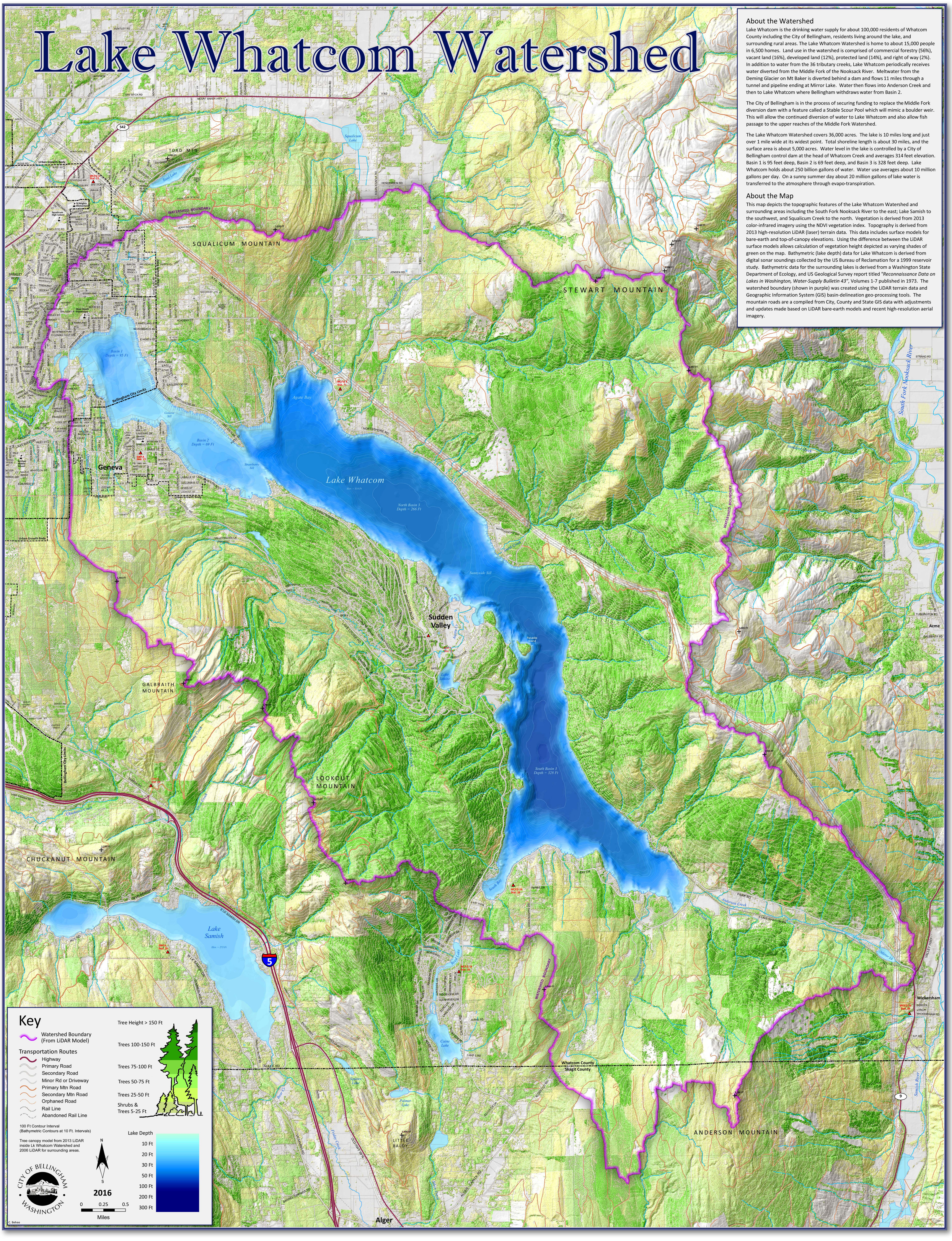
Lake Whatcom Watershed



About the Watershed

Lake Whatcom is the drinking water supply for about 100,000 residents of Whatcom County including the City of Bellingham, residents living around the lake, and surrounding rural areas. The Lake Whatcom Watershed is home to about 15,000 people in 6,500 homes. Land use in the watershed is comprised of commercial forestry (56%), vacant land (16%), developed land (12%), protected land (14%), and right of way (2%). In addition to water from the 36 tributary creeks, Lake Whatcom periodically receives water diverted from the Middle Fork of the Nooksack River. Meltwater from the Deming Glacier on Mt Baker is diverted behind a dam and flows 11 miles through a tunnel and pipeline ending at Mirror Lake. Water then flows into Anderson Creek and then to Lake Whatcom where Bellingham withdraws water from Basin 2.

The City of Bellingham is in the process of securing funding to replace the Middle Fork diversion dam with a feature called a Stable Scour Pool which will mimic a boulder weir. This will allow the continued diversion of water to Lake Whatcom and also allow fish passage to the upper reaches of the Middle Fork Watershed.

The Lake Whatcom Watershed covers 36,000 acres. The lake is 10 miles long and just over 1 mile wide at its widest point. Total shoreline length is about 30 miles, and the surface area is about 5,000 acres. Water level in the lake is controlled by a City of Bellingham control dam at the head of Whatcom Creek and averages 314 feet elevation. Basin 1 is 95 feet deep, Basin 2 is 69 feet deep, and Basin 3 is 328 feet deep. Lake Whatcom holds about 250 billion gallons of water. Water use averages about 10 million gallons per day. On a sunny summer day about 20 million gallons of lake water is transferred to the atmosphere through evapo-transpiration.

About the Map

This map depicts the topographic features of the Lake Whatcom Watershed and surrounding areas including the South Fork Nooksack River to the east; Lake Samish to the southwest, and Squalicum Creek to the north. Vegetation is derived from 2013 color-infrared imagery using the NDVI vegetation index. Topography is derived from 2013 high-resolution LiDAR (laser) terrain data. This data includes surface models for bare-earth and top-of-canopy elevations. Using the difference between the LiDAR surface models allows calculation of vegetation height depicted as varying shades of green on the map. Bathymetric (lake depth) data for Lake Whatcom is derived from digital sonar soundings collected by the US Bureau of Reclamation for a 1999 reservoir study. Bathymetric data for the surrounding lakes is derived from a Washington State Department of Ecology, and US Geological Survey report titled *"Reconnaissance Data on Lakes in Washington, Water-Supply Bulletin 43"*, Volumes 1-7 published in 1973. The watershed boundary (shown in purple) was created using the LiDAR terrain data and Geographic Information System (GIS) basin-delineation geo-processing tools. The mountain roads are a compiled from City, County and State GIS data with adjustments and updates made based on LiDAR bare-earth models and recent high-resolution aerial imagery.