APPENDIX A
Air Quality/Greenhouse Gas/ Energy Data

COLLINS ISLAND BRIDGE REPLACEMENT PROJECT Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	COLLINS ISLAND BRIDGE REPLACEMENT PROJECT
Construction Start Date	2/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	16.2
Location	33.608259, -117.899921
County	Orange
City	Newport Beach
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5976
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.18

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Bridge/Overpass Construction	0.01	Mile	0.01	0.00	—	—	—	New Bridge: 31 ft (0.00587 mi) long x 20.5 ft (0.00398 mi) wide

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.88	2.42	19.3	28.2	0.05	0.86	1.52	2.39	0.79	0.22	1.02	—	5,337	5,337	0.20	0.06	1.82	5,362
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.88	2.42	19.3	28.0	0.05	0.86	1.53	2.39	0.80	0.22	1.02	—	5,327	5,327	0.21	0.06	0.05	5,351
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.45	1.22	9.96	13.6	0.03	0.42	0.55	0.96	0.39	0.09	0.47	—	2,874	2,874	0.11	0.03	0.39	2,887
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.26	0.22	1.82	2.49	< 0.005	0.08	0.10	0.18	0.07	0.02	0.09	—	476	476	0.02	0.01	0.07	478

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.88	2.42	19.3	28.2	0.05	0.86	1.52	2.39	0.79	0.22	1.02	—	5,337	5,337	0.20	0.06	1.82	5,362
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.88	2.42	19.3	28.0	0.05	0.86	1.53	2.39	0.80	0.22	1.02	—	5,327	5,327	0.21	0.06	0.05	5,351
2026	0.87	0.73	6.40	9.78	0.02	0.26	0.20	0.45	0.24	0.05	0.28	—	2,349	2,349	0.09	0.02	0.02	2,359
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.45	1.22	9.96	13.6	0.03	0.42	0.55	0.96	0.39	0.09	0.47	—	2,874	2,874	0.11	0.03	0.39	2,887
2026	0.01	0.01	0.08	0.12	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	27.6	27.6	< 0.005	< 0.005	< 0.005	27.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.26	0.22	1.82	2.49	< 0.005	0.08	0.10	0.18	0.07	0.02	0.09	—	476	476	0.02	0.01	0.07	478
2026	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	< 0.005	4.59

3. Construction Emissions Details

3.1. Demolition Phase 1 (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.46	12.5	14.5	0.03	0.49	—	0.49	0.45	—	0.45	—	3,564	3,564	0.14	0.03	—	3,576

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.46	12.5	14.5	0.03	0.49	—	0.49	0.45	—	0.45	—	3,564	3,564	0.14	0.03	—	3,576
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.51	1.75	< 0.005	0.06	—	0.06	0.05	—	0.05	—	430	430	0.02	< 0.005	—	431
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.27	0.32	< 0.005	0.01	—	0.01	0.01	—	0.01	—	71.1	71.1	< 0.005	< 0.005	—	71.4
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.98	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	232	232	< 0.005	0.01	0.88	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.6	39.6	< 0.005	0.01	0.08	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.85	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	221	221	< 0.005	0.01	0.02	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.6	39.6	< 0.005	0.01	< 0.005	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.0	27.0	< 0.005	< 0.005	0.05	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.78	4.78	< 0.005	< 0.005	< 0.005	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.47	4.47	< 0.005	< 0.005	0.01	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	< 0.005	—

3.3. Demolition Phase 2 (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.74	1.46	12.5	14.5	0.03	0.49	—	0.49	0.45	—	0.45	—	3,564	3,564	0.14	0.03	—	3,576
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.46	12.5	14.5	0.03	0.49	—	0.49	0.45	—	0.45	—	3,564	3,564	0.14	0.03	—	3,576
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.75	0.87	< 0.005	0.03	—	0.03	0.03	—	0.03	—	215	215	0.01	< 0.005	—	216
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.14	0.16	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	35.6	35.6	< 0.005	< 0.005	—	35.7
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.98	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	232	232	< 0.005	0.01	0.88	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.01	< 0.005	0.10	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	79.2	79.2	0.01	0.01	0.17	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.85	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	221	221	< 0.005	0.01	0.02	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.01	< 0.005	0.10	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	79.3	79.3	0.01	0.01	< 0.005	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.02	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.78	4.78	< 0.005	< 0.005	< 0.005	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.24	2.24	< 0.005	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	< 0.005	—

3.5. Bridge Construction Phase 1 (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.62	1.35	12.4	14.5	0.03	0.46	—	0.46	0.42	—	0.42	—	3,447	3,447	0.14	0.03	—	3,459
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.49	1.75	< 0.005	0.06	—	0.06	0.05	—	0.05	—	416	416	0.02	< 0.005	—	417
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.27	0.32	< 0.005	0.01	—	0.01	0.01	—	0.01	—	68.8	68.8	< 0.005	< 0.005	—	69.0
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.07	1.12	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	265	265	< 0.005	0.01	1.01	—
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.9	31.9	< 0.005	< 0.005	0.09	—
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.6	39.6	< 0.005	0.01	0.08	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.9	30.9	< 0.005	< 0.005	0.05	—
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.84	3.84	< 0.005	< 0.005	< 0.005	—
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.78	4.78	< 0.005	< 0.005	< 0.005	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.11	5.11	< 0.005	< 0.005	0.01	—
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.64	0.64	< 0.005	< 0.005	< 0.005	—
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	< 0.005	—

3.7. Street Improvements Phase 1 (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.74	2.30	19.1	26.3	0.05	0.86	—	0.86	0.79	—	0.79	—	4,846	4,846	0.20	0.04	—	4,862

Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	0.42	3.46	4.75	0.01	0.16	—	0.16	0.14	—	0.14	—	876	876	0.04	0.01	—	879
Dust From Material Movement	—	—	—	—	—	—	0.19	0.19	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.63	0.87	< 0.005	0.03	—	0.03	0.03	—	0.03	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.12	1.96	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	465	465	0.01	0.02	1.76	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.4	26.4	< 0.005	< 0.005	0.06	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.32	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	81.0	81.0	< 0.005	< 0.005	0.14	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.78	4.78	< 0.005	< 0.005	< 0.005	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.4	13.4	< 0.005	< 0.005	0.02	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	< 0.005	—

3.9. Street Improvements Phase 2 (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.74	2.30	19.1	26.3	0.05	0.86	—	0.86	0.79	—	0.79	—	4,846	4,846	0.20	0.04	—	4,862
Dust From Material Movement	—	—	—	—	—	—	1.06	1.06	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.28	2.30	3.17	0.01	0.10	—	0.10	0.10	—	0.10	—	584	584	0.02	< 0.005	—	586
Dust From Material Movement	—	—	—	—	—	—	0.13	0.13	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.42	0.58	< 0.005	0.02	—	0.02	0.02	—	0.02	—	96.7	96.7	< 0.005	< 0.005	—	97.0
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.14	1.69	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	442	442	0.01	0.02	0.05	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.6	39.6	< 0.005	0.01	< 0.005	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.21	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	54.0	54.0	< 0.005	< 0.005	0.09	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.78	4.78	< 0.005	< 0.005	< 0.005	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.95	8.95	< 0.005	< 0.005	0.02	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	< 0.005	—

3.11. Landscaping/Paving Phase 2 (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.87	0.73	6.92	9.15	0.02	0.29	—	0.29	0.27	—	0.27	—	2,159	2,159	0.09	0.02	—	2,166
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.35	0.47	< 0.005	0.01	—	0.01	0.01	—	0.01	—	110	110	< 0.005	< 0.005	—	110
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.2	18.2	< 0.005	< 0.005	—	18.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.06	0.73	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	189	189	< 0.005	0.01	0.02	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.77	9.77	< 0.005	< 0.005	0.02	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.62	1.62	< 0.005	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

3.13. Landscaping/Paving Phase 2 (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.81	0.68	6.35	9.10	0.02	0.26	—	0.26	0.24	—	0.24	—	2,160	2,160	0.09	0.02	—	2,167
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.4	25.4	< 0.005	< 0.005	—	25.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.20	4.20	< 0.005	< 0.005	—	4.21
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.05	0.68	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	186	186	< 0.005	0.01	0.02	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.21	2.21	< 0.005	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.37	0.37	< 0.005	< 0.005	< 0.005	—

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition Phase 1	Linear, Grubbing & Land Clearing	2/1/2025	4/3/2025	5.00	44.0	—
Demolition Phase 2	Linear, Grubbing & Land Clearing	9/5/2025	10/6/2025	5.00	22.0	—
Bridge Construction Phase 1	Linear, Grading & Excavation	4/4/2025	6/4/2025	5.00	44.0	—
Street Improvements Phase 1	Linear, Drainage, Utilities, & Sub-Grade	6/5/2025	9/4/2025	5.00	66.0	—
Street Improvements Phase 2	Linear, Drainage, Utilities, & Sub-Grade	10/7/2025	12/5/2025	5.00	44.0	—

Landscaping/Paving Phase 2	Linear, Paving	12/6/2025	1/6/2026	5.00	22.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition Phase 1	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition Phase 1	Cranes	Diesel	Average	1.00	8.00	367	0.29
Demolition Phase 1	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Demolition Phase 1	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Demolition Phase 1	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
Demolition Phase 1	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37
Demolition Phase 1	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Demolition Phase 2	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition Phase 2	Cranes	Diesel	Average	1.00	8.00	367	0.29
Demolition Phase 2	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Demolition Phase 2	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Demolition Phase 2	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
Demolition Phase 2	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37
Demolition Phase 2	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Bridge Construction Phase 1	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Bridge Construction Phase 1	Cranes	Diesel	Average	1.00	8.00	367	0.29

Bridge Construction Phase 1	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Bridge Construction Phase 1	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Bridge Construction Phase 1	Surfacing Equipment	Diesel	Average	1.00	8.00	399	0.30
Bridge Construction Phase 1	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Bridge Construction Phase 1	Welders	Diesel	Average	2.00	8.00	46.0	0.45
Street Improvements Phase 1	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Street Improvements Phase 1	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Street Improvements Phase 1	Graders	Diesel	Average	2.00	8.00	148	0.41
Street Improvements Phase 1	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Street Improvements Phase 1	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Street Improvements Phase 1	Rough Terrain Forklifts	Diesel	Average	1.00	8.00	96.0	0.40
Street Improvements Phase 1	Rubber Tired Loaders	Diesel	Average	2.00	8.00	150	0.36
Street Improvements Phase 1	Signal Boards	Diesel	Average	1.00	8.00	6.00	0.82
Street Improvements Phase 1	Surfacing Equipment	Diesel	Average	1.00	8.00	399	0.30
Street Improvements Phase 1	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Street Improvements Phase 1	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Street Improvements Phase 2	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

Street Improvements Phase 2	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Street Improvements Phase 2	Graders	Diesel	Average	2.00	8.00	148	0.41
Street Improvements Phase 2	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Street Improvements Phase 2	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Street Improvements Phase 2	Rough Terrain Forklifts	Diesel	Average	1.00	8.00	96.0	0.40
Street Improvements Phase 2	Rubber Tired Loaders	Diesel	Average	2.00	8.00	150	0.36
Street Improvements Phase 2	Signal Boards	Diesel	Average	1.00	8.00	6.00	0.82
Street Improvements Phase 2	Surfacing Equipment	Diesel	Average	1.00	8.00	399	0.30
Street Improvements Phase 2	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Street Improvements Phase 2	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Landscaping/Paving Phase 2	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Landscaping/Paving Phase 2	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Landscaping/Paving Phase 2	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Landscaping/Paving Phase 2	Signal Boards	Electric	Average	1.00	8.00	6.00	0.82
Landscaping/Paving Phase 2	Surfacing Equipment	Diesel	Average	1.00	8.00	399	0.30
Landscaping/Paving Phase 2	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition Phase 1	—	—	—	—
Demolition Phase 1	Worker	17.5	18.5	LDA,LDT1,LDT2
Demolition Phase 1	Vendor	0.00	10.2	HHDT,MHDT
Demolition Phase 1	Hauling	0.57	20.0	HHDT
Demolition Phase 1	Onsite truck	—	—	HHDT
Street Improvements Phase 1	—	—	—	—
Street Improvements Phase 1	Worker	35.0	18.5	LDA,LDT1,LDT2
Street Improvements Phase 1	Vendor	0.00	10.2	HHDT,MHDT
Street Improvements Phase 1	Hauling	0.38	20.0	HHDT
Street Improvements Phase 1	Onsite truck	—	—	HHDT
Demolition Phase 2	—	—	—	—
Demolition Phase 2	Worker	17.5	18.5	LDA,LDT1,LDT2
Demolition Phase 2	Vendor	0.00	10.2	HHDT,MHDT
Demolition Phase 2	Hauling	1.14	20.0	HHDT
Demolition Phase 2	Onsite truck	—	—	HHDT
Bridge Construction Phase 1	—	—	—	—
Bridge Construction Phase 1	Worker	20.0	18.5	LDA,LDT1,LDT2
Bridge Construction Phase 1	Vendor	1.00	10.2	HHDT,MHDT
Bridge Construction Phase 1	Hauling	0.57	20.0	HHDT
Bridge Construction Phase 1	Onsite truck	—	—	HHDT
Street Improvements Phase 2	—	—	—	—
Street Improvements Phase 2	Worker	35.0	18.5	LDA,LDT1,LDT2
Street Improvements Phase 2	Vendor	0.00	10.2	HHDT,MHDT

Street Improvements Phase 2	Hauling	0.57	20.0	HHDT
Street Improvements Phase 2	Onsite truck	—	—	HHDT
Landscaping/Paving Phase 2	—	—	—	—
Landscaping/Paving Phase 2	Worker	15.0	18.5	LDA,LDT1,LDT2
Landscaping/Paving Phase 2	Vendor	0.00	10.2	HHDT,MHDT
Landscaping/Paving Phase 2	Hauling	0.00	20.0	HHDT
Landscaping/Paving Phase 2	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition Phase 1	0.00	200	0.01	0.00	—
Demolition Phase 2	0.00	200	0.01	0.00	—
Bridge Construction Phase 1	200	0.00	0.01	0.00	—
Street Improvements Phase 1	200	0.00	0.01	0.00	—

Street Improvements Phase 2	200	0.00	0.01	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Bridge/Overpass Construction	0.35	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	29.4	532	0.03	< 0.005
2026	29.4	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.66	annual days of extreme heat
Extreme Precipitation	3.25	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score

Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	51.9
AQ-PM	53.0
AQ-DPM	94.2
Drinking Water	32.3
Lead Risk Housing	57.9
Pesticides	0.00
Toxic Releases	81.0
Traffic	81.0
Effect Indicators	—
CleanUp Sites	25.6
Groundwater	0.00
Haz Waste Facilities/Generators	26.7
Impaired Water Bodies	90.1
Solid Waste	0.00
Sensitive Population	—
Asthma	5.48
Cardio-vascular	10.7
Low Birth Weights	0.00
Socioeconomic Factor Indicators	—

Education	0.00
Housing	61.3
Linguistic	0.00
Poverty	4.02
Unemployment	—

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	86.80867445
Employed	79.81521879
Median HI	75.47799307
Education	—
Bachelor's or higher	92.03131015
High school enrollment	100
Preschool enrollment	95.7141024
Transportation	—
Auto Access	73.42486847
Active commuting	80.57230848
Social	—
2-parent households	45.73335044
Voting	69.19029899
Neighborhood	—
Alcohol availability	4.516874118
Park access	81.35506224
Retail density	65.44334659

Supermarket access	82.0094957
Tree canopy	5.941229308
Housing	—
Homeownership	38.3036058
Housing habitability	74.87488772
Low-inc homeowner severe housing cost burden	73.38637239
Low-inc renter severe housing cost burden	65.94379571
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	89.59322469
Arthritis	3.0
Asthma ER Admissions	86.1
High Blood Pressure	3.8
Cancer (excluding skin)	1.1
Asthma	69.3
Coronary Heart Disease	4.7
Chronic Obstructive Pulmonary Disease	37.6
Diagnosed Diabetes	57.0
Life Expectancy at Birth	91.4
Cognitively Disabled	70.6
Physically Disabled	62.2
Heart Attack ER Admissions	98.3
Mental Health Not Good	92.6
Chronic Kidney Disease	14.8
Obesity	86.9
Pedestrian Injuries	19.6
Physical Health Not Good	72.6

Stroke	22.5
Health Risk Behaviors	—
Binge Drinking	69.8
Current Smoker	95.4
No Leisure Time for Physical Activity	86.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	18.5
Children	92.2
Elderly	2.4
English Speaking	94.7
Foreign-born	2.3
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	5.0
Traffic Density	78.9
Traffic Access	23.0
Other Indices	—
Hardship	1.7
Other Decision Support	—
2016 Voting	93.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	6.00
Healthy Places Index Score for Project Location (b)	90.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No

Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Per applicant provided construction questionnaire.
Construction: Off-Road Equipment	Per applicant provided construction questionnaire.
Construction: Paving	Per applicant provided construction questionnaire.

Energy Calculations
Construction On-Site (Off-Road) Fuel Consumption

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Fuel Consumption Rate (gallon/hour)[1]	Duration (total hours/day)	# days	Total Fuel Consumption (gallon)
Demolition Phase 1	Concrete/Industrial Saws	1	8	33	0.73	0.96	8	44	339.19
Demolition Phase 1	Cranes	1	8	367	0.29	4.26	8	44	1,498.53
Demolition Phase 1	Excavators	1	8	36	0.38	0.55	8	44	192.61
Demolition Phase 1	Off-Highway Trucks	1	8	376	0.38	5.72	8	44	2,011.75
Demolition Phase 1	Other Construction Equipment	1	8	82	0.42	1.38	8	44	484.92
Demolition Phase 1	Skid Steer Loaders	1	8	71	0.37	1.05	8	44	369.88
Demolition Phase 1	Tractors/Loaders/Backhoes	1	8	84	0.37	1.24	8	44	437.61
Demolition Phase 2	Concrete/Industrial Saws	1	8	33	0.73	0.96	8	22	169.59
Demolition Phase 2	Cranes	1	8	367	0.29	4.26	8	22	749.27
Demolition Phase 2	Excavators	1	8	36	0.38	0.55	8	22	96.31
Demolition Phase 2	Off-Highway Trucks	1	8	376	0.38	5.72	8	22	1,005.88
Demolition Phase 2	Other Construction Equipment	1	8	82	0.42	1.38	8	22	242.46
Demolition Phase 2	Skid Steer Loaders	1	8	71	0.37	1.05	8	22	184.94
Demolition Phase 2	Tractors/Loaders/Backhoes	1	8	84	0.37	1.24	8	22	218.80
Bridge Construction Phase 1	Bore/Drill Rigs	1	8	83	0.5	1.66	8	44	584.32
Bridge Construction Phase 1	Cranes	1	8	367	0.29	4.26	8	44	1,498.53
Bridge Construction Phase 1	Forklifts	1	8	82	0.2	0.66	8	44	230.91
Bridge Construction Phase 1	Generator Sets	1	8	14	0.74	0.41	8	44	145.87
Bridge Construction Phase 1	Surfacing Equipment	1	8	399	0.3	4.79	8	44	1,685.38
Bridge Construction Phase 1	Tractors/Loaders/Backhoes	1	8	84	0.37	1.24	8	44	437.61
Bridge Construction Phase 1	Welders	2	8	46	0.45	0.83	16	44	582.91
Street Improvements Phase 1	Air Compressors	1	8	37	0.48	0.71	8	66	375.09
Street Improvements Phase 1	Generator Sets	1	8	14	0.74	0.41	8	66	218.80
Street Improvements Phase 1	Graders	2	8	148	0.41	2.43	16	66	2,563.12
Street Improvements Phase 1	Plate Compactors	1	8	8	0.43	0.14	8	66	72.65
Street Improvements Phase 1	Pumps	1	8	11	0.74	0.33	8	66	171.92
Street Improvements Phase 1	Rough Terrain Forklifts	1	8	96	0.4	1.54	8	66	811.01
Street Improvements Phase 1	Rubber Tired Loaders	2	8	150	0.36	2.16	16	66	2,280.96
Street Improvements Phase 1	Signal Boards	1	8	6	0.82	0.20	8	66	103.91
Street Improvements Phase 1	Surfacing Equipment	1	8	399	0.3	4.79	8	66	2,528.06
Street Improvements Phase 1	Tractors/Loaders/Backhoes	2	8	84	0.37	1.24	16	66	1,312.82
Street Improvements Phase 1	Trenchers	1	8	40	0.5	0.80	8	66	422.40
Street Improvements Phase 2	Air Compressors	1	8	37	0.48	0.71	8	44	250.06
Street Improvements Phase 2	Generator Sets	1	8	14	0.74	0.41	8	44	145.87
Street Improvements Phase 2	Graders	2	8	148	0.41	2.43	16	44	1,708.75
Street Improvements Phase 2	Plate Compactors	1	8	8	0.43	0.14	8	44	48.44
Street Improvements Phase 2	Pumps	1	8	11	0.74	0.33	8	44	114.61
Street Improvements Phase 2	Rough Terrain Forklifts	1	8	96	0.4	1.54	8	44	540.67
Street Improvements Phase 2	Rubber Tired Loaders	2	8	150	0.36	2.16	16	44	1,520.64
Street Improvements Phase 2	Signal Boards	1	8	6	0.82	0.20	8	44	69.27
Street Improvements Phase 2	Surfacing Equipment	1	8	399	0.3	4.79	8	44	1,685.38
Street Improvements Phase 2	Tractors/Loaders/Backhoes	2	8	84	0.37	1.24	16	44	875.21
Street Improvements Phase 2	Trenchers	1	8	40	0.5	0.80	8	44	281.60
Landscaping/Paving Phase 2	Pavers	1	8	81	0.42	1.36	8	22	239.50
Landscaping/Paving Phase 2	Paving Equipment	1	8	89	0.36	1.28	8	22	225.56
Landscaping/Paving Phase 2	Rollers	1	8	36	0.38	0.55	8	22	96.31
Landscaping/Paving Phase 2	Signal Boards	1	8	6	0.82	0.20	8	22	34.64
Landscaping/Paving Phase 2	Surfacing Equipment	1	8	399	0.3	4.79	8	22	842.69
Landscaping/Paving Phase 2	Tractors/Loaders/Backhoes	1	8	84	0.37	1.24	8	22	218.80
Total Construction Off-Road Fuel Consumption (gallon)									***32,926.01***
Countywide Off-Road Fuel Consumption (2025) (gallon)[2]									***100,261,093.89***
Percentage Increase Countywide									***0.0328%***

Notes:

1. Fuel Consumption Rate = Horsepower x Load Factor x Fuel Consumption Factor

    Where:

    Fuel Consumption Factor for a diesel engine is 0.04 gallons per horsepower per hour (gal/hp/hr) and a gasoline engine is 0.06 gal/hp/hr.

2. Countywide operational fuel consumption, off-road construction equipment diesel fuel consumption, and on-road fuel consumption are from CARB EMFAC2021.

Source: Refer to CalEEMod outputs for assumptions used in this analysis.

Energy Calculations
Constrution Mobile (On-Road) Fuel Consumption

WORKER TRIPS						
Phase	**Phase Length (# days)**	**# Worker Trips**	**Worker Trip Length**	**Total VMT**	**Fuel Consumption Factor (Miles/Gallon/Day)**	**Total Fuel Consumption (gallon)**
Demolition Phase 1	44	17.5	18.5	14,245	**24.90284233**	572.02
Street Improvements Phase 1	66	35	18.5	42,735		1,716.07
Demolition Phase 2	22	17.5	18.5	7,123		286.01
Bridge Construction Phase 1	44	20	18.5	16,280		653.74
Street Improvements Phase 2	44	35	18.5	28,490		1,144.05
Landscaping/Paving Phase 2	22	15	18.5	6,105		245.15
					Worker Trips Total	*4,617.04*
VENDOR TRIPS						
Phase	**Phase Length (# days)**	**# Vendor Trips**	**Vendor Trip Length**	**Total VMT**	**Fuel Consumption Factor (Miles/Gallon/Day)**	**Total Fuel Consumption (gallon)**
Demolition Phase 1	44	0	10.2	0	**8.343886151**	0.00
Street Improvements Phase 1	66	0	10.2	0		0.00
Demolition Phase 2	22	0	10.2	0		0.00
Bridge Construction Phase 1	44	1	10.2	449		53.79
Street Improvements Phase 2	44	0	10.2	0		0.00
Landscaping/Paving Phase 2	22	0	10.2	0		0.00
					Vendor Trips Total	*53.79*
HAULING TRIPS						
Phase	**Phase Length (# days)**	**# Hauling Trips**	**Hauling Trip Length**	**Total VMT**	**Fuel Consumption Factor (Miles/Gallon/Day)[1]**	**Total Fuel Consumption (gallon)**
Demolition Phase 1	44	0.57	20	502	**8.343886151**	60.12
Street Improvements Phase 1	66	0.38	20	502		60.12
Demolition Phase 2	22	1.14	20	502		60.12
Bridge Construction Phase 1	44	0.57	20	502		60.12
Street Improvements Phase 2	44	0.57	20	502		60.12
Landscaping/Paving Phase 2	22	0	20	0		0.00
					Hauling Trips Total	*300.58*
					Total Construction On-Road (Automotive) Fuel Consumption (gallon)	***4,971.41***
					Countywide On-Road Fuel Consumption (2025) (gallon)[1]	***1,280,285,436***
					Percentage Increase Countywide	***0.0004%***

Notes:

1. Countywide operational fuel consumption, off-road construction equipment diesel fuel consumption, and on-road fuel consumption are from CARB EMFAC2021.

Source: Refer to CalEEMod outputs for assumptions used in this analysis.

APPENDIX B
Jurisdictional Delineation/ Marine Reports

November 16, 2023 JN 183038

City of Newport Beach
100 Civic Center Drive
Newport Beach, CA 92660
Robert Stein, Assistant City Engineer

SUBJECT: Delineation of State and Federal Jurisdictional Waters for the Collins Island Bridge Replacement Project, City of Newport Beach, Orange County, California

Dear Mr. Stein,

Michael Baker International (Michael Baker) has prepared this jurisdictional delineation to document the potential for federal waters regulated by the U.S. Army Corps of Engineers Los Angeles District (Corps) as well as state waters regulated by the Santa Ana Regional Water Quality Control Board (RWQCB), the California Department of Fish and Wildlife (CDFW) South Coast Region, and the California Coastal Commission (CCC) for the proposed Collins Island Bridge Replacement Project. Specifically, this report has been prepared to describe, map, and quantify aquatic features located within the survey area. The fieldwork for this jurisdictional delineation was conducted on October 11, 2023.

Project Location

Regionally, the project site is located within the City of Newport Beach (City), in the southwestern portion of Orange County; refer to Exhibit 1, *Regional Vicinity*. The project is depicted in Section 35 of Township 6 south, Range 10 west. The Pacific Ocean bounds the City to the west and surrounding jurisdictions include the cities of Huntington Beach and Costa Mesa to the north, Irvine to the east, and unincorporated Orange County to the south.

The project site is the Collins Island Bridge and its immediate vicinity located on Balboa Island in Newport Bay; refer to Exhibit 2, *Project Limits*. Collins Island is located on the western tip of Balboa Island and is connected to the greater Balboa Island via the Collins Island Bridge. Regional access to the project site is provided via State Route 1 (SR-1; Pacific Coast Highway) and local access to the site is provided via Marine Avenue (across the Balboa Island North Channel), and North Bay Front and Park Avenue on Balboa Island.

Project Description

The proposed project consists of the replacement of the Collins Island Bridge, seawall improvements, and future pump station accommodations (refer to Exhibit 3, *Overall Project Improvements*).

Bridge Replacement

The proposed bridge would be designed to be a total of 20 feet and 6 inches in width to accommodate one vehicle travel lane 13 feet and 9 inches-wide, one 4-foot wide sidewalk, and concrete barriers on each side to provide protection from projected sea level rise. The bridge would be 31 feet in length spanning over existing concrete sheet pile bulkheads.

The current slope along the roadway and sidewalk bridge approaches on both sides of the bridge exceed five percent. Therefore, the profiles would be adjusted to comply with Americans with Disabilities Act (ADA) standards. Landscaped areas and the bridge monument would also be improved to increase sight distance along the adjacent walkways to increase pedestrian safety. A new stop sign and limit line would also be added at the intersection on both sides of the bridge.

Street, sidewalk, and landscaping improvements are also proposed on the Balboa Island side along the Bay Front sidewalk and Park Avenue eastward until the alley. Anticipated improvements include monument sign construction, irrigation, paving, and landscaping.

Seawalls

Seawalls are designed to protect properties from water levels associated with high tides and storm surges. Water surface elevations are also expected to rise in the future due to climate change. Therefore, the project proposes to increase the height of existing seawalls adjacent to the bridge. Currently, most seawalls along Collins Island Bridge and along the Bay Front sidewalk consist of concrete sheet pile bulkheads with a concrete cap (coping) elevation of approximately 9 feet North American Vertical Datum of 1988 (NAVD 88). The proposed seawall improvements would be designed to have a top of wall coping elevation of 11 feet NAVD 88 with a future cap extension elevation up to 14 feet NAVD 88. Some of the existing concrete sheet piles are structurally deficient where existing tie back anchors have corroded and no longer provide adequate support at the upper part of the walls.

