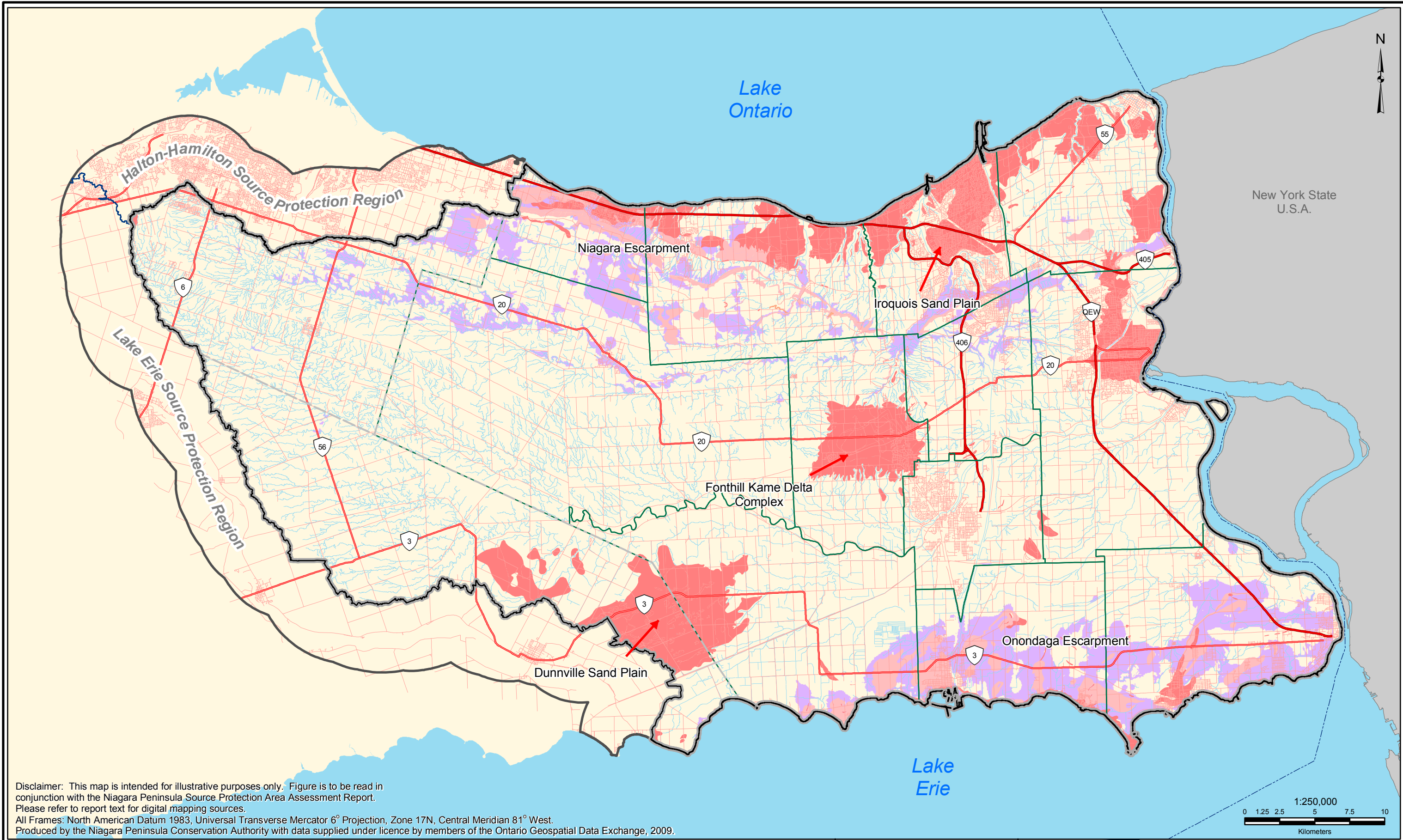


Legend --- International Boundary --- Major Highways --- Highways --- Watercourse		Ponds, Reservoirs, Lakes Extended Context Area Source Water Protection Area		Lower Tier Municipality Upper Tier Municipality		Groundwater Susceptibility (GwISI) High Medium Low		GwISI Data Points High Medium Low				NPSA Assessment Report Figure 4.1: Rule 37(1)/38(1) Groundwater Vulnerability – Intrinsic Susceptibility Index		
													Thursday, July 14, 2011	



Disclaimer: This map is intended for illustrative purposes only. Figure is to be read in conjunction with the Niagara Peninsula Source Protection Area Assessment Report. Please refer to report text for digital mapping sources.
All Frames: North American Datum 1983, Universal Transverse Mercator 6° Projection, Zone 17N, Central Meridian 81° West.
Produced by the Niagara Peninsula Conservation Authority with data supplied under licence by members of the Ontario Geospatial Data Exchange, 2009.

Legend

- International Boundary
- Major Highways
- Highways
- Watercourse
- Ponds, Reservoirs, Lakes
- Extended Context Area
- Source Water Protection Area
- Lower Tier Municipality
- Upper Tier Municipality

Groundwater Vulnerability (AVI)

- High (Sand and / or Gravel at Surface)
- High (Bedrock Outcrop)
- High (Karst Area)
- High (< 5 m overburden)

