

# Preliminary geologic cross sections of Dane County, Wisconsin

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## GEOLOGIC UNITS

### Quaternary deposits

**Q** Patchy loess deposits (not shown) drape stable, relatively flat upland surfaces throughout Dane County. Glacial sediment is as much as 372 feet (113 m) in buried valleys and under the Madison lakes; it is absent in the unglaciated part of the county.

### Ordovician

#### Sinnipee Group

**Os** The three formations that make up the Sinnipee group are not separated at this scale, but are easily distinguishable in outcrops, drill cuttings, and core.

##### Galena Formation

Dolomite and cherty dolomite; uneroded thickness is about 220 feet (67 m) under East Blue Mound on west edge of county.

##### Decorah Formation

Shaly dolomite; reaches a maximum thickness of 10 feet (3 m) in west-central Dane County.

##### Platteville Formation

Dolomite and shaly dolomite, gray to buff, fine to medium texture; maximum thickness is approximately 80 feet (24 m).

#### Ancell Group

**Oa** The Ancell Group is not divided here, but the following formations and members can be recognized in outcrops and in subsurface samples.

##### Glenwood Formation

Sandstone, siltstone, and/or shale; yellow-brown to green; discontinuous and variable in lithology, texture, and thickness; commonly 1 to 2 feet (0.3 to 0.6 m) thick in outcrops, but is reportedly thicker in the subsurface.

##### St. Peter Formation

Subdivided into two units. The upper Tontli Member is a medium-grained, mature quartz sandstone; the basal Readstown Member is immature, consisting of red-brown shale, sandstone, and chert conglomerate. The formation occupies channels eroded in the underlying rocks and varies widely in thickness across Dane County, from absent to greater than 200 feet (61 m).

#### Prairie du Chien Group

**Op** Dolomite, minor sandstone, cherty dolomite; yellow brown to gray; consists of two formations, the Shakopee and the Oneota, that are not shown separately. The Prairie du Chien Group forms bluffs and caps ridges in northwestern Dane County. It varies in thickness from 145 feet (44 m) in eastern Dane County to 220 feet (67 m) in western Dane County. In central Dane County, Prairie du Chien rocks have been entirely removed by erosion.

### Cambrian

#### Trempealeau Group

**Ct** Quartz sandstone, dolomitic siltstone, silty dolomite, and sandy dolomite. Consists of two formations, the Jordan and the underlying St. Lawrence, which were combined as one mapping unit. Thickness is about 75 feet (23 m) where not eroded.

#### Tunnel City Group

**Ctc** Medium to very fine-grained quartz sandstone, locally very glauconitic. Maximum thickness in Dane County is about 150 feet (46 m).

#### Elk Mound Group

Consists of the Wonewoc, Eau Claire, and Mount Simon Formations. Except for limited exposures of Wonewoc Formation sandstone, the Elk Mound Group is known only in the subsurface in Dane County.

##### Wonewoc Formation

Quartz sandstone, medium grained, brownish yellow to white, with medium-to large-scale cross bedding commonly seen in outcrop. Reaches a maximum thickness of 165 feet (50 m) in the subsurface. Exposed in northwestern Dane County along the Wisconsin River valley.

##### Eau Claire Formation

Fine to very fine, silty, shaly, and/or dolomitic quartz sandstone. Thickness varies from absent in northeastern Dane County to about 80 feet (24 m) in western Dane County. The Eau Claire is not exposed at the surface.

##### Mount Simon Formation

Primarily medium- to coarse-grained quartz sandstone, with a pebble conglomerate near the basal contact with the Precambrian. Thickness in Dane County ranges from about 300 feet (90 m) to over 600 feet (180 m).