To maintain consistency between Collins Island and Balboa Island, existing seawalls along the Bay Front sidewalk would also be improved; refer to Exhibit 5, *Proposed Seawall Improvements*. The seawall improvements along the Bay Front sidewalk are required where the roadway and sidewalk profiles are proposed to be adjusted to meet ADA requirements and to accommodate future sea level rise. The Bay Front sidewalks adjacent to the new proposed seawalls would also be raised to provide a minimum of 42 inches from sidewalk to top of coping.

The new seawalls would be designed to allow access to existing boat ramps and docks. However, certain docks would be temporarily relocated during construction activities. Where possible, the existing concrete sheet pile bulkhead system would remain in place to reduce disturbance and associated environmental impacts. In the case of Bay Front sidewalk seawall improvements, new steel sheet piles would be placed seaward from the existing concrete sheet piles. A new sidewalk and parapet cap would provide seawall protection.

Future Pump Station Accommodations

The City is currently designing storm drain improvements for Park Avenue near the Collins Island Bridge as part of a separate project. As such, given that the proposed project and pump station project are being designed concurrently in close vicinity, the project includes pump station accommodations to convey stormwater outflow into the bay adjacent to the new bridge. Specifically, the pump station and catch basin will have a discharge pipe near the new seawall and east bridge approach. It will also have a collection/distribution drainpipe located beneath the Bay Front Sidewalk adjacent to the new seawall. It should be noted that while the pump station project is being designed by the City concurrently with the proposed project, the pump station project is not a part of the proposed project and would be approved separately.

Summary of Regulations

There are four (4) key agencies that regulate activities within coastal streams, wetlands, and riparian areas in coastal California. The Corps Regulatory Division regulates activities pursuant to Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFW regulates activities under Sections 1600 *et seq*. of the California Fish and Game Code (CFGC), the RWQCB regulates activities pursuant to Section 401 of the CWA and Section 13263 of the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act), and the CCC regulates activities under the California Coastal Act.

Literature Review

A review of relevant literature and materials was conducted to obtain a general understanding of the environmental setting and preliminarily identify features/areas that may fall under the jurisdiction of the regulatory agencies. Relevant materials utilized during the literature review are summarized below.

<u>Watershed</u>

The project site is located within the Newport Bay Hydrologic Unit (18070204). The Newport Bay Watershed is defined by the foothills of the Santa Ana Mountains to the east (Loma Ridge), and the San Joaquin Hills to the west and southwest. The total area of the Newport Bay watershed is approximately 154 square miles. There are 4 sub-watersheds that make up the Greater Newport Bay Watershed: Peters Canyon Wash Upper San Diego Creek, Lower San Diego Creek, and Newport Bay.

<u>Soils</u>

On-site and adjoining soils were reviewed prior to conducting the field delineation using the U.S. Department of Agriculture, Natural Resources Conservation Service (USDA), Web Soil Survey (refer to Attachment C). According to the *Custom Soil Resources Report for Orange County and Part of Riverside County, California* (USDA 2021), the project site is underlain with the Beaches (115) map unit.

<u>Hydric Soils List of California</u>

Michael Baker reviewed the *Hydric Soils List for California* (USDA 2021 to preliminarily verify whether any of the soils mapped within the project site are considered to be hydric. According to the *Hydric Soils List for California*, Beaches (Mapping Unit 115) is listed as hydric.

<u>National Wetlands Inventory</u>

Michael Baker reviewed the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Mapper. The project site has been mapped as Estuarine and marine Deepwater habitat (E1UBLx). This mapped area was used as reference while documenting all potentially jurisdictional features as observed on-site during the field delineation.

<u>Flood Zone</u>

Michael Baker also reviewed the Federal Emergency Management Agency's (FEMA's) National Flood Hazard Layer. Based on the Flood Insurance Rate Map *No. 06059C0382K*, the project site is located in Zone AO. Zone

AO is a Special Flood Hazard Area and is described as coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves and a base flood elevation (BFE) of 15 feet.

Methodology

Richard Beck, Professional Wetland Scientist, and Allexis Cruz conducted a formal jurisdictional delineation of the survey area on October 10, 2023, using the most recent, agency approved methodology, to identify and map jurisdictional limits within the survey area. The delineation was conducted to determine the jurisdictional limits of waters of the U.S. (WoUS), including potential wetlands, and waters of the State located within the boundaries of the survey area.

For this location, potential wetlands were delineated using the methods outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Corps, 2008). For evaluation of wetland waters of the State, methods were modified so that an area can lack vegetation and still qualify as a State wetland in accordance with the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Resources Control Board, 2019). The project site is located within the Coastal Zone.

While in the field, jurisdictional features were recorded on an aerial base map at a scale of 1" = 100' using topographic contours and visible landmarks as guidelines. Data points were obtained with a Garmin Map62 Global Positioning System (GPS) device to record and identify specific widths for ordinary high water mark (OHWM) indicators, locations of photographs, soil pits, and other pertinent jurisdictional features, if present.

Site Conditions

Refer to Attachment A for representative photographs taken within the survey area during the field delineation.

Non-Wetland Tidal Features

Pacific Ocean/Newport Bay

Portions of the project site includes non-wetland tidal areas of Newport Bay/Harbor. The project site is subject to permanent tidal inundation and high tide events (the High Tide Line [HTL] elevation is 7.7 feet above mean sea level). Little to no lateral variation occurs due to the presence of sea walls around the northern and southern limits of the project site. No other jurisdictional areas were noted during the time of the assessment.

Findings

U.S. Army Corps of Engineers

Evidence of a HTL and an OHWM was noted within the boundaries of the project site and survey area. Based on observation of surface water in the bay, the entire open water area would meet the definition of a WoUS as a Traditional Navigable Water (TNW). Refer to Exhibit 6, *Jurisdictional Map*. Approximately 0.01-acre of WoUS would be permanently impacted due to the installation of 250 linear feet of seawall, approximately two (2) feet in width. The seawall would be installed in front of the existing seawall and would be limited to the extent necessary for sea level rise protection.

Regional Water Quality Control Board

As mentioned above, the Pacific Ocean/Newport Bay meets the definition of a WoUS as well as Wates of the State. Impacts are the same as the Corps impacts as State Waters match WoUS.

California Department of Fish and Wildlife

Although other agencies have jurisdiction of the waters within the project site, the CDFW does not take jurisdiction of tidal/beach areas as they do not contain lakes or streambeds. CDFW jurisdiction of Newport Back Bay areas begins immediately east of the State Route 1 (SR-1) bridge. Based on the results of the field delineation, no CDFW jurisdiction is present within the boundaries of the project site; therefore, no impacts to CDFW jurisdiction are anticipated.

California Coastal Commission

As previously mentioned, the project site is located within the Coastal Zone. Based on the results of the field delineation, it was determined that approximately 0.01 acre (250 linear feet at a two-foot width) of CCC jurisdictional open water is located within the permanent impact area. Impacts are the same as the Corps impacts to waters within the Coastal Zone match WoUS.

Regulatory Approval Process

This report has been prepared for the City to document the jurisdictional authority of the Corps, RWQCB, CDFW, and CCC within the project site. Permit authorizations from the Corps, RWQCB, and CCC would be required prior to project construction.

Please feel free to contact me at 949-680-9355 or at rbeck@mbakerintl.com should you have any questions or require additional information.

Sincerely,

Richard Beck

Richard Beck, PWS
Senior Regulatory Specialist

Attachments:

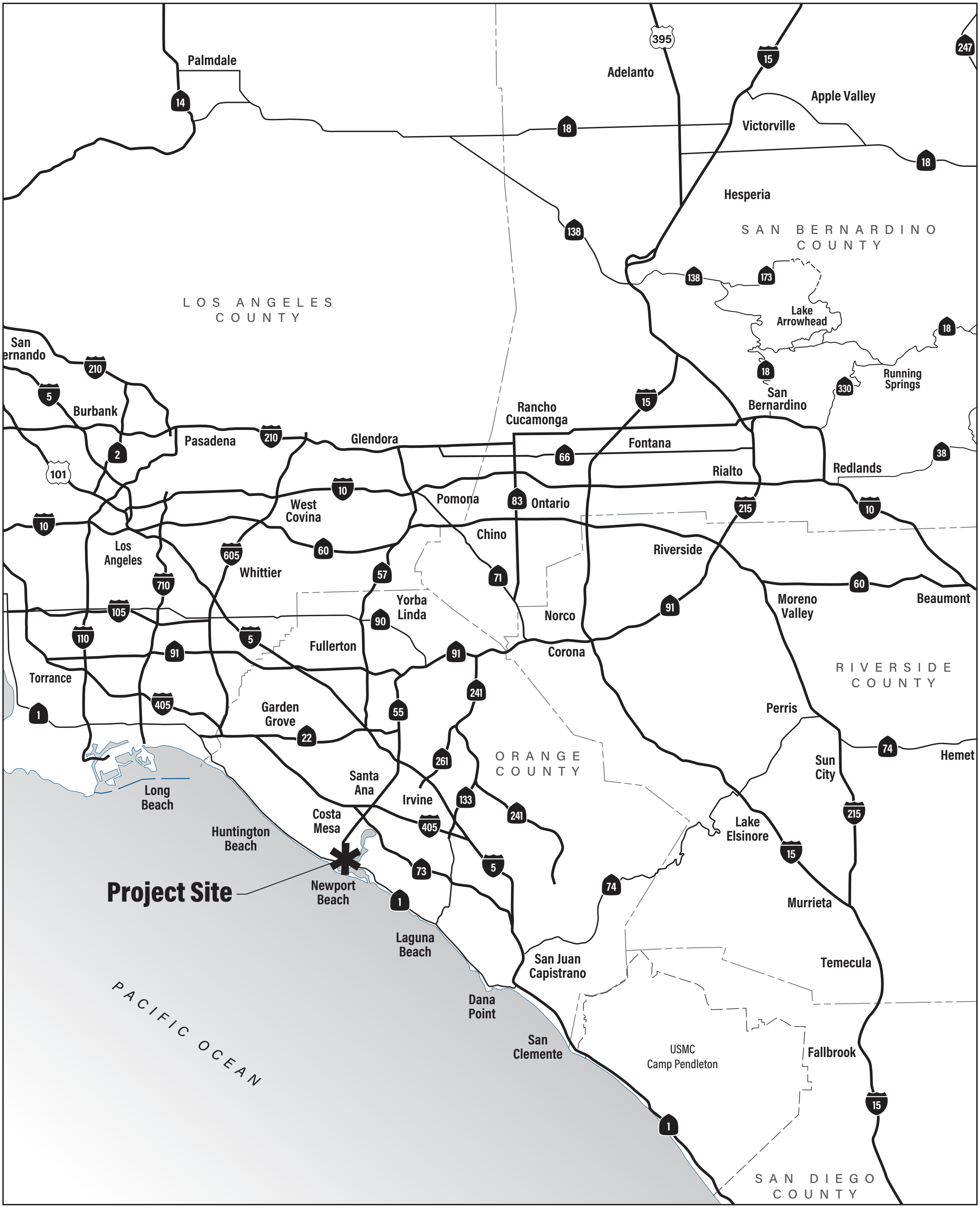
Site Photographs
Project Exhibits

SITE PHOTOGRAPHS

View looking at existing bridge, towards Collins Island.


View looking at side view of existing bridge, seawalls, and infrastructure.

View of adjacent boat docks to be temporarily removed.



COLLINS ISLAND BRIDGE REPLACEMENT PROJECT
JURISDICTIONAL DELINEATION

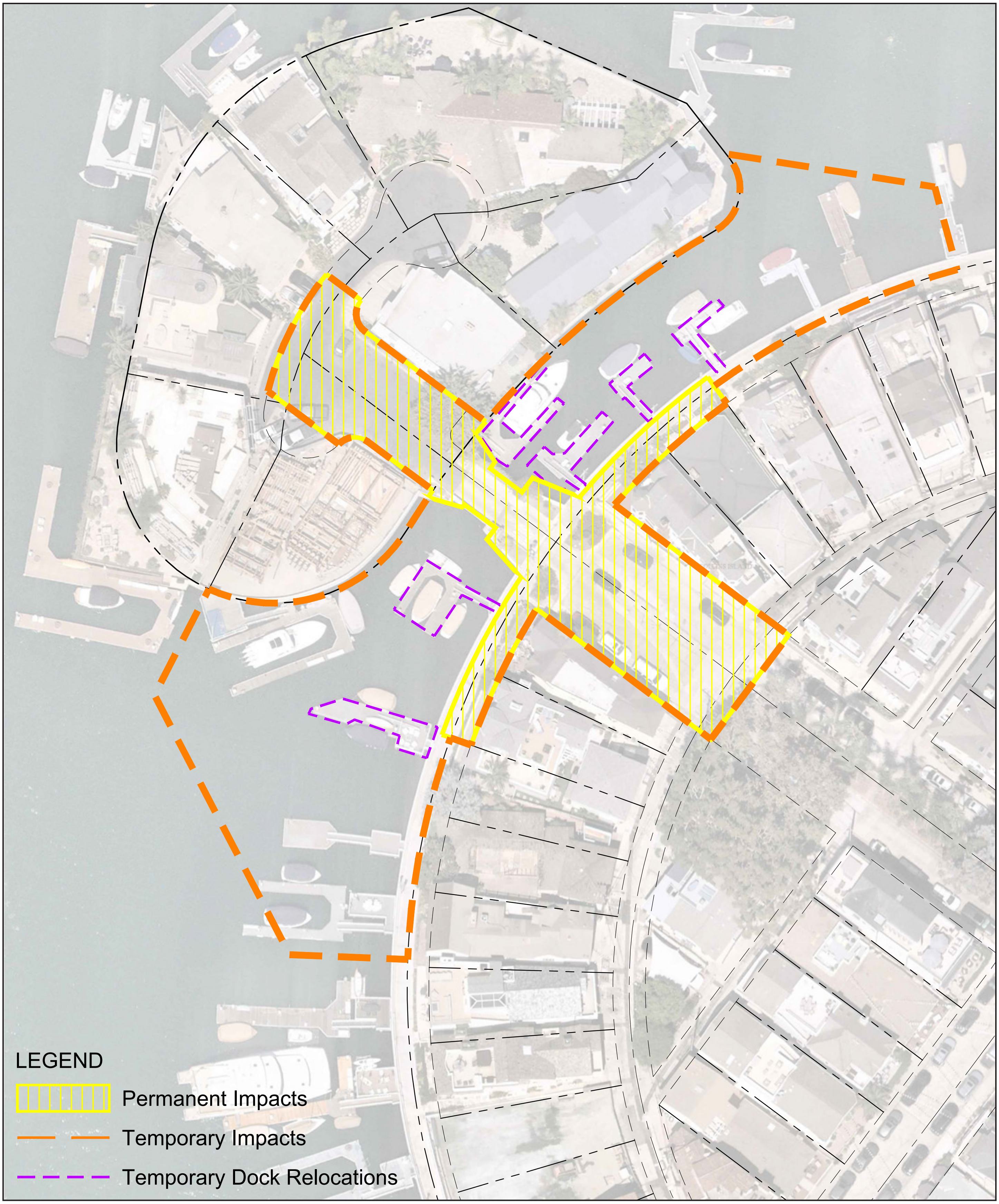
Regional Vicinity

Michael Baker INTERNATIONAL

NOT TO SCALE

11/2023 • JN 191636

Exhibit 1



Source: Michael Baker International, July 2023

Michael Baker INTERNATIONAL

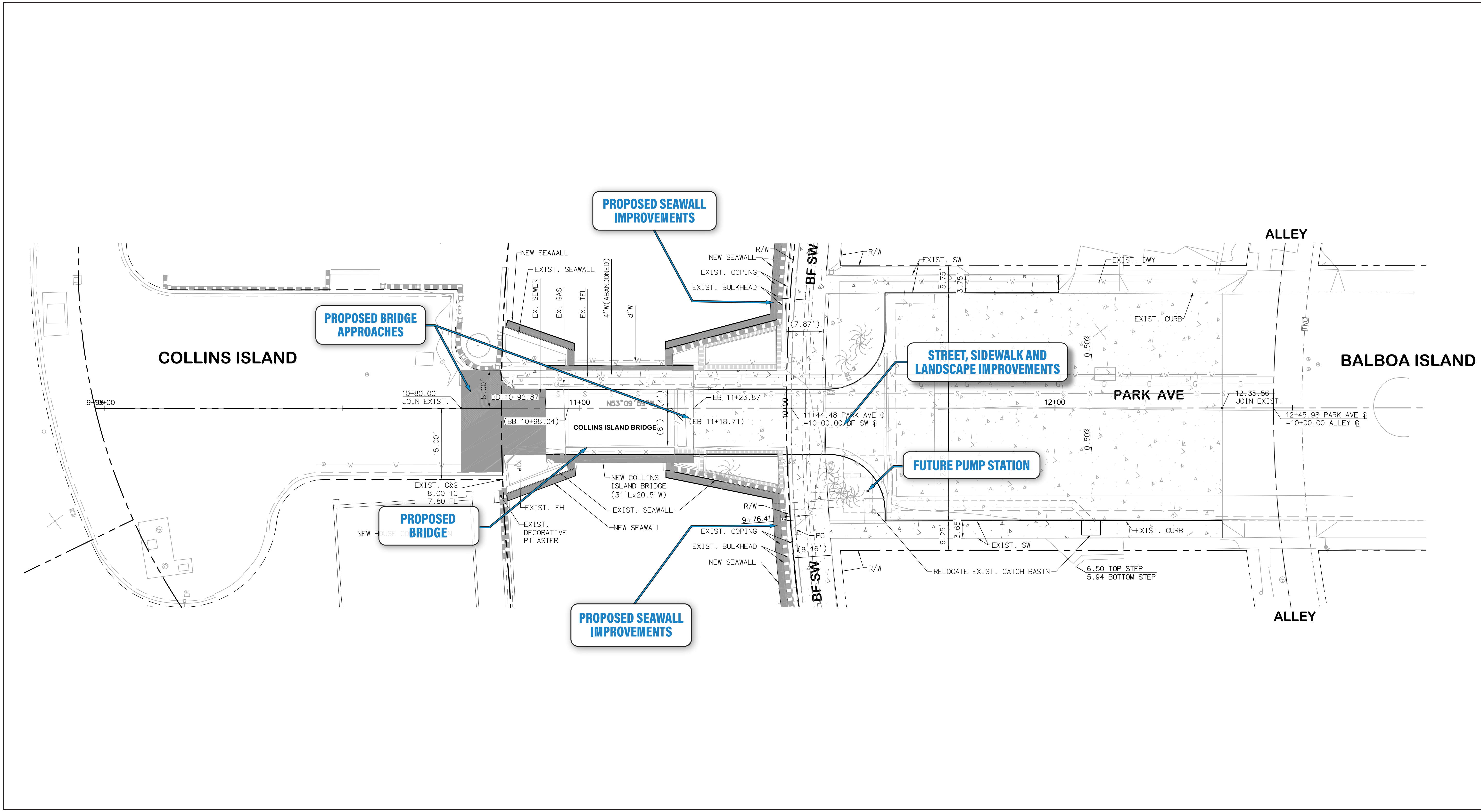
NOT TO SCALE

11/2023 • JN 191636

COLLINS ISLAND BRIDGE REPLACEMENT PROJECT
JURISDICTIONAL DELINEATION

Project Limits

Exhibit 2



Source: Michael Baker International, February 2024

Michael Baker INTERNATIONAL

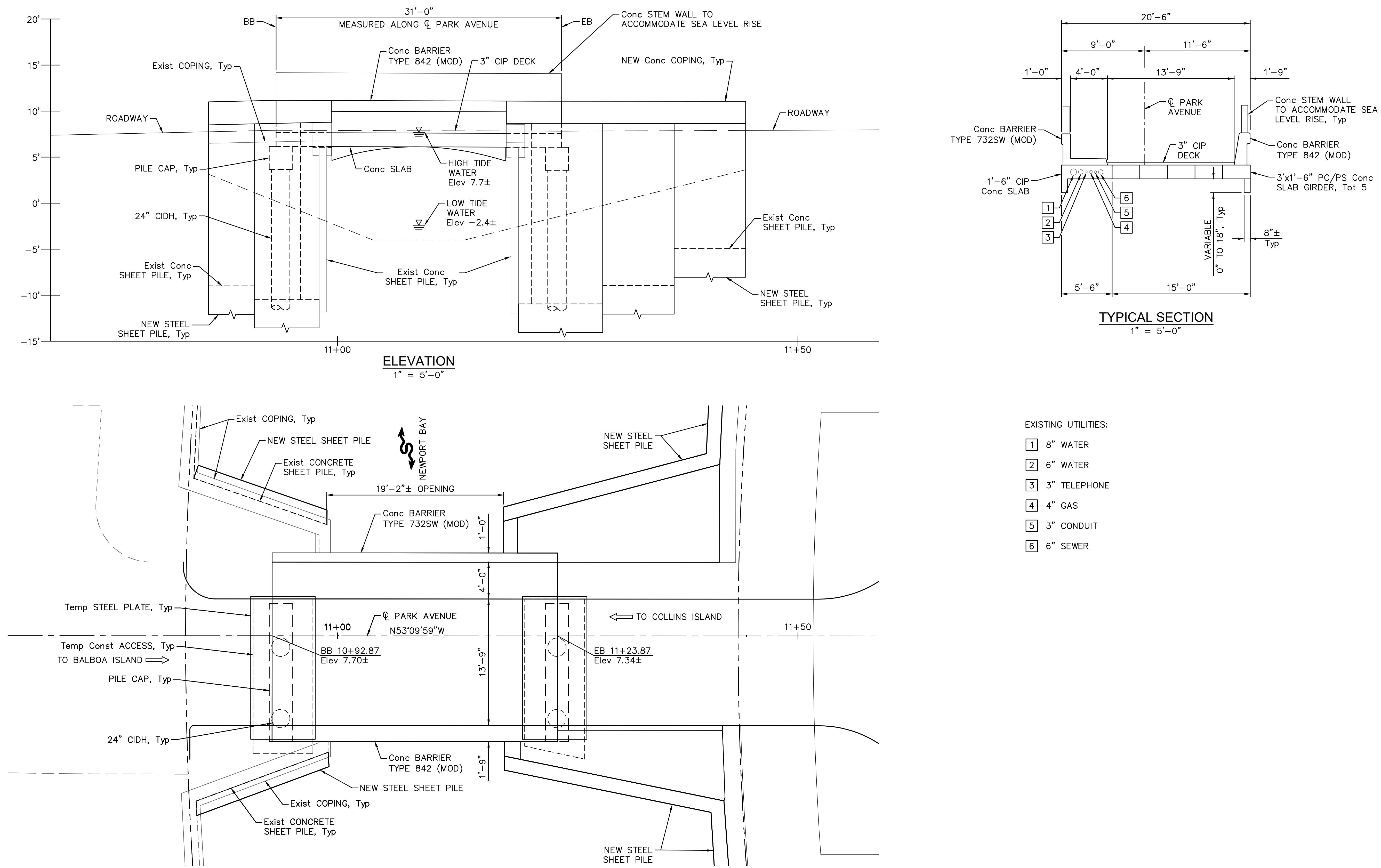
NOT TO SCALE

02/2024 • JN 191636

COLLINS ISLAND BRIDGE REPLACEMENT PROJECT
JURISDICTIONAL DELINEATION

Overall Project Improvements

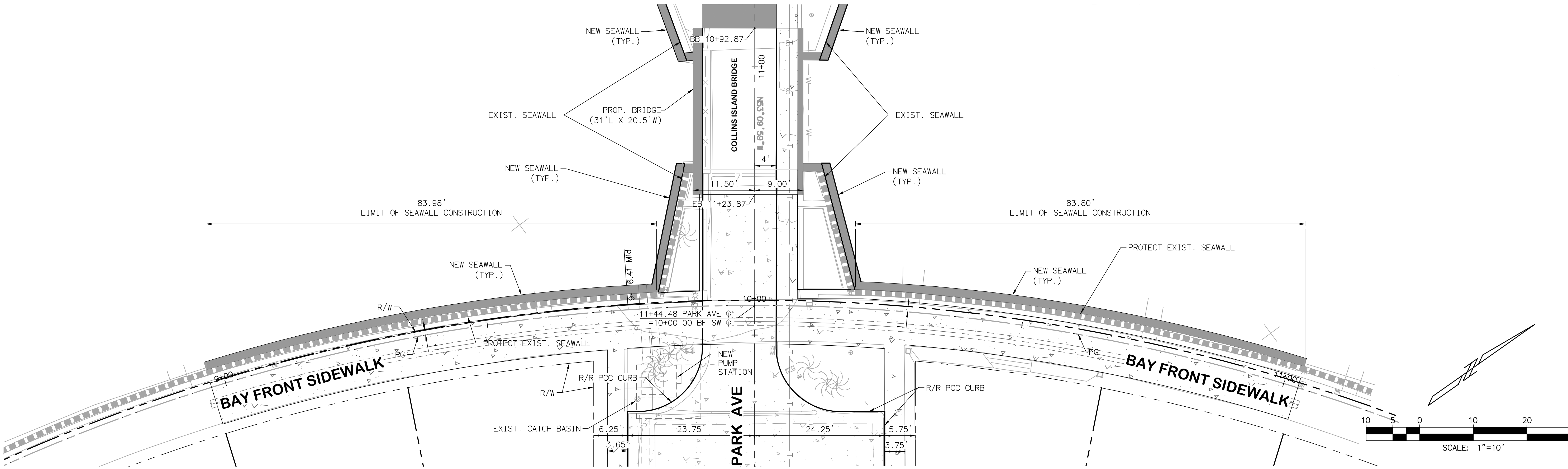
Exhibit 3



EXISTING UTILITIES:

1. 8" WATER
2. 6" WATER
3. 3" TELEPHONE
4. 4" GAS
5. 3" CONDUIT
6. 6" SEWER

Source: Michael Baker International, February 2024



Source: Michael Baker International, February 2024

Michael Baker INTERNATIONAL

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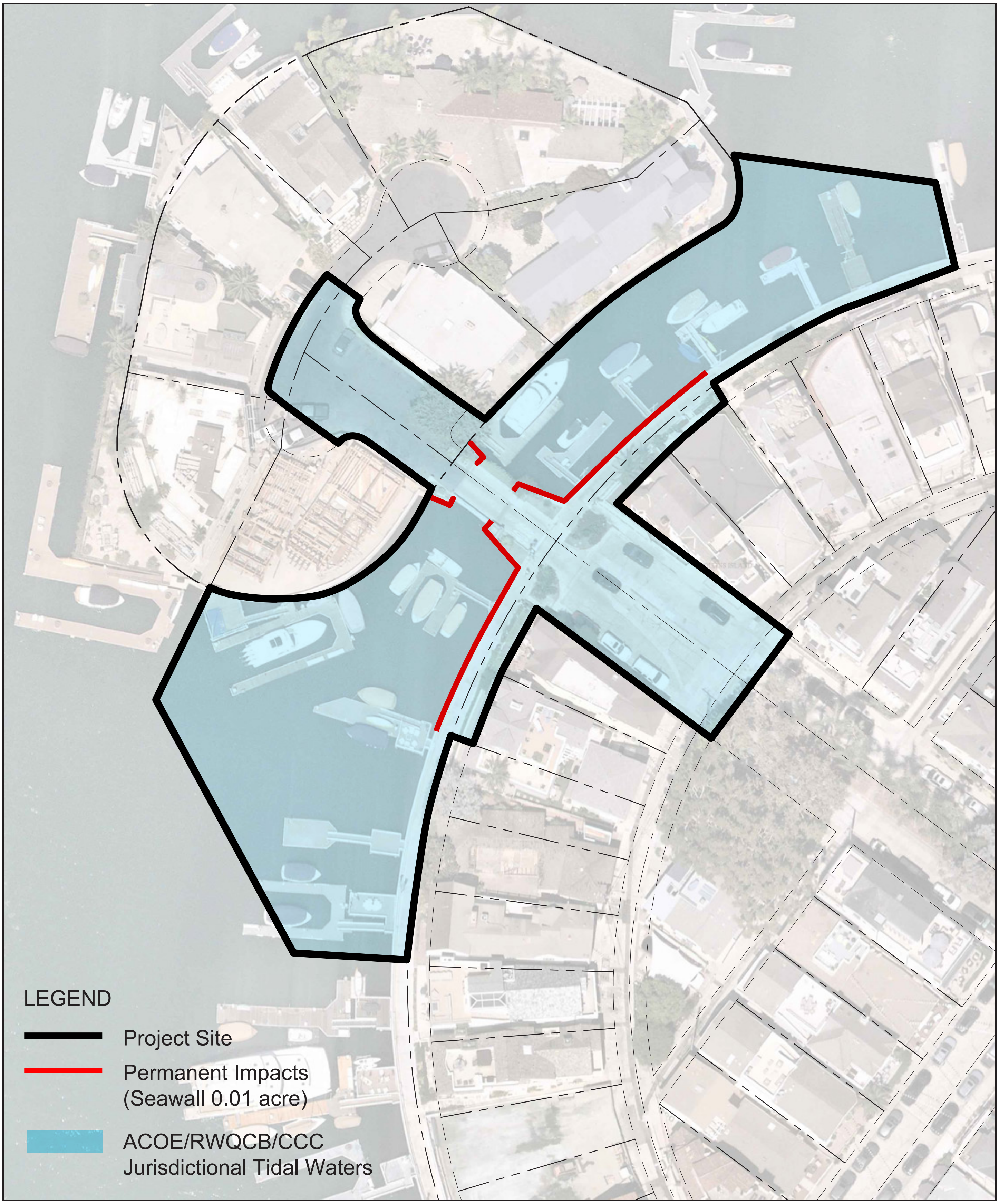
02/2024 • JN 191636

COLLINS ISLAND BRIDGE REPLACEMENT PROJECT
JURISDICTIONAL DELINEATION

Proposed Seawall Improvements

Exhibit 5



Source: Michael Baker International, February 2024

Michael Baker INTERNATIONAL

NOT TO SCALE

02/2024 • JN 191636

COLLINS ISLAND BRIDGE REPLACEMENT PROJECT
JURISDICTIONAL DELINEATION

Jurisdictional Map

Exhibit 6

Collins Island Bridge Replacement Project
Essential Fish Habitat Assessment
Newport Beach, California
Final Report

October 2023

Prepared for:

Michael Baker International
5 Hutton Centre Drive, Suite 500
Santa Ana, CA 92707

Prepared by:

Six Scientific Service
921 Mulberry Dr.
San Marcos, CA 92069

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

List of Acronyms and Abbreviations

APE	Area of Potential Effect
CDFW	California Department of Fish and Wildlife
CPS	Coastal Pelagic Species
EFH	Essential Fish Habitat
FMP	Fishery Management Plan
HAPC	Habitat Area of Particular Concern
MLLW	Mean Lower Low Water
MSFCA	Magnuson-Stevens Fishery Conservation and Management Act
NMFS	National Marine Fisheries Service
NWP	Nationwide Permit
PFMC	Pacific Fishery Management Council
PGF	Pacific Coast Groundfish
SANDAG	San Diego Association of Governments
SMCA	State Marine Conservation Area

1.0 INTRODUCTION

This Essential Fish Habitat (EFH) assessment is provided in conformance with the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCA) and includes a description of the proposed project, an overview of the EFH designated within the project area, and an analysis of the direct and cumulative effects on EFH for managed fish species and their food resources. Species managed by the West Coast Groundfish, Coastal Pelagic Species, and Highly Migratory Species Fishery Management Plans (FMPs), and which are likely to occur within the project area, are considered in this assessment.