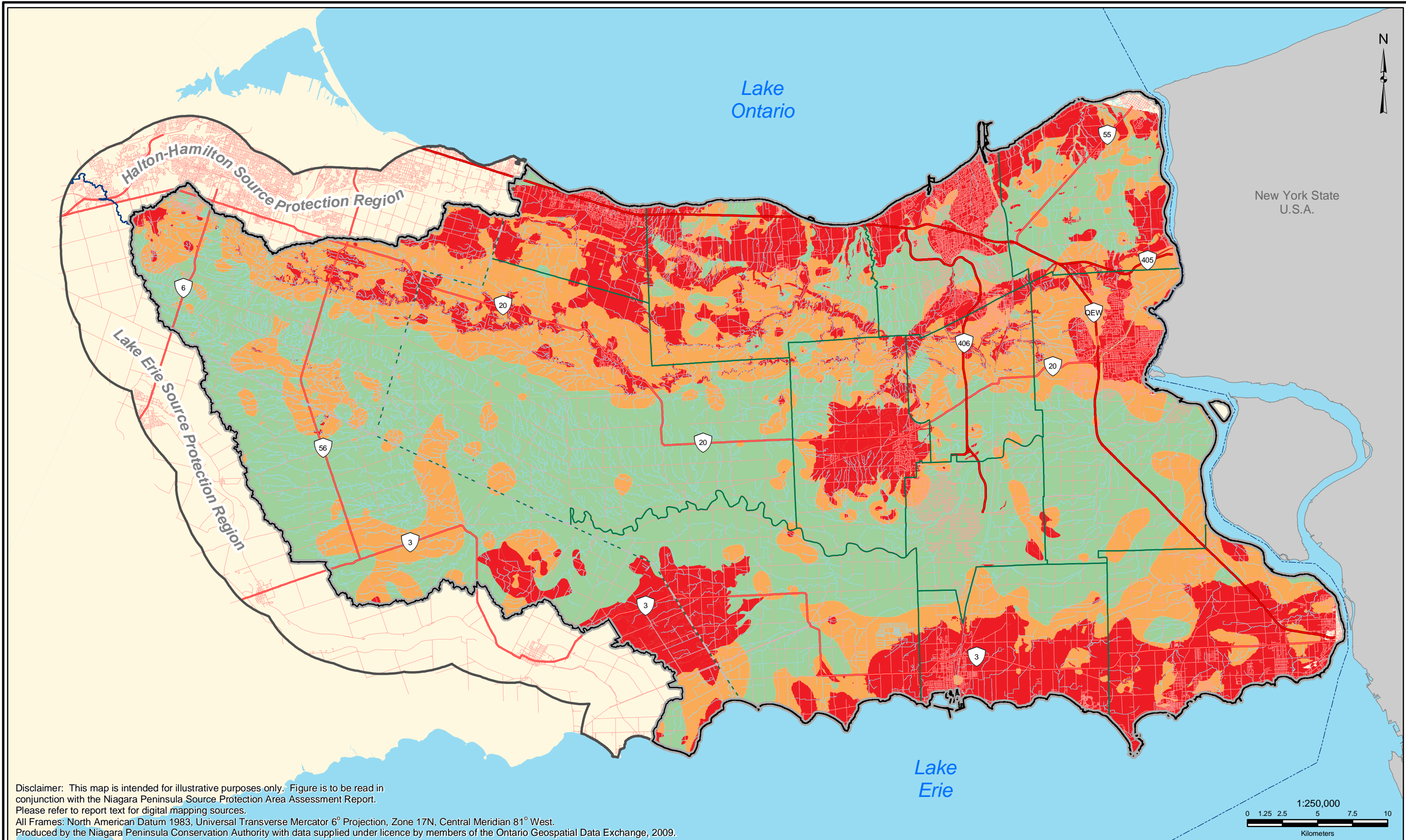
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Figure 4.2: Rule 37(2)-38(1) Groundwater Vulnerability – Aquifer Vulnerability Index

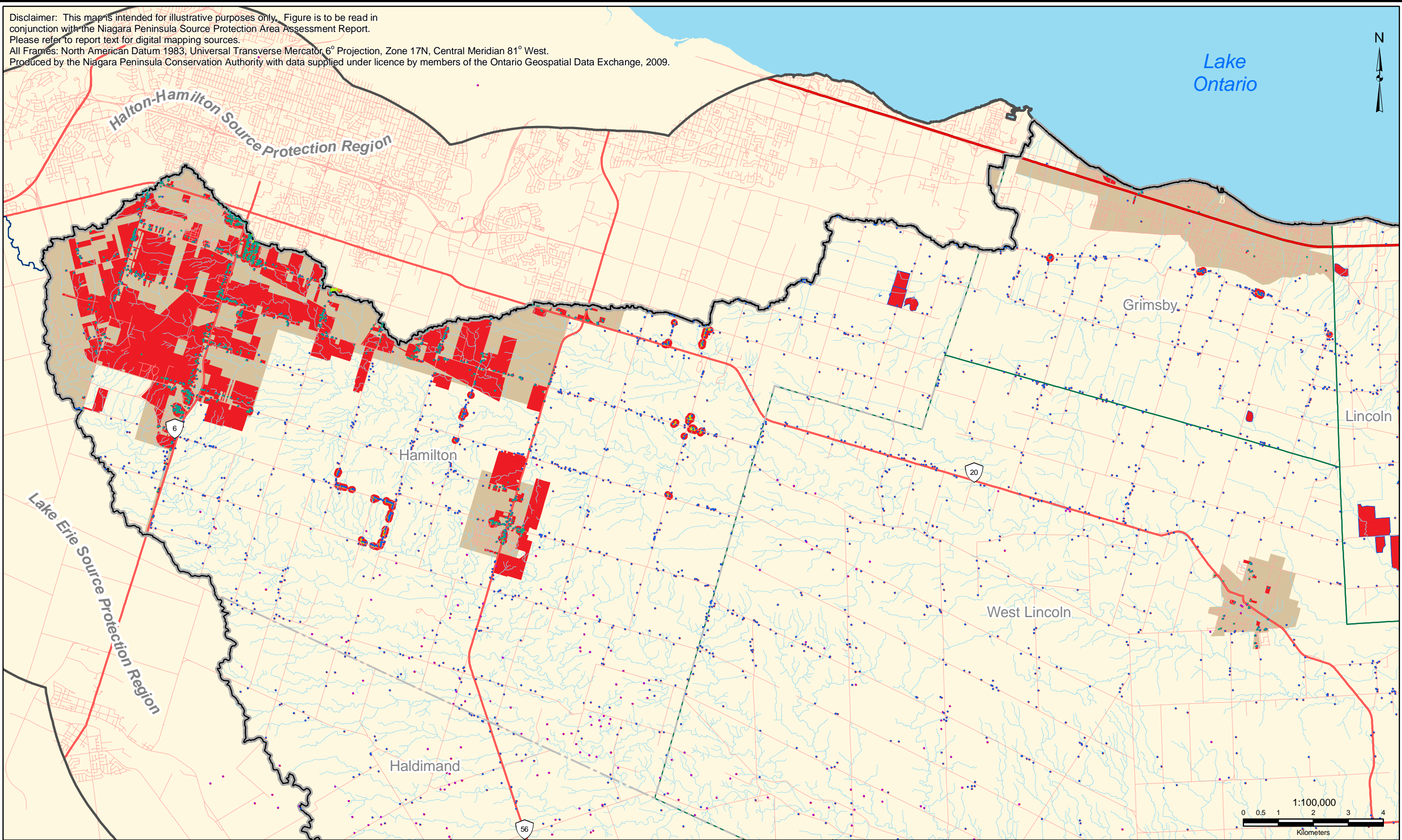
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Legend

- | | | | |
|----------------------------|------------------------------|--------------------------------|--|
| --- International Boundary | Ponds, Reservoirs, Lakes | Lower Tier Municipality | Cluster Wells (≥ 6 Wells in 100m Radius) |
| Major Highways | Extended Context Area | Upper Tier Municipality | Unknown Status Oil and Gas Wells |
| Highways | Source Water Protection Area | Municipally Served Water Areas | Municipally Served Areas WWIS Wells |
| Watercourse | Aggregate Operations | | MOE WWIS Pre-2000 |
| | | | Groundwater Vulnerability (High) |



