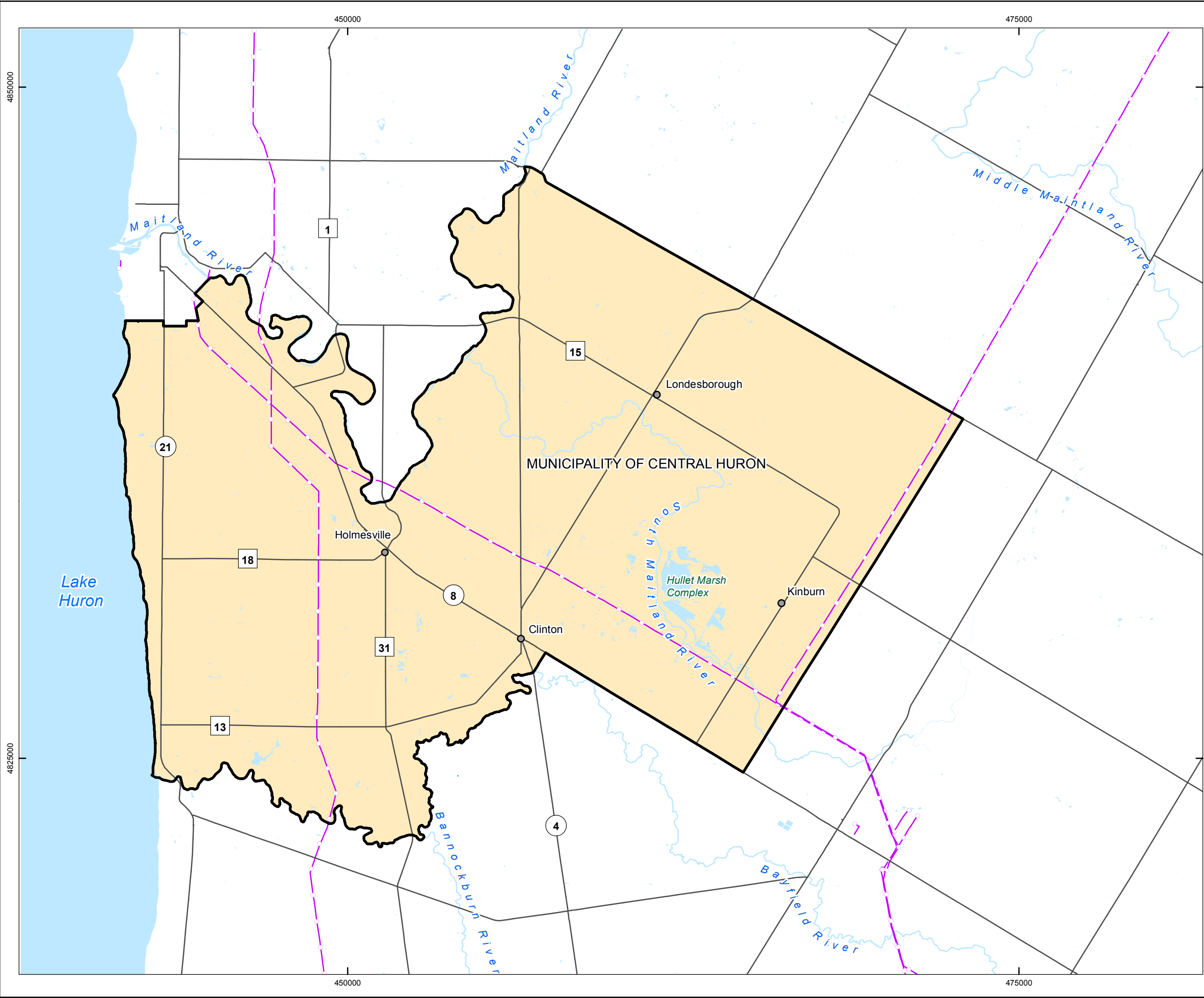


FIGURES

G:\Data\Project\Sedimentary_Site_NWMO\10-214-11_CentralHuron\Maps\CentralHuron_SuitabilityReport_Maps\10-214-11-10_CentralHuron_Fig.1_StudyArea.mxd



LEGEND

- Municipality of Central Huron
- Highway/Major Road
- Utility Line
- Waterbody
- Watercourse

LOCAL COUNTIES

Wellington County
Perth County
Huron County

INDEX MAP

Georgian Bay, Owen Sound, Ontario, Toronto, Lake Ontario, Waterloo, London, Michigan, Lake Huron, Lake Erie, New York, Windsor, Samia

SCALE 1:140,000

0 1.25 2.5 5 7.5 10
Kilometres

COORDINATE SYSTEM: UTM NAD83 Zone 17N
SOURCE: Basemap Layers: LIO, MNR, ESRI
Produced by Geofirma Engineering Ltd under license from Ontario Ministry of Natural Resources, ©Queens Printer 2011