As required by the MSFCA, the purpose of this document is to present the findings of the EFH Assessment conducted for the retrofit of the Collins Island Bridge in Newport Bay, California. The project site occupies approximately 0.70 acres in central Newport Bay connecting Balboa Island with Collins Island (Figure 1). The objective of this EFH assessment is to evaluate how the proposed project may affect EFH within its area of influence designated by the Pacific Fishery Management Council (PFMC) and implemented by the National Oceanic and Atmospheric Administration/National Marine Fisheries Service (NMFS).

2.0 REGULATORY ENVIRONMENT

The project area is located within a general area designated as EFH for the following FMPs: Pacific Coast Groundfish (PFMC 2011a), Coastal Pelagic Species (PFMC 1998), and West Coast Highly Migratory Species (PFMC 2011b). For any proposed action that may adversely affect EFH, project proponents must provide the NMFS with a written assessment of the effects of that action on those species regulated under a federal FMPs. EFH is defined as "…those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Under this definition, "waters" are defined to include "aquatic areas and their associated physical, chemical, and biological properties that are used by fish." These may include "…areas historically used by fish where appropriate; substrate to include hard bottom, structures underlying the waters, and associated biological communities." Also, under the definition of EFH, "necessary" means "the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem." An adverse effect to EFH is "any impact that reduces the quality and/or quantity of EFH" (see 50 Code of Federal Regulations § 600.910 (a) for further clarification). The level of detail required in the assessment is commensurate with the magnitude of potential impacts.

Newport Bay is a Habitat Area of Particular Concern (HAPC) for EFH. Newport Bay contains expansive meadows of eelgrass (*Zostera marina*), as well as broad diversity of coastal saltmarsh vegetation species considered EFH. This report evaluates the proposed activity with the project area impacts to EFH and managed species.

3.0 PROPOSED PROJECT

The Collins Island Bridge replacement project is located where Collins Island and Balboa Island meet in the City of Newport Beach, California on Coastal Zone State tidelands. Balboa Island is located in Lower Newport Bay and is one of the City's older, distinct residential neighborhoods along the coastline. On the western tip of Balboa Island, Collins Island is developed with eight single-family residences and is accessed only by the Collins Island Bridge via Park Avenue. The existing reinforced concrete bridge was constructed in 1953 and is approximately 20 feet and 8 inches long and 19 feet wide. The bridge is supported on concrete sheet pile bulkheads, which are insufficient to resist current code level seismic loads. The bridge accommodates one lane of vehicle traffic, one raised sidewalk, and steel railings on each side of the bridge. Essential utilities that serve Collins Island residents are currently located on the bridge. Given the age of the structure, the Collins Island Bridge does not meet current bridge code requirements and is nearing the end of its useful lifetime. According to a 2012 bridge inspection report, the Collins Island Bridge was designated as functionally obsolete and has not been improved since 2012.

The proposed Collins Island Bridge Replacement Project has three major components: 1) bridge replacement, 2) seawall improvements, and 3) future pump station accommodations for a separate project. The first two components are described in further detail below.

The proposed bridge is designed to be 20 feet and 6 inches wide to accommodate one 13 feet and 9 inches wide vehicle travel lane, one 4-foot-wide sidewalk, and concrete barriers on each side to provide protection from projected sea level rise. The bridge as designed is 31 feet in length spanning over existing concrete sheet pile bulkheads. The roadway and both sides of the sidewalk bridge approaches have slopes that exceed five percent. Therefore, the profiles would be adjusted to comply with Americans with Disabilities Act (ADA) standards. Landscaped areas and the bridge monument would also be improved to increase sight distance along the adjacent walkways to increase pedestrian safety.

Seawalls are designed to protect properties from water levels associated with high tides and storm surges. Water surface elevations are expected to rise in the future due to climate change. Therefore, the project proposes to increase the height of existing seawalls adjacent to the bridge. Currently, most seawalls along Collins Island Bridge and along the Bay Front sidewalk consist of concrete sheet pile bulkheads with a concrete cap (coping) elevation of approximately 9 feet North American Vertical Datum of 1988 (NAVD 88). The proposed seawall improvements would be designed to have a top of wall coping elevation of 11 feet NAVD 88 with a future cap extension elevation up to 14 feet NAVD 88. Some of the existing concrete sheet piles are structurally deficient where existing tie back anchors have corroded and no longer provide adequate support at the upper part of the walls. The new seawalls would be designed to allow access to existing boat ramps and docks. However, certain docks would be temporarily relocated during construction activities.

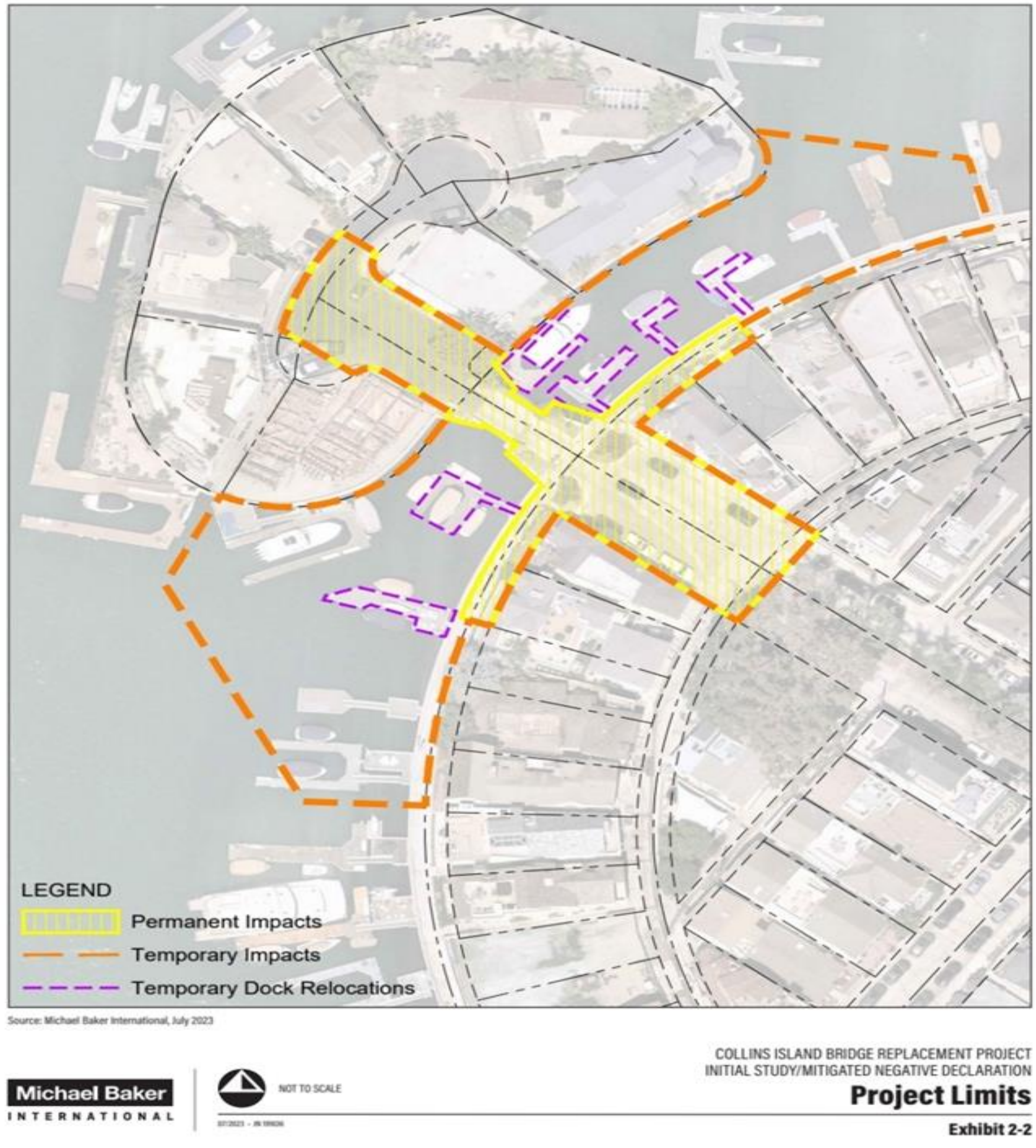

Figure 1. Construction Boundaries, Collins Island Bridge Project Area Newport Beach, CA.

4.0 SITE CHARACTERISTICS

The proposed project is specifically located within an area designated as EFH for two FMPs; Pacific Coast Groundfish (PFMC 2011a) and Coastal Pelagic Species (PFMC 1998). A preliminary survey for eelgrass was conducted on September 16, 2023, for the areas encompassed by the proposed project footprint. Eelgrass resources within the construction Area of Potential Effect (APE) were low to medium density in extent. Areas encompassed, or potentially directly impacted, by the proposed action were mapped and eelgrass communities' locations and densities were identified (Figure 2). The eelgrass communities nearest to the bridge were low density beds (≤20 turions/m2) occurring immediately adjacent to the existing bridge and seawall. Saltmarsh habitat, sand shoals, mudflats, and deep channels bordered much of the eelgrass habitat and biological communities within the APE were primarily dominated by marine species, based on species composition.

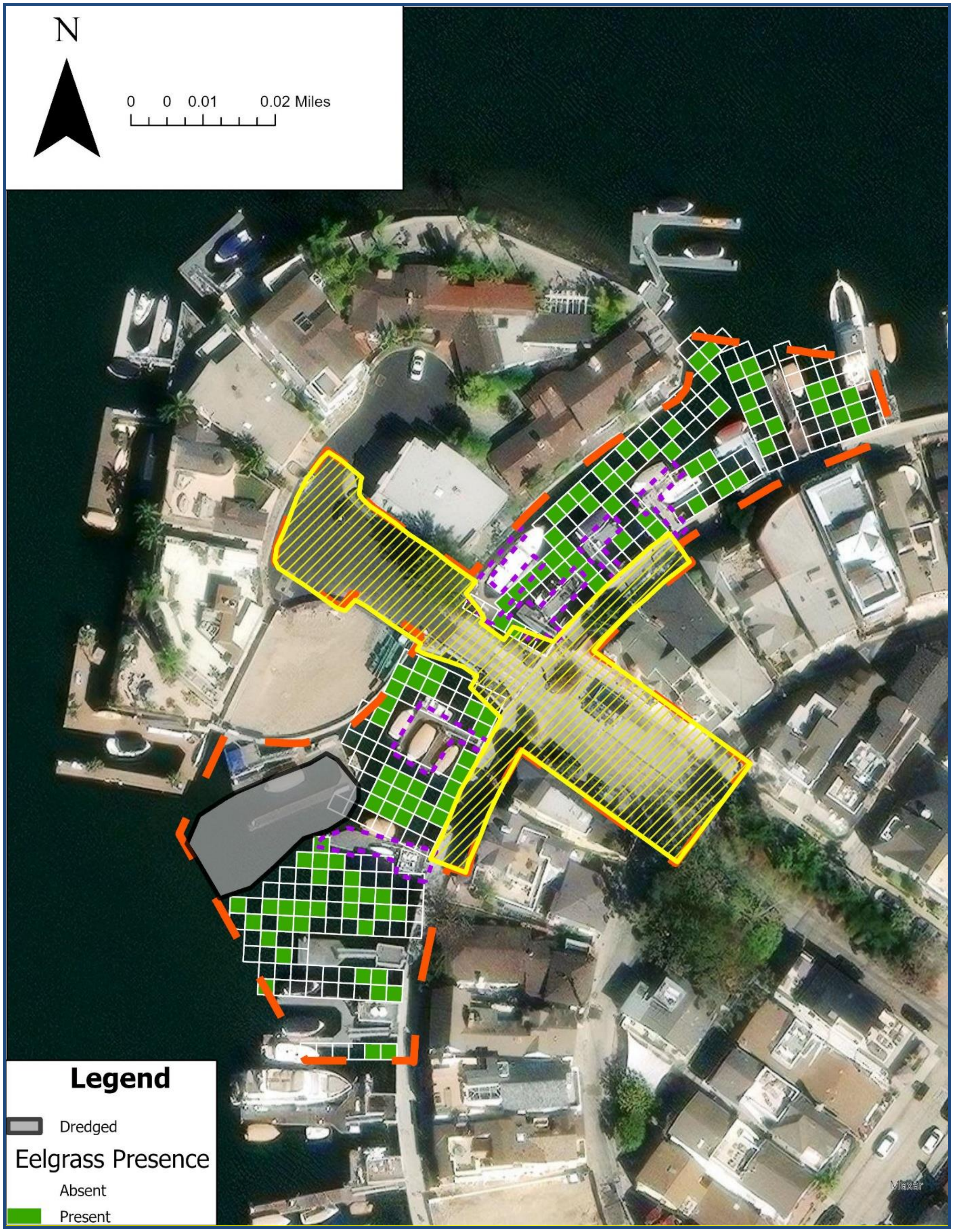

Figure 2 Eelgrass communities in the Project Area.

5.0 FISH COMMUNITIES

Orange County Sanitation District (OCSD) conducts semi-annual trawls to collect fish and large invertebrates at pre-determined stations and depth regimes adjacent to the project area. In the 2021 and 2022 surveys a 7.6-meter-wide otter trawl fitted with a 0.64 cm cod-end mesh net was towed via research vessel. The net was towed for 450 meters at approximately 2 knots (OCSD 2023). A total of 15,369 fish were collected in 2021 and 2022 surveys that represented 42 species (Table 1). However according to Allen 2006 there have been 142 species occurring in the coastal Southern California Bight found in studies over the last 4 decades.

To focus on the more recent data during the 2021 and 2022 surveys Pacific Sanddab (*Citharicthys sordidus*; 41.7%), yellowchin Sculpin (*Icelinus quadriseriatus*; 17.3%) longfin sanddab (*Citharichthys xanthostigma*; 5.8%), and speckled sanddab (*Citharichthys stigmaeus*; 5.1%) were the most abundant fish collected, representing about 70% of the total catch (OCSD 2023). Of the 14 families represented *Paralichthyidae* (sand flounders), *Synodontidae* (Lizardfish), *Pleuronectidae* (right-eye flounders), and *Cottidae* (sculpins) accounted for 37.5% of the species and 81.2% of the percent captured (Table 1). Fish abundance has historically been highly variable, although some patterns are consistent (OCSD 2023); the shallower stations typically have the lowest abundances, while the deep stations have the highest abundances. Depth-related abundance patterns in 2021-2022 were consistent with previous years (OCSD 2023).

Table 1. Number of species captured and abundance for the 2021 and 2022 surveys

Scientific Name	Common Name	Abundance	
		Number Captured (N)	Percent Captured (%)
Citharichthys sordidus	Pacific sanddab	6,414	41.7
Icelinus quadriseriatus	yellowchin Sculpin	2,658	17.3
Citharichthys xanthostigma	longfin sanddab	889	5.8
Citharichthys stigmaeus	speckled sanddab	784	5.1
Sebastes saxicola	stripetail Rockfish	768	5.0
Microstomus pacificus	Pacific Dover sole	502	3.3
Symphurus atricaudus	California tonguefish	447	2.9
Zaniolepis frenata	shortspine combfish	413	2.7
Lyopsetta exilis	slender sole	400	2.6
Zaniolepis latipinnis	longspine combfish	372	2.4
Parophrys vetulus	English sole	255	1.7
Hippoglossina stomata	bigmouth flounder	241	1.6
Pleuronichthys verticalis	hornyhead turbot	222	1.4
Chitonotus pugetensis	roughback sculpin	204	1.3
Zalembius rosaceus	pink surfperch	159	1.0
Scorpaena guttata	California scorpionfish	122	0.8
Sebastes goodei	chilipepper rockfish	84	0.5
Sebastes semicinctus	halfbanded rockfish	72	0.5
Porichthys notatus	plainfin midshipman	65	0.4
Synodus lucioceps	California lizardfish	53	0.3
Lycodes pacificus	blackbelly eelpout	52	0.3
Odontopyxis trispinosa	pygmy poacher	32	0.2
Sebastes chlorostictus	greenspotted rockfish	32	0.2

Merluccius productus	Pacific whiting (hake)	29	0.2
Sebastes sp	red rockfish	19	0.1
Sebastes elongatus	greenstriped rockfish	15	0.1
Sebastes hopkinsi	squarespot Rockfish	15	0.1
Xystreurys liolepis	fantail flounder	9	0.1
Argentina sialis	silver smelt	8	0.1
Raja inornata	California skate	8	0.1
Glyptocephalus zachirus	rex sole	5	<0.1
Sebastes levis	cowcod	5	<0.1
Paralichthys californicus	California Halibut	4	<0.1
Plectobranchus evides	bluebarred prickleback	4	<0.1
Agonopsis sterletus	southern spearnose poacher	1	<0.1
Chilara taylori	spotted cusk-eel	1	<0.1
Genyonemus lineatus	white croaker	1	<0.1
Kathetostoma averruncus	Smooth stargazer	1	<0.1
Ophiodon elongatus	lingcod	1	<0.1
Paralabrax nebulifer	barred sand bass	1	<0.1
Pleuronichthys decurrens	curlfin sole	1	<0.1
Xenertmus triacanthus	bluespotted poacher	1	<0.1
Total Abundance		15,369	100

*Survey data is based on observations published by *OCSD 2023*

5.1 Fishery Management Plans

Under the MFCMA, the federal government has jurisdiction to manage fisheries in the U.S. Exclusive Economic Zone (EEZ), which extends from the outer boundary of state waters (3 nm from shore) to a distance of 200 nm from shore. Fishery Management Plans (FMPs) are extensive documents that are regularly updated. The goal of a FMPs includes the development and sustainability of an efficient and profitable fishery, optimal yield, adequate forage for dependent species and long-term monitoring. There are two FMPs that include waters adjacent to the proposed project site; the Coastal Pelagic FMP including 6 species and the Pacific Groundfish FMP including 92 species.

5.1.1 Coastal Pelagics

In 2008 the Coastal Pelagic FMP covered one invertebrate (market squid) and four fish species (northern anchovy, jack mackerel, Pacific mackerel, and Pacific sardine). Amendment 12 to the Pelagic FMP was finalized in 2009 to protect krill. Krill, a shrimp like crustacean are very important on a trophic level and are the basis of the marine food chain. EFHs for Coastal Pelagics are defined as all marine and estuarine waters from the shoreline of the coasts of California, Oregon and Washington offshore to the limits of the EEZ and above the thermocline.

Although no Coastal Pelagic FMP species were observed during 2021 and 2022 surveys for the adjacent Orange County Sanitation District, all species covered could occur at some point during their life stages. (Allen 2006) The northern anchovy historically ranged from the Queen Charlotte Islands, British Columbia, south to Cabo San Lucas, Baja California. More recently, populations have moved into the Gulf of California, Mexico. Larvae and juveniles are often abundant in nearshore areas and estuaries with adults being more oceanic; however, adults may also be found in shallow nearshore areas and estuaries. Anchovy are nonmigratory but do make extensive inshore-offshore and along-shore movements (Emmett et al. 1991). During times of high abundance (from the early part of the 20th century into the 1940s) Pacific sardines ranged from the Gulf of California north to southeastern before the fishery crashed in the 1950's. Large populations still occur south of point conception into Baja California. The Pacific sardine is epipelagic, occurring in loosely aggregated schools. In times of abundance this species can occur up to 150 miles offshore (Wolf et al., 2001)

Jack mackerel and Pacific mackerel occur from Santa Maria Bay, Mexico to Yaquina Bay, Oregon. They are found in California bays, estuaries and coastal pelagic ocean waters throughout the year. They are schooling fish which prefer shallow water less than 100 feet and are most common in 5 to 50 foot depths (CDFW 2013). All costal pelagics are associated with the water column except for the female market squid, which lays egg masses on sandy bottoms during spawning at depths of about 15-180 feet The market squid ranges coastally from Baja California to Alaska and can be found within 200 miles of the shore (PFMC, 2008b).

5.1.2 Pacific Groundfish

There are 92 fish species included in the Pacific Groundfish FMP. EFH for Pacific Groundfish include all waters off southern California between Mean Higher High Water (MHHW) and depths to 11,483 ft. The Groundfish FMP also includes the extent of saltwater intrusion into freshwater inputs. Habitat Areas of Particular Concern (HAPCs) include but are not limited to estuaries, canopy kelp, seagrass, and rocky reefs.

The most abundant Pacific Groundfish groups captured during the OCSD 2021 and 2022 surveys were the flatfish followed by the rockfish, and then roundfish. Of the 92 fish species covered in this FMP 14 species were observed during the surveys. In the flatfish group, Pacific sanddabs had the greatest abundance with 41.7% of the total catch and recording 6,414 individuals. Dover sole were the 6th most abundant species with 3.3% of the total catch and recording 502 individuals, while English sole (11th most abundant) accounted for 1.7% of the total catch with 255 individuals. rex sole (31st most abundant) and curlfin sole (41st most abundant) were both recorded as less than 1% of the catch and less than 6 individuals.

The rockfish included California scorpionfish (16th most abundant) which accounted for 0.8% of the total catch with 122 individuals. The chilipepper rockfish (17th most abundant) accounted for 0.5% of the total catch with 84 individuals, halfbanded rockfish (18th most abundant) accounted for 0.5% of total catch with 72 individuals, and greenspotted rockfish (23rd most abundant) accounted for 0.2% of total catch with 32 individuals individually. While the greenstriped rockfish (26th most abundant), squarespot rockfish 27th most abundant), and cowcod (32nd most abundant) all recorded less than 16 individuals captured per species.

The roundfish included one species the Pacific whiting (hake) (24th most abundant) with 29 individuals accounting for 0.1% of the total catch.

Table 2 NMFS Managed Species observed near Collins Island, including Abundance, Total Percent and Habitat.

Common Name	Observed During 2021 & 2022 Surveys	Abundance (Rank and % of Total)	Habitat
Coastal Pelagics			
Northern Anchovy	No	-	Open water
Pacific Sardine	No	-	Open water
Pacific Mackerel	No	-	Open shallow water
Jack Mackerel	No	-	Open shallow water
Market Squid	No	-	Open water
Pacific Groundfish			
Pacific sanddab	Yes	1st/41.7%	Soft Bottom
Pacific Dover sole	Yes	6th/3.3%	Soft Bottom

English Sole	Yes	11th/1.7%	Soft Bottom
California scorpionfish	Yes	16th/0.8%	Hard Substrate & Kelp
Chilipepper rockfish	Yes	17th/0.5%	Hard Substrate & Kelp
Halfbanded rockfish	Yes	18th/0.5%	Hard Substrate & Kelp
Greenspotted rockfish	Yes	23rd/0.2%	Soft & Hard Substrate
Pacific whiting (hake)	Yes	24th/0.2%	Open Water & Hard substrate
Greenstriped rockfish	Yes	26th/0.1%	Hard Substrate & Kelp
Squarespot rockfish	Yes	27th/0.1%	Hard Substrate & Kelp
Rex Sole	Yes	31st/<0.1%	Soft Bottom
Cowcod	Yes	32nd/<0.1%	Hard Substrate & Kelp
Lingcod	Yes	39th/<0.1%	Hard Substrate & Kelp
Curlfin sole	Yes	41st/<0.1%	Soft Bottom

6.0 ASSESSMENT OF IMPACTS

This section will highlight and discuss all potential impacts resulting from construction activities. Accounting for all potential biological resources that may be present in the project footprint with the potential to be disturbed. Possible outcomes during and post construction activities are also included.

6.1 Impacts Resulting From Construction Activities

Activities associated with the proposed Collins Island Bridge and Seawall construction, may temporarily affect biological resources important to managed fish species if present in the APE. Terrestrial construction activities are not expected to impact marine resources. Best Management Practices would be put in place to mitigate any potential effects associated with terrestrial construction activities.

The potential impacts as a result of the action to the fourteen managed fish species demonstrating moderate abundance adjacent to Collins Island waters, if any, are expected to be temporary. Should any individuals of the species managed by the CPS FMP occur within the immediate vicinity of the project area, they would temporarily relocate to another area of open water or other shallow water habitat as a result of construction activities, i.e., increased noise or turbidity. If the species managed by the PGF FMP occur during the construction timeframe and within the action area, they would also temporarily relocate another area of open water or other shallow water habitat as a result of these activities. Also, the final bridge and seawall construction activities should not impact the denser eelgrass beds located outside APE serving as EFH.

Fish species passing through, or occupying, the bridge construction APE, as well as benthic invertebrates and those that are resident on the existing bridge sediments and hard surfaces, would be disturbed during the construction activities. Suspension of sediments with increased tidal height during construction could also have sub-lethal to lethal effects on the invertebrates immediately adjacent to the construction APE. This impact, however, would be temporary given the tidal habitat, relative abundance, rapid colonization rates, and movement of some individuals of these species. The soft bottom benthic habitat will be able to repopulate and recolonize once construction activities cease.

Fish eggs, larvae, juveniles, and adults would experience few to no effects due to construction activities. Fish eggs and larvae are primarily found adjacent to the water column in this area and are dispersed by water movement, while juvenile and adult fishes would move to avoid the disturbance during construction activities. Short-term water quality impacts (e.g., increase in turbidity) may affect resident fishes; however, these impacts would have no effect on the success of fish populations due to the ability of the juvenile and adult fishes to relocate to other areas. The constant water replenishment due to tidal flow in the bay transports fish larvae and eggs to various areas within the water body. A brief relocation of these transient species would not result in biologically significant impacts with regard to competition, predation, or spawning.

Other effects of in-water construction of the bridge and seawall include the unnatural occurrence of light and noise. Both would be short-term during construction activities. It is unlikely that these effects would lead to reduced survival, and if so, only a small percentage of individuals within fish populations would potentially be affected.

6.2 Impacts Resulting From Project Operations

No potential long-term deleterious effect on biological resources is expected from the Collins Island Bridge and Seawall construction project. Resident fish species would likely return if they were temporarily displaced due to construction activities. Eelgrass habitat in Newport Bay is abundant and any disrupted or displaced species would find suitable habitat in the vicinity of the construction APE. Long-term effects would potentially be beneficial, in that the supports or pilings of the new bridge(s) would provide substrate for organisms, and thus could provide additional benefit to fish populations near Harbor Island and within Newport Bay.

7.0 MITIGATION MEASURES

The following measures are designed to reduce or eliminate potential impacts to sensitive fisheries habitats. The assessment of impacts is based on the assumption that the proposed project would include the following.

- Equipment shall be inspected regularly (daily) during construction, and any leaks found shall be repaired immediately.
- Refueling of vehicles and equipment shall be in a designated, contained area.
- Drip pans shall be used under stationary equipment when refueling or maintenance.
- Drip pans that are used shall be covered during rainfall to prevent leaching of contaminants.
- Construction and maintenance of appropriate containment structures to prevent offsite transport of pollutants from spills and construction debris.
- Monitoring to verify Best Management Practices (BMPs) are implemented and kept in good working order.

