

April 2012

TITLE: Hydraulic and Geomorphic Assessment of the Merced River and Historic Bridges in East Yosemite Valley

ABSTRACT

The Merced River in the popular and picturesque eastern-most part of Yosemite Valley in Yosemite National Park, California, USA, has been extensively altered since the park was first conceived in 1864. Human trampling of streambanks and the historical construction of undersized stone bridges have been implicated in significant changes to the geomorphology of the stream, including large increases in stream width and exacerbated overbank flooding. In response, the National Park Service requested a study of the hydraulic and geomorphic conditions affecting the most-heavily influenced part of the river, a 2.4km reach in eastern Yosemite Valley extending from above the Tenaya Creek and Merced River confluence to below Housekeeping Bridge. As part of the study, present-day conditions and several hypothetical planning scenarios were evaluated, including historical conditions, the removal of an elevated road berm and the removal of three undersized historic stone bridges identified as potential problems: Sugar Pine, Ahwahnee and Stoneman Bridges.