2.0 SITE CHARACTERISTICS

{This Chapter of the U.S. EPR FSAR is incorporated by reference with the following departures and/or supplements.

Chapter 2 describes the geological, seismological, hydrological, and meteorological characteristics of the Nine Mile Point 3 Nuclear Power Plant (NMP3NPP) site and vicinity. The site characteristics are described in conjunction with present and projected population distribution, land use, and site activities and controls. The NMP3NPP site characteristics were developed in accordance with the relevant requirements of Title 10 CFR Part 20, Subpart D (CFR, 2007a); Title 10 CFR Part 50 (CFR, 2007b); Title 10 CFR Part 100 (CFR, 2007c); and Regulatory Guide 1.206 (NRC, 2007).}

The U.S. EPR FSAR includes the following COL Item in Section 2.0:

> A COL applicant that references the U.S. EPR design certification will compare site-specific data to design parameter data in Table 2.1-1. If the specific data for the site falls within the assumed design parameter data and characteristics in Table 2.1-1, then the U.S. EPR standard design is bounding for the site. For site-specific design parameter data or characteristic that are outside the bounds of the assumptions presented in Table 2.1-1, the COL applicant will confirm that the U.S. EPR design acceptably meets any additional requirements that may be imposed by the more limiting site-specific design parameter data or characteristic, and that the design maintains conformance to the design commitments and acceptance criteria described in this FSAR.

This COL Item is addressed as follows:

{The NMP3NPP site-specific parameters and characteristics have been reviewed and compared to determine if they are within the bounds of the assumed parameters and characteristics for a U.S. EPR. This comparison is provided in Table 2.0-1 and Table 2.0-2. For the NMP3NPP site-specific parameters or characteristics that are outside the bounds of the conservative limiting assumptions presented in Table 2.0-1 and Table 2.0-2, justification of the acceptability of these conditions is provided in the associated section of Chapter 3, Design of Structures, Components, Equipment and Systems or as specified in the table.}

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Table 2.0-1—{U.S. EPR Site Design Envelope Comparison}

(Page 1 of 4)

	U.S. EPR FSAR Design Parameter Value/Characteristic	NMP3NPP Design Parameter Value/Characteristic
Precipitation		
Rainfall	<19.4 in/hr	16 in/hr (40.6 cm/hr) (See Section 2.4.2.3)
Snow (design: extreme live load, including 48-hour probable maximum winter precipitation)	<100 psf	94 psf (4 kg/m^2) (See section 2.3.1)
Seismology		
Horizontal SSE Acceleration	0.3g Peak (CSDRS shapes – See Section 3.7.)	Design Values are enveloped (See Sections 2.5.2 and 3.7)
Vertical SSE Acceleration)	0.3g Peak (CSDRS shapes – See Section 3.7.)	Design Values are enveloped (See Sections 2.5.2 and 3.7)
Fault Displacement Potential	No fault displacement is considered for safety-related SSCs in U.S. EPR design certification.	No fault displacement potential (See Section 2.5.3)
Soil		
Minimum Bearing Capacity (Static)	22 ksf in localized areas at the bottom of the Nuclear Island basemat and 15 ksf on average across the total area of the bottom of the Nuclear Island basemat.	204 ksf (See section 2.5.4)
Minimum Shear Wave Velocity (Low strain best estimate average value at bottom of basemat)	1000 fps	5900 fps (1800 m/s) (See Section 3.7.1.1.1, 3.7.1.3)
Liquefaction	None	None (See section 2.5.4)
Slope Failure Potential	No slope failure potential is considered in the design of safety-related SSCs for U.S. EPR design certification.	No slope failure potential that would adversely affect the safety of the proposed NMP3NPP (See Section 2.5.5)
Maximum Differential Settlement (across the basemat)	1/2 inch in 50 feet in any direction	0.083 inches in 50 ft for common Basemat (See Sections 2.5.4)
Maximum Ground Water	3.3 ft below grade	Depth to Groundwater in Oswego Sandstone is greater than 3.3 ft. below grade el. of 270 ft. in the area of the power block (See sections 2.4.12.5,2.5.4, 3.8.5.6.1)

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Table 2.0-1—{U.S. EPR Site Design Envelope Comparison}

(Page 2 of 4)

	U.S. EPR FSAR Design Parameter Value/Characteristic	NMP3NPP Design Parameter Value/Characteristic
Inventory of Radionuclides Which Could Potentially Seep Into the Groundwater		
Bounding Values for Component Radionuclide Inventory	See Table 2.1-2	See Table 2.0-2
Flood Level		
Maximum Flood (or Tsunami)	1 ft below grade	There is no flood potential that could adversely affect the safety of NMP3NPP. The maximum design basis flood level is 269 ft, 1 foot below plant Grade El. of 270 ft. Safety-related facility entrances at El 271 ft., Plant Grade El 270 ft. (See FSAR Sections 2.4.2 and 2.4.6
Wind		
Maximum Sustained Speed	145 mph (Based on 3-sec gust at 33 ft above ground level and factored for 50-yr mean recurrence interval.)	90 mph (40 m/s) (based on 3 second gust at 33 feet for 50 year recurrence interval) (See Section 2.3.1)
Importance Factor	1.15 (Safety-related structures for 100-year mean recurrence interval.)	1.07 (safety related structures for 100 year mean recurrence interval) (See Section 2.3.1, 19.1.5.4.1)
Tornado		
Maximum Pressure Drop	1.2 psi at 0.5 psi/sec	1.2 psi (83 mb) at 0.5 psi/sec (37 mb/s) (See Section 2.3.1)
Maximum Rotational Speed	184 mph	184 mph (296 km/hr) (See Section 2.3.1, 19.1.5)
Maximum Translational Speed	46 mph	46 mph (74 km/hr) (See Section 2.3.1, 19.1.5)
Maximum Wind Speed	230 mph	230 mph (370 km/hr) (See Section 2.3.1, 19.1.5)
Radius of Maximum Rotational Speed	150 ft	150 feet (45.7m) (See Section 2.3.1)
Missile Spectra	6 in Schedule 40 pipe, 6.625 in diameter x 15 ft long, 287 lb, 34.5 in^2 impact area, impact velocity of 135 ft/sec horizontal and 90 ft/sec vertical.	Design values are enveloped (See Section 3.5)
	Automobile, 16.4 ft x 6.6 ft x 4.3 ft, 4000 lb, 4086.7 in^2 impact area, impact velocity of 135 ft/sec horizontal & 90 ft/sec vertical. (Automobile missile is considered at elevations up to 30.0 ft above grade elevation.)	Design values are enveloped (See Section 3.5)
	Solid steel sphere, 1 in diameter, 0.147 lb, 0.79 in^2 impact area, impact velocity of 26 ft/sec horizontal & 17 ft/sec Vertical.	Design values are enveloped (See Section 3.5)

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Table 2.0-1—{U.S. EPR Site Design Envelope Comparison}

(Page 3 of 4)

	U.S. EPR FSAR Design Parameter Value/Characteristic			NMP3NPP Design Parameter Value/Characteristic
Temperature				
Air	0% Exceedance Values	Maximum	115°F Dry Bulb / 80°F Wet Bulb (coincident)	97.6°F Dry Bulb /74.9°F Wet Bulb (coincident) (See Section 2.3.1)
			81°F Wet Bulb (non-coincident) for UHS Design only	82.3°F Wet Bulb (non-coincident) for UHS Design only Value bounded by U.S. EPR design envelope. (See Section 2.3.1)
		Minimum	-40°F	-18°F (See Section 2.3.1)
	1% Exceedance Values	Maximum	100°F Dry Bulb / 77°F Wet Bulb (coincident)	85.6°F / 71.3°F (See Section 2.3.1)
			80°F Wet Bulb (non-coincident) for UHS Design only	73.8°F (See Section 2.3.1)
		Minimum	-10°F	22.3°F (See Section 2.3.1)
UHS Meteorological Conditions				
Conditions resulting in Maximum Evaporation and Drift Loss of Water from the UHS (Section 2.3.1)			As presented in Table 2.1-3 – Design Values for Maximum Evaporation and Drift Loss of Water from the UHS	Design Values are enveloped (See Section 2.3.1)
Conditions resulting in Minimum Water Cooling in the UHS (Section 2.3.1)			As presented in Table 2.1-4 – Design Values for Minimum Water Cooling in the UHS.	Design Values are enveloped. (See Sections 2.3.1)
Potential for Water Freezing in the UHS Water Storage Facility (Sections 2.4.7 and 9.2.5)			As presented in Section 2.4.7 and 9.2.5	Engineering controls are in place to prevent freezing of UHS Water Storage (See Sections 2.3.1 and 3.8.4)
UHS Design Parameters				
Maximum UHS Evaporative Water Loss	571 gpm			571 gpm (2161 lpm) (See Section 9.2.5)
Maximum Drift Water Loss	≤0.005%			≤0.005% (See Section 2.3.1.2)
Design Cold (outlet) Water Temperature	≤95°F (max ESWS supply design limit)			≤95 °F (See Sections 2.3.1 and 9.2.5)
Atmospheric Dispersion Factors (χ/Q)				
Maximum Annual Average (0.5 mile - limiting sector)	<4.973E-6 sec/m^3			5.555E-06 sec/m^3 (note a) (See Section 2.3.5)

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Table 2.0-1—{U.S. EPR Site Design Envelope Comparison}

(Page 4 of 4)

	U.S. EPR FSAR Design Parameter Value/Characteristic	NMP3NPP Design Parameter Value/Characteristic
Accident		
0-2 hr (Exclusion Area Boundary, (EAB), 0.43 miles, symmetric portion)	<1E-3 sec/m^3	4.424E-04 sec/m^3 (See Section 2.3.4)
0-2 hr (Exclusion Area Boundary, (EAB), 0.5 miles, asymmetric portion)	<1E-3 sec/m^3	9.713E-04 sec/m^3 (See Section 2.3.4)
0-2 hr (Low Population Zone (LPZ, 1.5 miles)	<1.75E-4 sec/m^3	1.289E-04 sec/m^3 (See Section 2.3.4)
2-8 hr hr (Low Population Zone (LPZ, 1.5 miles)	<1.35E-4 sec/m^3	7.120E-05 sec/m^3 (See Section 2.3.4)
8-24 hr hr (Low Population Zone (LPZ, 1.5 miles)	<1.00E-4 sec/m^3	4.191E-05 sec/m^3 (See Section 2.3.4)
1-4 day hr (Low Population Zone (LPZ, 1.5 miles)	<5.40E-5 sec/m^3	1.860E-05 sec/m^3 (See Section 2.3.4)
4-30 day hr (Low Population Zone (LPZ, 1.5 miles)	<2.20E-5 sec/m^3	5.790E-06 sec/m^3 (See Section 2.3.4)

Notes:

(a) Value is a departure from a design parameter and is listed in Part 7 of the COL Application. Justification is provided in Section 2.3.5.

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Table 2.0-2—{Comparison of Inventory of Radionuclides Which Could Potentially Seep Into the Groundwater}

(Page 1 of 2)

	U.S. EPR FSAR Design Parameter Value/Characteristic	NMP3NPP Design Parameter Value/Characteristic (See Section 2.4.13)
Nuclide	**Activity (Ci/g)**	**Activity (Ci/g)**
Br-83	3.2E-02	3.2E-02
Br-84	1.7E-02	1.7E-02
Br-85	2.0E-03	2.0E-03
I-129	4.6E-08	4.6E-08
I-130	5.0E-02	5.0E-02
I-131	7.4E-01	7.4E-01
I-132	3.7E-01	3.7E-01
I-133	1.3E+00	1.3E+00
I-134	2.4E-01	2.4E-01
I-135	7.9E-01	7.9E-01
Cs-134	1.7E-01	4.4E-01
Cs-136	5.3E-02	1.1E-01
Cs-137	1.1E-01	1.7E-01
Cs-138	2.2E-01	2.3E-01
Cr-51	2.0E-03	2.1E-03
Mn-54	1.0E-03	1.1E-03
Fe-55	7.6E-04	8.1E-04
Fe-59	1.9E-04	2.0E-04
Co-58	2.9E-03	3.1E-03
Co-60	3.4E-04	3.6E-04
Na-24	3.7E-02	3.8E-02
Zn-65	3.2E-04	3.4E-04
W-187	1.8E-03	1.9E-03
Rb-88	1.0E+00	1.0E+00
Rb-89	4.7E-02	4.7E-02
Sr-89	6.3E-04	6.7E-04
Sr-90	3.3E-05	4.6E-05
Sr-91	1.0E-03	1.1E-03
Sr-92	1.7E-04	1.7E-04
Y-90	7.7E-06	1.1E-05
Y-91m	5.2E-04	5.4E-04
Y-91	8.1E-05	8.6E-05
Y-92	1.4E-04	1.4E-04
Y-93	6.5E-05	6.7E-05
Zr-95	9.3E-05	9.9E-05
Nb-95	9.3E-05	9.9E-05
Mo-99	1.1E-01	1.3E-01
Tc-99m	4.6E-02	5.7E-02
Ru-103	7.7E-05	1.1E-04
Ru-106	2.7E-05	6.2E-05
Rh-103m	6.8E-05	9.4E-05
Rh-106	2.7E-05	6.2E-05
Ag-110m	2.0E-07	1.0E-06
Te-127m	4.4E-04	6.6E-04
Te-129m	1.5E-03	1.9E-03

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Table 2.0-2—{Comparison of Inventory of Radionuclides Which Could Potentially Seep Into the Groundwater}

(Page 2 of 2)

	U.S. EPR FSAR Design Parameter Value/Characteristic	NMP3NPP Design Parameter Value/Characteristic (See Section 2.4.13)
Te-129	2.4E-03	3.1E-03
Te-131m	3.7E-03	4.6E-03
Te-131	2.6E-03	3.0E-03
Te-132	4.1E-02	5.0E-02
Te-134	6.7E-03	6.7E-03
Ba-137m	1.0E-01	1.6E-01
Ba-140	6.2E-04	7.1E-04
La-140	1.6E-04	1.9E-04
Ce-141	8.9E-05	9.7E-05
Ce-143	7.6E-05	8.3E-05
Ce-144	6.9E-05	7.3E-05
Pr-143	8.8E-05	9.7E-05
Pr-144	6.9E-05	7.3E-05
Np-239	8.7E-04	1.5E-03

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2.1 GEOGRAPHY AND DEMOGRAPHY

This section of the U.S. EPR FSAR is incorporated by reference with the following supplements.

The U.S. EPR FSAR includes the following COL Item in Section 2.1:

> A COL applicant that references the U.S. EPR design certification will provide site-specific information related to site location and description, exclusion area authority and control, and population distribution.

This COL Item is addressed as follows:

{Site specific information related to site location and description is addressed in Section 2.1.1. Exclusion area authority and control is addressed in Section 2.1.2, and population distribution is addressed in Section 2.1.3.}

2.1.1 SITE LOCATION AND DESCRIPTION

{Sections 2.1.1.1 through 2.1.1.3 are added as a supplement to the U. S. EPR FSAR.

2.1.1.1 Specification of Location

A site area map for the Nine Mile Point Nuclear Station (NMPNS) site is provided in Figure 2.1-1. The coordinates of the center of the containment building for NMP3NPP are provided in Table 2.1-1 for both the Geodetic Latitude/Longitude and the Universal Transverse Mercator (UTM) coordinate systems.

Figure 2.1-2 and Figure 2.1-3 depict the NMP3NPP site and the surrounding area within 50 mi (80 km) and 10 mi (16 km), respectively. The NMPNS site occupies 921 acres (373 hectares). Within the property lines of the NMPNS site are the Nine Mile Point (NMP) Unit 1 and Unit 2 Nuclear Power Plants, a meteorological tower, a firing range, a nuclear training and learning center and a retired energy information center. In association with the construction of NMP3NPP, the meteorological tower will be moved to the southern portion of the property and the firing range will be moved to the eastern portion of the property. With the exception of Nine Mile Point (NMP) Unit 1 and Unit 2 and those listed above, no other structures are located within the NMPNS site. A religious camp is located just outside of the property lines, west of the NMP3NPP site.

The NMP3NPP site is located in Oswego County, New York. The NMP3NPP site is in the north sector of Oswego County and is along the south shore of Lake Ontario. The prominent natural features of the NMP3NPP site region are several state parks, including the Mexico Point State Park, the Selkirk Shores State Park, and the Battle Island State Park, the Curtiss Gale Wildlife Management Area, the Seaway Trail, several rivers and creeks, including Oswego River, Salmon River, and Catfish Creek, and several lakes, including Silver Lake, Lake Neahtahwanta, and Lake Ontario. Lake Ontario connects to the Oswego River at the Oswego Harbor approximately 5.9 miles (9.5 km) west of the NMP3NPP site.

Oswego County includes many incorporated cities, towns, and villages, including Fulton, Hastings, Lycoming, Mexico, New Haven, Oswego, Parish, Pulaski, and Scriba. Lycoming, Mexico, New Haven, Oswego, and Scriba are located within 10 miles (16 km) of the NMP3NPP site. The Oswego County seat is Oswego, which is approximately 6 miles (9 km) west of the site.

Lake Road (County Route 1A) is the closest main road to the NMP3NPP site and runs along the south border of the site. State Routes 104 and 104B and County Routes 1, 29, and 51 are

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located south of the site, I-81 is located east of the site, and I-90 is located south of the site. Lake Road provides the main access to the site, but the road is blocked just east of the intersection of Lake Road and Lakeview Road, restricting access to the site.

One railroad is located within the vicinity of the site. The CSXT Railroad runs south of the site from Oswego, NY. There is a spur that used to serve NMP Unit 1 and Unit 2 and the James A. FitzPatrick Nuclear Power Plant (JAFNPP), but have since been disabled by paving over the portion of the tracks that cross Lakeview Road. The tracks would be reactivated for construction only; the tracks will not resume operation for any of the units after construction is completed.

The metropolitan centers closest to the NMP3NPP site are Syracuse, NY, approximately 35 miles (56 km) to the south; Rochester, NY, approximately 70 miles (113 km) to the southwest; Buffalo, NY, approximately 140 miles (225 km) to the southwest; Scranton, PA, approximately 170 miles (274 km) to the south; Albany, NY, approximately 170 miles (274 km) to the southeast; and Toronto, Ontario, Canada, approximately 235 miles (378 km) to the west.

2.1.1.2 Site Area Map

A site area map for the NMP3NPP site is provided in Figure 2.1-1. This map shows the following attributes:

- Plant property (site boundary) lines.
- Exclusion Area Boundary (EAB).
- Location and orientation of principal plant structures within the site area.
- Location of NMP Unit 1 and Unit 2 which are the only other commercial structures within the site. There are no industrial, military, transportation facilities, institutional, recreational, or residential areas on the NMP3NPP site.
- True North and Plant North.
- Highways, railways, and waterways that traverse or are adjacent to the site.
- Prominent natural and man-made features in the site area.

2.1.1.3 Boundary for Establishing Effluent Release Limits

The exclusion area is considered the restricted area. The exclusion area boundary (EAB) for NMP3NPP is a circle with a radius of approximately 2220 ft (677 m) or approximately 0.42 mi (0.68 km) except for the adjacent Ontario Bible Camp which is excluded from the EAB. The EAB is depicted on Figure 2.1-1. In accordance with 10 CFR 50.34(a)(1)(ii)(D)(1), an individual assumed to be located at any point on the EAB will not receive a radiation dose in excess of 25 rem TEDE over any two hour period following a postulated fission product release into the containment (CFR, 2007b). The EAB is established in accordance with 10 CFR 100.21(a) and 10 CFR 100.3 (CFR, 2007c).

