

North Oakville Creeks
Subwatershed Study

August 2006

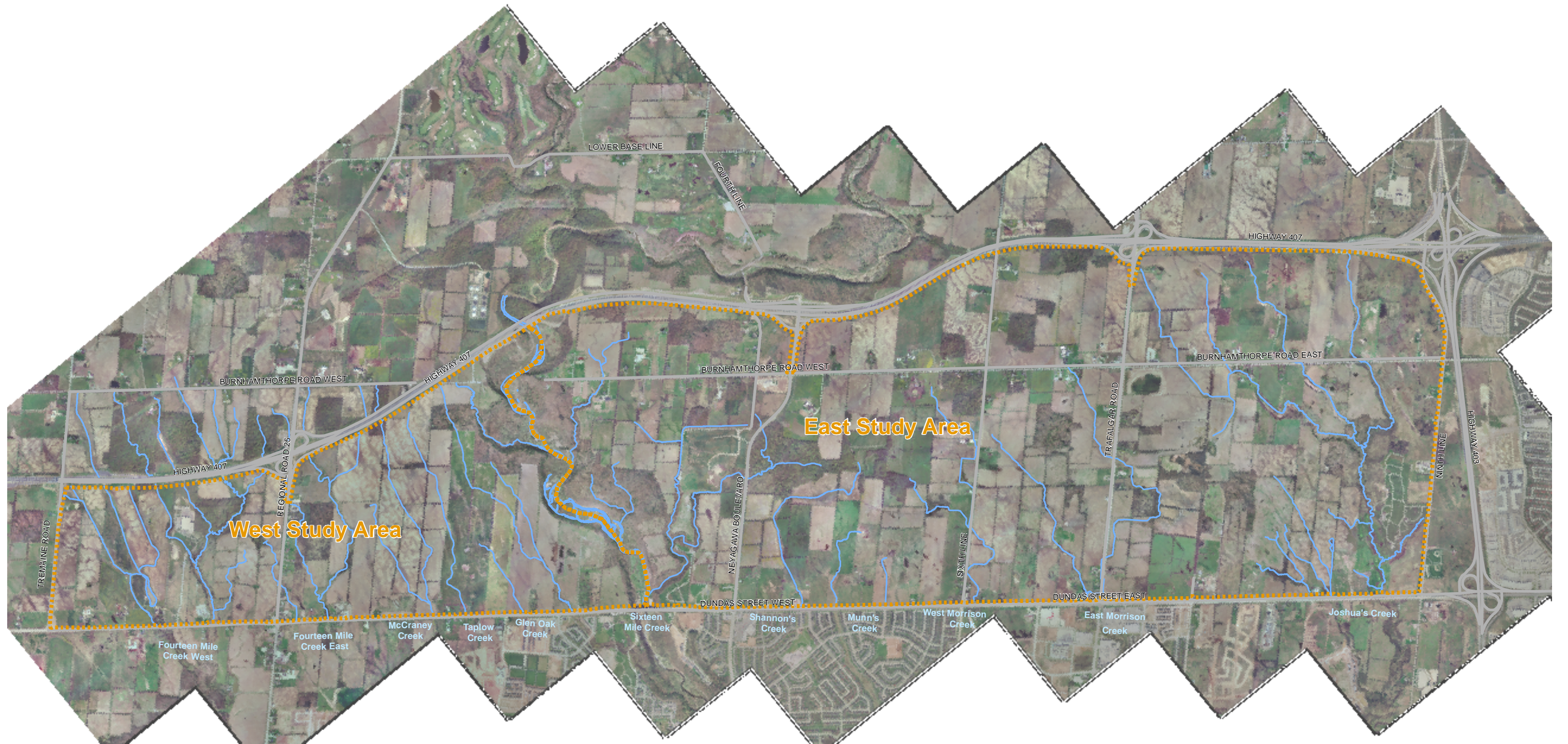
LEGEND

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> SECONDARY PLAN AREA BOUNDARY PROVINCIAL FREEWAY BOULEVARD/TRANSIT CORRIDOR MAJOR ARTERIAL/TRANSIT CORRIDOR MINOR ARTERIAL/TRANSIT CORRIDOR AVENUE/TRANSIT CORRIDOR CONNECTOR/TRANSIT CORRIDOR TRANSITWAY VILLAGE SQUARE HIGH OR MEDIUM CONSTRAINT STREAM | <ul style="list-style-type: none"> DUNDAS STREET URBAN CORE AREA NEYAGAWA BLVD. URBAN CORE AREA REGIONAL ROAD 25 URBAN CORE AREA TRAFALGAR ROAD URBAN CORE AREA TRANSITIONAL AREA EMPLOYMENT DISTRICT NATURAL HERITAGE SYSTEM AREA URBAN CENTRES STORMWATER MANAGEMENT (SMW) PONDS HEALTH ORIENTED MIXED USE NODE | <ul style="list-style-type: none"> COMMUNITY PARK AREA CEMETERIES INSTITUTIONAL ELEMENTARY SCHOOL SITE SECONDARY SCHOOL SITE NEIGHBOURHOOD PARK NEIGHBOURHOOD CENTRE GENERAL URBAN SUB URBAN HIGH CONSTRAINT STREAM CORRIDOR AREA IN NHS |
|---|---|--|

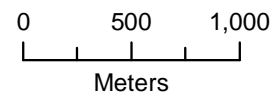
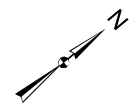
East Study Area