8.0 REFERENCES

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Pre-Construction Surveys Eelgrass (*Zostera marina*) & *Caulerpa taxafolia*

Collins Island Bridge Replacement Project

Newport Beach, California

Final Report

October 2023

Prepared for:

Michael Baker International
5 Hutton Centre Drive, Suite 500
Santa Ana, CA 92707

Prepared by:

Six Scientific Service
921 Mulberry Dr.
San Marcos, CA 92069

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FIGURES

1.0 Introduction

The Collins Island Bridge replacement project is located where Collins Island and Balboa Island meet in the City of Newport Beach, California on Coastal Zone State tidelands. Balboa Island is located in Lower Newport Bay and is one of the City's older, distinct residential neighborhoods along the coastline. On the western tip of Balboa Island, Collins Island is developed with eight single-family residences and is accessed only by the Collins Island Bridge via Park Avenue. The existing reinforced concrete bridge was constructed in 1953 and is approximately 20 feet and 8 inches long and 19 feet wide. The bridge is supported on concrete sheet pile bulkheads, which are insufficient to resist current code level seismic loads. The bridge accommodates one lane of vehicle traffic, one raised sidewalk, and steel railings on each side of the bridge. Essential utilities that serve Collins Island residents are currently located on the bridge. Given the age of the structure, the Collins Island Bridge does not meet current bridge code requirements and is nearing the end of its useful lifetime. According to a 2012 bridge inspection report, the Collins Island Bridge was designated as functionally obsolete and has not been improved since 2012.

The proposed Collins Island Bridge Replacement Project has three major components: 1) bridge replacement, 2) seawall improvements, and 3) future pump station accommodations for a separate project. The first two components are described in further detail below.

The proposed bridge would be designed to be a total of 20 feet and 6 inches in width to accommodate one vehicle travel lane 13 feet and 9 inches-wide, one 4-foot-wide sidewalk, and concrete barriers on each side to provide protection from projected sea level rise. The bridge would be 31 feet in length spanning over existing concrete sheet pile bulkheads. The current slope along the roadway and sidewalk bridge approaches on both sides of the bridge exceed five percent. Therefore, the profiles would be adjusted to comply with Americans with Disabilities Act (ADA) standards. Landscaped areas and the bridge monument would also be improved to increase sight distance along the adjacent walkways to increase pedestrian safety.

Seawalls are designed to protect properties from water levels associated with high tides and storm surges. Water surface elevations are also expected to rise in the future due to climate change. Therefore, the project proposes to increase the height of existing seawalls adjacent to the bridge. Currently, most seawalls along Collins Island Bridge and along the Bay Front sidewalk consist of concrete sheet pile bulkheads with a concrete cap (coping) elevation of approximately 9 feet. The proposed seawall improvements would be designed to have a top of wall coping elevation of 11 feet with a future cap extension elevation up to 14 feet. Some of the existing concrete sheet piles are structurally deficient where existing tie back anchors have corroded and no longer provide adequate support at the upper part of the walls. The new seawalls would be designed to allow access to existing boat ramps and docks. However, certain docks would be temporarily relocated during construction activities. Where possible, the existing concrete sheet pile bulkhead system would remain in place to reduce disturbance and associated environmental impacts. In the case of Bay Front sidewalk seawall improvements, new steel sheet piles would be placed seaward from the existing concrete sheet piles.

To comply with US Army Corps of Engineers Nationwide Permit (NWP) Number 14 requirements, a pre-construction survey was completed to identify potentially sensitive marine habitats and species within and adjacent to the area of construction to support non-discretionary special conditions (item 7). The pre-survey information will be assessed to determine the presence/absence of Caulerpa taxifolia and the proximity of construction activities to sensitive marine biological resources (Eelgrass) and ensure the project utilizes adequate protection of these resources during construction. To support the pre-construction survey, Six Scientific Service (SixSci) was contracted by Michael Baker International (Michael Baker) to provide survey services.

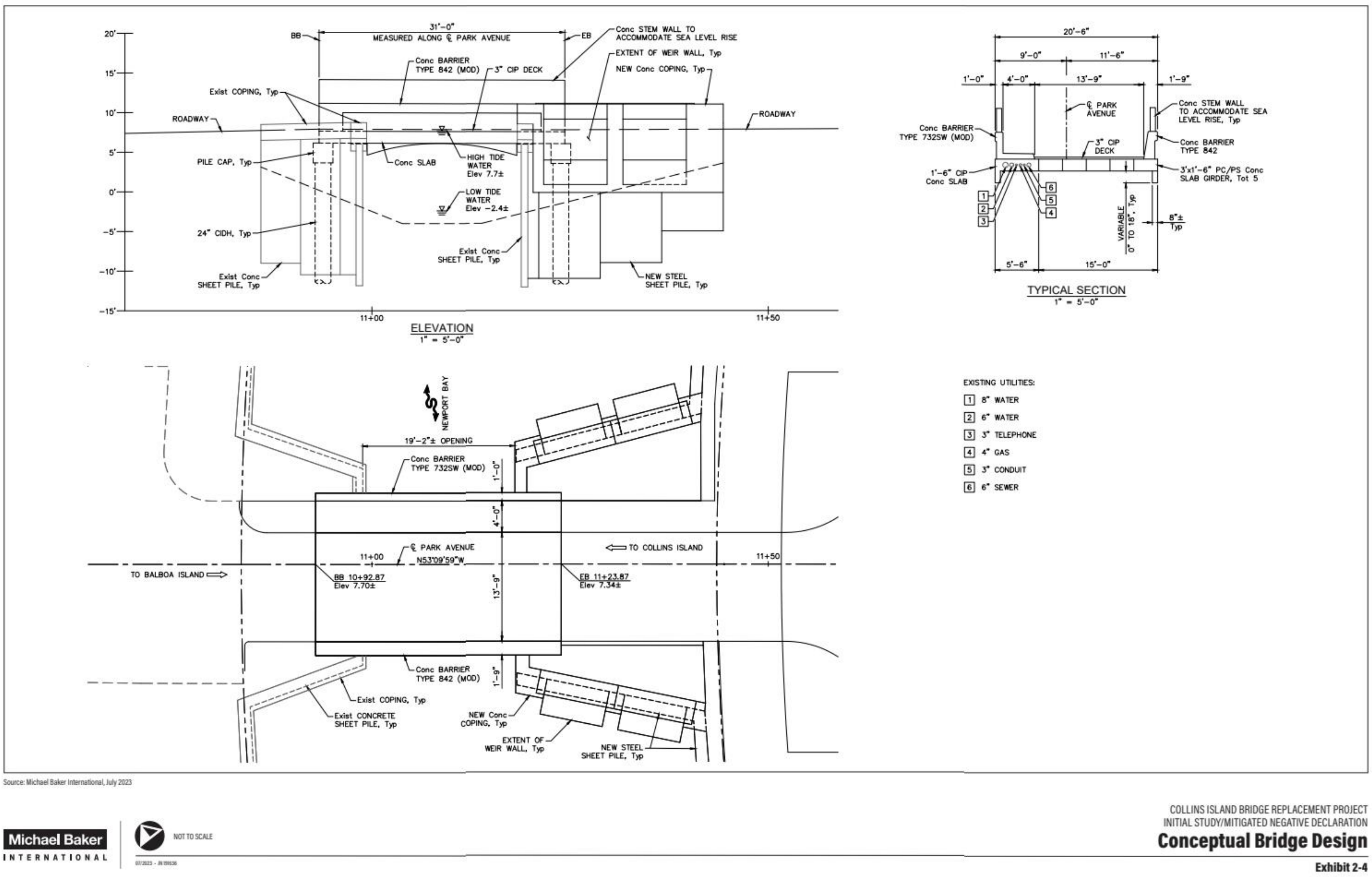

Figure 1: CollinsError! Reference source not found.

2.0 Survey Methodology

To identify existing sensitive habitats (Eelgrass) within the Areas of Potential Effect (APE) that may be impacted from construction related activity (i.e., physical disturbance, turbidity, and shading), an Eelgrass (*Zostera marina*) survey was conducted on September 16, 2023, to determine presence/absence of eelgrass within the APE and provide an initial assessment of adjacent eelgrass communities. In addition, a Caulerpa taxifolia presence/absence surveys was completed on September 16, 2023.

The survey methodology for the Collins Island Bridge rebuild project was developed by SixSci in consultation with Michael Baker. The aim of the pre-construction surveys was to provide a rapid assessment-based approach to delineate the presence and absence of eelgrass within the project area (Area of Potential Effect [APE]), adjacent to the project area, and assess the potential for impact. Diver transects and underwater photography was used to conduct a visual-based survey including 100% of the wetted project area. The survey plan was based on previous experience surveying similar areas, using similar techniques, and consistent with methods promulgated by the California Department of Fish and Wildlife (CDFW) and National Marine Fisheries Service (NMFS) for Eelgrass surveys in the California Eelgrass Mitigation Policy (CEMP 2014).

A GPS unit was used to map the corners of the survey area, a range finder was used to confirm locations and distances. A dive vessel navigated the diver on 10-ft intervals and a diver swam out a meter tape in length patterns of the project recording densities. One vessel operator, one diver and one data recorder completed cross-channel transects every 10 feet in sections until the entire length was surveyed on both sides and underneath the bridge. The survey was completed on September 16, 2023, in a positive tide of 1.0 to 4.9 feet and the surface water temperature was 21.6°C.

Density was recorded using a 50-centimeter quadrant divided into four 25-centimeter squares (625 square centimeters). Underwater photos were taken of the Eelgrass with and without transect laid over. A Caulerpa taxifolia survey in accordance with the Caulerpa Control Protocol was executed on September 16, 2023.

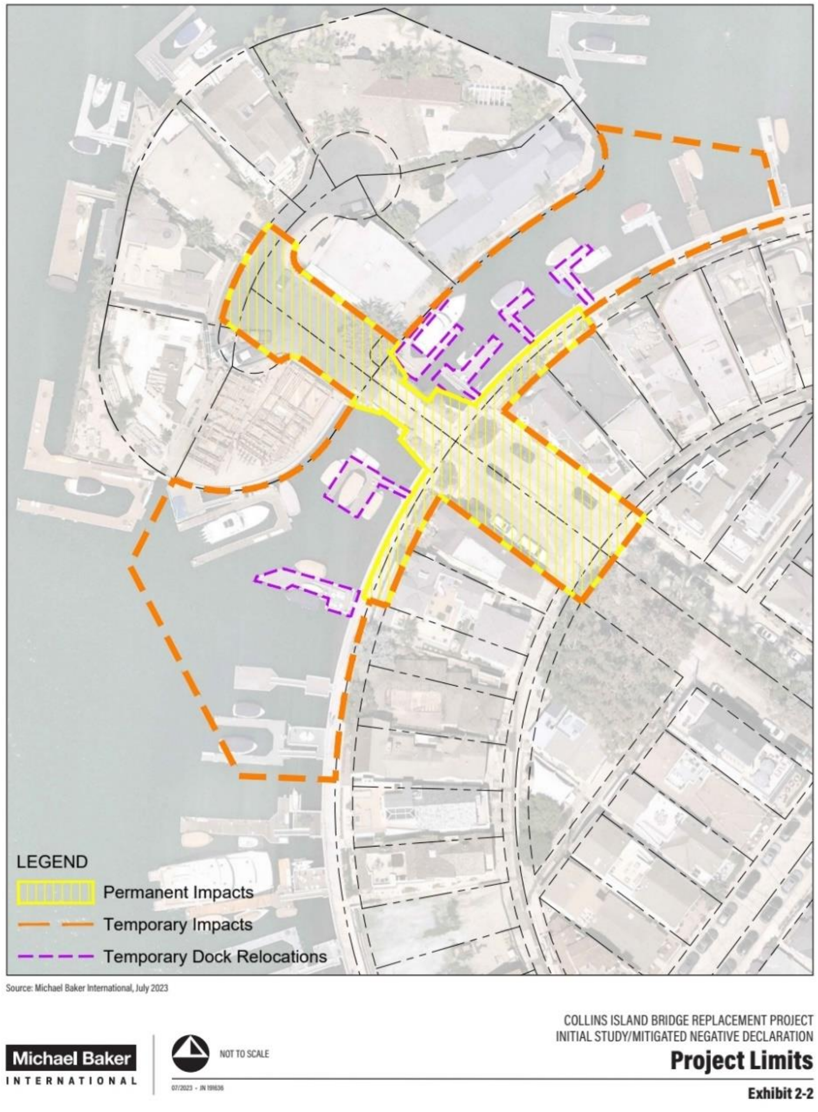

Figure 2. Collins Island Bridge Rebuild Project Area

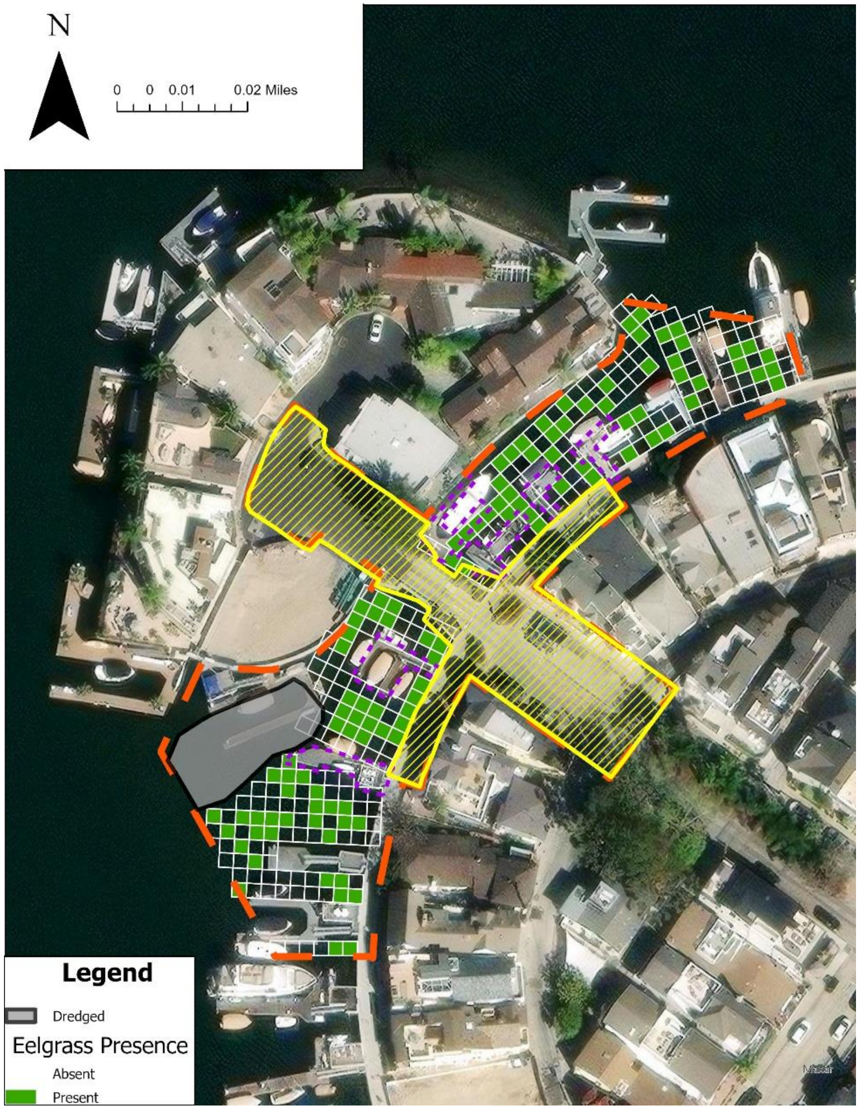

Figure 3. Eelgrass and Caulerpa transects Collins Island Bridge September 2023

3.0 Survey Results

The results of the visual survey within the APE detect some medium to low density patches of Eelgrass at the project site. Survey results and consultation from the 2022 Newport Bay Eelgrass monitoring report indicate as discovered the documented Eelgrass is located throughout the APE in open areas where no shading is present. Visual observation indicates medium to low density eelgrass beds are present near docks and the denser beds are in the open water at the north and south border of the APE. Most plant turions were extending between 0.2 and 0.5 meters from the substrate (Figure 3) in the project area.

The diver counted the number of live, green shoots “turions” at the sediment/shoot interface, within replicated 1/16th sq m quadrats Densities were recorded at the diver completed length transects. Densities ranged from 1 to 5 turions per 625 centimeters^2 or 1/16th sq m. The medium to low density eelgrass beds accounts for 10,700 square feet in the 30,492 square-foot wetted work area. The majority of eelgrass present reside at least 8 feet from the bridge on both sides and away from the shadows of any docks or boats. No eelgrass is present under the bridge opening. The beds are sparse in the APE when compared to documented beds outside of the work area.

Mixed in with the Eelgrass, Gracilaria turgida was observed with Sargassum. Associated biologics (Fish, invertebrates, etc.) were observed and noted. Several round rays, one bared sand bass, and some burrowing invertebrates (tube dwelling anemones, clams, etc.) were observed in and near the project area.

No Caulerpa taxifolia was observed in or near the project area during any of the surveys at the site on September 16, 2023

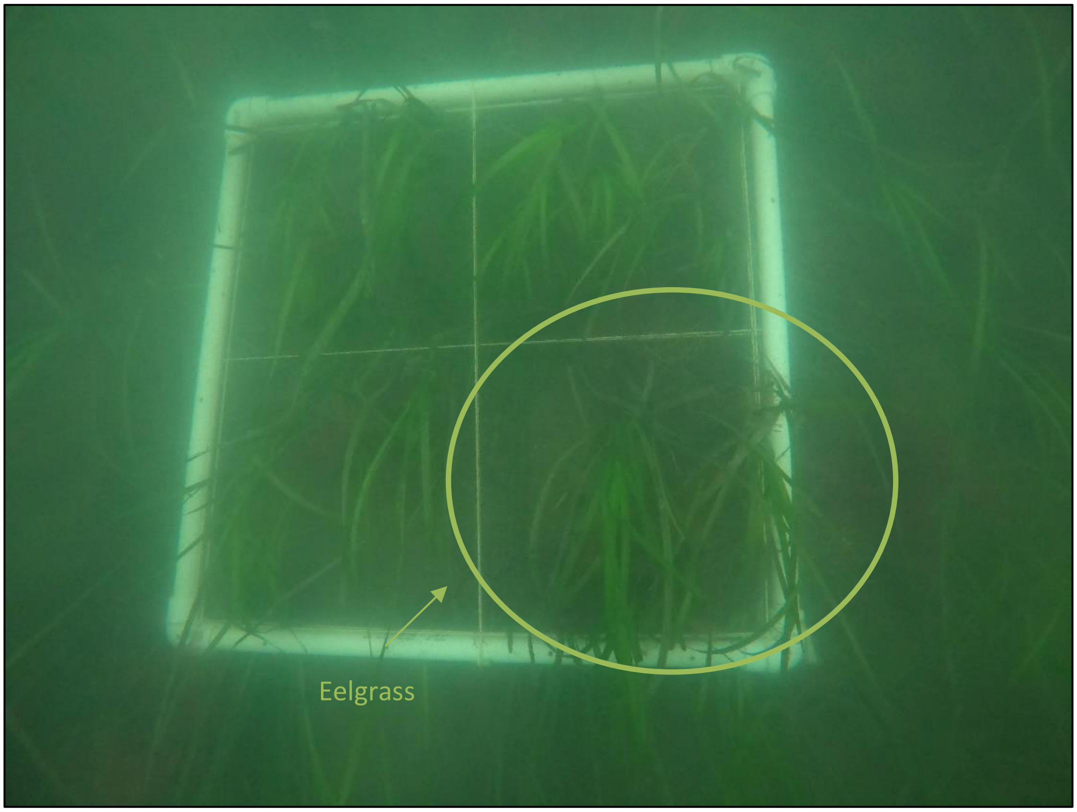

Figure 4. Underwater Photo Showing the Eelgrass Community.

4.0 Discussion

Eelgrass (*Zostera marina*) was visually detected inside the APE in the temporary impact area (TIA) is and adjacent to the expected permanent impact area (PIA). The eelgrass patches found within the project area were largely a medium to low density eelgrass community with denser beds on border of the TIA. The majority of the plants comprised of low numbers of turions per plant (Figure 5). Eelgrass beds were observed in this area during the 2022 Newport Bay Eelgrass monitoring report and our observations confirm the documented Eelgrass beds. High to low density beds can be found within the APE but none in the permanent impact area (PIA) adjacent to the bridge. Because the increased shading from trees, docks, the bridge and vessels stored in the area near the PIA eelgrass is low density to not present within ten feet of the bridge and seawalls. The beds are denser in the open waters at the north and south of the APE. The denser beds would see little effects from temporal construction activities. Eelgrass is less dense in and around docks and moored vessels. If any effects occurred, they would not contribute to any adverse long-term damage to the eelgrass health in the work area.

The replacement of the bridge and seawall retrofit will add 1.5ft and total width to the existing bridge and less than a foot on all existing seawalls. No eelgrass is present in the footprint of the PIA. The survey also indicates eelgrass abundance in the APE is sun based and if the temporary impact area is impacted there is little to no potential for construction-related impacts to existing eelgrass communities (i.e., temporary shading, physical disturbance, decreased light [turbidity]) and if deemed necessary construction Best Management Practices (BMPs) will provide adequate protections during in-water operations. These BMPs would include decreasing sedimentation using terrestrial booms, planning in water work according to eelgrass survey results and tide and avoid any unneeded shading. The temporary structures will be in place at most 7 months which will leave ample growth season for any impacts if they occur to recover before the next dormant/winter season. Any in-water manipulation or dock temporary relocation will be conducted with guidance from the most recent eelgrass survey to minimize the disturbance and not effect more dense beds. With the footprint of the proposed in water activity and construction being so small and eelgrass is not present in the footprint there should be no long-term effects to health of eelgrass in the project area and no mitigation would be needed.

During dive surveys a freshly dredged area in the south-west area of the APE was discovered. After investigation it was a location was Caulerpa taxafolia was identified and eradicated. The diver completed a 100% survey of the area to confirm no Caulerpa was present.

The survey results presented here were collected during the peak growth season (April to September). During the estimated construction window, the areal extent and/or presence of Eelgrass is not expected to vary, having compared seasonal assemblages from the survey completed and reviewed at this work site.

Figure 5. Harbor Island Bridge Construction Area Eelgrass Location.

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National Marine Fisheries Service. California Eelgrass Mitigation Policy (CEMP), Adopted October 2014.

Port of San Diego. Coastal Development Permit 2013-142, Issued to Westgroup Kona Kai, LLC

US Army Corps of Engineers. Nationwide Permit Verification, SPL-2014-00364-RRS, April 8, 2015

City of Newport Beach Public Works. Eelgrass Monitoring in Newport Bay. February 24, 2023

Appendix A

Caulerpa Survey Reporting Form

This form is required to be submitted for any surveys conducted for the invasive exotic alga *Caulerpa taxifolia* that are required to be conducted under federal or state permits and authorizations issued by the U.S. Army Corps of Engineers or Regional Water Quality Control Boards (Regions 8 & 9). The form has been designed to assist in controlling the costs of reporting while ensuring that the required information necessary to identify and control any potential impacts of the authorized actions on the spread of *Caulerpa*. Surveys required to be conducted for this species are subject to modification through publication of revisions to the *Caulerpa* survey policy. It is incumbent upon the authorized permittee to ensure that survey work is following the latest protocols. For further information on these protocols, please contact: Robert Hoffman, National Marine Fisheries Service (NOAA Fisheries), (562) 980-4043, or William Paznokas, California Department of Fish & Game, (858) 467-4218).

Report Date:	September 16, 2023
Name of bay, estuary, lagoon, or harbor:	Lower Newport Bay
Specific Location Name: (address or common reference)	Colins Island Bridge at Balboa Island
Site Coordinates: (UTM, Lat./Long., datum, accuracy level, and an electronic survey area map or hard copy of the map **must** be included)	See Report
Survey Contact: (name, phone, e-mail)	Chris Clark / Senior Marine Scientist
Personnel Conducting Survey (if other than above): (name, phone, e-mail)	Bryce Dewees, Diver, Certified Caulerpa Investigator
Permit Reference: (ACOE Permit No., RWQCB Order or Cert. No.)	
Is this the first or second survey for this project?	First survey
Was *Caulerpa* Detected?: (if *Caulerpa* is found, please immediately contact NOAA Fisheries or CDFG personnel identified above)	________________ **Yes, Caulerpa was found at this site and** ________________ **has been contacted on** __________ **date.** ______X______ **No, Caulerpa was not found at this site.**

Description of Permitted Work: (describe briefly the work to be conducted at the site under the permits identified above)	Construction of new bridge and seawall	
Description of Site: (describe the physical and biological conditions within the survey area at the time of the survey and provide insight into variability, if known. Please provide units for all numerical information).	*Depth range:*	o feet to 15 feet
	Substrate type:	Muddy substrate
	Temperature:	21.6 C
	Salinity:	28.2 ppt
	Dominant flora:	Eelgrass
	Dominant fauna:	Round rays
	Exotic species encountered (including any other Caulerpa species):	No
	Other site description notes:	
Description of Survey Effort: (please describe the surveys conducted including type of survey (SCUBA, remote video, etc.) and survey methods employed, date of work, and survey density (estimated percentage of the bottom actually viewed). Describe any limitations encountered during the survey efforts.	*Survey date and time period:*	9/16/23 0700 to 1200
	Horizontal visibility in water:	8 feet
	Survey type and methods:	Diver, quadrant and transect tape
	Survey personnel:	Bryce Dewees
	Survey density:	
	Survey limitations:	
Other Information: (use this space to provide additional information or references to attached maps, reports, etc.)		

Caulerpa Survey Reporting Form (version 1.2, 10/31/04)

APPENDIX C
Cultural Resources Assessment

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Phase I Cultural Resources Assessment for the Collins Island Bridge Replacement Project

Newport Beach, Orange County, California

Prepared for:
City of Newport Beach
100 Civic Center Drive
Newport Beach, CA 92660

Prepared by:
Susan Wood, PhD
Marc Beherec, PhD, RPA
Josh Rawley, MA

January 2024

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Michael Baker
INTERNATIONAL

5 Hutton Centre Drive, Suite 500
Santa Ana, CA 92707

Project No. JN 191636

January 2024

National Archaeological Database (NADB)
Type of Study: Literature Search, Intensive Pedestrian Survey, Significance Evaluation
New Sites: Waters Way Bridge (No. 55C-0265)
Updated Sites: None
USGS 7.5' Quadrangle: Newport Beach OE S
Acreage: 1.1 acres
Level of Investigation: Section 106 NHPA; CEQA Phase I
Keywords: Collins Island; Newport Beach; Waters Way Bridge; Caltrans Bridge No. 55C-0265

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EXECUTIVE SUMMARY

The City of Newport Beach (City) proposes the Collins Island Bridge Replacement Project (Project). The Project proposes the replacement of the Waters Way Bridge (No. 55C-0265), which connects Balboa Island with Collins Island; seawall improvements; and future pump station accommodations. The Project is subject to compliance with the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act of 1966 as amended for a permit under Section 404 of the Clean Water Act. Applicable regulations include the National Environmental Policy Act, CEQA, and local regulations. The City is the CEQA lead agency, and the US Army Corps of Engineers (USACE) is the lead agency for Section 106. This Phase 1 Cultural Resources Assessment is produced compliant with CEQA and USACE Section 106 standards.

In support of the Project, Michael Baker International conducted background and archival research; South Central Coastal Information Center records search; Native American Heritage Commission Sacred Lands File search; historical society consultation; an archaeological and built environment field survey; buried site sensitivity analysis; and a National Register of Historic Places (National Register) and California Register of Historical Resources (California Register) evaluation of one historic-period built environment resource, the Waters Way Bridge (No. 55C-0265). These efforts were completed to determine whether the Project could result in significant impacts to historical and archaeological resources as defined by CEQA Section 15064.5(a) or adverse effects to historic properties as defined by 36 Code of Federal Regulations (CFR) 800.16(l)(1).

Based on the results of the study, one historic-period built environment resource, the Waters Way Bridge (No. 55C-0265), was identified in the area of potential effect (APE) and evaluated as ineligible for the National Register and California Register, and therefore is not a historic property as defined by 36 CFR 800.16(l)(1) or historical resource as defined by CEQA Section 15064.5(a). As such, no further work is recommended for this resource. No archaeological resources were identified within the APE, and the sensitivity for potential buried resources is low. A finding of no historic properties affected with conditions under Section 106 and less than significant impact with mitigation incorporated under CEQA is appropriate for the Project. Refer to recommended mitigation measures in Chapter 6.

TABLE ES-1. CULTURAL RESOURCES WITHIN THE APE

Resource Name	Description	National/California Register Evaluation Recommendation	Historic Property/ Historical Resource
Waters Way Bridge (No. 55C-0265)	Automobile bridge	Ineligible	No

1.0 INTRODUCTION

The City of Newport Beach (City) proposes the replacement of the Waters Way Bridge (No. 55C-0265) which connects Balboa Island with Collins Island; seawall improvements; and future pump station accommodations. The Collins Island Bridge Replacement Project (Project) site is within the US Army Corps of Engineers' (USACE) jurisdictional boundaries; therefore, a USACE permit is anticipated, and compliance with the requirements of Section 106 of the National Historic Preservation Act (NHPA) is needed. The USACE is the lead agency for Section 106 compliance. Because the Project also requires discretionary approval from the City, the California Environmental Quality Act (CEQA) requirements also pertain. The City is the CEQA lead agency.

1.1 PROJECT LOCATION

The Project site is located in the City of Newport Beach in Orange County, California. The Project site is the Waters Way Bridge (No. 55C-0265), colloquially known as the Collins Island Bridge, and its immediate vicinity on Balboa Island in Newport Bay. Collins Island is located on the western tip of Balboa Island and is connected to the greater Balboa Island via the Collins Island Bridge. Regional access to the Project site is provided via State Route 1 (SR-1; Pacific Coast Highway) and local access to the site is provided via Marine Avenue (across the Balboa Island North Channel), and North Bay Front and Park Avenue on Balboa Island (**Figure 1**). The Project site is within Section 35 of Township 6 South and Range 10 West, San Bernardino Baseline and Meridian of the Newport Beach OE S, California 7.5-minute US Geological Survey (USGS) topographic quadrangle (**Figure 2**).