### Precambrian

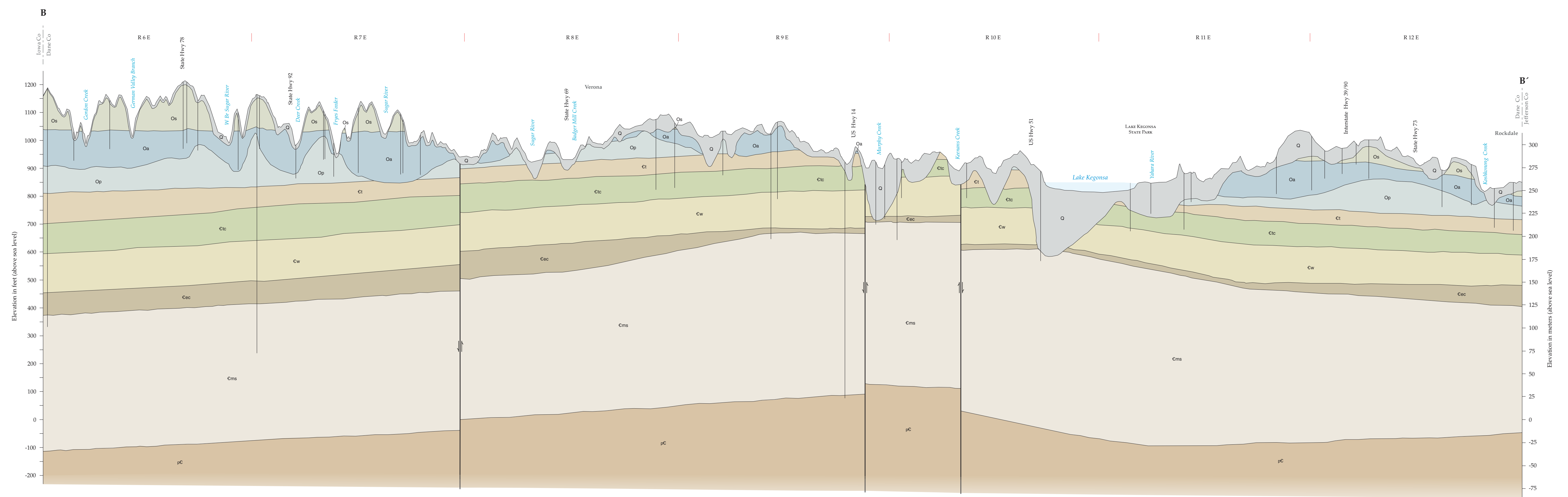
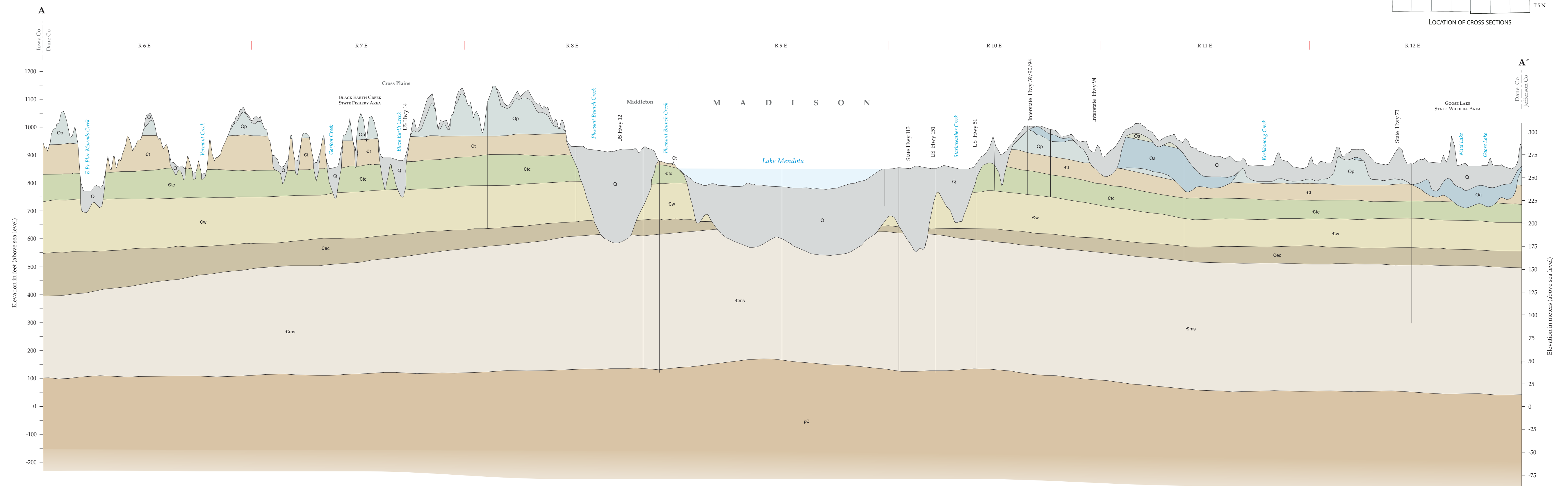
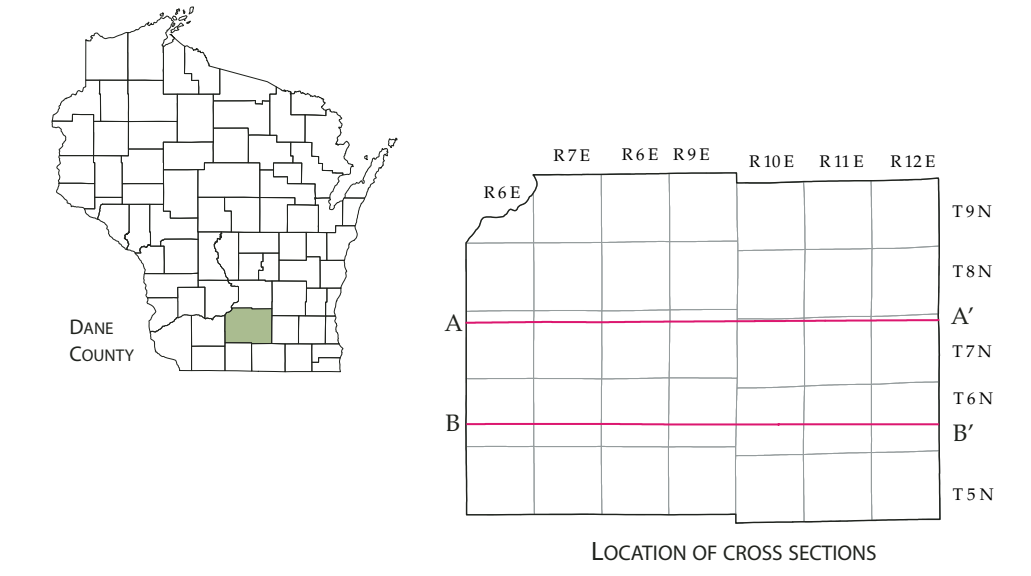
**pc** Igneous and metamorphic rocks including granite, metavolcanic rocks, rhyolite, and quartzite. Known only from subsurface samples recovered in the process of drilling wells.