Land Use

Figure 4E.2.1



NORTH OAKVILLE CREEKS SUBWATERSHED STUDY



Legend

- Study Area
- Road
- Watercourse

Study Area

Figure 1.2.1

Figure 1.3.1: Subwatershed Planning Process

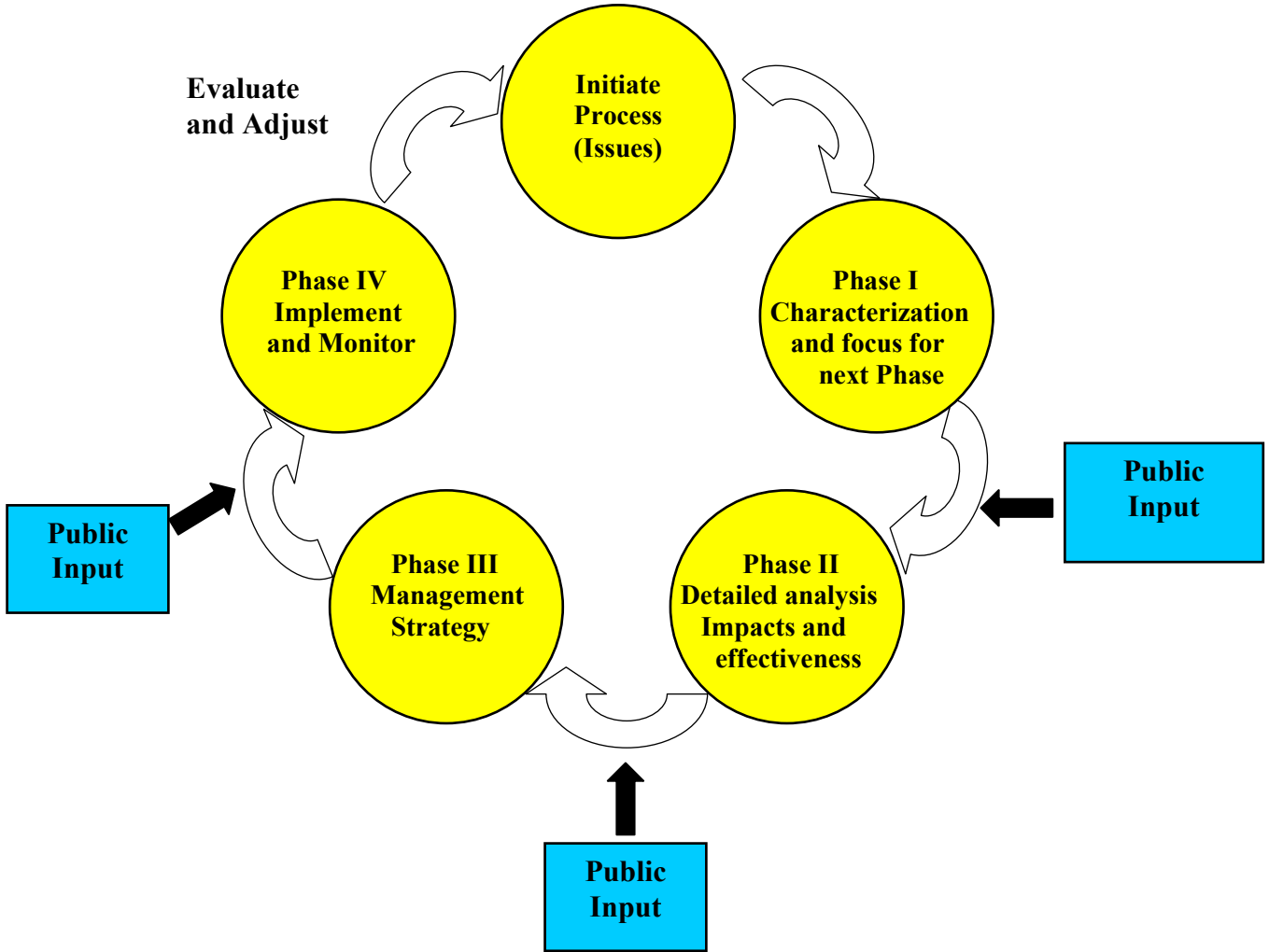


FIGURE 1.3.2

Study Approach

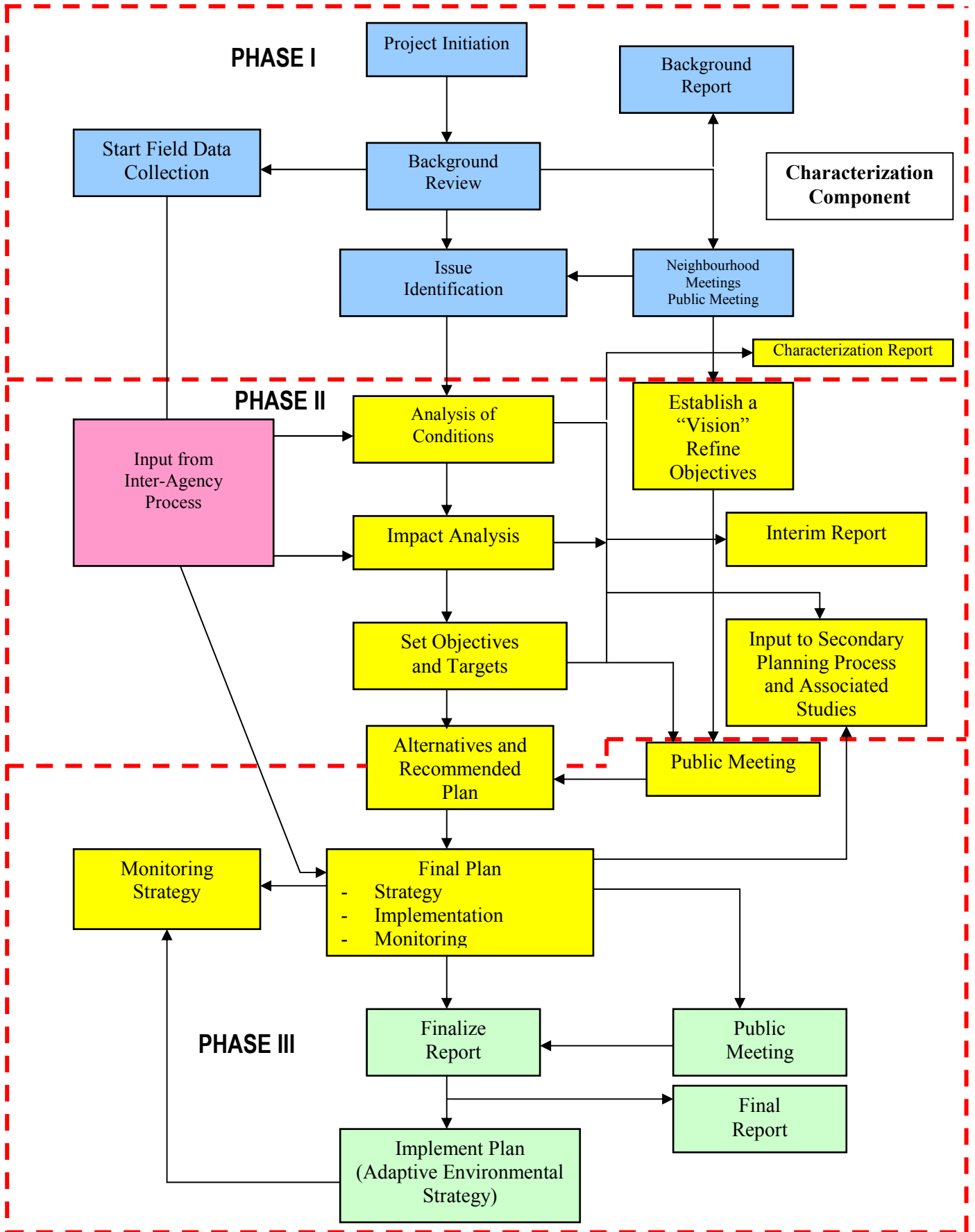


Figure 2.1.1
Hydrologic Cycle Components

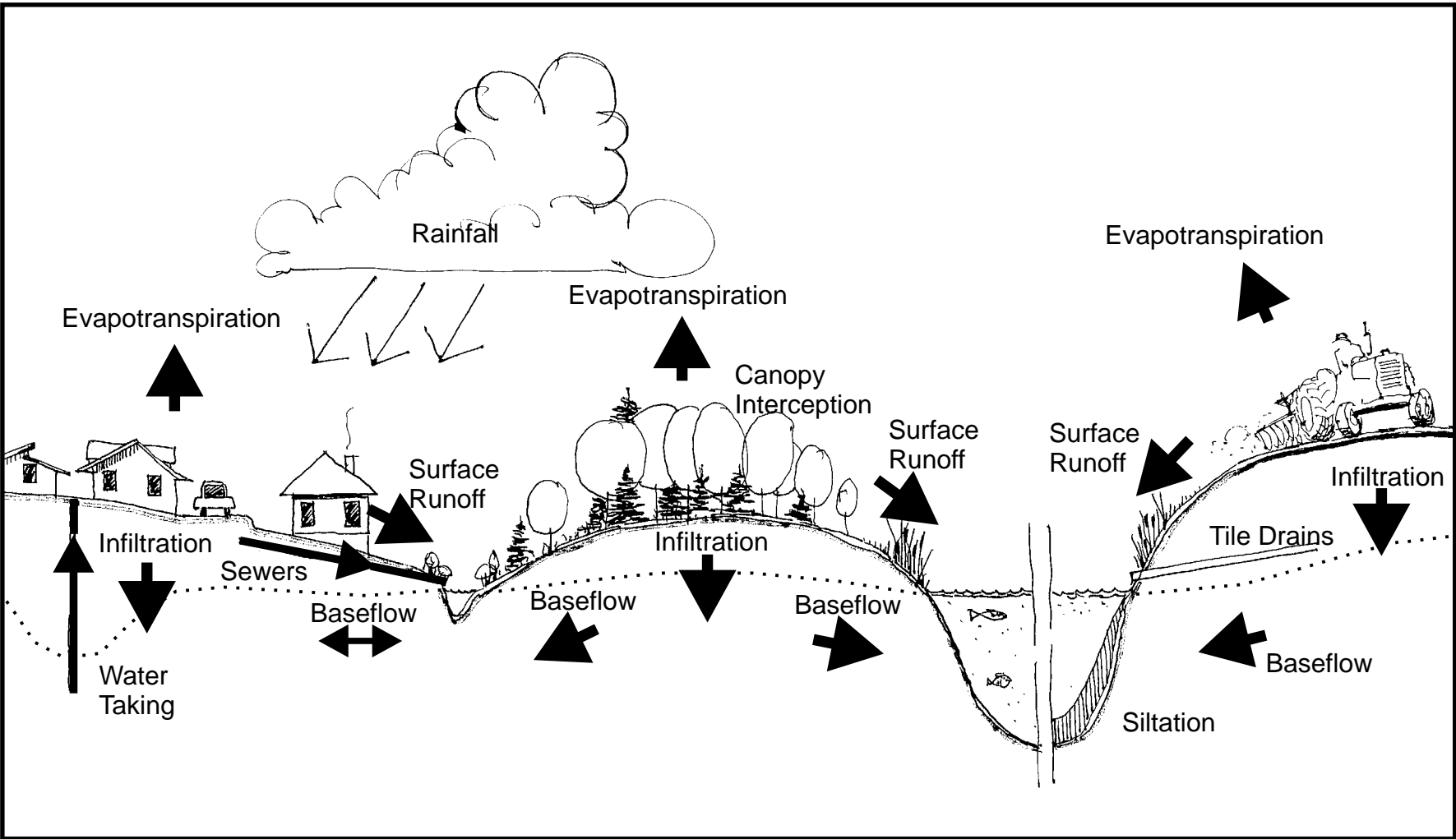
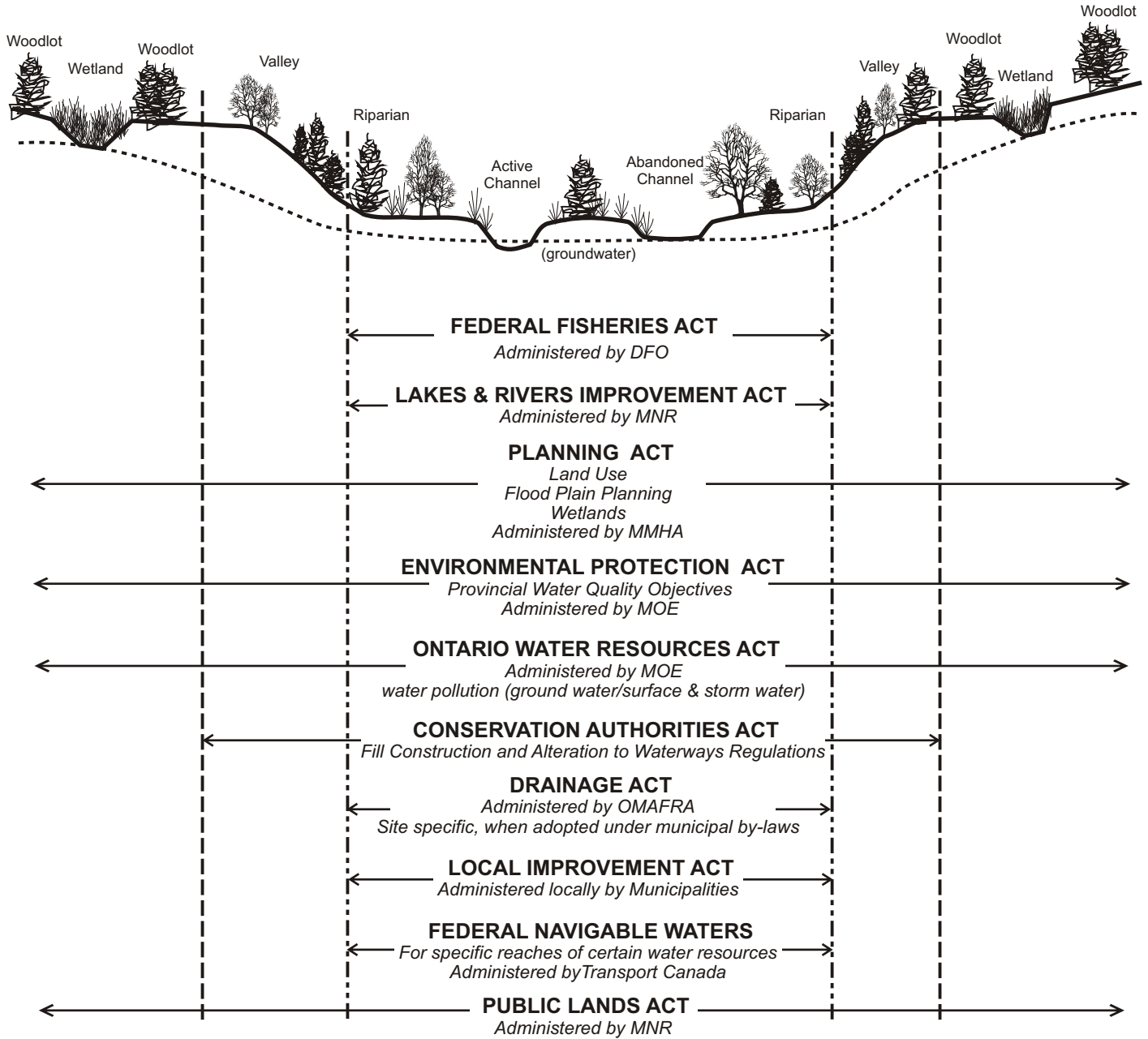
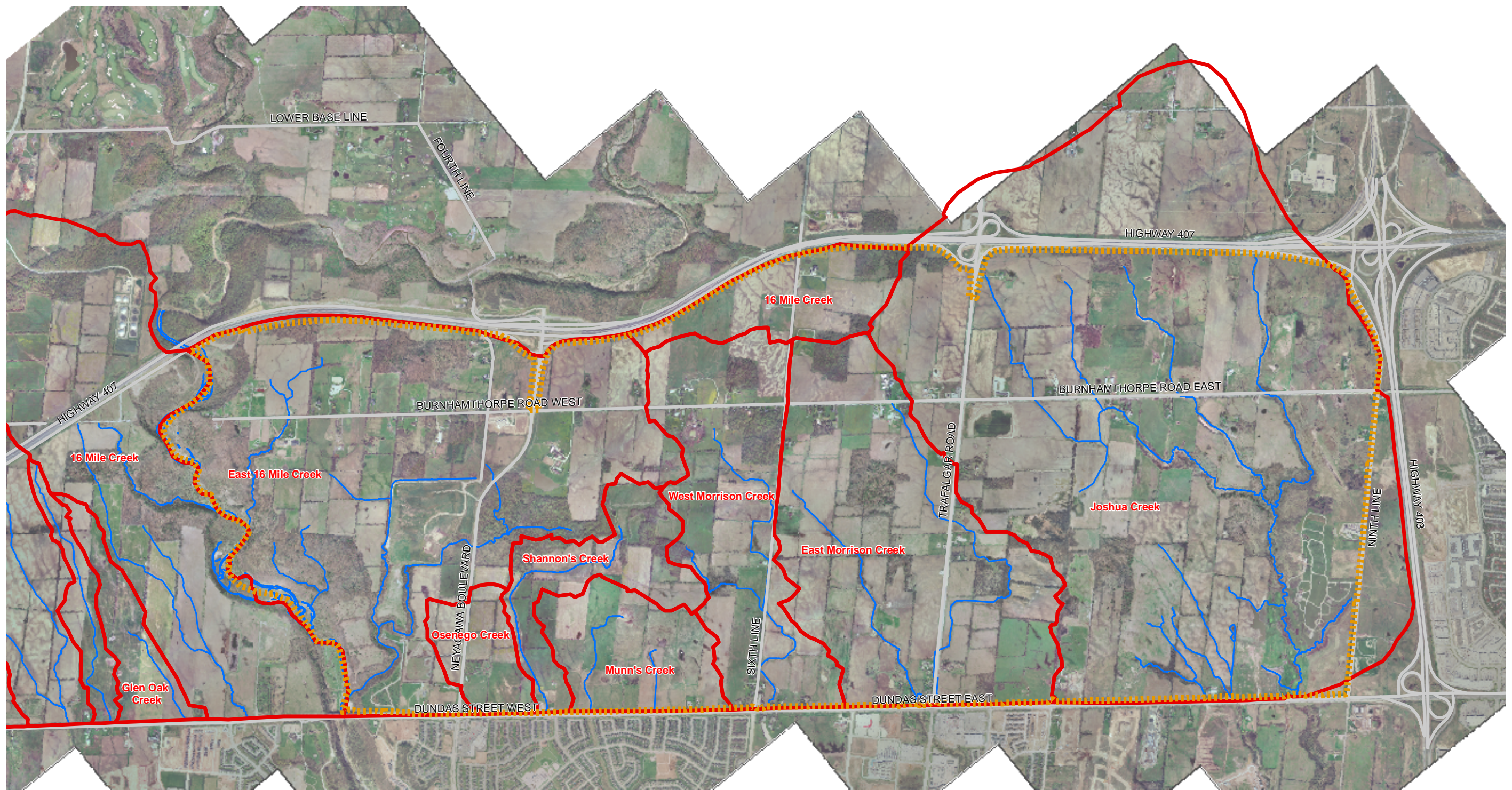