PROJECT No. 10-214-11

NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Central Huron

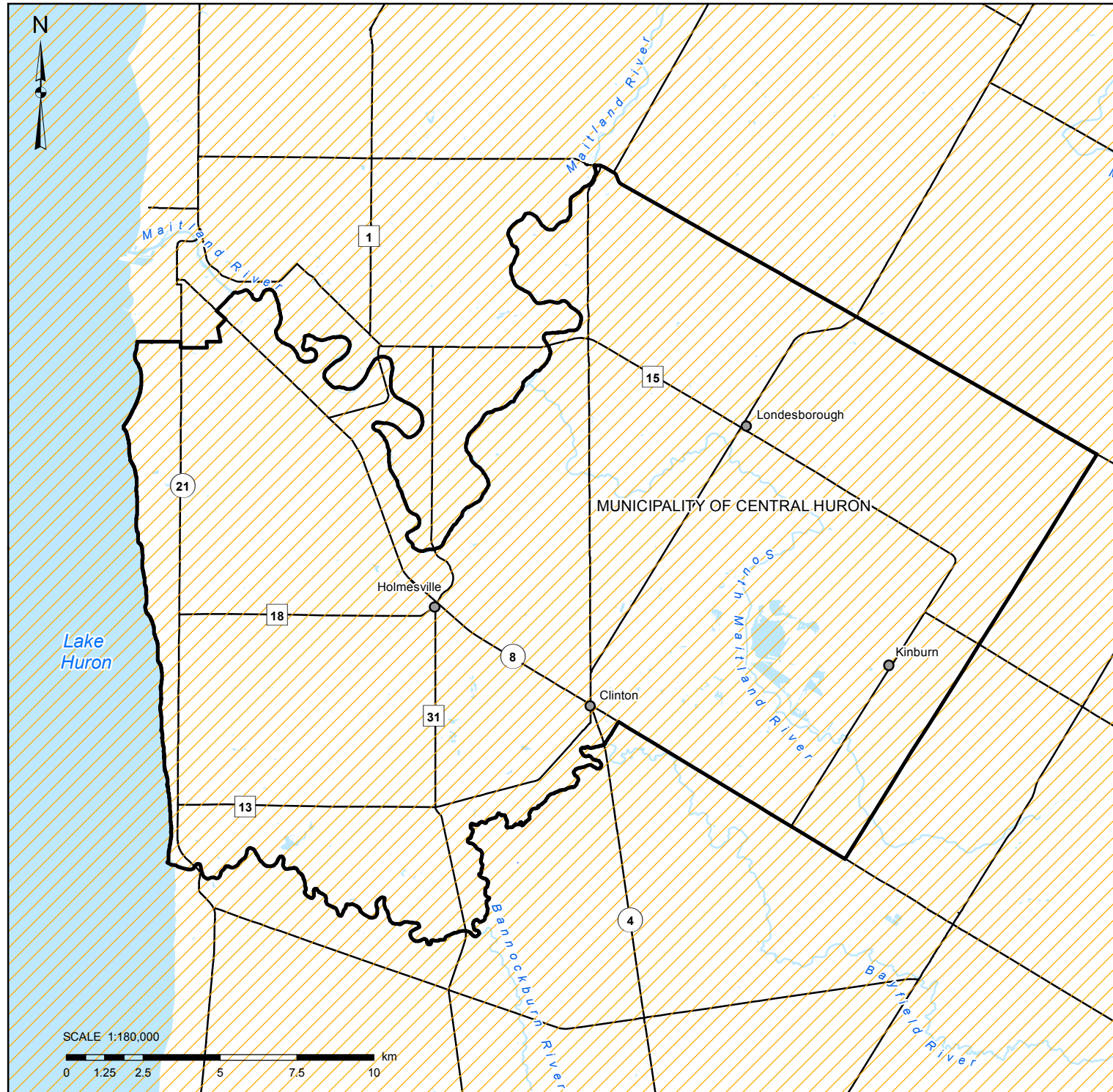
TITLE

The Central Huron Area

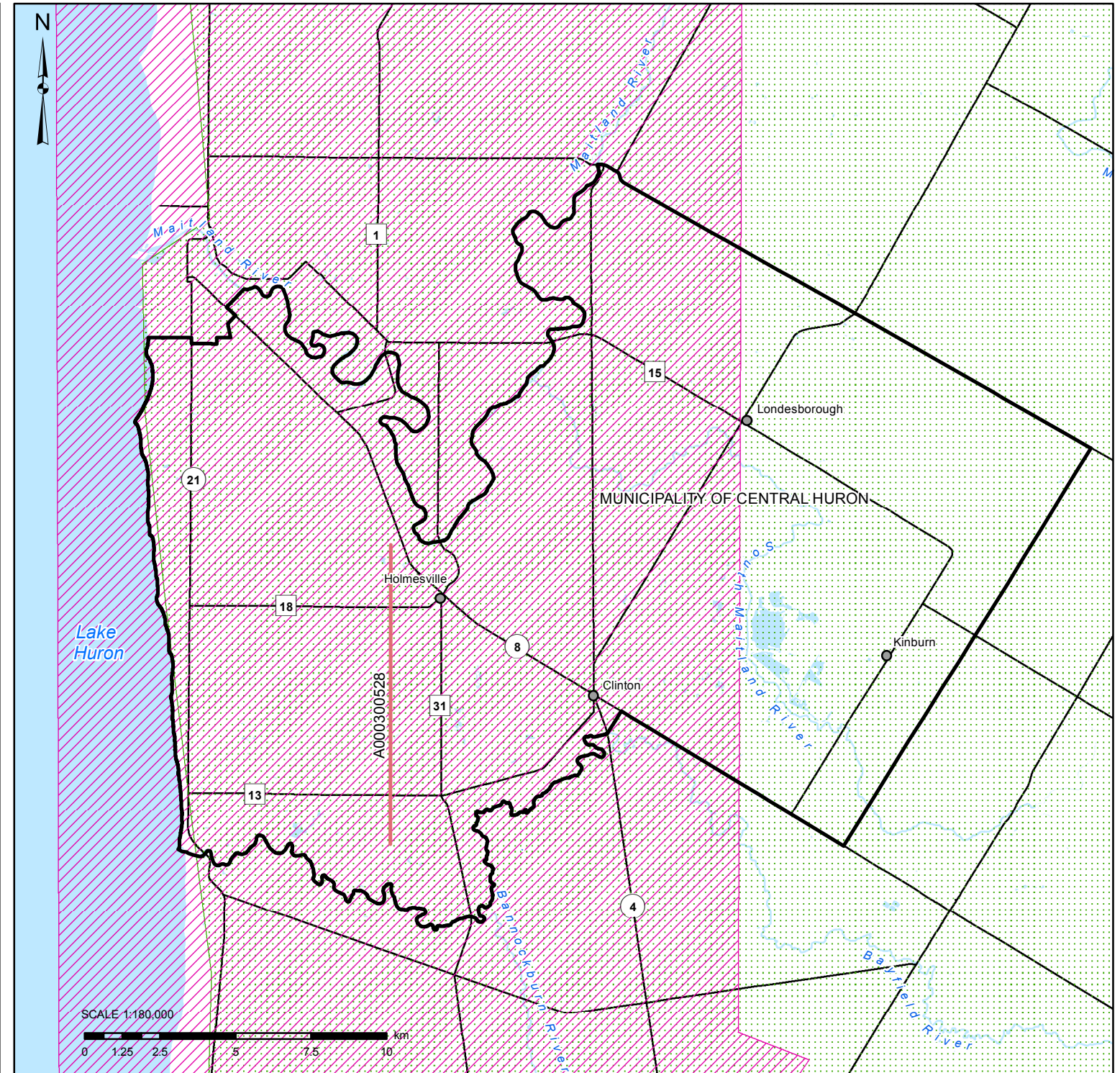
FIGURE 1.1

DESIGN: ADG
CAD/GIS: VMS/ADG
CHECK: KGR
REV: 0
DATE: 9/3/2015

Geology Coverage



Geophysics Coverage



LEGEND

- Municipality of Central Huron
- Highway
- Water Area, Permanent
- Watercourse

Full Geology Coverage

- Bedrock Geology Mapping**
- Armstrong and Carter (2010)
 - Brunton and Dodge (2008)
 - Gao et al. (2006)
 - Johnson et al. (1992)
 - OGS (2007)
 - OGS (2011)
 - Sanford (1977)

- Quaternary Geology Mapping**
- Gao et al. (2006)
 - OGS (2010)
 - OGS (1997)

Full Geophysics Coverage

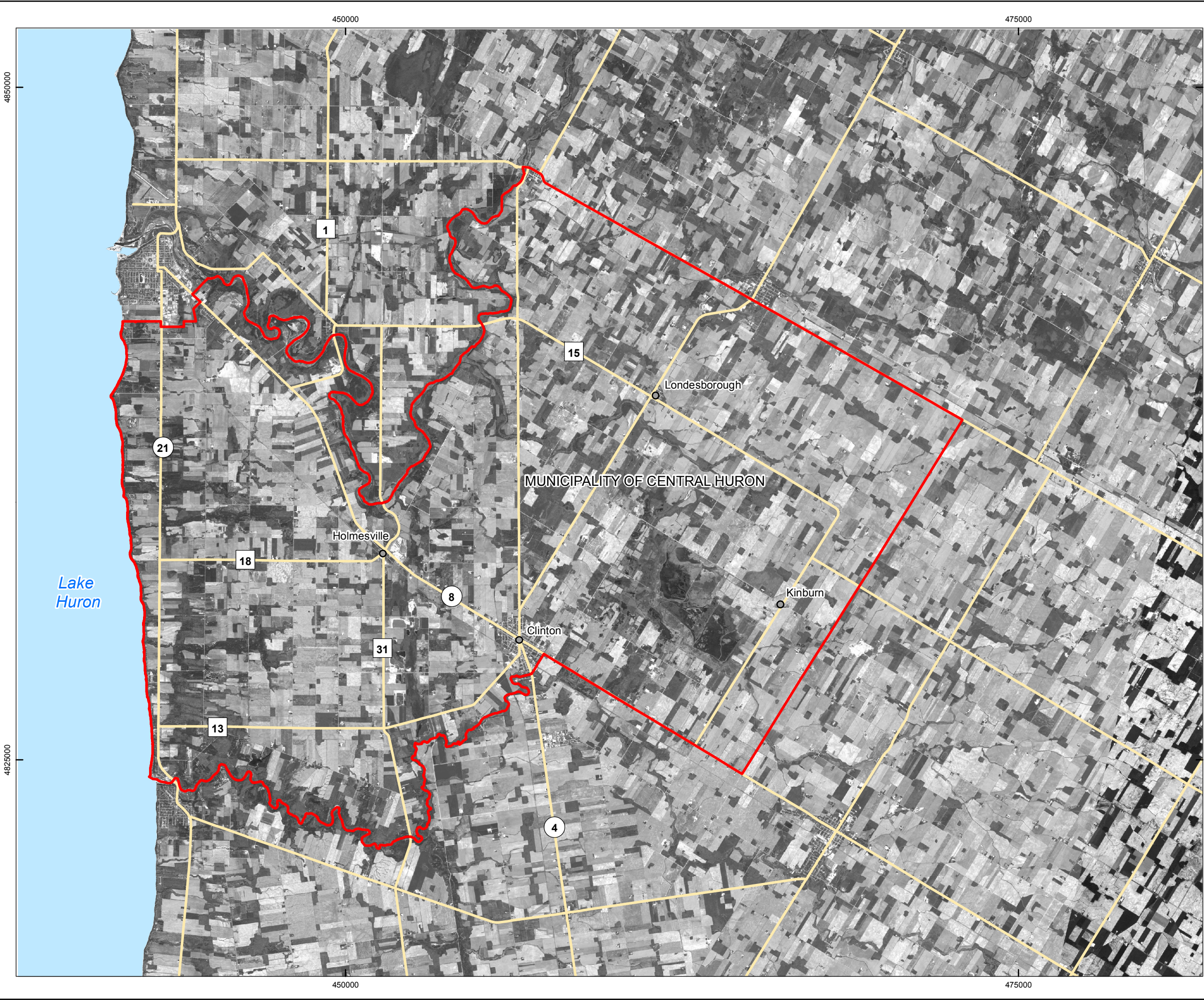
- Magnetic, Gravity Data**
- Boyce & Morris (2002)
- Gravity and Radiometric Data**
- GSC (2014)

