

## Little Willow Creek Assessment and Total Maximum Daily Loads Conceptual Approach Report

**Introduction:** Little Willow Creek is a fourth-order (Strahler 1957) north side tributary to the Lower Payette River with approximately 23 miles of perennial stream (U.S. Geological Survey 2009), located in the western portion of the lower Payette River subbasin; also identified as Hydrologic Unit Code (HUC) 17050122 with water body identification (WBID) label: ID (Figure A). The watershed is subdivided into assessment units (AU) that are indicative of stream order, with the assessment unit of focus in this report identified as ID17050122SW018\_04 which will hereafter be abbreviated as AU 18\_04. Little Willow Creek drains approximately 154 square miles of agricultural and low-density urban land between the foothills of the Salmon River Mountains and the Payette River. The stream flows across terrain with slopes ranging from <1-42 %, with the steepest slopes forming the eastern half of the watershed. The watershed lithology is dominated by Miocene igneous and sedimentary strata in the eastern half of the watershed and Pliocene outwash alluvium and Pliocene stream and lake sediments in the central and western portion of the watershed, with narrow lenses of Quaternary alluvium that frame the present-day perennial watercourse. The soils in the watershed are described as sandy to stony loams with erosion indices (K-factors) ranging from 0.24 to 0.35 (on a scale of 0 to 1); indicating moderate erosive potential. The mainstem of Little Willow Creek, in AU 018\_04, has reported measured flows that range from 1.4 cubic feet per second (cfs) to 26.7 cfs. Up to 99% of the land use in the watershed is agricultural, with surface water identified as the only other land use.

Little Willow Creek has presumed uses of Cold Water Aquatic Life (COLD) and Primary or Secondary Contact Recreation (PCR/SCR). The identified pollutants in this watershed are almost exclusively nonpoint source in nature. Data analysis for a five-year review of the lower Payette River TMDL was completed in 2010. The review included a comparative analysis of data collected since the development of the bacteria TMDL. Data collected by ISDA in 2007 indicated that suspended sediment concentrations are impairing beneficial uses

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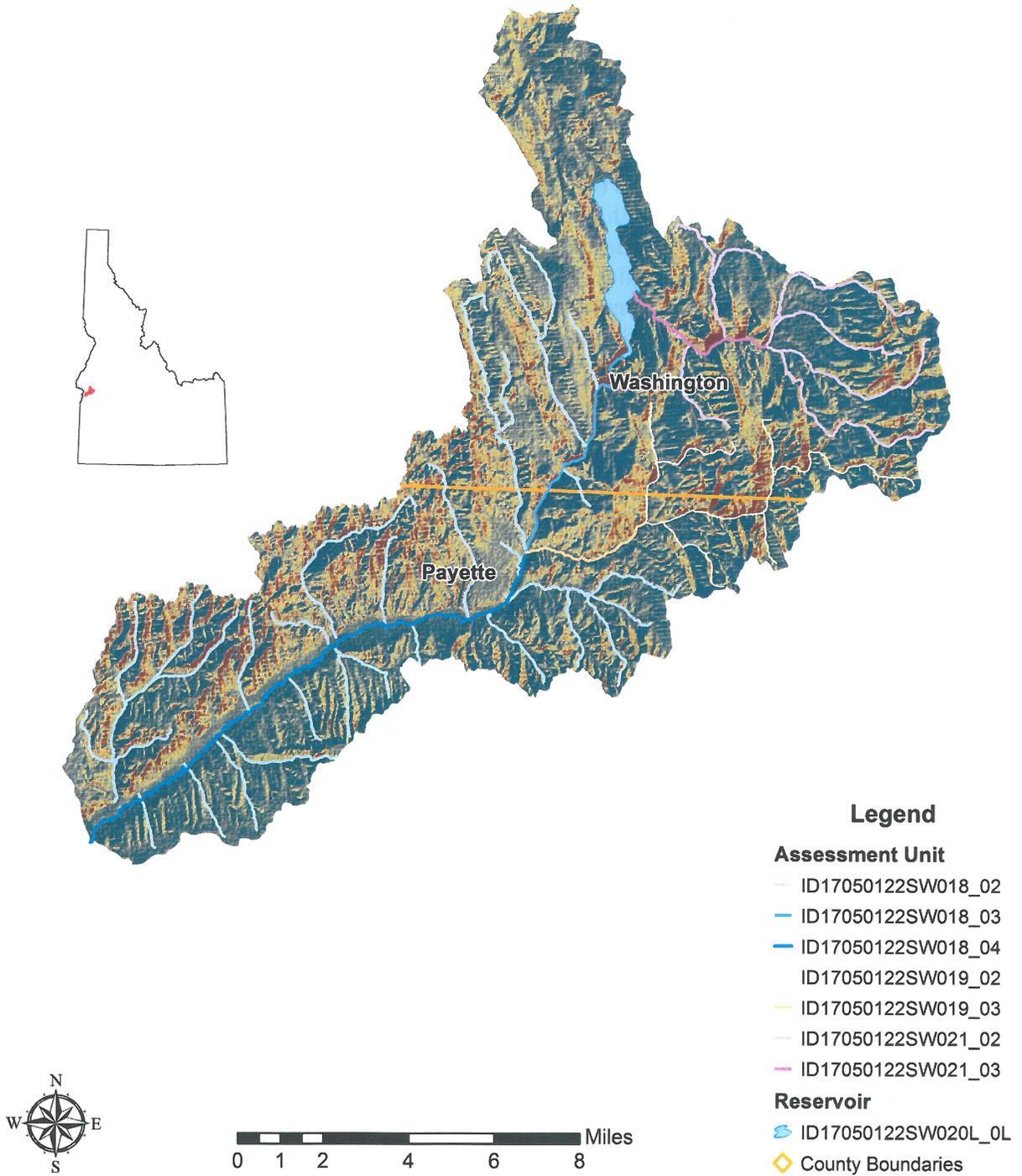


Figure A. Little Willow Creek watershed assessment units.