

15 / APPENDIX

BLUE PARK

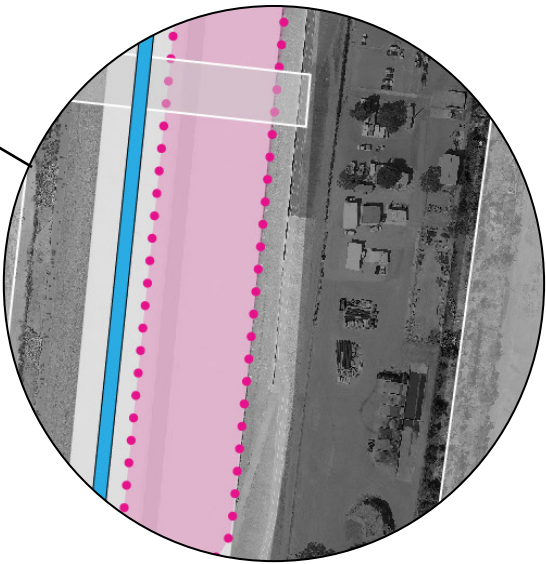
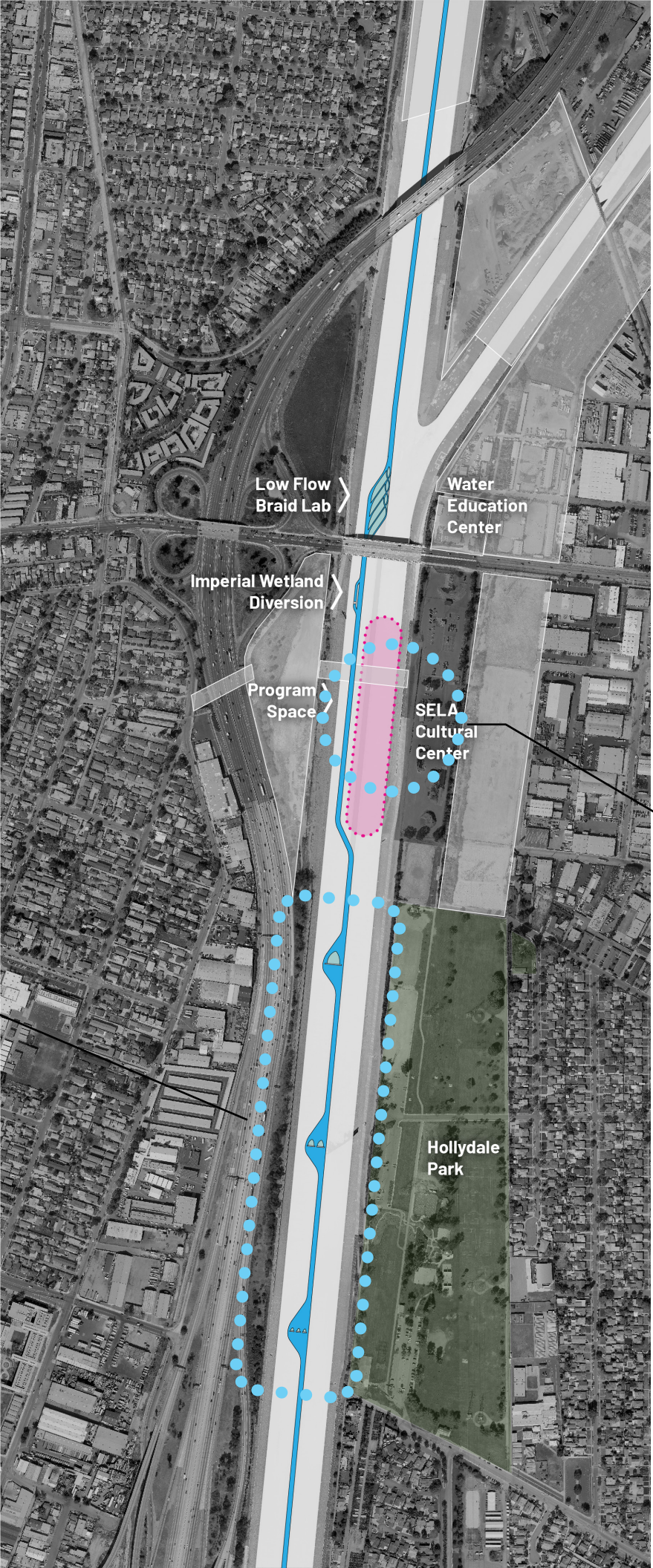
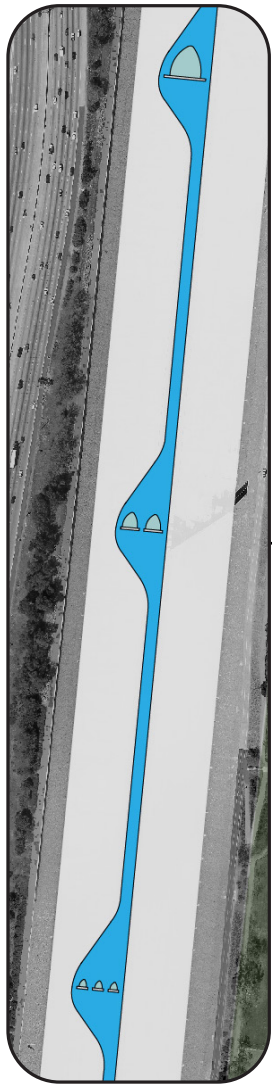
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BLUE PARK