Detailed Geophysical Extent

- Acquired 2-D Seismic Data
- Magnetic Data**
- GSC (2014) and Spector (1999)
- Gravity Data**
- GSC (2014) and PGW (2015)

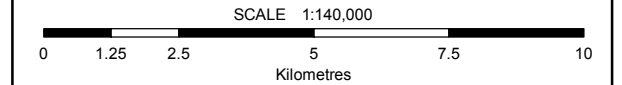
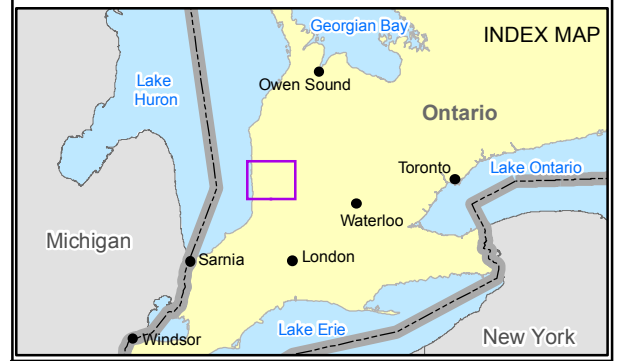
PROJECT No. 10-214-11	
NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Central Huron	
TITLE Geoscience Mapping and Geophysical Coverage of the Central Huron Area	
COORDINATE SYSTEM: UTM NAD83 Zone 17N	
SOURCE: Basemap Layers: LIO MNR, obtained 2010-2013	
Ontario Geological Survey, MNDM, PGW, 2013	
Produced by Geofirma Engineering Ltd under license from Ontario Ministry of Natural Resources, ©Queens Printer 2011	
FIGURE 1.2	DESIGN: NMP
	CAD/GIS: VMS
	CHECK: KGR
	REV: 0
	DATE: 9/3/2015

G:\Data\Project\Sedimentary_Site_NWMO\10-214-11_CentralHuron\CentralHuron_Maps\CentralHuron_SuitabilityReport_Maps\10-214-11-10_CentralHuron_Fig2.1_SatelliteImagery.mxd



LEGEND

- Municipality of Central Huron
- Highway/Major Road
- Waterbody



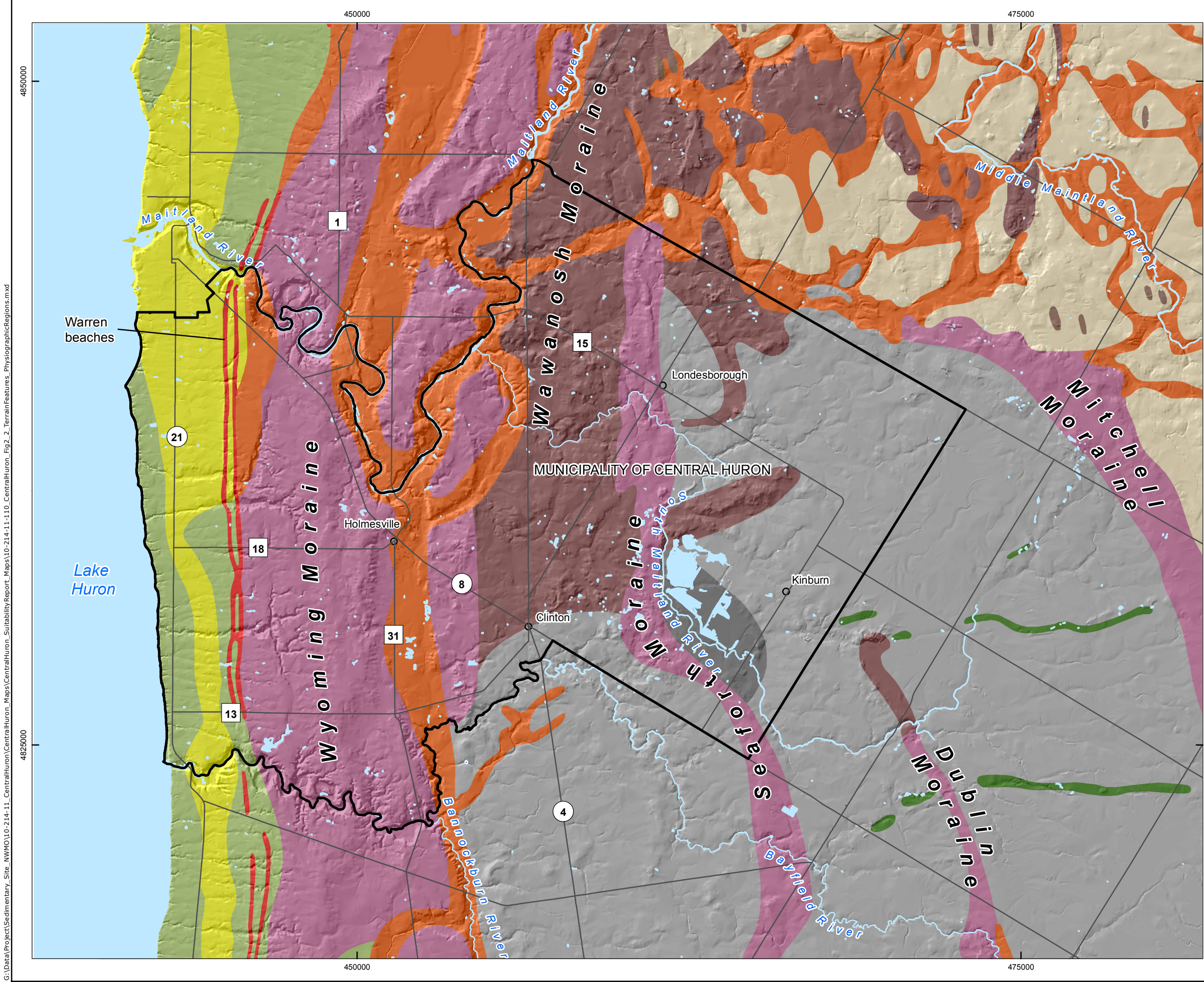
COORDINATE SYSTEM: UTM NAD83 Zone 17N
 SOURCE:
 Basemap Layers: LIO, MNR, ESRI
 Imagery: SPOT 5, Geobase, 2010
 Produced by Geofirma Engineering Ltd under license from
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PROJECT No. 10-214-11
 NWMO Phase 1 Geoscientific Desktop Preliminary
 Assessment Study - Central Huron