This area will be conspicuously posted and administrative procedures, including security patrols will be imposed to control access to the area. Section 2.1.2.1 provides additional discussion regarding the control of access to the EAB.

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2.1.2 EXCLUSION AREA AUTHORITY AND CONTROL

Sections 2.1.2.1 through 2.1.2.4 are added as a supplement to the U. S. EPR FSAR.

2.1.2.1 Authority

The NMP3NPP is owned by Nine Mile Point 3 Nuclear Project, LLC and Unistar Nuclear Operating Services, LLC . has been formed to be a licensee and to operate NMP3NPP. Unistar Nuclear Operating Services is a wholly owned subsidiary of Unistar Nuclear Energy (UNE) which is a joint venture between Constellation Energy Group, Inc., Constellation Energy Nuclear Group, LLC, and Electricite de France. Unistar Nuclear Operating Services and Constellation Energy Nuclear Group, Inc, for their respective parceled areas within the NMP3NPP Exclusion Area Boundary (EAB), possess the authority to determine all activities including the exclusion and removal of personnel and property. Unistar Nuclear Operating Services and Constellation Energy Nuclear Group, for their respective parceled area within the NMP3NPP EAB, will exercise dominion and control in the event of an emergency to afford protection of public health and safety. Control access to the NMP3NPP EAB within the site boundary is provided by posting the boundary and performing security patrols.**]**

2.1.2.2 Control of Activities Unrelated to Plant Operations

No activities unrelated to plant operation are planned within the NMP3NPP EAB. No person or entity can reside, build, or conduct other activities without approval from Unistar Nuclear Operating Services, LLC and Constellation Generation Group, LLC within the NMP3NPP EAB. However, in the event that an activity unrelated to plant operation is conducted within the NMP3NPP EAB, plant security will be notified prior to commencement of the activity to ensure that all individuals engaged in the activity may be evacuated in the event of an emergency.

2.1.2.3 Arrangements for Traffic Control

The NMP3NPP site is traversed by two roads and a rail spur. Under emergency conditions, the appropriate authority is contacted in the event that it becomes necessary to control traffic on Lake Road and on Lake View Road. When requested, the Consolidated Railroad Corporation controls railroad traffic through the area.

2.1.2.4 Abandonment or Relocation of Roads

The portion of Lake Road east of its intersection with Lakeview Road traverses a portion of the NMP3NPP EAB and will be closed to public access. A new entrance road will be constructed to allow access to NMP Unit 1 and Unit 2 from Miner Road.

2.1.3 POPULATION DISTRIBUTION

The 50 mile (80 km) radius centered at the NMP3NPP site includes all or parts of ten New York counties (Cayuga, Jefferson, Lewis, Madison, Oneida, Onondaga, Ontario, Oswego, Seneca, and Wayne) and three Canada counties (Frontenac, Lennox & Addington, and Prince Edward). The population surrounding the NMP3NPP site was projected based on the two most recent U.S. Census Bureau 1990 and 2000 decennial census data (USCB, 2000). Additional population projections were obtained for 2010, 2020, and 2030 (NYC, 2008). The Census 2000 county populations were projected to 2030 using current life expectancy and survival rates, age specific fertility rates, and rates of net migration.

Population data for the Canada Census 1996 and 2001 were obtained for Ontario Province (Statistics Canada, 2008). Additional population projections for Canada were obtained for 2010, 2020, and 2030 (OMF, 2008). Quadratic or linear equations were fit to trend lines for the

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years 1990, 2000, 2010, 2020, and 2030 for U.S counties and 1996, 2001, 2010, 2020 and 2030 for Canada counties to calculate population projections for each county at decadal intervals for the period 2040 through 2080. The population distribution for the U.S. was projected within SECPOP 2000 population rosette and tables (SECPOP 2000, 2003) in 10 concentric bands at 0 to 1 mi (0 to 1.6 km), 1 to 2 mi (1.6 to 3.2 km), 2 to 3 mi (3.2 to 4.8 km), 3 to 4 mi (4.8 to 6.4 km), 4 to 5 mi (6.4 to 8.0 km), 5 to 10 mi (8.0 to 16 km), 10 to 20 mi (16 to 32 km), 20 to 30 mi (32 to 48 km), 30 to 40 mi (48 to 64 km), and 40 to 50 mi (64 to 80 km) from NMP3NPP, and 16 directional sectors, each consisting of 22 ½ degrees.

Decadal growth rate projections for New York were entered into the SECPOP 2000 (SECPOP 2000, 2003) population multiplier for each decadal time period, as well as for the year of initial plant operation and end of plant operations. This information is used for comparison against NRC population density criteria (CFR, 2007d; CFR, 2007e). It is projected that the initial plant operation will occur in 2016. The license would expire 40 years after initial operation and, for the purposes of this evaluation the year 2056 is the end of plant operation. These populations are included with the decade populations that follow and are addressed in detail in Sections 2.1.3.1 and 2.1.3.6.

A comparable method was used to assign Canadian township and city census blocks and corresponding population estimates to SECPOP 2000 sectors. The centroids for Canadian census blocks were assigned to individual sectors and the Canadian population projections were added to the U.S. SECPOP 2000 projections for a combined U.S. and Canadian population total. Canadian census blocks included Wolfe Island and the city of Kingston (Frontenac County), Amherst Island, Bath, and South Fredericksburg (Lennox and Addington County), and Athol, Adolphustown, North Marysburg, South Marysburg, and Picton (Prince Edward County).

Sections 2.1.3.1 through 2.1.3.6 are added as a supplement to the U. S. EPR FSAR.

2.1.3.1 Population Within 10 Mi (16 km)

Figure 2.1-3 shows places of significant population grouping, such as cities and towns, and other features within 10 mi (16 km) of the site. The map includes concentric circles drawn with the NMP3NPP site at the center point, at distances of 1, 2, 3, 4, 5, and 10 mi (1.6, 3.2, 4.8, 6.4, 8.0, and 16 km). The map is divided into 22 ½ degree segments with each segment centered on one of the 16 compass points. According to data in the U.S. Census Bureau 2000 decennial census data, Oswego is the largest community with a population of 17,954. Other major towns within the 10 mi (16 km) radius include Mexico (population of 1,572) and Minetto (population of 1,086) (USCB, 2000).

The resident population distribution within 10 mi (16 km) of the NMP3NPP site was computed using SECPOP 2000 (SECPOP 2000, 2003) which overlays the 2000 census block point data (the smallest unit of census data) on the grid of concentric circles and 16 directional sectors. Radii for concentric circles are defined by the user prior to SECPOP 2000 computations. SECPOP calculation results can be displayed, printed, or saved as a rosette, a table, a MACCS2 (MELCOR Accident Consequence Code System) site file, or a MACCS2 like comma separated variable file.

New York State census population projections for counties within the 10 mi (16 km) of the NMP3NPP site were obtained for 2010, 2020, and 2030 (NYC, 2008) and used with the U.S. Census data for the years 1990 and 2000 (USCB, 2000) to plot population trend lines for counties. Quadratic or linear equations were fit to trend lines to calculate population projections for each county at decadal intervals. Population projections were entered into the population multiplier in SECPOP 2000 for decadal years 2010 through 2080, and for the year 2016 and 2056 (the initial and final years of the operational license. Population multipliers in

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SECPOP 2000 are applied to the census block point data to project population within each sector of the SECPOP 2000 rosette. The overall trend for the period 2000 to 2080 is for a reduction in resident population.

The population distributions were tabulated for all distances and in all 16 directional sectors. Figure 2.1-4 through Figure 2.1-12 illustrates the population for the year 2000 and projected population for the years 2010 though 2080. Each figure was developed using ESRI Arc GIS Version 9.2 (ESRI, 2008) and the grid sectors were populated with data from the SECPOP 2000 for each time interval. Figure 2.1-13 and Figure 2.1-14 show population projections for the year of initial operation and the year of planned plant shutdown. Each figure shows cumulative population by direction and radius. It is required that projected changes in population growth "within about five years" after initial site approval is evaluated. Initial site work would occur in the 2010 to 2012 time frame. Site preparation is scheduled for 2010 and plant construction would begin about 2012. Therefore the 2010 decade population and the 2016 population for initial operation are suitable for this evaluation.

The population within 10 mi (16 km) radius is presented for the years 2000 to 2080 in Table 2.1-2 and for Oswego County in Table 2.1-3. Transient population and related location information within the 10 mi (16 km) radius is presented in Table 2.1-6 through Table 2.1-9.

2.1.3.2 Population Between 10 and 50 Mi (16 and 80 km)

The 50 mi (80 km) radius centered at the NMP3NPP site includes all or parts of 10 New York counties (Cayuga, Jefferson, Lewis, Madison, Oneida, Onondaga, Ontario, Oswego, Seneca, and Wayne) and 3 Canada counties (Frontenac, Lennox & Addington, and Prince Edward). Figure 2.1-2 identifies significant population groupings, such as cities and towns within the 50 mi (80 km) radius. Concentric rings are drawn at 10 mi (16 km) increments between 10 and 50 mi (16 and 80 km) using the NMP3NPP as the center point. Radii divided the rings into 22 ½ degree segments centered on one of the 16 compass points. Census data for the years 1990 and 2000 and population projections for the years 2010, 2020, and 2030 were used to compute population between 10 and 50 mi (16 and 80 km) employing the same methodology used to develop the 10 mi (16 km) population grid.

The population grid from 10 and 50 mi (16 to 80 km) is illustrated on Figure 2.1-2. The 50 mi (80 km) population distributions for the years 2000 through 2080 by decade and the years of initial operation and plant shutdown for NMP3NPP are shown in Figure 2.1-15 through Figure 2.1-25. Total populations for each time period, including the years of initial operation and plant shutdown, are summarized in Table 2.1-4. County population projections for counties within or intersected by the 50 mi (80 km) radius are summarized in Table 2.1-5.

2.1.3.3 Transient Population

2.1.3.3.1 Transient Population Within 10 Mi (16 km)

Recreation is the primary contributor to short-term transient population in Oswego County. In 2006, Oswego County had an estimated 494,085 overnight visitors (OC, 2006, 2008a). The transient population from overnight visitors occurred primarily in the summer recreational period from May through September. Recreational fishing contributes to the transient population with 34,960 non-resident fishing licenses sold in Oswego. Fishing charters and river guides based in Oswego have destinations on the Oswego and Salmon Rivers and Lake Ontario. Oswego hosts several local festivals which include: Harborfest, Pumpkin Fest, Riverfront Winter Carniva, Rudin's Olde Tyme Farm Days, and Warm Up Oswego Fest. Transient

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population in Oswego for Harborfest represents the largest single event. In 2006 event participation was estimated at 280,000 persons during the 4-day festival.

The U.S. Census 2000 reported that the transient population included 2,893 people in college dormitories, 722 people in nursing homes, 142 people in local jails and other confinement facilities, 94 people in homes or halfway houses for drug/alcohol abuse, 77 people in other non-institutional group quarters, 35 people in homes for the mentally retarded, 19 people in homes for the mentally ill, 11 people in religious group quarters, 6 people in agriculture workers' dormitories on farms, and 5 people in other group homes.

Table 2.1-6 (major employers), Table 2.1-7 (major recreational and attractions), Table 2.1-8 hospitals and nursing homes, and Table 2.1-9 (schools) quantify transient populations within the 10 mi (16 km) radius. The tables include addresses, latitude and longitude coordinates in relation to the NMP3NPP site. The area has four major employers. Novelis (formerly Alcan Aluminum Corporation), SUNY College at Oswego, JAFNPP, and NMP Unit 1 and Unit 2. There are two marinas (Oswego International and Wright's Landing) located in Oswego with overnight slip accommodations which are open for the recreational season May 1- October 31. The city also contains the Fort Ontario State Historic Site and three museums (H. Lee White Marine, J.D. Murray Firefighter, and Oswego Railroad). The Oswego Speedway, also located within the City of Oswego, hosts racing events and on-site camping from May to October. Special event weekends reach the speedway's capacity of 15,000 persons. There is one hospital and five nursing homes located within Oswego with a capacity of 842 persons. The Oswego County Jail is located in the City of Oswego and has an average inmate population of 140 persons. Oswego, Minetto, and New Haven have 11 elementary, middle, and high schools with the 10 mi (16 km) radius with a total student and staff population of 6,061. The SUNY College of Oswego, located within the City of Oswego, has a total student enrollment and staff of 9,375 (OC, 2008b).

The total daily transient population within the 10 mi (16 km) radius is estimated at 19,169. This estimate will fluctuate with reductions in the University student populations during the summer, and increases with recreational and tourist events from May to October. Transient populations increase substantially during special tourist and recreational events. Harborfest may add ~70,000 persons per day during the four day festival and the special events at the Oswego Speedway may add 15,000 persons for weekend events.

2.1.3.3.2 Transient Population Between 10 and 50 Mi (16 and 80 km)

Information on the transient population for the ten counties in the 10 to 50 mi (16 to 80 km) radius is provided for hospitals/medical centers, Universities, and schools. Hospitals/medical centers in the area include: Oswego Hospital (population 202, distance 5 mi (8 km); Oswego, NY), Albert Lindey Lee Memorial Hospital (population 67, distance16 mi (26 km); Fulton, NY), and the St. Josephs Hospital Health Center (population 431, distance 34 mi (55 km); Syracuse, NY). Airports certified for carrier operations include the Syracuse Hancock International (average daily passengers 6,475, distance 34 mi (55 km); Syracuse, NY; ID: SYR), and Watertown International (average daily passengers 13, distance 45 mi (72 km); Watertown, NY; ID: ART). Other small public-use airports in the area include the Oswego County Airport (distance 9 mi (14 km); Fulton, NY; ID: FZY), Airline Enterprises (distance 26 mi (42 km); Clay, NY; ID: 1H1), and Camillus Airport (distance 29 mi (47 km); Camillus, NY; ID: NY2).

There are three additional colleges within the 50 mi (80 km radius), Syracuse University (distance 36 miles; Syracuse, NY; full time enrollment: 15,859), Onondaga Community College (distance 37 mi (60 km); Syracuse, NY; full time enrollment: 5,132), and Le Moyne College (distance 38 mi (61 km); Syracuse, NY; full time enrollment: 2,517).

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Students enrolled in elementary, middle and high schools within the 50 mi (80 km) radius make up the most significant portion of the transient population. The transient student populations in elementary, middle and high schools in the ten county region is comprised of: Cayuga County (enrollment 8,041 in 40 Schools, 18 Elementary, 7 Middle, 8 High), Jefferson County (22,720 enrollment in 52 Schools, 28 Elementary, 6 Middle, 8 High), Lewis County (5,385 enrollment in 20 Schools, 8 Elementary, 3 Middle, 5 High), Madison County (12,471enrollment in 30 School, 15 Elementary, 4 Middle, 5 High), Oneida County (41,471enrollment in 102 Schools, 55 Elementary, 13 Middle,18 High), Onondaga County (179 Schools, 111 Elementary, 23 Middle, 23 High), Ontario County (19,057enrollment in 38 Schools, 18 Elementary, 7 Middle, 8 High), Oswego County (enrollment 27,308 in 49 Schools, 29 Elementary, 7 Middle, 9 High), Seneca County (5,943enrollment in 23 Schools, 11 Elementary, 2 Middle, 4 High), and Wayne County (enrollment 19,754 in 48 Schools, 21 Elementary, 10 Middle, 11 High) (NYED, 2008).

A significant contribution to the transient population is expected from recreational opportunities in the 10 county region. An economic assessment of tourism on northern New York counties estimates annual tourism at 5.081 million persons (NYT, 2008).

2.1.3.4 Low Population Zone

The Low Population Zone (LPZ) for NMP3NPP is a 1.5 mi (2.4 km) radius centered on NMP3NPP. It is completely contained within the LPZ for NMP Unit 1 and Unit 2 which consists of the area within a 4 mi (6.4 km) radius of the NMP Unit 1 stack and 3.8 mi (6.1 km) radius of the Unit 2 stack (Figure 2.1-26). For conservatism, the NMP3NPP LPZ will be defined as the entire area of the NMP Unit 1 LPZ. The communities of Hammonds Corner, Lakeview, Lycoming, North Scriba, Scriba, and Shore Oaks lie within the LPZ. Approximately 50 percent of the LPZ is comprised of Lake Ontario. There are two campgrounds located within the LPZ, K&G Lodge Twin Pines and Ontario Bible Camp. The K&G Lodge operates an 8 room lodge and 16 campsites with an occupancy that ranges from 60 to 130 persons. The Ontario Bible Camp has groups of up to 500 persons and special events with attendance up to 1,500 persons. There are no nursing homes, hospitals, prisons, or schools operating within the LPZ. Major employers within the LPZ include Novelis, JAFNPP, and NMP Unit 1 and Unit 2.

The resident population distribution within the LPZ for each decade from 2000 to 2080 is denoted as the 4 mi (3.2km) radius on Figure 2.1-4 through Figure 2.1-12. The population within the LPZ includes the years 2016 and 2056 (Figure 2.1-13 and Figure 2.1-14), the expected year of initial operations and license expiration for NMP3NPP. Population density for the 4 mi (3.2 km) radius is included in for the same time periods.

There is a significant decrease in daily transient population at the sites of major employers. All major employers operate day and night shifts. Novelis has a day shift occupancy of 690 persons which is reduced to 140 persons at night. There are similar drops in occupancy at the JAFNPP and NMP Unit 1 and Unit 2. Residents in the LPZ would have the highest population at night as residents return from commutes to worksites within Oswego and surrounding counties (Table 2.1-10).

In accordance with 10 CFR 50.34(a)(1)(ii)(D)(2), an individual located on the outer radius of the LPZ for the course of the postulated accident (during the entire period of its passage) would not receive a radiation dose in excess of 25 rem TEDE (CFR, 2007e). For NMP Unit 1 and Unit 2 the LPZ encompasses an area within 4 mi (6.4 km) radius from the Unit 1 stack. It has been determined that the NMP3NPP could achieve the 25 rem TEDE within 1.5 mi (2.4 km). On-site emergency preparedness personnel have developed an Emergency Planning Zone (EPZ) that extends beyond the NMP3NPP boundary and the associated Radioactive Emergency Plan establishes evacuation routes both on-site and off-site. Under these plans, emergency

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preparedness personnel would have an ample time to take appropriate protective measures to all affected individuals within and beyond the LPZ.

Facilities and institutions in and beyond the LPZ that may require special consideration when evaluating emergency plans are defined out to a distance of 10 mi (16 km). The 10 mi (16 km) radius includes the LPZ and approximates the NMP3NPP EPZ. Hospitals and nursing homes within the EPZ are listed in Table 2.1-8. Schools within the EPZ are listed in Table 2.1-9 and major recreational areas and attractions are listed in Table 2.1-7

2.1.3.5 Population Center

The nearest population centers that meet the definition contained in 10 CFR 100.3 (distance from the reactor to the nearest boundary of a densely populated center containing more than about 25,000 residents) are Clay, NY located 25.8 mi (41 km) from NMP3NPP with a population of 58,805, and Syracuse, New York located 34.8 mi (56 km) from NMP3NPP with a population of 147,306 (USCB, 2000). The distance between Clay, Syracuse, and NMP3NPP is approximately 17 and 23 times the 1.5 mi (2 km) radius of the NMP3NPP LPZ. Therefore, the requirement that the population center distance be at least one and one-third times the distance from the reactor to the outer boundary of the LPZ, as defined in 10 CFR Part 100.11(a)(3) (CFR, 2007d) is met.Transient populations were not used to establish the nearest population center.