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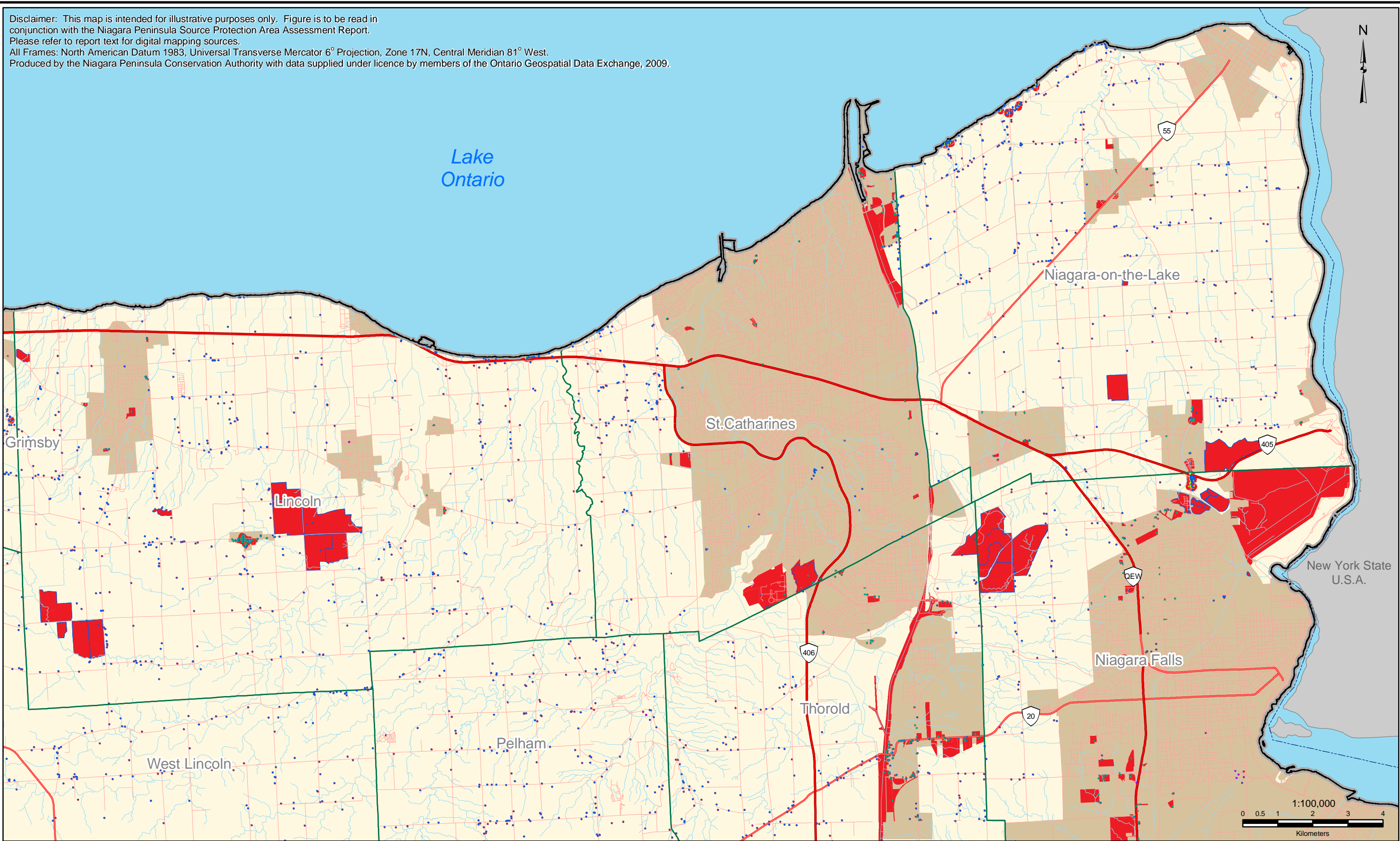
Figure 4.4: Transport Pathways - Northwest Quadrant



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Legend

--- International Boundary

— Major Highways

— Highways

— Watercourse

— Ponds, Reservoirs, Lakes

— Extended Context Area

— Source Water Protection Area

— Welland Canal on Bedrock

— Lower Tier Municipality

— Upper Tier Municipality

— Municipally Served Water Areas

— Aggregate Operations

● Municipally Served Areas WWIS Wells

● Unknown Status Oil and Gas Wells

● MOE WWIS Pre-2000

● Cluster Wells (>= 6 Wells in 100m Radius)

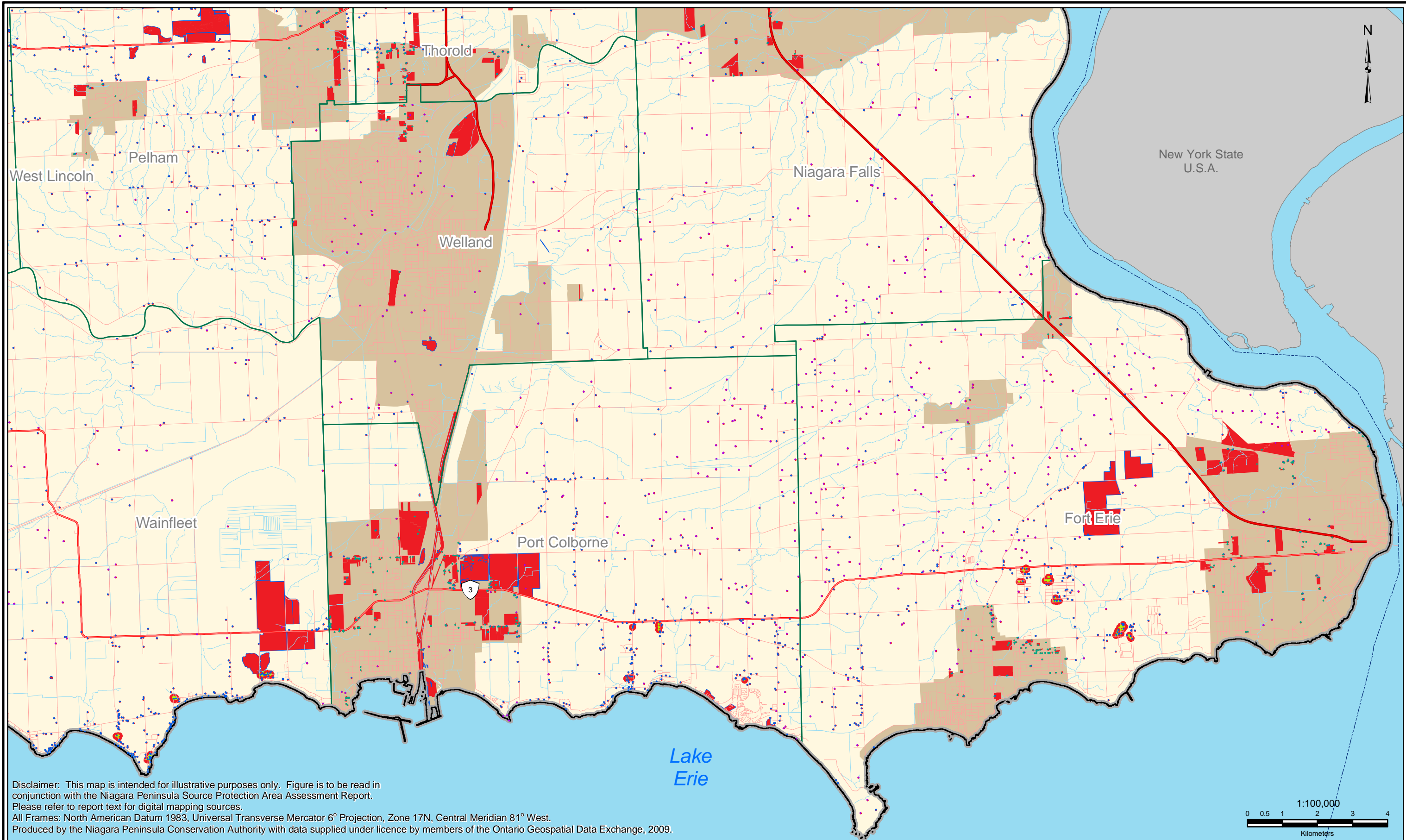
■ Groundwater Vulnerability (High)

