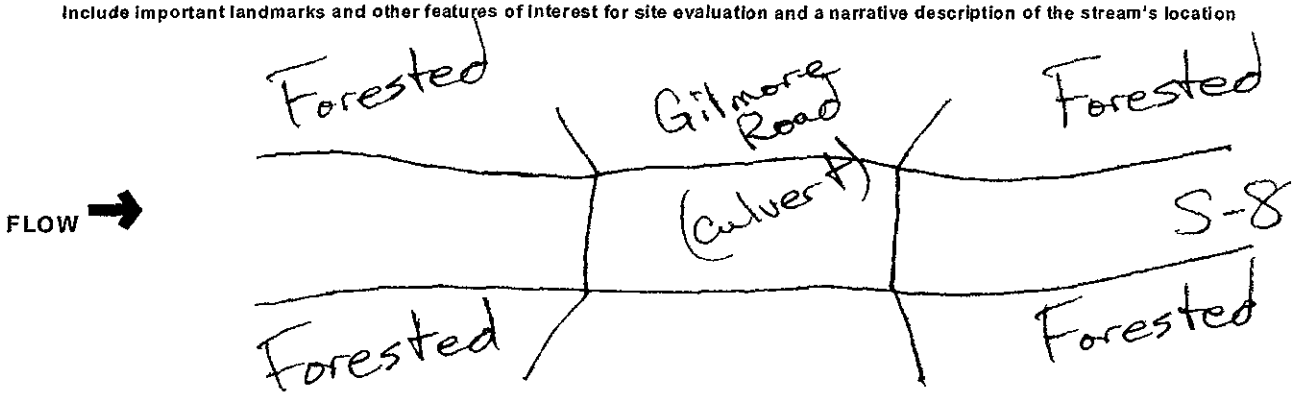
Fish Observed? (Y/N): N Voucher? (Y/N): N Salamanders Observed? (Y/N): N Voucher? (Y/N): N

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



APPENDIX E

Ohio Department of Natural Resources

TED STRICKLAND, GOVERNOR SEAN D. LOGAN, DIRECTOR

Division of Natural Areas & Preserves
Steven D. Maurer, Chief
2045 Morse Road, F-1
Columbus, OH 43229-6693
Phone: (614) 265-6453 Fax: (614) 267-3096

December 18, 2008

Scott Ross
BBC&M Engineering, Inc.
6190 Enterprise Ct.
Dublin, OH 43016

Dear Mr. Ross:

After reviewing our Natural Heritage maps and files, I find the Division of Natural Areas and Preserves has records of rare or endangered species near the BBC&M Engineering, Inc. 138 kV Long Line project #011-11772-E00. The map I have included with this letter displays the locations of the records and corresponds to the attached list. Becky Jenkins of the Division of Wildlife should be contacted regarding possible impacts to rare animal species. She can be reached at (614) 265-6631. The site is located in Secs. 29 and 35, Fairfield Twp., Butler Co., Green Hills Quadrangle. The project is within 5 miles of an Indiana Bat record. *Myotis sodalis,* Indiana Bat, is Endangered in Ohio and Federally Endangered. The US Fish and Wildlife Service should be consulted regarding possible impacts to the bats. They can be reached at (614) 469-6923.

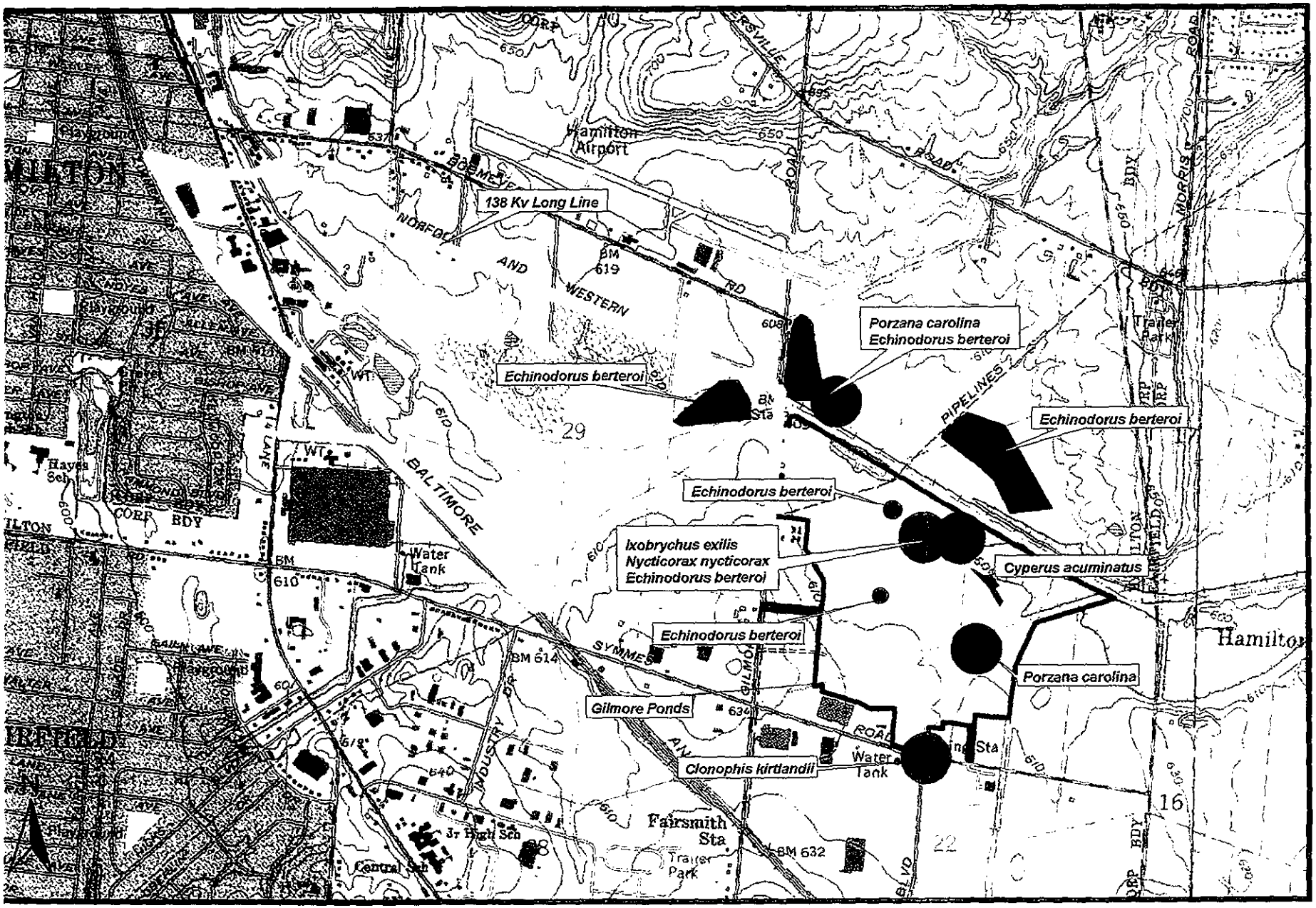
There are no existing or proposed state nature preserves at the project site. We are also unaware of any unique ecological sites, geologic features, breeding or non-breeding animal concentrations, state parks, state forests, scenic rivers, or wildlife areas within the project area. However, the site is near the Gilmore Ponds Preserve. The Metroparks of Butler County should be contacted regarding possible impacts the preserve. They can be reached at (513) 867-5835. The red line on the map represents the approximate boundary of the preserve.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although we inventory all types of plant communities, we only maintain records on the highest quality areas.

Please contact me at (614) 265-6409 if I can be of further assistance.

Sincerely,

Butch Grieszmer, Data Specialist
Resource Services Group



DNAP Natural Heritage Program
Data Services
Butch Grieszmer

0 1 Miles

ember 18, 2008

138 kV Long Line #011-11772-E00

Scientific Name	Common Name	State Status	Federal Status	Last Observed
Clonophis kirtlandii	Kirtland's Snake	T		1991-10-25
Cyperus acuminatus	Pale Umbrella-sedge	T		2000-07-26
Echinodorus berteroi	Burhead	E		1996-08-28
Echinodorus berteroi	Burhead	E		1996-08-28
Echinodorus berteroi	Burhead	E		1996-08-28
Echinodorus berteroi	Burhead	E		1996-09-11
Ixobrychus exilis	Least Bittern	T		1991-06 (NO DAY
Nycticorax nycticorax	Black-crowned Night-heron	T		1990-07-15
Porzana carolina	Sora Rail	SC		1983-05
Porzana carolina	Sora Rail	SC		1990-07

E=Endangered
FE=Federally Endangered
FT=Federally Threatened
P=Potentially Threatened
SC=Special Concern
SI=Special Interest
T=Threatened

APPENDIX D

OVAI Contract Report #2009-77a

A PHASE I CULTURAL RESOURCE LITERATURE REVIEW FOR THE PROPOSED ROUTE, SUBSTATION 11 TO SUBSTATION 10, 138 kV TRANSMISSION LINE PROJECT, CITY OF HAMILTON AND CITY OF FAIRFIELD, BUTLER COUNTY, OHIO

By

Stephen M. Biehl

December 22, 2009

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OVAI Contract Report #2009-77a

A PHASE I CULTURAL RESOURCE LITERATURE REVIEW FOR THE PROPOSED ROUTE, SUBSTATION 11 TO SUBSTATION 10, 138 kV TRANSMISSION LINE PROJECT, CITY OF HAMILTON AND CITY OF FAIRFIELD, BUTLER COUNTY, OHIO

By

Stephen M. Biehl

Prepared for:

BBC&M Engineering, Inc.
6190 Enterprise Court
Dublin, OH 43016

On behalf of:

American Municipal Power, Inc. (AMP)
1111 Schrock Road, Suite 100
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Prepared by:

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Albert M. Pecora Ph.D., RPA
Principal Investigator
December 22, 2009

Lead Agency: Ohio Power Siting Board

INTRODUCTION

The following literature review was completed at the request of Mary Sharrett of BBC&M Engineering, Inc. This review is designed to list and summarize known or previously recorded cultural resources within 3.0 km of the Substation 11 to Substation 10, 138 kV Transmission Line project located within the City of Hamilton and City of Fairfield, Butler County, Ohio (Figures 1-5).

Previously recorded cultural resources are the product of isolated professional surveys and amateur archaeology. Ohio has not been systematically surveyed to identify and record all cultural resources. Because of this, the literature review cannot determine if the proposed project will impact undocumented cultural resources, including National Register eligible properties. That is, we can only determine the presence of cultural resources that have been previously recorded and documented at the Ohio Historic Preservation Office, Columbus. The nature of the terrain, coupled with historic-era map information and demographic location (e.g., urban, rural, etc.), does help in determining the potential for previously undocumented cultural resources at any given location.

PROJECT DESCRIPTION

The proposed project includes the installation of overhead power lines and poles (as needed) along the designated Proposed Route that extends from the existing Substation 10 to the existing Substation 11 (Figures 2 and 5). The Proposed Route, which is the preferred route by the City of Hamilton, will extend west from the existing Substation 10 over a modern commercial property to the west side of the B&O railroad and east side of Zimmerman Avenue (Figures 2 and 5; Plates 1-4). This portion of the Proposed Route extends through residential neighborhood (west side of railroad tracks) and commercial properties (east side of railroad tracks). From this point, the Proposed Route follows the same trajectory as an existing power line along the west side of the railroad tracks, and adjacent to an existing railroad bridge over Corwin Avenue (Figure 5; Plates 5-7). At the intersection of the railroad and Dixie Highway/SR 4, the Proposed Route turns south, continuing along an existing power line and residential street, which eventually intersects with Dixie Highway/SR 4 (Figures 2 and 5; Plate 8). The Proposed Route will traverse adjacent to a documented structure (BUT-1366-09), which was constructed in 1895 (Figure 2; Plates 9 and 10). Since this portion of the Proposed Route will be installed on an existing power line corridor which is also adjacent to a commercial complex, it will not create a new visual impact for BUT-1366-09. Slightly south of BUT-1366-09, the Proposed Route turns east and crosses over Dixie Highway/SR 4 and traverses through an industrial property (BUT-1370-12), which is the 1945 Fisher Body Plant factory (Figures 2 and 5; Plates 12 and 13). This industrial property is still operational, although it is no longer the Fisher Body Plant. After crossing the industrial property, the Proposed Route will meet-up with the B&O railroad line again and continue along the west side of the tracks on top of existing poles (Figures 2 and 5; Plates 13-15). Before reaching the intersection of Symmes Road and the B&O

railroad, the Proposed Route turns northeast, crossing over the railroad tracks and traverses along the existing Duke Energy transmission power line, which is located along the northern edge of an existing natural gas pipeline corridor (Figure 2). The Proposed Route/Duke Energy power line traverses through an industrial park to the west side of Gilmore Road (Figures 2 and 5; Plates 16-21). The industrial park is comprised of both disturbed (developed) and undisturbed (fallow/agricultural field) portions. At Gilmore Road, the Proposed Route will turn south, along the west side of the road, until it reaches the existing Substation 11 (Figures 2 and 5; Plate 21). At this point, the Proposed Route will turn east, crossing over Gilmore Road, into Substation 11 (Figures 2 and 5).

Proposed Route: No National Register of Historic Places (NRHP) properties are located within 100 ft or within 1,000 ft of the Proposed Route. No previously recorded archaeological sites (OAI) are located within 100 ft of the Proposed Route. One site, 33Bu211, is located approximately 656 ft south of the eastern end of the Proposed Route near the existing Substation 11 (Figure 2). It is doubtful that this site is intact since it is situated along the western side of Gilmore Road within an industrial park. Three Ohio Historic Inventory (OHI) structures were identified within 1,000 ft of the Proposed Route (Figure 2). OHI structure BUT-877-09 is identified as a 1947 vernacular style, Vernon Gase House, located at 1125 Tiffin Avenue, west of the Proposed Route and Substation 10 (Figure 2). OHI structure BUT-1366-09 is identified as an 1895 Queen Anne style, Paul De Fazio House, located at 3951 Dixie Highway (southwest quadrant of Dixie Highway and Bishop Road) (Figure 2; Plates 9 and 10). This structure is also within 100 ft of the Proposed Route. OHI structure BUT-1370-12 is identified as a 1945 vernacular style, Fisher Body Plant factory, located at the northeast quadrant of the intersection of Dixie Highway and Symmes Road (Figure 2; Plates 12 and 13). This structure is also within 100 ft of the Proposed Route. The visual impact from the Proposed Route is considered minimal on OHI structures BUT-1366-09 and BUT-1370-12, both of which are located within 100 ft of the route. This is based on the fact that the area surrounding these structures is comprised of modern structures including commercial buildings. Also, the Proposed Route will be installed on top of existing poles that already have power lines strewn along their course (Plates 8-14). Based on this information, no cultural resources will be directly impacted by the Proposed Route.

Soils

Two soil associations are mapped for the proposed project corridor and include Fincastle-Patton-Xenia and Eldean-Ockley (USDA-SCS 1980). The Fincastle-Patton-Xenia association is described as "deep, nearly level and gently sloping, somewhat poorly drained, poorly drained, and moderately well drained soils that have a moderately fine textured subsoil; formed in loess, glacial till, and lacustrine silts" (USDA-SCS 1980:9). The Eldean-Ockley association is described as "deep, nearly level to moderately sloping, well drained soils that mostly have a fine or moderately fine textured subsoil; formed mainly in glacial outwash" (USDA-SCS 1980:9). Eight specific soil types have been mapped for the Proposed Route and include Eldean-Urban land complex (EuA), nearly level; Urban land-Eldean complex (UpA), nearly level; Uniontown silt

loam (UnA), 0-2% slopes; Udorthents & Dumps (Uf); Patton silty clay loam (Pa); Russell-Miamian silt loam (RuB2), 2-6% slopes, moderately eroded; Xenia silt loam (XeB), 2-6% slopes; and Fincastle silt loam (FcA), 0-2% slopes (USDA-SCS 1980). General soil series profiles for the Eldean, Tippecanoe, Xenia, Patton, Uniontown, Russell-Miamian, and Fincastle are given in Table 1.

The Eldean-Urban land complex (EuA) is described as consisting of both the well drained Eldean soils (50-65%) and the Urban land soils (25-50%). This soil type is typically found along terraces and glacial outwash plains and has been mapped within two separate areas comprising more than 2500 acres. These areas include the cities of Hamilton and Middletown (USDA-SCS 1980). The Urban land-Eldean complex (UpA) is described as consisting of both the Urban land soils (50-85%) and the well drained Eldean soils, which can consist of upwards of 50% Eldean soils but are usually intermixed beyond practical separation delineation. Typically, this soil type is found near the urban built-up areas of towns and cities such as Hamilton and Middletown and around large industrial complexes (USDA-SCS 1980). The Udorthents & Dumps (Uf) is described as those areas that have been artificially filled with materials including trash, stone, perishable/nonperishable materials, and industrial waste. These areas may include sanitary landfills, slag piles from steel mills, and paper mills (USDA-SCS 1980). The majority of the soils have a low potential to contain intact archaeological deposits, especially prehistoric sites, since the soils are comprised of the Urban land complex.

Table 1. General soil series profiles (USDA-SCS 1980).

Soil Series	Horizon:	Depth:	Hue:	Texture:
Eldean	Ap	0-15 cm	Dark brown (10YR4/3)	Loam
	B1	15-23 cm	Brown (7.5YR4/4)	Silty clay loam
	B21t	23-46 cm	Brown (7.5YR4/4)	Gravelly clay
Fincastle	Ap	0-20 cm	Dark grayish brown (10YR4/2)	Silt loam
	A&B	20-33 cm	A-Dark grayish brown (10YR4/2) B-grayish brown (10YR5/2)	Silt loam
	B21tg	33-51 cm	Dark yellowish brown (10YR4/4)	Silty clay loam
Miamian	Ap	0-15 cm	Brown (10YR4/3)	Silt loam
	B1	15-25 cm	Dark yellowish brown (10YR4/4)	Silty clay loam
Patton	Ap	0-18 cm	Very dark gray (10YR3/1)	Silty clay loam
	A12	18-33 cm	Black (10YR2/1)	Silty clay loam
Russell	Ap	0-18 cm	Dark brown (10YR4/3)	Silt loam
	B1	18-25 cm	Brown (10YR5/3)	Silt loam
Tippecanoe	Ap	0-20 cm	Very dark grayish brown (10YR3/2)	Silt loam
	A12	20-33 cm	Very dark brown (10YR2/2)	Heavy silt loam
Uniontown	Ap	0-25 cm	Dark grayish brown (10YR4/2)	Silt loam
	B1	25-36 cm	Brown (10YR4/4)	Heavy silt loam
Xenia	Ap	0-15 cm	Dark grayish brown (10YR4/2)	Silt loam
	B&A	15-25 cm	B-Brown (10YR5/3) A-Grayish brown (10YR5/2)	Heavy silt loam

LITERATURE REVIEW

The following literature review examines and summarizes the following documents and maps. The Ohio Archaeological Inventory (OAI), the Ohio Historic Inventory (OHI), the National Register of Historic Places files, and the Cultural Resource Management (CRM) reports, which are kept on file at the Ohio Historic Preservation Office (OHPO), are current as of the date of this report.

1. *An Archeological Atlas of Ohio* (Mills 1914);
2. Ohio Archaeological Inventory (OAI);
3. Ohio Historic Inventory (OHI);
4. National Register of Historic Places files;
5. OHPO Cultural Resource Management (CRM) reports;
6. 19th century atlas of Butler County;
7. The early 20th century USGS 15' series topographic maps; and
8. Modern USGS 7.5' series topographic maps.

Archaeological and Historic Records for Project Area and Surrounding Region

Mills' Atlas (1914): Mills (1914) recorded 251 archaeological sites in Butler County. These sites include mounds (n=221), enclosures (n=24), village site (n=1), burials (n=4), and cemetery (n=1) (Mills 1914). The majority of these sites are located along the Great Miami River, with most of these along the west side. A number of these sites are also found along the main tributaries of the Great Miami River, which include Sevenmile Creek, Fourmile Creek, and Indian Creek. Twenty-five of these sites are located within Fairfield Township and include mounds (n=17), enclosures (n=7), and cemetery (n=1). None of these sites appear to be located within, adjacent to, or within view of the project area.

Ohio Archaeological Inventory (OAI): Eleven archaeological sites have been documented within the 3.0 km study radius (Table 2; Figure 2). Due to map scale constraints, not all of these sites could be plotted on Figure 2. Documented temporal components include Early Archaic (n=1), Middle Archaic (n=1), Late Archaic (n=3), Early Woodland (n=1), unassigned prehistoric (n=7), and 19th/20th century (n=2). These 11 sites were documented on four types of landform including terrace (n=4, 36%), glacial hummock (n=5, 45%), wetland hummock (n=1, 9%), and moraine (n=1, 9%). Nine of these sites (33Bu231, 233-236, 477, 479-481) were identified during professional cultural resource management surveys (Duerksen and Doershuk 1993, 1994b; White 1979). One of these sites, 33Bu477, was recommended for a Phase III data recovery survey (Duerksen and Doershuk 1994a). With the exception of 33Bu211, none of these sites are located within, adjacent to, or within view of the project area. Site 33Bu211 is located approximately 200 meters (656 ft) south of the Proposed Route where it intersects with the existing Substation 11 (Figure 2). It is doubtful that this site remains intact since this entire area has been developed into an industrial park.