TITLE
Satellite Imagery of the Central Huron Area

FIGURE 2.1	DESIGN: ADG CAD/GIS: VMS/ADG CHECK: KGR REV: 0	
	DATE: 4/14/2015	



LEGEND

- Municipality of Central Huron
- Highway/Major Road
- Waterbody
- Watercourse

Physiography

- Peat And Muck
- Beaches
- Eskers
- Sand Plains
- Bevelled Till Plains
- Drumlins
- Till Plains (Drumlinized)
- Till Plains (Undrumlinized)
- Kame Moraines
- Spillways
- Till Moraines

Physiographic Regions

- Horseshoe Moraines
- Dundalk Till Plain
- Stratford Till Plain
- Teeswater Drumlin Field
- Huron Slope
- Huron Fringe

SCALE 1:140,000

0 1.25 2.5 5 7.5 10 Kilometres

COORDINATE SYSTEM: UTM NAD83 Zone 17N

SOURCE:
 Basemap Layers: LIO, MNR, ESRI
 Physiography and Physiographic Regions: Chapman and Putnam, 2007
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PROJECT No. 10-214-11

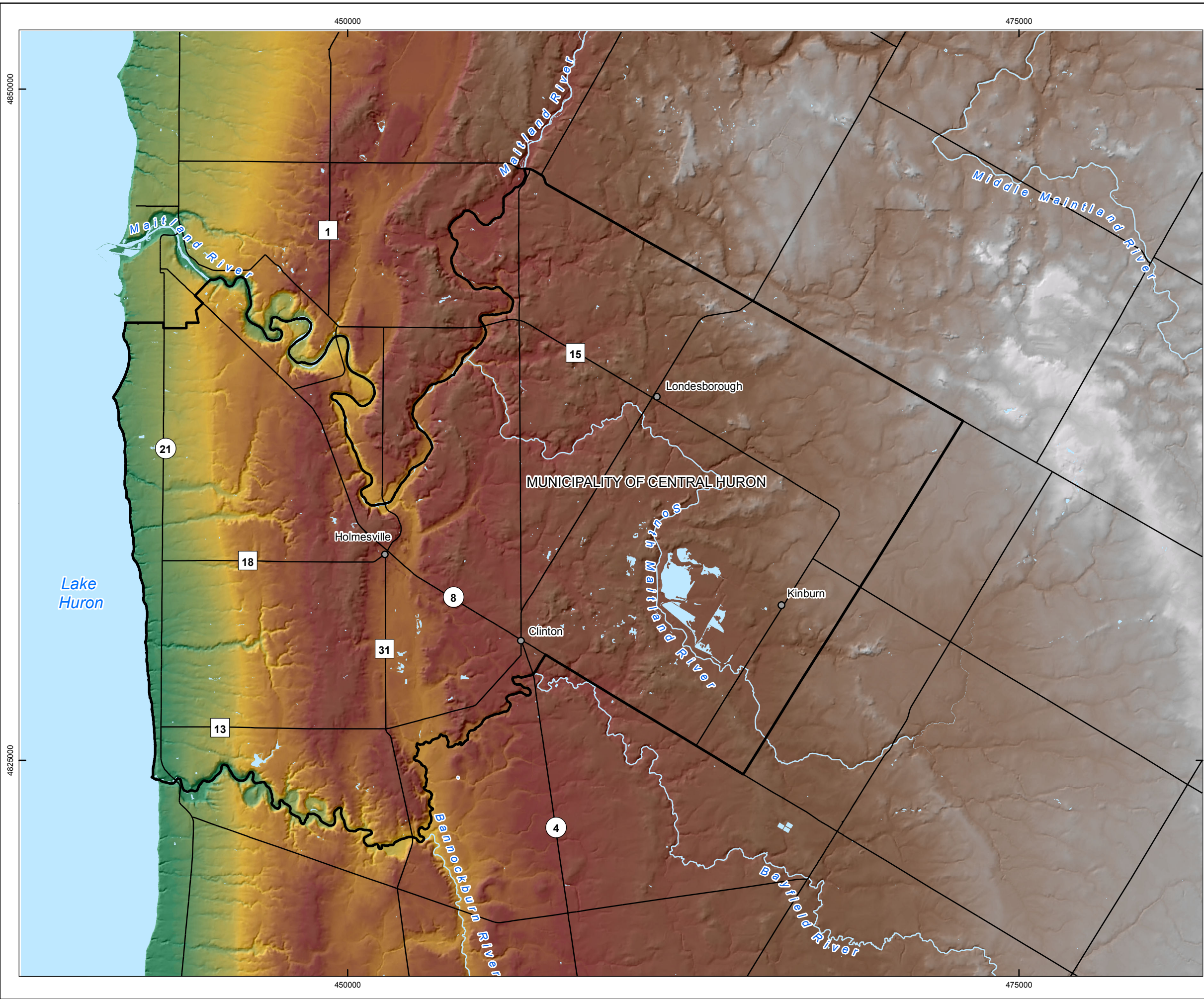
NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Central Huron

TITLE **Terrain (Physiographic) Features and Physiographic Regions of the Central Huron Area**

FIGURE 2.2	DESIGN: ADG CAD/GIS: ADG/VMS CHECK: KGR REV: 0	
	DATE: 4/14/2015	

G:\Data\Project\Sedimentary_Site_NWMO\10-214-11_CentralHuron_Maps\CentralHuron_SuitabilityReport_Maps\10-214-11-10_CentralHuron_Fig2_TerrainFeatures_PhysiographicRegions.mxd

G:\Data\Project\Sedimentary_Site_NWMO\10-214-11_CentralHuron\Maps\CentralHuron_SuitabilityReport_Maps\10-214-11-10_CentralHuron_Fig2_3_Elevation_MajorTopographic_Features.mxd



LEGEND

- Municipality of Central Huron
- Highway/Major Road
- Waterbody
- Watercourse

Digital Elevation Model (mASL)

High : 366

Low : 176

INDEX MAP

SCALE 1:140,000

0 1.25 2.5 5 7.5 10
Kilometres

COORDINATE SYSTEM: UTM NAD83 Zone 17N
SOURCE:
Basemap Layers: LIO, MNR, ESRI
Topography: DEM, Geobase, 2013
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NORTH