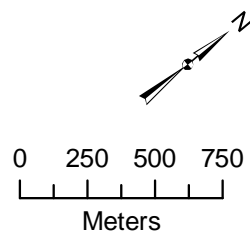
Figure 2.2.1

Legislative Framework





NORTH OAKVILLE CREEKS SUBWATERSHED STUDY



Legend

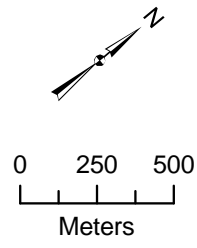
- Road
- Watercourse
- East Study Area
- Watershed

East Study Area
Watershed Boundaries

Figure 4E.1.1



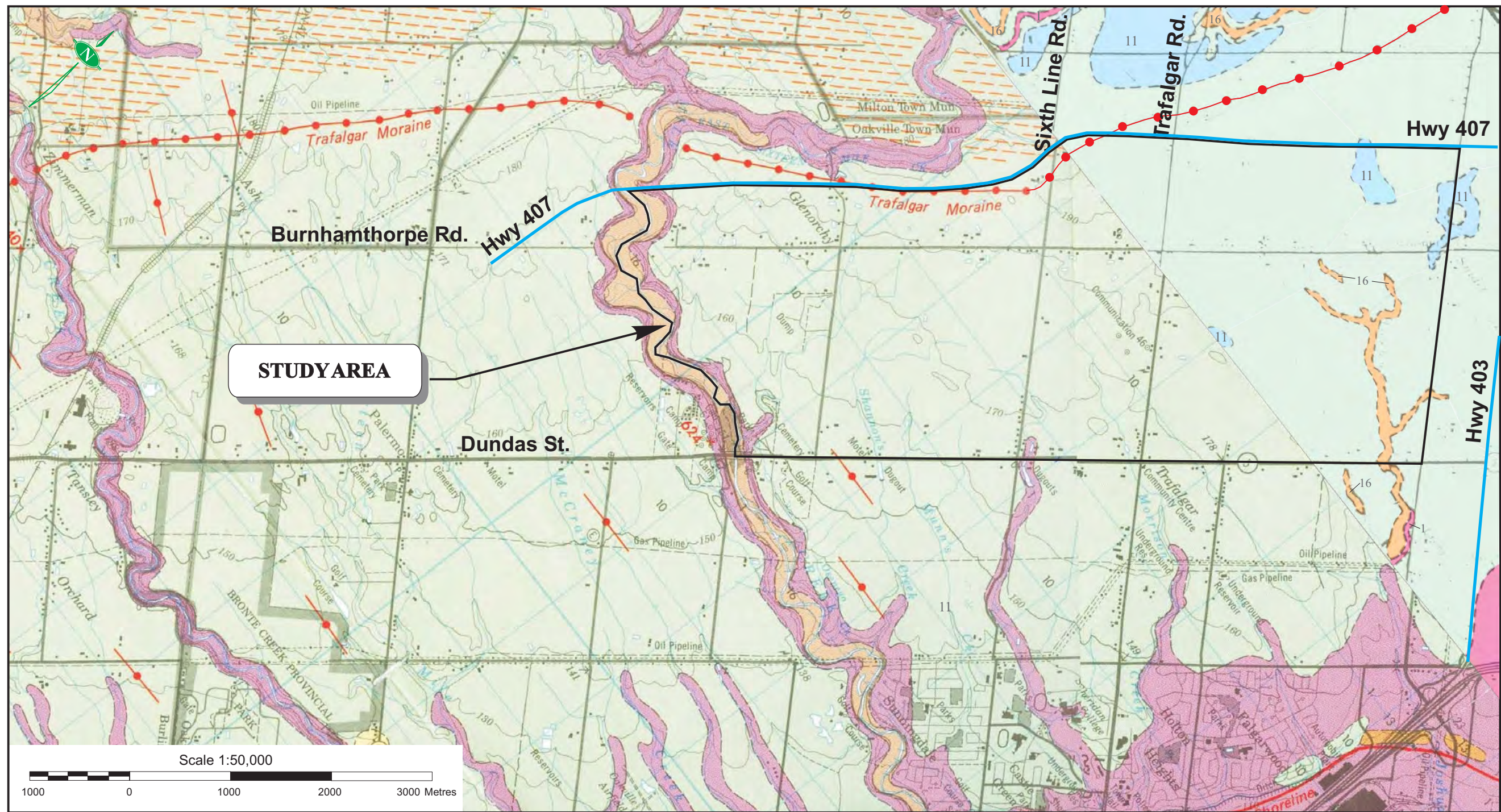
NORTH OAKVILLE CREEKS SUBWATERSHED STUDY



- Legend**
- East Study Area
 - Road
 - Watercourse
 - Reach Break
 - Water Quality Monitoring Station