Ohio Historic Inventory: Ninety-eight previously recorded Ohio Historic Inventory (OHIs) structures are located within the 3.0 km study radius, 10 of which are located within a 2.0 km radius (Table 3; Figure 2). None of these structures are within the project area, although three (BUT-877-09; BUT-1366-09; BUT-1370-12) are within view of the Proposed Route (Figure 2). Two structures, BUT-1366-09 and BUT-1370-12, are located adjacent to the Proposed Route (Figure 2). BUT-1366-09 is a Queen Anne-style house constructed in 1895 (Plates 9 and 10). BUT-1370-12 is a vernacular-style manufacturing plant (Fisher Body Plant) that was constructed in 1945. Due to map scale constraints, not all of the OHIs within the 3.0 km radius are plotted on Figure 2.

National Register of Historic Places (NRHP): No NRHP properties or districts are located within the 3.0 km study radius.

Cultural Resource Management Reports: Three Phase I Cultural Resource Management (CRM) surveys (Duerksen and Doershuk 1993, 1994b; White 1979) have been conducted within the 3.0 km study radius (Figure 2). Due to map scale constraints, not all of these surveys are plotted on Figure 2. None of these surveys overlap the project corridor (Figure 2). One Phase III data recovery survey has been completed within the 3.0 km study radius on site 33Bu477 (Duerksen and Doershuk 1994a).

***Historic-era Atlas*:** The 1875 *Combination Atlas Map of Butler County, Ohio* (Everts 1875) indicates that the Proposed Route passes through the 1875 properties of J. Burke; along an existing railroad line; an existing road; J. Hay Heirs; M. Diefel; E. Bork; and D. C. Cumler (Figure 3). The Proposed Route does not appear to cross-over any 1875 structure locations (Figure 3).

15' USGS topographic quadrangles: The project corridor does not appear to cross-over any structure locations that are indicated on the 1915 (surveyed 1903 & 1915) Hamilton, Ohio 15' USGS topographic map (Figure 4). The Proposed Route extends west from the present day location of Substation 10 and follows southeast along the Cincinnati, Hamilton, and Dayton railroad line before turning south along a road then southeast back to the aforementioned railroad line, then east towards the present day location of the Substation 11 (Figure 4). One structure appears to be adjacent to the Proposed Route (Figure 4).

***7.5' USGS topographic quadrangles*:** On the current 1965 (PR 1981) Greenhills, Ohio 7.5' USGS topographic map the Proposed Route extends west from Substation 10 over a commercial property then traverses southeast along the west side of the Baltimore and Ohio railroad (B&O), between Zimmerman Avenue and the railroad before turning south along the west side of Dixie Highway/SR 4, then turning east through an industrial plant property and meeting back with the B&O railroad, after which it turns east-northeast towards the existing Substation 11 (Figure 2).

Table 2. Previously recorded archaeological sites (OAIs) within the 3.0 km study radius.

Site #	Temporal Period	Landform	Artifacts	Site Size	Reference
33Bu208	Unass. prehistoric	Glacial hummock	Debitage=19; Biface=3; Tools=9; Core=1	50 m^2	Site form
33Bu211	Early Archaic; Late Archaic; Early Woodland	Glacial hummock	Debitage=74; Points=7; Tools=69; Biface=8; Core=1; Animal bone=8; Human bone=7	20,000 m^2	Site form
33Bu231	Unass. prehist./Historic	Terrace	Debitage=8; FCR=7; Shell=1; Biface=1/ Hist.=3	18,115.5 m^2	White 1979
33Bu233	Unass. prehist./Historic	Terrace	Debitage=52; FCR=2; Tools=4/ Hist.=1	37,160 m^2	White 1979
33Bu234	Late Archaic	Terrace	Debitage=50; Tools=6; Point=1	9290 m^2	White 1979
33Bu235	Middle Archaic	Terrace	Debitage=13; FCR=6; Tools=3; Point=1	33,444 m^2	White 1979
33Bu236	Unass. prehistoric	Moraine	Debitage=10; FCR=1; Biface=1; Core=2	9290 m^2	White 1979
33Bu477	Late Archaic	Wetland hummock	304+ artifacts; Botanical remains	2400 m^2	Duerksen and Doershuk 1993, 1994a
33Bu479	Unass. prehistoric	Glacial hummock	Debitage=4	809 m^2	Duerksen and Doershuk 1994b
33Bu480	Unass. prehistoric	Glacial hummock	Debitage=2; Biface=1	809 m^2	Duerksen and Doershuk 1994b
33Bu481	Unass. prehistoric	Glacial hummock	Debitage=2; Hammerstone=1	809 m^2	Duerksen and Doershuk 1994b

Table 3. Previously recorded structures (OHIs) within the 2.0 km study radius.

OHI	Name	Address	Style	Date	UTM East: Zone 16	UTM North: Zone 16
BUT-877-09	Vernon Gase House	1125 Tiffin Ave	Vernacular	1947	711169	4359918
BUT-1366-09	Paul De Fazio House	3951 Dixie Hwy	Queen Anne	1895	711728	4359058
BUT-1367-09	Not given	4551 Dixie Hwy	Dutch Colonial Revival	1920	711727	4358533
BUT-1368-09	Bales House	4565 Dixie Hwy	Tudor/English Revival	1920	711723	4358511
BUT-1369-12	Holiday Inn	4670 Dixie Hwy	Not given	1968	711870	4358220
BUT-1370-12	Fisher Body Plant	Dixie Highway and Symmes Rd	Vernacular	1945	712013	4358683
BUT-1371-12	Aaron W Schenck House	Dixie Highway	Italianate	1864	712171	4357774
BUT-1372-12	Fairfield High School	5050 Dixie Hwy	International	1951	712415	4357403
BUT-1373-12	Central Elementary School	5058 Dixie Hwy	Second Renaissance Revival	1929	712457	4357306
BUT-1473-12	Patrick Burns House	4815 Walter Ave	Vernacular	1915	711610	4357810

Summary

No previously recorded cultural resources (OAIs, OHIs, or NRHP properties/district are located within the Substation 11 to Substation 10, 138 kV Transmission Line project in the City of Hamilton and City of Fairfield, Butler County, Ohio. No structures appear to be within the Proposed Route on the 1875 atlas, 1915 15' USGS map or the current 1965 (PR 1981 and 1988) 7.5' USGS maps, although one structure does appear adjacent on the 15' USGS map and several on the current 7.5' USGS map. Currently, the Proposed Route will be adjacent to two OHIs, BUT-1366-09 and BUT-1370-12. Because the Proposed Route follows an existing power lines and will be installed on existing poles, it will not create a new visual impact on the two adjacent OHIs (Plates 11-13). In addition, modern residential and commercial structures are adjacent to these OHIs (Plate 11).

Based on the map information extending back to 1875, it is unlikely that significant historic-era archaeological sites will be impacted by the proposed project. Because the Proposed Route will utilize existing poles, for the most part, they will not have a new visual impact on any historic properties or structures. Likewise, this alignment is unlikely to have an impact on archaeological resources. In sum, the Substation 11 to Substation 10, 138 kV Transmission Line project will not impact known cultural resources. No further work is recommended for the project.

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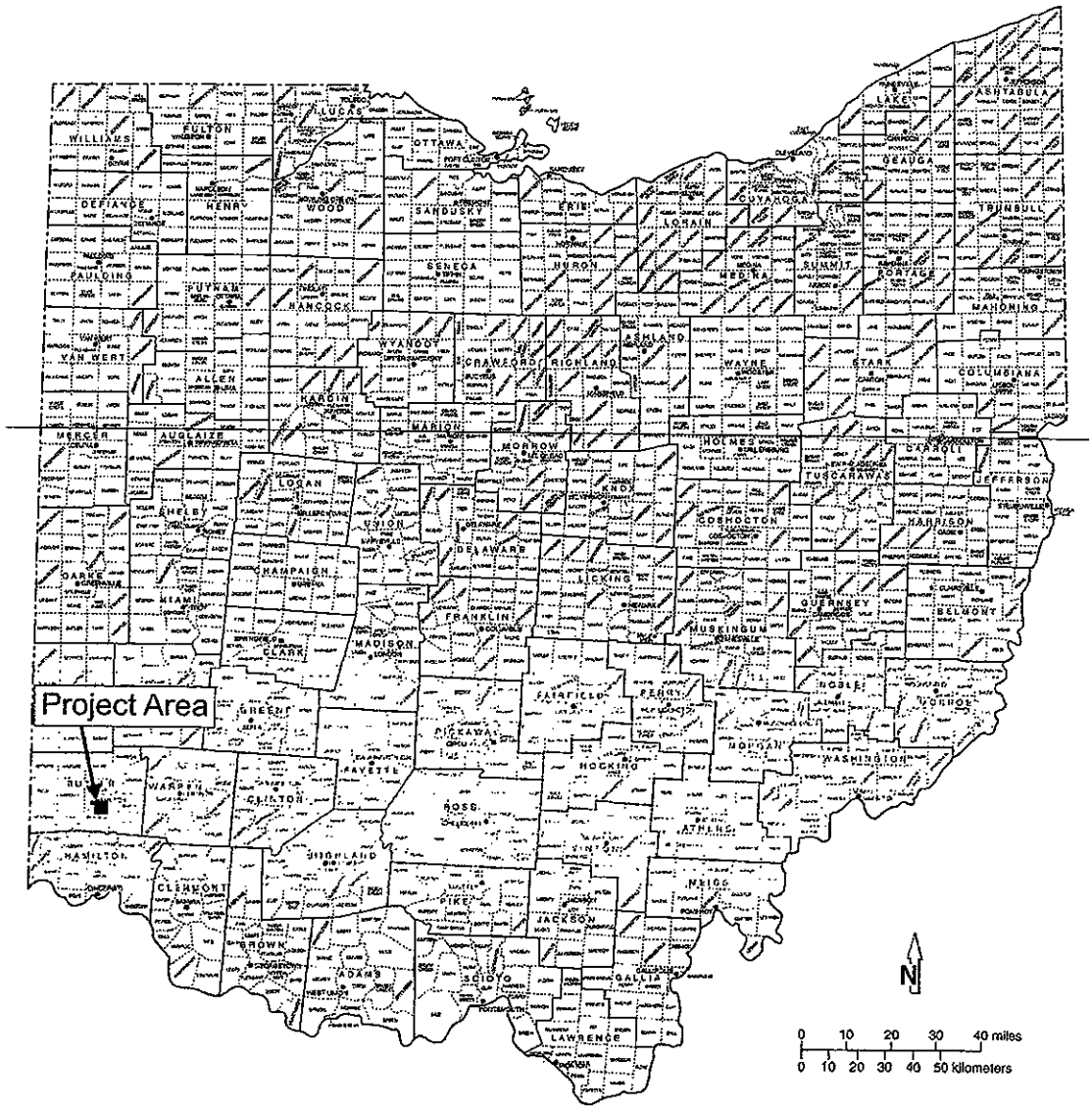

Figure 1. State of Ohio map showing general location of the project area.

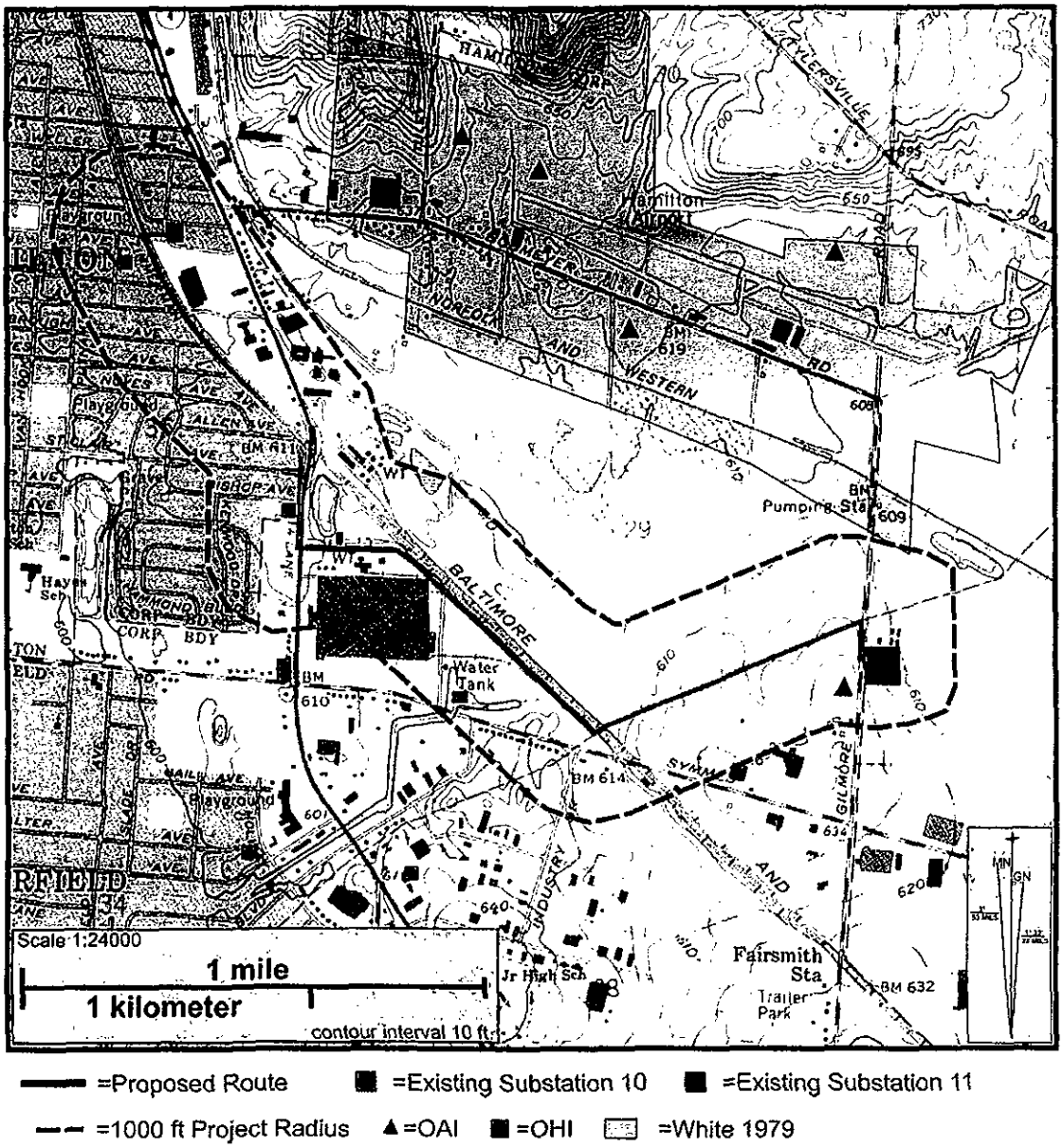

Figure 2. Portion of the 1965 (PR 1981) Greenhills, Ohio 7.5' USGS topographic map showing the location of the project area, previously recorded cultural resources, and previously surveyed area.

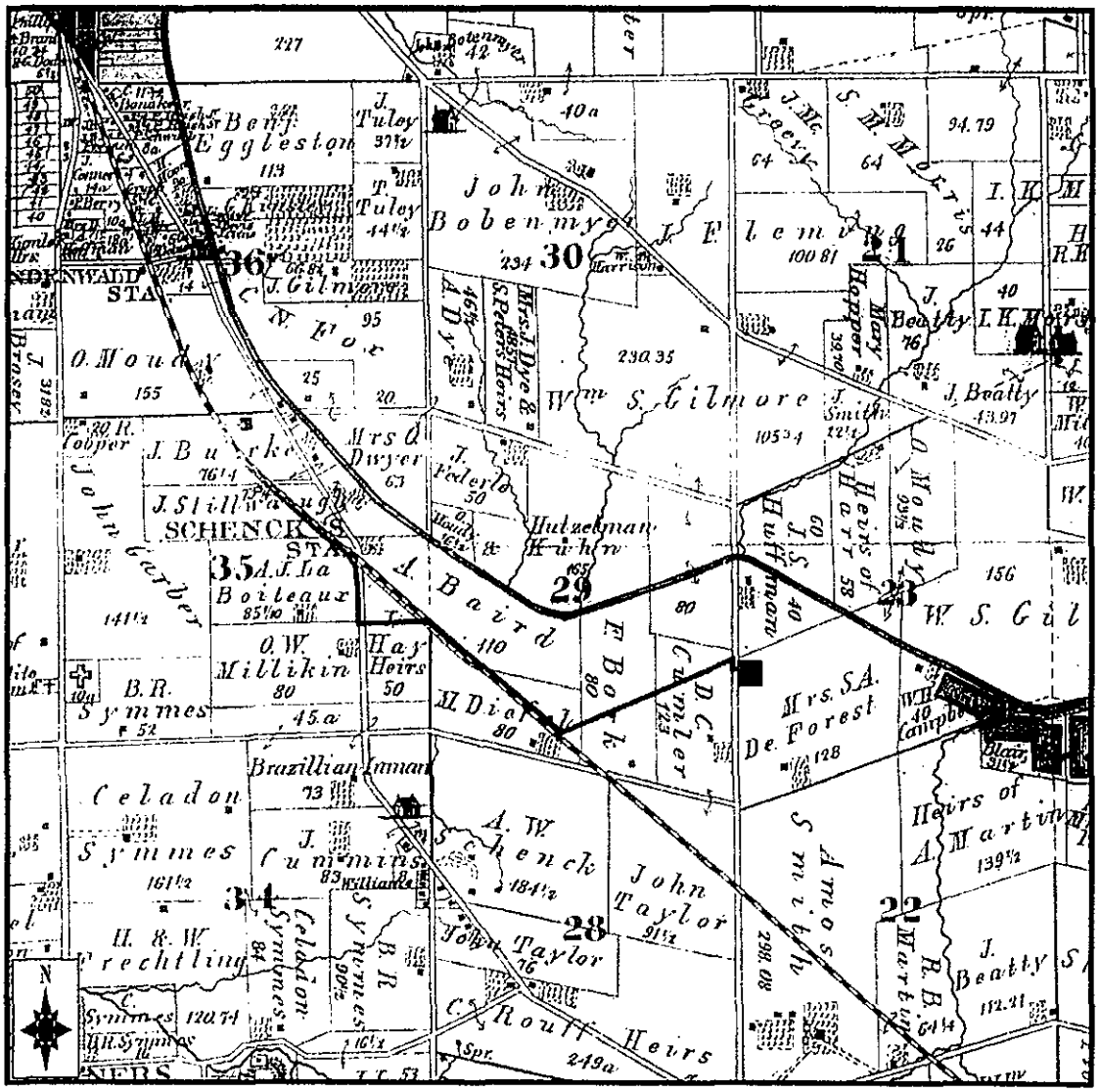

Figure 3. Portion of the 1875 *Combination Atlas Map of Butler County, Ohio* (Everts 1875) showing the location of the project area.

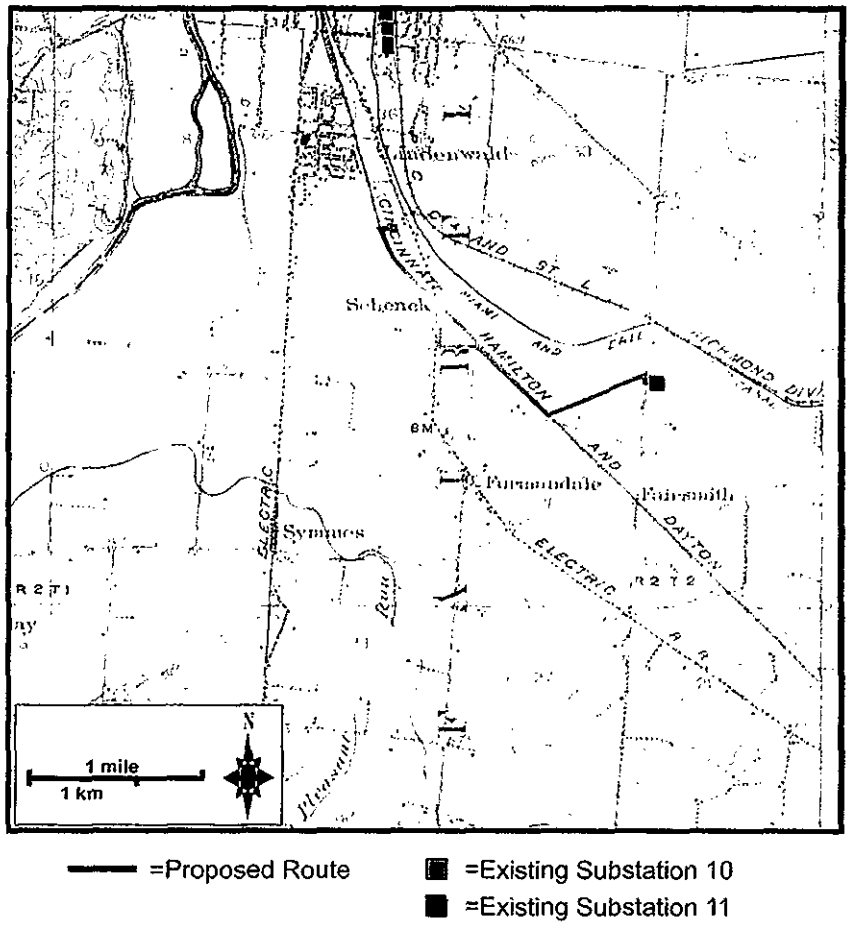

Figure 4. Portion of the 1915 (surveyed 1903 & 1915) Hamilton, Ohio 15' USGS topographic map showing the location of the project area.

