



Zone 3 overview

Zone 3 includes the Wisconsin counties of:

- Columbia
- Crawford (southern portion)
- Dane
- Dodge
- Grant
- Green
- Iowa
- Lafayette
- Jefferson
- Richland
- Rock
- Sauk
- Walworth and
- Winnebago, Ill. (northern portion)

The physical boundaries of Zone 3 and transmission facilities located in Zone 3 are shown in [Figure ZS-24](#).

Land use in Zone 3 is a mix of rural, urban and agricultural.

The major population centers are the Madison metropolitan area and the Janesville/Beloit area.

Zone 3 typically experiences peak demands during the summer months. Manufacturing, food processing, state government and institutional loads are among the largest electricity users in the zone.

Demographics

Historical and Projected Population

The population of the counties in Zone 3 grew at an annual rate of .9% from 2001 to 2010. The highest growth rate of 1.5% per year and the largest increase in population of 64,400 occurred in Dane County.

Population in Zone 3 is projected to grow at 1.2% annually for the 2011 to 2020 period. From 2011 to 2020, Dane County is projected to realize the largest increase in population (82,900) and is projected to have the highest growth rate of 1.7%.

Historical and Projected Employment



During the same period, the annual employment growth rate was 0.6%. The highest growth rate (1.2%) and the largest increase in employment (37,800) occurred in Dane County.

Employment in Zone 3 is projected to grow at 1.2% annually between 2011 and 2020. Dane County is projected to realize the largest increase in employment of over 54,000 and the highest growth rate of 1.4%.

Employment			
Annual Growth Rate			
2001-2010		2011-2020	
Zone 3	0.6	Zone 3	1.2
Dane, WI	1.2	Dane, WI	1.4
Total Increase			
2001-2010		2011-2020	
Zone 3	42,276	Zone 3	91,406
Dane, WI	37,870	Dane, WI	54,008

Population			
Annual Growth Rate			
2001-2010		2011-2020	
Zone 3	0.9	Zone 3	1.2
Dane, WI	1.5	Dane, WI	1.7
Total Increase			
2001-2010		2011-2020	
Zone 3	96,894	Zone 3	131,829
Dane, WI	64,473	Dane, WI	82,972

Zone 3 Environmental Considerations

Zone 3 covers the south central and southwestern portions of Wisconsin and the Illinois county of Winnebago.

The ecological landscapes in this zone vary from Southeast Glacial Plains in the east through the Central Sand Hills area to areas that are part of the Southwest Savanna and Western Coulee and Ridges landscapes in the west. The eastern portions of the zone generally are level to gently rolling terrain, while the western areas are characterized by the ridges and valleys of the driftless area.



The northern and western portions of this zone are located in the Lower Wisconsin River Drainage Basin, and the Mississippi River forms the zone's western boundary. Other portions of this zone are located in the Grant-Platte, Sugar River-Pecatonica, Upper and Lower Rock and Fox Illinois drainage basins. Horicon Marsh National Wildlife Refuge is located in the northeast part of the zone, and the Upper Mississippi River Wildlife and Fish Refuge is located along the zone's western edge. The Baraboo Hills are located in the north-central portion of the zone. The Lower Wisconsin River State Riverway also is found in this zone.

Zone 3 electricity demand and generation

The coincident peak load forecasts for Zone 3 for 2012, 2016, 2021 and 2026 are shown in Table ZS-10. The table also shows existing generation, proposed generation based on projected in-service year, and resultant capacity margins (with and without the proposed generation).

The table shows that load in Zone 3 is projected to grow at roughly 1.37 percent annually from 2012 through 2021. Comparing load with generation (at maximum output) within the zone indicates that Zone 3 has more generation than peak load during peak load periods. However, actual operating experience indicates that during most load periods, Zone 3 is a net importer of power.

Zone 3 transmission system issues

Key transmission facilities in Zone 3 include:

- Columbia-North Madison 345-kV lines,
- Columbia-Rockdale 345-kV line,
- Paddock-Rockdale 345-kV line,
- Paddock-Wempletown 345-kV line,
- Rockdale – Wempletown 345-kV line, and
- 138-kV facilities from the Nelson Dewey Power Plant, around the Madison area, and in the northwest and southeast portions of Zone 3.

Key system performance issues in Zone 3 include:

- Existing contingency thermal overloads on the Fitchburg-Royster 69-kV line,
- Low voltages for two separate double circuit tower outages in Dane County transmission system calls for reactive support in 2011
- Maintaining reliability of service to load in and around the Madison area requires that system reinforcements be implemented in the near term. Longer term, a 345-kV source on the west side of Madison will be required,



10-Year Assessment

An annual report summarizing proposed additions and expansions to ensure electric system reliability.

2011

September 2011 10-Year Assessment
www.atc10yearplan.com

- Load growth in the Rock and Green Counties, along with the mismatch of load to generation in the area, could result in the Monroe area 69-kV network being subjected to unacceptably low voltages and thermal overloads under both normal and contingency conditions in the summer of 2011. Rebuilding the 69-kV line Y-33 from Brodhead to South Monroe will address these issues.
- Load growth in Green County, west of Rock County and south of Dane County requires one additional 69-kV source into the area. Adding the Bass Creek 138/69-kV transformation will address a number of potential low voltage issues and transformer overloads.
- Several provisional projects in past 10-Year Assessments found low voltage and thermal overload issues which did not appear in the 2011 Assessment. The provisional project in-service dates were retained for now until it can be determined in future assessments that these voltage and thermal issues no longer exist.