East Study Area Water Quality Monitoring Stations

Figure 4E.10.1



Scale 1:50,000
 1000 0 1000 2000 3000 Metres

LEGEND

**PHANEROZOIC
 CENOZOIC
 QUATERNARY
 RECENT**

- 17 Lake Ontario deposits: stratified sands, gravel
- 16 Stream deposits: gravel, sand, silt, and clay
- 15 Peat and muck

**PLEISTOCENE
 LATE WISCONSINAN**

- 14 Alluvial fan gravel
- 13 Beach gravel
- 12 Lacustrine and outwash sand
- 11 Lake deposits: stratified to varved clay, silt, and fine sand
- 10 Halton Till: clay or silt till

- 9 Outcrop complex: bouldery till and bedrock ridges
- 8 Ice-contact sand: kames and eskers
- 7 Outwash gravel
- 6 Ice-contact gravel: kames and eskers
- 5 Wentworth Till: stony, sandy, silt till

**PALEOZOIC
 ORDOVICIAN AND SILURIAN**

- 1 Shale and dolomite

Notes
 *Not present on this map sheet.
 Deposits on this sheet are mapped only where they reach 1 m or more in thickness. Thinner deposits are not shown.

SYMBOLS

- Geological boundary, approximate
- Glacial fluting
- Bedrock pressure-release ridge
- Trend of moraine crest
- Abandoned shoreline feature
- Shallow lacustrine sediments of Lake Peel
- Sample site

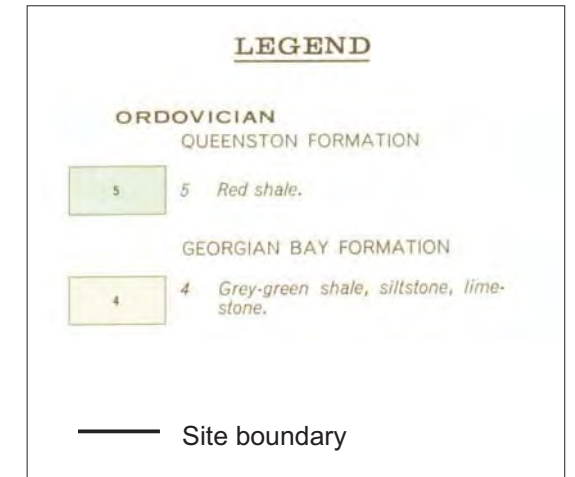
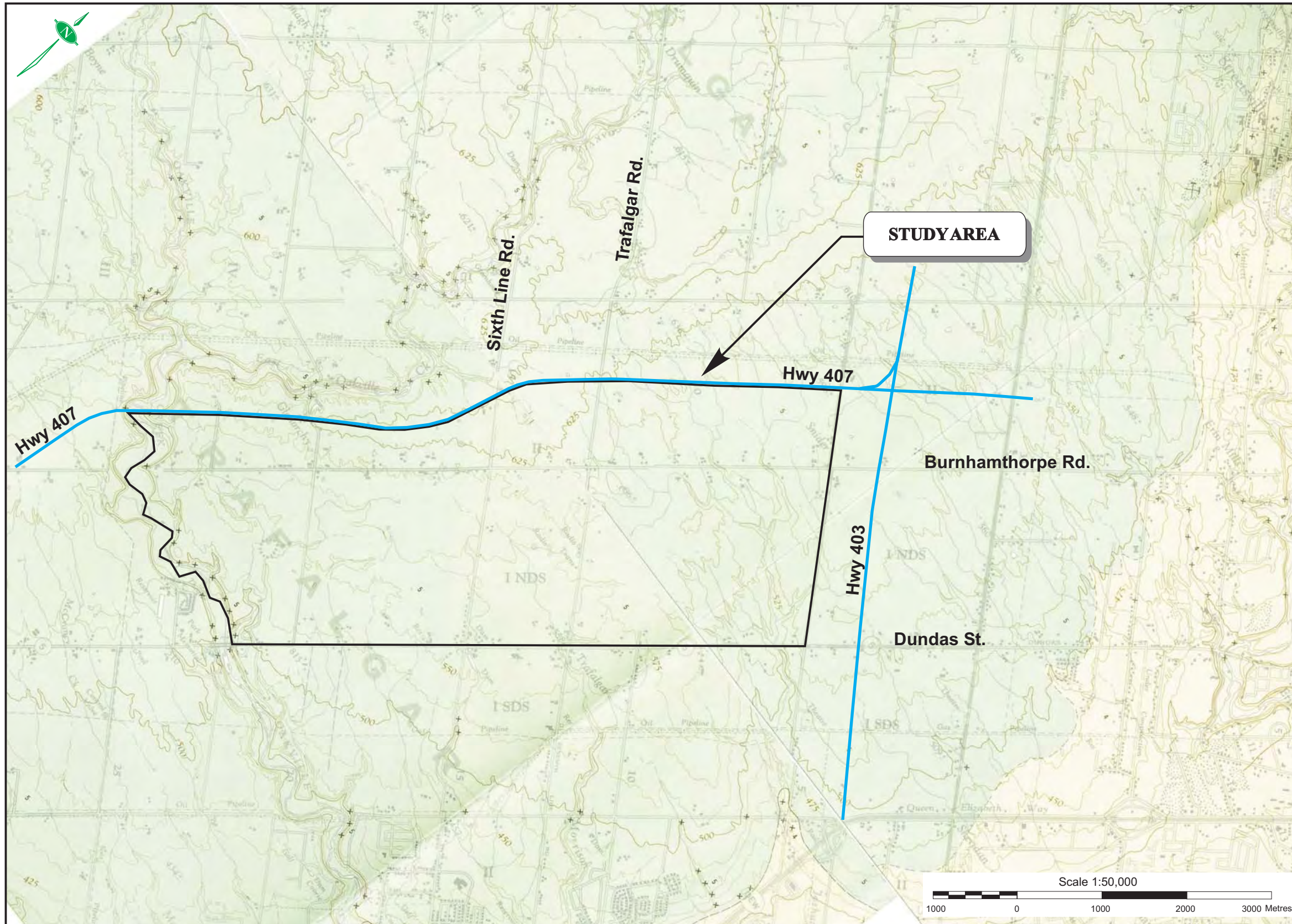
For other conventional signs refer to 1:50 000 National Topographic System maps.

Reference: OGS Map 2509 Quaternary Geology, HAMILTON AREA, and Map P3171 Quaternary Geology, BRAMPTON AREA.

FIGURE 4E.3.1

QUATERNARY GEOLOGY
 North Oakville Creeks East of Sixteen Mile Creek
 Subwatershed Study
 Oakville, Ontario



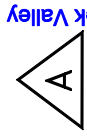


Reference: OGS Map 2336 HAMILTON, Paleozoic Geology, and 2337 BRAMPTON, Paleozoic Geology,

FIGURE 4E.3.2

BEDROCK GEOLOGY
 North Oakville Creeks East of Sixteen Mile Creek
 Subwatershed Study
 Oakville, Ontario

WEST



Sixteen Mile Creek Valley

Sixteen Mile Creek Tributary

EAST



Shannon's Creek Tributary
5697

2135

Neyagawa Blvd.

