

Notice of Section 401 Application Reception

File Number: 362022-18

Project Name: Carbon Canyon Channel Flood Control Improvement Project

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Project City: Chino Hills

Project County: San Bernardino

Applicant Organization: San Bernardino County Flood Control District

Applicant Name: Anthony Pham

Waterboard Staff: TBA

Brief Description of Project:

Project Description: The Project goal is to decrease the chances of flooding during a 100-year storm event by improving the capacity and conveyance of the District-maintained facility. The Project consists of construction of a trapezoidal channel with articulating block invert with hardened sidewalls. The improved channel will replace an undersized earthen and rip-rap channel. The Channel will include two transition structures. These two structures will transition existing regular concrete channels to the improved channel. The channel will also consist of a junction structure with English Channel which joins from the northwest. The new Channel will allow for ultimate flows to be conveyed within District ROW.

Project Activities: The preliminary Project design consists of construction of an approximately 4,800-linear foot-long flood control channel, including a 4,200-foot long trapezoidal channel with concrete side slope and articulating block invert, a 50-foot long double concrete box, and a 560-foot long rectangular concrete channel. The improved channel will replace an undersized earthen channel. The channel will include two transition structures which will transition existing rectangular concrete channels to the improved channel. The channel will also consist of a riprap junction structure with English Channel which joins from the northwest. The channel improvements will allow for ultimate flows to be conveyed within District ROW. The channel will have a partially permeable invert 40 feet wide, 15 feet deep, and side slopes of 1.5:1. The side slopes will be concreted to prevent erosion and decrease the friction for high flows. The channel invert will consist of a 30-foot wide open cell articulating block surface in the middle with a 5-foot strip of concrete along each edge parallel to the walls. These outside strips will allow larger flows to move faster to help reduce the friction created by vegetation growth which provides for the redevelopment of natural habitat within the

channel as it occurs now. The design will allow flows to move through the vegetation that may grow in the channel, which can improve water quality, with the two outside edges of concrete reducing the amount of friction, which will allow higher flows to be conveyed along the channel. The use of articulating block on the invert (which is wider than current conditions) may increase the amount of permeability in the channel as compared to the existing rock invert. An articulating block surface provides a hard armor surface that is an alternative to rip rap. It consists of a matrix of individual concrete blocks placed together to form an erosion-resistant overlay with specific hydraulic performance. Overall, this design will allow the channel to convey storm water and reduce the chances of flooding, as well as allow vegetation to continue to grow in the bottom of the channel.