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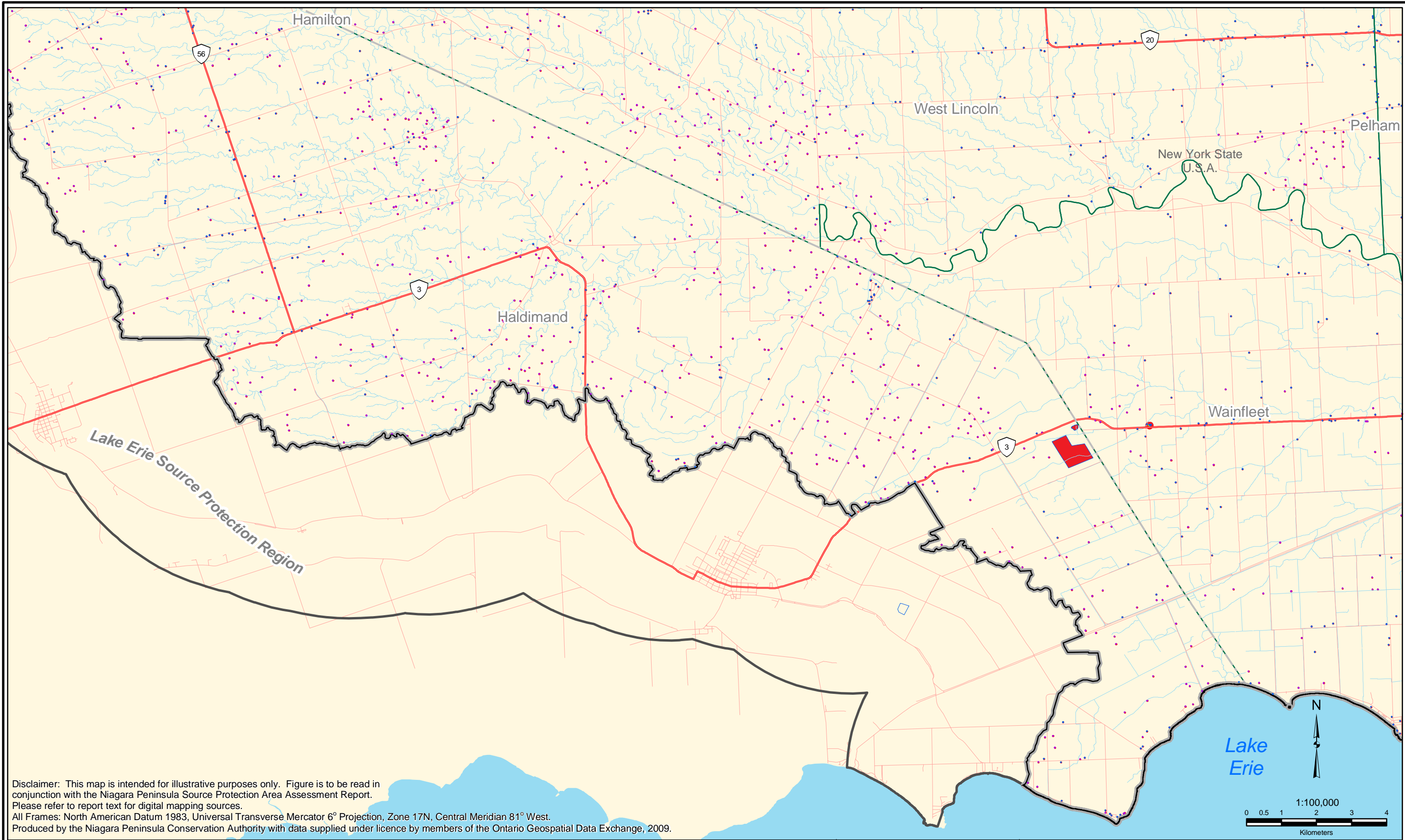
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Figure 4.5: Transport Pathways - Northeast Quadrant

