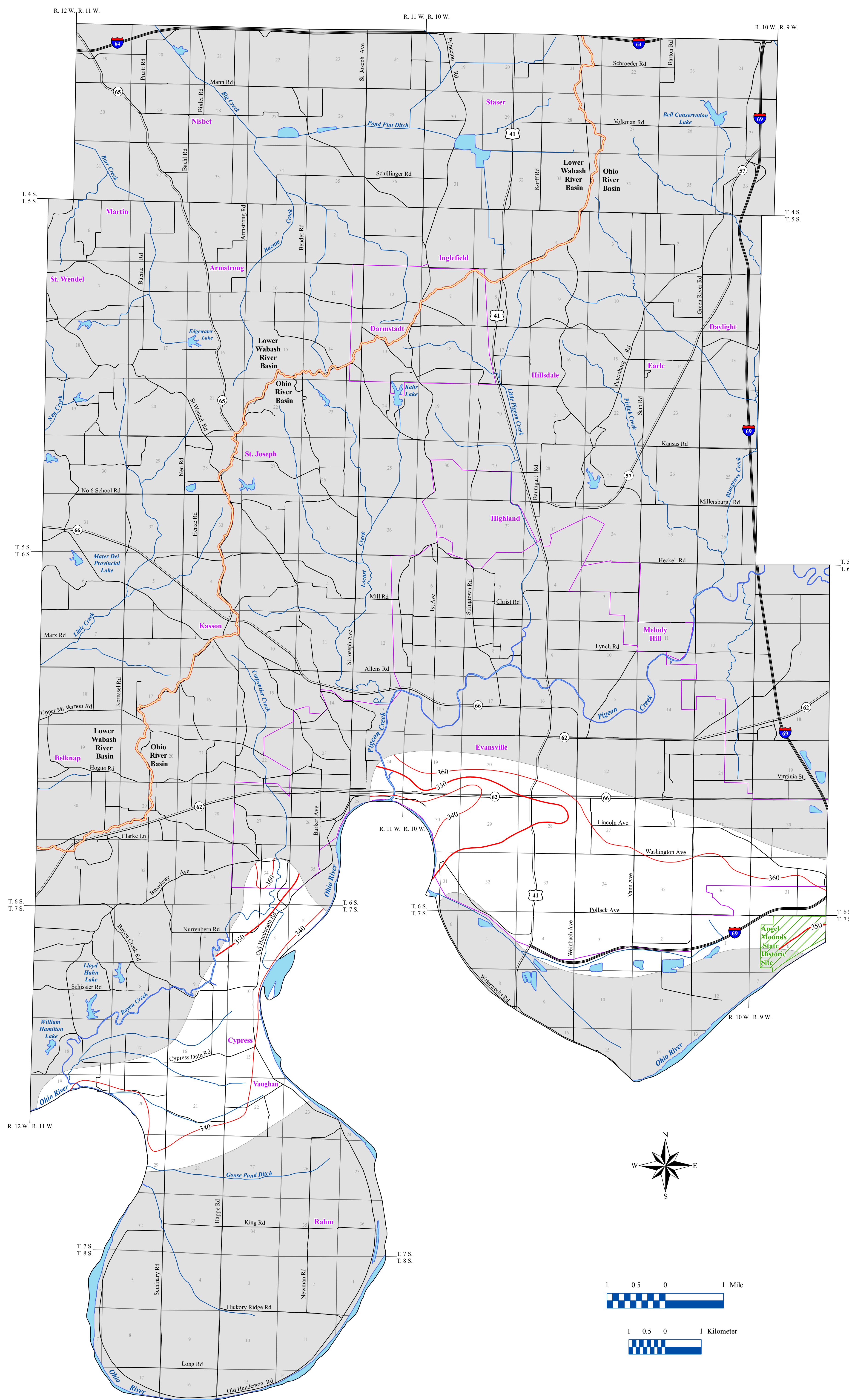