The largest population center within the 10 mi (8 km) radial distance from the NMP3NPP is Oswego, New York. Oswego's population was 17,954 as reported in the 2000 Census Report (USCB, 2000). The transient student population at the State University of New York Oswego contributes 6,600 students to Oswego's population (SUNY, 2008).

2.1.3.6 Population Density

This section describes populations and resulting population densities in the years of initial operation and the end of operations. For the purposes of this study, it is assumed that initial operation of NMP3NPP begins in 2016. It is also assumed that the end of operations is upon license expiration which is currently projected to be the year 2056, 40 years thereafter.

Figure 2.1-13 and Figure 2.1-14 illustrate the projected population for the years 2016 and 2056 within the 10 mi (16 km) radius centered on the NMP3NPP . Figure 2.1-24 and Figure 2.1-25 provide site projected population data within the 50 mi (80 km) radius for the years 2016 and 2056. Additional population data is illustrated for the decades 2000 through 2080 in Figure 2.1-4 through Figure 2.1-12 for the 10 mi (16 km) vicinity and in Figure 2.1-15 through Figure 2.1-23 for the 50 mi (80 km) vicinity.

Table 2.1-11 shows the cumulative population in the year 2000 within the 30 mi (48 km) of the NMP3NPP site and the decadal years 2020 through 2080, including 2016 (the assumed initial year of operation) and the year 2056 (assumed year for end of operations). Table 2.1-12 shows the actual (2000 Census) and projected population density (persons/mi^2) to demonstrate that the population density does not exceed 500 persons/mi^2 (200 persons/km^2) at the time of the projected COL approval and within 5 years thereafter consistent with guidance provided in Regulatory Guide 4.7, Position C.4 (NRC, 1998) and Regulatory Guide 1.206 (NRC, 2007). Areas located exclusively over Lake Ontario were excluded in the calculation of population density. Areas located exclusively over water were excluded in calculating population densities.

Figure 2.1-24 illustrates that the population for the startup year (2016) is below a population density of 500 persons/mi^2 (200 persons/km^2) for all radial distances 1,2, 3, 4, 5, 10, 20, and 30 mi (1.6, 3.2, 4.8, 6.4, 8.0, 16, 32, and 49 km). The highest population density at startup (2016) is

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projected at was 288.9 persons/mi^2 (111.6 persons/km^2) at the 10 mi (16 km) radial distance. The land area calculated at this distance is 132.4 mi^2 (342.9 km^2).

Table 2.1-12 presents the total population at the end of operations data (2056). For all radial distances 1,2, 3, 4, 5, 10, 20, and 30 mi (1.6, 3.2, 4.8, 6.4, 8.0, 16, 32, and 49 km), the population is below the 1000 persons/mi^2 (400 persons/km^2) density criterion. The highest population density at 2056 is 234.5 persons/mi^2 (88.3 persons/ km^2) at the 10 mi (48 km) radial distance. The land area at the 10 mi (16 km) radial distance is 132.4 mi^2 (342.9 km^2).}

2.1.4 REFERENCES

{This section is added as a supplement to the U. S. EPR FSAR.

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Table 2.1-1—{NMP3NPP Specific Location}

Latitude/Longitude (NAD 27) (Degrees)	Latitude/Longitude (NAD 83) (Degrees)	UTM, Zone 18N (78W to 72W) (NAD 27) (Meters)	UTM, Zone 18N (78W to 72W) (NAD 83) (Meters)
N 43 30 54	N 43 30 55	North/South 4,818,776	North/South 4,818,999
W 76 25 03	W 73 25 01	East/West 385,437	East/West 385,468

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Table 2.1-2—{Population Within 10 mi (16 km) Radius of NMP3NPP (2000 — 2080)}

Year	10 mi (16 km) Radius Population
2000	39,066
2010	38,938
2016	38,408
2020	38,205
2030	36,790
2040	35,313
2050	32,943
2056	30,293
2060	29,480
2070	23,917
2080	13,815

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Table 2.1-3—{Population for Counties Within 10 mile (16 km) Radius of NMP3NPP (2000 — 2080)}

Year	Oswego County Population
2000	122,377
2010	123,400
2016	123,326
2020	123,591
2030	121,834
2040	120,218
2050	117,573
2056	115,605
2060	114,134
2070	109,901
2080	104,874

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Table 2.1-4—{Population Within 50 mi (80 km) Radius of NMP3NPP (2000 — 2080)}

Year	U.S. Population	Canada Population	Total Population
2000	898,625	73,127	971,752
2010	895,089	83,751	978,840
2016	883,825	87,613	971,438
2020	878,946	91,238	970,184
2030	846,294	97,505	943,799
2040	812,820	103,611	916,431
2050	758,178	108,218	866,396
2056	714,356	110,457	824,813
2060	678,489	111,690	790,179
2070	550,204	113,939	664,143
2080	317,674	114,994	432,668

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Table 2.1-5—{Population Census (US Census 2000 and Canada Census 2001)and Projections (2010 —2080) for Counties Within 50 mile (80 km) Radius of NMP3NPP}

	2000	2010	2016	2020	2030	2040	2050	2056	2060	2070	2080
US Counties											
Cayuga	81,963	79,881	78,126	76,638	71,809	65,561	57,869	50,674	48,730	38,146	26,117
Jefferson	111,738	111,524	111,804	111,837	111,725	111,409	110,932	110,417	110,271	109,426	108,397
Lewis	26,944	26,585	26,146	25,762	24,388	22,541	20,187	17,944	17,333	13,976	10,119
Madison	69,441	69,342	69,401	69,442	68,895	68,344	67,531	66,722	66,498	65,245	63,773
Oneida	235,469	233,761	230,177	231,681	226,702	230,276	235,272	241,368	243,184	254,010	267,750
Onondaga	458,336	442,531	431,473	423,235	398,596	369,832	336,499	306,594	298,667	256,336	209,506
Ontario	100,224	103,097	104,043	104,320	102,981	99,814	94,513	88,772	87,129	77,664	66,116
Oswego	122,377	123,400	123,326	123,591	121,834	120,218	117,573	114,885	114,134	109,901	104,874
Seneca	33,342	32,099	30,369	30,059	27,411	26,571	24,988	23,722	23,405	21,822	20,240
Wayne	93,765	96,285	97,720	98,321	98,734	97,909	95,816	93,222	92,446	87,798	81,873
Total	1,333,599	1,318,505	1,302,585	1,294,886	1,253,075	1,212,475	1,161,179	1,114,320	1,101,796	1,034,325	958,765
Canada Counties											
Frontenac	138,606	157,080	164,546	171,500	183,260	194,456	202,537	202,537	207,146	208,040	210,966
Lennox & Addington	39,461	42,740	44,259	45,350	47,840	49,738	51,088	51,088	51,773	51,890	52,142
Prince Edward	24,901	27,530	28,641	29,810	32,010	34,555	36,980	36,980	39,381	39,381	41,759
Total	**202,968**	**227,350**	**237,446**	**246,660**	**263,110**	**278,749**	**290,605**	**290,605**	**298,300**	**299,311**	**304,867**

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Table 2.1-6—{Transient Population Facilities — Major Employers Within 10 mi (16 km) Radius of NMP3NPP}

Name of Facility	Address	Location	Population
Novelis (formerly Alcan Aluminum Corporation)	448 County Route 1A Oswego, NY 13126	43°29'25.47"N 76°27'18.88"W	750
James A. FitzPatrick Nuclear Power Plant	Lake Road Scriba, NY 13126	43°31'15.54"N 76°23'52.10"W	515
Nine Mile Point Unit 1 and Unit 2	Lake Road Scriba, NY 13126	Unit 1 43°31'18.72"N 76°24'35.96"W Unit 2 43°31'22.52"N 76°24'19.27"W	1006
SUNY College at Oswego	7060 State Route 104 Oswego, NY 13126	43°70'2.23"N 76°32'36.82"W	1093

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Table 2.1-7—{Transient Population Facilities — Major Recreational Areas and Attractions Within 10 mi (16 km) Radius of NMP3NPP}

Name of Facility	Address	Location	Population
Oswego International Marina	3 Basin Street Oswego, NY 13126	43°27'45.67"N 76°31'12.60"W	(May 1-October 31) 80-160
Wright's Landing Marina	41 Lake Street Oswego, NY 13126	43°27'44.94"N 76°30'33.22"W	(May 1-October 31) 90-175
Fort Ontario State Historic Site	1 E. Forth Street Oswego, NY 13126	43°27'57.10"N 76°30'29.60"W	(Daily Average) 25
H. Lee White Marine Museum	1 W. First Street Oswego, NY 13126	43°27'51.85"N 76°30'56.35"W	(Daily Average) 16
John D. Murray Firefighter Museum	East Side Fire Station, E. Cayuga St Oswego, NY 13126	43°27'35.01"N 76°30'22.38"W	(Daily Average) 12
Oswego Railroad Museum	56 W. 1st Street Oswego, NY 13126	43°27'40.50"N 76°30'49.37"W	(Daily Average) 12
New Oswego Speedway	300 E. Albany St. Oswego, NY 13126	43°27'25.13"N 76°28'54.85"W	(May 1-October31) Weekend Average 500-800 Special Events 15,000

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Table 2.1-8—{Special Facilities — Hospitals and Nursing Homes Within the 10 mi (16 km) Zone of NMP3NPP}

Name	Address	Location	Total Population
Oswego Hospital	110 West 6th Street Oswego, NY 13126	43°27'14.10"N 76°30'58.86"W	202
Loretto-Oswego Health and Rehabilitation Center	132 Ellen Street Oswego, NY 13126	43°26'36.64"N 76°30'45.07"W	120
Pontiac Nursing Home	303 East River Road Oswego, NY 13126	43°26'41.49"N 76°29'33.61"W	80
Seneca Hill Manor Inc	20 Manor Drive Oswego, NY 13126	43°23'45.85"N 76°27'33.04"W	120
St Luke Residential Health Care Facility Inc	299 East River Road Oswego, NY	43°26'41.44"N 76°29'33.61"W	200
Sunrise Nursing Home	17 Sunrise Drive Oswego, NY 13126	43°26'44.09"N 76°31'41.07"W	120

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Table 2.1-9—{Special Facilities — Schools Within 10 mi (16 km) Zone of NMP3NPP}

Name of School	Address	Location	Student Enrollment	Staff	Total Population
Charles E. Riley Elementary School	269 E 8th St Oswego, NY 13126	43°26'55.52"N 76°29'38.35"W	485	37	522
Kingsford Park Elementary School	275 W Fifth St Oswego, NY 13126	43°26'44.46"N 76°31'53.46"W	444	33	477
Fitzhugh Park Elementary School	E 10th and Bridge Sts Oswego, NY 13126	43°27'39.30"N 76°29'49.61"W	481	37	518
Leighton Elementary School	1 Buccaneer Blvd Oswego, NY 13126	43°27'6.51"N 76°31'30.96"W	544	39	583
Minetto Elementary School	2411 County Rt. 8 Minetto, NY 13115	43°23'58.33"N 76°28'28.04"W	456	20	476
Oswego Community Christian School	400 East Albany St Oswego, NY 13126	43°27'25.28"N 76°28'36.18"W	101	6	107
Oswego High School	2 Buccaneer Blvd Oswego, NY 13126	43°27'1.59"N 76°31'28.54"W	1,723	112	1,835
Oswego Middle School	Mark Fitzgibbons Dr Oswego, NY 13126	43°25'50.65"N 76°30'14.67"W	841	61	902

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Table 2.1-10—{Commuting Patterns To and From Oswego County (2000)}

Parameter	County	Count
Worker Outflow from Oswego County to Counties in 50 mi (80km) Radius	Cayuga	348
	Jefferson	428
	Lewis	3
	Madison	311
	Oneida	556
	Onondaga	18,231
	Ontario	49
	Seneca	145
	Wayne	127
	Total	20,198
Worker Outflow from Oswego County to Areas Outside 50 mi (80 km) Radius	Total	1.468
Worker Inflow to Oswego County from Counties in 50 mi (80 km) Radius	Cayuga	831
	Jefferson	362
	Lewis	38
	Madison	105
	Oneida	415
	Onondaga	2,925
	Ontario	9
	Seneca	32
	Wayne	138
	Total	4,855
Worker Inflow to Oswego County from Areas Outside 50 (80km) Radius	Total	672
Net Worker Outflow from Oswego County		16,139

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Table 2.1-11—{Actual (2000) and Projected (2016-2080) Population Within the 1 mi (1.6 km) to 30 mi (48 km) Zones of NMP3NPP}

	SECPOP Radius (Land Area)							
Year	1 mi (1.6 km) (2.1 mi^2)	2 mi (3.2 km) (6.8 mi^2)	3 mi (4.8 km) (14.1 mi^2)	4 mi (6.4 km) (23.1 mi^2)	5 mi (8.0 km) (34.2 mi^2)	10 mi (16 km) (132.4 mi^2)	20 mi (32 km) (613.2 mi^2)	30 mi (48 km) (1,544.3 mi^2)
2000	90	677	1,502	3,453	5,698	39,066	101,665	264,727
2016	88	666	1,476	3,398	5,608	38,408	100,051	260,392
2020	88	664	1,471	3,380	5,575	38,205	99,484	258,977
2030	85	636	1,414	3,254	5,367	36,790	95,773	249,331
2040	81	612	1,359	3,124	5154	35,313	91,945	239,412
2050	75	570	1,268	2,916	4,809	32,943	85,778	223,349
2056	71	540	1,197	2,748	4,532	31,051	80,806	210,417
2060	68	511	1,136	2,611	4,303	29,480	76,765	199,870
2070	54	413	917	2,113	3,488	23,917	62,270	162,119
2080	32	238	528	1,218	2,012	13,815	35,921	93,588

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Table 2.1-12—{Actual (2000) and Projected (2016-2056) Population Density (persons/mi^2) Within the 1 mi (1.6 km) to 30 mi (48 km) Zones of NMP3NPP}

	SECPOP Radius (Land Area)							
Year	1 mi (1.6 km) (2.1 mi^2)	2 mi (3.2 km) (6.8 mi^2)	3 mi (4.8 km) (14.1 mi^2)	4 mi (6.4 km) (23.1 mi^2)	5 mi (8.0 km) (34.2 mi^2)	10 mi (16 km) (132.4 mi^2)	20 mi (32 km) (613.2 mi^2)	30 mi (48 km) (1,544.3 mi^2)
2000	42.9	99.6	106.5	101.0	166.6	295.1	165.8	171.4
2016	41.9	97.9	104.8	147.1	164.0	290.1	163.2	168.6
2020	41.9	97.6	104.3	98.8	163.0	288.6	162.2	167.7
2030	40.5	93.5	100.3	95.1	156.9	277.9	156.2	161.5
2040	38.6	90.0	96.4	91.3	150.7	266.7	149.9	155.0
2050	35.7	83.8	89.9	85.3	140.6	248.8	139.9	144.6
2056	33.8	79.4	85.0	119.0	132.5	234.5	131.8	136.3
2060	32.4	75.1	80.6	76.3	125.8	222.7	125.2	129.4
2070	25.7	60.7	65.0	61.8	102.0	180.6	101.5	105.0
2080	15.2	35.0	37.4	52.7	58.8	104.3	152.6	146.6

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Figure 2.1-1—{NMP3NPP Site Area Map}

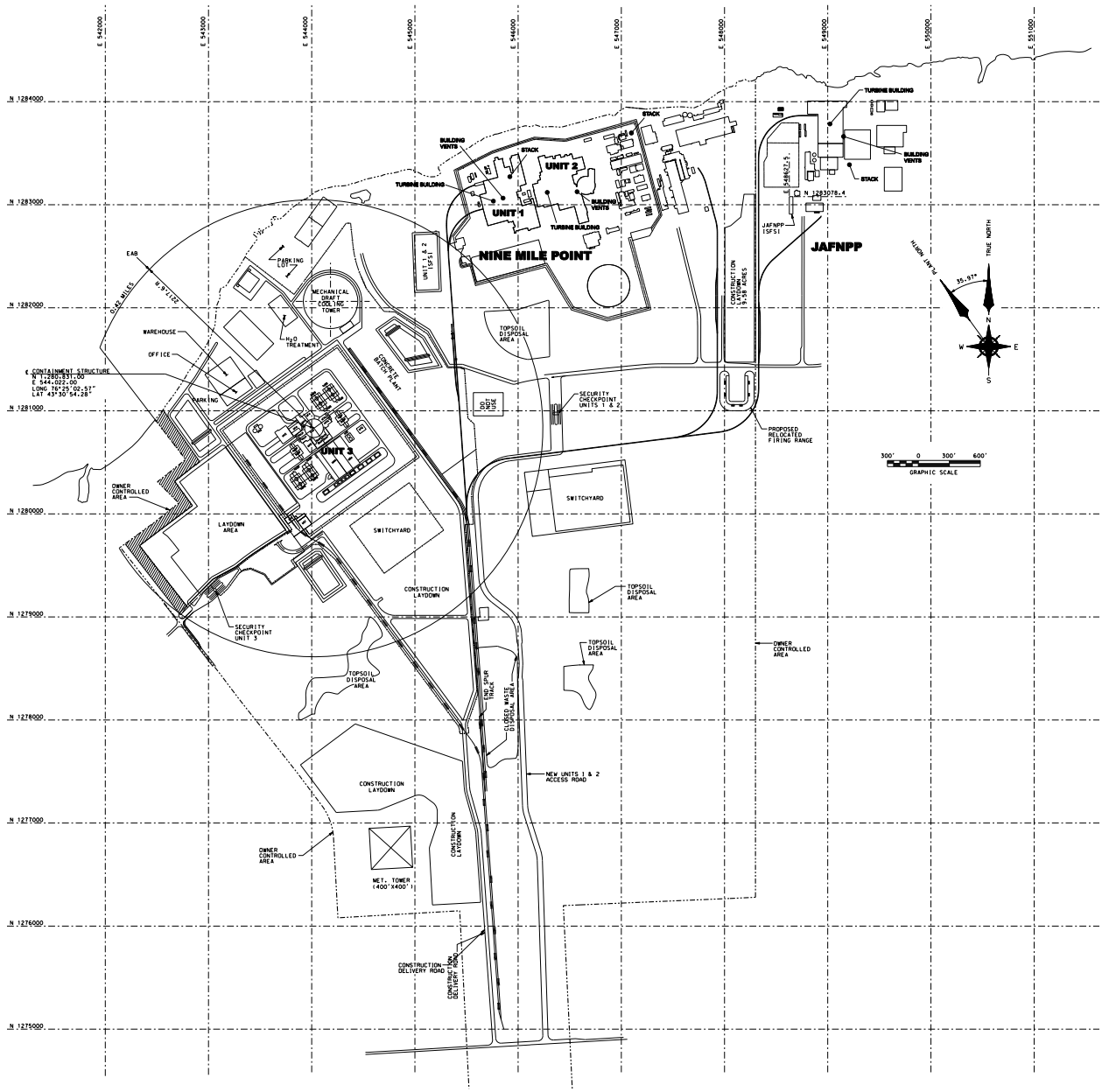

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Figure 2.1-2—{50 mi (80 km) Surrounding Area}

