Fenton Parkway Bridge
Mikel Ciafre, Roman Gonzalez, Erika Kenion, Jacobo Velasco, Nicholle Noelle Willis, Ross Wong

About Us
Nicholle Noelle Willis
Civil Engineer
Mikel Ciafre
P&I Civil Engineer
Roman Gonzalez
Environmental Engineer
Erika Kenion
Civil Engineer
Jacobo Velasco
Geotechnical Engineer
Ross Wong
Civil Engineer

Existing Conditions
City: San Diego
Bridge will be located east of San Diego State West Campus, North of Camino Del Rio N & Mission City Parkway. And South of Fenton Parkway & Northside Drive. Bridge will connect Camino Del Rio N & Mission City Parkway over the San Diego River with Fenton Pkwy & Northside Dr.

Design and Approach
Structural
- Type of Bridge
  - Based upon the length and abutment placement
  - Could not have an abutment in the river environment, so used a through-arch bridge

Traffic
- Intersection Dimensions
  - Necessary Street Widening on Eastern Side of Fenton Parkway
  - Three Legged Intersection
  - Two 11’ Southbound Lanes on Fenton Parkway
  - Two 11’ Northbound Lanes on Fenton Parkway
  - 6’ Wide Bicycle Lanes on Both Sides of Fenton Parkway

Traffic Signal Design
- Fully Actuated 3 Phase Traffic Signal with Priority on Fenton Parkway
- Traffic Signal will be Synchronized with MTS Trolley and Rail Crossing Gate
- Designed to meet Forecasted Traffic Demand with an A Level of Service

Roadway Design
- demolition, street widening, and horizontal/vertical alignments
- will follow Caltrans specifications
- road profile with asphalt depths and drainage grade

Geotechnical
- Recommendations
  - Deep Pile Foundation
  - Socketed Caisson (Drilled Pile)
  - 2 piles per pier

Geotechnical
- Borehole Basin

Project Objectives
To propose a design for Fenton Street Bridge
- Structural
  - Bridge Design
  - Calculations
  - Site Civil
  - Street Improvement Plans
  - Traffic Signal Plans
  - Grading Design
  - Cost Estimate
  - Street Design
  - Geotechnical Study
  - Stormwater
    - Drainage Study
    - SWQMP
    - BMPs
  - Erosion Control – Post Construction
  - Design Impact
  - Public, Health, Safety, & Welfare
  - Global Factors
  - Social Factors
  - Environmental Factors
  - Economic Factors
  - ISI Envision
  - USGBC LEED

Proposed Conditions

Findings
Stormwater
- Existing Conditions
  - Land Use: Recreational
  - Vegetation: Riparian
  - Watershed Identification: Lower San Diego 907.1
  - Discharge Location: Pacific Ocean
  - Ocean Beach Area: Tributary Area: 1.21 acres

Geotechnical
- CPT (Conet Penetration Test)
- Soil is susceptible to liquefaction
- No significant seismic motion was found

Pollutants of Concern
- Indicator Bacteria
- Sediments
- Nutrients
- Heavy Metals
- Trash & Debris