2214

2139

4788

2142

2141

2217

2221

3112

4263

4662

5809

2806

2224*

7064

2225

2130

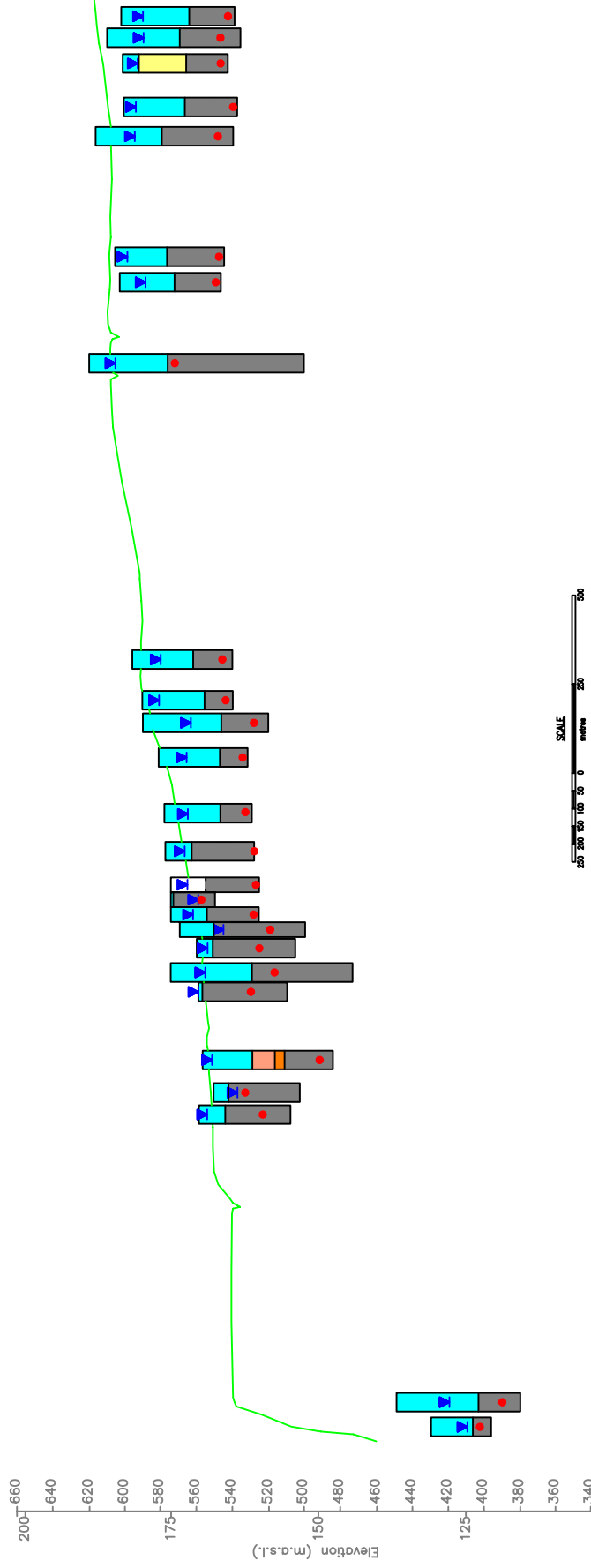
2126

2127

2125

Elevation (m.d.s.l.)

Elevation (f.o.s.l.)



SCALE
300
250
200
150
100
50
0
meters

Legend

- Clay
- Silt
- Sand & Gravel
- Gravel
- Sand
- Shale
- Boulders
- Pre-dug
- Static water level
- Water found at

2224* Corrected M.O.E. water well record (grnd elev. ft) to O.B.M. interpreted (grnd elev. m)

CROSS SECTION A-A'

North Oakville Creeks East of Sixteen Mile Creek
Subwatershed Study
Oakville, Ontario

Project No.: 208-021

Date: August 2004



FIGURE 4E.3.3



WEST



EAST

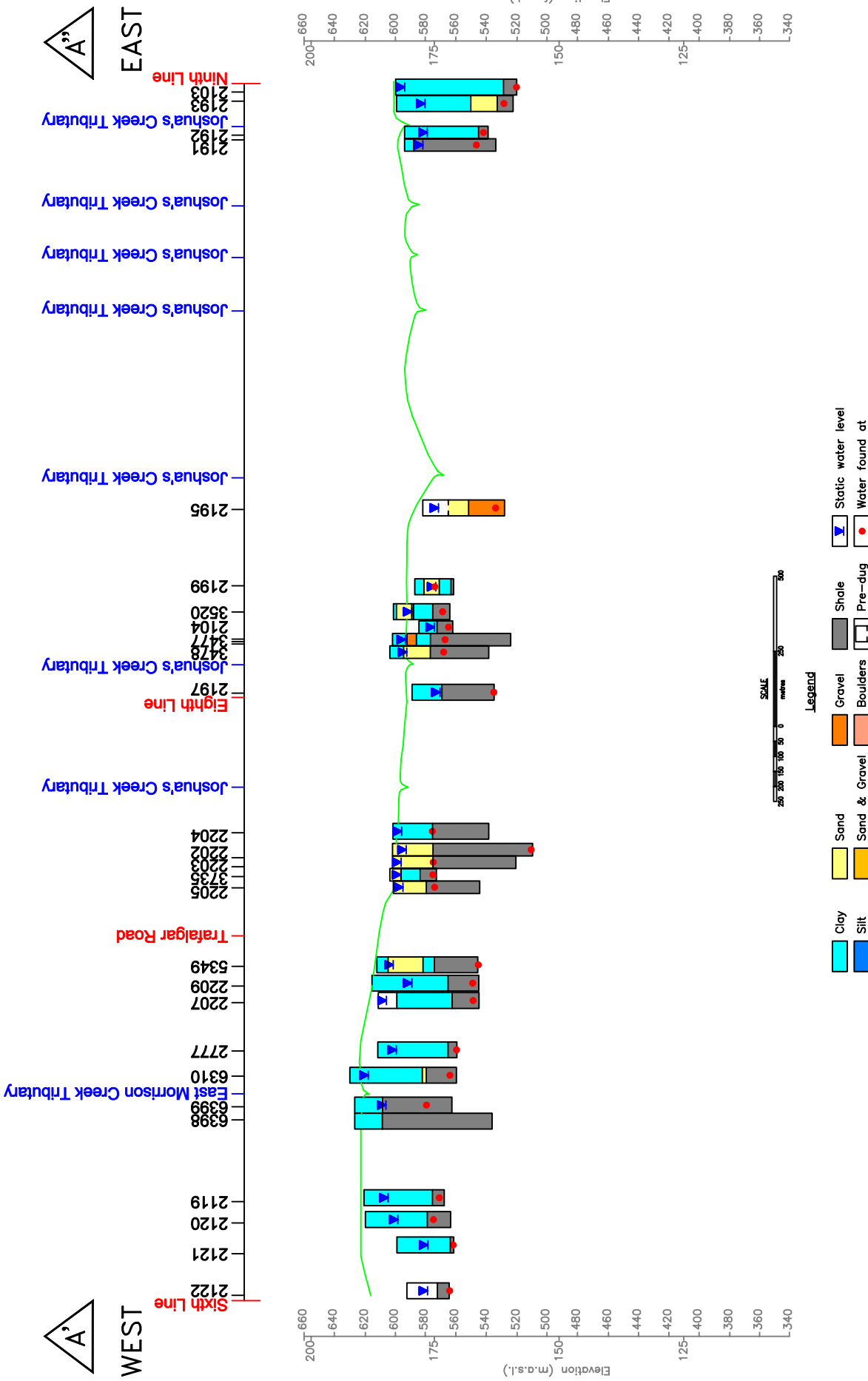


FIGURE 4E.3.4



Project No.: 208-021

Date: August 2004

CROSS SECTION A-A'
 North Oakville Creeks East of Sixteen Mile Creek
 Subwatershed Study
 Oakville, Ontario



NORTH



SOUTH

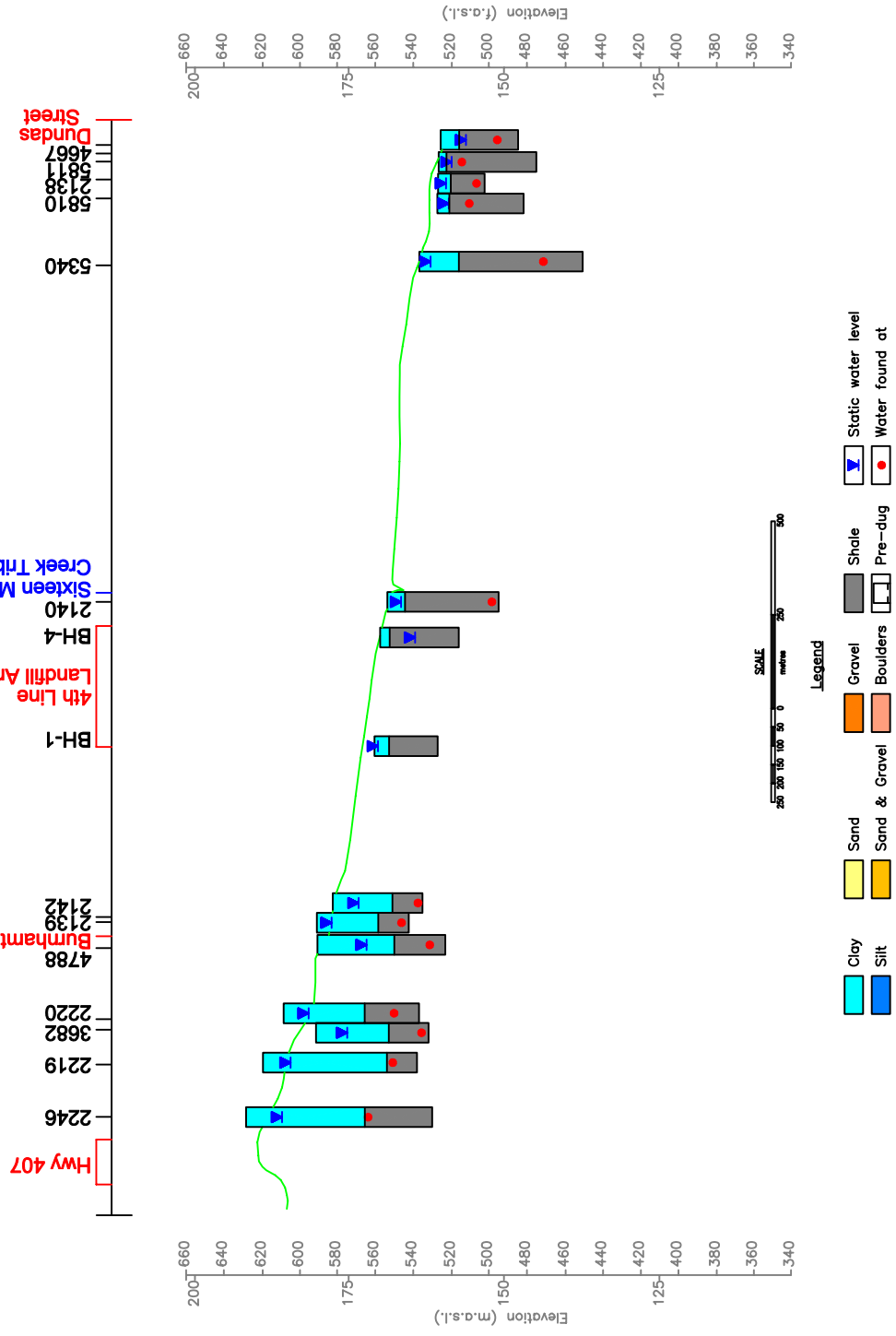


FIGURE 4E .3.5

Project No.: 208-021

Date: August 2004

CROSS SECTION B-B'
 North Oakville Creeks East of Sixteen Mile Creek
 Subwatershed Study
 Oakville, Ontario