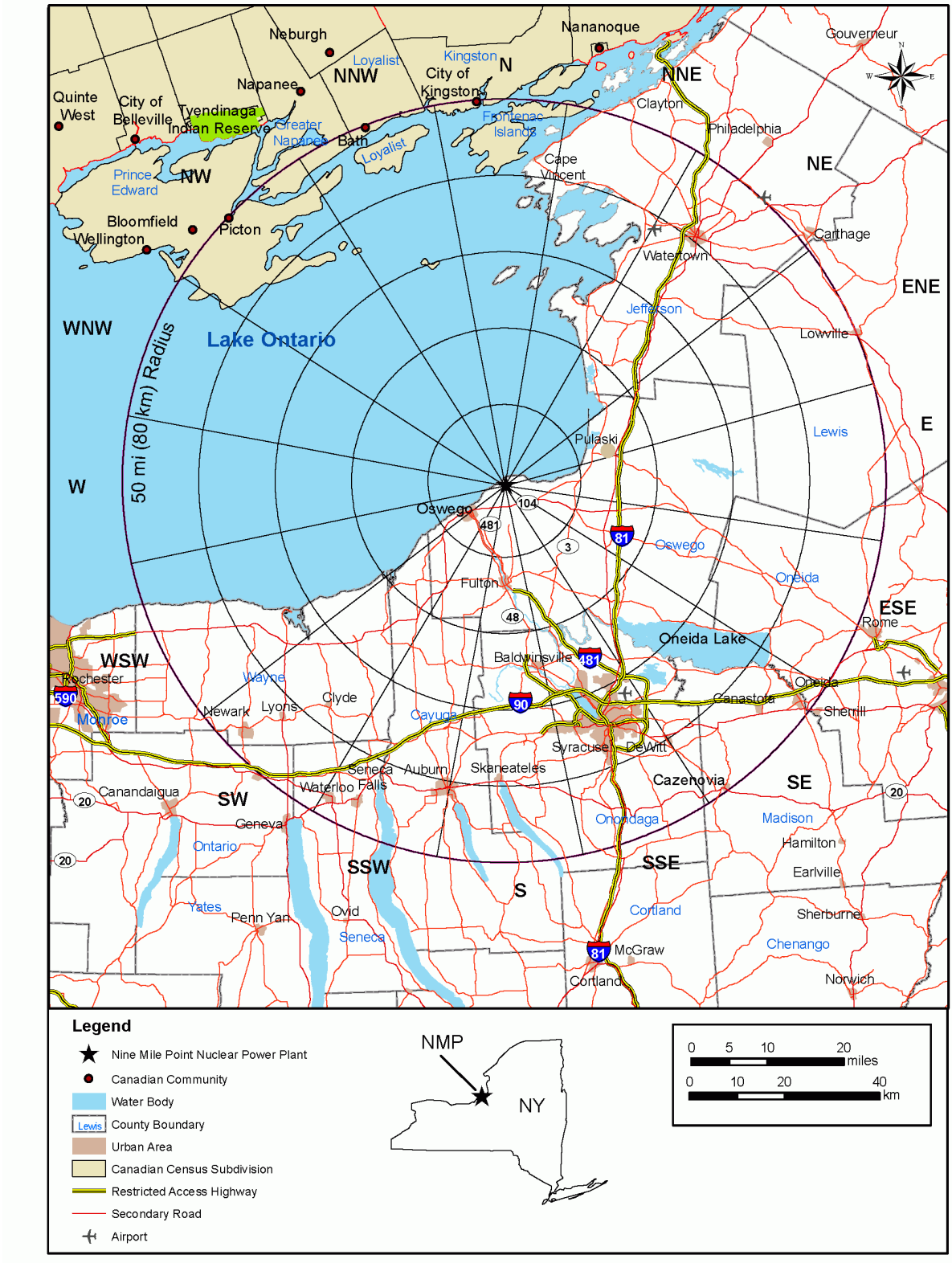

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Figure 2.1-3—{10 mi (16 km) Surrounding Area}

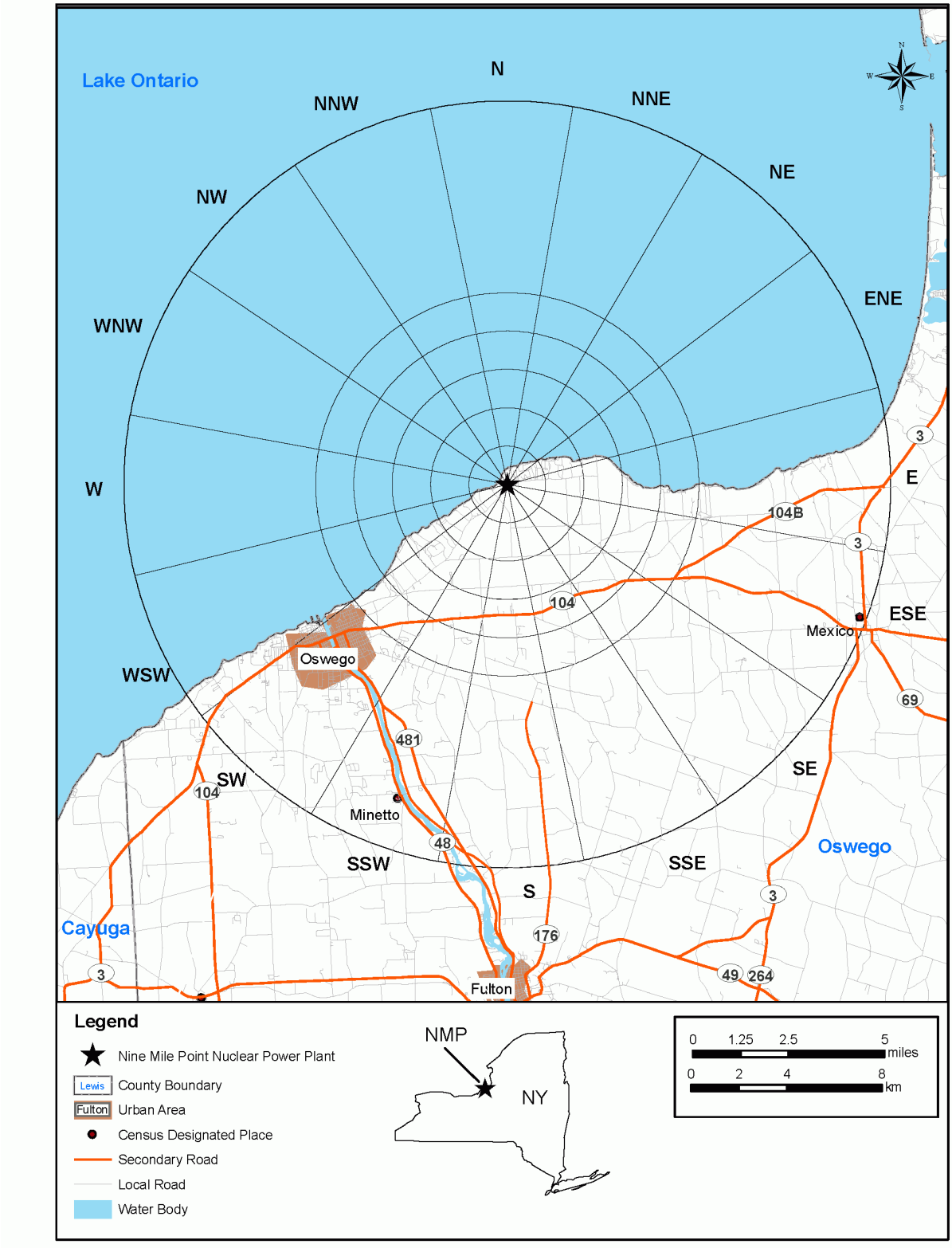

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Figure 2.1-4—{10 mi (16 km) 2000 Population Distribution}

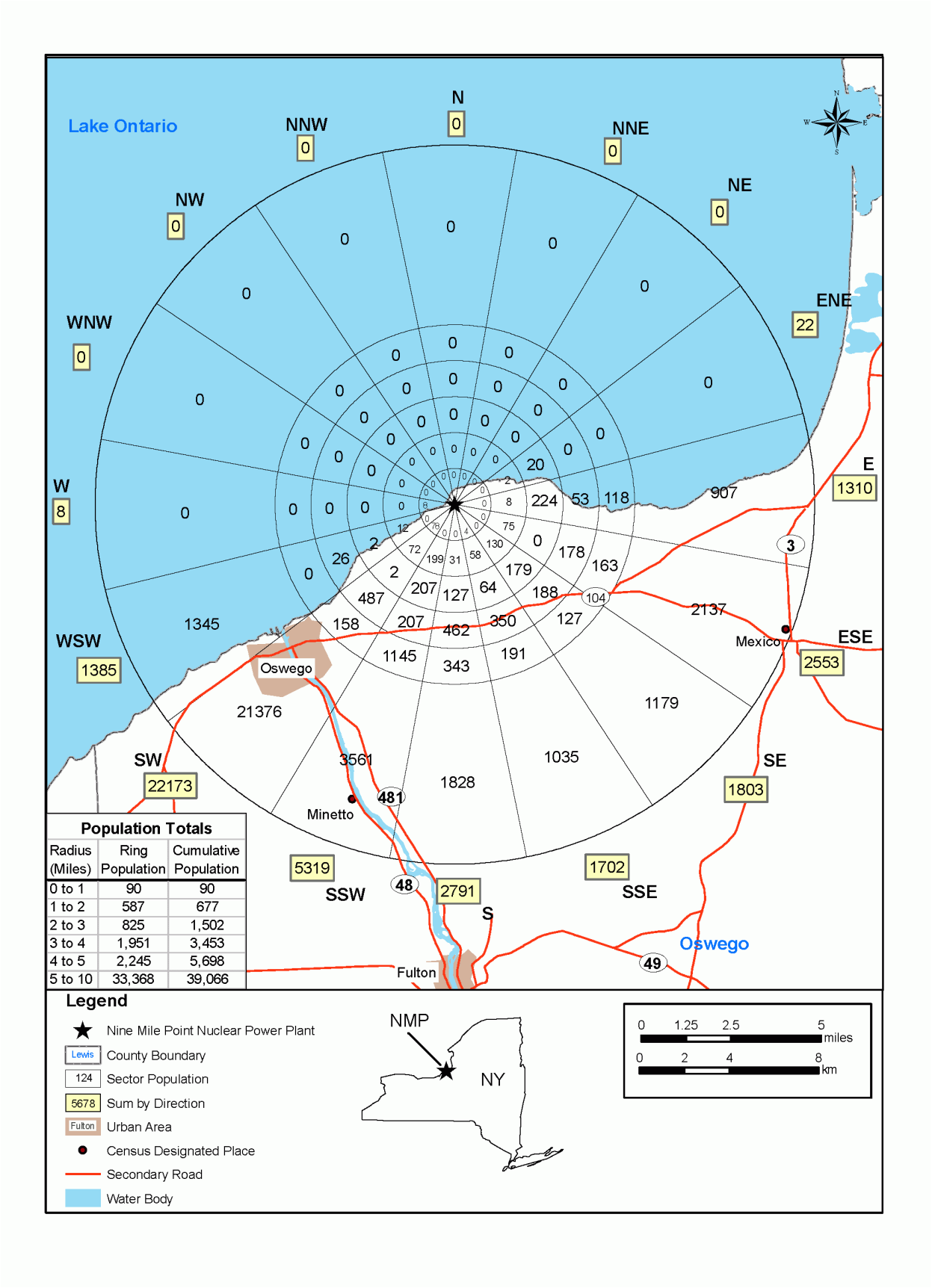

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Figure 2.1-5—{10 mi (16 km) 2010 Population Distribution}

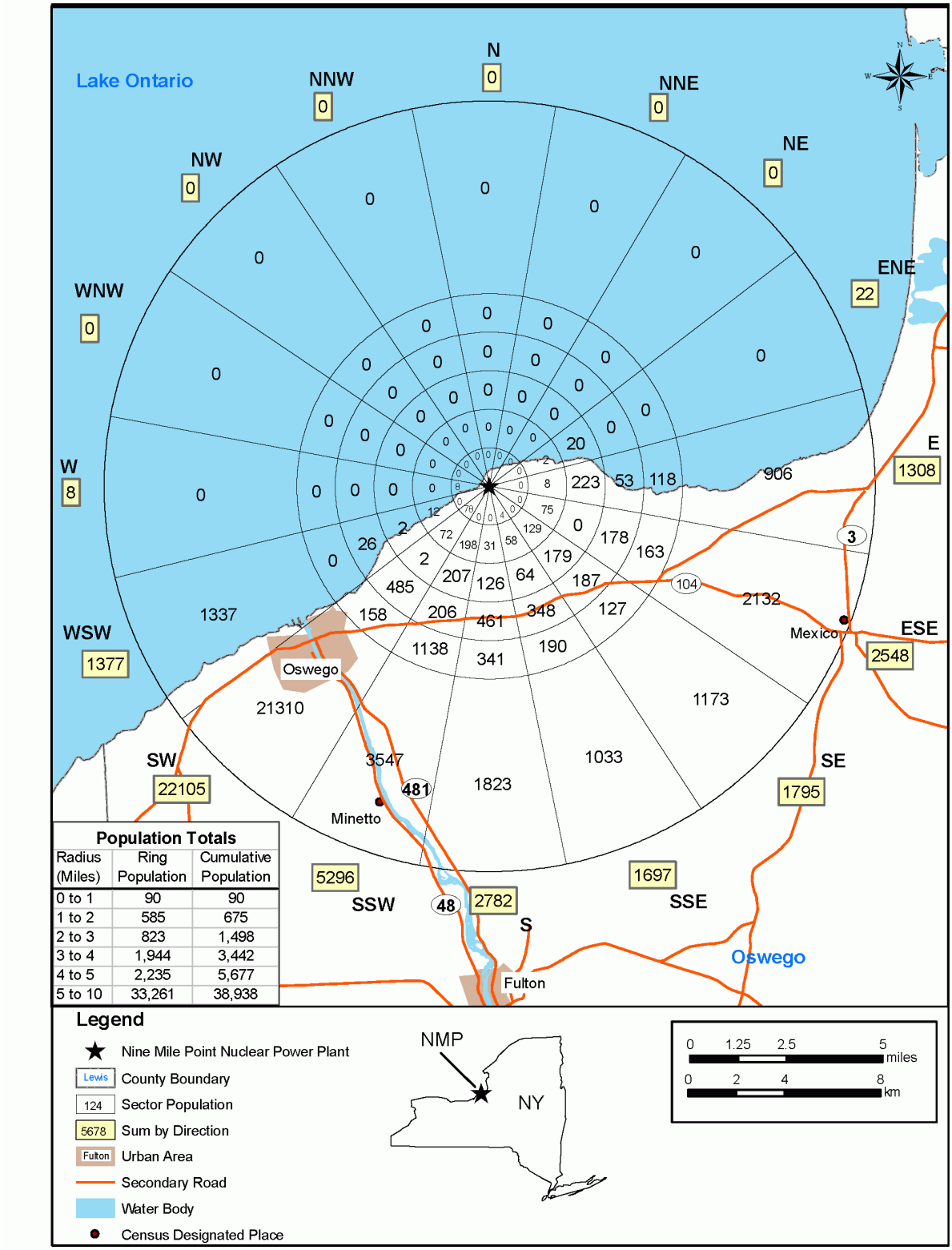

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Figure 2.1-6—{10 mi (16 km) 2020 Population Distribution}

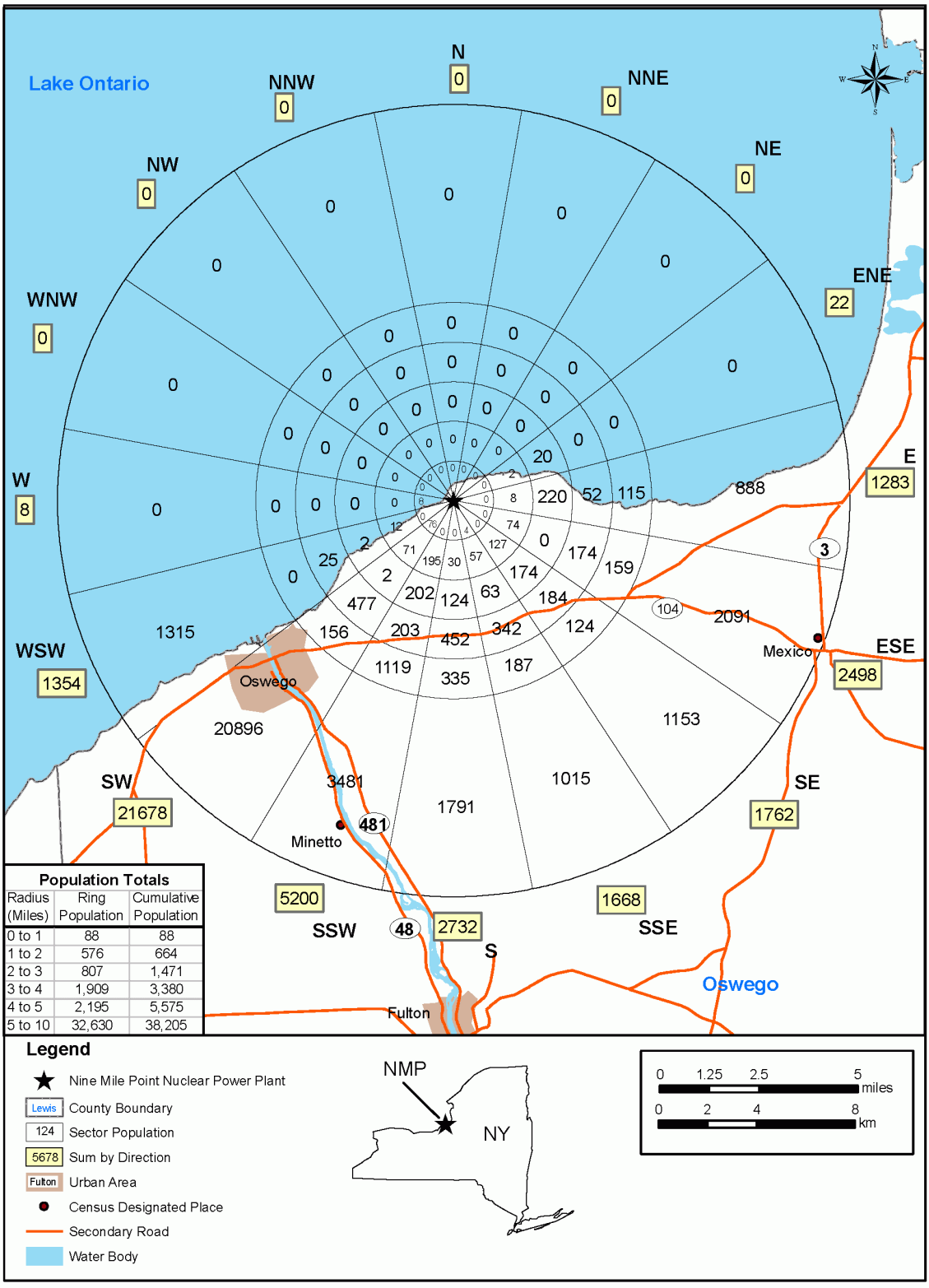

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Figure 2.1-7—{10 mi (16 km) 2030 Population Distribution}

