

Lower Northwest Interceptor

Seismic Evaluation & Design

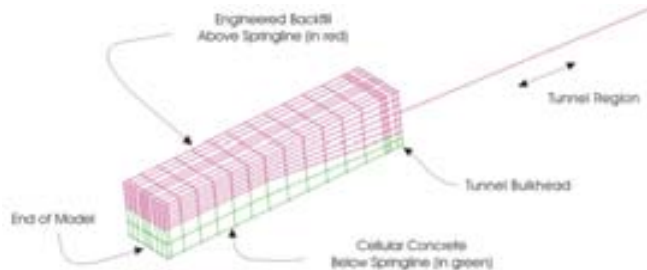
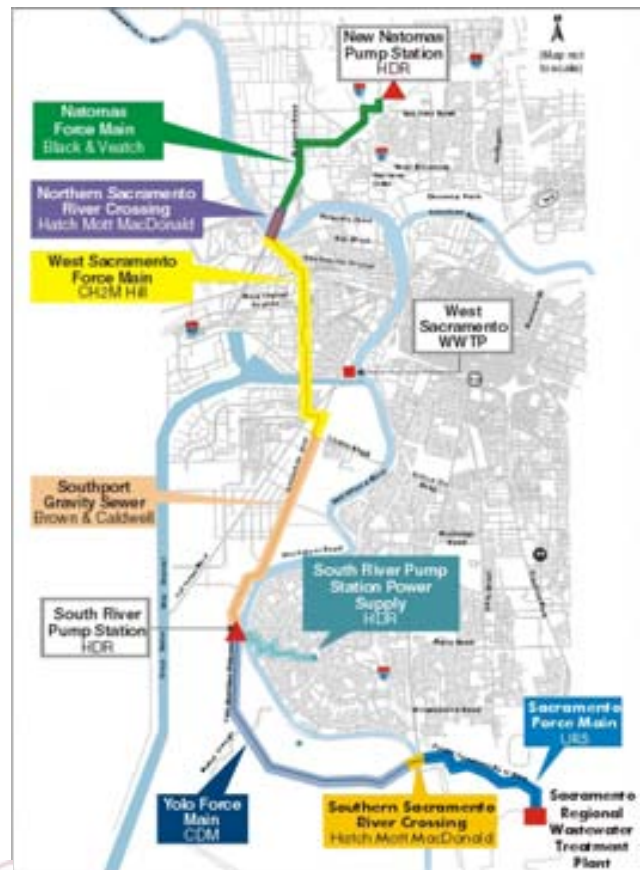
Location: Sacramento, CA

Owner: Sacramento Regional Cnty Sanitation District

The Lower Northwest Interceptor (LNWI) is a regional pipeline that will provide sewer service for the growing northern Sacramento County area and West Sacramento. The pipeline route and overall planning are the result of a cooperative effort among area governments to ensure that the entire region is provided with the highest quality sewer service possible.

The LNWI, at an estimated construction cost of \$115M, is one of the most ambitious projects to be implemented by the Sacramento Regional County Sanitation District (SRCSD) since the District was formed. Once completed, it will serve as the critical link needed to bring wastewater from West Sacramento and the newly developing areas of Natomas to the Sacramento Regional Wastewater Treatment Plant (SRWTP) in Elk Grove. The pipeline route begins in North Natomas and continues through the city of West Sacramento, rural Yolo County and ends at the SRWTP.

The overall program includes two new pump stations, five pipeline projects and 14 tunneled crossings, including two tunneled crossings under the Sacramento River.



LNWI-South Tunnel



SC Solutions was responsible for the seismic evaluation of the Southern and Northern Sacramento River Crossings for the Lower Northwest Interceptor Project. The global models included a launching and receiving shaft, embedded pipes within the shafts, and a buried tunnel region which extends below the river. Seismic time history analyses were performed for both crossings, focusing on determining the expected level of pipe steel strain in the tunnel region and determining the relative axial displacements and rotations through the pipe “coupling” in the shaft regions. During analyses, the effective soil spring force-displacement relations were varied to determine overall system sensitivity.