1.2 PROJECT DESCRIPTION

The Project includes three major components: 1) bridge replacement, 2) seawall improvements, and 3) future pump station accommodations.

Bridge Replacement: The proposed new bridge would be designed to be a total of 20 feet and 6 inches in width to accommodate one vehicle travel lane that is 13 feet and 9 inches wide, one 4-foot-wide sidewalk, and concrete barriers on each side to provide protection from projected sea level rise. The bridge would be 31 feet in length spanning over existing concrete sheet pile bulkheads. The existing bridge slope along the roadway and sidewalk bridge approaches on both sides of the bridge exceed 5 percent. Therefore, the Project includes adjusting the profiles to comply with Americans with Disabilities Act standards. Landscaped areas and the bridge monument would also be improved to increase sight distance along the adjacent walkways to increase pedestrian safety. A new stop sign and limit line would also be added at the intersection on both ends of the bridge.

Additionally, street, sidewalk, and landscaping improvements are proposed on the Balboa Island side along the Bay Front sidewalk and Park Avenue eastward until the alley. Anticipated improvements include monument sign construction, irrigation, paving, and landscaping.

Seawall Improvements: The Project includes increasing the height of existing seawalls adjacent to the bridge to protect properties from water levels associated with high tides and storm surges and anticipated future water surface elevation increases due to climate change. Currently, most seawalls along Collins Island Bridge and the Bay Front sidewalk consist of concrete sheet pile bulkheads with a concrete cap (coping) elevation of approximately 9 feet North American Vertical Datum of 1988 (NAVD 88). The proposed seawall improvements would be designed to have a top of wall coping elevation of 11 feet NAVD 88 with a future cap extension elevation up to 14 feet NAVD 88.

To maintain consistency between Collins Island and Balboa Island, existing seawalls along the Bay Front sidewalk would also be improved to meet Americans with Disabilities Act requirements and to accommodate future sea level rise. The Bay Front sidewalks adjacent to the new proposed seawalls would be raised to provide a minimum of 42 inches from sidewalk to top of coping.

The new seawalls would be designed to allow access to existing boat ramps and docks. However, certain docks would be temporarily relocated during construction activities. Where possible, the existing concrete sheet pile bulkhead system would remain in place to reduce disturbance and associated environmental impacts. In the case of Bay Front sidewalk seawall improvements, new steel sheet piles would be placed seaward from the existing concrete sheet piles. A new sidewalk and parapet cap would provide seawall protection.

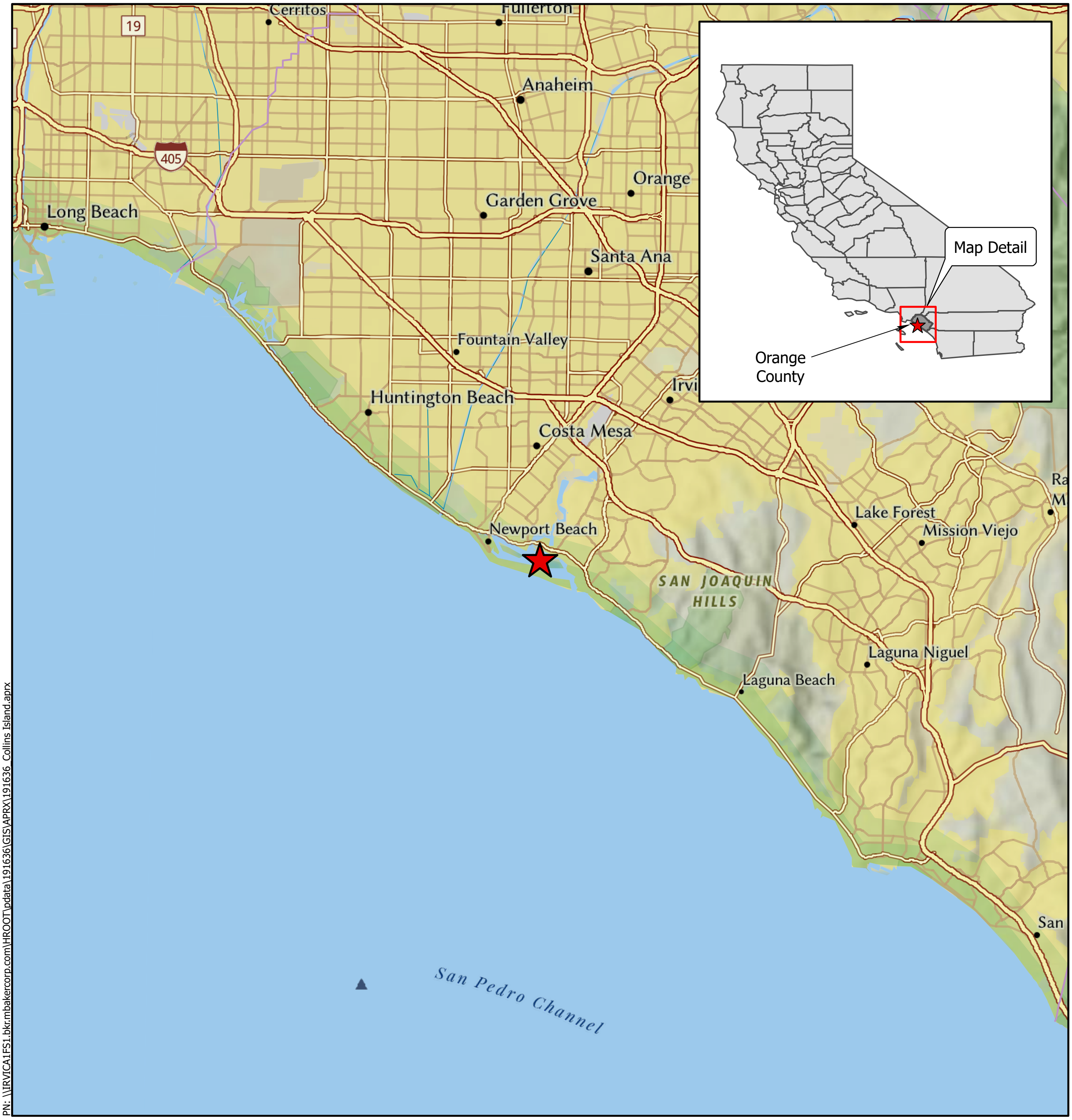
Future Pump Station Accommodations: The City is currently in the process of designing a new stormwater pump station on Park Avenue near the Collins Island Bridge as part of a separate project. The pump station is designed to have discharge outlets located near the east abutment of the Collins Island Bridge (Waters Way Bridge [No. 55C-0265]). As such, given that the Project and pump station project are being designed concurrently, the Project includes pump station accommodations to convey anticipated stormwater outflow into the bay adjacent to the new bridge. Specifically, weir structures would be constructed adjacent to the proposed seawalls along the east abutment of the bridge to control the rate of stormwater outflow. In addition, portions of the future pump station outlet pipes that connect to the weir structure are proposed within this project. Two outlet pipes are proposed on the northern side of the bridge and two outlet pipes are proposed on the southern side of the bridge. It should be noted that while the pump station project is being designed by the City concurrently with the Project, the pump station project is not a part of the Project and would be approved separately.

1.3 AREA OF POTENTIAL EFFECTS

According to Section 106 of the NHPA, the area of potential effects (APE) is:

[T]he geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 Code of Federal Regulations [CFR] 800.16[d]).

An APE for this Project was delineated pursuant to Section 106 of the NHPA. The APE includes the approximately 1.1-acre footprint of the planned bridge and seawall work, including the impacted part of Park Avenue, overlapping boat docks and slips, and the adjacent waters. This APE includes any area where historic properties may be directly or indirectly affected by Project-related activities. The vertical APE for the Project is limited to the maximum depth of ground disturbance required for the Project. Error! Reference source not found.**Figure 3** depicts the APE.



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Legend

Project Area

0 2.5 5 Miles

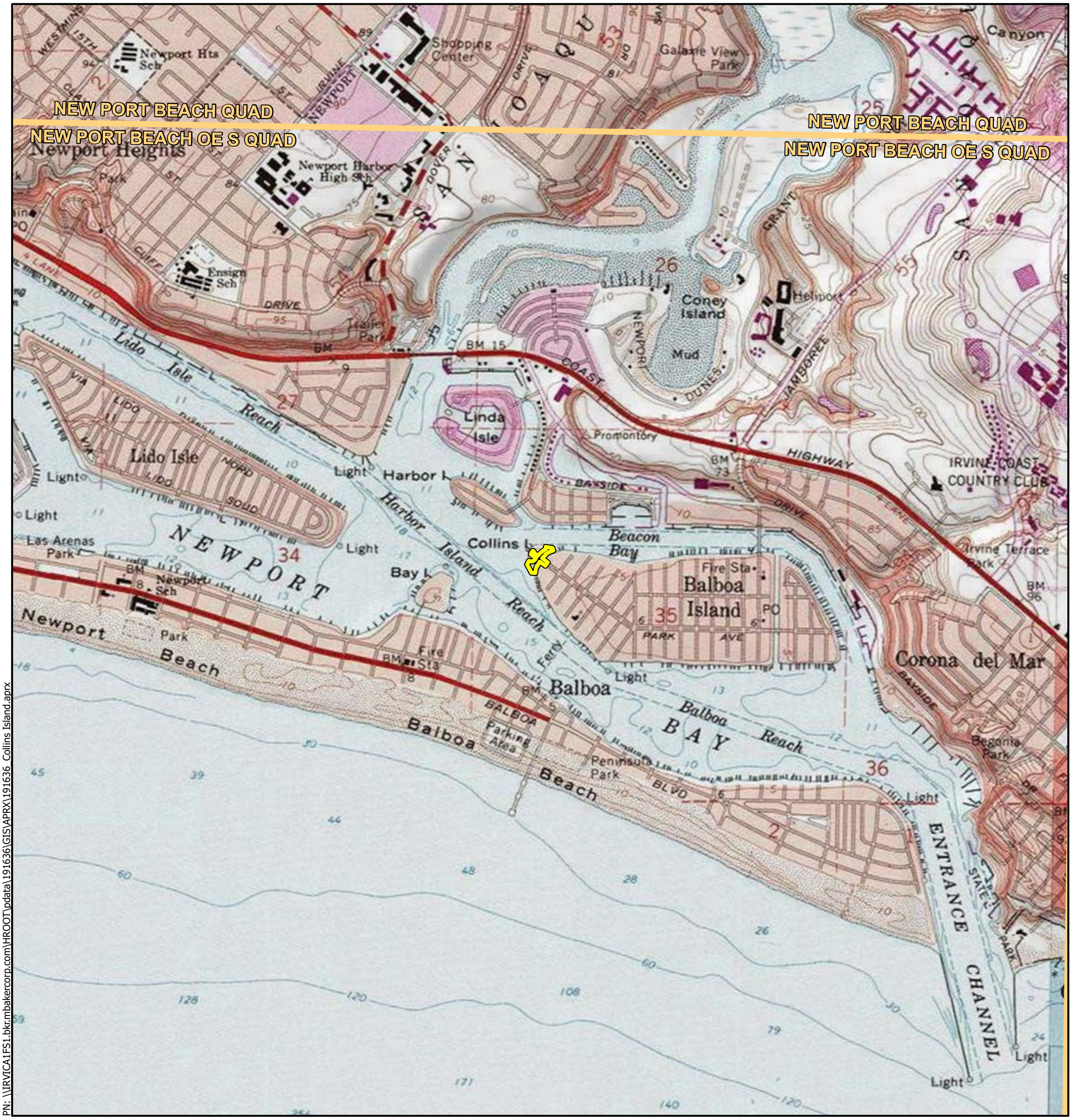
Michael Baker INTERNATIONAL

Source: Esri, ArcGIS Online, National Geographic World Map: *Newport Beach, California*

COLLINS ISLAND BRIDGE
NEWPORT BEACH, CA

Regional Vicinity

Figure 1



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Legend

Project Area

Michael Baker INTERNATIONAL

0 0.25 0.5 Miles

Source: Esri, ArcGIS Online, Newport Beach OE S USGS 7.5-Minute topographic quadrangle maps: *Newport Beach, California*

COLLINS ISLAND BRIDGE
NEWPORT BEACH, CA

Project Vicinity

Figure 2

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Legend

Area of Potential Effects

Michael Baker INTERNATIONAL

0 50 100 Feet

Source: Esri, ArcGIS Online, 2023 Nearmap Imagery: *Newport Beach, California*

COLLINS ISLAND BRIDGE
NEWPORT BEACH, CA

Area of Potential Effects

Figure 3

2.0 ENVIRONMENTAL SETTING AND BACKGROUND

2.1 NATURAL SETTING

California is divided into 11 geomorphic provinces, each defined by unique geologic and geomorphic characteristics. The APE is in the northern Peninsular Ranges geomorphic province. This province is characterized by a series of ranges separated by northwest trending valleys running roughly parallel to the San Andreas Fault. The Los Angeles Basin and the continental shelf are included in this province. The bedrock consists of granitic rock intruding older metamorphic rocks (CGS 2002).

The geology of the Newport Beach area was mapped at a scale of 1:100,000 by V. E. Langenheim et al. (2006). The APE is denoted simply "Q," indicating that it is underlain by geologic units deposited during the Quaternary period (2,588,000 years ago to present). Approximately 0.6 acres, or 53.9 percent of the APE, is covered in surface water. The remaining 0.5 acre, or 46.1 percent of the APE, is mapped as beach sands (NRCS 2023).

In its natural state, the Newport Beach coastline was rich in animal and plant life. The APE is located in what was once marshland, where various birds, cattails, willows, reeds, insects, various small crustaceans, fish, and shellfish abounded (California State Water Resources Control Board 1979).

2.2 CULTURAL SETTING

This section provides a brief summary of the prehistoric record and ethnohistoric and historic settings of the APE.

2.2.1 Prehistoric Period

The APE is within coastal Southern California, an area where the prehistoric record is better documented than in many other regions in the state. The summary of the prehistoric occupation of the region here follows the general cultural history schema of Southern California prehistory documented in past work (e.g., Glassow et al. 2007; ICF 2021; Moratto 1984; Waugh 1999).

The prehistoric occupation of Southern California is divided chronologically into four temporal phases or horizons (Moratto 1984). Horizon I, or the Early Man Horizon, began at the first appearance of people in the region (approximately 12,000 years ago) and continued until approximately 5,000 BC. One of the oldest archaeological finds in the region is Daisy Cave, on San Miguel Island, where cultural remains have been radiocarbon dated to between 11,100 and 10,950 BC (Moratto 1984). These early occupants of Southern California are believed to have been nomadic large-game hunters whose tool assemblage included percussion-flaked scrapers and knives; large, well-made stemmed, fluted, or leaf-shaped projectile points (e.g., Lake Mojave, Silver Lake); crescentics; heavy core/cobble tools; hammerstones; bifacial cores; and choppers and scraper-planes. Warren (1968) and Wallace (1955) suggest that the absence of milling tools commonly used for seed preparation indicates that an orientation toward hunting continued throughout this phase.

Horizon II, also known as the Millingstone Horizon or Encinitas Tradition, began around 5,000 BC and continued until approximately 1,500 BC. The Millingstone Horizon is characterized by the widespread use of milling stones (manos and metates) and core tools, with few projectile points or bone or shell artifacts. This horizon represents a diversification of subsistence activities and a more sedentary settlement pattern. Archaeological evidence suggests that hunting became less critical and that a reliance on collecting shellfish and vegetal resources increased (Moratto 1984: 159). The inland occupants collected primarily hard seeds and hunted small mammals; projectile points were more common in inland assemblages.

A greater emphasis on seed gathering marked the general settlement and subsistence patterns of Horizon II. Coastal and inland sites exhibit shallow midden accumulations, suggesting seasonal camping, and midden accumulation at desert locales dating to this period is generally rare. Based on the distribution of sites assigned to this period, aboriginal groups likely followed a modified, centrally based wandering pattern, with an inferred shift toward enhanced logistical settlement organization (Warren 1968). In this semisedentary pattern, larger groups occupied a base camp for a portion of the year, while smaller groups used satellite camps to exploit seasonally available floral resources such as grass seeds, berries, tubers, and nuts. King suggests that the coastal sites probably represent more permanent occupations than those found in the interior because coastal inhabitants were sustained by more reliable and abundant food resources (King 1967).

Horizon III, the Intermediate Horizon or Campbell Tradition, began around 1,500 BC and continued until approximately AD 600–800. Horizon III is defined by a shift from the use of milling stones to increased use of mortar and pestle, possibly indicating a greater reliance on acorns as a food source. Projectile points become more abundant and, together with faunal remains, indicate increased use of both land and sea mammals (Moratto 1984: 159).

Horizon IV, the Late Horizon, which began around AD 600–800 and terminated with Spanish colonization in 1769, is characterized by dense populations; diversified hunting and gathering subsistence strategies, including intensive fishing and hunting for sea mammals; extensive trade networks; use of the bow and arrow; and a general cultural elaboration (Moratto 1984: 159). All regional chronological sequences recognize the introduction of the bow and arrow at about AD 500 by the appearance of small arrow points and arrow-shaft straighteners. Diagnostic artifacts for the Late Horizon include small triangular projectile points, mortars and pestles, steatite ornaments and containers, perforated stones, circular shell fishhooks, numerous and varied bone tools, and bone and shell ornamentation. Elaborate mortuary customs, generous use of bitumen (i.e., tar), and the development of extensive trade networks are also characteristic of this period. Pottery, ceramic pipes, cremation urns, rock paintings, and some European trade goods were added to the previous cultural assemblage during the latter half of the late prehistoric occupation of the Southern California coastal region (Meighan 1954).

2.2.2 Ethnographic Setting

The earliest written records of the Native American population come from when Spanish explorers first visited the coast of southern California in 1542. San Pedro Bay was one of the first parts of Los Angeles County encountered by these seafarers. In 1542, the Cabrillo expedition visited the bay and called it Baia de los Fumos. Cabrillo and his men interacted with the Gabrielino people, who came to meet their ships in a canoe. The bay was visited again in 1602 by the Vizcaino expedition (McCawley 1996: 64). But European settlement did not begin in the area until 1769, when Gaspar de Portola led an exploratory mission intended to open up Alta California to settlement. Portola met several friendly Native American groups which were described by his diarist, Fray Juan Crespi (Crespi and Brown 2001), although the expedition passed well inland from Huntington Beach and their journals therefore give little information specific to the APE (Meadows 1965; Smith 1965).

On September 8, 1771, Franciscan friars established Mission San Gabriel Arcángel. The APE was located within the area allotted to Mission San Gabriel, and the Franciscans called the local Native Americans Gabrielinos after the mission.

Gabrielino territory included the Los Angeles Basin as far south as Aliso Creek, parts of the Santa Ana and Santa Monica Mountains, and San Clemente, San Nicolas, and Santa Catalina Islands. Gabrielino villages were located near the coast and along the rivers and creeks, where villages houses, formed of domed semipermanent structures the Spanish likened to half-oranges, centered around a temple and the home of the village chief. The resource procurement area claimed by these villages spread around the village center, abutting against the territories of nearby villages. Some village sites are shown on Spanish or Mexican period maps. The area was surveyed when California was acquired by the United States, however, no early American surveyors mapped the villages as they did elsewhere in California. Rapid development in the nineteenth and twentieth centuries, along with the irregular flow of the area's drainages led to the destruction of the villages. Archaeologists and ethnologists rely on American-period historical documents, the oral histories of the Gabrielino themselves, and archaeological finds to pinpoint village locations. A study was performed on locations of some Gabrieleno villages was just released (Mapping Los Angeles Landscape History: The Indigenous Landscape, October 9, 2023, prepared by the University of Southern California).

Although Newport Beach would have been an ideal location for hunting and gathering the rich estuarine biota, frequent flooding and the shifting mouth of the Santa Ana River would have made permanent settlement in most of coastal Newport Beach nearly impossible in the prehistoric period. Archaeological sites tend to be light shell scatters on high knolls or bluffs, where hunting and gathering parties passing through the area left ephemeral deposits. However, one place name, Kengaa or Gengara, is known to have existed on Upper Newport Bay. The place is mentioned in records from Mission San Juan Capistrano and appears to have been inhabited as late as 1829 or 1830, and Newport Bay was known as the Bay of Gengara as late as 1853 (McCawley 1996: 72).

Maps show Gabrielino villages known or suspected to be located in the vicinity of Newport Beach. Kroeber's map "Native Sites in Part of Southern California" shows no villages within the APE, but Lukup appears on the west bank of the Santa Ana River northwest of the APE, and Moyo appears east of the APE (Kroeber 1925: Plate 57). The *Kirkman-Harriman Pictorial and Historical Map of Los Angeles County, A.D. 1860*, which was prepared in 1937 but intended to represent the area as it existed nearly 80 years earlier, shows an unlabeled village east of Upper Newport Bay. The Southwest Museum's map shows archaeological sites along the Santa Ana River and San Diego Creek, as well as villages it labels Lupukngna and Moyongna in the same places that named villages are shown by Kroeber (Johnston 1962: x). Unfortunately, these maps are of too coarse a scale to identify exact distances to the APE itself, but it is clear that none of these villages are located within or adjacent to the APE.

The Gabrieleno Band of Mission Indians identify three villages around Newport Bay including Lupukugna on the west bank of the bay adjacent to the Santa Isabella Channel, Moyongna on the east bank of the Bay, and Kenyaanga, located on the bluffs of the Banning Ranch near the Santa Ana River. No villages would have been located adjacent to Newport Bay, including what is now the locations of the Collins Island Bridge, as this area was all wetlands and mudflats. The resource procurement areas of these known villages would have included the immediate vicinity, and the Area of Potential Effects (APE) would have been claimed by one of these villages.

2.2.3 Historic Setting

Regional Development

Many histories of the greater Orange County region begin with the settlement of Spaniards from Mexico in 1784. The beginning of land development in Orange County can be traced to Spanish rule, when the government gave Manuel Nieto permission in 1784 to occupy the land between what is today northern Orange County and the southern region of Los Angeles County. Soon after, the Spanish government also permitted Juan Pablo Grijalva to occupy lands in the region. Nieto and Grijalva and their descendants operated cattle ranches on these lands after Mexico broke away from Spain in 1824. The land that would become modern-day Newport Beach was a swampland and ignored by the Spanish and Mexican settlers in the region. It was not until after the Mexican American war when the United States took control over the region and made California a state in 1850 that any real settlement in the area took place. Given the inhospitable terrain, the State of California sold land in present-day Newport Beach for $1 an acre. After the Civil War, many people from the eastern United States immigrated to the area for the cheap land. (Baker 2004; Chattel Architecture, Planning & Preservation, Inc. 2006; Orange County Historical Society 2023)

Newport Beach

The vicinity of present-day Newport Beach was settled during the late nineteenth century by James McFadden and other ranch owners. Making his homestead in the Lower Bay in 1868, McFadden saw potential for the area to rival the deep-port town of Wilmington to the north. McFadden bought much of the undeveloped land, and the area was soon known by residents as "Newport." In 1888, McFadden sought to fully realize his vision and transformed the isolated settlement by building a wharf that extended from the shallow bay to deeper water where large steamers could dock. As a result, shipping activity increased dramatically, and Newport Beach became a vibrant Southern California shipping town. In 1902, McFadden sold much of his land—the Newport Townsite and half of the Balboa Peninsula—to William Collins, who continued to develop Newport Beach. In 1905, the Pacific Electric Railroad established a line to Newport Beach, connecting the growing beachside town to Los Angeles by rail. Public transit brought new visitors to the waterfront, and developers, like Collins, took advantage of the opportunity and constructed small hotels and beach cottages that catered to the tourist industry. The City of Newport Beach incorporated in 1906 and continued to grow, spurred on more as the Pacific Coast Highway was opened in 1926, the North Harbor was dedicated in 1936, and the Santa Ana Freeway (I-5) was built in the 1950s. Newport Beach—like many cities across the state—experienced a period of unprecedented population growth during and following World War II as a result of wartime construction industries, expansion of regional transportation networks, and abundance of local recreation amenities. By the latter decades of the twentieth century, service, retail, and professional industries supplanted fishing and shipping as the region's economic base (City of Newport Beach 2022; USGS 1949, 1951, 1965; Novak 2008).

Balboa Island and Collins Island

In 1905, Collins dredged a channel on the north side of the bay, and deposited sand and silt on the tidelands. In 1909, Collins received permission from the Orange County Board of Supervisors to move the small dredge to the eastern part of Newport Bay. Collins created Balboa Island from this fill. Soon after, Collins began sending salesmen to Los Angeles and Pasadena to promote property around Newport Harbor. Originally, Collins sold lots on Balboa Island for $25, with promises of street paving, sewers, streetlights, and bridge and ferry access to follow. Many lots on Balboa Island were sold to wealthy Pasadena families, and many longtime island residents continue to have family ties to the Pasadena area (Baker 2004; Visit Newport Beach 2023).

Major infrastructure improvements did not reach Balboa Island until 1916 when the City of Newport Beach annexed the site. Prior to Balboa Island's incorporation into Newport Beach, residents had built a cement seawall and pedestrian bridge (1912) and connected waterlines by 1914. By 1920, the City of Newport Beach had added a paved road, gas lines, and a ferry service to the island that caused a boost in residential occupation. In 1929, City engineers built a concrete bridge to replace the wooden bridge that had previously connected Balboa Island to the mainland. Between 1930 and the 1950s, entrepreneurs capitalized on increased island access and opened commercial businesses, including restaurants and a market. Most of this new development was concentrated along Marine Avenue. Since 1930, the population has increased exponentially from 100 permanent residents to over 4,500 (Baker 2004; Visit Newport Beach 2023).

Just as William Collins created Balboa Island in the early 1900s by depositing sand and silt in the bay, he also created a smaller island directly west of the site, separated from Balboa Island by a narrow channel. In 1910, on this piece of land, he built his "castle," a sprawling house where he lived with his wife Apolonia until he sold the island in 1926. At some point prior to selling, Collins constructed a Japanese-style footbridge that connected Collins Island with Balboa Island (**Figure 4**). Later, the island became known as Collins Island in honor of its original inhabitant. (*Covina Argus* 1926; *Los Angeles Times* 1953a; Smart 1989).

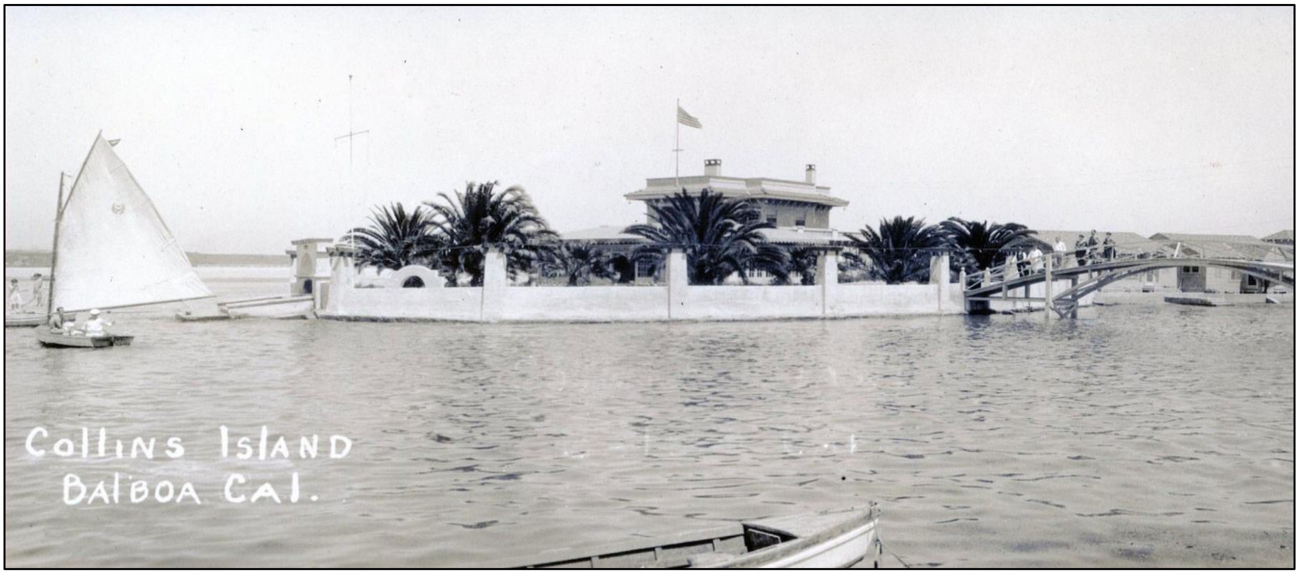

FIGURE 4: CIRCA 1930S PHOTOGRAPH DEPICTING THE FOOTBRIDGE ON THE RIGHT (COURTESY OF THE CITY OF NEWPORT BEACH)

In 1926, a group of Hollywood businessmen bought the Collins Island property and transformed it into the Balboa Yacht and Swimming Club. These developers made improvements to transform Collins's former house into a clubhouse, with locker rooms, a pool, and handball courts. The club was short-lived; however, actor James Cagney purchased the island for $32,000 in 1938. During World War II, the Coast Guard used Collins Island as a base for the Volunteer Port Security Force, though the Coast Guard quickly vacated the area after the war (*Anaheim Gazette* 1944; *News-Pilot* 1938; *Santa Ana Register* 1926).