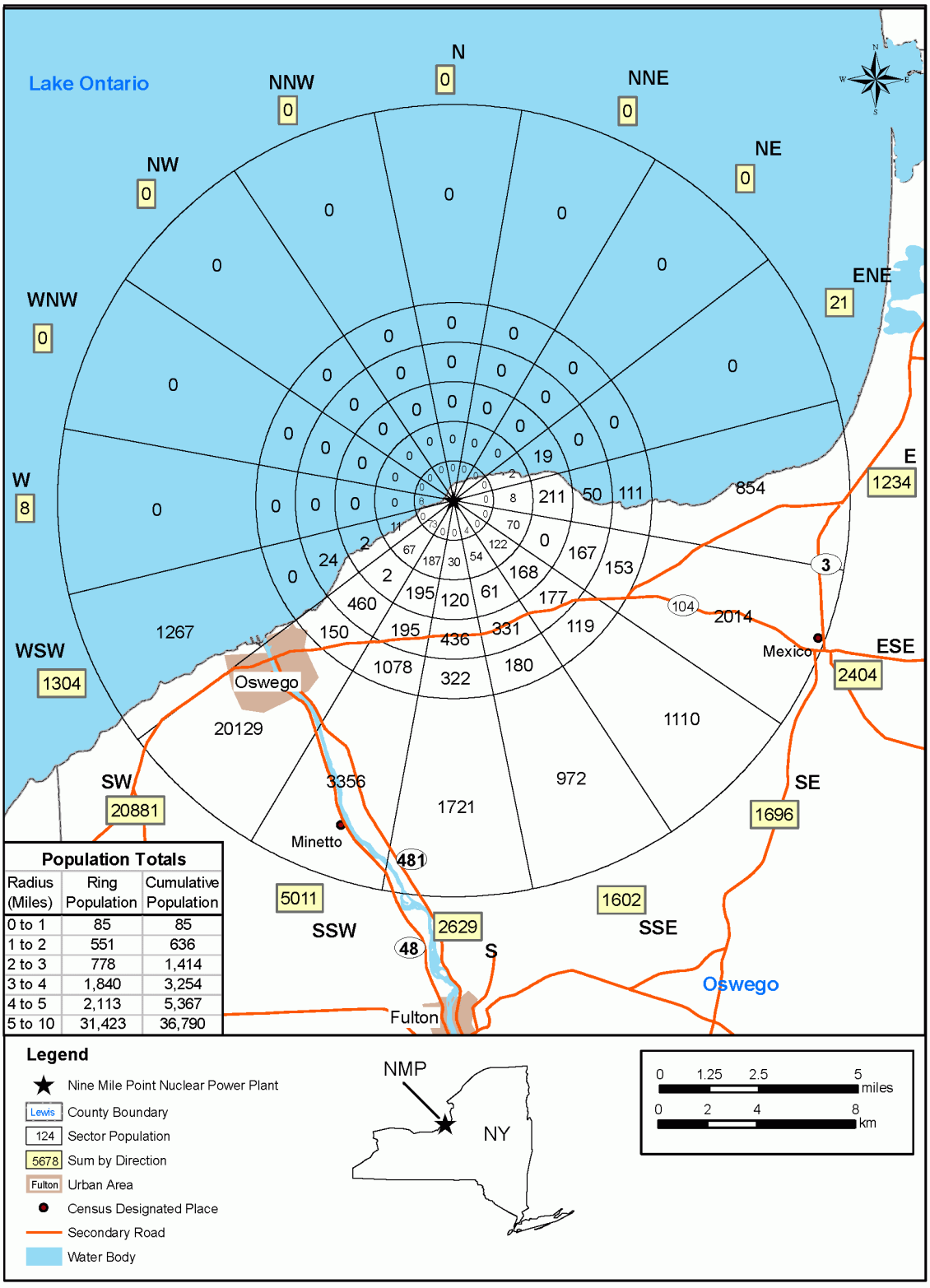

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Figure 2.1-8—{10 mi (16 km) 2040 Population Distribution}

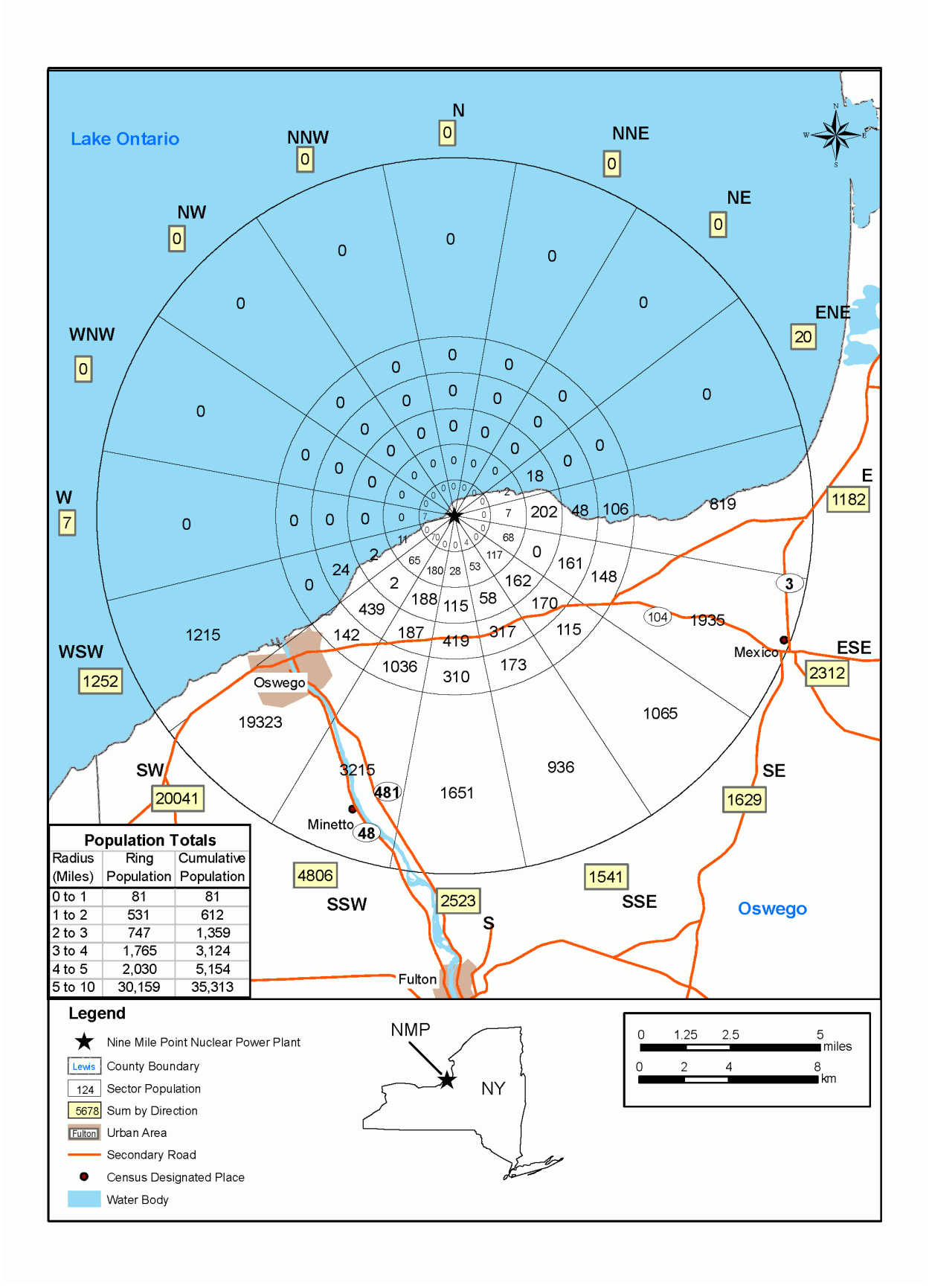

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Figure 2.1-9—{10 mi (16 km) 2050 Population Distribution}

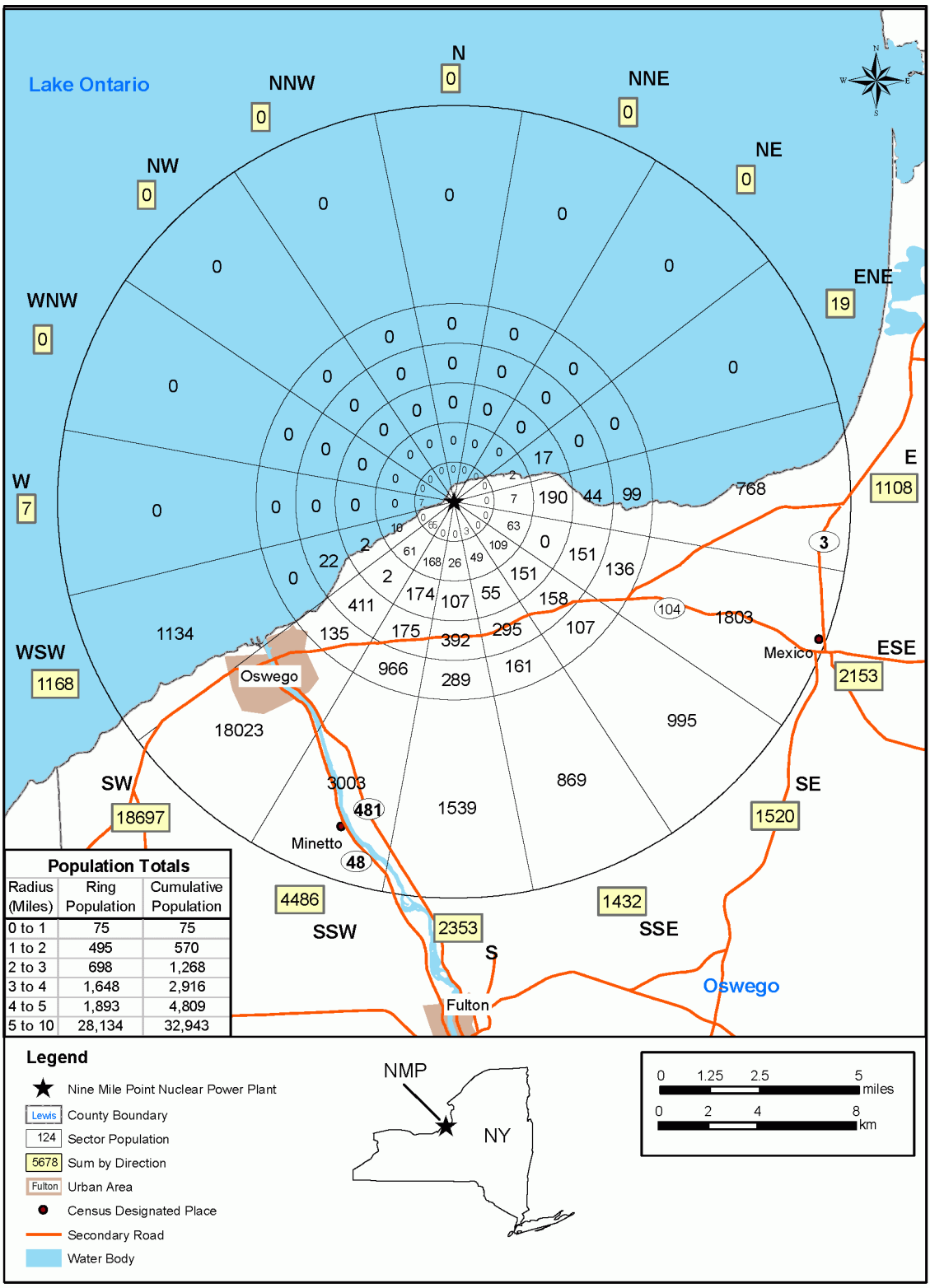

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Figure 2.1-10—{10 mi (16 km) 2060 Population Distribution}

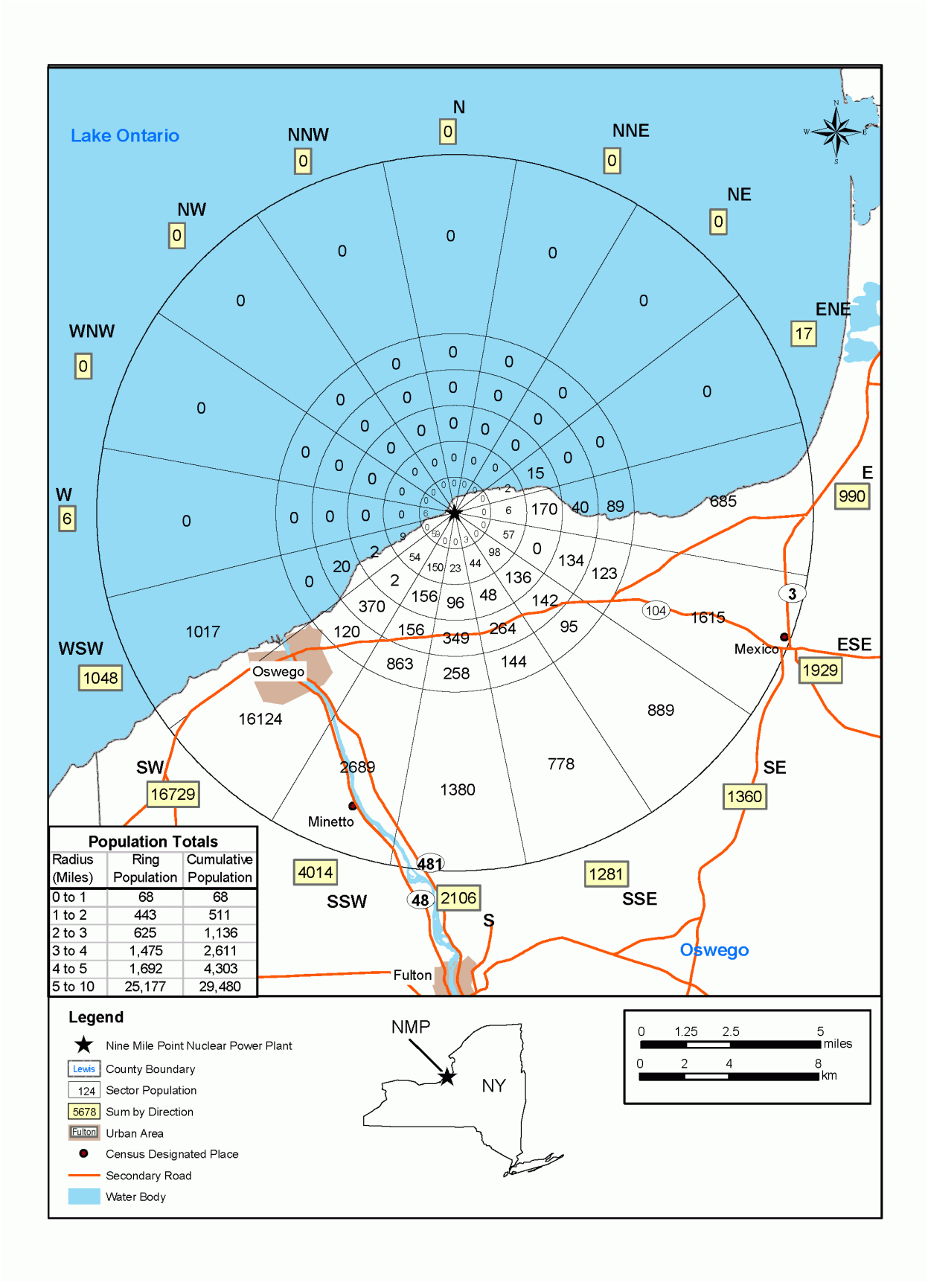

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Figure 2.1-11—{10 mi (16 km) 2070 Population Distribution}

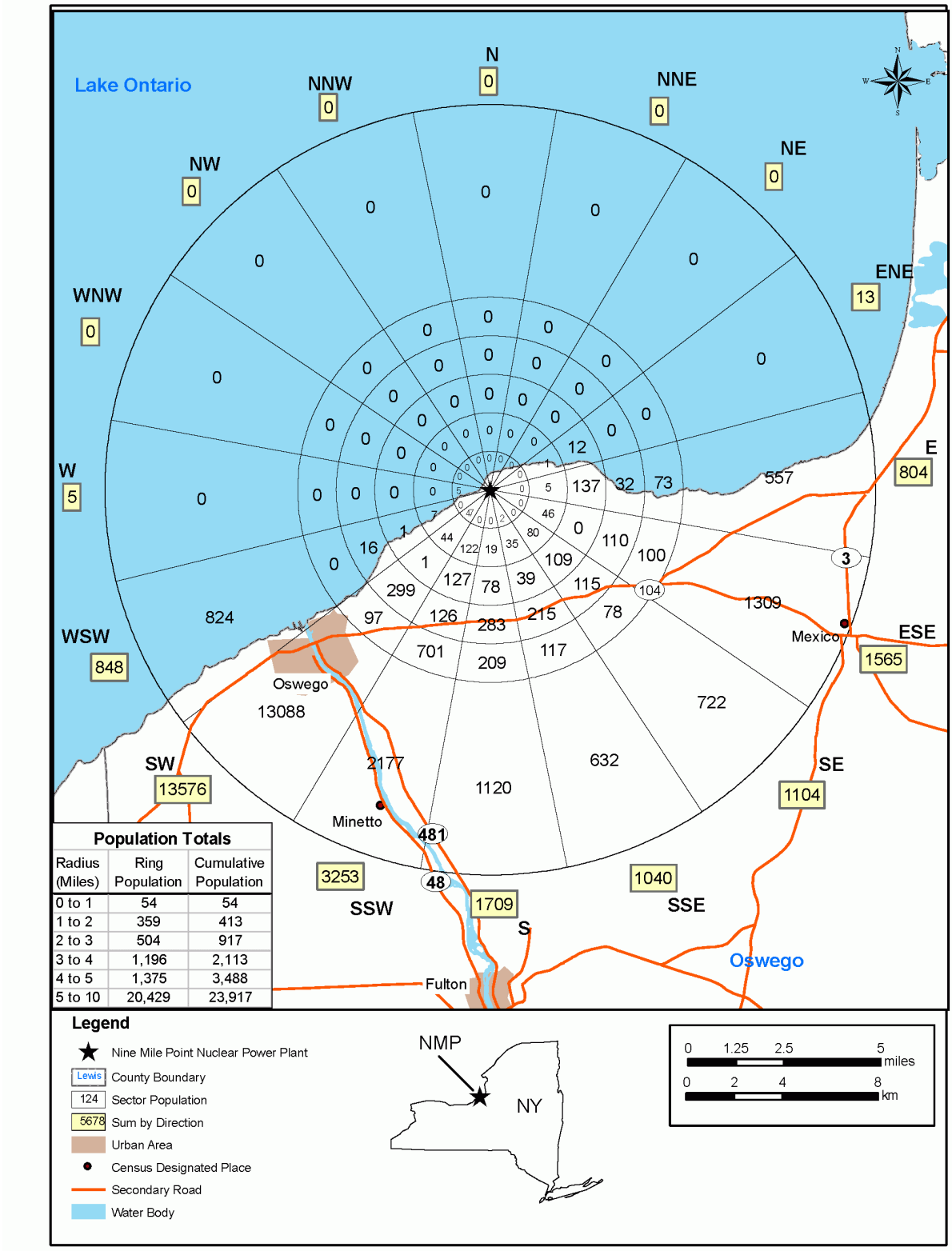

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Figure 2.1-12—{10 mi (16 km) 2080 Population Distribution}