HYDRAULICS

The following hydraulic studies informed the CFD modelling for the Blue Park Project (see Chapter 9) that evaluated a range of proposed design features relative to the baseline study of the existing hydraulics, featured in the Additional Research, Chapter 5. As introduced in those chapters, the complex hydraulics of the critical scenario of the Rio Hondo peak flow required comprehensive 3D analysis to confirm and/or verify the technical feasibility of future Blue Park features.

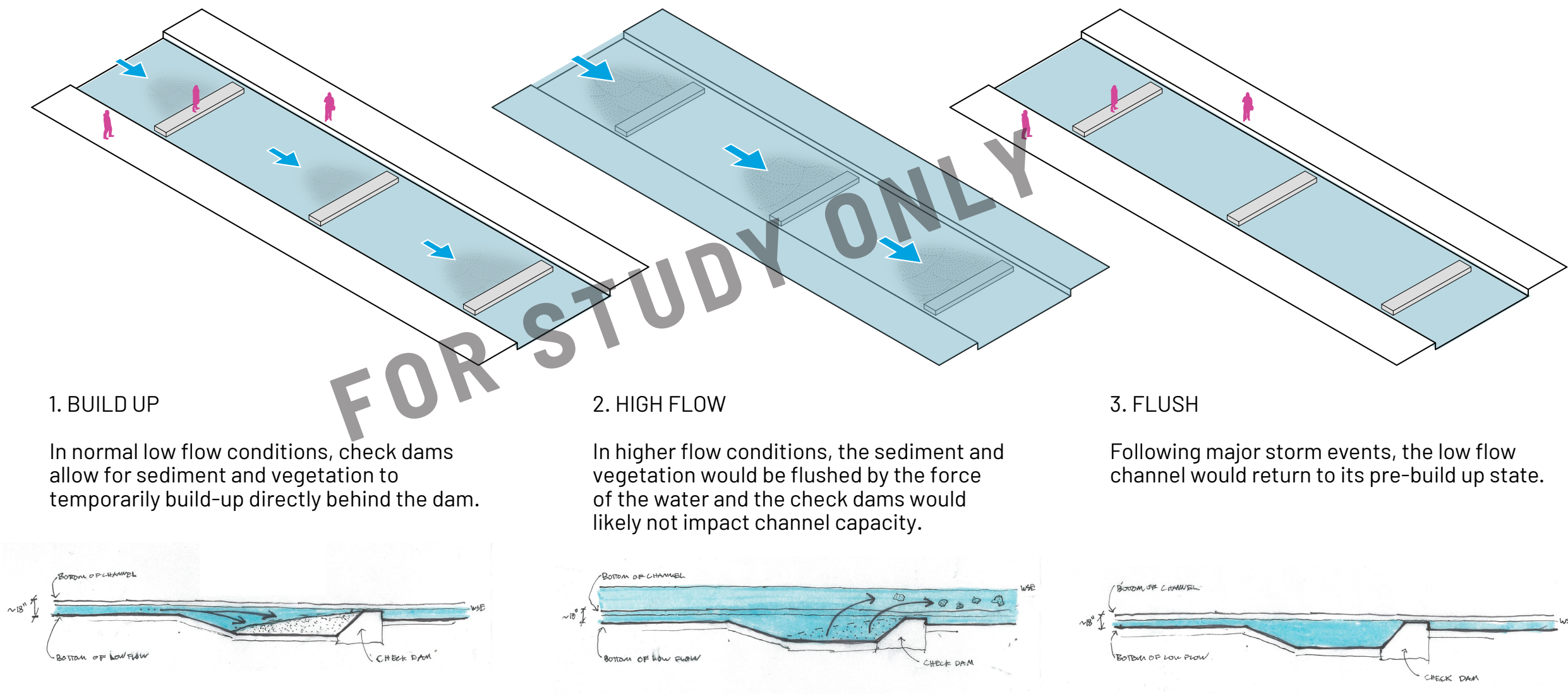
These two studies represent design features that were considered but ultimately not proposed in the Blue Park project design as they were determined to increase flood risk relative to the baseline study. The Technical Team explored multiple options and configurations as shown for each study here to rigorously test these features that each hold opportunities for additional habitat creation, water education, and connectivity. Although these studies were tested together with other channel modifications, bridge piers for the SELA Bridge Park, and additional ramps and terracing, the results require additional hydraulic analysis to ensure that they do not increase flood risk and to minimize hydraulic impacts.