After the war, George McNamara bought Collins Island, and in 1953 removed Collins's former house. McNamara expanded the island with the construction of a cement bulkhead. He also had the island zoned to accommodate eight residential lots large enough to accommodate houses of 3,500 square feet. McNamara constructed an automobile bridge to connect Collins Island and Balboa Island, and a paved automobile area was added to the center of the island. Telephone and utility lines were connected underground. McNamara kept two of the lots for himself and sold the remainder lots for between $40,000 and $70,000. In 1959, McNamara deeded the subject bridge to the City of Newport Beach. Historical aerials suggest the island has remained relatively unchanged since the last residential lot was developed sometime prior to 1972. (*Anaheim Bulletin* 1953; City of Newport 1959; *Los Angeles Times* 1953a; NETR 2023)

Reinforced Concrete Bridges

After 1910, bridge designers increasingly used concrete reinforced with steel embedded rods as an effective means of improving the strength of concrete. Engineers already recognized concrete for its strength; however, it was susceptible to cracking under compression. As bridge load requirements increased in the early twentieth century, reinforced concrete improved bridge construction and sustainability. By the mid-1930s, the California Division of Highways and local agencies constructed most of their new bridges with reinforced concrete. Reinforced concrete (and later prestressed concrete) was used for arches as well as slab, t-beam, and girder bridges. The cast-in-place method, the method used for the subject bridge, is where liquid concrete is poured into forms at the bridge site. In the mid-twentieth century, engineers developed the pre-cast method where bridge elements could be poured elsewhere and moved. By the 1950s, over 90 percent of bridges were constructed of concrete due to the innovation of reinforced box girders and prestressed concrete, which allowed for longer spans and more control of greater control over load capacity. The height of bridge construction in California occurred during the 1960s and into the early 1970s, including construction of more than half of all concrete road bridges in California (JRP Historical Consulting Services 2003: 47-57).

Concrete Slab Bridges

Transportation officials favored concrete slab, girder, and t-beam bridges from 1936 to 1959; these types accounted for more than a quarter of the newly constructed bridges during this time period. Los Angeles and the southern Central Valley contain the greatest concentrations of concrete slab and t-beam bridges (JRP Historical Consulting Services 2003: 58). Between 1965 and 1974, transportation engineers had standardized bridge designs, and a 2015 California Department of Transportation (Caltrans) report documented that concrete slab bridges were used primarily for short to medium spans (Blackmore et al. 2015: 6). In 2005, Caltrans carried out an evaluation of historical significance for the National Register of Historic Places (National Register) of bridges constructed prior to 1960. The report found that concrete slab bridges accounted for more than 25 percent of the 8,587 bridges constructed prior to 1960 (Hope 2005). There are 20 concrete slab bridges in California that are eligible for or listed in the National Register or that meet California Register of Historical Resources (California Register) criteria. However, 16 are contributors to historic roads or other larger properties. Of the four concrete slab bridges individually listed or eligible, the most recent was constructed in 1940 (Blackmore et al. 2015: 6).

Site Specific History

The Waters Way Bridge (No. 55C-0265), colloquially known as the Collins Island Bridge, was constructed in 1953 over Newport Bay, to connect Collins Island and Balboa Island in Newport Beach, California (**Figure 5**). It is a local agency bridge maintained by the City of Newport Beach (Caltrans 2019).

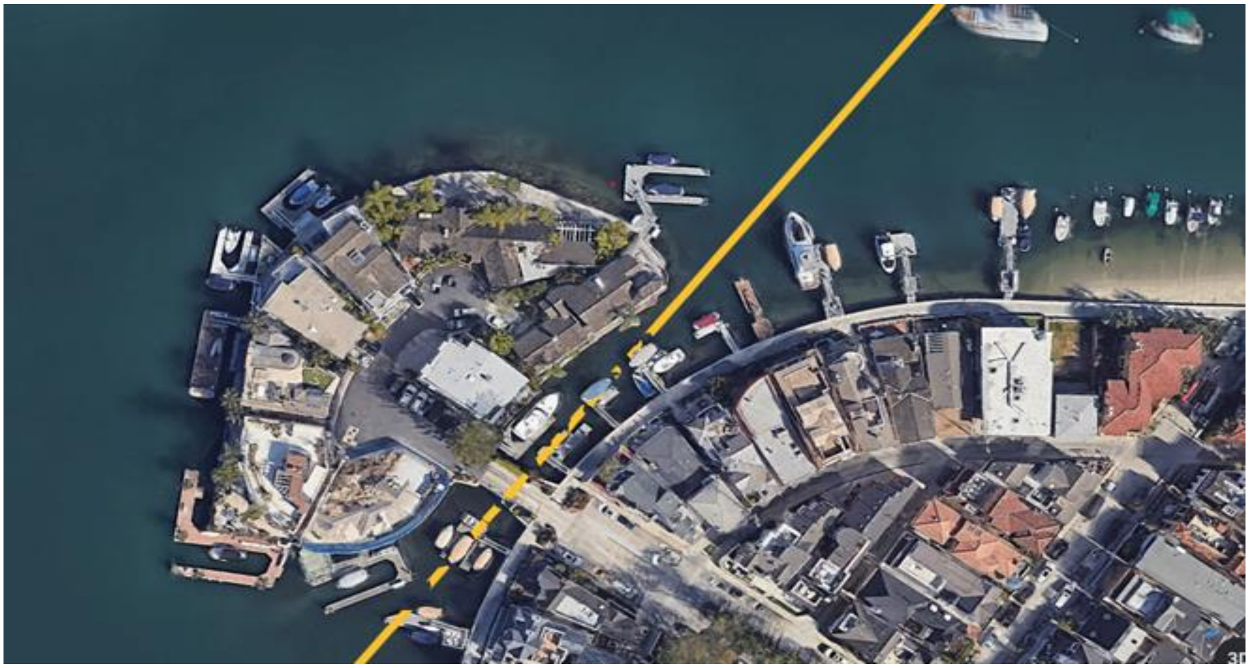

FIGURE 5: WATERS WAY BRIDGE (NO. 55C-0265) OVER NEWPORT BAY. YELLOW LINE MARKS THE BOUNDARY BETWEEN COLLINS ISLAND (TO THE WEST) AND BALBOA ISLAND (TO THE EAST) (GOOGLE EARTH 2023).

The general area surrounding the bridge was swamp and marshland until the beginning of the twentieth century. A 1901 and 1907 map do not show either Collins Island or Balboa Island (**Figure 6**) (USGS 1901, 1907).

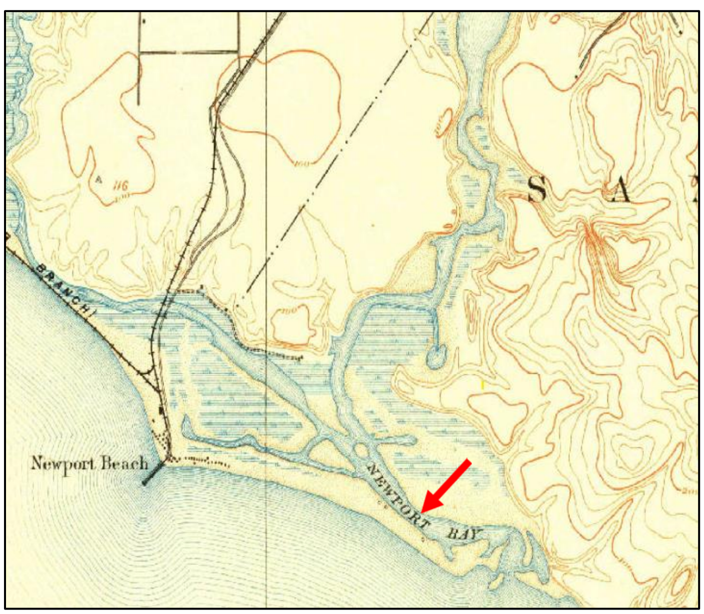

FIGURE 6: 1907 USGS MAP SHOWS UNDEVELOPED AREA SURROUNDING NEWPORT BAY. A RED ARROW POINTS TO THE APPROXIMATE FUTURE SITE OF BALBOA ISLAND (USGS 1907).

Archival resources document that Balboa Island and Collins Island had been constructed by 1909 (Baker 2004). A 1932 map shows a cluster of residential properties on Balboa Island and on the Balboa Peninsula. Land directly north of Balboa Island remained undeveloped save for a highway that is marked along today's SR-1, connecting Corona Del Mar with Newport Beach. This map also shows an automobile bridge carrying a road across Newport Bay to the north, connecting the mainland with Balboa Island. This road later became known as Marine Avenue on the island side. Park Avenue, the road the subject bridge carries over the channel, runs perpendicular to Marine Avenue. The map shows it terminating directly before Collins Island (USGS 1932). A 1938 aerial photograph shows a pedestrian foot bridge connecting Balboa Island with Collins Island. In this aerial photograph, a variety of structures are visible on Collins Island, and a boat dock is situated on the southern tip. Residential properties cover Balboa Island with only a few scattered empty lots (NETR 1938).

Maps show that between 1938 and 1949 the area around the bridge remained relatively unchanged, apart from four buildings that are present on Collins Island, which were possibly added by the US Coast Guard when they occupied the island during World War II (*Anaheim Gazette* 1944; USGS 1949). A 1953 aerial depicts only one structure remaining on Collins Island. This is likely due to the ownership change at that time and their plans to redevelop the island into additional parcels for new home construction (*Anaheim Bulletin* 1953; *Los Angeles Times* 1953a). At this time, the pedestrian footbridge is still intact. Later in 1953, Collins Island's then-owner George McNamara constructed the subject bridge (No. 55C-0265); this is visible in 1963 aerials and a 1965 map (City of Newport Beach 1959; NETR 2023: 1963; UCSB 1963; USGS 1965). The 1963 aerial reflects the removal of the sole building on Collins Island and the addition of six residential homes and corresponding boat docks (**Figure 7**) (UCSB 1963; NETR 2023: 1963). Two additional residences were added on the island by 1972, and the area has remained relatively unchanged since then (NETR 2023: 1972, 1987, 1997, 2009, 2020).

FIGURE 7: 1963 AERIAL PHOTOGRAPH SHOWING WATERS WAY BRIDGE (NO. 55C-0265) (RED ARROW) COMPLETED (UCSB 1963).

People

William Collins

William Collins was born in Indiana in 1863. Before departing in 1888 for Riverside, California, he was a schoolteacher. Once in Riverside, Collins became a successful orange grower. After his success in agriculture, Collins dabbled in the oil and mining businesses and then bought a large portion of land in Newport from James McFadden in 1902. By 1909, he had constructed Balboa Island. By 1910, Collins had built his personal residence on Collins Island, which he created by dredging a small channel across the tip of Balboa Island. He lived in this house until 1926 when he sold the property to a group of Hollywood investors. Collins moved away from California shortly after, and eventually died in Wichita, Kansas, in 1952 (*Covina Argus* 1926; *Los Angeles Times* 1952; *Los Angeles Times* 1953a; Smart 1989).

George McNamara

George McNamara was born November 28, 1894, in San Francisco, California. Very little information regarding McNamara's life can be found in archival sources. His World War I draft card reveals he had moved to Los Angeles sometime prior to 1918 and worked in the printing business. The 1940 Federal Census notes his marriage to Melba McNamara and lists his occupation as an office clerk. In 1948, McNamara bought Collins Island from James Cagney and created plans to expand and develop the island to include eight residential tracts. A 1953 newspaper source described McNamara as a "retired manufacturer" (*Los Angeles Times* 1953b). In 1953, McNamara built the subject bridge (No. 55C-0265) to connect Collins Island to Balboa Island via automobile. During this time, he built his own residence on two of the residential lots he had subdivided on the island. Though the bridge was privately built, he deeded it to the City of Newport Beach in 1959. McNamara resided at his house on Collins Island until his death on January 30, 1973 (City of Newport Beach 1959; US Census Bureau 1940; Ancestry.com 2005).

Architect and Builder

Frederick Hodgdon, the architect of the subject bridge, was born in Dorchester, Massachusetts, in 1894. He attended the Chicago Art Institute between 1918 and 1921 (Koyl 1962). It appears that Hodgdon was primarily an architect of churches. He designed a variety of church buildings throughout his career, including the First Presbyterian Church of Clinton, Iowa, in 1932, and the Evangelical United Brethren Church in Santa Ana, California, in 1956 (Koyl 1962). However, targeted research failed to show that Mr. Hodgdon made any noteworthy contributions to the field of bridge design that would classify him as a master (Ancestry.com 2023; Google 2023: Newspapers.com 2023).

Trautwein Brothers Marine Construction Company was responsible for building Waters Way Bridge (No. 55C-0265) over Newport Bay. The company was active in the construction of various waterside buildings, including the boat marina in Santa Cruz Harbor, the Ventura West Marina, and docks in Catalina, Huntington Harbour, and Newport Beach. Despite their prolific activity throughout California, the subject bridge does not represent a remarkable representation of their work, nor is it a noteworthy example of bridge construction (*Press Telegram* 1974; *Ventura County Star-Free Press* 1979).

3.0 REGULATORY FRAMEWORK

3.1 CLEAN WATER ACT

Section 404 of the Clean Water Act establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in the waters of the United States regulated under this program include fill for development, water resource projects, infrastructure development, and mining projects. Section 404 requires a permit to be obtained before dredged or fill material may be discharged into the waters of the United States.

The Project requires filling and/or redirection of ephemeral drainages. As a result, a Section 404 permit must be obtained from the USACE prior to construction. Because the Project falls within the jurisdiction of a federal agency and requires a federally issued permit, the Project is considered a federal undertaking.

3.2 NATIONAL HISTORIC PRESERVATION ACT

The Project requires federal permitting, license, or approval; therefore, the Project meets the definition of an undertaking in 36 CFR Section 800.16(y). Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings (36 CFR Section 800.1). A historic property is defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register. Properties of traditional religious and cultural importance to Native Americans are considered under Section 106 (36 CFR Sections 800.3-800.10) and Section 101 (d)(6) of the NHPA.

3.2.1 National Register of Historic Places

The National Register is the official register of districts, sites, buildings, structures, and objects determined to be worth special protections due to their historic or artistic significance. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following four criteria:

- Criterion A: Are associated with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B: Are associated with the lives of persons significant in our past; or
- Criterion C: Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D: Have yielded, or may be likely to yield, information important in prehistory or history.

All resources or properties nominated for listing in the National Register must retain integrity, which is the authenticity of a historic resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historic resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. It must also be judged with reference to the particular criteria under which a resource is proposed for nomination.

3.3 CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA applies to all discretionary projects undertaken or subject to approval by the state's public agencies (California Code of Regulations [CCR] Title 14[3] Section 15002[i]). CEQA conditions that it is the policy of the state of California to "take all action necessary to provide the people of this state with historic environmental qualities and preserve for future generations examples of the major periods of California history" (Public Resources Code [PRC] Section 21001[b], [c]). Under the provisions of CEQA, "a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (CCR Title 14[3] Section 15064.5[b]).

CEQA Guidelines Section 15064.5(a) defines a "historical resource" as a resource that meets one or more of the following criteria:

- Listed in, or eligible for listing in, the California Register.
- Listed in a local register of historical resources (as defined in PRC Section 5020.1[k]).
- Identified as significant in a historical resource survey meeting PRC Section 5024.1(g) requirements.
- Determined to be a historical resource by a project's lead agency (CCR Title 14[3] Section 15064.5[a]).

A historical resource consists of "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. … Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing in the California Register of Historical Resources" (CCR Title 14[3] Section 15064.5[a][3]).

The CEQA planning process requires considering historical resources and unique archaeological resources (CCR Title 14[3] Section 15064.5; PRC Section 21083.2). If feasible, adverse effects to the significance of historical resources must be avoided or mitigated (CCR Title 14[3] Section 15064.5[b][4]). The significance of a historical resource is impaired when a project demolishes or materially alters adversely those physical characteristics of a historical resource that convey its historical significance and justify its eligibility for the California Register. If there is a substantial adverse change in the significance of a historical resource, the preparation of an environmental impact report may be required (CCR Title 14[3] Section 15065[a]).

If the cultural resource in question is an archaeological site, CEQA (CCR Title 14[3] Section 15064.5[c][1]) requires that the lead agency first determine if the site is a historical resource as defined in CCR Title 14(3) Section 15064.5(a). If the site qualifies as a historical resource, potential adverse impacts must be considered in the same manner as a historical resource (OHP 2001a). If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological site, then the archaeological site is treated in accordance with PRC Section 21083.2 (CCR Title 14[3] Section 15069.5[c][3]). In practice, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource. CEQA defines a "unique archaeological resource" as an archaeological artifact, object, or site about which it can be demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2[g]).

If an impact to a historical or archaeological resource is significant, CEQA requires feasible mitigation measures to minimize the impact (CCR Title 14[3] Section 15126.4[a][1]). Mitigation must lessen or eliminate the physical impact that the project will have on the resource. Generally, drawings, photographs, and/or displays do not mitigate the physical impact on the environment caused by the demolition or the destruction of a historical resource. However, CEQA (PRC Section 21002.1[b]) requires that all feasible mitigation be undertaken even if it does not mitigate impacts to a less than significant level (OHP 2001a: 9).

3.3.1 California Register of Historical Resources

The California Register is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The California Register helps government agencies identify and evaluate California's historical resources (OHP 2001b: 1) and indicates which properties are to be protected, to the extent prudent and feasible, from substantial adverse change (PRC Section 5024.1[a]). Any resource listed in, or eligible for listing in, the California Register is to be considered during the CEQA process (OHP 2001a: 7).

A cultural resource is evaluated under four criteria to determine its historical significance. A resource must be significant in accordance with one or more of the following criteria:

- Criterion 1: Is associated with events that have made a significant contribution to the broad pattern of California's history and cultural heritage.
- Criterion 2: Is associated with the lives of persons important in our past.
- Criterion 3: Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Criterion 4: Has yielded, or may be likely to yield, information important in prehistory or history.

Age

In addition to meeting one or more of the above criteria, the California Register requires that sufficient time must have passed to allow a "scholarly perspective on the events or individuals associated with the resource." Fifty years is used as a general estimate of the time needed to understand the historical importance of a resource (OHP 2006:3). The California Office of Historic Preservation (OHP) recommends documenting, and taking into consideration in the planning process, any cultural resource that is 45 years or older (OHP 1995:2).

Period of Significance

The period of significance for a property is "the length of time when a property was associated with important events, activities, persons, or attained the characteristics which qualify it for National Register listing" (NPS 1997: 42). The period of significance begins with the date of the earliest important land use or activity that is reflected by historic characteristics tangible today. The period closes with the date when events having historical importance ended. The period of significance for an archaeological property is "the broad span of time about which the site or district is likely to provide information" (NPS 1997: 42). Archaeological properties may have more than one period of significance.

Integrity

The California Register also requires a resource to possess integrity, which is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association" (OHP 2006: 2).

Archaeologists use the term "integrity" to describe the level of preservation or quality of information contained within a district, site, or excavated assemblage. Integrity is relative to the specific significance that the resource conveys. Although it is possible to correlate the seven aspects of integrity with standard archaeological site characteristics, those aspects are often unclear for evaluating the ability of an archaeological resource to convey significance under Criterion 4. The integrity of archaeological resources is judged according to the site's ability to yield scientific and cultural information that can be used to address important research questions (NPS 1997: 44–49).

3.4 CALIFORNIA PUBLIC RESOURCES CODE SECTION 5097.5

PRC Section 5097.5 prohibits excavation or removal of any "vertebrate paleontological site … or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority, or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

3.5 CALIFORNIA HEALTH AND SAFETY CODE SECTION 7050.5

California Health and Safety Code Section 7050.5 states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of this identification. The NAHC will identify a Native American most likely descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

4.0 CULTURAL RESOURCES IDENTIFICATION EFFORTS

This section includes the methods and results of the South Central Coastal Information Center (SCCIC) records search, literature review, interested parties consultation, archaeological field survey, sensitivity analysis, and National Register and California Register evaluations.

4.1 SCCIC RECORDS SEARCH

Senior Archaeologist Marc Beherec, PhD, conducted a records search for the Project on August 10, 2023, at the California Historical Resources Information System SCCIC housed at California State University, Fullerton. The records search included a review of all recorded cultural resources and previous studies within a half-mile radius of the APE. Other resources produced and maintained by the OHP, including the *California Inventory of Historic Resources* (OHP 1976), California Historical Landmarks (OHP 2023a), and California Historical Resources (OHP 2023b), were similarly consulted. The Built Environment Resources Directory was searched for historic resources located within a half-mile radius on roads located within the APE (OHP 2023c). The SCCIC records search results are included in **Appendix A**.

4.1.1 Previous Studies

The records search results indicated that six cultural resources studies have been conducted within a half-mile radius of the APE. None of those studies overlap the APE. No studies of the APE are documented by the SCCIC (**Table 1**).

Table 1. Previous Studies within the APE and a Half-Mile Search Radius

Report Number	Date	Author	Firm	Title/Description	Intersects APE?
OR-02534	1976		ARI	Annual Report to The Irvine Company from Archaeological Research, Inc.	No
OR-02225	1978	Stozier, Hardy	The Irvine Company	The Irvine Company Planning Process and California Archaeology- A Review and Critique	No
OR-00305	1979	Scroth, Adella	Archaeological Resource Management Corp.	The History of Archaeological Research on Irvine Ranch Property: the Evolution of a Company Tradition	No
OR-00666	1981	Seeman, Larry	Larry Seeman Associates, Inc.	Historic Property Survey Pacific Coast Highway Widening Project Newport Beach, California	No
OR-00666	1981	Douglas, Ronald D.	Larry Seeman Associates, Inc.	Archaeological Survey Report for Proposed Improvements to Pacific Coast Highway 07-ORA-1 From P.M. 16.25 to P.M. 18.05	No
OR-01012	1982	Padon, Beth	LSA Associates, Inc.	Back Bay Archaeology Site Inventory/Status Evaluation	No

4.1.2 Previously Identified Resources

The records search results indicated that a total of seven cultural resources have been recorded within a half-mile radius of the APE. Two archaeological sites with shell debris (P-30-000067 and P-30-000068) and three prehistoric sites with shell debris and lithic scatters (P-30-000157, P-30-000158, and P-30-000159) are located within the search area. These resources are all documented to be very sparse scatters, in keeping with the ephemeral use of the Project vicinity documented in the prehistoric and ethnohistoric overview in Chapter 2. Two historic commercial buildings are also located within the search area (P-30-158588 and P-30-158591) (**Table 2**). None of the seven resources intersect the APE. No resources were identified within the APE.

TABLE 2. RESOURCES PREVIOUSLY RECORDED WITHIN A HALF-MILE RADIUS OF THE APE

Primary No.	Trinomial	Site Attributes	Proximity to APE	Recorder/Firm/Year	Evaluation Status
P-30-000067	CA-ORA-000067	AP15 (Habitation debris)	755 m	N. C. Nelson (1912) Beth Padon, LSA, Inc., (1982)	Unevaluated
P-30-000068	CA-ORA-000068	AP15 (Habitation debris)	690 m	N. C. Nelson (1912) P. Chace, Pacific Coast Arch Society (1966)	Unevaluated
P-30-000157	CA-ORA-000157	AP02 (Lithic scatter) AP15 (Habitation debris)	760 m	P. Chace (1966)	Unevaluated
P-30-000158	CA-ORA-000158	AP02 (Lithic scatter) AP15 (Habitation debris)	750 m	P. Chace (1966)	Unevaluated
P-30-000159	CA-ORA-000159	AP02 (Lithic scatter) AP15 (Habitation debris)	560 m	P. Chace (1966)	Unevaluated
P-30-158588		HP06 (Commercial building) HP26 (Monument/mural/gravestone) HP39 (Other)	680 m	John Loomis, Thirtieth Street Architects (1981) John Loomis, Thirtieth Street Architects (1983) John Loomis, Thirtieth Street Architects (1983) Sandra J. Elder (1989)	Nominated for the National Register in 1983
P-30-158591		HP06 (Commercial building)	730 m	Robert Selway, 611 E Balboa Limited (1985)	Nominated for the National Register in 1985

4.2 INTERESTED PARTIES CONSULTATION

4.2.1 Native American Coordination

The California NAHC maintains a confidential Sacred Lands File, which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on August 8, 2023, to request a search of the Sacred Lands File. The NAHC responded to the request in a letter dated August 29, 2023. In that letter, the NAHC stated, "The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact the Gabrieleno/Tongva

San Gabriel Band of Mission Indians on the attached list for more information." The NAHC appended a list of 22 tribal contacts, including Chairperson Anthony Morales of the Gabrieleno/Tongva San Gabriel Band of Mission Indians, whom it recommended contacting for information about the APE. As part of Section 106 compliance, USACE will consult with Native American groups associated with the APE and its vicinity. The NAHC response and contact list is located in **Appendix B**. Michael Baker International did not conduct outreach to tribes identified on the NAHC contact list.

On September 7, 2023, the City of Newport Beach sent Assembly Bill 52 consultation invitations to the three tribal representatives who previously requested to be informed of proposed projects in the city. The three tribal representatives include:

- Chairperson Andrew Salas, Gabrieleño Band of Mission Indians—Kizh Nation
- Joyce Stanfield Perry, Juaneño Band of Mission Indians/Acjachemen Nation
- Sam Dunlap, Gabrielino-Tongva Tribe

Assembly Bill 52 consultation is ongoing and will be documented separately as part of the environmental document prepared for the Project.

4.2.2 Historical Society Consultation

On August 8, 2023, Michael Baker International sent a letter describing the Project, with maps depicting the APE, to the Newport Beach Historical Society. The letter requested any information about, or concerns regarding, historical resources that may be impacted by the Project (**Appendix** B**C**). No response to the consultation letter has been received to date.

4.3 HISTORICAL MAPS, AERIAL PHOTOGRAPHS, AND ARCHIVES

Michael Baker International reviewed publications, maps, and websites for archaeological, ethnographic, historical, and environmental information about the APE and its vicinity. The literature review was used in developing the historic context in Section 2.2.3 of this report. APE specific analysis is located below. Literature reviewed here includes:

4.3.1 Historical Maps

- *Santa Ana, CA* 1:62,500 topographic map (USGS 1896)
- *Santa Ana, CA* 1:62,500 topographic map (USGS 1901)
- *Santa Ana, CA* 1:62,500 topographic map (USGS 1907)
- *Santa Ana, CA* 1:62,500 topographic map (USGS 1915)
- *Santa Ana, CA* 1:62,500 topographic map (USGS 1925)
- *Newport Beach, CA* 1:31,680 topographic map (USGS 1932)
- *Newport Beach, CA* 1:31,680 topographic map (USGS 1944)
- *Newport Beach, CA* 1:24,000 topographic map (USGS 1949)
- *Newport Beach, CA* 1:24,000 topographic map (USGS 1951)
- *Newport Beach, CA* 1:24,000 topographic map (USGS 1965)
- *Newport Beach, CA* 1:24,000 topographic map (USGS 1982)
- *Newport Beach, CA* 1:24,000 topographic map (USGS 2012)

- *Newport Beach, CA* 1:24,000 topographic map (USGS 2021)

4.3.2 Historical Aerial Images

- Single-frame aerial photograph (NETR 2023: 1938)
- Single-frame aerial photograph (NETR 2023: 1953)
- Single-frame aerial photograph (NETR 2023: 1963)
- Single-frame aerial photograph (NETR 2023: 1972)
- Single-frame aerial photograph (NETR 2023: 1980)
- Single-frame aerial photograph (NETR 2023:1987)
- Single-frame aerial photograph (NETR 2023: 1997)
- Single-frame aerial photograph (NETR 2023: 2009)
- Single-frame aerial photograph (NETR 2023: 2020)
- Single-frame aerial photograph (UCSB 1963)

4.3.3 Historical Databases

- Ancestry.com (2023)
- Google.com (2023)
- Newspaper.com (2023)

4.3.4 Literature

- *Historic Context Statement, Roadway Bridges of California: 1936 to 1959* (JRP Historical Consulting Services 2003)
- *Historic Resources Evaluation Report, Caltrans Statewide Historic Bridge Inventory: 2015 Update, 1965-1974 (*Blackmore et al. 2015*)*
- *City of Orange Historic Context Statement* (Chattel Architecture, Planning & Preservation, Inc. 2006)
- *Newport Beach* (Baker 2004)
- *General Environmental Impact Report* (City of Newport Beach 2022)

4.3.5 Results

The APE is first depicted in area maps beginning in 1896, at which time the general area surrounding the site was water and marshland. This map shows a meandering Newport Bay flanked by the Balboa Peninsula to the southeast and the mainland to the north. A smattering of residential properties is visible on the peninsula outside the APE. Although archival evidence reflects that William Collins created both Collins and Balboa Islands, they do not appear on any available maps until 1932. However, there was a thriving community in place by 1910 (USGS 1896, 1907, 1915, 1925, 1932; *Covina Argus* 1926; Baker 2004).

On the 1932 USGS map, Balboa Island and Collins Island are visible with a bridge carrying a road across Newport Bay to the northeast (Marine Avenue) of the APE; by this time, a highway is marked along the route of today's SR-1, flanking Newport Bay to the north of the APE. A 1938 aerial shows the presence of a built-up community on Balboa Island, with extensive residential properties. A residence with various structures is also present on Collins Island and the two islands are connected by a pedestrian footbridge

(NETR 2023: 1938). A 1953 aerial shows that not much had changed since 1938, save for the removal of some structures on Collins Island.