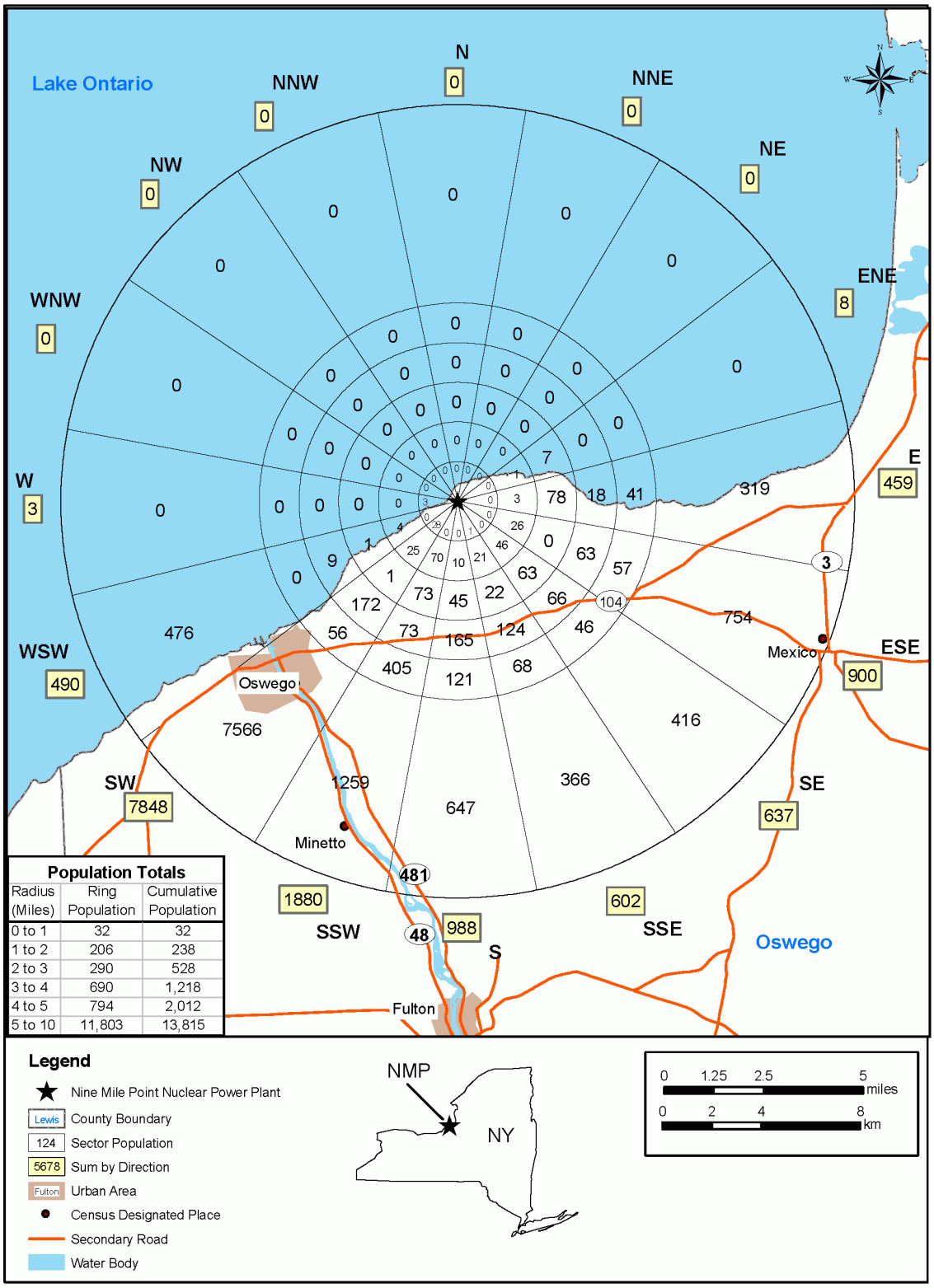

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Figure 2.1-13—{10 mi (16 km) 2016 Population Distribution}

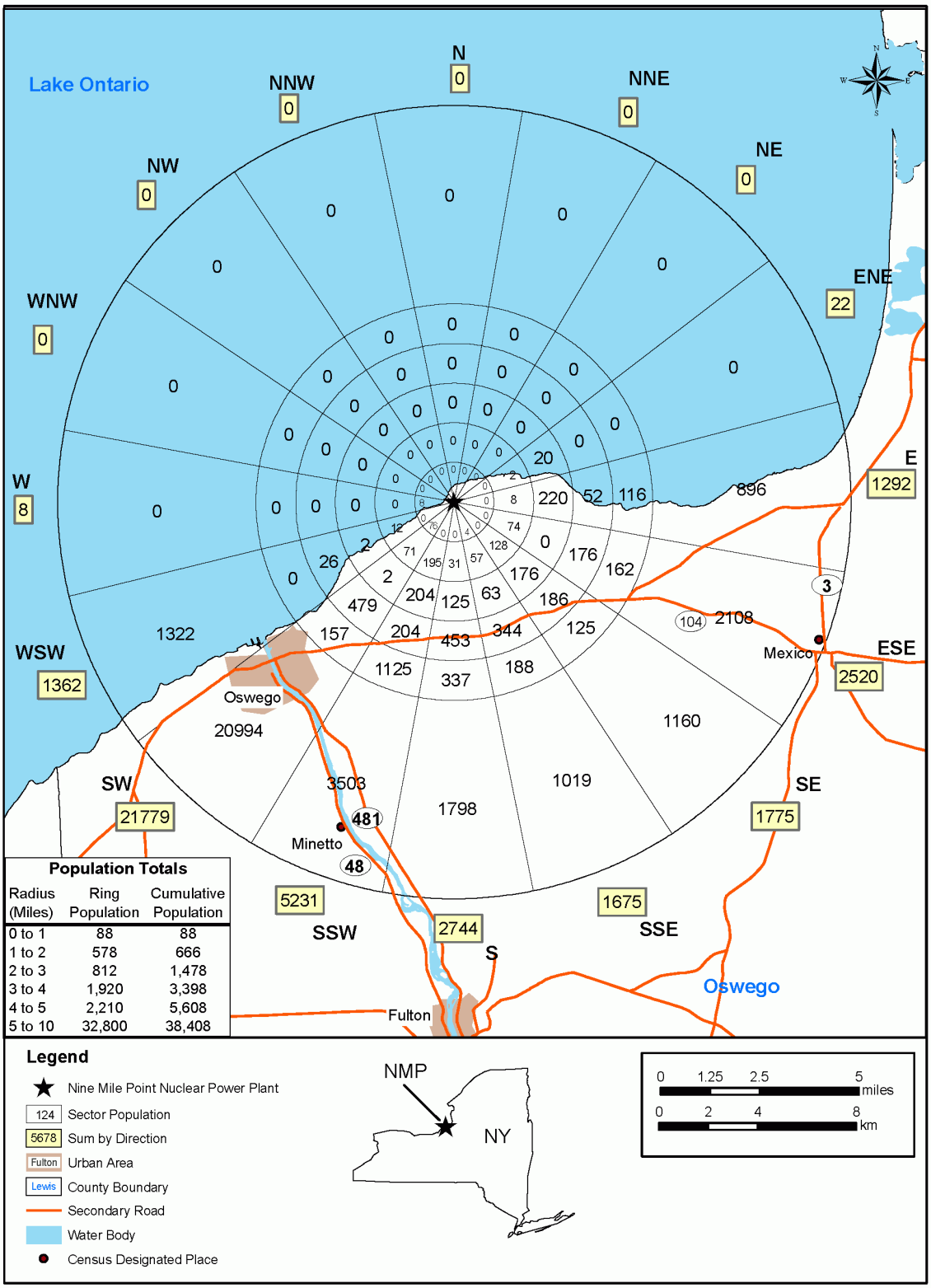

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Figure 2.1-14—{10 mi (16 km) 2056 Population Distribution}

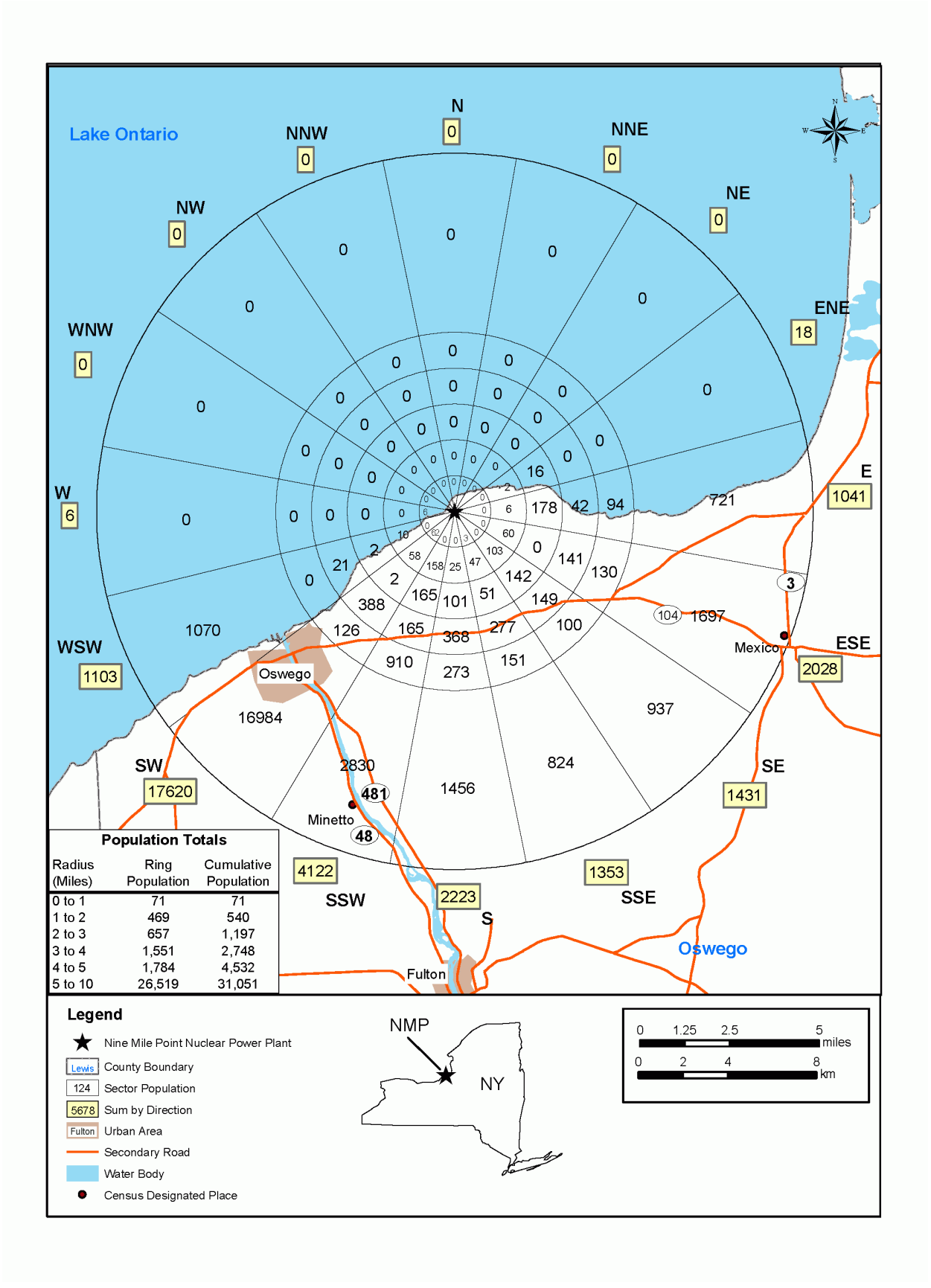

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Figure 2.1-15—{50 mi (80 km) 2000 Population Distribution}

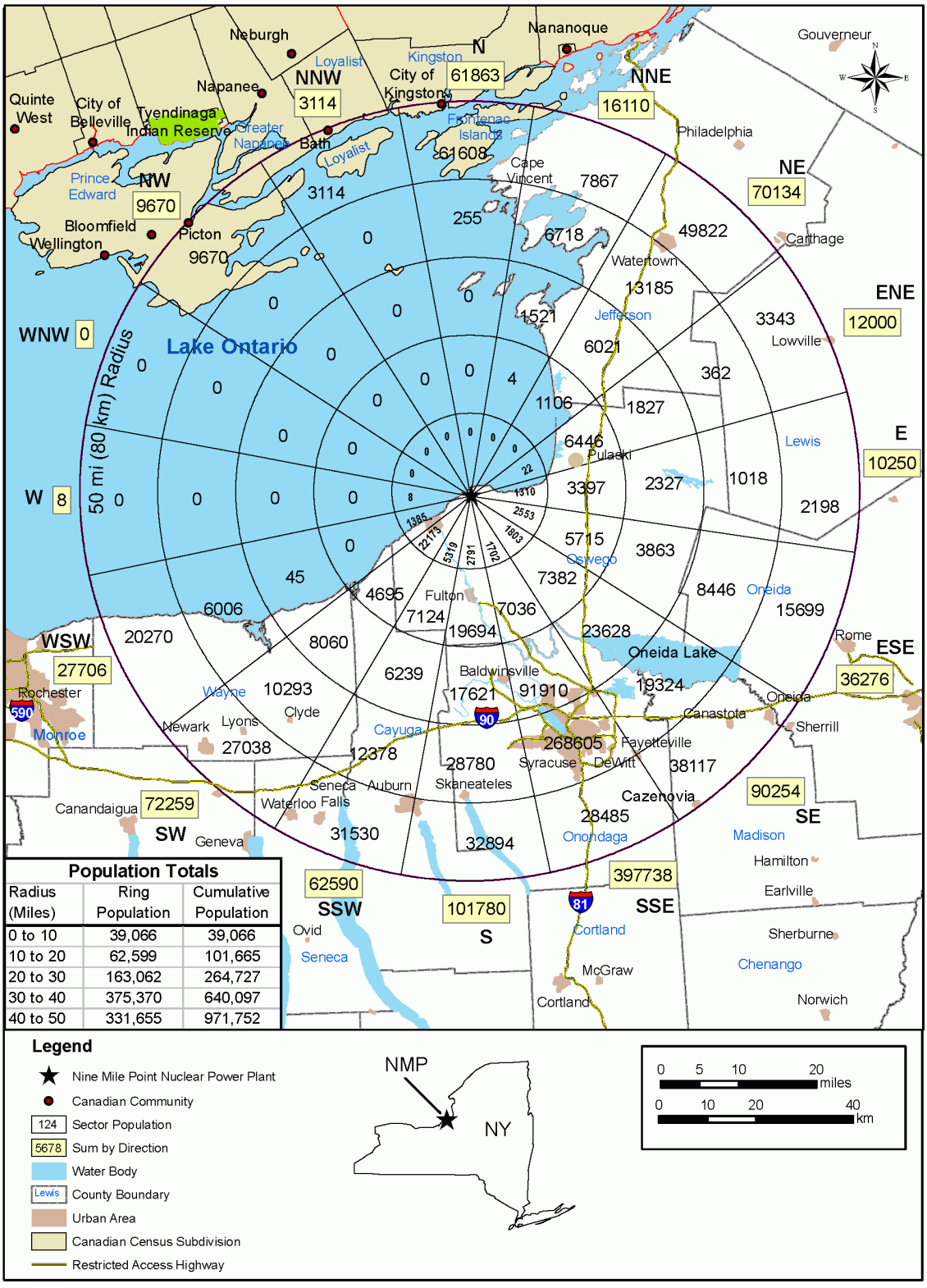

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Figure 2.1-16—{50 mi (80 km) 2010 Population Distribution}

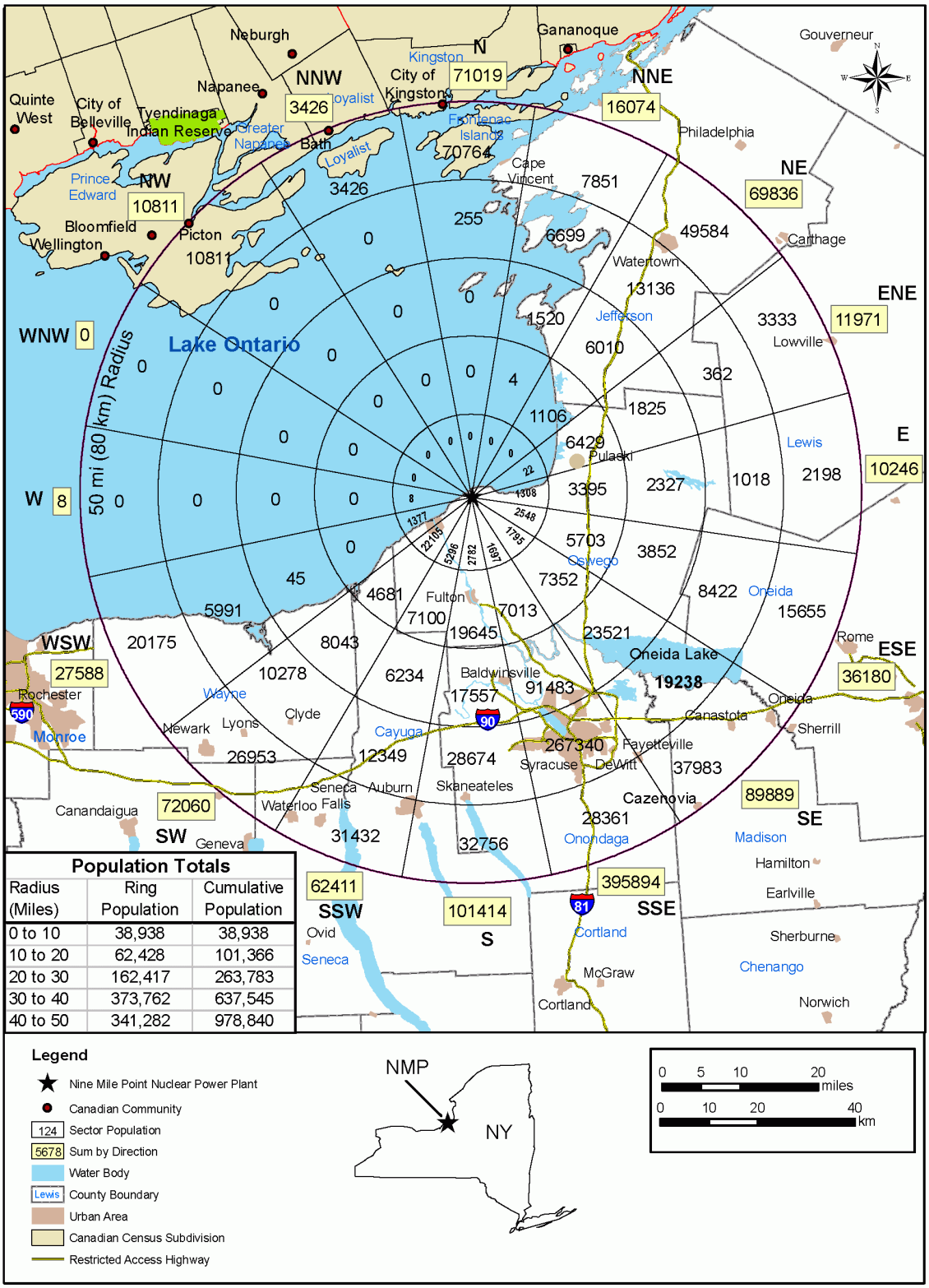

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Figure 2.1-17—{50 mi (80 km) 2020 Population Distribution}