PROJECT No. 10-214-11

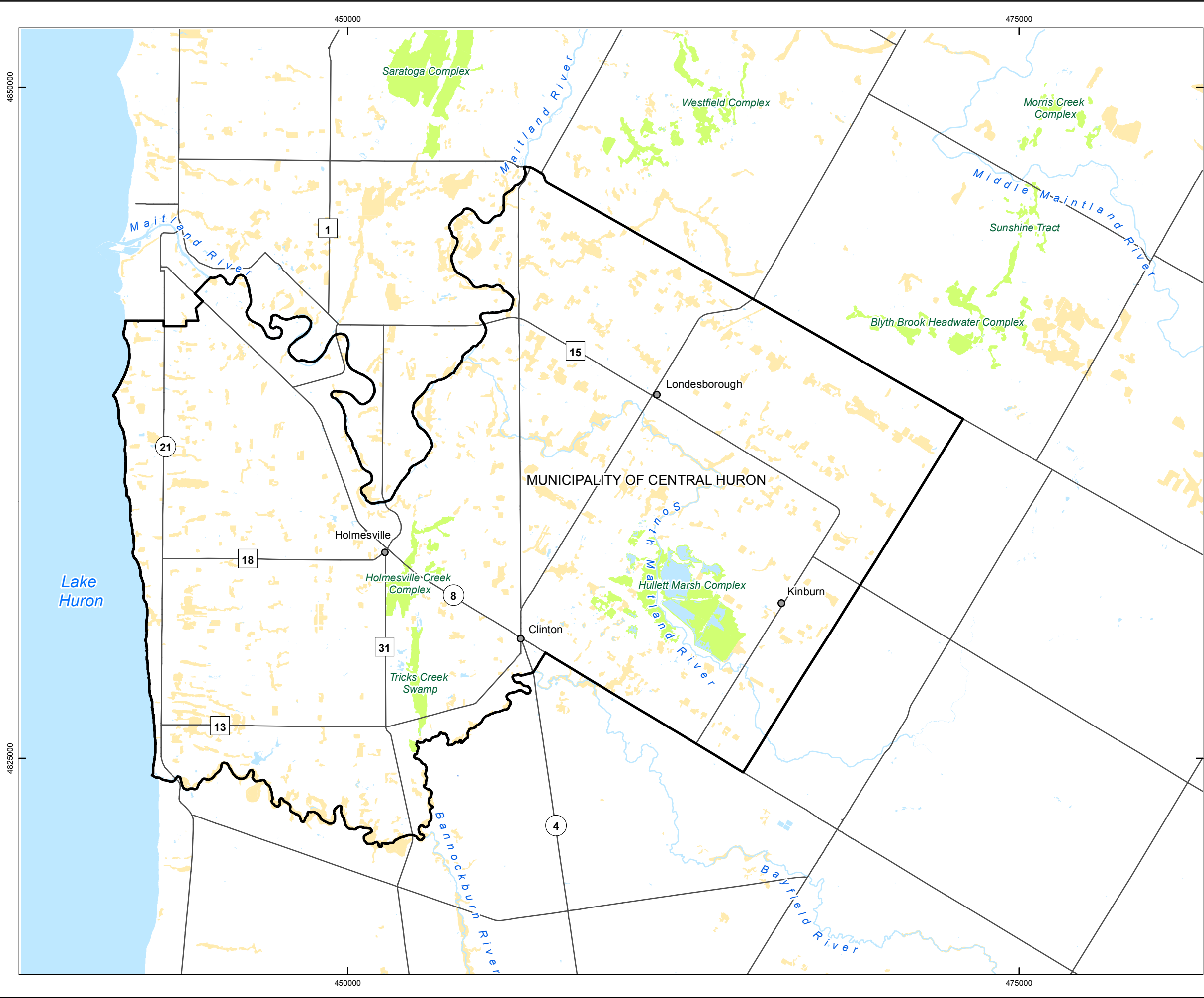
NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Central Huron

TITLE

Ground Surface Elevation of the Central Huron Area

FIGURE 2.3	DESIGN: VMS CAD/GIS: VMS, ADG CHECK: KGR REV: 0	
	DATE: 4/14/2015	

G:\Data\Project\Sedimentary_Site_NWMO\10-214-11_CentralHuron\CentralHuron_Maps\CentralHuron_SuitabilityReport_Maps\10-214-11-10_CentralHuron_Fig2_4_LakesandWetlands.mxd



LEGEND

- Municipality of Central Huron
- Highway/Major Road
- Waterbody
- Watercourse
- Other Wetlands
- Provincially Significant Wetland

INDEX MAP

SCALE 1:140,000

0 1.25 2.5 5 7.5 10
Kilometres

COORDINATE SYSTEM: UTM NAD83 Zone 17N
SOURCE:
Basemap Layers: LIO, MNR, ESRI
Wetlands: LIO, 2014; ABCA, 2014
Produced by Geofirma Engineering Ltd under license from Ontario Ministry of Natural Resources, ©Queens Printer 2011