NORTH



SOUTH

East Sixteen Mile Creek Tributary

8524

2210

3462

MW-1

Burnhamthorpe Road

2130

3321

2121

2122

8261

East Morison Creek Tributary

3433

West Morison Creek Tributary

2128

2129

West Morison Creek Tributary

2318

2124

2125

2133

Dundas Street

5288

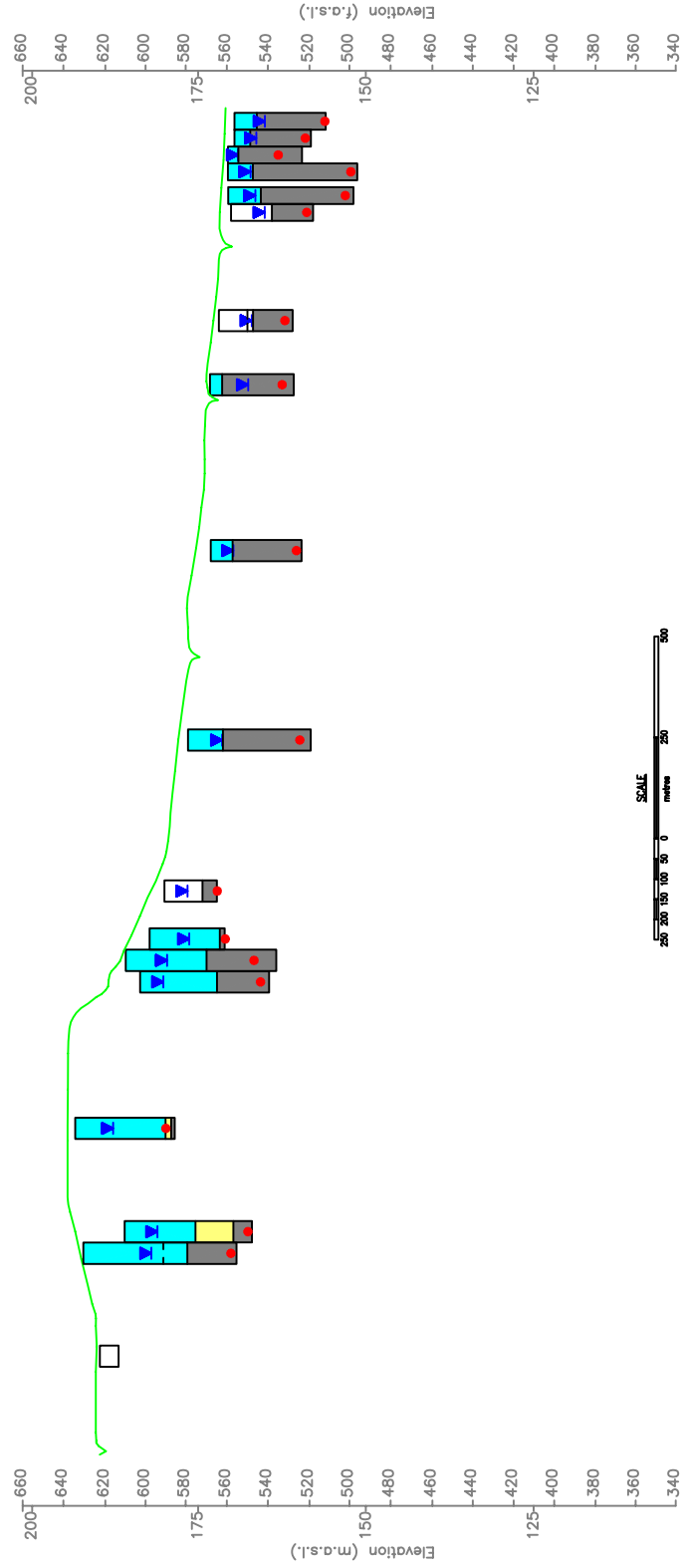
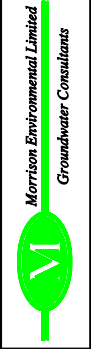


FIGURE 4E .3.6



Project No.: 208-021

Date: August 2004

CROSS SECTION C-C'
 North Oakville Creeks East of Sixteen Mile Creek
 Subwatershed Study
 Oakville, Ontario