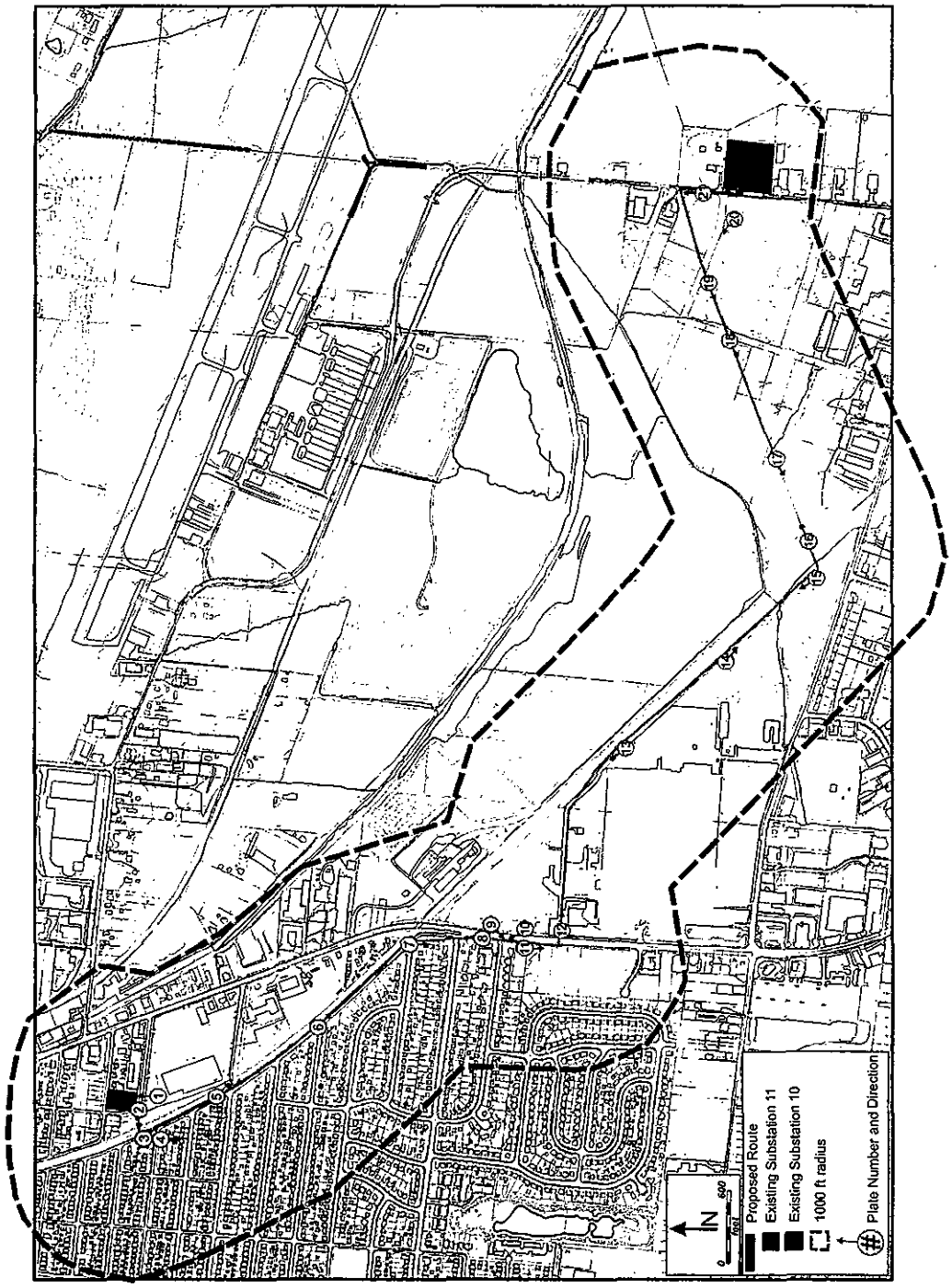

Figure 5. Photo-keyed map of the project area.

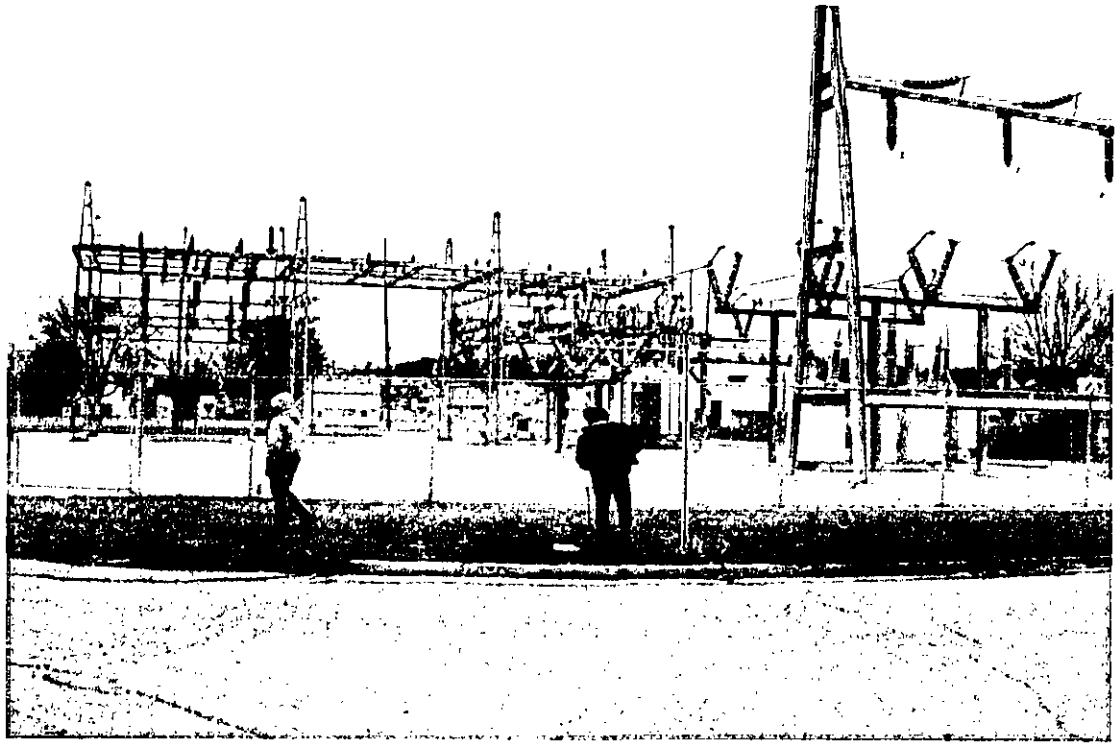

Plate 1. View of Substation 10, facing northeast.

Plate 2. View of commercial property west of Substation 10, facing west.

Plate 3. View of Proposed Route along railroad tracks and Zimmerman Avenue, facing southeast.

Plate 4. View of residential neighborhood west of Proposed Route, facing south.

Plate 5. View of railroad bridge over Corwin Road along Proposed Route, facing southeast.

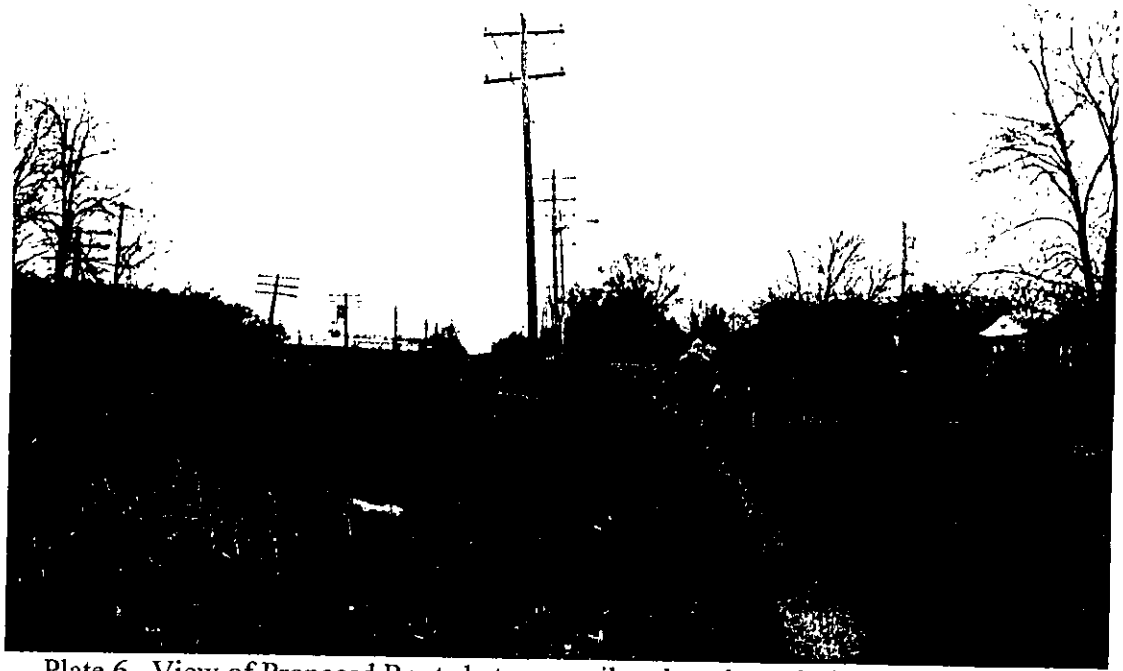

Plate 6. View of Proposed Route between railroad tracks and Zimmerman Avenue, facing southeast.

Plate 7. View of Proposed Route turning towards Dixie Highway/SR 4, facing south.

Plate 8. View of Proposed Route along Dixie Highway/SR 4, facing north.

Plate 9. View of north and east elevations of BUT-1366-09, facing southwest.

Plate 10. View of east and south elevations of BUT-1366-09, facing northwest.

Plate 11. View of Proposed Route along Dixie Highway/SR 4, facing south.

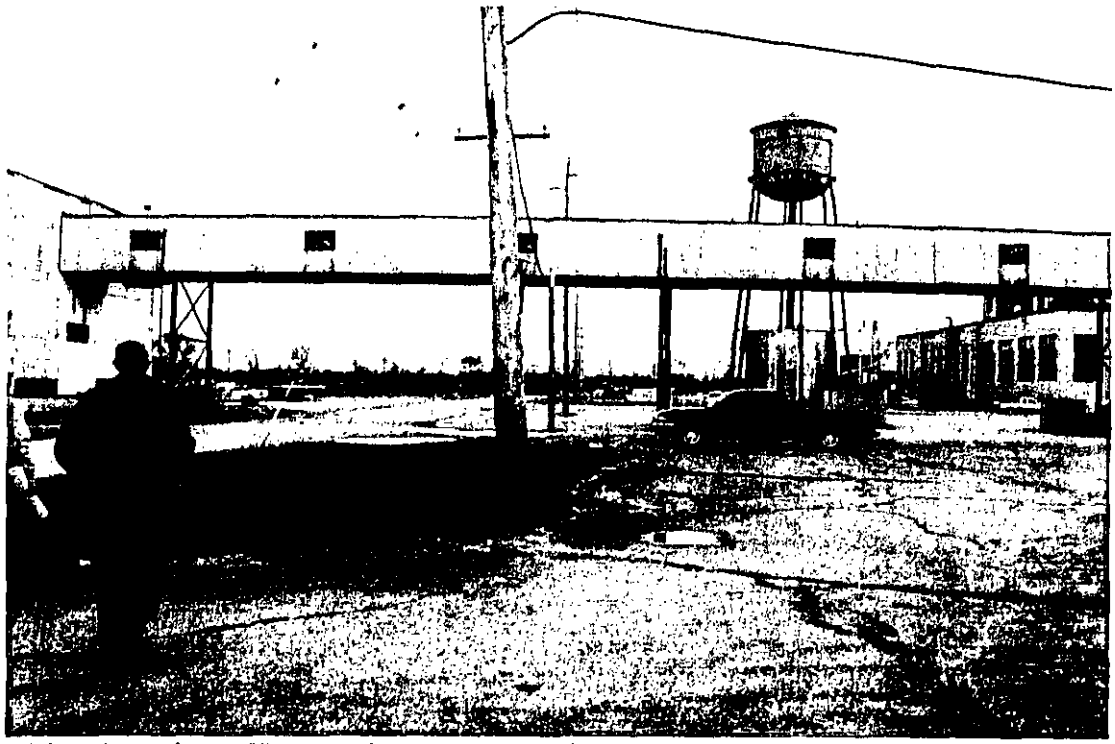

Plate 12. View of Proposed Route through industrial property (BUT-1370-12), facing east.

Plate 13. View of Proposed Route through industrial property (BUT-1370-12), facing northwest.

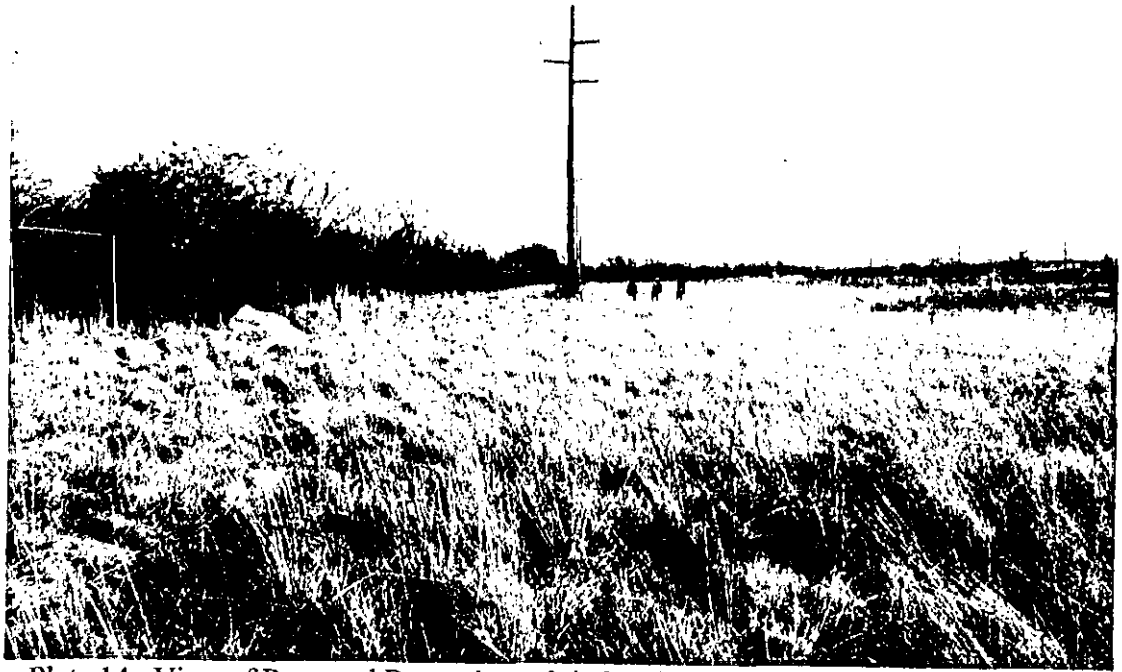

Plate 14. View of Proposed Route through industrial property (BUT-1370-12), facing southeast.

Plate 15. View of Proposed Route, facing northwest.

Plate 16. View of Proposed Route, facing northeast.

Plate 17. View of Proposed Route, facing southwest.

Plate 18. View of Proposed Route, facing southwest.

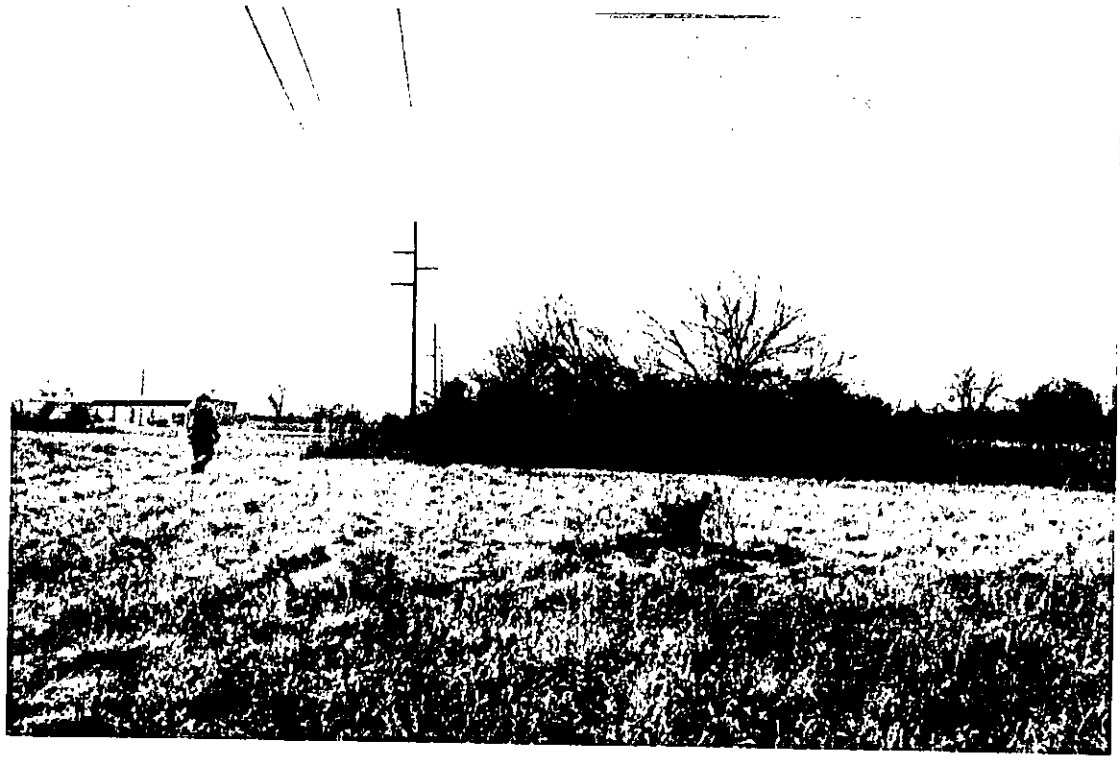

Plate 19. View of Proposed Route, facing southwest.

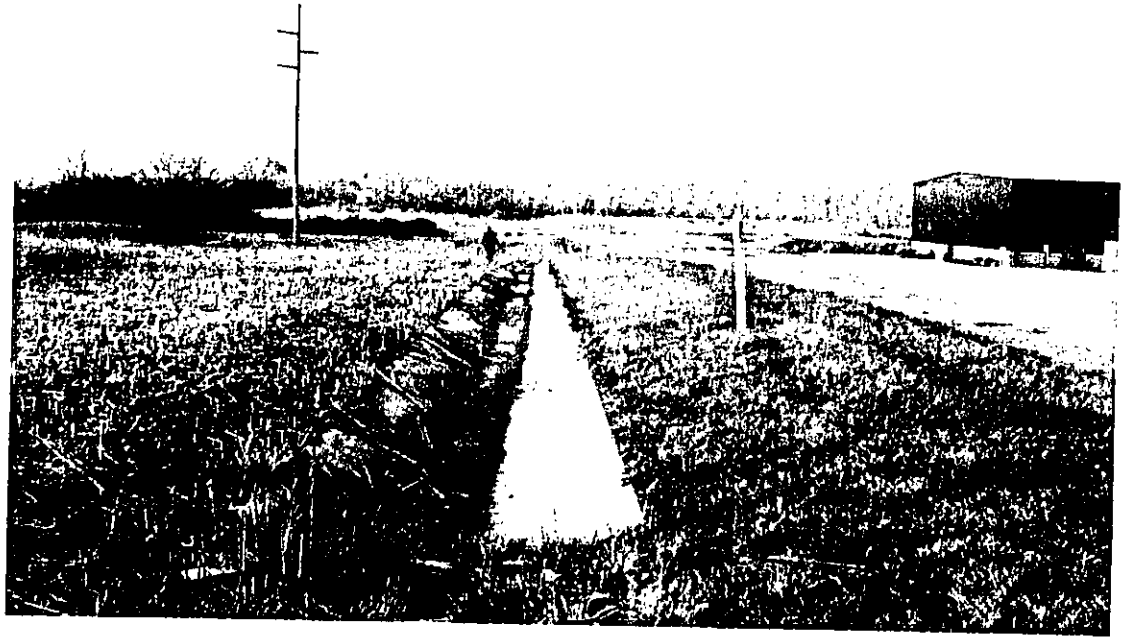

Plate 20. View of Proposed Route along Bohkle Boulevard, facing northwest.