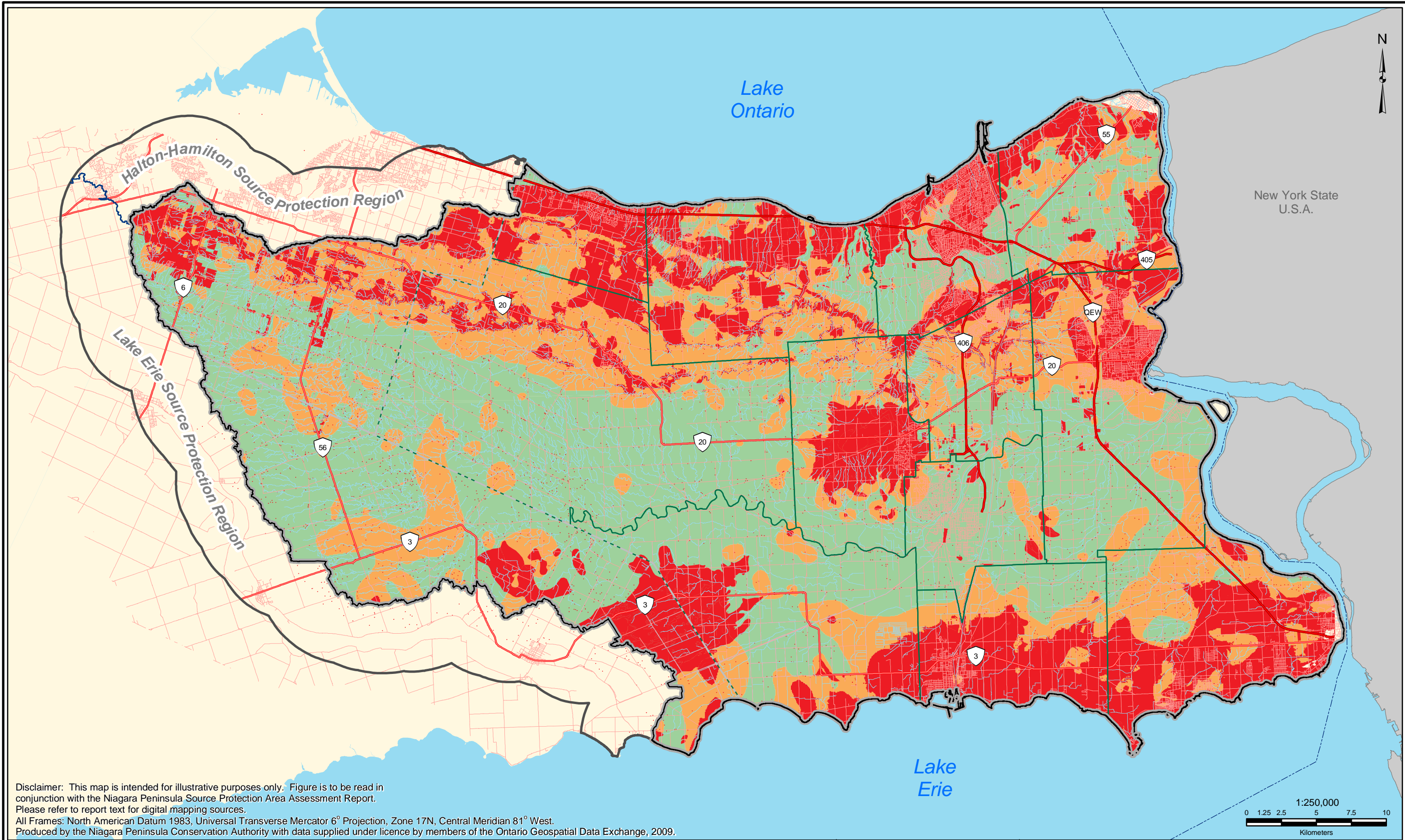
Thursday, July 14, 2011

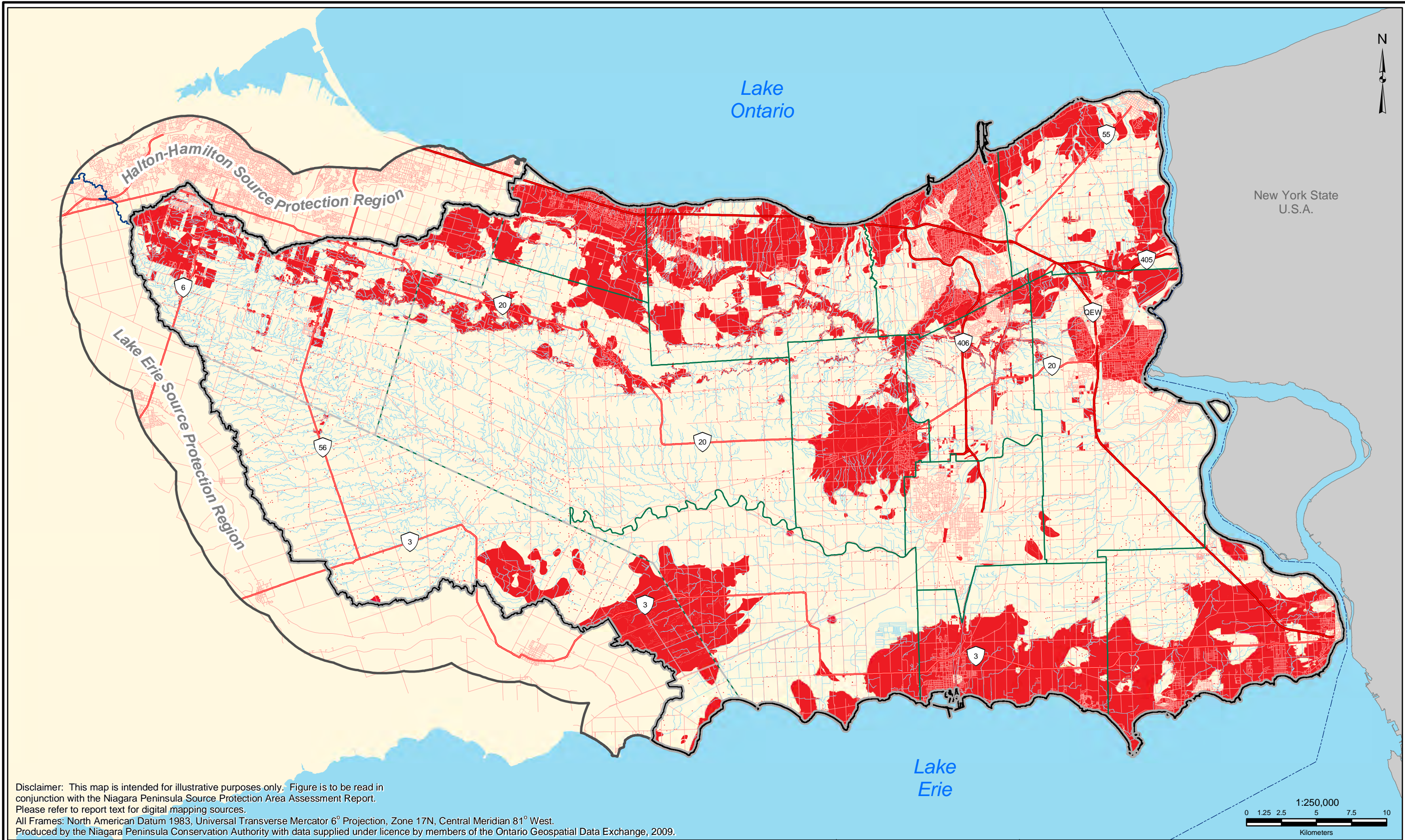


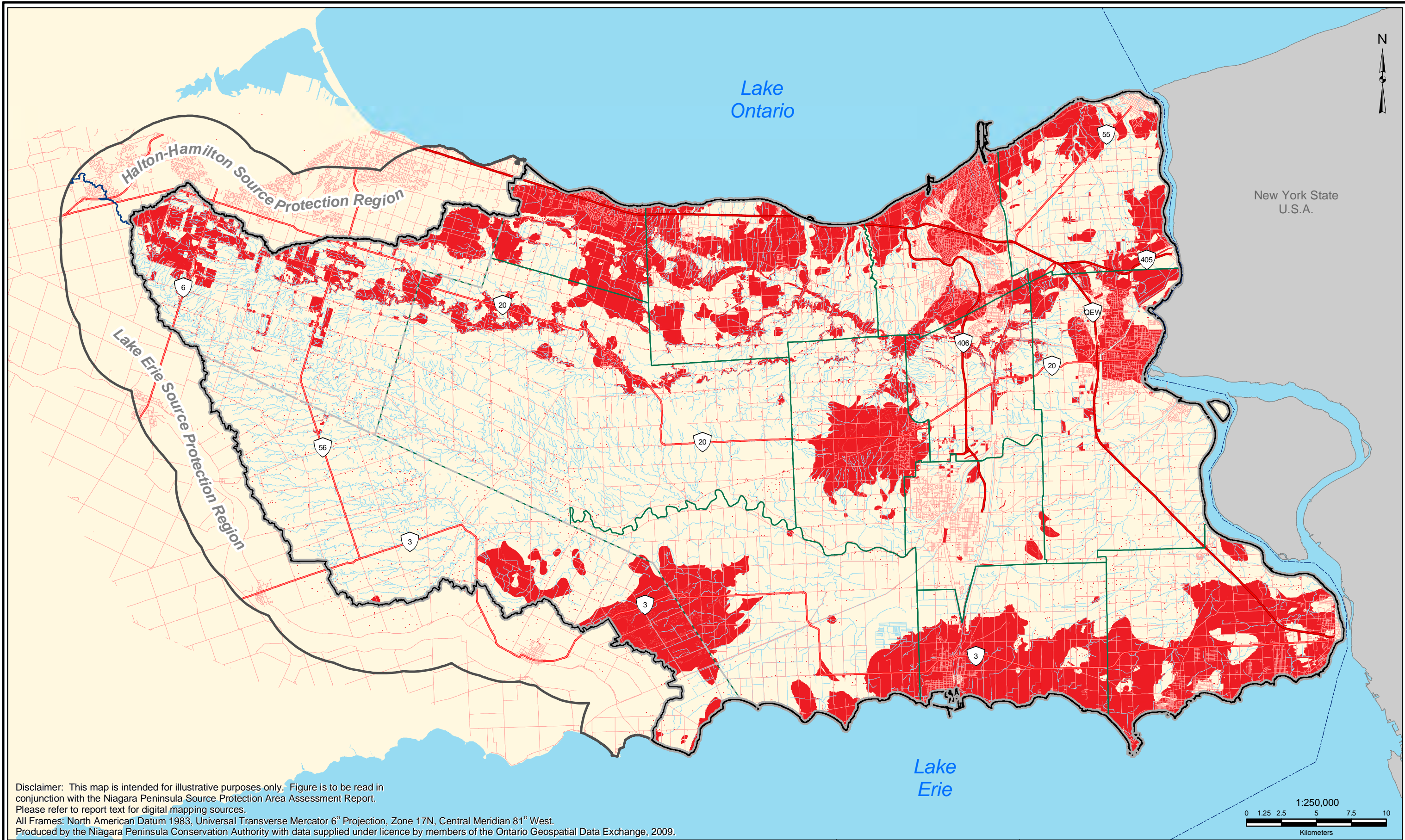
Legend <div> <div> <div>--- International Boundary</div> <div>Major Highways</div> <div>Highways</div> <div>Watercourse</div> </div> <div> <div>Ponds, Reservoirs, Lakes</div> <div>Extended Context Area</div> <div>Source Water Protection Area</div> <div>Welland Canal on Bedrock</div> </div> <div> <div>Lower Tier Municipality</div> <div>Upper Tier Municipality</div> <div>Municipally Served Water Areas</div> <div>Aggregate Operations</div> </div> </div>			<div> <div>Municipally Served Areas WWIS Wells</div> <div>Unknown Status Oil and Gas Wells</div> <div>MOE WWIS Pre-2000</div> <div>Cluster Wells (>= 6 Wells in 100m Radius)</div> <div>Groundwater Vulnerability (High)</div> </div>					NPSPA Assessment Report	
Figure 4.6: Transport Pathways - Southeast Quadrant									
		Thursday, July 14, 2011							



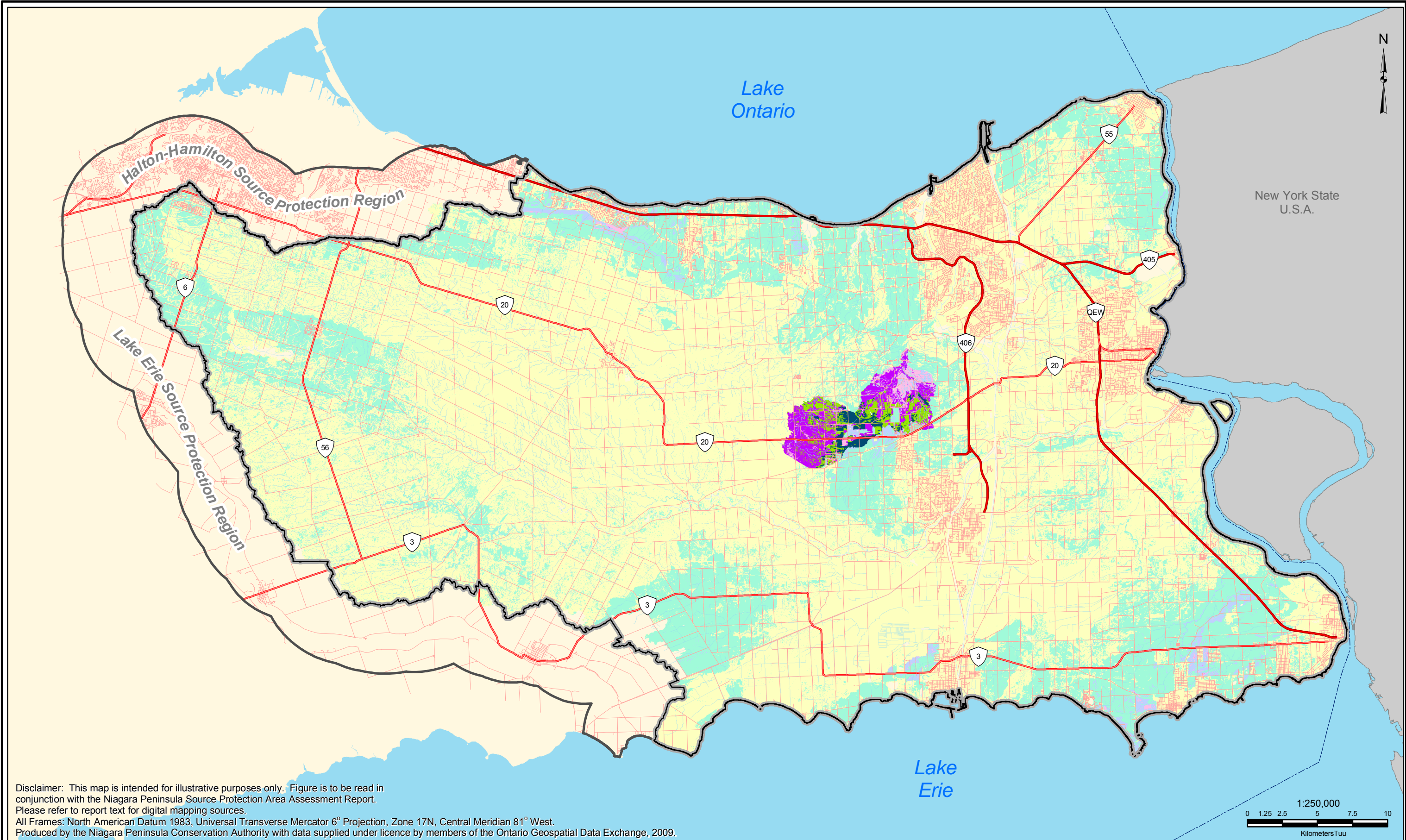
Legend <div> <div> <div>--- International Boundary</div> <div>Major Highways</div> <div>Highways</div> <div>Watercourse</div> </div> <div> <div>Ponds, Reservoirs, Lakes</div> <div>Extended Context Area</div> <div>Source