In 1953, Collins Island's owner, George McNamara, constructed the subject bridge (City of Newport Beach 1959). Between 1953 and 1972, eight residential properties were constructed on Collins Island, west of the bridge (NETR 2023: 1972). By 1980, the areas surrounding the Collins Island and Balboa Island Beach were further developed with tracts of residential homes and commercial enterprises (NETR 2023: 1980). This growth has continued to the present, and today the area surrounding the APE is completely developed (USGS 1982, 2012, 2021; NETR 2023: 1987, 1997, 2009, 2020).

4.4 CULTURAL RESOURCES SURVEY

4.4.1 Survey Methods

A cultural resources survey was conducted on August 22, 2023, by cultural resources specialist Marcel Young, BA. Because almost the entire APE is either paved or hardscaped or inundated, formal transects were not walked. Instead, exposed undeveloped ground surfaces were opportunistically inspected for the presence of archaeological cultural material. Photographs of the Waters Way Bridge (No. 55C-0265) were taken.

Before fieldwork, a map was created in ArcGIS Online that includes the APE and GIS feature classes, including point, line, and polygon features for collecting data in the field. The maps were downloaded in Esri's Field Maps app on Apple iPads and coupled via Bluetooth with a Trimble DA2 Catalyst GNSS GPS receiver with submeter accuracy. The field crew used the tablet and GPS unit to accurately locate and survey the APE. The Field Maps app allows for photographs of features, artifacts, and overviews to be attached to GIS points, lines, and polygons recorded in the field.

Digital photographs taken with the Solocator application allowed for photographs with directional and field of view information to be geotagged in the documentation of the environmental associations, specific features including the bridge, and the general character of the survey area.

A daily survey summary form was completed at the end of the survey to convey the conditions of the survey area and summarize survey findings. Evidence for buried cultural deposits was opportunistically sought by inspecting natural or artificial erosional exposures and the spoils from rodent burrows.

4.4.2 Survey Results

During the survey of the APE, ground surface visibility was almost nonexistent due to the developed nature of the APE. Surface exposures were limited to small patches of obviously disturbed soils in planters and landscaped areas. During the pedestrian survey, the Waters Way Bridge (No. 55C-0265), a historic-aged built environment resource, was photo-documented for the purpose of a California Register and National Register evaluation. No prehistoric or historical archaeological resources were identified. The Waters Way Bridge (No. 55C-0265) is described below, and the DPR 523 series form for the resource is included in **Appendix** CD.

Legend

- Area of Potential Effects
- Waters Way Bridge (No. 55C-0265)

Michael Baker INTERNATIONAL

0 50 100 Feet

Source: Esri, ArcGIS Online, 2023 Nearmap Imagery: *Newport Beach, California*

COLLINS ISLAND BRIDGE
NEWPORT BEACH, CA

Resources within the APE

Figure 8

4.5 ARCHAEOLOGICAL SENSITIVITY ANALYSIS

The archaeological sensitivity for potential unknown prehistoric archaeological sites within the APE is low. The APE is located on what USGS maps indicate was a slight rise in the marshy land surrounding Newport Bay. Historically, the Santa Ana River would have meandered through this area, sometimes debouching into the Pacific Ocean in the Project vicinity. The APE and its vicinity would have provided an important resource procurement locale for prehistoric inhabitants, but the unstable nature of the land would have lent itself toward temporary use, leaving ephemeral remains. The five archaeological sites documented within a half-mile of the APE exemplify this land use; they are documented as moderate to light shell scatters, sometimes with small quantities of lithic debitage, on higher ground considerably to the east of the APE. No resources are documented within the APE.

In addition, the APE has been significantly disturbed over the course of the twentieth century. During the twentieth century, Newport Bay was dredged and stabilized. The dredged material was used to build new, stable ground, including Collins Island and Balboa Island. In addition, these mostly artificial islands, while they may contain native soils at their cores, have been further disturbed by major ground-disturbing activities such as bridge construction, building construction, boat dock and slip installation, road construction, and utilities installation. This massive reworking of the coastline would have damaged or destroyed archaeological sites, particularly the kind of small, ephemeral sites documented in the records search area and anticipated to have once existed in the vicinity.

Although the APE is located in an area that is anticipated to have been an important resource procurement area for the Gabrielino and other early inhabitants, the instability of the land and known recent disturbances indicate that the sensitivity for unknown buried resources is low.

5.0 EVALUATION

The Waters Way Bridge (No. 55C-0265) required evaluation for listing in the National Register and California Register. Below is a summary of the evaluation. Further documentation for the resource is located in the DPR 523 form (see **Appendix** C**D**).

5.1 WATERS WAY BRIDGE (NO. 55C-0265)

The Waters Way Bridge (No. 55C-0265) is a reinforced concrete slab bridge constructed in 1953 that carries Park Avenue over Newport Bay between Balboa Island and Collins Island in the City of Newport Beach, California. It is a local agency bridge maintained by the City of Newport Beach (Caltrans 2019). According to the Caltrans Local Agency Historic Bridge Inventory, this bridge is listed as a Category 5, "Bridge not eligible for NRHP" (Caltrans 2019).

> **Criterion A/1**: Research did not demonstrate that the Waters Way Bridge (No. 55C-0265) was associated with events significant to the broad patterns of our history at the local, state, or national level. The bridge was constructed in 1953 to replace a footbridge to facilitate automobile traffic between Balboa Island and the small, private Collins Island.
>
> Although the bridge made travel to Collins Island more convenient, it was not significant to the development of Collins Island, Balboa Island, or the Newport area, nor with road and bridge

development in Newport Beach or Orange County. The subject bridge is not directly or significantly associated with general bridge development at the state or national level. The Waters Way Bridge (No. 55C-0265) is not known to have made a significant contribution to other broad patterns of local, regional, state, or national culture and history. The Waters Way Bridge (No. 55C-0265) is a ubiquitous concrete slab beam bridge type in similar form in the region since the early twentieth century. As such, it is not one of the first or pioneering reinforced concrete slab bridges, nor was it significant to the development of the Newport Bay. Therefore, Waters Way Bridge (No. 55C-0265) is recommended as not eligible for listing in the National Register under Criterion A and California Register under Criterion 1.

Criterion B/2: William McNamara purchased Collins Island in 1948 and worked to have it subdivided for residential development. To improve island access, he replaced the existing footbridge with a privately funded automobile bridge, which he deeded to the City of Newport Beach in 1959. McNamara was a successful businessman, and he is responsible for the construction of the subject bridge. However, his local historical significance is not represented by the bridge, but rather by the increased development of Collins Island. There is no demonstrable evidence that any other persons that made significant contributions to history at the local, state, or national level are associated with the bridge. Therefore, the property is recommended not eligible for listing in the National Register under Criterion B and California Register under Criterion 2.

Criterion C/3: The Waters Way Bridge (No. 55C-0265), a reinforced concrete slab bridge, is indistinguishable from other examples of this resource type. It was not the first of its type, nor the most distinguished example of a reinforced concrete slab bridge in the region, state, or nation. Its design and construction do not represent a departure from standard construction practices or design for this resource type. The Waters Way Bridge (No. 55C-0265) is not the representative work of a master, nor does it possess high artistic values. Therefore, the resource is recommended as not eligible for listing in the National Register under Criterion C and the California Register under Criterion 3.

Criterion D/4: The built environment of the subject property is not likely to yield valuable information which will contribute to our understanding of human history because the property is not and never was the principal source of important information pertaining to significant events, people, or engineering. Therefore, the resource is recommended not eligible for listing in the National Register under Criterion D and the California Register under Criterion 4.

Lacking significance, this property is recommended as ineligible for listing in the National Register and California Register. It is not a historic property as defined by 36 CFR 800.16(l)(1) nor is it a historical resource as defined by CEQA Section 15064.5(a).

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

The SCCIC records search, literature review, field survey, and interested parties' consultation identified one historic-period built environment resource within the APE. The resource, the Waters Way Bridge (No. 55C-0265), was evaluated and recommended ineligible for inclusion in the National Register and California Register. No historic properties or historical resources were identified within the APE, and buried site sensitivity is low due to the unstable nature of the land before the twentieth century and the amount of disturbance associated with the dredging of Newport Harbor and construction of Collins and Balboa Islands. A finding of no historic properties affected with conditions under Section 106 and a finding of less than significant impact with mitigation incorporated under CEQA is appropriate for the Project.

6.2 RECOMMENDATIONS

Impacts to unanticipated cultural resources may be avoided or reduced to a less than significant level by implementing the following mitigation measures:

6.2.1 CUL-1: Archaeological Resources Inadvertent Discovery

In the event that any subsurface cultural resources are encountered during earth-moving activities, it is recommended that all work be halted in the vicinity of the discovery until a Qualified Archaeologist can evaluate the findings and make recommendations. The archaeologist may evaluate the find in accordance with federal, state, and local guidelines, including those set forth in the California Public Resources Code Section 21083.2, to assess the significance of the find and identify avoidance or other measures as appropriate. Additionally, Health and Safety Code Section 7050.5, California Environmental Quality Act Guidelines Section 15064.5(e), and Public Resources Code Section 5097.98 mandate the process to be followed in the unlikely event of an accidental discovery of human remains in a location other than a dedicated cemetery.

7.0 PROFESSIONAL QUALIFICATIONS

This report was prepared by Michael Baker International Senior Archaeologist Marc Beherec and Senior Architectural Historian Susan Wood. Archaeologist Marcel Young conducted the field survey and site recordation. Michael Baker International Cultural Resources Department Manager Margo Nayyar conducted quality assurance review.

Susan Wood, PhD, is a senior architectural historian experienced in historic preservation and cultural resource management in California. She meets the Secretary of the Interior’s Professional Qualification Standards for architectural history, history, and archaeology. Susan’s professional activities include historical resource evaluations, significance evaluations, integrity assessments, effects analysis, mitigation documentation, design review, archival and historical research, architectural and archaeological field surveys, and project management. As an architectural historian, she has performed numerous historical property assessments and National/California Register evaluations. Her archaeological expertise includes site significance assessments and determination of project impacts pursuant to Section 106 of the NHPA and CEQA. Susan has conducted years of ethnohistorical research focused on decolonization and prehistoric archaeology in the San Bernardino National Forest and the history of anthropology in California. She has organized and curated several historical- and anthropological-themed interoperative events for the Los Angeles County Fair in collaboration with tribal elders. In this capacity, she has worked extensively in Riverside, San Bernardino, and Los Angeles Counties.

Marc Beherec, PhD, RPA, has more than 20 years of experience in prehistoric and historical archaeology and cultural resources management. His experience includes writing technical reports, including National Environmental Policy Act (NEPA), NHPA, and CEQA compliance documents. He has supervised and managed all phases of archaeological fieldwork, including survey, Phase II testing and evaluations and Phase III data recovery, and monitoring at sites throughout Southern California. He meets the Secretary of the Interior’s Professional Qualification Standards for prehistory and historical archaeology.

Joshua Rawley, MA, is a researcher with experience interpreting historical documentation in California. In addition to his role at Michael Baker International, he volunteers with the City of Riverside and has conducted research to support the City’s LGBTQ+ Historic Context project. He meets the Secretary of the Interior's Professional Qualification Standards for history.

Marcel Young, BA, has worked in various capacities in cultural resource management since 2013. He is experienced in surveying and conducting recording and evaluations of historic and prehistoric archaeological sites in California. Marcel is versed in conducting fieldwork within frameworks of Section 106 of the NHPA, CEQA, and NEPA. He has participated in projects in several phases of archaeology: Phase I pedestrian, Extended Phase I testing, shovel test surveys, buried site testing, Phase III data recovery, and monitoring.

Margo Nayyar, MA is a senior architectural historian with 13 years of cultural management experience in California, Nevada, Arizona, Texas, Idaho, Alaska, New Mexico, and Mississippi. Her experience includes built environment surveys, evaluation of historic-era resources using guidelines outlined in the California and National Registers, and preparation of cultural resources technical studies pursuant to CEQA and NHPA Section 106, including identification studies, finding of effect documents, memorandum of agreements, programmatic agreements, and Historic American Buildings Survey/Historic American Engineering Record/Historic American Landscapes Survey mitigation documentation. She prepares cultural resources sections for CEQA environmental documents, including infill checklists, initial studies, and environmental impact reports, as well as NEPA environmental documents, including environmental impact statements and environmental assessments. She also specializes in municipal preservation planning, historic preservation ordinance updates, Native American consultation, and provision of Certified Local Government training to interested local governments. She develops Survey 123 and Esri Collector applications for large-scale historic resources surveys, and authors National Register nomination packets. Margo meets the Secretary of the Interior's Professional Qualification Standards for history and architectural history.

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Appendix A:
SCCIC Records Search Results –
CONFIDENTIAL

Appendix B:
Native American Consultation

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: Collins Bridge Replacement Project

County: Orange County

USGS Quadrangle Name: Newport Beach OE S

Township: 06 S **Range:** 10 W **Section(s):** 35

Company/Firm/Agency: Michael Baker International

Street Address: 3536 Concours St #100

City: Ontario **Zip:** 91764

Phone: 909-974-4956

Fax: N/A

Email: joshua.rawley@mbakerintl.com

Project Description:

The City of Newport Beach proposes to replace the Collins Island Bridge connecting Balboa Island to Collins Island. The project has three major components: 1) bridge replacement, 2) seawall improvements, and 3) future pump station accommodations. Landscaped areas and the bridge monument would also be improved to increase sight distance along the adjacent walkways to increase pedestrian safety. A new stop sign and limit line would also be added at the intersection on both sides of the bridge.

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

August 29, 2023

Marc Beherec
Michael Baker International

Via Email to: marc.beherec@mbakerintl.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Collins Bridge Replacement Project, Orange County

Dear Dr. Beherec:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures.

   All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact the Gabrieleno/Tongva San Gabriel Band of Mission Indians on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #
Campo Band of Diegueno Mission Indians	F	Ralph Goff, Chairperson	36190 Church Road, Suite 1 Campo, CA, 91906	(619) 478-9046
Ewiiaapaayp Band of Kumeyaay Indians	F	Michael Garcia, Vice Chairperson	4054 Willows Road Alpine, CA, 91901	(619) 933-2200
Ewiiaapaayp Band of Kumeyaay Indians	F	Robert Pinto, Chairperson	4054 Willows Road Alpine, CA, 91901	(619) 368-4382
Gabrieleno Band of Mission Indians - Kizh Nation	N	Andrew Salas, Chairperson	P.O. Box 393 Covina, CA, 91723	(844) 390-0787
Gabrieleno Band of Mission Indians - Kizh Nation	N	Christina Swindall Martinez, Secretary	P.O. Box 393 Covina, CA, 91723	(844) 390-0787

Gabrieleno/Tongva San Gabriel Band of Mission Indians	N	Anthony Morales, Chairperson	P.O. Box 693 San Gabriel, CA, 91778	(626) 483-3564
Gabrielino /Tongva Nation	N	Sandonne Goad, Chairperson	106 1/2 Judge John Aiso St., #231 Los Angeles, CA, 90012	(951) 807-0479
Gabrielino Tongva Indians of California Tribal Council	N	Christina Conley, Cultural Resource Administrator	P.O. Box 941078 Simi Valley, CA, 93094	(626) 407-8761
Gabrielino Tongva Indians of California Tribal Council	N	Robert Dorame, Chairperson	P.O. Box 490 Bellflower, CA, 90707	(562) 761-6417
Gabrielino-Tongva Tribe	N	Charles Alvarez, Chairperson	23454 Vanowen Street West Hills, CA, 91307	(310) 403-6048
Gabrielino-Tongva Tribe	N	Sam Dunlap, Cultural Resource Director	P.O. Box 3919 Seal Beach, CA, 90740	(909) 262-9351

Juaneno Band of Mission Indians Acjachemen Nation - Belardes	N	Joyce Perry, Cultural Resource Director	4955 Paseo Segovia Irvine, CA, 92603	(949) 293-8522
Juaneno Band of Mission Indians Acjachemen Nation 84A	N	Heidi Lucero, Chairperson, THPO	31411-A La Matanza Street San Juan Capistrano, CA, 92675	(562) 879-2884
La Posta Band of Diegueno Mission Indians	F	Gwendolyn Parada, Chairperson	8 Crestwood Road Boulevard, CA, 91905	(619) 478-2113
La Posta Band of Diegueno Mission Indians	F	Javaughn Miller, Tribal Administrator	8 Crestwood Road Boulevard, CA, 91905	(619) 478-2113
Manzanita Band of Kumeyaay Nation	F	Angela Elliott Santos, Chairperson	P.O. Box 1302 Boulevard, CA, 91905	(619) 766-4930
Mesa Grande Band of Diegueno Mission Indians	F	Michael Linton, Chairperson	P.O Box 270 Santa Ysabel, CA, 92070	(760) 782-3818

Pala Band of Mission Indians	F	Alexis Wallick, Assistant THPO	PMB 50, 35008 Pala Temecula Road Pala, CA, 92059	(760) 891-3537
Pala Band of Mission Indians	F	Shasta Gaughen, Tribal Historic Preservation Officer	PMB 50, 35008 Pala Temecula Road Pala, CA, 92059	(760) 891-3515
Santa Rosa Band of Cahuilla Indians	F	Lovina Redner, Tribal Chair	P.O. Box 391820 Anza, CA, 92539	(951) 659-2700
Soboba Band of Luiseno Indians	F	Jessica Valdez, Cultural Resource Specialist	P.O. Box 487 San Jacinto, CA, 92581	(951) 663-6261
Soboba Band of Luiseno Indians	F	Joseph Ontiveros, Tribal Historic Preservation Officer	P.O. Box 487 San Jacinto, CA, 92581	(951) 663-5279

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 70
Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 210

Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
(619) 478-5818	rgoff@campo-nsn.gov	Dieguenо	Imperial,Orange,Riverside,San Diego	
(619) 445-9126	michaelg@leaningrock.net	Dieguenо	Imperial,Orange,Riverside,San Diego	
(619) 445-9126	ceo@ebki-nsn.gov	Dieguenо	Imperial,Orange,Riverside,San Diego	
	admin@gabrielenoindians.org	Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	8/18/2023
	admin@gabrielenoindians.org	Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	8/18/2023

(626) 286-1262	GTTribalcouncil@aol.com	Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Ventura	
	sgoad@gabrielino-tongva.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Ventura	3/28/2023
	christina.marsden@alumni.usc.edu	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/16/2023
(562) 761-6417	gtongva@gmail.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/16/2023
	Chavez1956metro@gmail.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Ventura	5/30/2023
	tongvatcr@gmail.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Ventura	5/30/2023

	kaamalam@gmail.com	Juaneno	Los Angeles,Orange,Riverside,San Bernardino,San Diego	3/17/2023
	jbmian.chairwoman@gmail.com	Juaneno	Los Angeles,Orange,Riverside,San Bernardino,San Diego	3/28/2023
(619) 478-2125	LP13boots@aol.com	Diegueno	Imperial,Orange,Riverside,San Diego	
(619) 478-2125	jmiller@LPtribe.net	Diegueno	Imperial,Orange,Riverside,San Diego	
(619) 766-4957		Diegueno	Imperial,Orange,Riverside,San Diego	
(760) 782-9092	mesagrandeband@msn.com	Diegueno	Imperial,Orange,Riverside,San Diego	

	awallick@palatribe.com	Cupeno Luiseno	Orange,Riverside,San Bernardino,San Diego	3/23/2023
(760) 742-3189	sgaughen@palatribe.com	Cupeno Luiseno	Orange,Riverside,San Bernardino,San Diego	3/23/2023
(951) 659-2228	lsaul@santarosa-nsn.gov	Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	
(951) 654-4198	jvaldez@soboba-nsn.gov	Cahuilla Luiseno	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	7/14/2023
(951) 654-4198	jontiveros@soboba-nsn.gov	Cahuilla Luiseno	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	7/14/2023

)50.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public

80.3.1 for the proposed Collins Bridge Replacement Project, Orange County.

Record: PROJ-2023-004407
Report Type: AB52 GIS
Counties: Orange
NAHC Group: All

CITY OF NEWPORT BEACH
100 Civic Center Drive
Newport Beach, California 92660
949-644-3055 | 949-644-3308 FAX
newportbeachca.gov

September 7, 2023

Andrew Salas
Gabrieleno Band of Mission Indians – Kizh Nation
PO Box 393
Covina, CA 91723

RE: AB 52 CONSULTATION FOR THE COLLINS ISLAND BRIDGE REPLACEMENT PROJECT

Dear Mr. Salas:

The City of Newport Beach has initiated the Collins Island Bridge Replacement Project in the City of Newport Beach, Orange County, California. Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) 21080.3.1 and Chapter 532, Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC 21080.3.1(d), if you would like to consult on this project.

The project site, Collins Island Bridge and its immediate vicinity, is located at the confluence of the Newport Channel and the Balboa Island Channel, adjacent to the greater Balboa Island in the Newport Bay. Collins Island is an artificial island located on the western tip of Balboa Island and is connected to the greater Balboa Island via the Collins Island Bridge. Regional access to the project site is provided via State Route 1 (SR-1; Pacific Coast Highway) and local access to the site is provided via Marine Avenue (across the Balboa Island North Channel), and North Bay Front and Park Avenue on Balboa Island.

The project has three major components: 1) bridge replacement, 2) seawall improvements, and 3) future pump station accommodations. Street, sidewalk, and landscaping improvements are also proposed on the Balboa Island side along the Bay Front sidewalk and Park Avenue eastward until the alley. Anticipated improvements include monument sign construction, irrigation, paving, and landscaping. As part of the pump station accommodations, pump station outlet pipes and weir structures would be installed.

A Native American Heritage Commission Sacred Lands File search was conducted for the project site. The results of the search were positive. However, a California Historical

Resources Information System records search was negative for the project area. An intensive pedestrian survey of the project area was also negative.

We are requesting any information or concerns that you may have regarding potential tribal cultural resources within the project area. Please let us know of your interest to consult with the City of Newport Beach regarding this project within 30 days of the receipt of this letter. If you have any questions or need additional information, please contact me at rstein@newportbeachca.gov or 949.644.3322.

Sincerely,

Bob Stein
City of Newport Beach

CITY OF NEWPORT BEACH
100 Civic Center Drive
Newport Beach, California 92660
949-644-3055 | 949-644-3308 FAX
newportbeachca.gov

September 7, 2023

Joyce Stanfield Perry
Juaneno Band of Mission Indians/Acjachemen Nation
4955 Paseo Segovia
Irvine, CA 92603

RE: AB 52 CONSULTATION FOR THE COLLINS ISLAND BRIDGE REPLACEMENT PROJECT

Dear Ms, Perry:

The City of Newport Beach has initiated the Collins Island Bridge Replacement Project in the City of Newport Beach, Orange County, California. Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) 21080.3.1 and Chapter 532, Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC 21080.3.1(d), if you would like to consult on this project.

The project site, Collins Island Bridge and its immediate vicinity, is located at the confluence of the Newport Channel and the Balboa Island Channel, adjacent to the greater Balboa Island in the Newport Bay. Collins Island is an artificial island located on the western tip of Balboa Island and is connected to the greater Balboa Island via the Collins Island Bridge. Regional access to the project site is provided via State Route 1 (SR-1; Pacific Coast Highway) and local access to the site is provided via Marine Avenue (across the Balboa Island North Channel), and North Bay Front and Park Avenue on Balboa Island.

The project has three major components: 1) bridge replacement, 2) seawall improvements, and 3) future pump station accommodations. Street, sidewalk, and landscaping improvements are also proposed on the Balboa Island side along the Bay Front sidewalk and Park Avenue eastward until the alley. Anticipated improvements include monument sign construction, irrigation, paving, and landscaping. As part of the pump station accommodations, pump station outlet pipes and weir structures would be installed.

A Native American Heritage Commission Sacred Lands File search was conducted for the project site. The results of the search were positive. However, a California Historical

Resources Information System records search was negative for the project area. An intensive pedestrian survey of the project area was also negative.

We are requesting any information or concerns that you may have regarding potential tribal cultural resources within the project area. Please let us know of your interest to consult with the City of Newport Beach regarding this project within 30 days of the receipt of this letter. If you have any questions or need additional information, please contact me at rstein@newportbeachca.gov or 949.644.3322.

Sincerely,

Bob Stein
City of Newport Beach

CITY OF NEWPORT BEACH
100 Civic Center Drive
Newport Beach, California 92660
949-644-3055 | 949-644-3308 FAX
newportbeachca.gov

September 7, 2023

Sam Dunlap
Gabrielino Tongva Tribe
Cultural Resources Representative
TongvaTCR@gmail.com

RE: AB 52 CONSULTATION FOR THE COLLINS ISLAND BRIDGE REPLACEMENT PROJECT

Dear Mr. Dunlap:

The City of Newport Beach has initiated the Collins Island Bridge Replacement Project in the City of Newport Beach, Orange County, California. Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) 21080.3.1 and Chapter 532, Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC 21080.3.1(d), if you would like to consult on this project.

The project site, Collins Island Bridge and its immediate vicinity, is located at the confluence of the Newport Channel and the Balboa Island Channel, adjacent to the greater Balboa Island in the Newport Bay. Collins Island is an artificial island located on the western tip of Balboa Island and is connected to the greater Balboa Island via the Collins Island Bridge. Regional access to the project site is provided via State Route 1 (SR-1; Pacific Coast Highway) and local access to the site is provided via Marine Avenue (across the Balboa Island North Channel), and North Bay Front and Park Avenue on Balboa Island.

The project has three major components: 1) bridge replacement, 2) seawall improvements, and 3) future pump station accommodations. Street, sidewalk, and landscaping improvements are also proposed on the Balboa Island side along the Bay Front sidewalk and Park Avenue eastward until the alley. Anticipated improvements include monument sign construction, irrigation, paving, and landscaping. As part of the pump station accommodations, pump station outlet pipes and weir structures would be installed.

A Native American Heritage Commission Sacred Lands File search was conducted for the project site. The results of the search were positive. However, a California Historical

Resources Information System records search was negative for the project area. An intensive pedestrian survey of the project area was also negative.

We are requesting any information or concerns that you may have regarding potential tribal cultural resources within the project area. Please let us know of your interest to consult with the City of Newport Beach regarding this project within 30 days of the receipt of this letter. If you have any questions or need additional information, please contact me at rstein@newportbeachca.gov or 949.644.3322.

Sincerely,

Bob Stein
City of Newport Beach

Michael Baker
INTERNATIONAL

Appendix C: Historical Society Consultation

From:	Rawley, Joshua
To:	info@newportbeachhistorical.org
Cc:	Nayyar, Margo; Beherec, Marc
Subject:	Collins Island Bridge Replacement Project
Date:	Tuesday, August 8, 2023 2:25:48 PM
Attachments:	Collins Island HS Letter.pdf

Dear Historical Society:
Michael Baker International is conducting a cultural resources study supporting the Collins Island Bridge Replacement Project in Newport Beach, California. The project consists of three major components 1) bridge replacement, 2) seawall improvements, and 3) future pump station accommodations. Landscaped areas and the bridge monument would also be improved to increase sight distance along the adjacent walkways to increase pedestrian safety. A new stop sign and limit line would also be added at the intersection on both sides of the bridge.
Please notify us if your organization has any information or concerns about cultural resources in the project area. This is not a request for research; it is solely a request for public input for any concerns that the Historical Society may have. If you have any questions, please contact me at joshua.rawley@mbakerintl.com or (909) 974-4956.

Sincerely,

Josh Rawley | Architectural Historian Technician
3536 Concours, Suite 100 | Ontario, CA 91764 | [O] 909-974-4956
joshua.rawley@mbakerintl.com | www.mbakerintl.com

August 8, 2023

NEWPORT BEACH HISTORICAL SOCIETY
P.O. Box 8814
Newport Beach CA 92658

RE: COLLINS ISLAND BRIDGE REPLACEMENT PROJECT, CITY OF NEWPORT BEACH, ORANGE COUNTY, CALIFORNIA

Dear Historical Society:

Michael Baker International is conducting a cultural resources study supporting the Collins Island Bridge Replacement Project in Newport Beach, California. The project consists of three major components 1) bridge replacement, 2) seawall improvements, and 3) future pump station accommodations. Landscaped areas and the bridge monument would also be improved to increase sight distance along the adjacent walkways to increase pedestrian safety. A new stop sign and limit line would also be added at the intersection on both sides of the bridge.

Please notify us if your organization has any information or concerns about cultural resources in the project area. This is not a request for research; it is solely a request for public input for any concerns that the Historical Society may have. If you have any questions, please contact me at joshua.rawley@mbakerintl.com or (909) 974-4956.