PROJECT No. 10-214-11

NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Central Huron

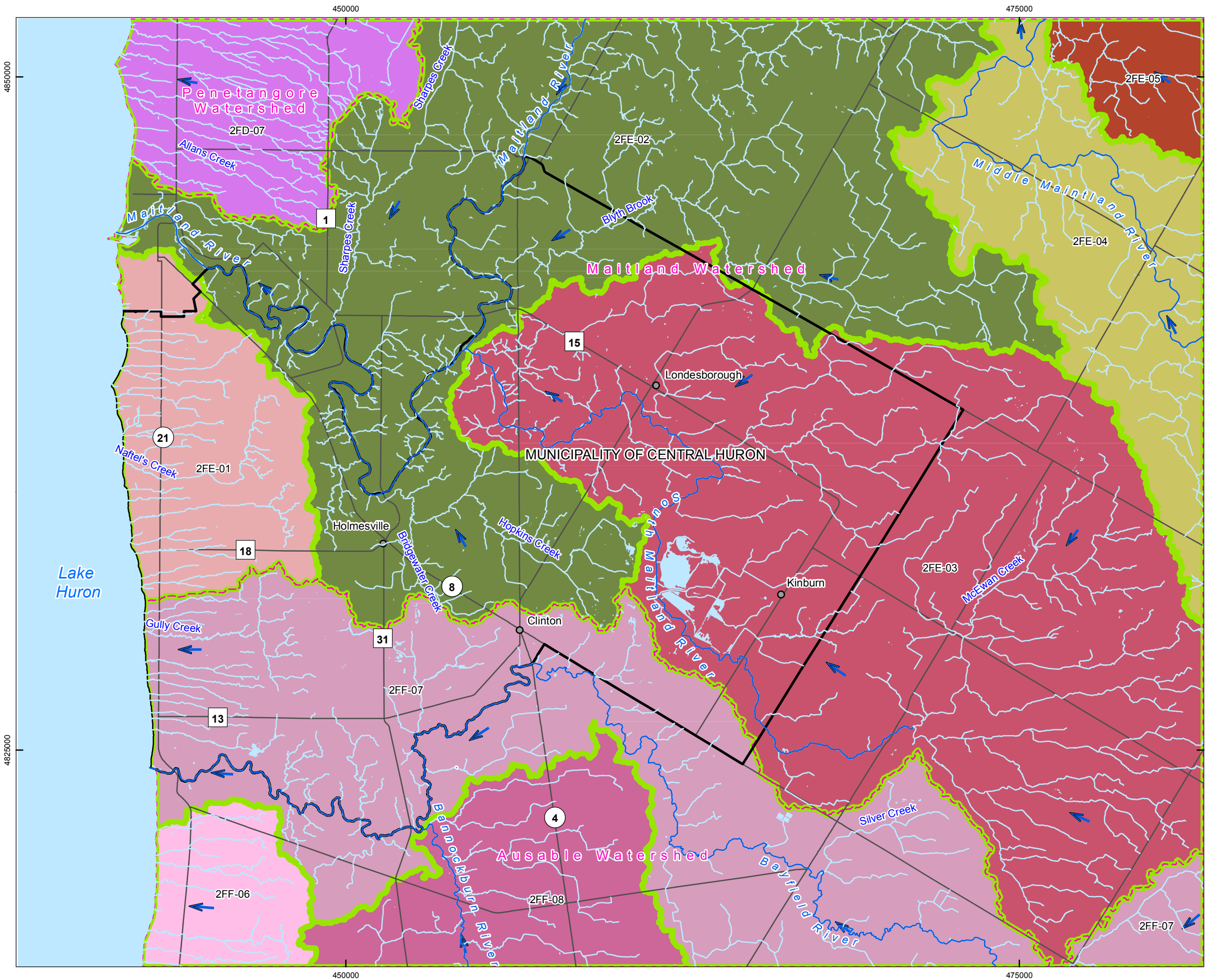
TITLE

Waterbodies and Wetlands of the Central Huron Area

FIGURE 2.4

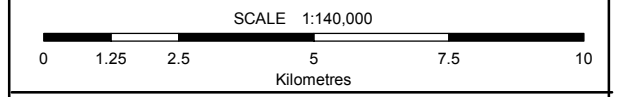
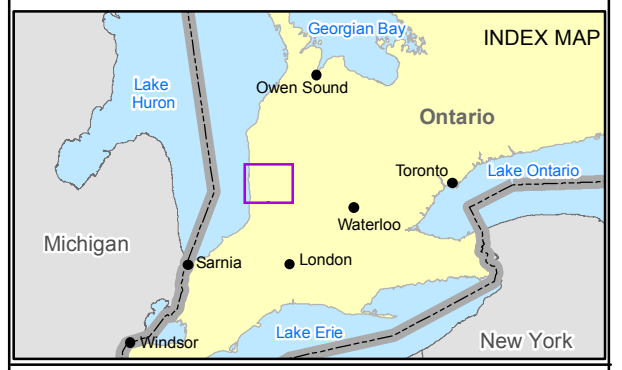
DESIGN: VMS
CAD/GIS: VMS
CHECK: KGR
REV: 0
DATE: 4/14/2015

G:\Data\Project\Sedimentary_Site_NWMO\10-214-11_CentralHuron\CentralHuron_Maps\CentralHuron_SuitabilityReport_Maps\10-214-11-10_CentralHuron_Fig2_5_WatershedsandSurfaceWaterFlow.mxd



LEGEND

- Municipality of Central Huron
- Highway/Major Road
- Waterbody
- Watercourse
- Tertiary Watershed
- Quaternary Watershed
- Surface Water Flow Direction



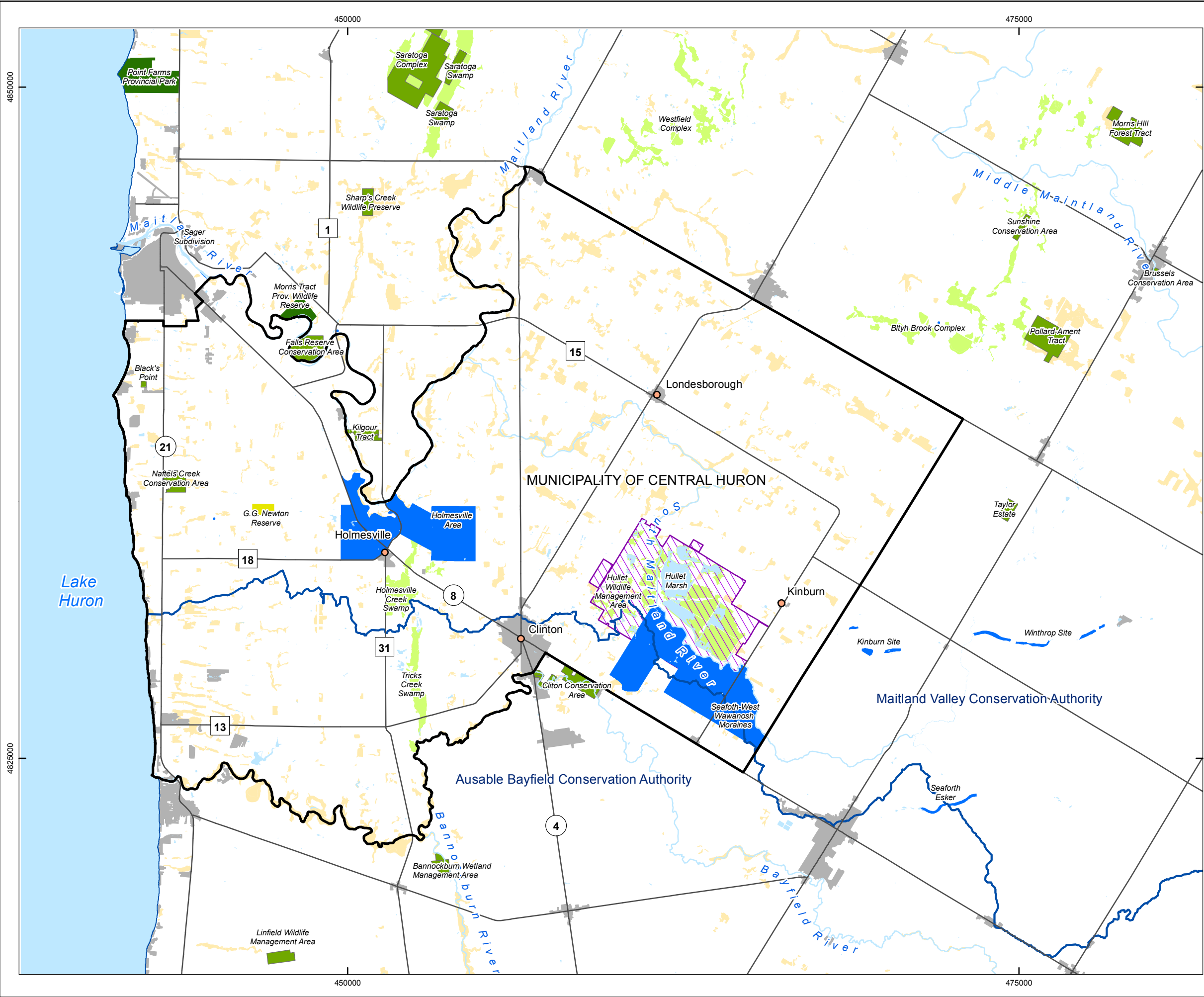
COORDINATE SYSTEM: UTM NAD83 Zone 17N
 SOURCE:
 Basemap Layers: LIO, MNR, ESRI
 Watersheds: LIO, 2015
 Flow Directions : JDMA, 2015
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PROJECT No. 10-214-11
 NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Central Huron

TITLE
Watershed and Surface Water Flow in the Central Huron Area

FIGURE 2.5	DESIGN: VMS CAD/GIS: VMS/ADG CHECK: KGR REV: 0	
	DATE: 9/3/2015	

G:\Data\Project\Sedimentary_Site_NWMO\10-214-11_CentralHuron_Maps\CentralHuron_Maps\10-214-11-10-CentralHuron_Fig2_6_LandDispositionOwnership.mxd



LEGEND

- Municipality of Central Huron
- Highway/Major Road
- Waterbody
- Watercourse
- Conservation Administration Area
- ANSI (Earth Science)
- Built-Up Area
- Conservation Area/Reserve
- NGO Nature Reserve
- Provincial Park
- Provincial Wildlife Area
- Crown Leased Lands
- Other Wetlands
- Provincially Significant Wetland

INDEX MAP

SCALE 1:140,000

0 1.25 2.5 5 7.5 10
Kilometres

COORDINATE SYSTEM: UTM NAD83 Zone 17N
SOURCE:
 Basemap Layers: LIO, MNR, ESRI
 Land Disposition and Ownership: Lio, 2014; ABCA, 2014
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NORTH