Water Protection Area</div> <div>Welland Canal on Bedrock</div> </div> <div> <div>Lower Tier Municipality</div> <div>Upper Tier Municipality</div> <div>Municipally Served Water Areas</div> <div>Aggregate Operations</div> </div> </div>			<div> <div>Municipally Served Areas WWIS Wells</div> <div>Unknown Status Oil and Gas Wells</div> <div>MOE WWIS Pre-2000</div> <div>Cluster Wells (>= 6 Wells in 100m Radius)</div> <div>Groundwater Vulnerability (High)</div> </div>	<div> <div> <div>DRINKING WATER SOURCE PROTECTION ACT FOR CLEAN WATER</div> <div> <div>NIAGARA PENINSULA CONSERVATION AUTHORITY</div> <div> <div>NPSPA Assessment Report</div> <div> <div>Figure 4.7: Transport Pathways - Southwest Quadrant</div> <div> <div>Thursday, July 14, 2011</div> <div> </div> </div> </div> </div> </div> </div></div>
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Legend --- International Boundary Ponds, Reservoirs, Lakes Lower Tier Municipality --- Major Highways Extended Context Area Upper Tier Municipality --- Highways Source Water Protection Area --- Watercourse			Groundwater Vulnerability High - Vulnerability Score 6			NPSPA Assessment Report
Figure 4.9: Highly Vulnerable Aquifers						
	Thursday, July 14, 2011					