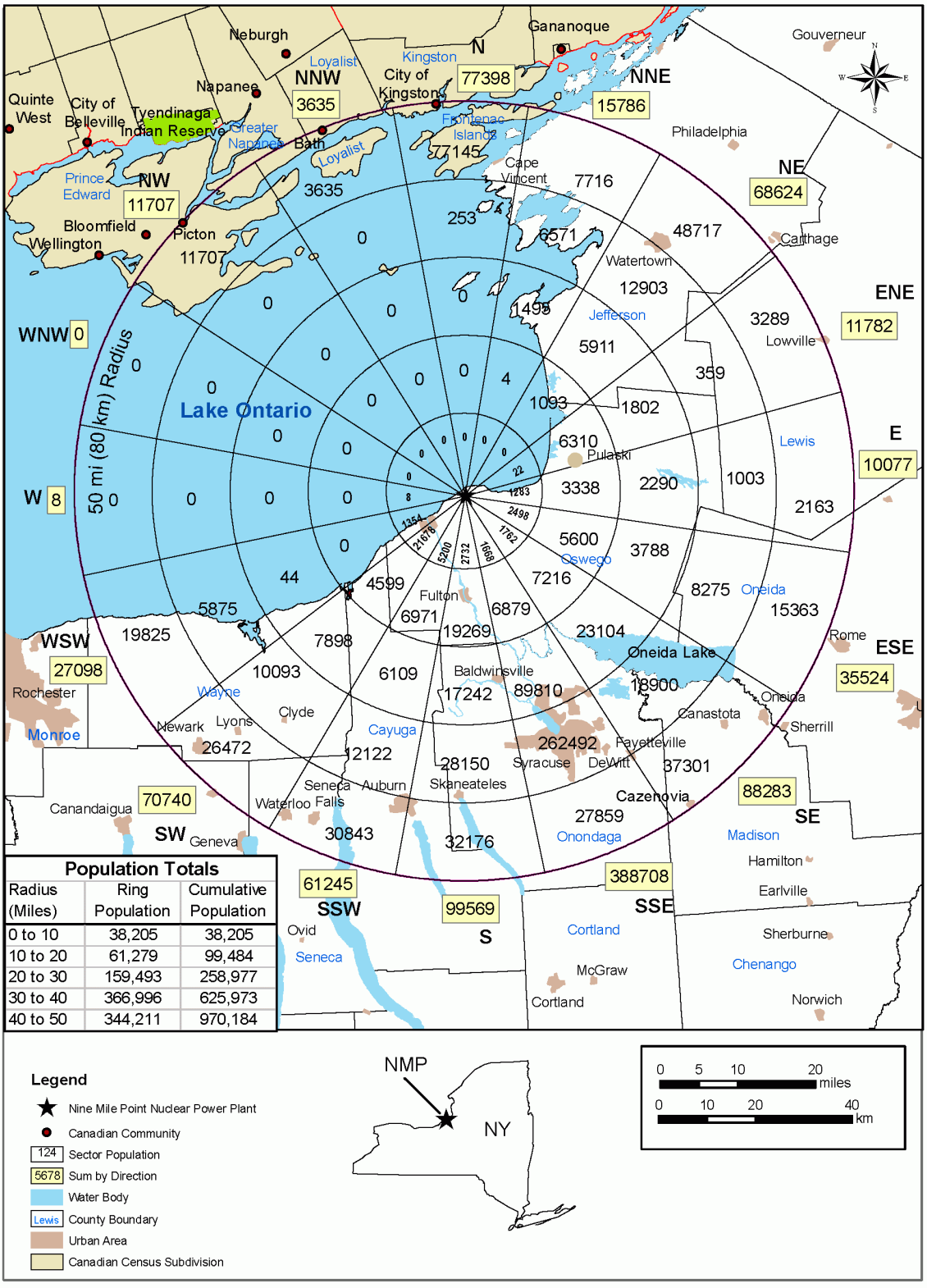

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Figure 2.1-18—{50 mi (80 km) 2030 Population Distribution}

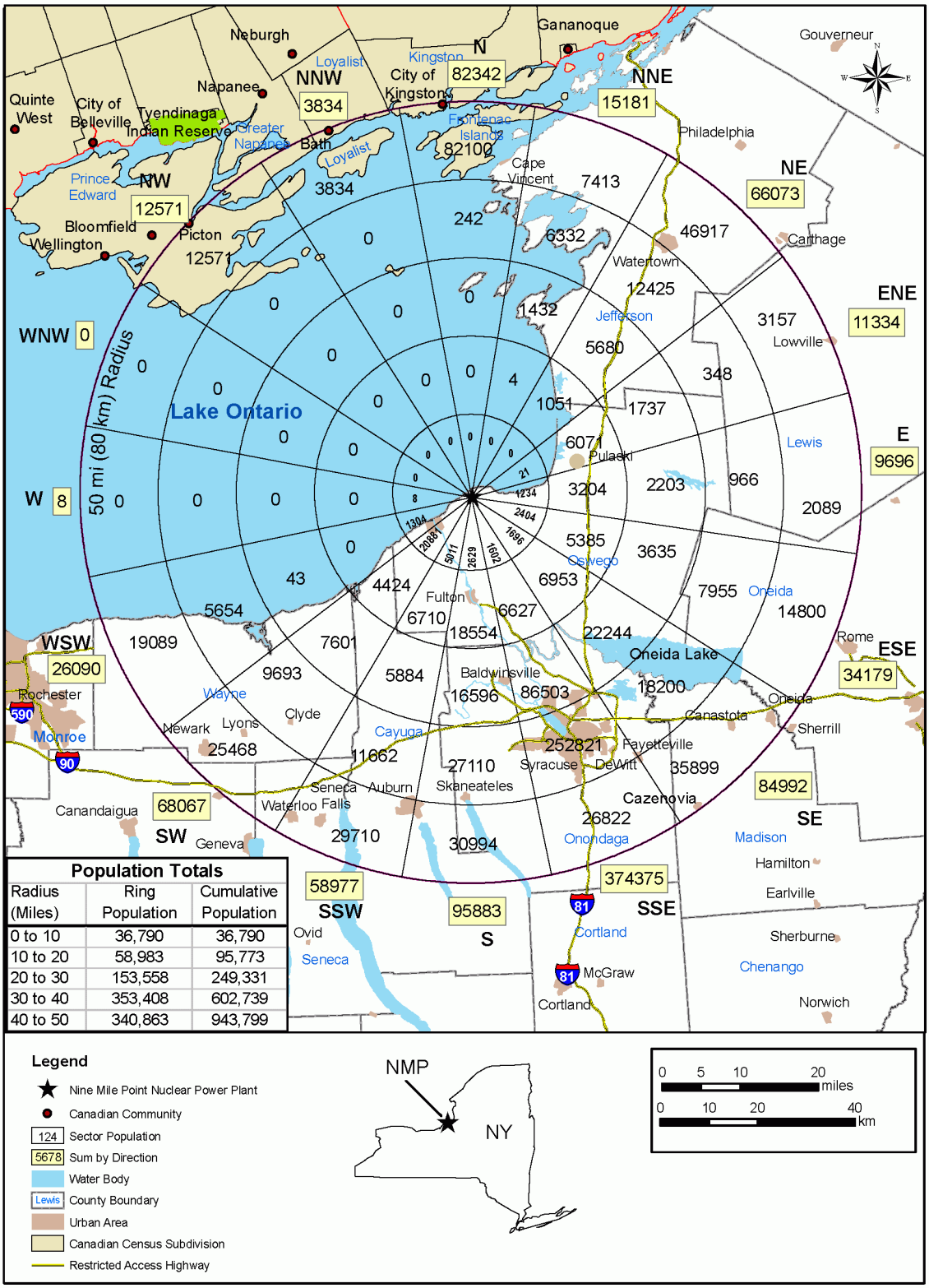

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Figure 2.1-19—{50 mi (80 km) 2040 Population Distribution}

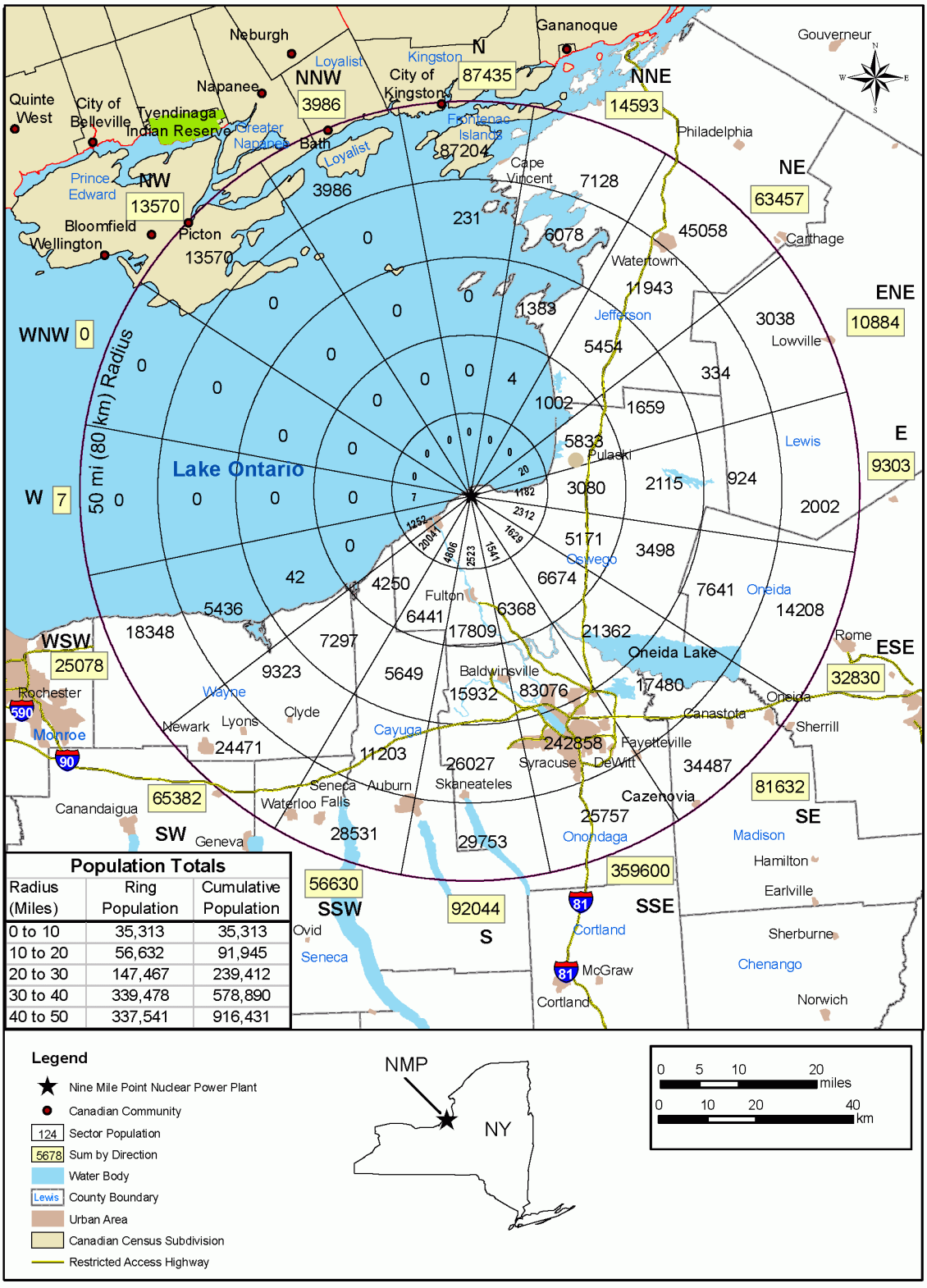

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Figure 2.1-20—{50 mi (80 km) 2050 Population Distribution}

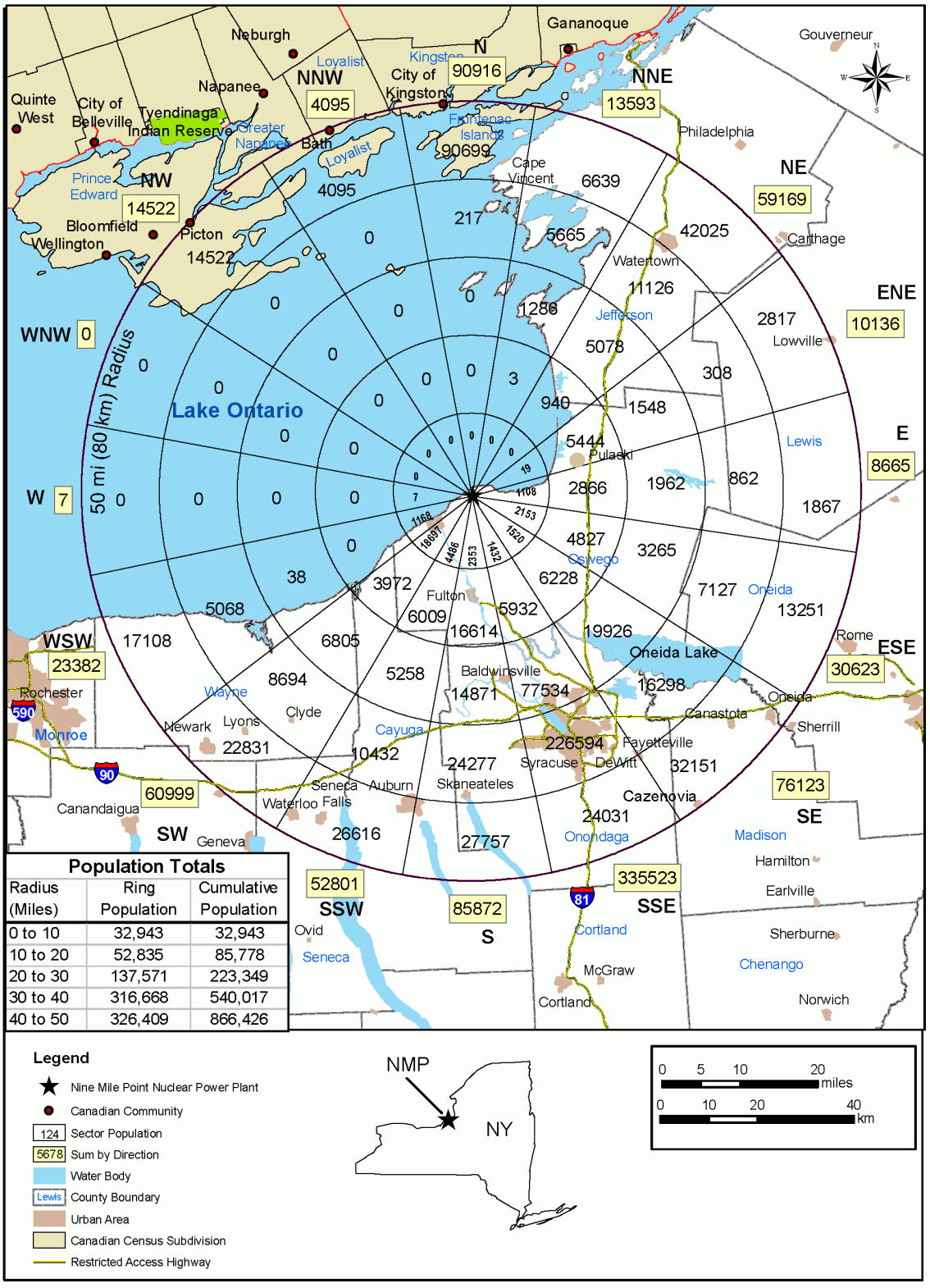

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Figure 2.1-21—{50 mi (80 km) 2060 Population Distribution}

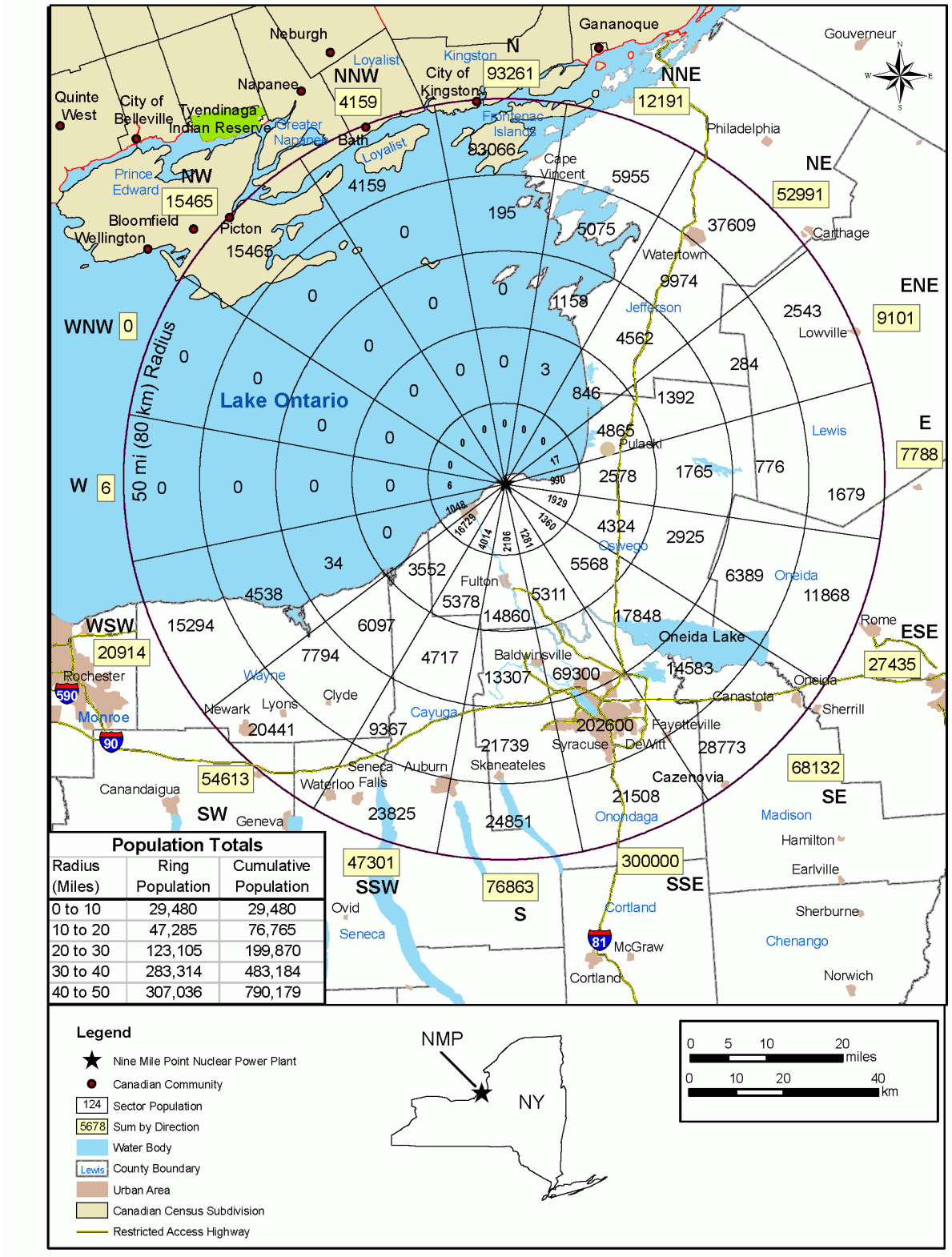

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Figure 2.1-22—{50 mi (80 km) 2070 Population Distribution}