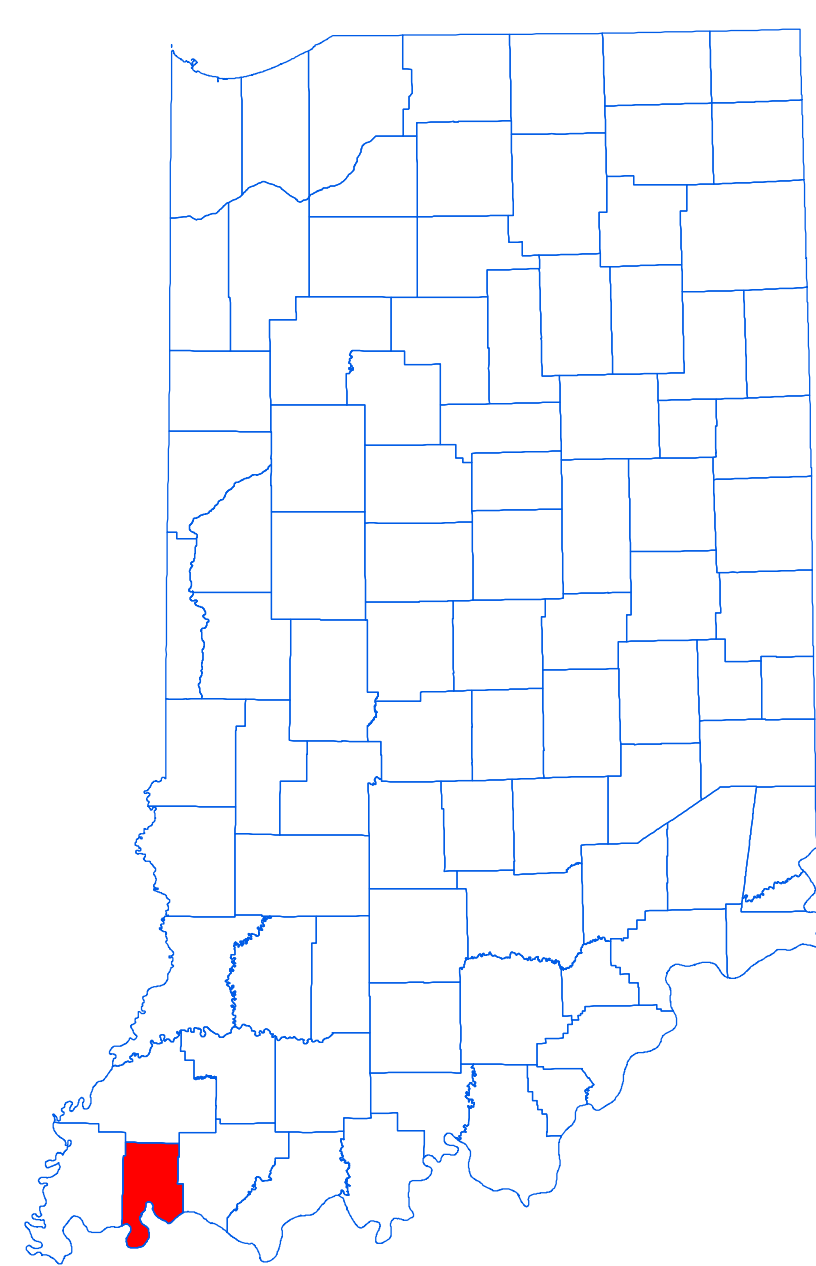