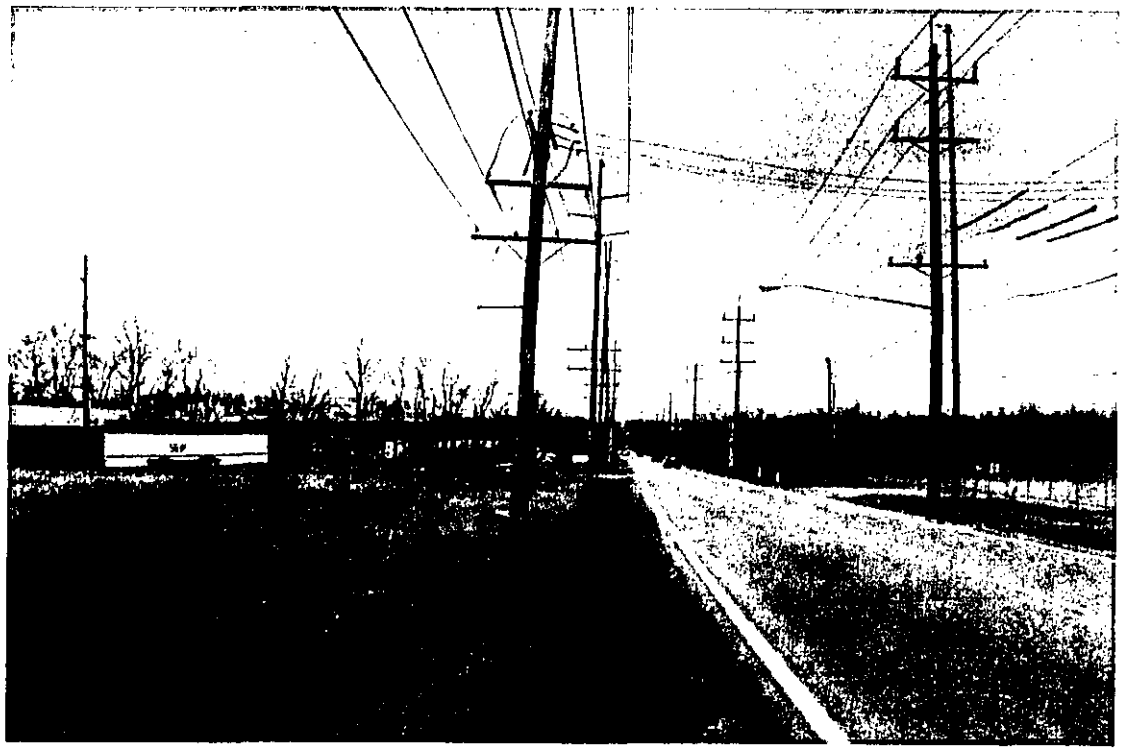

Plate 21. View of Proposed Route along west side of Gilmore Road, facing north.

APPENDIX E

U.S. Census Bureau
American FactFinder

P1. TOTAL POPULATION [1] - Universe: Total population
Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: For information on confidentiality protection, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf1u.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Total	281,421,906	11,353,140	332,807	42,097	60,690

U.S. Census Bureau
Census 2000

Census count corrections for American Indian and Alaska Native Areas (AIANAs), states, counties, places, county subdivisions, census tracts, and blocks may have been released as a result of an external challenge through the Count Question Resolution Program.

P3. RACE [71] - Universe: Total population
Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: For information on confidentiality protection, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf1u.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Total:	281,421,906	11,353,140	332,807	42,097	60,690
Population of one race:	274,595,678	11,195,255	329,062	41,621	59,916
White alone	211,460,626	9,645,453	303,510	37,830	53,975
Black or African American alone	34,658,190	1,301,307	17,531	2,557	4,581
American Indian and Alaska Native alone	2,475,956	24,486	693	56	173
Asian alone	10,242,998	132,633	5,147	948	275
Native Hawaiian and Other Pacific Islander alone	398,835	2,749	115	15	23
Some other race alone	15,359,073	88,627	2,066	215	889
Population of two or more races:	6,826,228	157,885	3,745	476	774
Population of two races:	6,368,075	146,556	3,521	451	731
White; Black or African American	784,764	43,903	1,072	167	197
White; American Indian and Alaska Native	1,082,683	34,561	1,019	82	287
White; Asian	868,395	17,966	576	74	87
White; Native Hawaiian and Other Pacific Islander	112,964	1,256	45	2	9
White; Some other race	2,206,251	25,854	455	77	103
Black or African American; American Indian and Alaska Native	182,494	7,673	100	10	16
Black or African American; Asian	106,782	2,250	35	14	3
Black or African American; Native Hawaiian and Other Pacific Islander	29,876	446	7	0	3
Black or African American; Some other race	417,249	7,649	60	0	12
American Indian and Alaska Native; Asian	52,429	554	10	0	1
American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander	7,328	70	3	0	1
American Indian and Alaska Native; Some other race	93,842	804	19	4	4
Asian; Native Hawaiian and Other Pacific Islander	138,802	939	36	0	3
Asian; Some other race	249,108	2,381	76	20	5
Native Hawaiian and Other Pacific Islander; Some other race	35,108	250	8	1	0
Population of three races:	410,285	10,401	203	18	36
White; Black or African American; American Indian and Alaska Native	112,207	5,778	88	7	10
White; Black or African American; Asian	21,166	547	12	2	3
White; Black or African American; Native Hawaiian and Other Pacific Islander	2,938	73	1	0	1
White; Black or African American; Some other race	43,172	1,383	30	2	7
White; American Indian and Alaska Native; Asian	23,766	373	17	0	0
White; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander	4,843	53	3	0	2
White; American Indian and Alaska Native; Some other race	29,095	532	12	0	1

White; Asian; Native Hawaiian and Other Pacific Islander	89,611	478	16	3	9
White; Asian; Some other race	34,962	388	5	1	1
White; Native Hawaiian and Other Pacific Islander; Some other race	8,364	50	0	0	0
Black or African American; American Indian and Alaska Native; Asian	5,798	151	4	0	1
Black or African American; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander	998	21	0	0	0
Black or African American; American Indian and Alaska Native; Some other race	7,023	180	4	0	0
Black or African American; Asian; Native Hawaiian and Other Pacific Islander	5,309	125	5	0	0
Black or African American; Asian; Some other race	8,069	160	3	0	1
Black or African American; Native Hawaiian and Other Pacific Islander; Some other race	2,167	29	0	0	0
American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander	3,063	27	0	0	0
American Indian and Alaska Native; Asian; Some other race	2,544	26	3	3	0
American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander; Some other race	586	9	0	0	0
Asian; Native Hawaiian and Other Pacific Islander; Some other race	4,604	18	0	0	0
Population of four races:	38,408	713	11	3	2
White; Black or African American; American Indian and Alaska Native; Asian	10,672	337	5	2	0
White; Black or African American; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander	988	31	1	0	1
White; Black or African American; American Indian and Alaska Native; Some other race	4,645	133	4	0	1
White; Black or African American; Asian; Native Hawaiian and Other Pacific Islander	2,128	28	0	0	0
White; Black or African American; Asian; Some other race	1,376	30	0	0	0
White; Black or African American; Native Hawaiian and Other Pacific Islander; Some other race	325	2	0	0	0
White; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander	6,450	29	0	0	0
White; American Indian and Alaska Native; Asian; Some other race	1,099	16	1	1	0
White; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander; Some other race	309	0	0	0	0
White; Asian; Native Hawaiian and Other Pacific Islander; Some other race	7,932	49	0	0	0
Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander	750	14	0	0	0
Black or African American; American Indian and Alaska Native; Asian; Some other race	334	7	0	0	0
Black or African American; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander; Some other race	111	2	0	0	0
Black or African American; Asian; Native Hawaiian and Other Pacific Islander; Some other race	1,082	34	0	0	0
American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some other race	207	1	0	0	0
Population of five races:	8,637	193	10	4	5
White; Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander	6,611	158	10	4	5
White; Black or African American; American Indian and Alaska Native; Asian; Some other race	724	14	0	0	0
White; Black or African American; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander; Some other race	68	0	0	0	0
White; Black or African American; Asian; Native Hawaiian and Other Pacific Islander; Some other race	379	8	0	0	0
White; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some other race	639	7	0	0	0
Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some other race	216	6	0	0	0
Population of six races:	823	22	0	0	0
White; Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some other race	823	22	0	0	0

U.S. Census Bureau
Census 2000

P4. HISPANIC OR LATINO, AND NOT HISPANIC OR LATINO BY RACE [73] - Universe: Total population
Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: For information on confidentiality protection, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf1u.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Total:	281,421,906	11,353,140	332,807	42,097	60,690
Hispanic or Latino	35,305,818	217,123	4,771	646	1,566
Not Hispanic or Latino:	246,116,088	11,136,017	328,036	41,451	59,124
Population of one race:	241,513,942	10,998,247	324,658	41,026	58,468
White alone	194,552,774	9,538,111	301,078	37,450	53,386
Black or African American alone	33,947,837	1,290,662	17,398	2,526	4,562
American Indian and Alaska Native alone	2,068,883	21,985	645	53	163
Asian alone	10,123,169	131,670	5,120	947	272
Native Hawaiian and Other Pacific Islander alone	353,509	2,336	77	8	12
Some other race alone	467,770	13,483	340	42	73
Population of two or more races:	4,602,146	137,770	3,378	425	656
Population of two races:	4,257,110	127,845	3,179	402	617
White; Black or African American	697,077	42,340	1,051	161	195
White; American Indian and Alaska Native	969,238	33,088	956	82	252
White; Asian	811,240	17,544	568	70	86
White; Native Hawaiian and Other Pacific Islander	100,702	1,159	45	2	9
White; Some other race	731,719	14,648	256	41	33
Black or African American; American Indian and Alaska Native	168,022	7,305	98	10	15
Black or African American; Asian	99,513	2,132	35	14	3
Black or African American; Native Hawaiian and Other Pacific Islander	27,479	413	6	0	2
Black or African American; Some other race	255,966	5,417	47	0	9
American Indian and Alaska Native; Asian	43,052	494	10	0	1
American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander	5,453	60	3	0	1
American Indian and Alaska Native; Some other race	21,477	296	16	1	4
Asian; Native Hawaiian and Other Pacific Islander	129,130	898	32	0	3
Asian; Some other race	185,754	1,990	53	20	4
Native Hawaiian and Other Pacific Islander; Some other race	11,288	61	3	1	0
Population of three races:	311,029	9,186	181	16	32
White; Black or African American; American Indian and Alaska Native	94,161	5,373	82	6	8
White; Black or African American; Asian	18,229	493	11	2	3
White; Black or African American; Native Hawaiian and Other Pacific Islander	2,527	62	1	0	1
White; Black or African American; Some other race	27,691	1,103	26	1	7
White; American Indian and Alaska Native; Asian	18,405	327	17	0	0
White; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander	3,884	45	3	0	2
White; American Indian and Alaska Native; Some other race	13,796	393	8	0	1
White; Asian; Native Hawaiian and Other Pacific Islander	77,616	445	16	3	9
White; Asian; Some other race	21,964	322	2	1	0
White; Native Hawaiian and Other Pacific Islander; Some other race	4,741	28	0	0	0
Black or African American; American Indian and Alaska Native; Asian	4,849	128	4	0	1
Black or African American; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander	753	17	0	0	0
Black or African American; American Indian and Alaska Native; Some other race	4,648	141	1	0	0
Black or African American; Asian; Native Hawaiian and Other Pacific Islander	4,501	108	5	0	0
Black or African American; Asian;Some other race	6,217	133	2	0	0
Black or African American; Native Hawaiian and Other Pacific Islander; Some other race	1,289	20	0	0	0
American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander	2,131	14	0	0	0
American Indian and Alaska Native; Asian; Some other race	955	15	3	3	0
American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander; Some other race	200	4	0	0	0
Asian; Native Hawaiian and Other Pacific Islander; Some other race	2,472	15	0	0	0
Population of four races:	27,155	571	8	3	2
White; Black or African American; American Indian and Alaska Native; Asian	8,912	293	5	2	0
White; Black or African American; American Indian and Alaska Native;	740	19	1	0	1

Native Hawaiian and Other Pacific Islander					
White; Black or African American; American Indian and Alaska Native; Some other race	2,576	105	1	0	1
White; Black or African American; Asian; Native Hawaiian and Other Pacific Islander	1,635	22	0	0	0
White; Black or African American; Asian; Some other race	848	22	0	0	0
White; Black or African American; Native Hawaiian and Other Pacific Islander; Some other race	157	2	0	0	0
White; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander	4,411	19	0	0	0
White; American Indian and Alaska Native; Asian; Some other race	491	12	1	1	0
White; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander; Some other race	160	0	0	0	0
White; Asian; Native Hawaiian and Other Pacific Islander; Some other race	5,493	33	0	0	0
Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander	530	14	0	0	0
Black or African American; American Indian and Alaska Native; Asian; Some other race	223	5	0	0	0
Black or African American; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander; Some other race	45	0	0	0	0
Black or African American; Asian; Native Hawaiian and Other Pacific Islander; Some other race	854	25	0	0	0
American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some other race	80	0	0	0	0
Population of five races:	6,342	154	10	4	5
White; Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander	5,081	124	10	4	5
White; Black or African American; American Indian and Alaska Native; Asian; Some other race	483	11	0	0	0
White; Black or African American; American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander; Some other race	32	0	0	0	0
White; Black or African American; Asian; Native Hawaiian and Other Pacific Islander; Some other race	227	8	0	0	0
White; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some other race	380	5	0	0	0
Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some other race	139	6	0	0	0
Population of six races:	510	14	0	0	0
White; Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some other race	510	14	0	0	0

U.S. Census Bureau
Census 2000

P7. RACE [8] - Universe: Total population
Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: For information on confidentiality protection, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf1u.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Total:	281,421,906	11,353,140	332,807	42,097	60,690
White alone	211,460,626	9,645,453	303,510	37,830	53,975
Black or African American alone	34,658,190	1,301,307	17,531	2,557	4,581
American Indian and Alaska Native alone	2,475,956	24,486	693	56	173
Asian alone	10,242,998	132,633	5,147	948	275
Native Hawaiian and Other Pacific Islander alone	398,835	2,749	115	15	23
Some other race alone	15,359,073	88,627	2,066	215	889
Two or more races	6,826,228	157,885	3,745	476	774

U.S. Census Bureau
Census 2000

P9. RACE (TOTAL RACES TALLIED) [7] - Universe: Total races tallied
Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: For information on confidentiality protection, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf1u.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Total races tallied:	288,764,436	11,523,519	336,807	42,609	61,519
White alone or in combination with one or more other races	216,930,975	9,779,512	306,882	38,254	54,699
Black or African American alone or in combination with one or more other races	36,419,434	1,372,501	18,972	2,765	4,842
American Indian and Alaska Native alone or in combination with one or more other races	4,119,301	76,075	1,996	169	503
Asian alone or in combination with one or more other races	11,898,828	159,776	5,961	1,072	394
Native Hawaiian and Other Pacific Islander alone or in combination with one or more other races	874,414	6,984	250	25	57
Some other race alone or in combination with one or more other races	18,521,486	128,671	2,746	324	1,024

U.S. Census Bureau
Census 2000

P12. SEX BY AGE [49] - Universe: Total population
Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: For information on confidentiality protection, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf1u.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Total:	281,421,906	11,353,140	332,807	42,097	60,690
Male:	138,053,563	5,512,262	162,370	20,494	29,183
Under 5 years	9,810,733	385,231	11,748	1,305	2,337
5 to 9 years	10,523,277	417,023	12,398	1,397	2,117
10 to 14 years	10,520,197	424,906	12,670	1,524	2,179
15 to 17 years	6,204,989	250,725	7,310	908	1,327
18 and 19 years	4,186,015	165,360	6,203	548	899
20 years	2,071,220	79,741	3,223	267	469
21 years	1,965,673	75,239	3,089	268	373
22 to 24 years	5,650,921	208,709	6,829	928	1,242
25 to 29 years	9,798,760	366,452	10,599	1,802	2,285
30 to 34 years	10,321,769	390,689	11,520	1,645	2,216
35 to 39 years	11,318,696	435,881	13,178	1,641	2,323
40 to 44 years	11,129,102	454,202	13,462	1,690	2,281
45 to 49 years	9,889,506	411,052	12,099	1,557	1,997
50 to 54 years	8,607,724	357,926	10,381	1,439	1,714
55 to 59 years	6,508,729	265,926	7,230	955	1,102
60 and 61 years	2,173,239	89,902	2,396	305	395
62 to 64 years	2,963,388	124,739	3,305	435	592
65 and 66 years	1,814,807	75,058	1,990	245	379
67 to 69 years	2,585,555	108,669	2,871	377	579
70 to 74 years	3,902,912	169,083	4,285	533	969
75 to 79 years	3,044,456	130,350	2,954	394	751
80 to 84 years	1,834,897	77,227	1,609	199	412
85 years and over	1,226,998	48,172	1,021	132	245
Female:	143,368,343	5,840,878	170,437	21,603	31,507
Under 5 years	9,365,065	369,699	11,358	1,362	2,208
5 to 9 years	10,026,228	399,323	11,881	1,448	2,139
10 to 14 years	10,007,875	402,905	11,850	1,439	2,055
15 to 17 years	5,835,448	238,527	7,081	874	1,283
18 and 19 years	3,993,438	162,256	6,564	463	810
20 years	1,978,228	80,343	3,535	245	409
21 years	1,875,409	75,622	3,421	280	456
22 to 24 years	5,422,550	209,274	6,804	985	1,315
25 to 29 years	9,582,576	369,130	10,641	1,686	2,241

30 to 34 years	10,188,619	393,623	11,777	1,560	2,092
35 to 39 years	11,387,968	447,890	13,843	1,741	2,359
40 to 44 years	11,312,761	467,343	13,994	1,812	2,339
45 to 49 years	10,202,898	423,779	12,133	1,633	2,069
50 to 54 years	8,977,824	373,627	10,599	1,528	1,779
55 to 59 years	6,960,508	287,248	7,810	1,065	1,391
60 and 61 years	2,367,932	100,377	2,697	365	504
62 to 64 years	3,300,888	140,714	3,622	499	711
65 and 66 years	2,075,424	87,894	2,354	292	500
67 to 69 years	3,067,759	131,047	3,372	422	792
70 to 74 years	4,954,529	218,501	5,270	692	1,362
75 to 79 years	4,371,357	195,118	4,333	570	1,194
80 to 84 years	3,110,470	138,014	2,782	334	778
85 years and over	3,012,589	128,624	2,716	308	721

U.S. Census Bureau
Census 2000

P13. MEDIAN AGE BY SEX [3] - Universe: Total population
Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: For information on confidentiality protection, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf1u.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Median age--					
Both sexes	35.3	36.2	34.2	35.2	34.9
Male	34.0	34.9	33.2	33.9	32.9
Female	36.5	37.5	35.1	36.4	36.7

U.S. Census Bureau
Census 2000

P17. AVERAGE HOUSEHOLD SIZE [1] - Universe: Households
Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: For information on confidentiality protection, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf1u.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Average household size	2.59	2.49	2.61	2.44	2.45

U.S. Census Bureau
Census 2000

Standard Error/Variance documentation for this dataset:
Accuracy of the Data: Census 2000 Summary File 1 (SF 1) 100-Percent Data (PDF 44KB)

U.S. Census Bureau
American FactFinder

P1. TOTAL POPULATION [1] - Universe: Total population
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: Data based on a sample except in P3, P4, H3, and H4. For information on confidentiality protection, sampling error, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf3.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Total	281,421,906	11,353,140	332,807	41,972	60,662

U.S. Census Bureau
Census 2000

P3. 100-PERCENT COUNT OF THE POPULATION [1] - Universe: Total population
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: Data based on a sample except in P3, P4, H3, and H4. For information on confidentiality protection, sampling error, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf3.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Total	281,421,906	11,353,140	332,807	42,097	60,690

Data Note
U.S. Census Bureau
Census 2000

P6. RACE [8] - Universe: Total population
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: Data based on a sample except in P3, P4, H3, and H4. For information on confidentiality protection, sampling error, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf3.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Total:	281,421,906	11,353,140	332,807	41,972	60,662
White alone	211,353,725	9,640,523	302,565	37,698	53,832
Black or African American alone	34,361,740	1,288,359	17,924	2,580	4,470
American Indian and Alaska Native alone	2,447,989	26,999	838	116	266
Asian alone	10,171,820	132,131	5,077	966	336
Native Hawaiian and Other Pacific Islander alone	378,782	2,641	62	0	9
Some other race alone	15,436,924	89,149	2,245	218	848
Two or more races	7,270,926	173,338	4,096	394	901