## SYMBOLS

— geologic contact (formation boundaries)

— fault, arrows show relative motion

— Subsurface control point (WDNR well construction report, WGNHS geologic log, or other drillhole records)



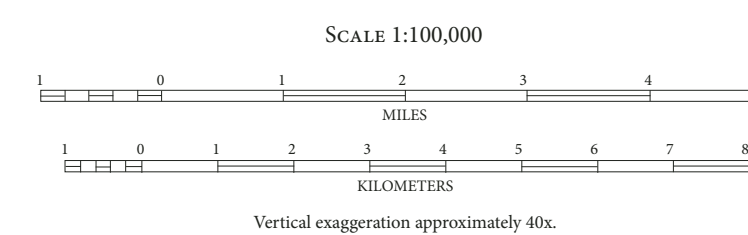
The map and sections are based on field work and analysis of subsurface data by the authors between 1995 and 1996, and on earlier field mapping by P.G. Olcott (1972).

These sections represent work performed by the Wisconsin Geological and Natural History Survey and are released to the open files in the interest of making the information readily available. These sections have not been edited or reviewed for conformity with Wisconsin Geological and Natural History Survey standards and nomenclature.

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Cartography by K.C. Roushar

*These cross sections are an interpretation of the data available at the time of preparation. Every reasonable effort has been made to ensure that this interpretation conforms to sound scientific and cartographic principles; however, the cross sections should not be used to guide site-specific decisions without verification. Proper use is the sole responsibility of the user.*



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