PROJECT No. 10-214-11

NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Central Huron

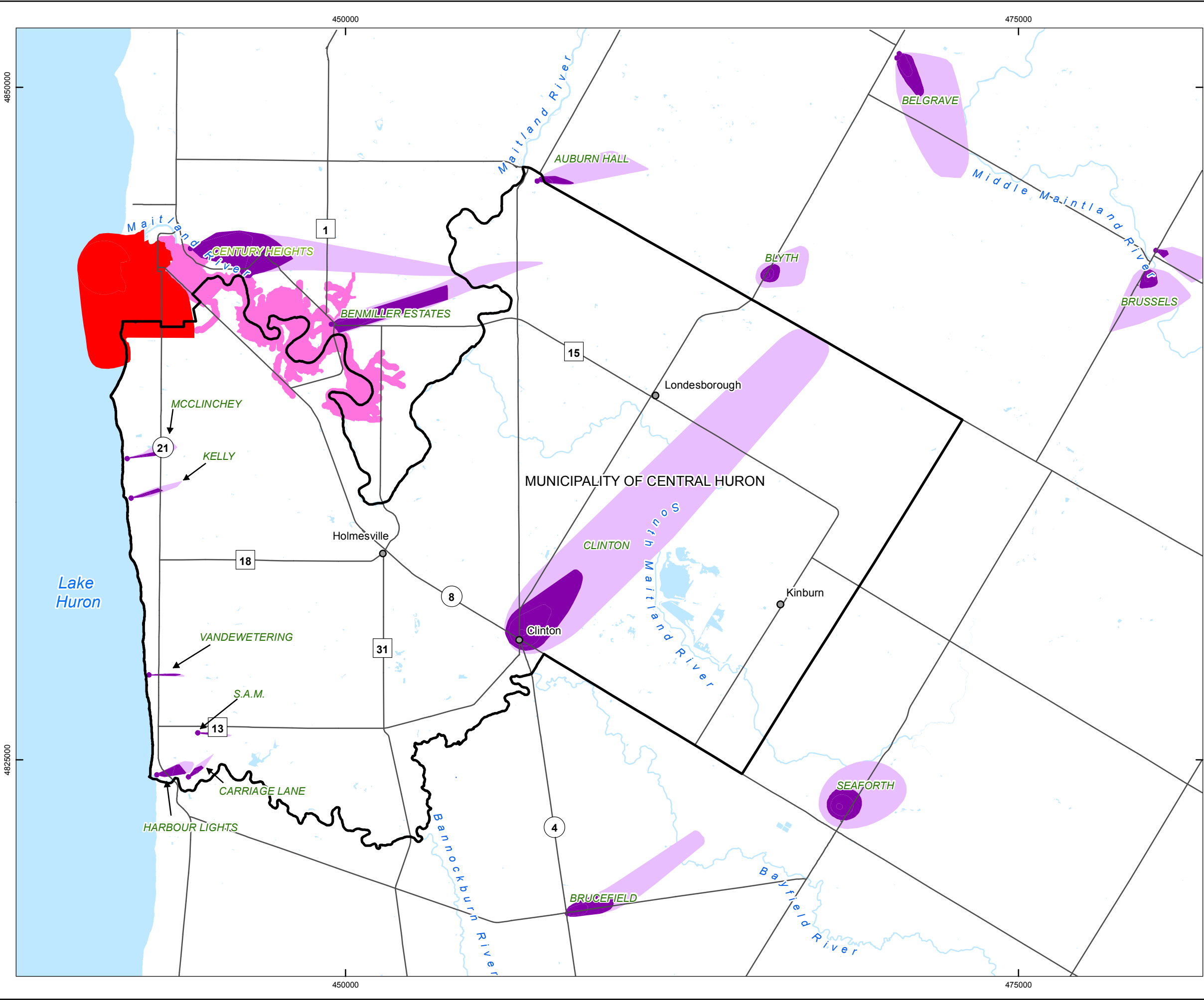
TITLE
Land Disposition and Ownership within the Central Huron Area

FIGURE 2.6

DESIGN: ADG
 CAD/GIS: VMS/ADG
 CHECK: KGR
 REV: 0
 DATE: 4/14/2015

Geofirma Engineering Ltd

G:\Data\Project\Sedimentary_Site_NWMO\10-214-11_CentralHuron\Maps\CentralHuron_SuitabilityReport_Maps\10-214-11-10_CentralHuron_Fig2_7_SourceWaterProtectionAreas.mxd



LEGEND

- Municipality of Central Huron
- Highway/Major Road
- Waterbody
- Watercourse
- Surface Water Intake Protection Zone**
 - IPZ 1 and 2
- Wellhead Protection Area**
 - WHPA A, B, and C
 - WHPA D
 - WHPA E

INDEX MAP

SCALE 1:140,000
0 1.25 2.5 5 7.5 10
Kilometres

COORDINATE SYSTEM: UTM NAD83 Zone 17N
SOURCE:
Basemap Layers: LIO MNR
Source Water Protection: Ausable Bayfield Maitland Valley Protection Region, 2011a,b
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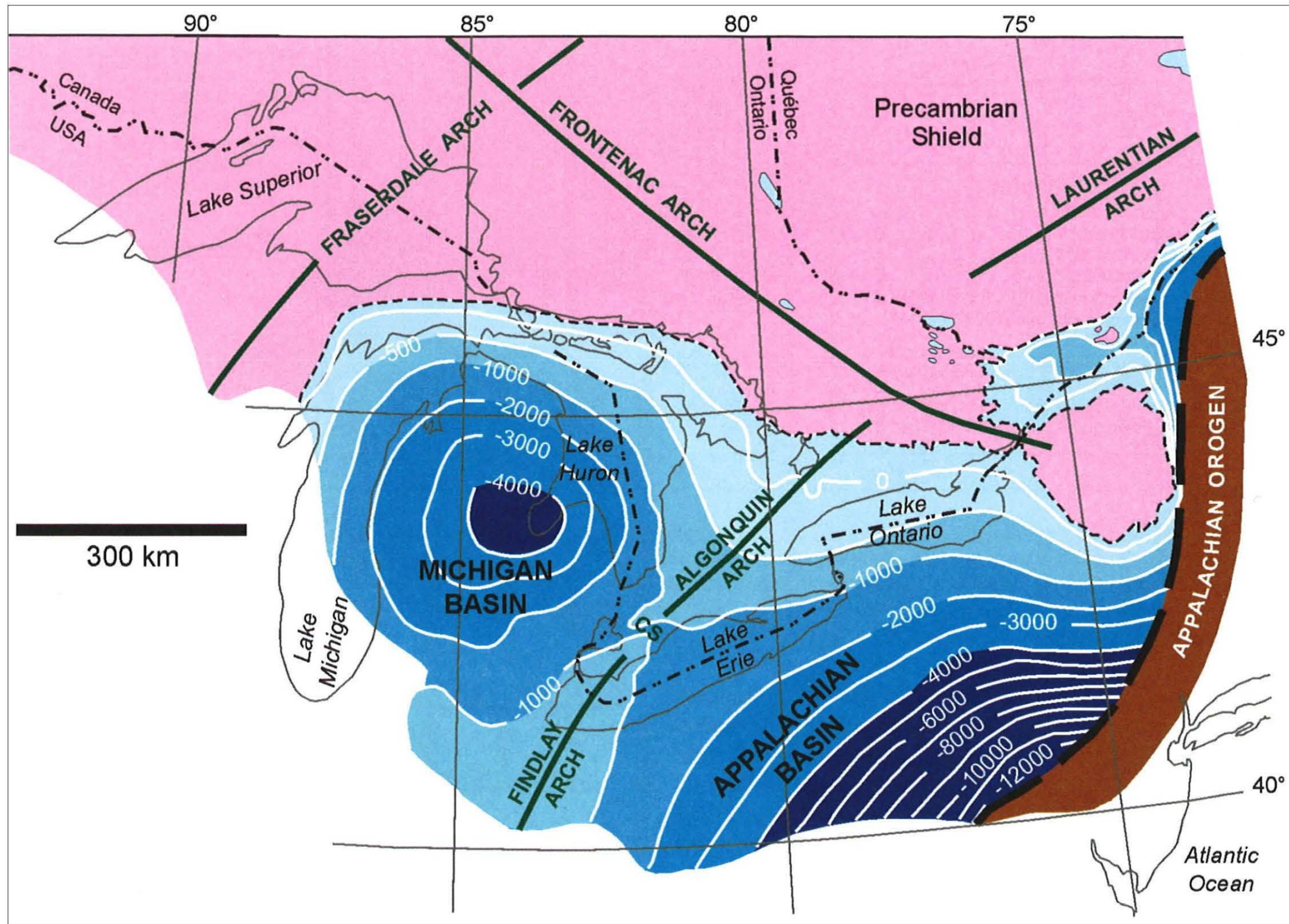
NORTH