U.S. Census Bureau
Census 2000

P52. HOUSEHOLD INCOME IN 1999 [17] - Universe: Households
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: Data based on a sample except in P3, P4, H3, and H4. For information on confidentiality protection, sampling error, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf3.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Total:	105,539,122	4,446,621	123,125	16,959	24,246
Less than $10,000	10,067,027	406,698	8,468	542	2,812
$10,000 to $14,999	6,657,228	285,372	6,167	584	1,782
$15,000 to $19,999	6,601,020	286,496	6,395	787	1,756
$20,000 to $24,999	6,935,945	307,647	6,844	747	2,011
$25,000 to $29,999	6,801,010	301,721	7,104	996	1,918
$30,000 to $34,999	6,718,232	301,275	7,583	1,097	1,709
$35,000 to $39,999	6,236,192	276,378	7,785	1,263	1,744
$40,000 to $44,999	5,965,869	263,109	7,100	1,239	1,545
$45,000 to $49,999	5,244,211	231,642	6,508	1,162	1,320
$50,000 to $59,999	9,537,175	426,570	11,978	1,777	2,390
$60,000 to $74,999	11,003,429	478,753	15,303	2,379	2,367
$75,000 to $99,999	10,799,245	444,599	15,946	2,352	1,727
$100,000 to $124,999	5,491,526	200,320	8,149	1,109	600
$125,000 to $149,999	2,656,300	88,729	3,484	449	208
$150,000 to $199,999	2,322,038	71,062	2,253	261	170
$200,000 or more	2,502,675	76,250	2,058	215	187

U.S. Census Bureau
Census 2000

P53. MEDIAN HOUSEHOLD INCOME IN 1999 (DOLLARS) [1] - Universe: Households
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: Data based on a sample except in P3, P4, H3, and H4. For information on confidentiality protection, sampling error, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf3.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Median household income in 1999	41,994	40,956	47,885	50,316	35,365

U.S. Census Bureau
Census 2000

P76. FAMILY INCOME IN 1999 [17] - Universe: Families
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: Data based on a sample except in P3, P4, H3, and H4. For information on confidentiality protection, sampling error, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf3.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Total:	72,261,780	3,007,207	88,555	11,379	15,933
Less than $10,000	4,155,386	156,828	3,130	176	1,218
$10,000 to $14,999	3,115,586	113,007	2,404	186	659
$15,000 to $19,999	3,640,373	141,028	2,983	378	897
$20,000 to $24,999	4,117,024	168,898	3,502	272	1,045
$25,000 to $29,999	4,267,407	180,864	4,529	460	1,257
$30,000 to $34,999	4,397,022	191,480	5,019	666	1,174
$35,000 to $39,999	4,267,228	188,572	5,333	663	1,190
$40,000 to $44,999	4,228,392	187,334	5,077	661	1,119
$45,000 to $49,999	3,886,488	174,092	5,007	818	998
$50,000 to $59,999	7,299,543	334,303	9,577	1,198	1,865
$60,000 to $74,999	8,830,557	398,166	13,047	2,037	1,976
$75,000 to $99,999	9,009,327	386,861	14,257	2,004	1,536
$100,000 to $124,999	4,662,368	178,014	7,522	1,026	520
$125,000 to $149,999	2,273,842	79,592	3,285	408	199
$150,000 to $199,999	1,983,673	62,842	2,082	242	138
$200,000 or more	2,112,564	65,326	1,801	184	142

U.S. Census Bureau
Census 2000

P77. MEDIAN FAMILY INCOME IN 1999 (DOLLARS) [1] - Universe: Families
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: Data based on a sample except in P3, P4, H3, and H4. For information on confidentiality protection, sampling error, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf3.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Median family income in 1999	50,046	50,037	57,513	61,233	41,936

U.S. Census Bureau
Census 2000

P87. POVERTY STATUS IN 1999 BY AGE [17] - Universe: Population for whom poverty status is determined
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data

NOTE: Corrected counts are available for one or more geographies displayed in this table.

NOTE: Data based on a sample except in P3, P4, H3, and H4. For information on confidentiality protection, sampling error, nonsampling error, definitions, and count corrections see http://factfinder.census.gov/home/en/datanotes/expsf3.htm.

	United States	Ohio	Butler County, Ohio	Fairfield city, Ohio	Hamilton city, Ohio
Total:	273,882,232	11,046,987	321,367	41,416	59,430
Income in 1999 below poverty level:	33,899,812	1,170,698	27,946	1,757	7,969
Under 5 years	3,412,025	128,266	2,918	194	1,092
5 years	689,664	24,107	476	0	131
6 to 11 years	4,148,573	144,635	2,625	151	904
12 to 17 years	3,496,596	111,677	2,014	121	701
18 to 64 years	18,865,180	646,271	17,593	1,090	4,327
65 to 74 years	1,550,969	54,571	1,221	89	472
75 years and over	1,736,805	61,171	1,099	112	342
Income in 1999 at or above poverty level:	239,982,420	9,876,289	293,441	39,659	51,461
Under 5 years	15,314,663	613,037	19,719	2,260	3,375
5 years	3,220,298	128,168	4,367	469	646
6 to 11 years	20,439,242	834,775	26,536	3,392	4,268
12 to 17 years	20,204,200	853,673	26,534	3,387	4,216
18 to 64 years	150,745,243	6,140,313	185,248	26,180	31,472
65 to 74 years	16,702,257	728,940	18,734	2,523	4,023
75 years and over	13,356,517	577,383	12,303	1,448	3,461

U.S. Census Bureau
Census 2000

Standard Error/Variance documentation for this dataset:
Accuracy of the Data: Census 2000 Summary File 3 (SF 3) - Sample Data (PDF 141.5KB)

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POPULATION FINDER

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The 2007 population estimate for Hamilton city, Ohio is 62,285.

Note: Information about challenges to population estimates data can be found on the Population Estimates Challenges page.

View population trends...

	2007	2000	1990
Population	62,285	60,690	61,368

Source: U.S. Census Bureau, 2007 Population Estimates, Census 2000, 1990 Census

View more results...

Population for all cities and towns in Ohio, 2000-2007:
alphabetic | ranked

Map of Persons per Square Mile, City/Town by Census Tract:
2000 | 1990

See more data for Hamilton city, Ohio on the Fact Sheet.

The letters PDF or symbol indicate a document is in the Portable Document Format (PDF). To view the file you will need the Adobe® Acrobat® Reader, which is available for free from the Adobe web site.

U.S. Census Bureau
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Fairfield city, Ohio

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state
Ohio GO
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The 2007 population estimate for Fairfield city, Ohio is 42,294.

Note: Information about challenges to population estimates data can be found on the Population Estimates Challenges page.

View population trends...

	2007	2000	1990
Population	42,294	42,097	39,729

Source: U.S. Census Bureau, 2007 Population Estimates, Census 2000, 1990 Census

View more results...

Population for all cities and towns in Ohio, 2000-2007:
alphabetic | ranked

Map of Persons per Square Mile, City/Town by Census Tract:
2000 | 1990

See more data for Fairfield city, Ohio on the Fact Sheet.

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The 2007 population estimate for Butler County, Ohio is 357,888.

Note: Information about challenges to population estimates data can be found on the Population Estimates Challenges page.

View population trends...

	2007	2000	1990
Population	357,888	332,807	291,479

Source: U.S. Census Bureau, 2007 Population Estimates, Census 2000, 1990 Census

View more results...

Population for all counties in Ohio, 2000-2007:
alphabetic | ranked

Map of Persons per Square Mile, Ohio by County:
2007 | 2000 | 1990

Map of Persons per Square Mile, County by County Subdivision:
2007 | 2000 | 1990

See more data for Butler County, Ohio on the Fact Sheet.

Table 6: Interim Projections: Total Population for Regions, Divisions, and States: 2000 to 2030

Region, division, and state	Census April 1, 2000	Projections July 1, 2005	Projections July 1, 2010	Projections July 1, 2015	Projections July 1, 2020	Projections July 1, 2025	Projections July 1, 2030
United States	**281,421,906**	**295,507,134**	**308,935,581**	**322,365,787**	**335,804,546**	**349,439,199**	**363,584,435**
Northeast	**53,594,378**	**54,802,949**	**55,786,179**	**56,565,669**	**57,135,437**	**57,470,313**	**57,671,068**
New England	13,922,517	14,372,985	14,738,789	15,052,263	15,309,528	15,491,545	15,623,015
Maine	1,274,923	1,318,557	1,357,134	1,388,878	1,408,665	1,414,402	1,411,097
New Hampshire	1,235,786	1,314,821	1,385,560	1,456,679	1,524,751	1,586,348	1,646,471
Vermont	608,827	630,979	652,512	673,169	690,686	703,288	711,867
Massachusetts	6,349,097	6,518,868	6,649,441	6,758,580	6,855,546	6,938,636	7,012,009
Rhode Island	1,048,319	1,086,575	1,116,652	1,139,543	1,154,230	1,157,855	1,152,941
Connecticut	3,405,565	3,503,185	3,577,490	3,635,414	3,675,650	3,691,016	3,688,630
Middle Atlantic	39,671,861	40,429,964	41,046,390	41,513,406	41,825,909	41,978,768	42,048,053
New York	18,976,457	19,258,082	19,443,672	19,546,699	19,576,920	19,540,179	19,477,429
New Jersey	8,414,350	8,745,279	9,018,231	9,255,769	9,461,635	9,636,644	9,802,440
Pennsylvania	12,281,054	12,426,603	12,584,487	12,710,938	12,787,354	12,801,945	12,768,184
Midwest	**64,392,776**	**66,005,033**	**67,391,433**	**68,569,609**	**69,455,175**	**70,041,457**	**70,497,298**
East North Central	45,155,037	46,188,274	47,041,323	47,732,177	48,208,733	48,469,671	48,638,464
Ohio	11,353,140	11,477,557	11,676,181	11,635,446	11,644,058	11,605,738	11,550,528
Indiana	6,080,485	6,249,617	6,392,139	6,517,631	6,627,008	6,721,322	6,810,108
Illinois	12,419,293	12,699,336	12,916,894	13,097,218	13,236,720	13,340,507	13,432,892
Michigan	9,938,444	10,207,421	10,428,683	10,599,122	10,695,993	10,713,730	10,694,172
Wisconsin	5,363,675	5,554,343	5,727,426	5,882,760	6,004,954	6,088,374	6,150,764
West North Central	19,237,739	19,816,759	20,350,110	20,837,432	21,246,442	21,571,786	21,858,834
Minnesota	4,919,479	5,174,743	5,420,636	5,668,211	5,900,769	6,108,787	6,306,130
Iowa	2,926,324	2,973,700	3,009,907	3,026,380	3,020,496	2,993,222	2,955,172
Missouri	5,595,211	5,765,166	5,922,078	6,069,556	6,199,862	6,315,366	6,430,173
North Dakota	642,200	635,468	636,623	635,133	630,112	620,777	606,566
South Dakota	754,844	771,803	786,399	796,954	801,939	801,845	800,462
Nebraska	1,711,263	1,744,370	1,768,997	1,788,508	1,802,678	1,812,787	1,820,247
Kansas	2,688,418	2,751,509	2,805,470	2,852,690	2,890,566	2,919,002	2,940,084
South	**100,236,820**	**106,916,476**	**113,583,614**	**120,440,208**	**127,570,819**	**135,160,886**	**143,269,337**
South Atlantic	51,769,160	56,737,197	59,791,781	64,019,354	68,442,026	73,129,056	78,093,216
Delaware	783,600	836,687	884,342	927,400	963,209	990,694	1,012,658
Maryland	5,296,486	5,600,563	5,904,970	6,208,392	6,497,626	6,762,732	7,022,251
District of Columbia	572,059	551,136	529,785	506,323	480,540	455,108	433,414
Virginia	7,078,515	7,552,581	8,010,245	8,466,864	8,917,395	9,364,304	9,825,019
West Virginia	1,808,344	1,818,887	1,829,141	1,822,758	1,801,112	1,766,435	1,719,959
North Carolina	8,049,313	8,702,410	9,345,823	10,010,770	10,709,289	11,449,153	12,227,739
South Carolina	4,012,012	4,239,310	4,446,704	4,642,137	4,822,577	4,989,550	5,148,569
Georgia	8,186,453	8,925,796	9,589,080	10,230,578	10,843,753	11,438,622	12,017,838
Florida	15,982,378	17,509,827	19,251,691	21,204,132	23,406,525	25,912,458	28,685,769
East South Central	17,022,810	17,571,539	18,063,711	18,530,725	18,978,828	19,432,299	19,902,285
Kentucky	4,041,769	4,163,360	4,265,117	4,351,188	4,424,431	4,489,662	4,554,998
Tennessee	5,689,283	5,965,317	6,230,852	6,502,017	6,780,670	7,073,125	7,380,634
Alabama	4,447,100	4,527,166	4,596,330	4,663,111	4,728,915	4,800,092	4,874,243
Mississippi	2,844,658	2,915,696	2,971,412	3,014,409	3,044,812	3,069,420	3,092,410
West South Central	31,444,850	33,607,740	35,728,122	37,890,129	40,149,965	42,599,531	45,273,836
Arkansas	2,673,400	2,777,007	2,875,039	2,968,913	3,060,219	3,151,005	3,240,208
Louisiana	4,468,976	4,534,310	4,612,679	4,673,721	4,719,160	4,762,398	4,802,633
Oklahoma	3,450,654	3,521,379	3,591,516	3,661,694	3,735,690	3,820,994	3,913,251
Texas	20,851,820	22,775,044	24,648,888	26,585,801	28,634,896	30,865,134	33,317,744
West	**63,197,932**	**67,782,676**	**72,175,355**	**76,790,301**	**81,643,115**	**86,766,543**	**92,146,732**
Mountain	18,172,295	20,005,440	21,740,479	23,585,039	25,557,049	27,668,947	29,909,432
Montana	902,195	933,005	968,598	999,489	1,022,735	1,037,387	1,044,898
Idaho	1,293,953	1,407,060	1,517,291	1,630,045	1,741,333	1,852,627	1,969,624
Wyoming	493,782	507,268	519,886	528,005	530,948	529,031	522,979
Colorado	4,301,261	4,617,962	4,831,554	5,049,493	5,278,867	5,522,803	5,792,357
New Mexico	1,819,046	1,902,057	1,980,225	2,041,539	2,084,341	2,106,584	2,099,708
Arizona	5,130,632	5,868,004	6,637,381	7,495,238	8,456,448	9,531,537	10,712,397
Utah	2,233,169	2,417,998	2,595,013	2,783,040	2,990,094	3,225,680	3,485,367
Nevada	1,998,257	2,352,086	2,690,531	3,058,190	3,452,283	3,863,298	4,282,102
Pacific	45,025,637	47,777,236	50,434,876	53,205,262	56,086,066	59,097,596	62,237,300
Washington	5,894,121	6,204,632	6,541,963	6,950,610	7,432,136	7,996,400	8,624,801
Oregon	3,421,399	3,596,083	3,790,996	4,012,924	4,260,393	4,536,418	4,833,918
California	33,871,648	36,038,859	38,067,134	40,123,232	42,206,743	44,305,177	46,444,861
Alaska	626,932	661,110	694,109	732,544	774,421	820,881	867,674
Hawaii	1,211,537	1,276,552	1,340,674	1,386,952	1,412,373	1,438,720	1,466,046

U.S. Census Bureau, Population Division, Interim State Population Projections, 2005.
Internet Release Date: April 21, 2005

ST-99-3 State Population Estimates: Annual Time Series, July 1, 1990 to July 1, 1999

The documentation is located at the end of the data file.

Source: Population Estimates Program, Population Division, U.S. Census Bureau, Washington, DC 20233
Contact: Statistical Information Staff, Population Division, U.S. Census Bureau (301-457-2422)

Internet Release Date: December 29, 1999

Block Number	Area Name	7/1/99 Population (Estimate)	7/1/98 Population (Estimate)	7/1/97 Population (Estimate)	7/1/96 Population (Estimate)	7/1/95 Population (Estimate)	7/1/94 Population (Estimate)
1	United States	272690813	270248003	267783607	265228572	262803276	260327021
1	Northeast	51829962	51685676	51591325	51520274	51443931	51360744
1	New England	13495933	13428630	13378075	13328837	13282700	13242751
1	Middle Atlantic	38334029	38257046	38213250	38191437	38161231	38117993
1	Midwest	63242284	62950532	62675478	62371519	61991920	61572173
1	East North Central	44442146	44257498	44082062	43887955	43629122	43342048
1	West North Central	18800138	18693034	18593416	18483564	18362798	18230125
1	South	96468455	95348823	94176777	92947197	91777714	90573372
1	South Atlantic	49560021	48926635	48293338	47612747	46974427	46349183
1	East South Central	16582841	16469361	16338356	16194955	16049935	15882646
1	West South Central	30325593	29952827	29545083	29139495	28753352	28341543
1	West	61150112	60262972	59340027	58389582	57589711	56820732
1	Mountain	17127479	16804614	16476792	16114351	15741906	15306988
1	Pacific	44022633	43458358	42863235	42275231	41847805	41513744
1	Alabama	4369862	4351037	4320281	4290403	4262731	4232965
1	Alaska	619500	615205	608846	604918	601345	600624
1	Arizona	4778332	4667277	4552207	4432308	4306908	4147561
1	Arkansas	2551373	2538202	2524007	2504858	2480121	2450605
1	California	33145121	32682794	32217708	31780829	31493525	31317179
1	Colorado	4056133	3968967	3891293	3812716	3738061	3653910
1	Connecticut	3282031	3272563	3268514	3267030	3265293	3268346
1	Delaware	753538	744066	735024	727090	718265	708416
1	District of Columbia	519000	521426	528752	538273	551273	564982
1	Florida	15111244	14908230	14683350	14426911	14185403	13961798
1	Georgia	7788240	7636522	7486094	7332225	7188538	7045900
1	Hawaii	1185497	1190472	1189322	1184434	1180490	1173903
1	Idaho	1251700	1230923	1210638	1187706	1165000	1135459
1	Illinois	12128370	12069774	12011509	11953003	11884935	11804986
1	Indiana	5942901	5907617	5872370	5834908	5791819	5745626
1	Iowa	2869413	2861025	2854396	2848473	2840860	2829422
1	Kansas	2654052	2638667	2616339	2598266	2586942	2569118
1	Kentucky	3960825	3934310	3907816	3881051	3855248	3823215
1	Louisiana	4372035	4362758	4351390	4338763	4327978	4306500
1	Maine	1253040	1247554	1245215	1241436	1237438	1237687
1	Maryland	5171634	5130072	5092914	5057142	5023650	4985411
1	Massachusetts	6175169	6144407	6115476	6085393	6062335	6031352
1	Michigan	9863775	9820231	9785450	9739184	9659871	9584481
1	Minnesota	4775508	4726411	4687726	4647723	4605445	4566028
1	Mississippi	2768619	2751335	2731826	2709925	2690788	2663450
1	Missouri	5468338	5437562	5407113	5367888	5324610	5281206
1	Montana	882779	879533	878706	876656	868522	854923
1	Nebraska	1666028	1660772	1656042	1647657	1635142	1621551
1	Nevada	1809253	1743772	1675581	1596476	1525777	1456388
1	New Hampshire	1201134	1185823	1173239	1160768	1145604	1133054
1	New Jersey	8143412	8095542	8054178	8009624	7965523	7918796
1	New Mexico	1739844	1733535	1722939	1706151	1682417	1653329
1	New York	18196601	18159175	18143184	18143805	18150928	18156652
1	North Carolina	7650789	7545828	7428672	7307658	7185403	7060959
1	North Dakota	633666	637808	640945	642858	641548	639762
1	Ohio	11256654	11237752	11212498	11187032	11155493	11111451
1	Oklahoma	3358044	3339478	3314259	3289634	3265547	3246119
1	Oregon	3316154	3282055	3243254	3195087	3141421	3087142
1	Pennsylvania	11994016	12002329	12015888	12038008	12044780	12042545
1	Rhode Island	990819	987704	986966	987858	989203	993412
1	South Carolina	3885736	3839578	3790066	3738974	3699943	3666456
1	South Dakota	733133	730789	730855	730699	728251	723038
1	Tennessee	5483535	5432679	5378433	5313576	5241168	5163016
1	Texas	20044141	19712389	19355427	19006240	18679706	18338319
1	Utah	2129836	2100562	2065397	2022253	1976774	1930436

1	Vermont	593740	590579	588665	586352	582827	578900
1	Virginia	6872912	6789225	6732878	6665491	6601392	6536771
1	Washington	5756361	5687832	5604105	5509963	5431024	5334896
1	West Virginia	1806928	1811688	1815588	1818983	1820560	1818490
1	Wisconsin	5250446	5222124	5200235	5173828	5137004	5095504
1	Wyoming	479602	480045	480031	480085	478447	474982