POTENTIOMETRIC SURFACE MAP OF THE UNCONSOLIDATED AQUIFERS OF VANDERBURGH COUNTY, INDIANA



Location Map



Vanderburgh County is located in southwest Indiana, and is bounded by the counties of Posey, Gibson and Warrick to the west, north and east, respectively. The state of Kentucky borders the county to the south. The majority of the county lies within the Ohio River Basin, while the north-central, northwest and west-central portions of the county are situated within the Lower Wabash River Basin.

The Potentiometric Surface Map (PSM) of the unconsolidated aquifers of Vanderburgh County was mapped by contouring the elevations of 276 static water-levels reported on well records received primarily over a 50 year period. These wells are completed in aquifers at various depths, and typically, under confined conditions (bounded by impermeable layers above and below the water bearing formation). However, some wells were completed under unconfined (not bounded by impermeable layers) settings.

The potentiometric surface is a measure of the pressure on water in a water bearing formation. Water in an unconfined aquifer is at atmospheric pressure and will not rise in a well above the top of the aquifer, in contrast to groundwater in a confined aquifer which is under hydrostatic pressure and will rise in a well above the top of the water bearing formation.

Static water-level measurements in individual wells used to construct county PSM's are indicative of the water-level at the time of well completion. The groundwater level within an aquifer constantly fluctuates in response to rainfall, evapotranspiration, groundwater movement and pumping. Therefore, measured static water-levels in an area may differ due to local or seasonal variations. Because fluctuations in groundwater are typically small, static water-levels can be used to construct a generalized PSM. As a general rule, but certainly not always, groundwater flow approximates the overlying topography and intersects the land surface at major streams.

Universal Transverse Mercator (UTM) coordinates for the water wells were either physically obtained in the field, determined through address geocoding, or reported on water well records. The location of the majority of the water well records used to make the PSM were field verified. Elevation data were obtained from a digital elevation model. Quality control/quality assurance procedures were utilized to refine or remove data where errors were readily apparent.

The mapped potentiometric surface contours are primarily for the upper 100 feet of the unconsolidated materials and utilize data for wells 100 feet or less in depth. If the shallow data was sparse or unavailable in an area, wells greater than 100 feet in depth were used to complement the mapping. Large portions of Vanderburgh County do not have unconsolidated potentiometric surface elevations because these areas are either lacking in data and/or covered by thin or unproductive unconsolidated deposits.

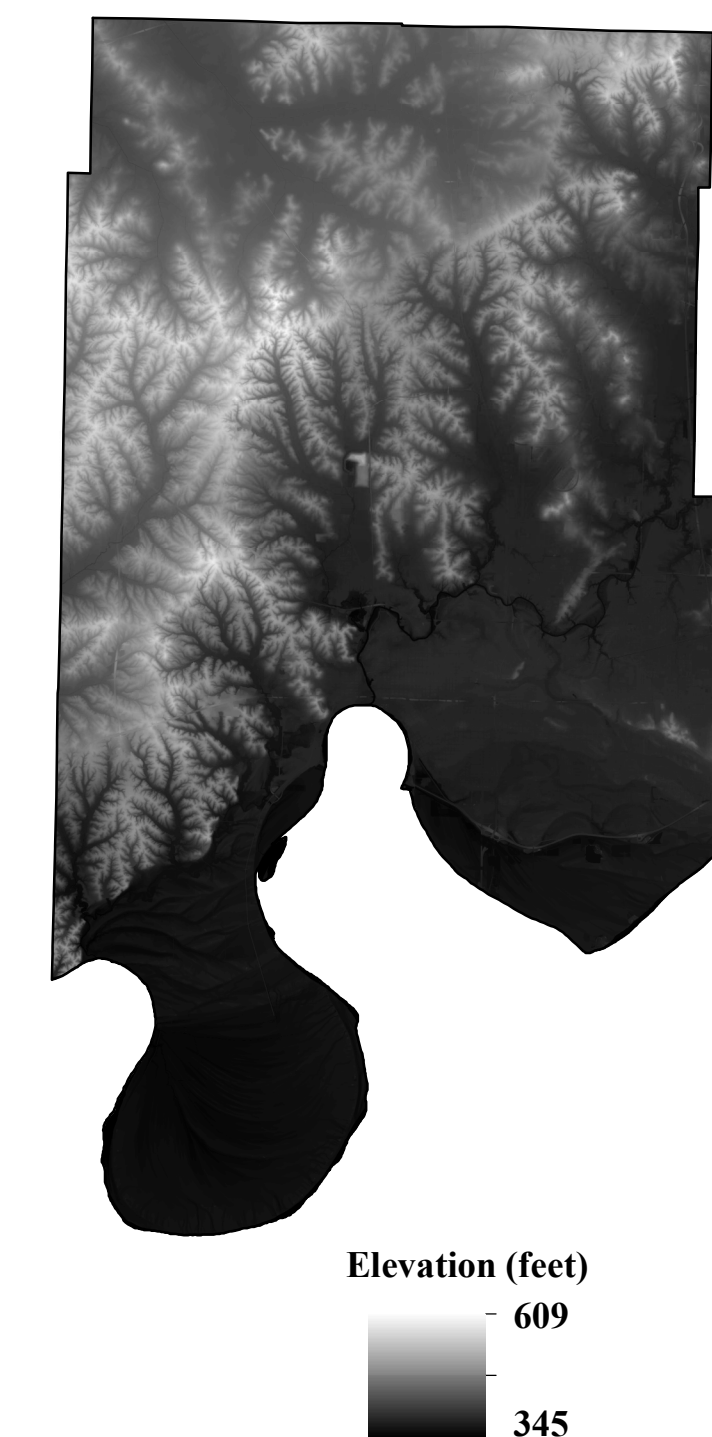
Potentiometric surface elevations range from a high of 360 feet mean sea level (msl) to a low of 340 feet msl and were only mapped in the southern part of the county. Regional groundwater flow direction is generally towards the Ohio River.