PROJECT No. 10-214-11

NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Central Huron

TITLE
Source Water Protection Areas within the Central Huron Area

FIGURE 2.7	DESIGN: ADG CAD/GIS: VMS/ADG CHECK: KGR REV: 0	
	DATE: 4/14/2015	



Data Source: Johnson et al. (1992); Armstrong and Carter (2010)

FIGURE 3.1 - Geological Features of Southern Ontario

NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Central Huron

Prepared by: VMS

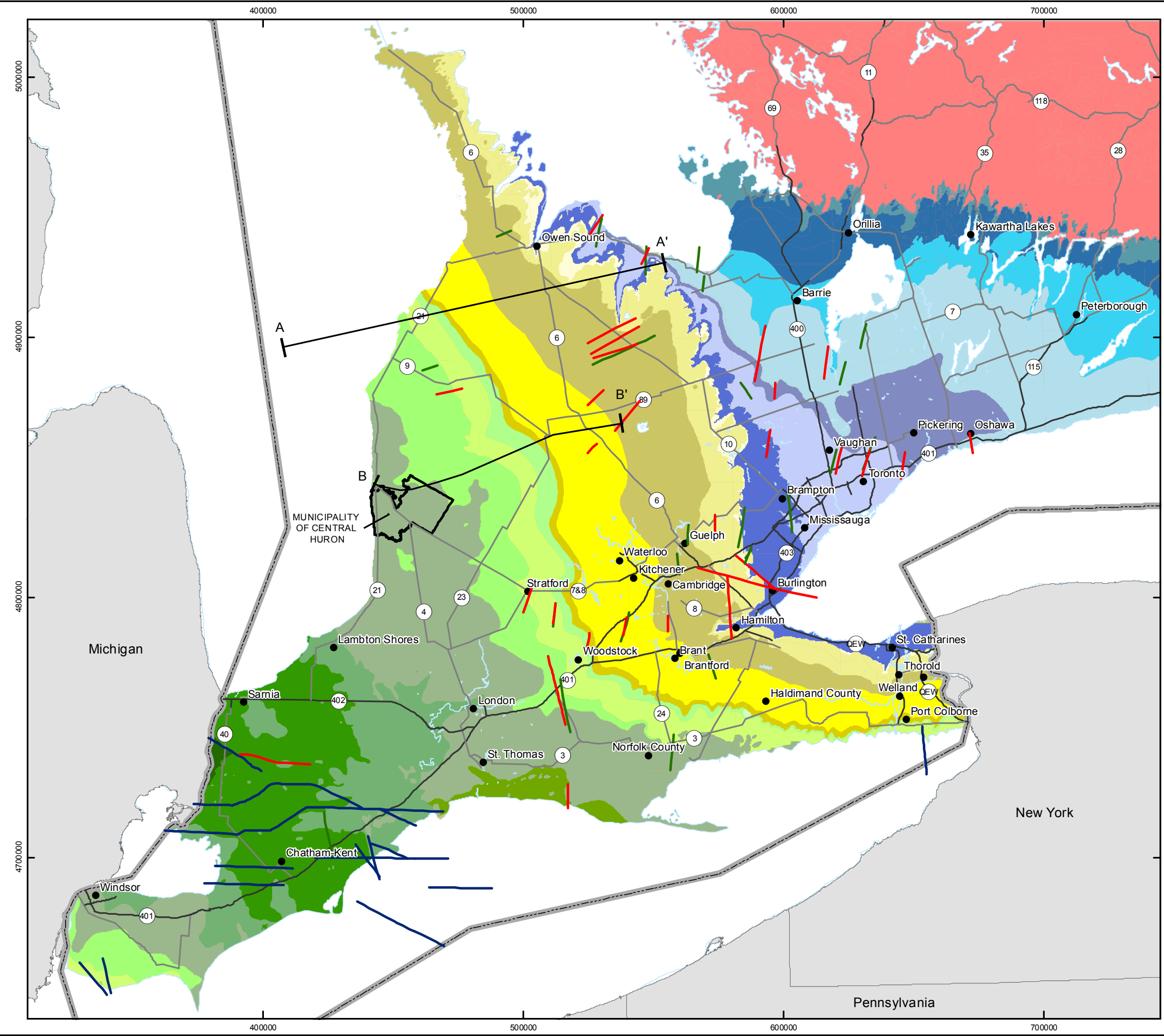
Reviewed by: KGR

Date: 01/20/2015

Michigan and Appalachian sedimentary basins (blue), Algonquin and Findlay basement arches (green) and the Chatham Sag (CS). Contour lines (white) indicate elevation of the top of the Precambrian basement in meters below mean sea level. The Appalachian orogenic is indicated in brown, with the extent of the thrusting shown as a thick, black dashed line. Thinner dashed line represents the present-day erosional edge of Paleozoic rocks (After Johnson et al. 1992)



G:\Data\Project\Sedimentary_Site_NWMO\10-214-11_CentralHuron_Maps\CentralHuron_SuitabilityReport_Maps\10-214-11-110_CentralHuron_Fig3.2_BedrockGeology_SouthernOntario.mxd



LEGEND

- Municipality of Central Huron
- Expressway
- Highway
- Canada - USA Boundary

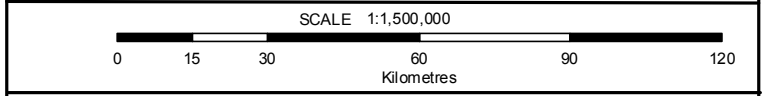
Mapped Subsurface Faults

- Rochester (Silurian)
- Trenton (Ordovician)
- Shadow Lake/Precambrian
- Waterbody
- Regional Cross-Section (Figures 3.3 and 5.3)

Bedrock Geology

Upper Devonian	Lower Silurian
Port Lambton Gp	Amabel Fm
Kettle Point Fm	Lockport Fm
Middle Devonian	Clinton-Cataract Gp
Hamilton Gp	Upper Ordovician
Marcellus Fm	Queenston Fm
Dundee Fm	Georgian Bay Fm
Lucas Fm	Blue Mountain Fm
Amherstburg Fm	Lindsay (Cobourg) Fm
Onondaga Fm	Verulam (Sherman Fall) Fm
Lower Devonian	Bobcaygeon (Coboconk & Kirkfield) Fm
Bois Blanc Fm	Gull River Fm
Oriskany Fm	Shadow Lake Fm
Upper Silurian	Precambrian
Bass Islands Fm	Precambrian
Bertie Fm	
Salina Gp	
Guelph Fm	

(Cobourg) = Subsurface Nomenclature
Gp = Group
Fm = Formation



COORDINATE SYSTEM: UTM NAD83 Zone 17N
SOURCE:
Basemap Layers: LIO, MNR, ESRI
Geology: MRD219 Paleozoic Geology of Southern Ontario, OGS, 2007
Fault Mapping: MRD 276 Regional structure and isopach maps of potential hydrocarbon-bearing strata for southern Ontario, OGS, 2011

PROJECT No. 10-214-11
NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Central Huron

TITLE **Bedrock Geology of Southern Ontario**

FIGURE 3.2

DESIGN: NMP
CAD/GIS: VMS
CHECK: KGR
REV: 0
DATE: 02/09/2015