Block Number	Area Name	7/1/93 Population (Estimate)	7/1/92 Population (Estimate)	7/1/91 Population (Estimate)	7/1/90 Population (Estimate)	4/1/90 Population (Census)
2	United States	257782608	255029699	252153092	249464396	248790925
2	Northeast	51253425	51078292	50957878	50875639	50828313
2	New England	13215512	13187671	13200917	13220022	13206943
2	Middle Atlantic	38037913	37890621	37756961	37655617	37621370
2	Midwest	61176124	60711099	60217499	59765440	59669320
2	East North Central	43082892	42766414	42419415	42076640	42009114
2	West North Central	18093232	17944685	17798084	17688800	17660206
2	South	89329642	88101757	86892174	85731747	85455793
2	South Atlantic	45688915	45062338	44430356	43757262	43571473
2	East South Central	15706642	15519819	15343827	15209144	15179959
2	West South Central	27934085	27519600	27117991	26765341	26704361
2	West	56023417	55138551	54085541	53091570	52837499
2	Mountain	14835514	14412687	14038554	13716309	13658794
2	Pacific	41187903	40725864	40046987	39375261	39178705
2	Alabama	4193114	4139269	4091025	4048508	4040389
2	Alaska	596993	587073	569273	553120	550043
2	Arizona	3993390	3867333	3762394	3679056	3665339
2	Arkansas	2423743	2394098	2370666	2354343	2350624
2	California	31147208	30875920	30414114	29950111	29811427
2	Colorado	3560884	3459995	3367567	3303862	3294473
2	Connecticut	3272325	3274997	3288640	3289056	3287116
2	Delaware	699475	690158	680495	669063	666168
2	District of Columbia	576358	584183	593239	603814	606900
2	Florida	13713593	13504775	13289497	13018365	12938071
2	Georgia	6894092	6759474	6621279	6506531	6478149
2	Hawaii	1161508	1149926	1131412	1112703	1108229
2	Idaho	1101204	1066490	1038915	1011882	1006734
2	Illinois	11725984	11635197	11535973	11446979	11430602
2	Indiana	5701965	5648649	5602062	5555097	5544156
2	Iowa	2820525	2806923	2791227	2779769	2776831
2	Kansas	2547605	2526042	2495209	2480683	2477588
2	Kentucky	3792288	3756358	3714686	3692584	3686892
2	Louisiana	4284749	4270849	4240950	4219179	4221826
2	Maine	1238256	1235748	1235439	1231296	1227928
2	Maryland	4942504	4902545	4856176	4797431	4780753
2	Massachusetts	6010884	5993474	5998652	6018664	6016425
2	Michigan	9529240	9470323	9395022	9310462	9295287
2	Minnesota	4521709	4471503	4427429	4387283	4375665
2	Mississippi	2635574	2610193	2591230	2577426	2575475
2	Missouri	5237757	5193686	5157770	5126370	5116901
2	Montana	839876	822436	807837	799824	799065
2	Nebraska	1612149	1602406	1590805	1580664	1578417
2	Nevada	1380197	1330694	1285046	1218629	1201675
2	New Hampshire	1122191	1112766	1107055	1111831	1109252
2	New Jersey	7874891	7827770	7784269	7757158	7747750
2	New Mexico	1614937	1580750	1547115	1519933	1515069
2	New York	18140894	18082032	18029532	18002855	17990778
2	North Carolina	6947412	6831850	6748135	6656987	6632448
2	North Dakota	637229	635427	634199	637364	638800
2	Ohio	11070385	11007609	10933683	10861837	10847115
2	Oklahoma	3228829	3204174	3166471	3147105	3145576
2	Oregon	3034490	2973934	2918745	2858547	2842337
2	Pennsylvania	12022128	11980819	11943160	11895604	11882842
2	Rhode Island	997852	1000571	1003990	1004649	1003464
2	South Carolina	3634507	3600576	3559470	3499064	3486310
2	South Dakota	716258	708698	701445	696667	696004
2	Tennessee	5085666	5013999	4946886	4890626	4877203

2	Texas	17996764	17650479	17339904	17044714	16986335
2	Utah	1875993	1821498	1771941	1729722	1722850
2	Vermont	574004	570115	567141	564526	562758
2	Virginia	6464795	6383315	6283853	6213526	6189197
2	Washington	5247704	5139011	5013443	4900780	4866669
2	West Virginia	1816179	1805462	1798212	1792481	1793477
2	Wisconsin	5055318	5004636	4952675	4902265	4891954
2	Wyoming	469033	463491	457739	453401	453589

Documentation Notes for the December, 1999 release of July 1, 1999 state population estimates.

These population estimates incorporate revisions of estimates from previous years and the results of special censuses and test censuses conducted by the Census Bureau.

4/1/90 Census Population - The revised April 1, 1990 Census population of an area.

Births - Total number of live births occurring to residents of an area during the period, as reported from the Census Bureau's Federal-State Cooperative Program for Population Estimates (FSCPE) and the National Center for Health Statistics.

Census Regions and Divisions - The Census Bureau delineates two sets of sub-national areas that are formed of states. This two-tiered system of areas consists of 9 census divisions nested in 4 census regions. The Northeast region includes the New England division: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont; and the Middle Atlantic division: New Jersey, New York, and Pennsylvania. The Midwest region includes the East North Central division: Illinois, Indiana, Michigan, Ohio, and Wisconsin; and the West North Central division: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota. The South region includes the South Atlantic division: Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia; the East South Central division: Alabama, Kentucky, Mississippi, and Tennessee; and the West South Central division: Arkansas, Louisiana, Oklahoma, and Texas. The West region includes the Mountain division: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming; and the Pacific division: Alaska, California, Hawaii, Oregon, and Washington.

Deaths - Total number of deaths occurring within the resident population of an area during the period, as reported by the Census Bureau's Federal-State Cooperative Program for Population Estimates (FSCPE) and the National Center for Health Statistics.

Demographic Components of Change - The demographic components of population change consist of births, deaths, net domestic migration, and net international migration.

FIPS State Code - Two digit Federal Information Processing Standards (FIPS) codes uniquely identify each state and state equivalent. They are issued by the National Institute of Standards and Technology (NIST) of the U.S. Department of Commerce.

Natural Increase - births minus deaths in an area. The rate of natural increase expresses natural increase during a time period as a percentage of an area's initial population.

Net Domestic Migration - the difference between domestic in-migration to an area and domestic out-migration from it during the period. Domestic in-migration and out-migration consist of moves where both the origins and destinations are within the United States (excluding Puerto Rico). The net domestic migration rate expresses net domestic migration during a time period as a percentage of an area's initial population.

Net Federal Movement - Net Federal movement is the difference between the movement of federal employees (both military and civilian) and their dependents into and out of the United States (excluding Puerto Rico) during the period.

Net International Migration - the difference between migration to an area from outside the United States (immigration) and migration from the area to outside the United States (emigration) during the period. For the purposes of these population estimates, the geographic extent of the United States is defined as excluding Puerto Rico. Net international migration includes: (1) legal immigration to the United States as reported by the Immigration and Naturalization Service, (2) an estimate of net undocumented immigration from abroad, (3) an estimate of emigration from the United States, and (4) net movement between Puerto Rico and the (balance of) the United States. The net international migration rate expresses net international migration during a time period as a percentage of an area's initial population.

Numeric Population Change - the difference between the population of an area at the beginning and end of a time period.

Percent Change- the difference between the population of an area at the beginning and end of a time period, expressed as a percentage of the beginning population.

Population (Estimate) - The estimated population is the computed number of persons living in the area (resident population) as of July 1. The estimated population is calculated from a demographic components of change model that incorporates information on natural change (births and deaths) and net migration (net domestic migration and net movement from abroad) that has occurred in the area since the reference date of the 1990 census. Additional information on the methodology used to produce these population estimates is contained in Current Population Reports P25-1127 and at our Internet site at: http://www.census.gov/population/www/methodep.html

Resident Population - These population estimates are for the resident population. The resident population of a state includes all residents (both civilian and Armed Forces) living in the state. The geographic universe for the resident population is the 50 states and the District of Columbia. It excludes Puerto Rico and outlying areas under United States jurisdiction. The resident population excludes U.S. citizens residing abroad.

Residual - The subnational estimates are constrained to sum to an independently derived estimate of the national population. The residual is the difference between an area's population as estimated by the subnational population estimation procedure before and after imposing this constraint. The residual is not a demographic component of population change; rather, it is a statistical artifact of the procedures employed to produce the estimates.

U.S. Census Bureau

American FactFinder

United States

S2301. Employment Status

Data Set: **2007 American Community Survey 1-Year Estimates**

Survey: **American Community Survey**

NOTE. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see Survey Methodology.

Subject	Total	Margin of Error	In labor force	Margin of Error	Employed	Margin of Error	Unemployment rate	Margin of Error
Population 16 years and over	**236,416,572**	**+/-47,218**	**64.8%**	**+/-0.1**	**60.3%**	**+/-0.1**	**6.3%**	**+/-0.1**
AGE								
16 to 19 years	17,578,723	+/-47,969	44.2%	+/-0.2	34.4%	+/-0.2	21.3%	+/-0.2
20 to 24 years	20,945,480	+/-31,994	74.9%	+/-0.2	65.2%	+/-0.2	11.2%	+/-0.2
25 to 44 years	83,397,470	+/-45,912	81.9%	+/-0.1	76.8%	+/-0.1	5.5%	+/-0.1
45 to 54 years	43,925,234	+/-33,305	80.4%	+/-0.1	76.8%	+/-0.1	4.3%	+/-0.1
55 to 64 years	32,729,107	+/-17,638	62.5%	+/-0.1	60.1%	+/-0.1	3.9%	+/-0.1
65 to 74 years	19,397,263	+/-19,062	23.9%	+/-0.1	23.0%	+/-0.1	3.5%	+/-0.1
75 years and over	18,443,295	+/-14,553	5.6%	+/-0.1	5.4%	+/-0.1	3.8%	+/-0.2
RACE AND HISPANIC OR LATINO ORIGIN								
One race	232,787,071	+/-46,599	64.8%	+/-0.1	60.3%	+/-0.1	6.3%	+/-0.1
White	178,961,013	+/-76,689	64.8%	+/-0.1	61.0%	+/-0.1	5.3%	+/-0.1
Black or African American	27,828,169	+/-31,905	62.8%	+/-0.2	54.8%	+/-0.2	12.0%	+/-0.1
American Indian and Alaska Native	1,790,577	+/-21,549	60.1%	+/-0.6	52.0%	+/-0.6	12.6%	+/-0.5
Asian	10,647,198	+/-22,126	65.0%	+/-0.2	61.4%	+/-0.2	5.0%	+/-0.1
Native Hawaiian and Other Pacific Islander	336,046	+/-7,520	69.3%	+/-1.4	62.4%	+/-1.4	8.5%	+/-1.1
Some other race	13,224,068	+/-81,156	69.3%	+/-0.2	63.7%	+/-0.2	7.6%	+/-0.2
Two or more races	3,629,501	+/-41,895	65.5%	+/-0.4	58.1%	+/-0.5	10.1%	+/-0.3
Hispanic or Latino origin (of any race)	31,561,150	+/-19,298	67.8%	+/-0.1	62.5%	+/-0.1	7.3%	+/-0.1
White alone, not Hispanic or Latino	161,864,950	+/-26,165	64.6%	+/-0.1	60.9%	+/-0.1	5.2%	+/-0.1
Population 20 to 64 years	**180,997,291**	**+/-49,314**	**77.2%**	**+/-0.1**	**72.4%**	**+/-0.1**	**5.6%**	**+/-0.1**
SEX								
Male	90,268,956	+/-30,263	83.1%	+/-0.1	77.6%	+/-0.1	5.6%	+/-0.1
Female	90,728,335	+/-31,465	71.4%	+/-0.1	67.3%	+/-0.1	5.6%	+/-0.1
With own children under 6 years	14,903,969	+/-54,448	64.9%	+/-0.2	59.8%	+/-0.2	7.6%	+/-0.2
POVERTY STATUS IN THE PAST 12 MONTHS								
Below poverty level	20,041,619	+/-102,507	49.6%	+/-0.2	38.3%	+/-0.2	22.6%	+/-0.2
DISABILITY STATUS								
With any disability	22,499,361	+/-72,862	42.3%	+/-0.2	36.8%	+/-0.2	12.9%	+/-0.2
EDUCATIONAL ATTAINMENT								
Population 25 to 64 years	**160,051,811**	**+/-59,735**	**77.5%**	**+/-0.1**	**73.4%**	**+/-0.1**	**4.9%**	**+/-0.1**
Less than high school graduate	20,820,602	+/-86,898	60.7%	+/-0.2	54.9%	+/-0.2	9.5%	+/-0.1
High school graduate (includes equivalency)	46,533,917	+/-127,013	74.6%	+/-0.1	69.8%	+/-0.1	6.2%	+/-0.1
Some college or associate's degree	45,669,946	+/-118,392	80.3%	+/-0.1	75.9%	+/-0.1	4.7%	+/-0.1
Bachelor's degree or higher	47,027,346	+/-136,728	85.2%	+/-0.1	82.6%	+/-0.1	2.6%	+/-0.1
PERCENT IMPUTED								
Employment status for population 16 years and over	2.7%	(X)	(X)	(X)	(X)	(X)	(X)	(X)

Source: U.S. Census Bureau, 2007 American Community Survey

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

Notes:
·The "Employed" and "Unemployment rate" columns refer to the civilian population. For more information, see the ACS Subject Definitions.
·Employment and unemployment estimates may vary from the official labor force data released by the Bureau of Labor Statistics because of differences in survey design and data collection. For guidance on differences in employment and unemployment estimates from different sources go to Labor Force Guidance.
·While the 2007 American Community Survey (ACS) data generally reflect the December 2006 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities. The 2007 Puerto Rico Community Survey (PRCS) data generally reflect the December 2005 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in PRCS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.
·Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2000 data. Boundaries for urban areas have not been updated since Census 2000. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Explanation of Symbols:
1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available. Selected migration, earnings, and income data are not available for certain geographic areas due to problems with group quarters data collection and imputation. See Errata Note #44 for details.

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U.S. Census Bureau

American FactFinder

Ohio

S2301. Employment Status

Data Set: **2007 American Community Survey 1-Year Estimates**

Survey: **American Community Survey**

NOTE. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see Survey Methodology.

Subject	Total	Margin of Error	In labor force	Margin of Error	Employed	Margin of Error	Unemployment rate	Margin of Error
Population 16 years and over	**9,047,030**	**+/-5,205**	**64.9%**	**+/-0.2**	**60.1%**	**+/-0.2**	**7.2%**	**+/-0.2**
AGE								
16 to 19 years	662,449	+/-5,505	49.2%	+/-1.0	38.2%	+/-1.1	22.1%	+/-1.2
20 to 24 years	756,966	+/-4,518	77.9%	+/-0.8	68.0%	+/-1.0	12.4%	+/-0.8
25 to 44 years	3,036,209	+/-5,675	82.8%	+/-0.3	77.2%	+/-0.4	6.6%	+/-0.3
45 to 54 years	1,750,282	+/-3,846	80.7%	+/-0.4	76.5%	+/-0.4	5.1%	+/-0.3
55 to 64 years	1,294,585	+/-2,801	62.3%	+/-0.6	59.9%	+/-0.6	3.8%	+/-0.3
65 to 74 years	786,075	+/-2,562	23.0%	+/-0.7	22.2%	+/-0.7	3.2%	+/-0.6
75 years and over	760,464	+/-1,898	5.2%	+/-0.3	5.0%	+/-0.3	2.5%	+/-1.0
RACE AND HISPANIC OR LATINO ORIGIN								
One race	N	N	N	N	N	N	N	N
White	7,723,071	+/-6,481	65.3%	+/-0.2	61.2%	+/-0.3	6.2%	+/-0.2
Black or African American	998,708	+/-4,777	60.6%	+/-0.7	51.4%	+/-0.8	15.0%	+/-0.9
American Indian and Alaska Native	16,462	+/-1,995	56.5%	+/-5.9	49.0%	+/-5.7	13.4%	+/-4.5
Asian	143,003	+/-3,139	67.4%	+/-1.8	64.3%	+/-1.7	4.4%	+/-1.0
Native Hawaiian and Other Pacific Islander	N	N	N	N	N	N	N	N
Some other race	70,666	+/-4,672	71.6%	+/-3.0	64.7%	+/-3.1	9.5%	+/-2.1
Two or more races	91,911	+/-4,547	63.2%	+/-2.6	54.5%	+/-2.4	13.6%	+/-2.4
Hispanic or Latino origin (of any race)	191,023	+/-2,291	68.2%	+/-1.5	61.5%	+/-1.7	9.6%	+/-1.4
White alone, not Hispanic or Latino	7,612,949	+/-4,197	65.3%	+/-0.2	61.2%	+/-0.3	6.1%	+/-0.2
Population 20 to 64 years	**6,838,042**	**+/-5,445**	**77.8%**	**+/-0.2**	**72.7%**	**+/-0.2**	**6.4%**	**+/-0.2**
SEX								
Male	3,373,212	+/-3,787	82.5%	+/-0.3	76.7%	+/-0.3	6.7%	+/-0.2
Female	3,464,830	+/-3,912	73.3%	+/-0.4	68.9%	+/-0.4	6.0%	+/-0.2
With own children under 6 years	553,161	+/-10,197	69.9%	+/-1.0	64.7%	+/-1.1	7.3%	+/-0.7
POVERTY STATUS IN THE PAST 12 MONTHS								
Below poverty level	789,965	+/-16,890	50.7%	+/-0.9	36.2%	+/-0.9	28.6%	+/-1.2
DISABILITY STATUS								
With any disability	943,114	+/-15,089	41.8%	+/-0.9	35.4%	+/-0.8	15.3%	+/-1.0
EDUCATIONAL ATTAINMENT								
Population 25 to 64 years	**6,081,076**	**+/-5,079**	**77.8%**	**+/-0.2**	**73.3%**	**+/-0.2**	**5.7%**	**+/-0.2**
Less than high school graduate	593,131	+/-12,166	54.5%	+/-1.0	46.3%	+/-1.0	15.1%	+/-1.0
High school graduate (includes equivalency)	2,154,665	+/-20,450	75.2%	+/-0.4	70.0%	+/-0.4	6.8%	+/-0.3
Some college or associate's degree	1,735,221	+/-16,856	81.4%	+/-0.4	76.9%	+/-0.5	5.3%	+/-0.3
Bachelor's degree or higher	1,598,059	+/-17,265	86.1%	+/-0.4	83.8%	+/-0.4	2.4%	+/-0.2
PERCENT IMPUTED								
Employment status for population 16 years and over	2.2%	(X)	(X)	(X)	(X)	(X)	(X)	(X)

Source: U.S. Census Bureau, 2007 American Community Survey

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

Notes:
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·Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2000 data. Boundaries for urban areas have not been updated since Census 2000. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Explanation of Symbols:
1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
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The letters PDF or symbol indicate a document is in the Portable Document Format (PDF). To view the file you will need the Adobe® Acrobat® Reader, which is available for free from the Adobe web site.

U.S. Census Bureau

American FactFinder

Butler County, Ohio

S2301. Employment Status

Data Set: **2007 American Community Survey 1-Year Estimates**

Survey: **American Community Survey**

NOTE. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see Survey Methodology.

Subject	Total	Margin of Error	In labor force	Margin of Error	Employed	Margin of Error	Unemployment rate	Margin of Error
Population 16 years and over	279,272	+/-808	65.3%	+/-1.4	61.6%	+/-1.4	5.6%	+/-0.9
AGE								
16 to 19 years	23,961	+/-1,318	42.6%	+/-5.5	36.7%	+/-5.2	13.9%	+/-4.8
20 to 24 years	28,940	+/-780	73.9%	+/-5.6	67.3%	+/-5.6	8.6%	+/-3.1
25 to 44 years	96,848	+/-1,201	83.0%	+/-2.2	77.7%	+/-2.4	6.3%	+/-1.6
45 to 54 years	53,134	+/-890	79.2%	+/-3.0	76.9%	+/-3.1	2.9%	+/-1.1
55 to 64 years	36,715	+/-376	61.4%	+/-3.5	59.3%	+/-3.6	3.5%	+/-2.0
65 to 74 years	21,795	+/-824	21.4%	+/-4.1	21.4%	+/-4.1	0.0%	+/-3.4
75 years and over	17,879	+/-499	6.8%	+/-2.5	6.8%	+/-2.5	0.0%	+/-12.6
RACE AND HISPANIC OR LATINO ORIGIN								
One race	N	N	N	N	N	N	N	N
White	251,037	+/-1,046	65.4%	+/-1.5	61.8%	+/-1.4	5.5%	+/-1.0
Black or African American	N	N	N	N	N	N	N	N
American Indian and Alaska Native	N	N	N	N	N	N	N	N
Asian	N	N	N	N	N	N	N	N
Native Hawaiian and Other Pacific Islander	N	N	N	N	N	N	N	N
Some other race	N	N	N	N	N	N	N	N
Two or more races	N	N	N	N	N	N	N	N
Hispanic or Latino origin (of any race)	N	N	N	N	N	N	N	N
White alone, not Hispanic or Latino	247,286	+/-779	65.3%	+/-1.6	61.6%	+/-1.5	5.6%	+/-1.0
Population 20 to 64 years	215,637	+/-1,179	77.2%	+/-1.6	73.0%	+/-1.6	5.3%	+/-1.0
SEX								
Male	105,742	+/-970	83.6%	+/-1.9	77.9%	+/-2.0	6.6%	+/-1.3
Female	109,895	+/-801	71.0%	+/-2.4	68.2%	+/-2.6	4.0%	+/-1.3
With own children under 6 years	18,800	+/-2,167	68.8%	+/-5.3	66.7%	+/-5.3	3.1%	+/-2.4
POVERTY STATUS IN THE PAST 12 MONTHS								
Below poverty level	27,036	+/-3,214	47.4%	+/-6.0	34.8%	+/-5.5	26.6%	+/-7.3
DISABILITY STATUS								
With any disability	29,242	+/-2,321	33.1%	+/-4.2	26.8%	+/-4.0	19.0%	+/-6.8
EDUCATIONAL ATTAINMENT								
Population 25 to 64 years	186,697	+/-1,082	77.7%	+/-1.5	73.8%	+/-1.6	4.9%	+/-1.0
Less than high school graduate	20,180	+/-2,139	53.7%	+/-5.9	46.5%	+/-6.2	13.4%	+/-6.7
High school graduate (includes equivalency)	65,621	+/-3,988	75.2%	+/-3.0	70.3%	+/-3.1	6.3%	+/-2.0
Some college or associate's degree	49,760	+/-3,665	81.4%	+/-2.8	77.8%	+/-3.0	4.3%	+/-1.7
Bachelor's degree or higher	51,136	+/-3,532	86.7%	+/-2.1	85.2%	+/-2.2	1.8%	+/-0.9
PERCENT IMPUTED								
Employment status for population 16 years and over	2.0%	(X)	(X)	(X)	(X)	(X)	(X)	(X)

Source: U.S. Census Bureau, 2007 American Community Survey

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

Notes:
·The "Employed" and "Unemployment rate" columns refer to the civilian population. For more information, see the ACS Subject Definitions.
·Employment and unemployment estimates may vary from the official labor force data released by the Bureau of Labor Statistics because of differences in survey design and data collection. For guidance on differences in employment and unemployment estimates from different sources go to Labor Force Guidance.
·While the 2007 American Community Survey (ACS) data generally reflect the December 2006 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities. The 2007 Puerto Rico Community Survey (PRCS) data generally reflect the December 2005 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in PRCS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.
·Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2000 data. Boundaries for urban areas have not been updated since Census 2000. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Explanation of Symbols:
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Below is a list of species found in Butler County, likely to be important in consideration of local wildlife.