NORTH



SOUTH

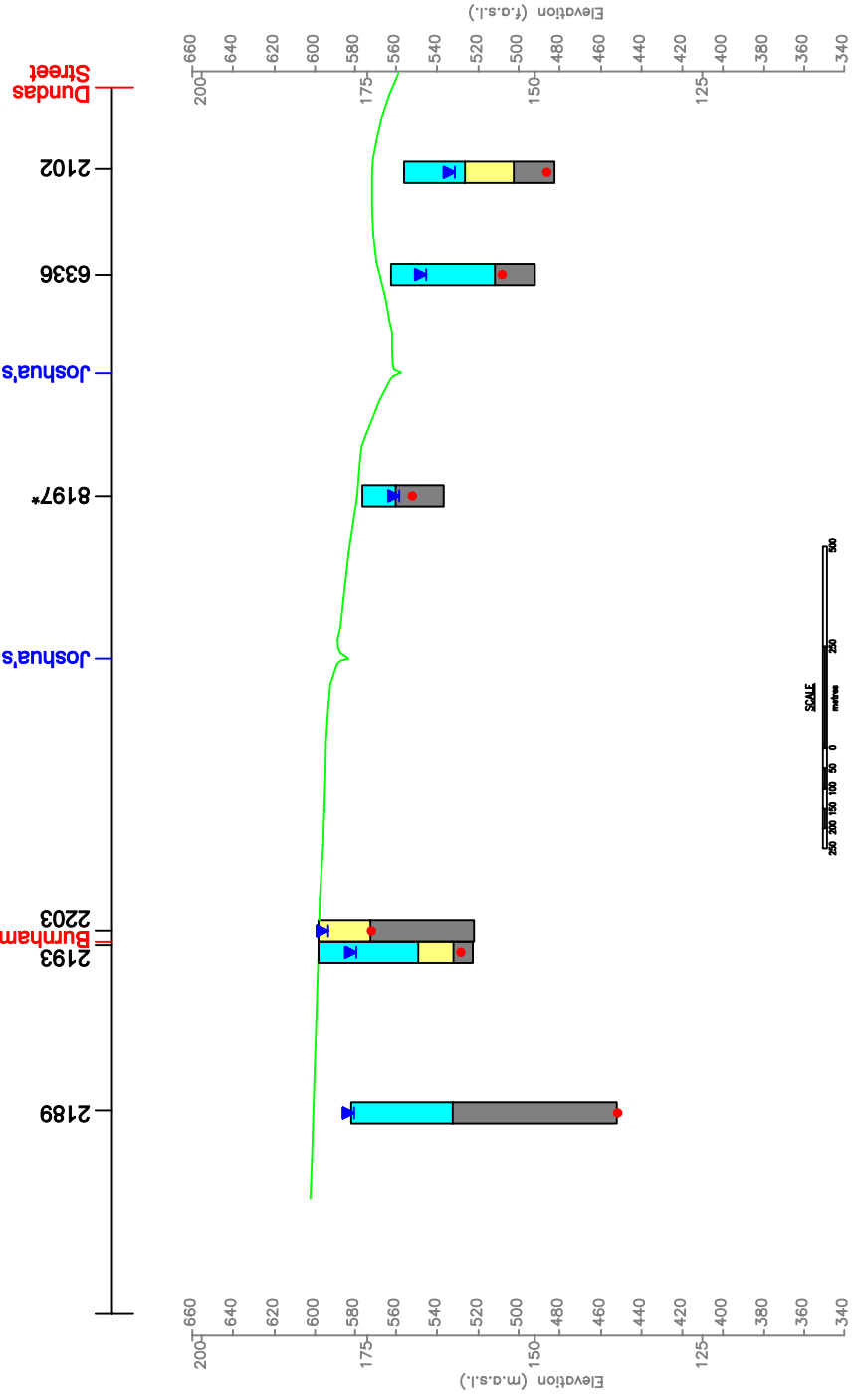


FIGURE 4E.3.7

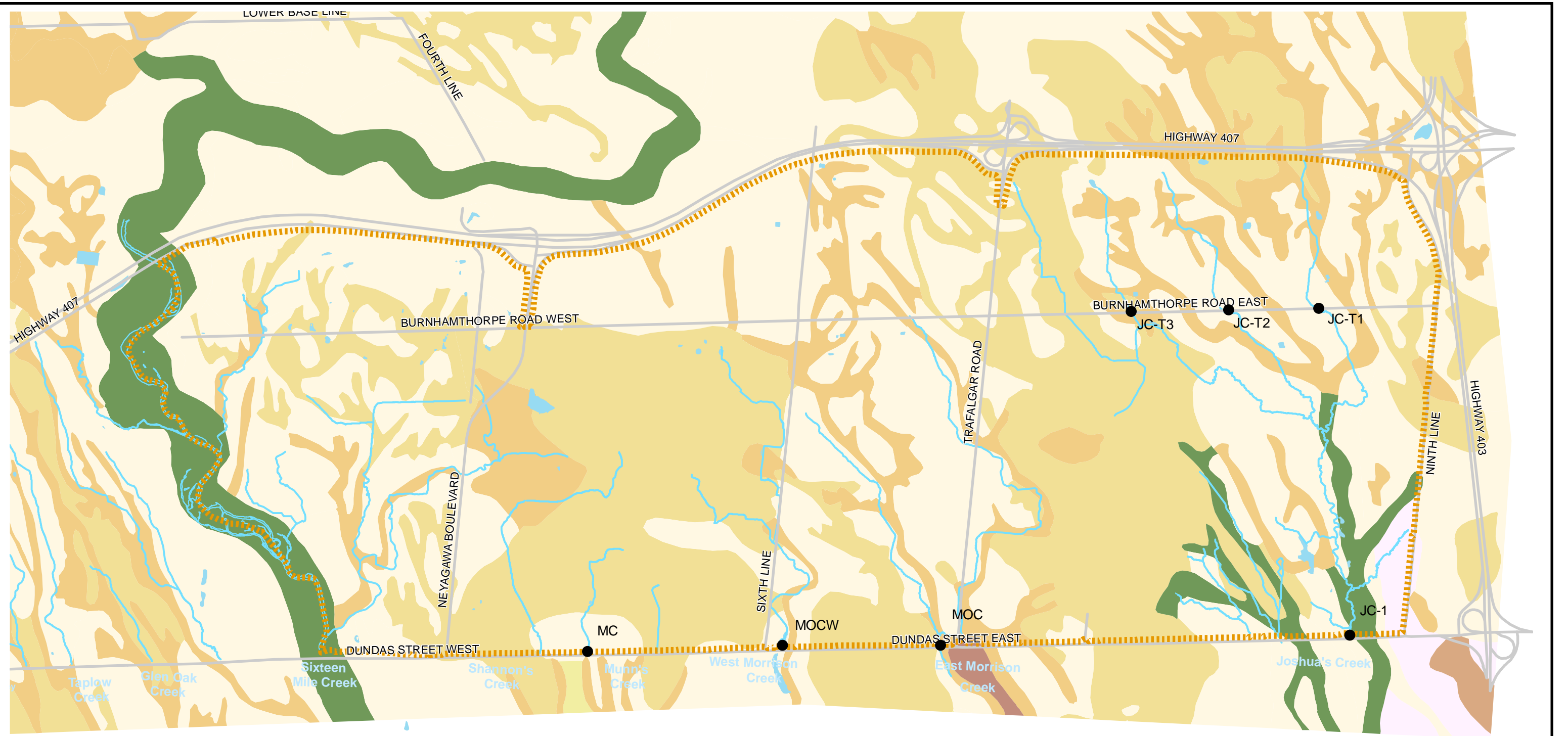


Project No.: 208-021

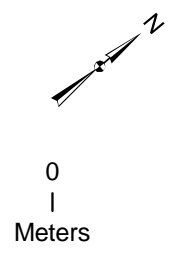
Date: August 2004

CROSS SECTION D-D'
 North Oakville Creeks East of Sixteen Mile Creek
 Subwatershed Study
 Oakville, Ontario

8197* Corrected M.O.E. water well record (grnd elev. ft) to O.B.M. interpreted (grnd elev. m)



NORTH OAKVILLE CREEKS SUBWATERSHED STUDY



Legend

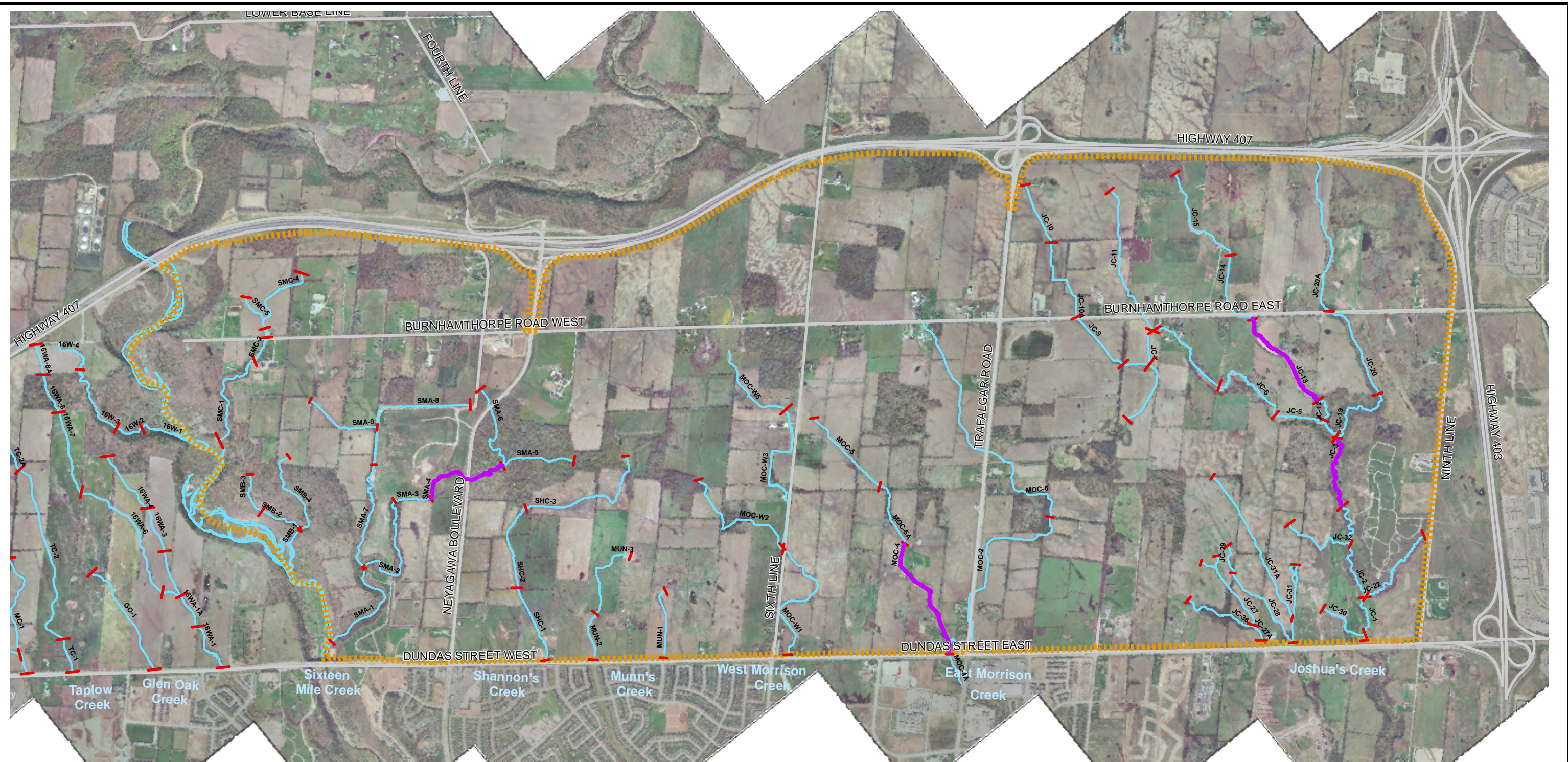
- East Study Area
- Road
- Watercourse
- Pond
- Flow Monitoring Locations

Soil Type

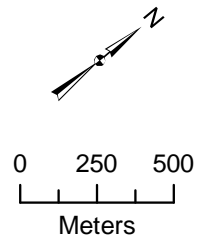
- Bottom Land
- Brady (Sandy Loam)
- Chinguacousy (Rocky Phase)
- Chinguacousy Clay Loam
- Jeddo Clay Loam
- Lockport Clay
- Oneida (Rocky Phase)
- Onieda Clay Loam
- Trafalgar Clay

**East Study Area
Soils and Flow
Monitoring Locations**

Figure 4E.6.1



NORTH OAKVILLE CREEKS SUBWATERSHED STUDY



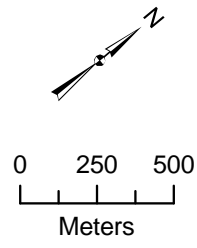
- Legend**
- East Study Area
 - Road
 - Watercourse
 - Reach Break
 - Detailed Field Sites