Legend

- International Boundary
- ~ Watercourse
- Major Highways
- Highways
- Ponds, Reservoirs, Lakes
- Non Modeled Areas
- Source Water Protection Area
- Extended Context Area

Annual groundwater recharge (mm/yr) 1991 - 2005

- < 53
- 53.0 - 100.0
- 100.1 - 125.0
- 125.1 - 150.0
- 150.1 - 200.0
- 200.1 - 250.0
- > 250






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Figure 4.10: Local Scale Groundwater Recharge Areas

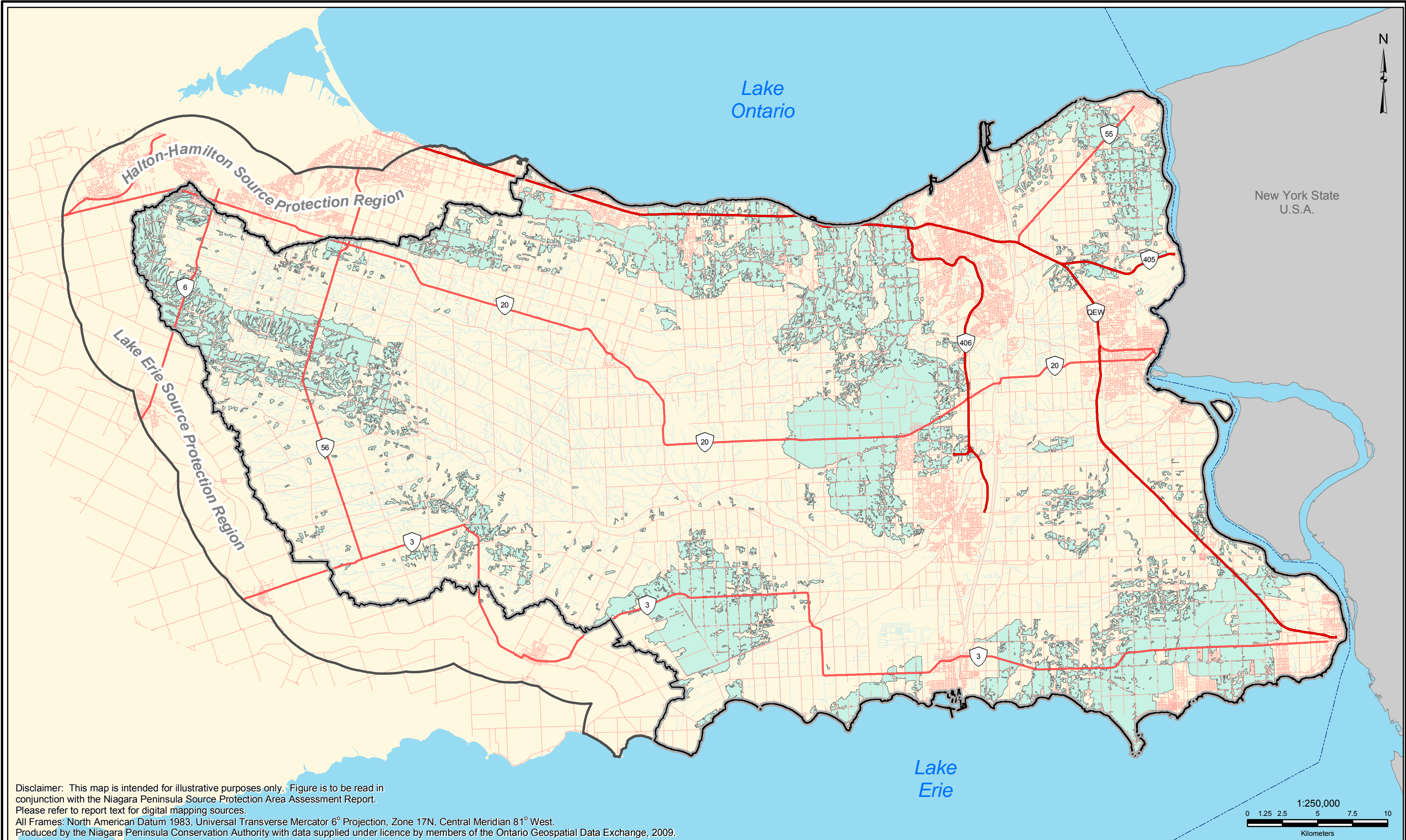


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- Legend**
- International Boundary
 - Watercourse
 - Major Highways
 - Ponds, Reservoirs, Lakes
 - Highways
 - Extended Context Area
 - Source Water Protection Area
 - Non Modeled Areas

Significant Groundwater Recharge Areas


- Rule 44(1)