Endangered Species

Indiana Bat (*Myotis sodalis)*

According to U.S. Fish and Wildlife Service (USFWS), the Indiana Bat (*Myotis sodalis*) is listed as an endangered species in Butler County, Ohio. They are found in caves and mines that have stable temperatures. Their maternity and foraging habitats range from small stream corridors with well developed riparian woods to upland forests. The area has been determined to have "no effect" on federally listed species because the project is:

- within an urban setting (i.e., incorporated villages or cities); and
- not adjacent to a wooded area

The USFWS page determined that no listed species or designated critical habitat is anticipated to be directly or indirectly affected by this action.

Recreational Species

Below is a list on Ohio species acceptable for hunting as listed on the ODNR, Division of Wildlife:

American Crow (*Corvus brachrhynchos*)

Crows are inhabitants of all counties in Ohio with a wide range of habitats. They are heavily found in areas with forested farmland as in southwestern Ohio. This species is likely to inhabit the transmission line corridors.

Canada Goose (*Branta canadensis*)

This species lives near rivers, wetlands, ponds and lakes. There are several subspecies, some that migrate while others remain nearby. ODNR management efforts established populations permanently in the 1950's due to extirpation of the species in the 1800's and early 1900's. Since this effort was made, the Canada Goose has become a successful residence in Ohio. This species is likely to inhabit the transmission line corridors.

Coyote *(Canis latrans)*

Not originating in Ohio, the coyote is now found in almost any habitat. With an adaptable nature, their increasing exposure to humans allowed them to thrive where others species could not. Due to their nocturnal behavior, coyotes hunt in various habitats but will extend to daytime hours if there is no potential threat. This species is likely to inhabit the transmission line corridors.

Eastern Cottontail Rabbit *(Sylvilagus floridanus)*

This species tends to establish itself in open areas along wooded borders, common with the clearing of forested areas. It is Ohio's top hunted species and is often

confused with snowshoe hares during early hunting season. This species is likely to inhabit the transmission line corridors.

Gray and Red Fox (*Urocyon cinereoargenteus)* and (*Vulpes vulpes)*

Both the gray fox and red fox are found in various habitats in Ohio, and carry adaptable traits similar to coyotes. Gray foxes occupy forested areas or partially open brush lands, absent of humans. While their populations declined, the red fox populations increased with further human interactions as the red fox tends to endure highly fragmented ecosystems. It is more likely to site the red fox in urban settings however both species are likely to inhabit the transmission line corridors.

Gray, Red, Fox or Flying squirrels *(Sciurus carolinensis, Tamiasciurus hudsonicus, Sciurus niger, Glaucomys volans)*

Found in forested areas, some species such as the fox squirrel enjoy the cleared land associated with early settlement. Gary squirrels can be found near large trees such as walnuts and oaks that produce food late into the winter. The red squirrels prefer coniferous and mixed forests, and are attracted to structures. Flying squirrels are the most abundant in Ohio but are nocturnal so they are seldom seen. These species are likely to inhabit the transmission line corridors.

Long-Tailed Weasel (*Mustela frenata)*

The weasel is found in many different habitats especially those near water. They are active and aggressive, feeding on small mammals, birds, fruits and berries. Due to the proximity to the Little Miami River, this species is likely to inhabit the transmission line corridors.

Mallard (*Anas platyrhychos)*

The mallard is the largest ranging duck species in the United States, and is adaptable to various situations. They can be found wherever their food and water necessities are met. This species is likely to inhabit the transmission line corridors.

Mourning Doves (*Zenaida macroura)*

Mourning doves are found in all Ohio counties, being one of the most highly adapted native species living near humans. The only areas they are not found in Ohio are in well developed forests. Therefore, this species is likely to inhabit the transmission line corridors.

Opossum (*Didelphis virginiana)*

The opossum is a marsupial that has increased in population since the settlement of man in Ohio. It is found in cities with ideal locations bordering wetlands, forests and agricultural areas. It is very likely to see this species in the area of transmission line corridors.

Raccoon (*Prosyon lotor)*

Raccoons have become increasingly adapted to human contact. They are commonly found in towns and cities as they exist wherever there is food, or anything that bears a resemblance to it. This species is likely to inhabit the transmission line corridors.

Striped Skunk (*Mephitis mephitis)*

The skunk has the adaptability similar to other animals whose populations increased while human residents rose. They range from rural to suburban areas, often found near a water source and are likely to inhabit the transmission line corridors.

Wild Turkey (*Meleagris gallopavo)*

The wild turkey prefers forested areas, sometimes tolerating less dense forest cover. They were once locally extirpated, but are making a comeback in recent years. This species is likely to inhabit the transmission line corridors.

White-tailed Deer (*Odocoileus virginianus)*

Whitetail deer move through all habitats and are most active from October to December. Deer may be seen traversing the site but this species is not likely to inhabit the transmission line corridors due to lack of sufficiently forested habitat.

Woodchuck (*Marmota monax)*

Woodchucks, or groundhogs, are found in open areas, sometimes in low density forests and near agricultural lands. This species is likely to inhabit areas within the transmission line corridors.

Commercial Species

Commercially important species are those traded, or trapped for fur, pelts, etc. and are important within the proposed routes.

Beaver (*Castor Canadensis)*

Beavers are found in areas surrounding waterways throughout Ohio. They are often known to build lodges out of twigs and small branches that provide shelter to other species when vacant. This species is likely to inhabit the transmission line corridors.

Coyote *(Canis latrans)*

Not originating in Ohio, the coyote is now found in almost any habitat. With an adaptable nature, their increasing exposure to humans allowed them to thrive where others species could not. Due to their nocturnal behavior, coyotes hunt in various habitats but will extend to daytime hours if there is no potential threat. This species is likely to inhabit the transmission line corridors.

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Mallard (*Anas platyrhychos)*

The mallard is the largest ranging duck species in the United States, and is adaptable to various situations. They can be found wherever their food and water necessities are met. This species is likely to inhabit the transmission line corridors.

Mink *(Mustela vison)*

Today mink occur in every county in Ohio, although less frequently than in pre-settlement times. They tend to inhabit areas surrounding streams, rivers, wetlands or lakes. This species is likely to inhabit the transmission line corridors.

Muskrat (*Ondatra zibethicus*)

Abundant throughout Ohio, the muskrat is found near intermittent streams, wetlands, and ponds. The build lodges similar to beavers, but out of herbaceous layers instead of sticks. This species is likely to inhabit the transmission line corridors.

Opossum (*Didelphis virginiana)*

The opossum is a marsupial that has increased in population since the settlement of man. It is found in cities with ideal locations bordering wetlands, forests and agricultural areas. This species is likely to inhabit the transmission line corridors.

Raccoon (*Prosyon lotor)*

Raccoons have become increasingly adapted to human contact. They are commonly found in towns and cities as they exist wherever there is food, or anything that bears a resemblance to it. This species is likely to inhabit the transmission line corridors.

River Otter (*Lontra Canadensis)*

The river otter became extirpated due to over hunting for its pelt in the early 1900's. However, later in the century, there was a reintroduction of otters into several of Ohio's rivers. This species often inhabits abandoned beaver lodges, thus common along rivers and streams, and currently found in nearly two-third of Ohio's rivers. This species is likely to inhabit the transmission line corridors.

Striped Skunk (*Mephitis mephitis)*

The skunk has the adaptability similar to other animals whose populations increased while human residents rose. They range from rural to suburban areas, often found near a water source and are likely to inhabit the transmission line corridors.

Resources:

Information on commercial and recreational species of Ohio can be found on the Ohio Department of Natural Resources Website.

Hunting species and regulations:

http://www.ohiodnr.com/wildlife/dow/regulations/hunting_smallgame.aspx

Species information:

http://www.dnr.state.oh.us/Home/species_a_to_z/SpeciesGuideIndex/tabid/6491/Default.aspx

Ohio Department of Natural Resources

TED STRICKLAND, GOVERNOR SEAN D. LOGAN, DIRECTOR

Division of Natural Areas & Preserves
Steven D. Maurer, Chief
2045 Morse Road, F-1
Columbus, OH 43229-6693
Phone: (614) 265-6453 Fax: (614) 267-3096

December 18, 2008

Scott Ross
BBC&M Engineering, Inc.
6190 Enterprise Ct.
Dublin, OH 43016

Dear Mr. Ross:

After reviewing our Natural Heritage maps and files, I find the Division of Natural Areas and Preserves has records of rare or endangered species near the BBC&M Engineering, Inc. 138 kV Long Line project #011-11772-E00. The map I have included with this letter displays the locations of the records and corresponds to the attached list. Becky Jenkins of the Division of Wildlife should be contacted regarding possible impacts to rare animal species. She can be reached at (614) 265-6631. The site is located in Secs. 29 and 35, Fairfield Twp., Butler Co., Green Hills Quadrangle. The project is within 5 miles of an Indiana Bat record. *Myotis sodalis,* Indiana Bat, is Endangered in Ohio and Federally Endangered. The US Fish and Wildlife Service should be consulted regarding possible impacts to the bats. They can be reached at (614) 469-6923.

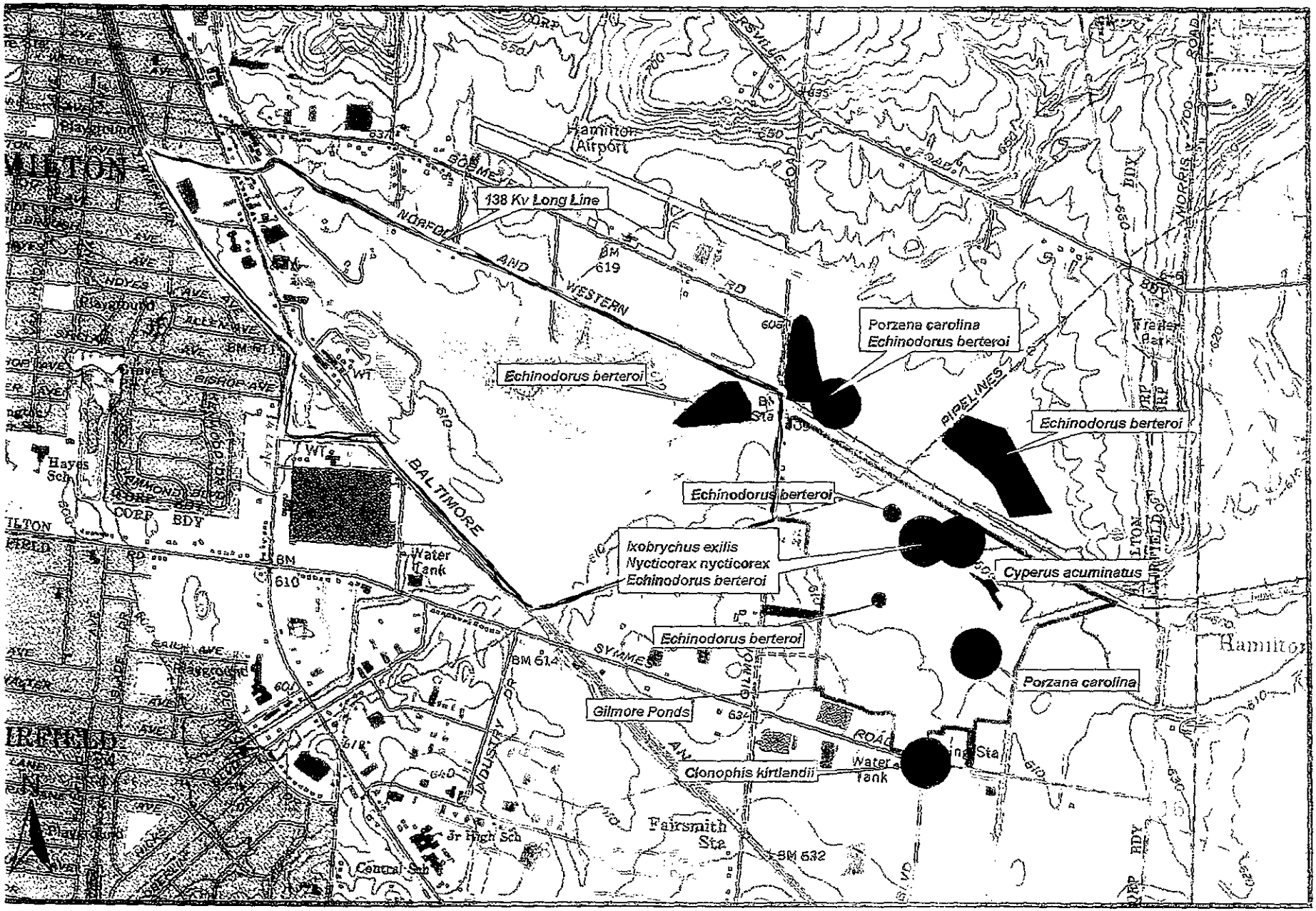
There are no existing or proposed state nature preserves at the project site. We are also unaware of any unique ecological sites, geologic features, breeding or non-breeding animal concentrations, state parks, state forests, scenic rivers, or wildlife areas within the project area. However, the site is near the Gilmore Ponds Preserve. The Metroparks of Butler County should be contacted regarding possible impacts the preserve. They can be reached at (513) 867-5835. The red line on the map represents the approximate boundary of the preserve.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although we inventory all types of plant communities, we only maintain records on the highest quality areas.

Please contact me at (614) 265-6409 if I can be of further assistance.

Sincerely,

Butch Grieszmer, Data Specialist
Resource Services Group



DNAP Natural Heritage Program
Data Services
Butch Grieszmer

0 1 Miles

September 16, 2002

138 kV Long Line #011-11772-E00

Scientific Name	Common Name	State Status	Federal Status	Last Observed
Clonophis kirtlandii	Kirtland's Snake	T		1991-10-25
Cyperus acuminatus	Pale Umbrella-sedge	T		2000-07-26
Echinodorus berteroi	Burhead	E		1996-08-28
Echinodorus berteroi	Burhead	E		1996-08-28
Echinodorus berteroi	Burhead	E		1996-08-28
Echinodorus berteroi	Burhead	E		1996-09-11
Ixobrychus exilis	Least Bittern	T		1991-06 (NO DAY
Nycticorax nycticorax	Black-crowned Night-heron	T		1990-07-15
Porzana carolina	Sora Rail	SC		1983-05
Porzana carolina	Sora Rail	SC		1990-07

E=Endangered
FE=Federally Endangered
FT=Federally Threatened
P=Potentially Threatened
SC=Special Concern
SI=Special Interest
T=Threatened

Ohio Department of Natural Resources

TED STRICKLAND, GOVERNOR — SEAN D. LOGAN, DIRECTOR

Division of Wildlife
David M. Graham, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

December 8, 2008

Monica Noon
BBC&M Engineering, Inc.
6190 Enterprise Court
Dublin, OH 43016-3293

RE: Transmission line project
Hamilton, Ohio
Butler County

Dear Ms. Noon:

This is in response to your e-mail dated November 17, 2008. In that e-mail you request information regarding recreational and commercial species within the area of the project referenced above. We do not maintain records of recreational or commercial species found within this area. However, after reviewing the information provided, the Ohio Department of Natural Resources, Division of Wildlife (DOW) has the following comments.

As indicated by the U.S. Fish and Wildlife Service, the project is within the range of the Indiana bat (*Myotis sodalis*), a state and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees: Shagbark hickory (*Carya ovata*), Shellbark hickory (*Carya laciniosa*), Bitternut hickory (*Carya cordiformis),* Black ash (*Fraxinus nigra*), Green ash (*Fraxinus pennsylvanica*), White ash (*Fraxinus americana*), Shingle oak (*Quercus imbricaria*), Northern red oak (*Quercus rubra*), Slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), Eastern cottonwood (Populus deltoides), Silver maple (*Acer saccharinum*), Sassafras (*Sassafras albidum*), Post oak (*Quercus stellata*), and White oak (*Quercus alba*). Indiana bat habitat consists of suitable trees that include dead and dying trees of the species listed above with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees of the species listed above with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. If suitable trees occur within the project area, these trees must be conserved. If suitable habitat occurs on the project area and trees must be cut, cutting must occur between September 30 and April 1. If suitable trees must be cut during the summer months of April 2 to September 29, a net survey must be conducted in May or June prior to cutting. Net surveys shall incorporate either two net sites per square kilometer of project area with each net site containing a minimum of two nets used for two consecutive nights, or one net site per kilometer of stream within the project limits with each net site containing a minimum of two nets used for two consecutive nights. If no tree removal is proposed, the project is not likely to impact this species.

The project is also within the range of the blue corporal (*Ladona deplanata*), a state endangered dragonfly. Due to the mobility of this species, the project is not likely to impact this species.

The project is within the range of the Kramer's cave beetle (*Pseudanophthalmus krameri*), a state endangered species, and the Ohio cave beetle (*Pseudanophthalmus ohioensis*), a state endangered species. These species are found only in caves. The Ohio Cave Protection Law, Section 1517.21 of the Ohio Revised Code, protects caves from impacts, in turn, protecting the habitat of these species. Therefore, the project is not likely to have an impact on these species.

The project is within the range of the cave salamander (*Eurycea lucifuga*), a state endangered species. Records show this species has been found in the same township as the proposed project area. Due to the project's proximity to current records, a habitat survey may be required on the proposed site. The need for a survey is determined by the type of habitat located in the project area and the type of work proposed. The survey must be done by a professional herpetologist approved by the DOW. Unless the herpetologist determines that the presence of the cave salamander is highly unlikely, a presence/absence survey will be required.

Otherwise, the Ohio Department of Natural Resources, Division of Wildlife, is not aware of any threatened or endangered species in the vicinity of this project. However, the Ohio Department of Natural Resources, Division of Natural Areas and Preserves maintains the Natural Heritage Database, the state's most comprehensive record of Ohio threatened and endangered species. If you have not already done so, it is recommended you contact the Division of Natural Areas and Preserves at (614) 265-6453. To process future projects more efficiently, I recommend you contact the Division of Natural Areas and Preserves prior to contacting the Division of Wildlife. To help expedite the process, please include the results of the Division of Natural Areas and Preserves' Natural Heritage Database request when contacting us regarding future projects.

The Ohio Department of Natural Resources, Division of Wildlife is available to provide guidance on avoiding or minimizing impacts to any listed fauna and/or their habitat. If you should need further assistance, please feel free to contact Becky Jenkins at (614) 265-6631.

Sincerely,

JOHN NAVARRO
Program Administrator

JN/BJ/al

Indiana Bat

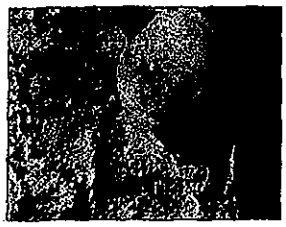
Photo Gallery

Scientific Collection Permits

Dealing with Wildlife

Population Status Report

Wildlife Diseases



There are many things that distinguish bats in the animal world. Bats are the only mammals capable of flight. For mammals, they are an evolutionarily old group with fossil records dating back 50 million years.