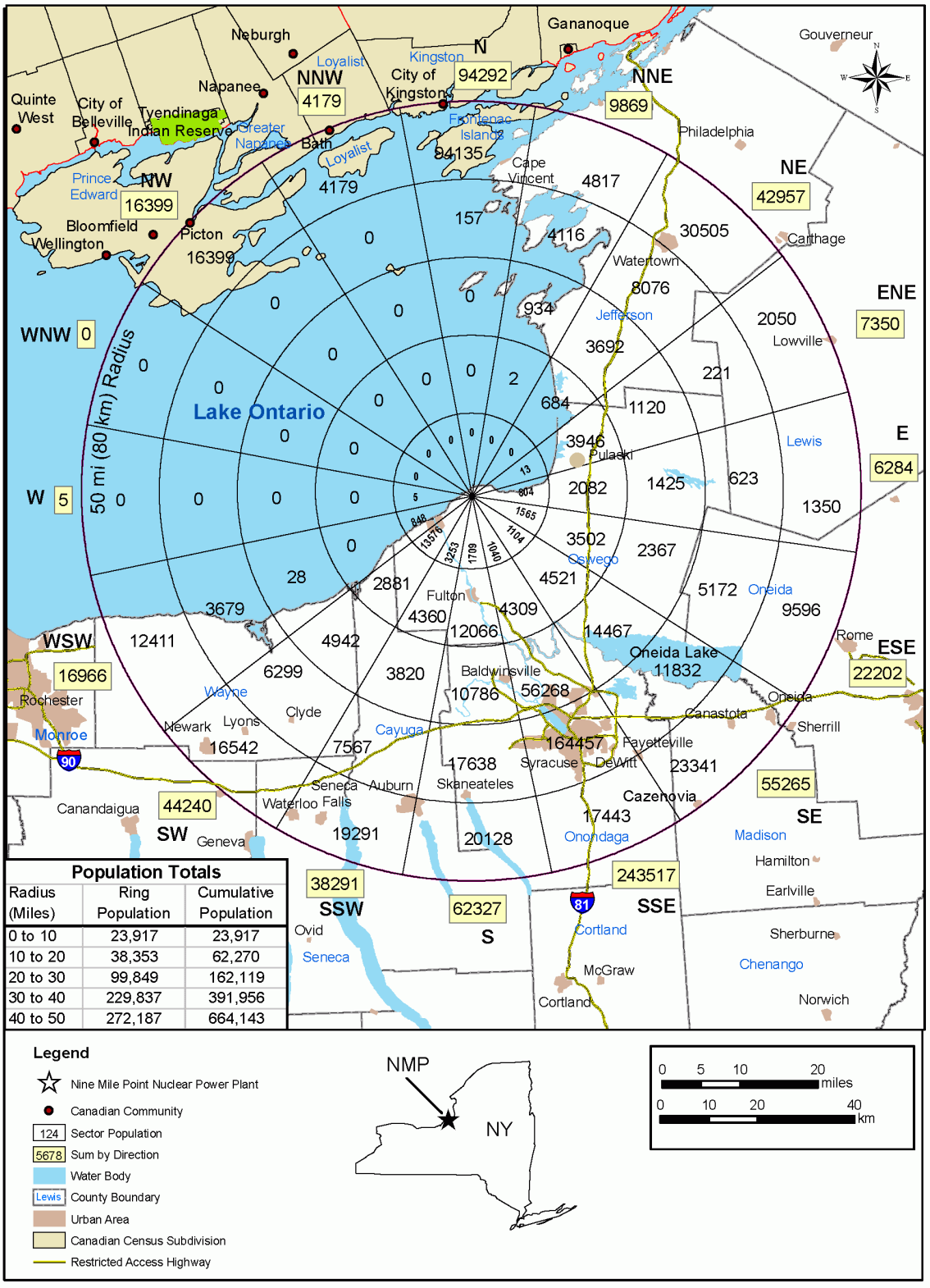

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Figure 2.1-23—{50 mi (80 km) 2080 Population Distribution}

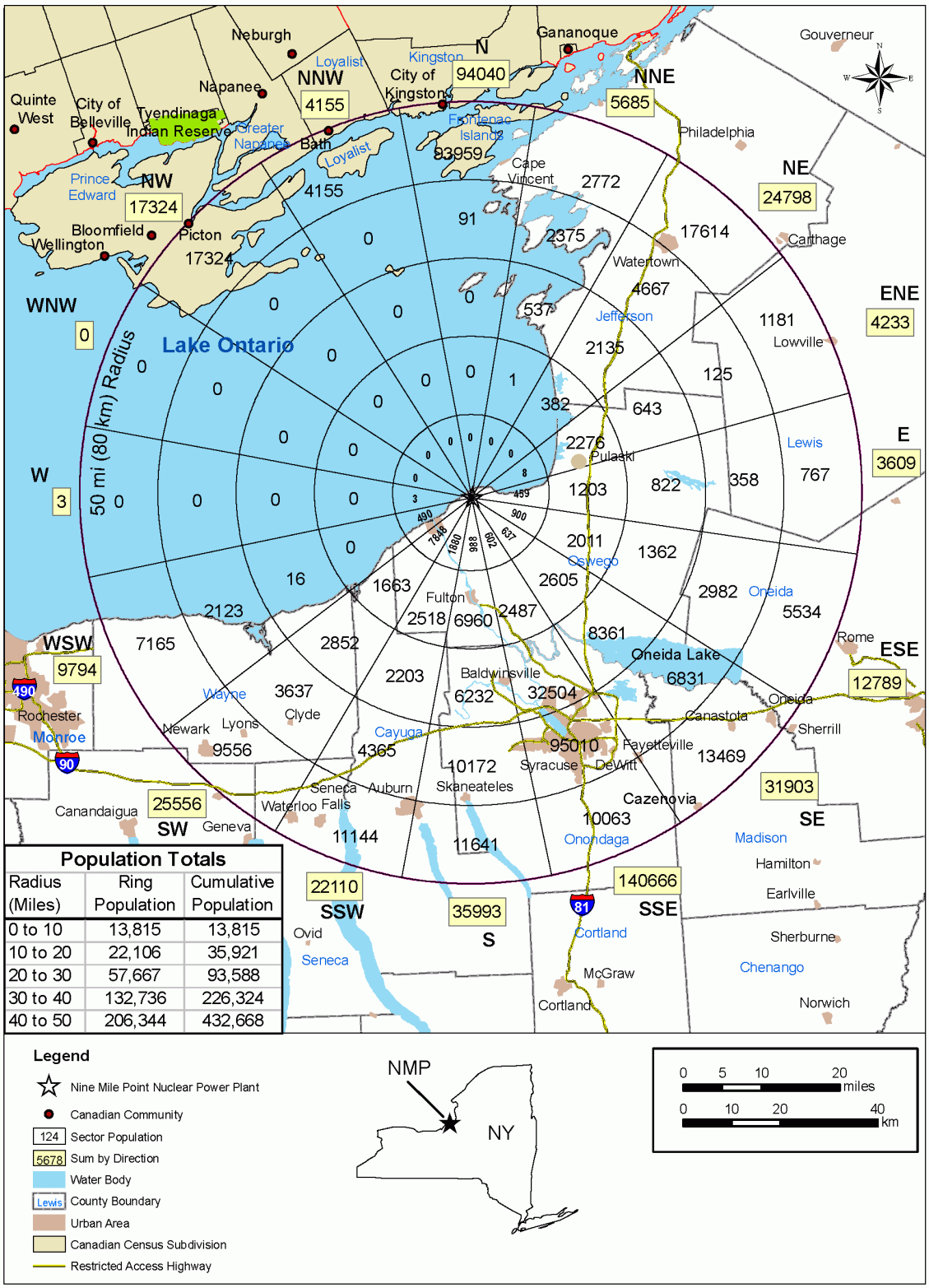

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Figure 2.1-24—{50 mi (80 km) 2016 Population Distribution}

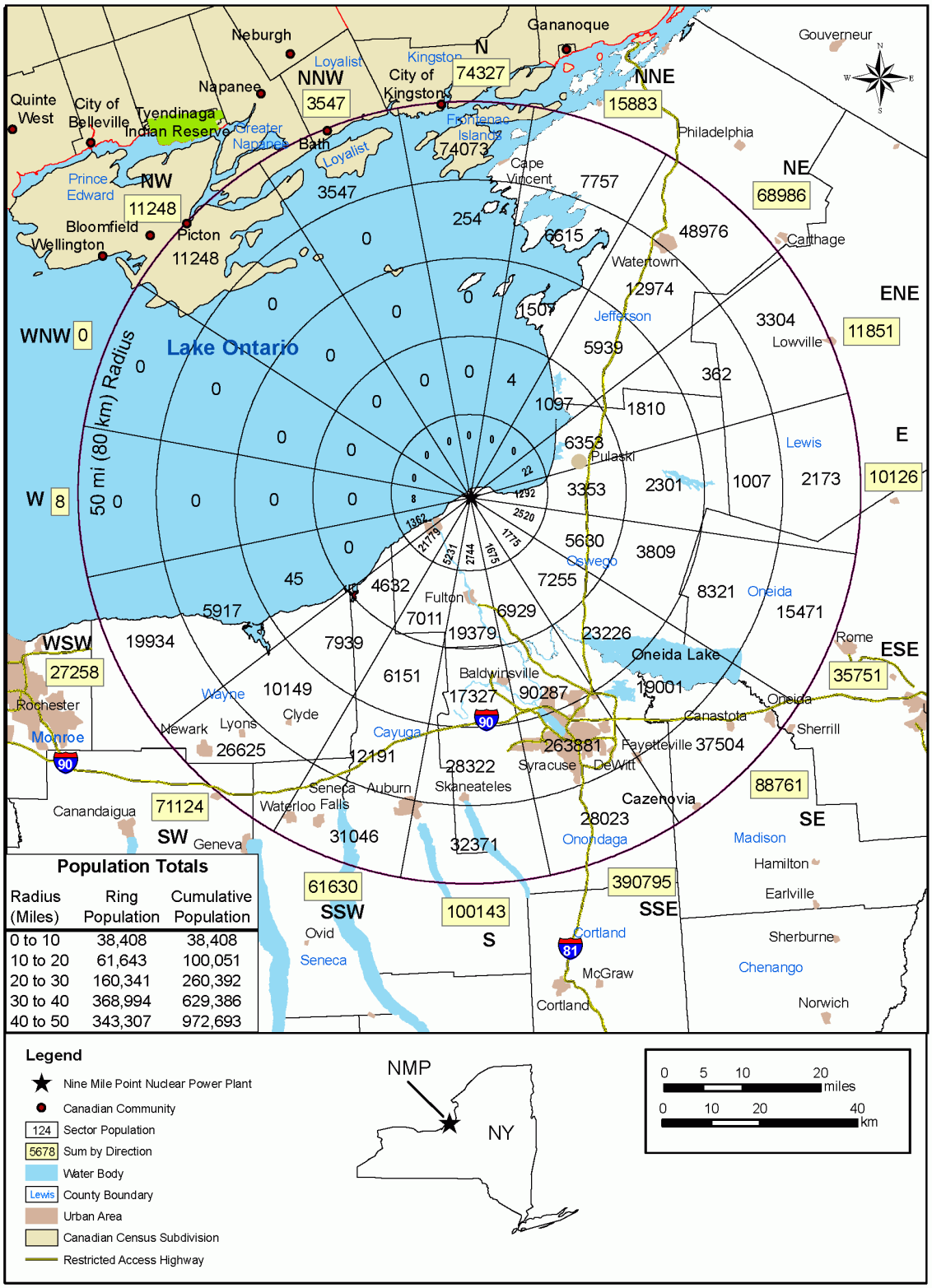

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Figure 2.1-25—{50 mi (80 km) 2056 Population Distribution}

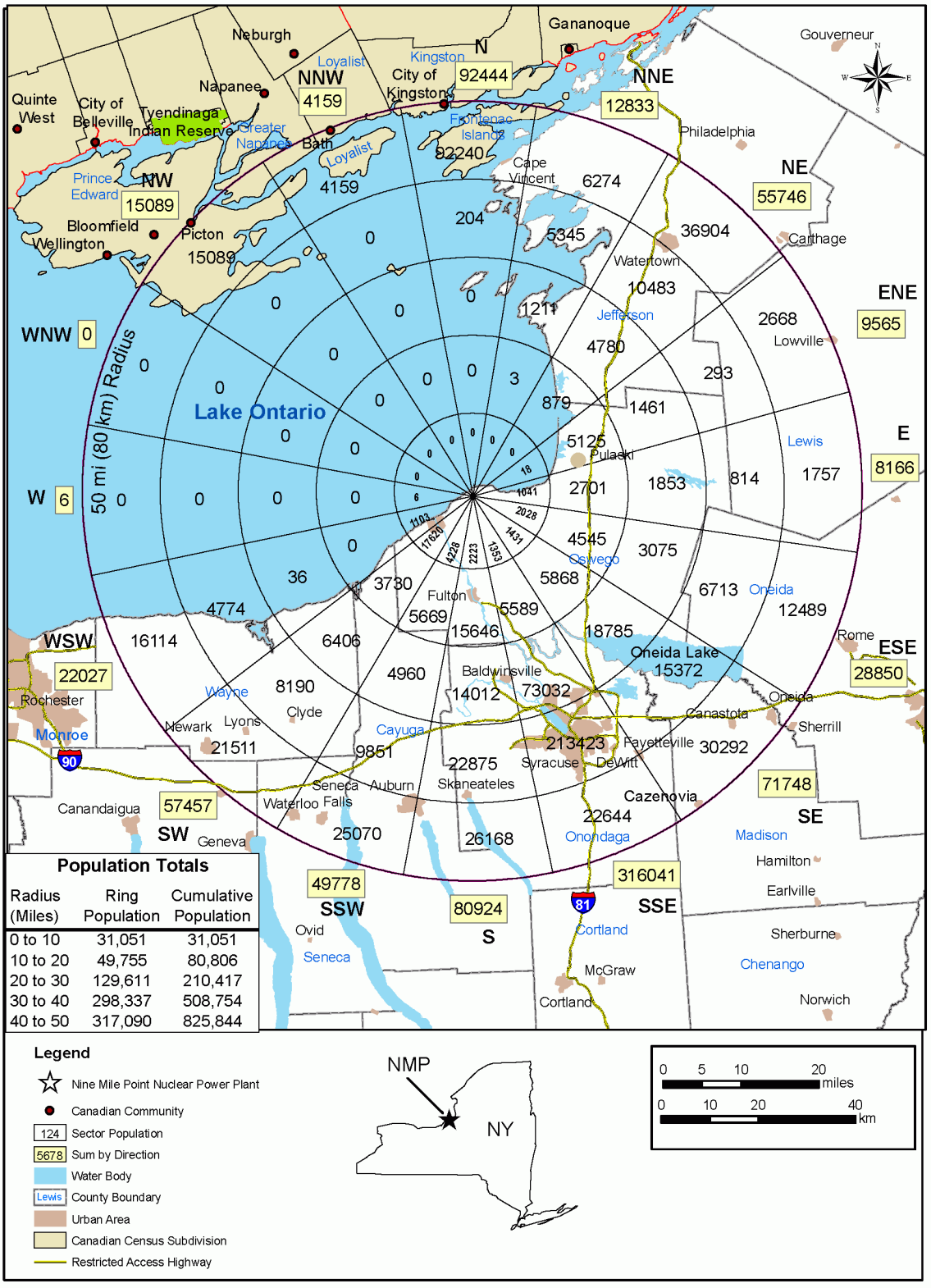

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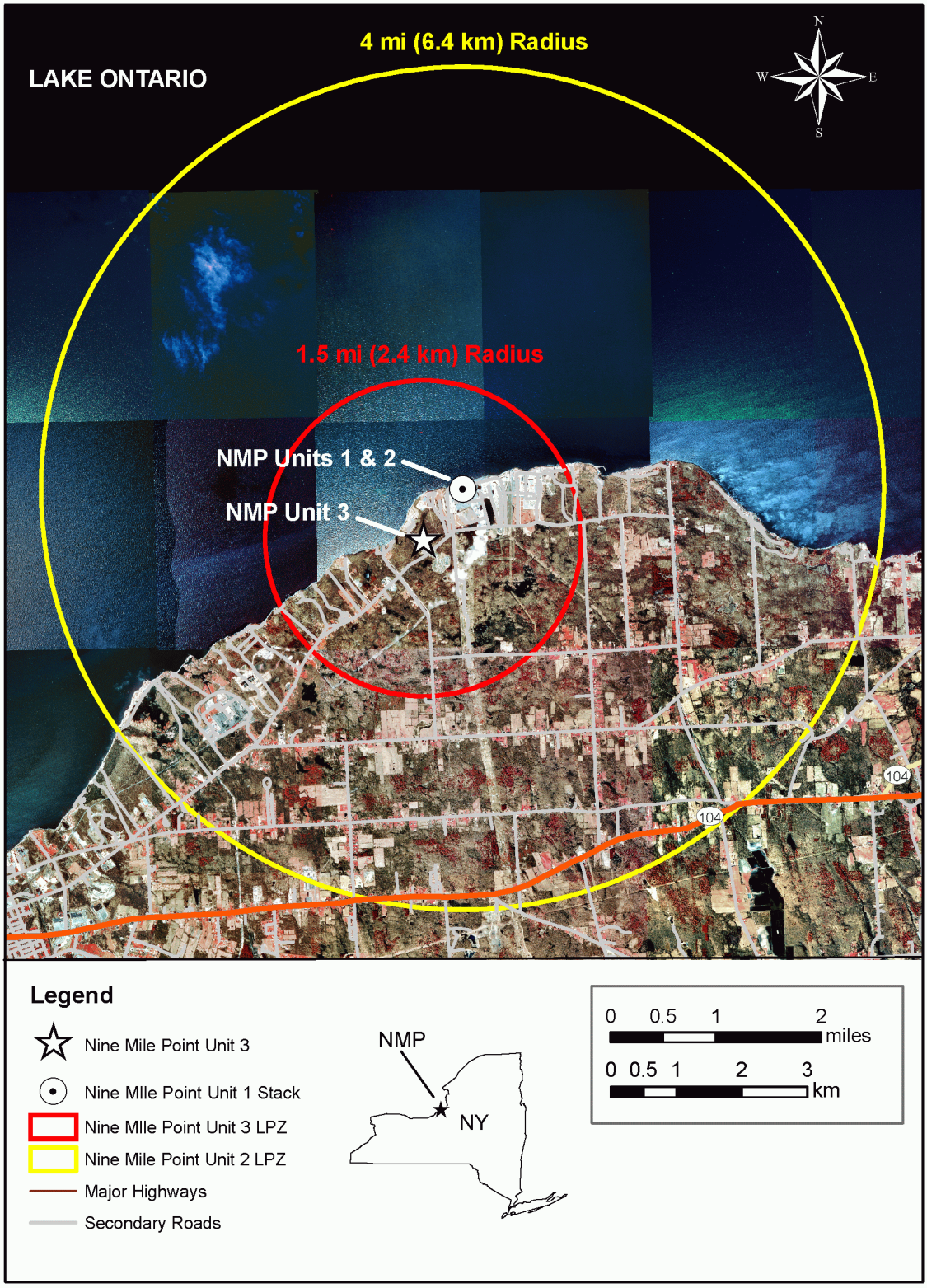
Figure 2.1-26—{Low Population Zone}



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