BLUE PARK

HYDRAULICS: LOW FLOW MODIFICATIONS

The first hydraulic study proposed sediment check dams within a series of low flow channel modifications located the portion of the channel south of the future Imperial Wetlands and SELA Bridge Park and west of Hollydale Regional Park. While the check dams provided potential education and habitat benefits, as located, they had an observable negative impact on the hydraulics, increasing flood risk. It is possible that these design features may be suitable in other areas or could be hydrodynamically optimized, but would require additional hydraulic analysis to ensure that they do not increase flood risk.



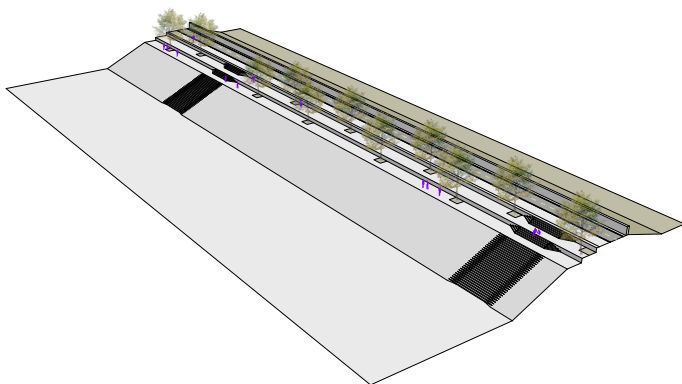
NOTE: The hydraulic analysis for this project has been based on the USACE regulatory 1D hydraulic model. Due to the hydraulic complexities of the confluence site and proposed projects, a 3D model is warranted and was developed.

BLUE PARK

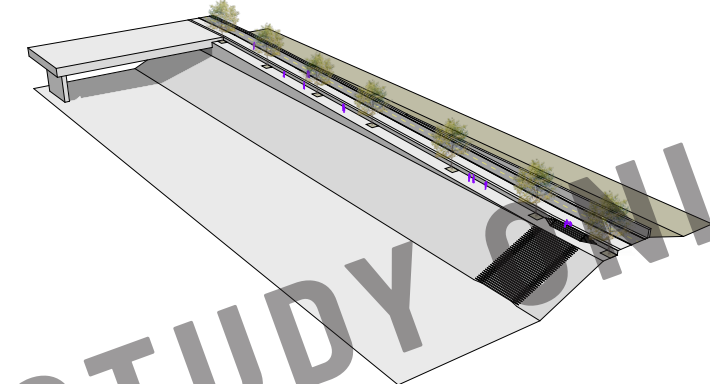
HYDRAULICS: POTENTIAL LEVEE MODIFICATIONS

The second study shows multiple terracing and ramp options along the east bank of the levee adjacent and south of the future SELA Bridge Park and east of the future SELA Cultural Center. They include both partial and full channel terraces along a portion of the levee or along the entire side of the levee. Portions of the terrace that were located below the water surface elevation of the design storm flow were observed to increase flood risk.