The Indiana bat is one of 13 bat species recorded in Ohio. It is a rare species, and is listed on both the state and federal endangered species list. It was not until 1974 that the first maternity colony was discovered in Indiana. Like little brown bats (to which they bear a close resemblance), Indiana bats migrate to caves south of Ohio to hibernate.

Related Links

Back to Species A-Z Guide Home

Printable Life History - Indiana bat

Watchable Wildlife Areas

Wild Plates / Donate

Conservation Organizations

Indiana Bat
Myotis sodalis

At-a-Glance

- Mating: Polygamous
- Peak Breeding Activity: September and October
- Gestation Period: Approximately 49-56 days
- Migration Patterns: Seasonal resident. Indiana bats live in small summer colonies in the state. They home in on site-specific locations to roost. Little is known about the dispersal of young. The bats migrate south to caves for the winter.
- Feeding Periods: One hour or two after sunset and before sunrise.
- Typical Foods: Insects, especially small soft-bodied moths, beetles, flies, and caddis flies that are trapped under closed tree canopies over small streams.

Description
The back of the Indiana bat appears uniformly dark brown, often with a distinctive pinkish or chestnut color. However, individual hairs are actually tri-colored, which helps differentiate them from the little brown bat that they closely resemble. The wing membranes are dark brown. This similarity in appearance to the little brown bat can make the two species difficult to distinguish.

Habitat and Habits
In winter, Indiana bats live in caves and abandoned mines which provide and maintain a cool and stable temperature. Male and female Indiana bats then segregate in the summer. It is assumed that male bats roost alone or live in small bachelor colonies. Females nest under loose bark of exfoliating trees or in tree hollows.

Reproduction and Care of the Young
Although sperm is transferred to the female during copulation that occurs in the fall, ovulation and fertilization of the egg are delayed until the females arouse from hibernation the following spring. During the summer, females form maternity colonies, almost always under the loose bark of trees or in tree cavities. Maternity colonies usually consist of fewer than 100 females.

Ohio Department of Natural Resources, Division of Wildlife
2045 Morse Rd., Bldg. G, Columbus, OH 43229-6693

Cave Salamander

Photo Gallery
Reptile/Amphibian Captivity Laws
Ohio Frog and Toad Calling Survey
Venemous and Nonvenemous Snakes
Learn about Wild School Sites
Collecting Species for the Classroom

The cave salamander is protected as an endangered species by the Ohio Division of Wildlife.

Related Links
Back to Species A-Z Guide Home
Watchable Wildlife Areas
Wild Plates / Donate
Conservation Organizations

Cave Salamander
Eurycea lucifuga

At-a-Glance

- Family: Plethodontidae (Lungless salamanders)
- Length: 4-6 inches
- Brood size: 50-90 eggs
- Typical Foods: insects

Description
This slender salamander has a color ranging from orange to red. Irregular black spots pepper the body and tail. Unlike the closely related long-tailed salamander, the spots do not form bars on the tail. The tail is long, making up 60-65 percent of the total body length. The head and body have a somewhat flattened appearance.

Habitat and Habits
These salamanders are found in and around caves, seeps, springs, springhouses, and small forested limestone creeks associated with groundwater. Cave salamanders live in rock crevices or under rocks, logs, or other debris.

Reproduction and Care of the Young
Courtship probably occurs in the autumn. In the winter, eggs are attached singly to rocks in underground springs or in small streams and probably hatch the following spring. The aquatic larvae go through metamorphosis the following summer. Although their lifespan is unknown, they do not reach breeding age for another two to three years. In their larval and adult lives, they feed on invertebrates.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
614-416-8993 / FAX 614-416-8994

January 05, 2009

Scott Ross
BBCM
6190 Enterprise Court
Dublin, OH, 43016

TAILS: 2009-TA- 0165

Re: 138 KV Transmission Line, Hamilton, Butler County, OH

Dear Mr. Ross:

This is in response to your December 9, 2008 letter requesting information we may have regarding the occurrence or possible occurrence of Federally-listed threatened or endangered species within the vicinity of the proposed project located in Hamilton, Butler County, Ohio. We understand that the project area consists of an urban setting of residential, commercial and light industrial development. We understand that BBCM delineated three forested category 2 wetlands and five emergent/scrub-shrub category 1 wetlands in the project corridor. In addition to this, an intermittent stream and six ephemeral streams were delineated and are unnamed tributaries to Pleasant Run.

There are no Federal wildlife refuges, wilderness areas, or Critical Habitat within the vicinity of this site.

In general, the U.S. Fish and Wildlife Service recommends that proposed activities minimize water quality impacts and impacts to quality fish and wildlife habitat, such as forests, streams, and wetlands. Riparian zone habitat should be preserved wherever possible. Vegetated areas along stream and river banks stabilize the banks, provide fish and wildlife habitat, filter pollutants and excess nutrients from the water, store excess water during storm events, and minimize sedimentation. We recommend that the proposed action use best construction techniques to minimize erosion. Prevention of non-native, invasive plant establishment is critical in maintaining quality habitats. All disturbed areas should be mulched and re-vegetated with native plants. We recommend planting disturbed areas with native riparian species, for example willows, dogwoods, and cottonwoods. For maximum benefits on water quality and bank stabilization, riparian areas should not be mowed.

ENDANGERED SPECIES COMMENTS: The proposed project lies within the 5 mile buffer zone for the **Indiana bat** (*Myotis sodalis*), a Federally-listed endangered species. Since first listed as endangered in 1967, their population has declined by nearly 60%. Several factors have contributed to the decline of the Indiana bat, including the loss and degradation of suitable

forested habitat, particularly stands of large, mature trees. Fragmentation of forest habitat may also contribute to declines.
During winter, Indiana bats hibernate in caves and abandoned mines. Summer habitat requirements for the species are not well defined but the following are considered important:

(1) dead or live trees and snags with peeling or exfoliating bark, split tree trunk and/or branches, or cavities, which may be used as maternity roost areas;
(2) live trees (such as shagbark hickory and oaks) which have exfoliating bark;
(3) stream corridors, riparian areas, and upland woodlots which provide forage sites.

There is a known Indiana bat capture location within approximately 4.5 miles SW of the proposed site. According to your letter, a minimal number of trees with exfoliating bark or split trunks/branches were observed in the study area. We understand that approximately 2 acres of forested habitat is located within the project corridor and is dominated by immature trees. Should the proposed site contain trees or associated habitats exhibiting any of the characteristics listed above, we recommend that the habitat and surrounding trees be saved wherever possible. In order for the Service to evaluate potential impacts to the Indiana bat, the Applicant must submit additional information. We recommend including the following information:

1. A map of the site with all forested areas indicated, and a general description of the habitat, including acreage, dominant species composition, age, density of understory, and canopy cover, and representative photos of these areas.
2. A map identifying the location of any exposed bedrock that supports caves, crevices, fissures, or sinkholes, or abandoned mines of any kind, and representative photos of these areas.
3. A map indicating the location of suitable roost trees (dead or live trees with peeling bark, cracks, or crevices), and describe species, condition (live or dead), size (dbh), and canopy cover. In particular, potential maternity roost trees should be located and quantified. Potential maternity roosts are typically large diameter trees with peeling bark that receive solar exposure for at least half the day. Please include representative photos of these trees.
4. A map indicating the location of any wetlands, streams, ponds, and cleared paths or trails.
5. A description and quantification of any forested parcels and potential roost trees onsite that will be preserved.
6. A description of any other forested properties within the vicinity of the project that are protected in perpetuity (ex. parks, conservation easements, etc.).
7. A description of the connectivity of forested areas onsite and other adjacent forested parcels.
8. A list of avoidance and minimization measures to protect the bat and its habitat (such as preservation of suitable habitat, seasonal tree clearing, etc.).
9. Using the information above as justification, please include your determination of whether or not the project is likely to adversely affect the Indiana bat.

Based on this information, the Service will evaluate potential impacts to the Indiana bat from the proposed project. Depending on the extent of impacts to suitable Indiana bat habitat, we may recommend mist net or emergence surveys to determine bat usage of the project area. These surveys must be designed and conducted in coordination with this office, and *may only be completed between May 15 and August 15*. In lieu of first providing the above information for Service evaluation, the Applicant may elect to forgo a habitat evaluation and conduct a mist net survey on the property. If this option is selected, the Applicant should contact this office immediately for a list of permitted Indiana bat surveyors, and to ensure that the appropriate survey protocol is implemented. Furthermore, if the habitat evaluation and/or mist net surveys do not provide sufficient information to document a "not likely to adversely affect" determination, formal consultation under Section 7 of the Endangered Species Act of 1973, as amended, will be necessary.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (ESA), as amended, and are consistent with the intent of the National Environmental Policy Act of 1969 and the U. S. Fish and Wildlife Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed ESA section 7 consultation document.

If you have questions, or if we may be of further assistance in this matter, please contact Melanie Cota at extension 15 in this office or by email at Melanie_Cota@fws.gov or visit our website at http://www.fws.gov/midwest/Reynoldsburg/.

Sincerely,

Mary Knapp

Mary Knapp, Ph.D.
Field Supervisor

cc: ODNR, DOW, SCEA Unit, Columbus, OH

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

Federally-Listed Species by Ohio Counties
November 2008

COUNTY	SPECIES E = Endangered CH = Critical Habitat T = Threatened SC = Species of Concern C = Candidate
ADAMS	Indiana bat (E), running buffalo clover (E), sheepnose (C), snuffbox (SC), timber rattlesnake (SC)
ALLEN	Indiana bat (E), bald eagle (SC)
ASHLAND	Indiana bat (E), bald eagle (SC)
ASHTABULA	Indiana bat (E), clubshell (E), piping plover (E), eastern massasauga (C), bald eagle (SC), snuffbox (SC)
ATHENS	Indiana bat (E), American burying beetle (E), pink mucket pearly mussel (E), fanshell (E), sheepnose (C), snuffbox (SC), timber rattlesnake (SC)
AUGLAIZE	Indiana bat (E)
BELMONT	Indiana bat (E), sheepnose (C), snuffbox (SC), bald eagle (SC)
BROWN	Indiana bat (E), running buffalo clover (E), rayed bean (C), sheepnose (C), bald eagle (SC), snuffbox (SC)
BUTLER	Indiana bat (E)
CARROLL	Indiana bat (E)
CHAMPAIGN	Indiana bat (E), clubshell (E), eastern massasauga (C), rayed bean (C), snuffbox (SC)
CLARK	Indiana bat (E), eastern prairie fringed orchid (T), eastern massasauga (C)
CLERMONT	Indiana bat (E), running buffalo clover (E), rayed bean (C), sheepnose (C), snuffbox (SC)
CLINTON	Indiana bat (E), eastern massasauga (C)
COLUMBIANA	Indiana bat (E), eastern massasauga (C), sheepnose (C), snuffbox (SC), bald eagle (SC)
COSHOCTON	Indiana bat (E), clubshell (E), fanshell (E), purple cat's paw pearly mussel (E), rayed bean (C), sheepnose (C), bald eagle (SC), snuffbox (SC)
CRAWFORD	Indiana bat (E), eastern massasauga (C), bald eagle (SC)
CUYAHOGA	Indiana bat (E), piping plover (E), bald eagle (SC)

DARKE	Indiana bat (E)
DEFIANCE	Indiana bat (E), white cat's paw pearly mussel (E), clubshell (E), northern riffleshell (E), copperbelly watersnake (T), rayed bean (C), eastern massasauga (C), bald eagle (SC)
DELAWARE	Indiana bat (E), clubshell (E), rayed bean (C), bald eagle (SC), snuffbox (SC)
ERIE	Indiana bat (E), piping plover (E/CH), Lake Erie watersnake (T), Lakeside daisy (T), eastern massasauga (C), bald eagle (SC)
FAIRFIELD	Indiana bat (E), clubshell (E), eastern massasauga (C), rayed bean (C)
FAYETTE	Indiana bat (E), eastern massasauga (C)
FRANKLIN	Indiana bat (E), Scioto madtom (E), clubshell (E), northern riffleshell (E), rayed bean (C), bald eagle (SC), snuffbox (SC)
FULTON	Indiana bat (E), rayed bean (C), eastern massasauga (C)
GALLIA	Indiana bat (E), pink mucket pearly mussel (E), sheepnose (C), snuffbox (SC)
GEAUGA	Indiana bat (E), bald eagle (SC), snuffbox (SC)
GREENE	Indiana bat (E), clubshell (E), eastern massasauga (C), snuffbox (SC)
GUERNSEY	Indiana bat (E), bald eagle (SC)
HAMILTON	Indiana bat (E), running buffalo clover (E), sheepnose (C), snuffbox (SC)
HANCOCK	Indiana bat (E), clubshell (E), rayed bean (C), bald eagle (SC)
HARDIN	Indiana bat (E), clubshell (E), copperbelly watersnake (T), rayed bean (C), eastern massasauga (C), bald eagle (SC)
HARRISON	Indiana bat (E), bald eagle (SC)
HENRY	Indiana bat (E), bald eagle (SC)
HIGHLAND	Indiana bat (E), bald eagle (SC)
HOCKING	Indiana bat (E), American burying beetle (E), northern monkshood (T), small whorled pogonia (T), timber rattlesnake (SC)
HOLMES	Indiana bat (E), eastern prairie fringed orchid (T), bald eagle (SC)
HURON	Indiana bat (E), eastern massasauga (C), bald eagle (SC)
JACKSON	Indiana bat (E), timber rattlesnake (SC)
JEFFERSON	Indiana bat (E), sheepnose (C), snuffbox (SC)
KNOX	Indiana bat (E), bald eagle (SC)
LAKE	Indiana bat (E), piping plover (E/CH), bald eagle (SC), snuffbox (SC)

LAWRENCE	Indiana bat (E), pink mucket pearly mussel (E), running buffalo clover (E), sheepnose (C), snuffbox (SC), timber rattlesnake (SC)
LICKING	Indiana bat (E), eastern massasauga (C), bald eagle (SC)
LOGAN	Indiana bat (E), eastern massasauga (C)
LORAIN	Indiana bat (E), piping plover (E), eastern massasauga (C), bald eagle (SC)
LUCAS	Indiana bat (E), Karner blue butterfly (E), piping plover (E), eastern prairie fringed orchid (T), rayed bean (C), eastern massasauga (C), bald eagle (SC)
MADISON	Indiana bat (E), Scioto madtom (E), clubshell (E), northern riffleshell (E), rayed bean (C), snuffbox (SC)
MAHONING	Indiana bat (E), bald eagle (SC)
MARION	Indiana bat (E), clubshell (E), eastern massasauga (C), rayed bean (C), bald eagle (SC), snuffbox (SC)
MEDINA	Indiana bat (E), eastern massasauga (C)
MEIGS	Indiana bat (E), pink mucket pearly mussel (E), fanshell (E), sheepnose (C), snuffbox (SC)
MERCER	Indiana bat (E), bald eagle (SC)
MIAMI	Indiana bat (E), rayed bean (C), snuffbox (SC)
MONROE	Indiana bat (E), sheepnose (C), snuffbox (SC)
MONTGOMERY	Indiana bat (E), eastern massasauga (C) rayed bean (C), snuffbox (SC)
MORGAN	Indiana bat (E), American burying beetle (E), fanshell (E), pink mucket pearly mussel (E), sheepnose (C), bald eagle (SC), snuffbox (SC)
MORROW	Indiana bat (E)
MUSKINGUM	Indiana bat (E), fanshell (E), sheepnose (C), bald eagle (SC), snuffbox (SC)
NOBLE	Indiana bat (E), bald eagle (SC)
OTTAWA	Indiana bat (E), piping plover (E), Lake Erie watersnake (T), Lakeside daisy (T), eastern prairie fringed orchid (T), eastern massasauga (C), bald eagle (SC)
PAULDING	Indiana bat (E), eastern massasauga (C)
PERRY	Indiana bat (E), American burying beetle (E)
PICKAWAY	Indiana bat (E), Scioto madtom (E), clubshell (E), northern riffleshell (E), rayed bean (C), bald eagle (SC), snuffbox (SC)
PIKE	Indiana bat (E), clubshell (E), northern riffleshell (E), rayed bean (C), timber rattlesnake (SC)
PORTAGE	Indiana bat (E), Mitchell's satyr (E), northern monkshood (T), eastern massasauga (C),

	bald eagle (SC)
PREBLE	Indiana bat (E), eastern massasauga (C)
PUTNAM	Indiana bat (E), bald eagle (SC)
RICHLAND	Indiana bat (E), bald eagle (SC)
ROSS	Indiana bat (E), clubshell (E), northern riffleshell (E), rayed bean (C), bald eagle (SC), snuffbox (SC), timber rattlesnake (SC)
SANDUSKY	Indiana bat (E), piping plover (E), eastern prairie fringed orchid (T), eastern massasauga (C), bald eagle (SC)
SCIOTO	Indiana bat (E), running buffalo clover (E), clubshell (E), northern riffleshell (E), pink mucket pearly mussel (E), Virginia spiraea (T), small whorled pogonia (T), rayed bean (C), sheepnose (C), snuffbox (SC), timber rattlesnake (SC)
SENECA	Indiana bat (E), eastern massasauga (C), bald eagle (SC)
SHELBY	Indiana bat (E)
STARK	Indiana bat (E), eastern massasauga (C), bald eagle (SC)
SUMMIT	Indiana bat (E), northern monkshood (T), bald eagle (SC)
TRUMBULL	Indiana bat (E), clubshell (E), eastern massasauga (C), bald eagle (SC), snuffbox (SC)
TUSCARAWAS	Indiana bat (E), bald eagle (SC)
UNION	Indiana bat (E), Scioto madtom (E), clubshell (E), northern riffleshell (E), rayed bean (C), snuffbox (SC)
VAN WERT	Indiana bat (E)
VINTON	Indiana bat (E), American burying beetle (E), timber rattlesnake (SC)
WARREN	Indiana bat (E), running buffalo clover (E), eastern massasauga (C), rayed bean (C)
WASHINGTON	Indiana bat (E), fanshell (E), pink mucket pearly mussel (E), sheepnose (C), bald eagle (SC), snuffbox (SC)
WAYNE	Indiana bat (E), eastern prairie fringed orchid (T), eastern massasauga (C), bald eagle (SC)
WILLIAMS	Indiana bat (E), white cat's paw pearly mussel (E), clubshell (E), northern riffleshell (E), copperbelly watersnake (T), rayed bean (C)
WOOD	Indiana bat (E), bald eagle (SC)
WYANDOT	Indiana bat (E), eastern massasauga (C), rayed bean (C), bald eagle (SC)

IMPORTANT NOTE: This list reflects data available as of November 2008, and will change as new data become available. For this reason, searches for listed species should not necessarily be limited to the counties noted above. Any decisions in that regard should be made only after calling the USFWS (614/416-8993) for guidance.

Appendix F

Cultural Resource Investigation Documentation

OHIO HISTORY

March 17, 2010

Randy Meyer, Director of Environmental Affairs
AMP - Ohio
1111 Schrock Road, Suite 100
Columbus, OH 43229

Re: Substation No. 11 to Substation No. 10 Overhead Transmission Line
Cities of Fairfield and Hamilton, Butler County, Ohio

Dear Mr. Meyer,

This is in response to correspondence from your office dated January 11, 2010 (received January 13), regarding the above referenced project. The comments of the Ohio Historic Preservation Office (OHPO) are submitted in accordance with provisions of Ohio Revised Code 149.53 requesting cooperation among state agencies in the preservation of historic properties, and with provisions of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 [36 CFR 800]).

The project involves construction of a 138 kV Overhead Transmission Line connecting two existing substations along an approximately 2.1 mile route. It isn't clear to us why the new overhead transmission line is needed. Also it isn't clear to us what the consultants were asked to do. The attached information consists of background information and doesn't present the results of an archaeological survey. From minimal information, it is our understanding that the new transmission line will be installed on "for the most part" existing poles. This suggests that there will be some new poles. Our best guess is that there will be minimal ground disturbance and the addition of the new transmission line will not substantially change the appearance of the existing transmission line.

Based on available information, we agree that no archaeological survey is needed for the above referenced project. Near Substation No. 11 (the southeast end of the project), it appears that the project extends past a known archaeological site. No information is provided on this site. Caution is recommended to minimize ground disturbance in the southern part of the project given the likely presence of archaeological sites in this area. Near the northern end of the project there are several buildings listed in the Ohio Historic Inventory that are of interest. Provided that the new overhead transmission line is primarily installed along existing poles and involves minimal changes to the existing route, we agree that the proposed project will have no effect on historic properties. No further coordination with this office is necessary for this project unless there is a change in the scope of work. In addition, if new or additional properties or unanticipated effects are discovered, this office should be notified.

OHIO HISTORICAL SOCIETY
Ohio Historic Preservation Office
1982 Velma Avenue, Columbus, Ohio 43211-2497 ph: 614.298.2000 fx: 614.298.2037
www.ohiohistory.org

Any questions concerning this matter should be addressed to David Snyder at (614) 298-2000, between the hours of 8 am. to 5 pm. Thank you for your cooperation.

Sincerely,

David Snyder

David Snyder, Ph.D., Archaeology Reviews Manager
Resource Protection and Review

DMS/ds (OHPO Serial Number 1030401)