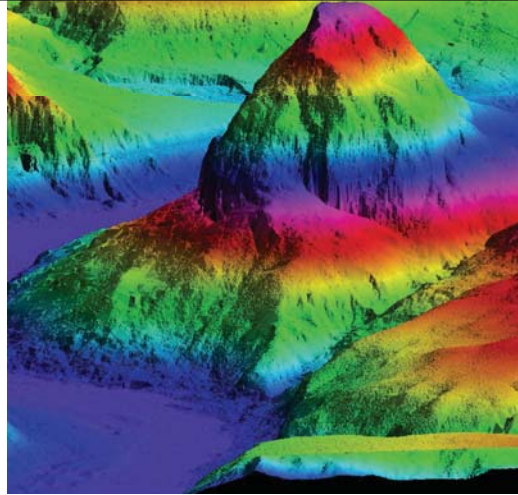




North Coast Railroad Authority Existing Rail



Eel River LiDAR



Eel River Via Helicopter

# NCRA Route Rehabilitation Program Marin-Sonoma-Mendocino Counties, CA

Towill, Inc. was selected to provide professional surveying and topographic mapping services for approximately 200 miles of the North Coast Railroad Authority (NCRA) alignment through Marin, Sonoma, Mendocino, and Humboldt counties. HNTB's scope of work mandated that Towill utilize the most effective technologies available to establish a comprehensive geodetic control network, and to produce 1"-100' topographic mapping with 1ft contours and color orthophoto aerial images with a ground resolution of six inches.

Towill manned a raft to access remote areas in order to provide ground control surveys along an extremely remote and winding river. Towill determined that rafting down the Eel River was the most cost-effective means of performing the ground control surveys. We loaded a survey crew and GPS equipment onto the raft for a 35-mile journey, stopping every few miles to set precise aerial control panels.

In order to acquire the imagery suitable for generating 1ft topographic contours in the rugged Eel River Canyon, Towill equipped a helicopter with an infrared ground scanning system (LiDAR) to fly while following the centerline of the railroad as it follows the sinuous curves of the Eel River Canyon. The entire 98-mile LiDAR survey was completed in two days, exceeding the expectations of the owner and the client.

OWNER  
North Coast Railroad Authority

CLIENT  
HNTB, Inc.  
1330 Broadway, Suite 1630  
Oakland, CA 94612

  
AMERICAN COUNCIL OF ENGINEERING COMPANIES  
*California*

 **TOWILL** | Surveying, Mapping  
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