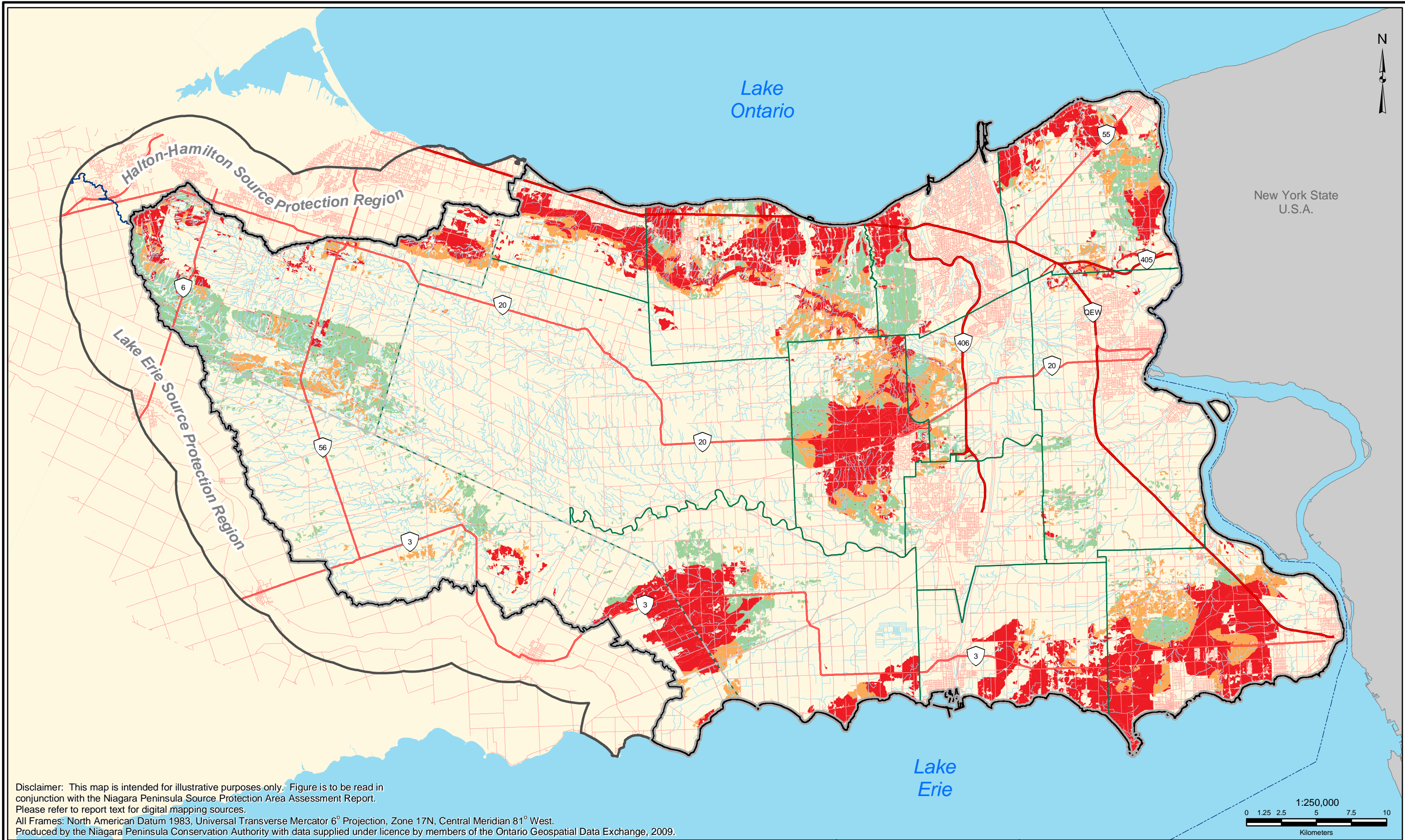
NPSPA Assessment Report

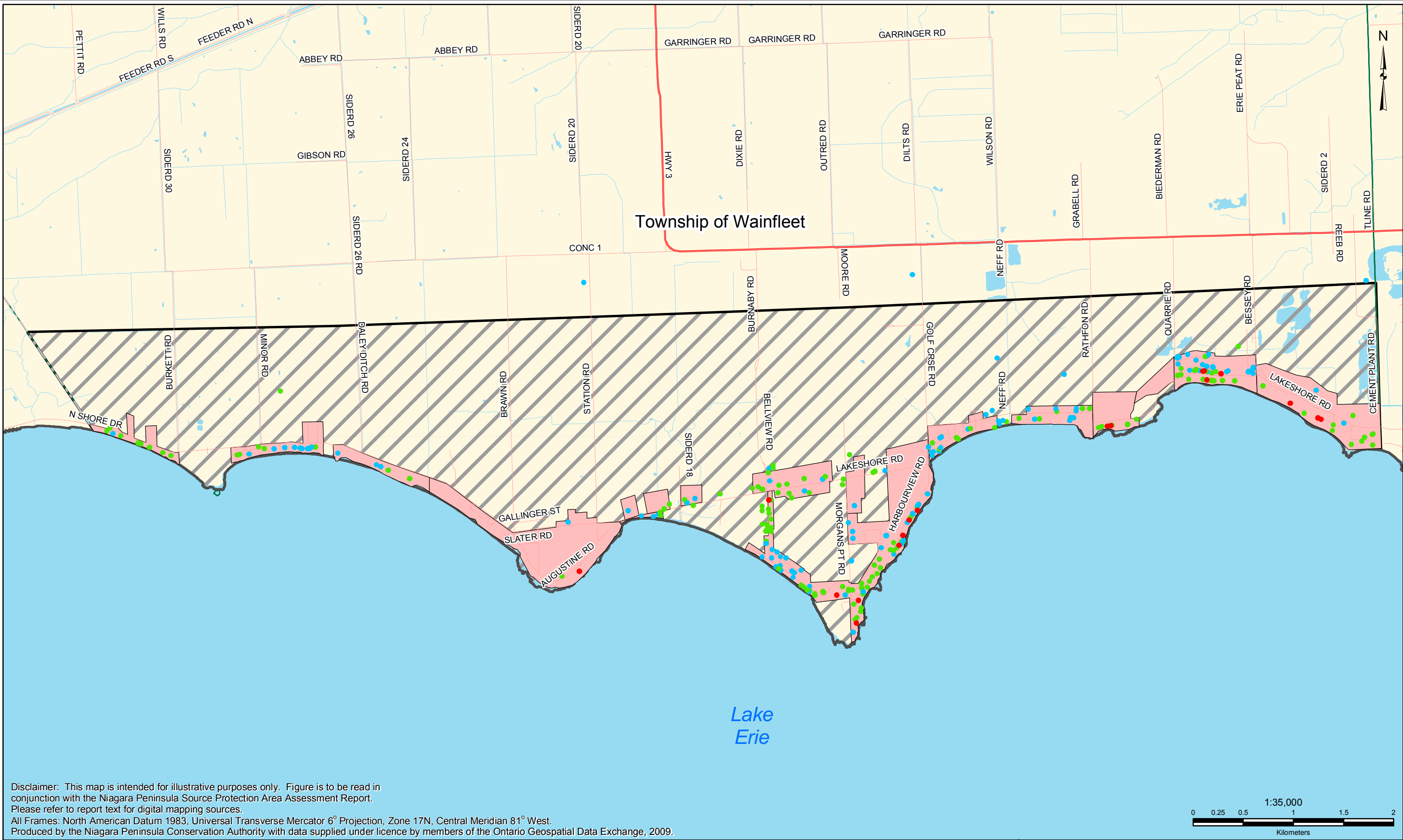
Figure 4.11: Significant Groundwater Recharge Areas



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Legend --- International Boundary --- Major Highways --- Highways --- Roads --- Watercourse --- Ponds, Reservoirs, Lakes --- Extended Context Area --- Niagara Peninsula Source Water Protection Area --- Lower Tier Municipality --- Upper Tier Municipality --- Issue Contributing Area --- Wainfleet Boil Water Advisory Area		Water Wells Tested for Nitrate • Health Criterion (10 mg/L) Exceeded • Detected • Non-Detect				NPSPA Assessment Report		
Figure 4.13: Wainfleet Lakeshore Issue Contributing Area							Thursday, July 14, 2011	