East Study Area
Reach Delineation
and Field Sites

Figure 4E.8.1



NORTH OAKVILLE CREEKS SUBWATERSHED STUDY

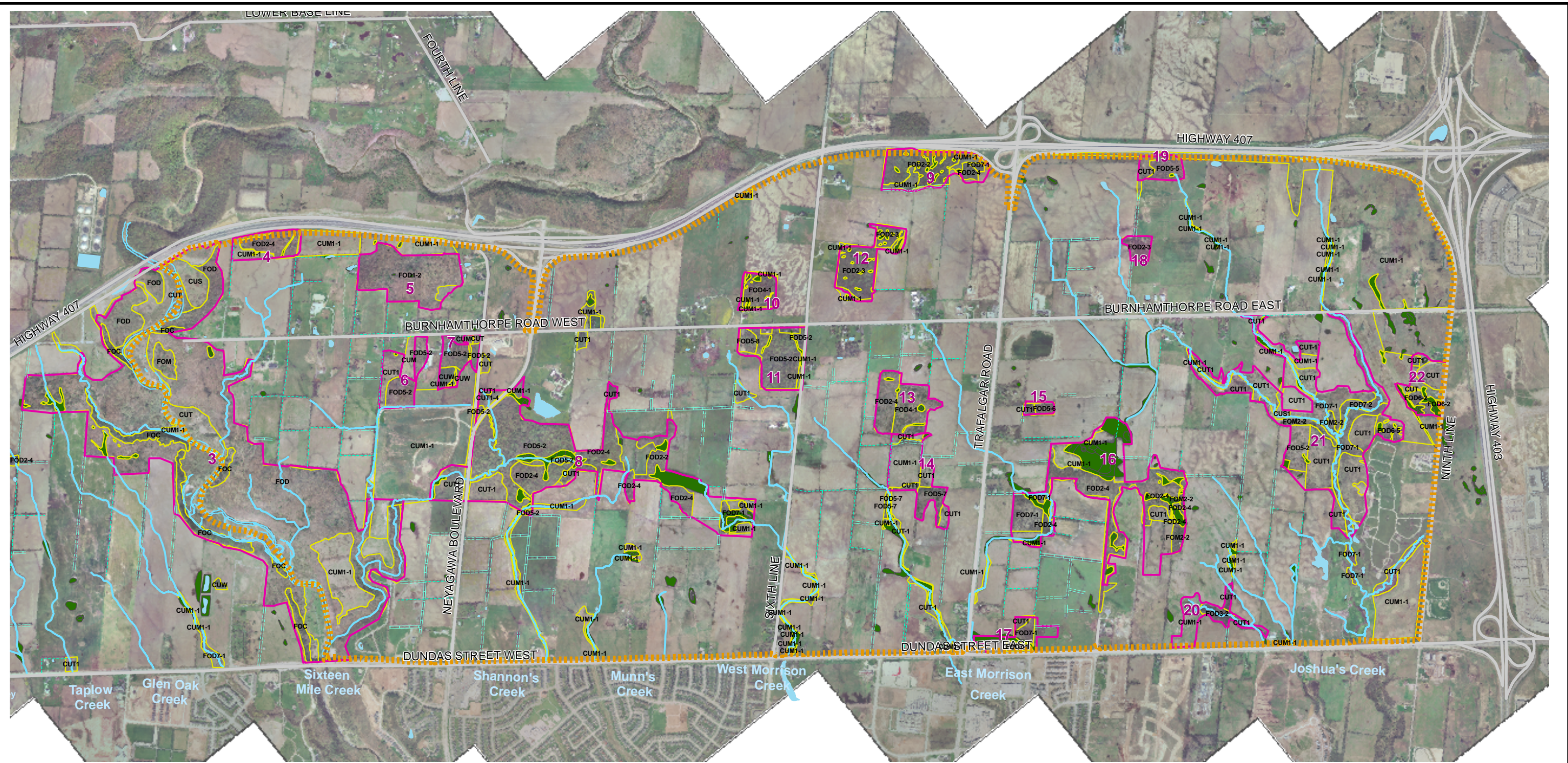


Legend

- East Study Area
- Road
- Watercourse
- Reach Break
- Channel Stability - Stable
- Channel Stability - In Adjustment
- Channel Stability - In Regime
- Channel Stability - Transitional
- Channel Stability - Swale
- Channel Stability - Pond
- Channel Stability - No Stability Assigned

East Study Area
Channel Stability

Figure 4E.8.2



NORTH OAKVILLE CREEKS SUBWATERSHED STUDY



Legend

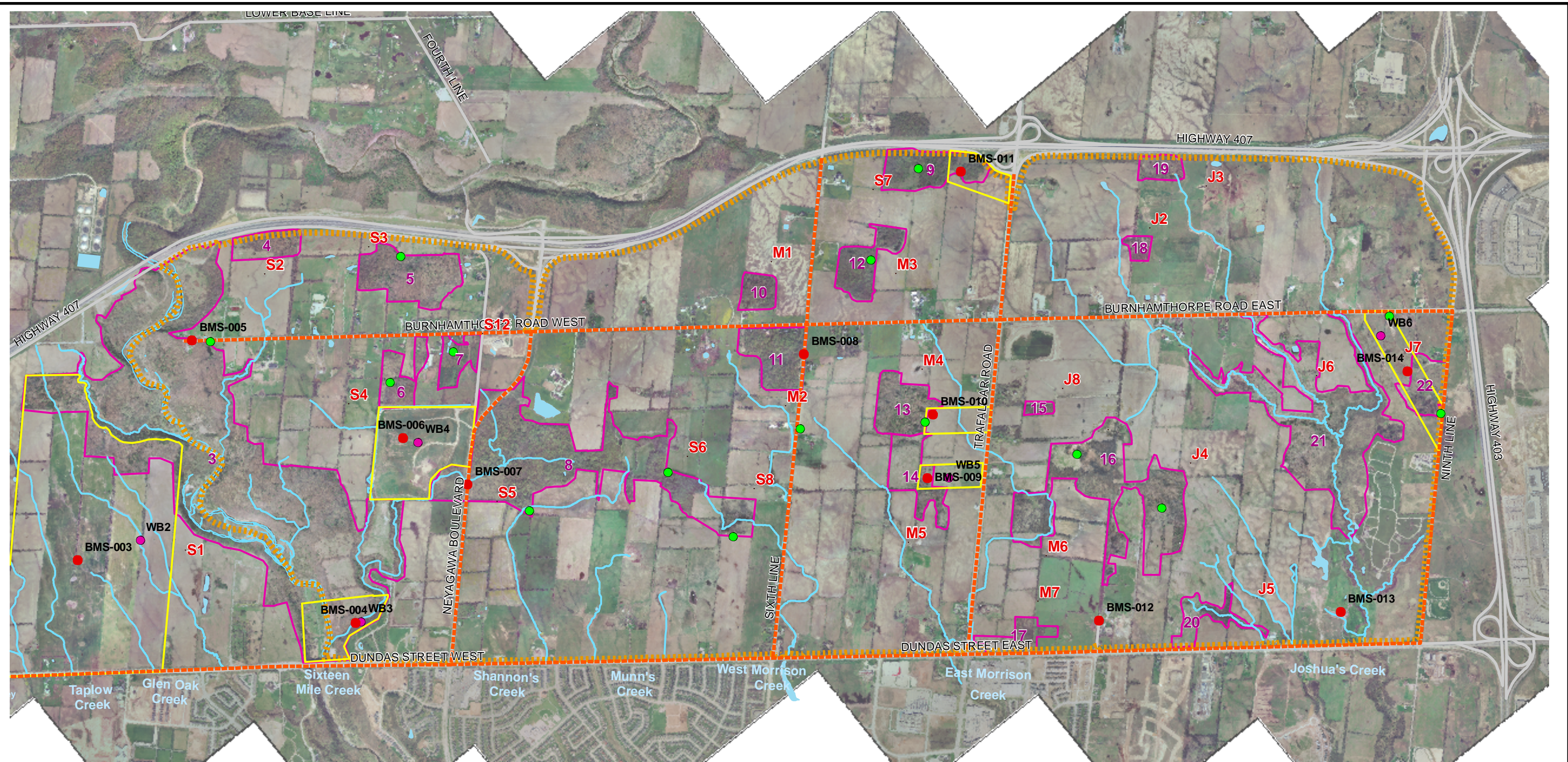
- East Study Area
- Road
- Watercourse
- Wetland
- ELC Polygon
- Mixed Hedgerow
- Shrub Dominated Hedgerow
- Tree Dominated Hedgerow
- Pond
- Habitat Units

ELC Code & Description

- | | |
|--|--|
| CUM1-1, Cultural Meadow | FOD5-1, Dry-Fresh Sugar Maple Deciduous Forest |
| CUS1-1, Cultural Savannah; CUS1, Cultural Savannah | FOD5-2, Dry-Fresh Sugar Maple-Beech Deciduous Forest |
| CUT1-1, Cultural Thicket | FOD5-3, Dry-Fresh Sugar Maple-Oak Deciduous Forest |
| CUW, Cultural Woodlot | FOD5-5, Dry-Fresh Sugar Maple-Hickory Deciduous Forest |
| FOC, Coniferous Forest | FOD5-8, Dry-Fresh Sugar Maple - White Ash Deciduous Forest |
| FOD, Deciduous Forest | FOD6-2, Fresh-Moist Sugar Maple - Black Maple Deciduous Forest |
| FOD1-2, Dry-Fresh White Oak Deciduous Forest | FOD6-5, Fresh-Moist Sugar Maple-Hardwood Deciduous Forest |
| FOD2-2, Dry-Fresh Oak Hickory Deciduous Forest | FOD7, Fresh-Moist Lowland Deciduous Forest |
| FOD2-3, Dry-Fresh Hickory Deciduous Forest | FOD7-1, Fresh Moist White Elm Lowland Deciduous Forest |
| FOD2-4, Dry-Fresh Oak Hardwood Deciduous Forest | FOD7-2, Fresh-Moist Ash Lowland Deciduous Forest |
| FOD3-2, Dry-Fresh White Birch Deciduous Forest | FOM, Mixed Forest |
| FOD4-1, Dry-Fresh Beech Deciduous Forest | FOM2-2, Dry-Fresh White Pine - Sugar Maple Mixed Forest |

East Study Area Terrestrial Survey Map

Figure 4E.9.1



NORTH OAKVILLE CREEKS SUBWATERSHED STUDY



0 250
Meters

Legend

- East Study Area
- Road
- Watercourse
- Pond
- Habitat Units
- Winter Bird Survey Route 2006
- Winter Bird Monitoring Station 2006
- Breeding Bird Survey Area 2002 (location as per LGL 1999)
- Bird Survey Area 2005
- Bird Monitoring Station 2005
- Amphibian Survey Station 2002 (location as per LGL 1999)

East Study Area

Wildlife Monitoring Stations

Figure 4E.9.2