



## Innovative Design for the SFOBB I-80 Yerba Buena Island WB Ramps

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### Abstract

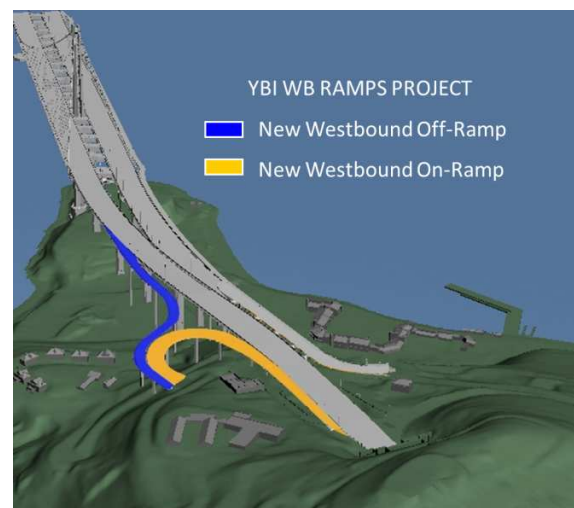
The San Francisco County Transportation Authority retained AECOM for the design of the new westbound ramps providing access between the new east-span of San Francisco-Oakland Bay Bridge and Yerba Buena Island. The purpose of the project is to improve mobility, safety, and access by replacing two westbound existing ramps on I-80 constructed in the 1930s. The new ramps will provide a significant improvement geometrically and operationally over the current ramps, and will include bridge structures that complement the SFOBB architecture. The project was cleared under an EIR/EIS prepared by AECOM. The construction contract of the project was awarded in late 2013, and construction completion is targeted for late 2016. This paper discusses a number of innovative design solutions to address the project challenges associated with the site conditions, environmental restrictions, geotechnical challenges, and a high level of seismicity.

**Keywords:** SFOBB; concrete-box; post-tensioning; steel-box; GFRG; seismic; aesthetic.

### 1 Introduction

The City of San Francisco proposed to construct westbound (WB) on and off ramps at Yerba Buena Island (YBI) to and from the new east span of the San Francisco Oakland Bay Bridge (SFOBB). The new east span of SFOBB was recently completed via several construction contracts, which incorporated a number of structure segments. This \$50 million YBI WB Ramp Project will interface directly with two of these structure segments (i.e., the "YBI Viaduct Replacement" and the "YBI Transition Structure"), which have been completed. The rendering of the YBI WB Ramp structures with the adjacent SFOBB structures is shown in Fig. 1.

The general arrangement of the YBI WB Ramp Project is shown in Fig. 2, which consists of five



*Fig.1: Rendering of YBI WB structures with adjacent new SFOBB structures*