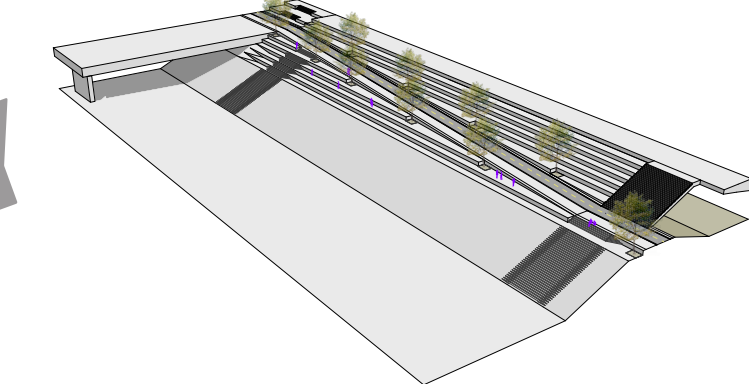
DOUBLE TERRACE



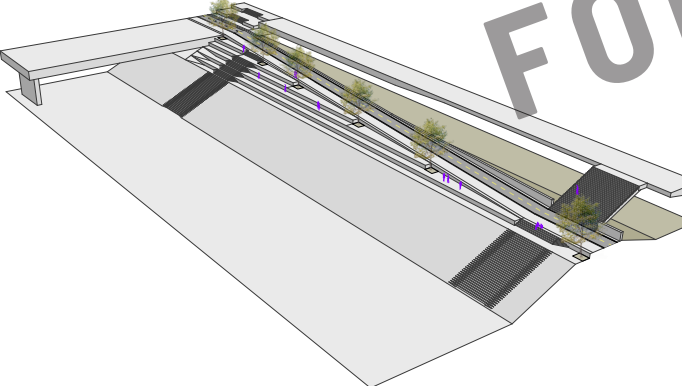
SINGLE TERRACE + RAMP TO BRIDGE



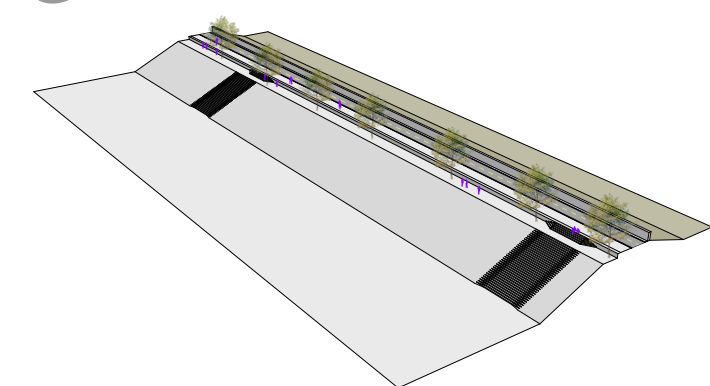
UPPER AND LOWER LARGE TERRACES + RAMP TO BRIDGE



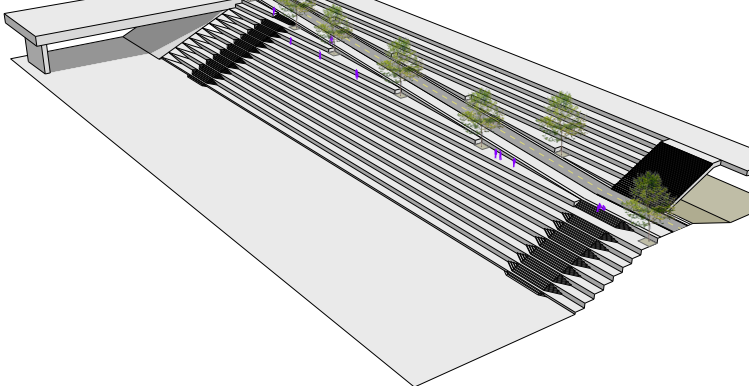
LOWER LARGE TERRACES + RAMP TO BRIDGE



SINGLE TERRACE



FULL CHANNEL TERRACES + RAMP TO BRIDGE*



*Terraces below the water surface elevation of a design storm event require additional to hydraulic analysis to ensure flood risk is not increased.

NOTE: Terraces below the design peak water surface elevation require additional hydraulic analysis to ensure flood risk is not increased and minimize hydraulic impacts. River bank terracing should be designed to create additional flow area (i.e. remove bank material instead of adding) as practical, and to have smooth transitions (i.e. avoid abrupt changes and protrusions into the flow path).