The county PSM can be used to define the regional groundwater flow path and to identify significant areas of groundwater recharge and discharge. County PSM's represent overall regional characteristics and are not intended to be a substitute for site-specific studies.

EXPLANATION

- Line of equal elevation, in feet above mean sea level
- Potentiometric Contour interval 10 feet
- Stream
- Basin Boundary
- County Road
- State Road
- US Highway
- Interstate
- Municipal Boundary
- State Managed Property
- Lake & River
- No Aquifer Material or Limited Data

Digital Elevation Map of Vanderburgh County, Indiana



Map Use and Disclaimer Statement

We request that the following agency be acknowledged in products derived from this map: Indiana Department of Natural Resources, Division of Water.

This map was compiled by staff of the Indiana Department of Natural Resources, Division of Water using data believed to be reasonably accurate. However, a degree of error is inherent in all maps. This product is distributed "as is" without warranties of any kind, either expressed or implied. This map is intended for use only at the published scale.

This map has been created from several existing shapefiles: Township and Range Lines of Indiana (line shapefile, 20020621); Land Survey Lines of Indiana (polygon shapefile, 20020621); and County Boundaries of Indiana (polygon shapefile, 20020621) are from the Indiana Geological Survey and based on a 1:24,000 scale. Roads (TIGER and INDOT) (line shapefile, 2005) is from the Indiana Department of Transportation and based on a 1:24,000 scale. System1 (line shapefile, 2003) is from the Indiana Department of Transportation and based on a 1:24,000 scale. Incorporated Boundaries in Indiana (polygon shapefile, 20060501) is from the Graphics and Engineering Section Indiana Department of Transportation. Hydrography, Streams (NHD) (line shapefile, 20081218); Rivers (NHD) (polygon shapefile, 20081218); and Lakes (NHD) (polygon shapefile, 20081218) are from the U.S. Geological Survey and the U.S. Environmental Protection Agency, and based on a 1:24,000 scale. Basin boundaries are modified from the Watershed Boundary Dataset (polygon shapefile, 2008) from the Natural Resource Conservation Service. Managed Lands IDNR IN (polygon shapefile, 20100920) is from the Indiana Department of Natural Resources and based on a 1:24,000 scale. Digital Elevation Model image is derived from the Indiana Ortho LIDAR Statewide Collection Program (2013). Vanderburgh County Unconsolidated No Aquifer Material or Limited Data (polygon shapefile, Grove, 2017), and Potentiometric Surface Map of the Unconsolidated Aquifers of Vanderburgh County, Indiana (line shapefile, Grove, 2017) are based on a 1:24,000 scale.

Potentiometric Surface Map of the Unconsolidated Aquifers of Vanderburgh County, Indiana

by
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