Sincerely,

Josh Rawley
Architectural Historian

Enclosures
Figure 1 – Project Vicinity
Figure 2 – Project Area
Figure 3 – Area of Potential Effects

Michael Baker INTERNATIONAL

0 2.5 5 Miles

Source: Esri, ArcGIS Online, National Geographic World Map: Newport Beach, California

COLLINS ISLAND BRIDGE
NEWPORT BEACH, CA
Regional Vicinity
Figure 1

Legend

Project Area

Michael Baker INTERNATIONAL

0 0.25 0.5 Miles

Source: Esri, ArcGIS Online, Newport Beach OE S USGS 7.5-Minute topographic quadrangle maps: Newport Beach, California

COLLINS ISLAND BRIDGE
NEWPORT BEACH, CA
Project Vicinity
Figure 2

Legend

Project Area

Michael Baker INTERNATIONAL

0 50 100
Feet

Source: Esri, ArcGIS Online, 2023 Nearmap Imagery: Newport Beach, California

COLLINS ISLAND BRIDGE
NEWPORT BEACH, CA
Project Area
Figure 3

Appendix D:
DPR 523 Forms

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code   Reviewer   Date

Page 1 of 14   ***Resource Name or #:** Waters Way Bridge (No. 55C-0265)

P1. Other Identifier: None
***P2. Location:** ☒ **Unrestricted**
***a. County** Orange **and**
***b. USGS 7.5' Quad** *Newport Beach, Calif.* **Date** 1965 (rev. 1981) **T** 6S; **R** 10W; Sec. 35 **S.B.B.M**
c. Address: Park Avenue over the Newport Bay **City:** Newport Beach **Zip:** 92662
d. UTM: Zone 11S 416508mE/3719091 mN
e. Other Locational Data: Connect Collins Island to Balboa Island

***P3a. Description:**
The Waters Way Bridge (No. 55C-0265) is a single span reinforced concrete slab bridge constructed in 1953 that carries Park Avenue over Newport Bay between Balboa Island and Collins Island in the City of Newport Beach. The bridge is approximately 21 feet long with a deck width of 19 feet, including an approximately 4-foot pedestrian walkway on the north side, and a 1-foot curb on the south side. The bridge is supported by reinforced open end seat abutments, and concrete sheet pile bulkheads (**Photograph 1** through **Photograph 9**) (Caltrans 2019a). (See Continuation Sheets).

***P3b. Resource Attributes:** HP19. Bridge
***P4. Resources Present:** ☒ Structure

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

Photograph 1: See P5b for caption.

P5b. Description of Photo: **Photograph 1** Overview of south side of Waters Way Bridge (No. 55C-0265) over Newport Bay. View northeast, August 22, 2023.

P6. Date Constructed/Age and Source:
☒ Historic
1953 (Caltrans 2019a)

***P7. Owner and Address:**
City of Newport Beach
100 Civic Center Drive
Newport Beach, CA 92660

***P8. Recorded by:**
Marcel Young
Michael Baker International
5 Hutton Centre Drive, Suite 500
Santa Ana, CA 92707

***P9. Date Recorded:**
August 22, 2023

***P10. Survey Type:** Intensive Pedestrian

***P11. Report Citation:**
Beherec, Marc, Susan Wood, and Josh Rawley. 2023. "Phase I Cultural Resources Assessment for the Collins Island Bridge Replacement Project, City of Newport Beach, Orange County, California." Santa Ana, CA: Michael Baker International.

***Attachments:** ☒Building, Structure, and Object Record ☒Location Map ☒Sketch Map ☒Continuation Sheet

BUILDING, STRUCTURE, AND OBJECT RECORD

 ***NRHP Status Code** 6Y

***Resource Name or #** Waters Way Bridge (No. 55C-0265)

B1. Historic Name: N/A
B2. Common Name: Collins Island Bridge
B3. Original Use: Automobile bridge **B4. Present Use:** Automobile bridge
***B5. Architectural Style:** None
***B6. Construction History:**

The Waters Way Bridge (No. 55C-0265) was constructed in 1953 on behalf of Collins Island's then-owner, George McNamara (Caltrans 2019a, 2019b; City of Newport Beach 1959). Local architect Fredrick Hodgdon designed the bridge, and R. L. Patterson served as the engineer (Patterson 1953). In 1992, a water main was replaced on the bridge (City of Newport Beach Public Works Department 1993). No records were located that document any other alterations, though the bridge has most likely undergone general maintenance (Caltrans 2019a). No alterations were observed during the survey.

***B7. Moved?** ☒**No** **Date:** N/A **Original Location:** N/A
***B8. Related Features:** Park Avenue; Newport Bay

B9a. Architect: Frederick Hodgdon **b. Builder:** Trautwein Brothers
***B10. Significance: Theme:** Regional development; bridge architecture **Area:** Orange County, California
Period of Significance: 1953 **Property Type:** Bridge **Applicable Criteria:** N/A

Regional History

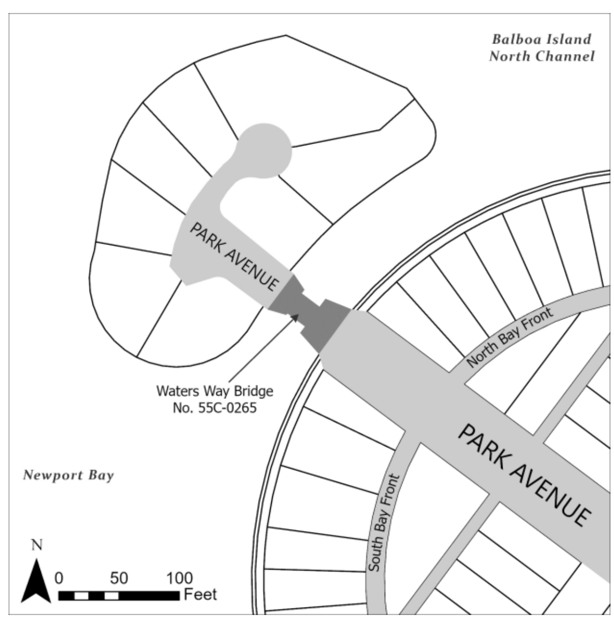
Many histories of the greater Orange County region begin with the settlement of Spaniards from Mexico in 1784. The beginning of land development in Orange County can be traced to Spanish rule, when the government gave Manuel Nieto permission in 1784 to occupy the land between what is today northern Orange County and the southern region of Los Angeles County. Soon after, the Spanish government also permitted Juan Pablo Grijalva to occupy lands in the region. Nieto and Grijalva and their descendants operated cattle ranches on these lands after Mexico broke away from Spain in 1824. The land that would become modern-day Newport Beach was a swampland and ignored by the Spanish and Mexican settlers in the region. It was not until after the Mexican American war when the United States took control over the region and made California a state in 1850 that any real settlement in the area took place. Given the inhospitable terrain, the State of California sold land in present-day Newport Beach for $1 an acre. After the Civil War, many people from the eastern United States immigrated to the area for the cheap land. (Baker 2004; Chattel Architecture, Planning & Preservation, Inc. 2006; Orange County Historical Society 2023)

B11. Additional Resource Attributes: N/A
***B12. References:** See Continuation Sheets.
B13. Remarks: N/A

***B14. Evaluator:**
Susan Wood, Senior Architectural Historian and Josh Rawley, Architectural Historian
Michael Baker International
3100 Zinfandel Drive, #125
Rancho Cordova, CA 95670

***Date of Evaluation:** September 2023

(This space reserved for official comments.)

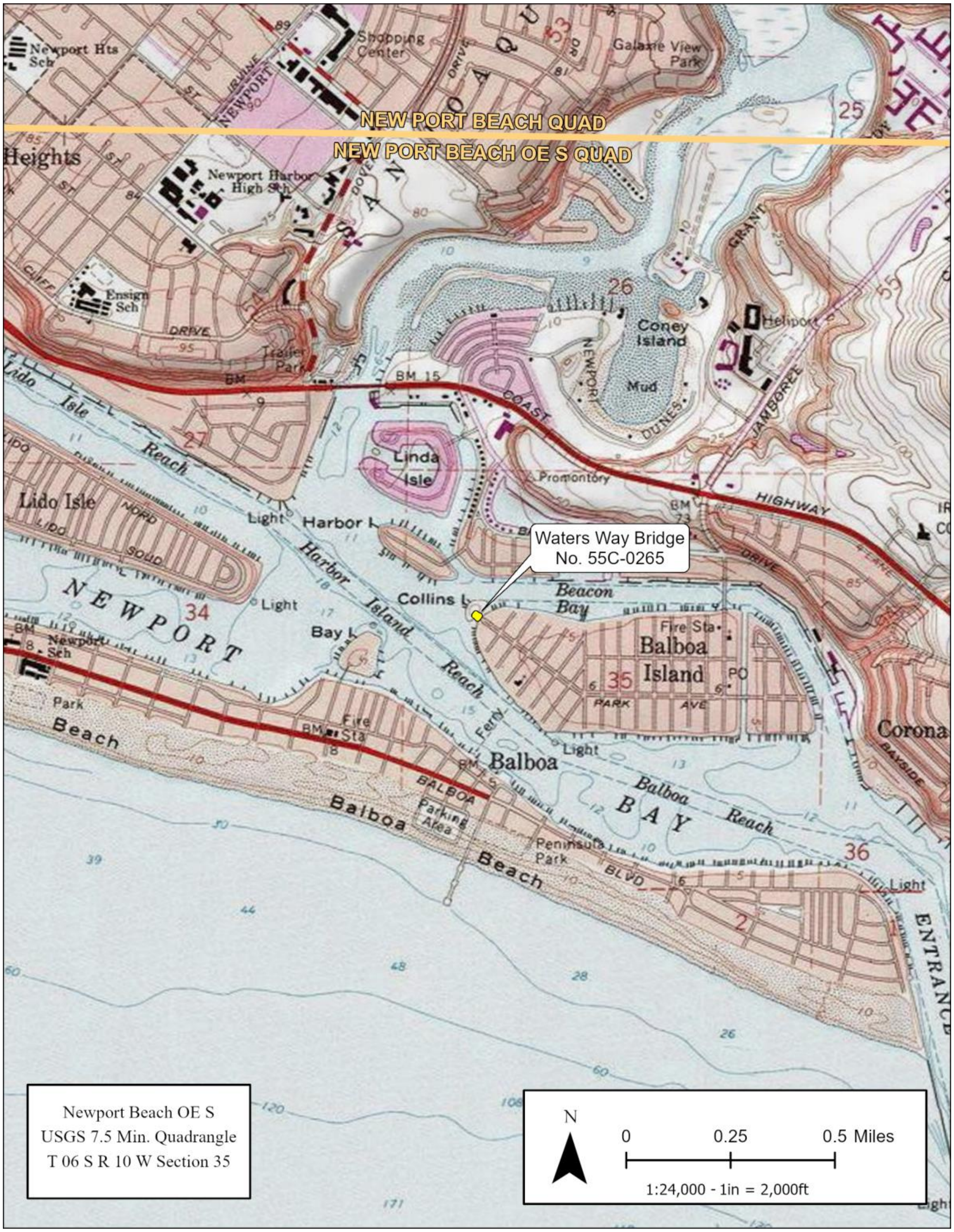


State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

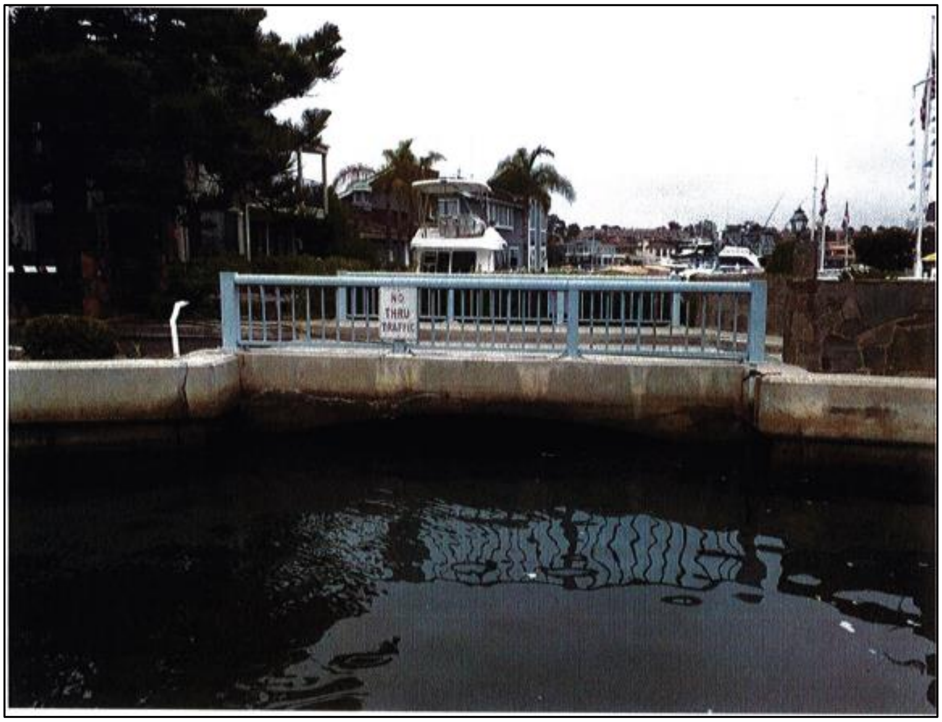
***Resource Name or #** Waters Way Bridge (No. 55C-0265)

***Map Name:** *Newport Beach OE S, Calif.* ***Scale:** 1:24,000 ***Date of map:** 1965 (rev. 1981)



***Recorded by:** Marcel Young, Michael Baker International ***Date:** August 22, 2023 ☒ Continuation

P3a. Description (continued):



Photograph 2: Overview of the south side of the bridge in 2017, view northwest (Caltrans 2017).

Photograph 3: Overview of the south side of the bridge where it connects to Balboa Island. View northeast, August 22, 2023.

Photograph 4: Overview of the north side of the bridge. View southwest, August 22, 2023.

Photograph 5: Overview of the north side of the bridge in 2017, view southwest (Caltrans 2017).

Photograph 6: Underside view of the bridge in 2018 looking north (Caltrans 2018).

Photograph 7: Overview of the approach from the pedestrian walkway on the west end of the bridge on Collins Island looking towards Balboa Island. View south, August 22, 2023.

Photograph 8: Overview of the approach and pedestrian walkway along the north side of the bridge looking towards Collins Island from Balboa Island. View northwest, August 22, 2023.

Photograph 9: View of decorative stone wall at southwest corner of the bridge with attached sign announcing the entrance to Collins Island. View west, August 22, 2023.

***B10. Significance (continued):**

Newport Beach

The vicinity of present-day Newport Beach was settled during the late nineteenth century by James McFadden and other ranch owners. Making his homestead in the Lower Bay in 1868, McFadden saw potential for the area to rival the deep-port town of Wilmington to the north. McFadden bought much of the undeveloped land, and the area was soon known by residents as "Newport." In 1888, McFadden sought to fully realize his vision and transformed the isolated settlement by building a wharf that extended from the shallow bay to deeper water where large steamers could dock. As a result, shipping activity increased dramatically, and Newport Beach became a vibrant Southern California shipping town. In 1902, McFadden sold much of his land—the Newport Townsite and half of the Balboa Peninsula—to William Collins, who continued to develop Newport Beach. In 1905, the Pacific Electric Railroad established a line to Newport Beach, connecting the growing beachside town to Los Angeles by rail. Public transit brought new visitors to the waterfront, and developers, like Collins, took advantage of the opportunity and constructed small hotels and beach cottages that catered to the tourist industry. The City of Newport Beach incorporated in 1906 and continued to grow, spurred on more as the Pacific Coast Highway was opened in 1926, the North Harbor was dedicated in 1936, and the Santa Ana Freeway (I-5) was built in the 1950s. Newport Beach—like many cities across the state—experienced a period of unprecedented population growth during and following World War II as a result of wartime construction industries, expansion of regional transportation networks, and abundance of local recreation amenities. By the latter decades of the twentieth century, service, retail, and professional industries supplanted fishing and shipping as the region's economic base (City of Newport Beach 2022; USGS 1949, 1951, 1965; Novak 2008).

Balboa Island and Collins Island

In 1905, Collins dredged a channel on the north side of the bay, and deposited sand and silt on the tidelands. In 1909, Collins received permission from the Orange County Board of Supervisors to move the small dredge to the eastern part of Newport Bay. Collins created Balboa Island from this fill. Soon after, Collins began sending salesmen to Los Angeles and Pasadena to promote property around Newport Harbor. Originally, Collins sold lots on Balboa Island for $25, with promises of street paving, sewers, streetlights, and bridge and ferry access to follow. Many lots on Balboa Island were sold to wealthy Pasadena families, and many longtime island residents continue to have family ties to the Pasadena area (Baker 2004; Visit Newport Beach 2023).

Major infrastructure improvements did not reach Balboa Island until 1916 when the City of Newport Beach annexed the site. Prior to Balboa Island's incorporation into Newport Beach, residents had built a cement seawall and pedestrian bridge (1912) and connected waterlines by 1914. By 1920, the City of Newport Beach had added a paved road, gas lines, and a ferry service to the island that caused a boost in residential occupation. In 1929, City engineers built a concrete bridge to replace the wooden bridge that had previously connected Balboa Island to the mainland. Between 1930 and the 1950s, entrepreneurs capitalized on increased island access and opened commercial businesses, including restaurants and a market. Most of this new development was concentrated along Marine Avenue. Since 1930, the population has increased exponentially from 100 permanent residents to over 4,500 (Baker 2004; Visit Newport Beach 2023).

Just as William Collins created Balboa Island in the early 1900s by depositing sand and silt in the bay, he also created a smaller island directly west of the site, separated from Balboa Island by a narrow channel. In 1910, on this piece of land, he built his "castle," a sprawling house where he lived with his wife Apolonia until he sold the island in 1926. At some point prior to selling, Collins constructed a Japanese-style footbridge that connected Collins Island with Balboa Island (**Figure 1**). Later, the island became known as Collins Island in honor of its original inhabitant. (*Covina Argus* 1926; *Los Angeles Times* 1953a; Smart 1989).

Figure 1: Circa 1930s photograph depicting the footbridge on the right (courtesy of the City of Newport Beach).

In 1926, a group of Hollywood businessmen bought the Collins Island property and transformed it into the Balboa Yacht and Swimming Club. These developers made improvements to transform Collins's former house into a clubhouse, with locker rooms, a pool, and handball courts. The club was short-lived; however, actor James Cagney purchased the island for $32,000 in 1938. During World War II, the Coast Guard used Collins Island as a base for the Volunteer Port Security Force, though the Coast Guard quickly vacated the area after the war (*Anaheim Gazette* 1944; *News-Pilot* 1938; *Santa Ana Register* 1926).

After the war, George McNamara bought Collins Island, and in 1953 removed Collins's former house. McNamara expanded the island with the construction of a cement bulkhead. He also had the island zoned to accommodate eight residential lots large enough to accommodate houses of 3,500 square feet. McNamara constructed an automobile bridge to connect Collins Island and Balboa Island, and a paved automobile area was added to the center of the island. Telephone and utility lines were connected underground. McNamara kept two of the lots for himself and sold the remainder lots for between $40,000 and $70,000. In 1959, McNamara deeded the subject bridge to the City of Newport Beach. Historical aerials suggest the island has remained relatively unchanged since the last residential lot was developed sometime prior to 1972. (*Anaheim Bulletin* 1953; City of Newport 1959; *Los Angeles Times* 1953a; NETR 2023)

Reinforced Concrete Bridges
After 1910, bridge designers increasingly used concrete reinforced with steel embedded rods as an effective means of improving the strength of concrete. Engineers already recognized concrete for its strength; however, it was susceptible to cracking under compression. As bridge load requirements increased in the early twentieth century, reinforced concrete improved bridge construction and sustainability. By the mid-1930s, the California Division of Highways and local agencies constructed most of their new bridges with reinforced concrete. Reinforced concrete (and later prestressed concrete) was used for arches as well as slab, t-beam, and girder bridges. The cast-in-place method, the method used for the subject bridge, is where liquid concrete is poured into forms at the bridge site. In the mid-twentieth century, engineers developed the pre-cast method where bridge elements could be poured elsewhere and moved. By the 1950s, over 90 percent of bridges were constructed of concrete due to the innovation of reinforced box girders and prestressed concrete, which allowed for longer spans and more control of greater control over load capacity. The height of bridge construction in California occurred during the 1960s and into the early 1970s, including construction of more than half of all concrete road bridges in California (JRP Historical Consulting Services 2003: 47-57).

Concrete Slab Bridges

Transportation officials favored concrete slab, girder, and t-beam bridges from 1936 to 1959; these types accounted for more than a quarter of the newly constructed bridges during this time period. Los Angeles and the southern Central Valley contain the greatest concentrations of concrete slab and t-beam bridges (JRP Historical Consulting Services 2003: 58). Between 1965 and 1974, transportation engineers had standardized bridge designs, and a 2015 California Department of Transportation (Caltrans) report documented that concrete slab bridges were used primarily for short to medium spans (Blackmore et al. 2015: 6). In 2005, Caltrans carried out an evaluation of historical significance for the National Register of Historic Places (National Register) of bridges constructed prior to 1960. The report found that concrete slab bridges accounted for more than 25 percent of the 8,587 bridges constructed prior to 1960 (Hope 2005). There are 20 concrete slab bridges in California that are eligible for or listed in the National Register or that meet California Register of Historical Resources (California Register) criteria. However, 16 are contributors to historic roads or other larger properties. Of the four concrete slab bridges individually listed or eligible, the most recent was constructed in 1940 (Blackmore et al. 2015: 6).

Site-Specific History

The Waters Way Bridge (No. 55C-0265), colloquially known as the Collins Island Bridge, was constructed in 1953 over Newport Bay, to connect Collins Island and Balboa Island in Newport Beach, California (**Figure 2**). It is a local agency bridge maintained by the City of Newport Beach (Caltrans 2019a).

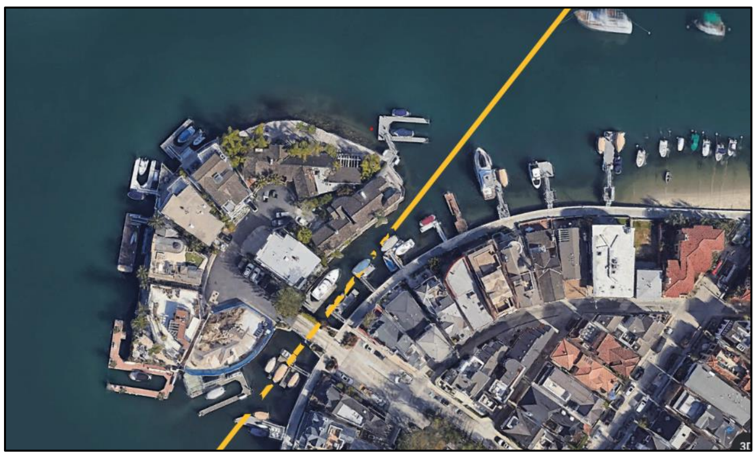


Figure 2: Waters Way Bridge (No. 55C-0265) over Newport Bay. Yellow line marks the boundary between Collins Island (to the west) and Balboa Island (to the east) (Google Earth 2023).

The general area surrounding the bridge was swamp and marshland until the beginning of the twentieth century. A 1901 and 1907 map do not show either Collins Island or Balboa Island (**Figure 3**) (USGS 1901, 1907).

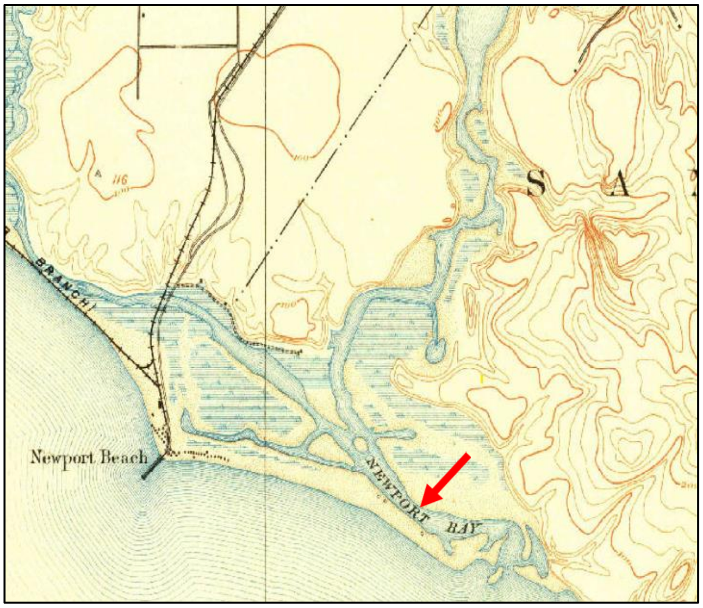


Figure 3: 1907 USGS map shows undeveloped area surrounding Newport Bay. A red arrow points to the approximate future site of Balboa Island. (USGS 1907).

Archival resources document that Balboa Island and Collins Island had been constructed by 1909 (Baker 2004). A 1932 map shows a cluster of residential properties on Balboa Island and on the Balboa Peninsula. Land directly north of Balboa Island remained undeveloped save for a highway that is marked along today's State Route 1, connecting Corona Del Mar with Newport Beach. This map also shows an automobile bridge carrying a road across Newport Bay to the north, connecting the mainland with Balboa Island. This road later became known as Marine Avenue on the island side. Park Avenue, the road the subject bridge carries over the channel, runs perpendicular to Marine Avenue. The map shows it terminating directly before Collins Island (USGS 1932). A 1938 aerial photograph shows a pedestrian footbridge connecting Balboa Island with Collins Island (**Figure 4**). In this aerial photograph, a variety of structures are visible on Collins Island, and a boat dock is situated on the southern tip. Residential properties cover Balboa Island with only a few scattered empty lots (NETR 2023: 1938).

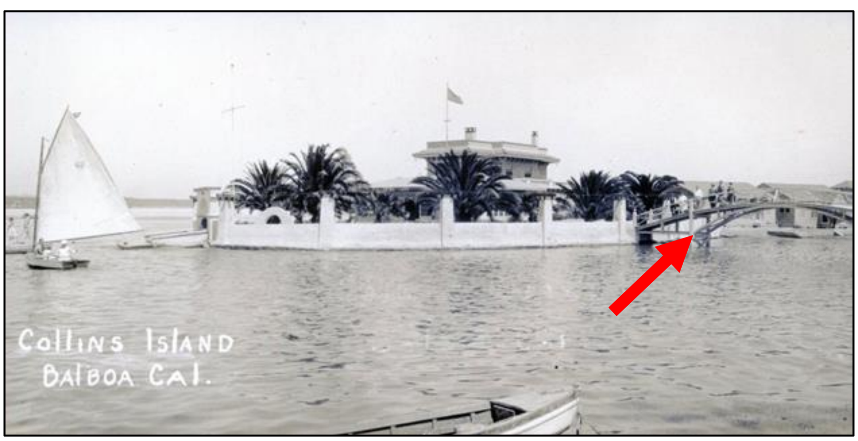


Figure 4: Circa 1930s photograph that shows Collins Island and Newport Bay. A red arrow points to the pedestrian bridge that connected Collins Island with Balboa Island (Courtesy of the City of Newport Beach).

Maps show that between 1938 and 1949 the area around the bridge remained relatively unchanged, apart from four buildings that are present on Collins Island, which were possibly added by the US Coast Guard when they occupied the island during World War II (*Anaheim Gazette* 1944; USGS 1949). A 1953 aerial depicts only one structure remaining on Collins Island. This is likely due to the ownership change at that time and their plans to redevelop the island into additional parcels for new home construction (*Anaheim Bulletin* 1953; *Los Angeles Times* 1953a). At this time, the pedestrian footbridge is still intact. Later in 1953, Collins Island's then-owner George McNamara constructed the subject bridge (No. 55C-0265); this is visible in 1963 aerials and a 1965 map (City of Newport Beach 1959; NETR 2023: 1963; UCSB 1963; USGS 1965). The 1963 aerial reflects the removal of the sole building on Collins Island and the addition of six residential homes and corresponding boat docks (**Figure 5**) (UCSB 1963; NETR 2023: 1963). Two additional residences were added on the island by 1972, and the area has remained relatively unchanged since then (NETR 2023: 1972, 1987, 1997, 2009, 2020).

Figure 5: 1963 aerial photograph showing Waters Way Bridge (No. 55C-0265) (red arrow) completed (UCSB 1963).

People

William Collins

William Collins was born in Indiana in 1863. Before departing in 1888 for Riverside, California, he was a schoolteacher. Once in Riverside, Collins became a successful orange grower. After his success in agriculture, Collins dabbled in the oil and mining businesses and then bought a large portion of land in Newport from James McFadden in 1902. By 1909, he had constructed Balboa Island. By 1910, Collins had built his personal residence on Collins Island, which he created by dredging a small channel across the tip of Balboa Island. He lived in this house until 1926 when he sold the property to a group of Hollywood investors. Collins moved away from California shortly after, and eventually died in Wichita, Kansas, in 1952 (*Covina Argus* 1926; *Los Angeles Times* 1952, 1953a; Smart 1989).

George McNamara

George McNamara was born November 28, 1894, in San Francisco, California. Very little information regarding McNamara's life can be found in archival sources. His World War I draft card reveals he had moved to Los Angeles sometime prior to 1918 and worked in the printing business. The 1940 Federal Census notes his marriage to Melba McNamara and lists his occupation as an office clerk. In 1948, McNamara bought Collins Island from James Cagney and created plans to expand and develop the island to include eight residential tracts. A 1953 newspaper source described McNamara as a "retired manufacturer" (*Los Angeles Times* 1953b). In 1953, McNamara built the subject bridge (No. 55C-0265) to connect Collins Island to Balboa Island via automobile. During this time, he built his own residence on two of the residential lots he had subdivided on the island. Though the bridge was privately built, he deeded it to the City of Newport Beach in 1959. McNamara resided at his house on Collins Island until his death on January 30, 1973 (City of Newport Beach 1959; US Census Bureau 1940; Ancestry.com 2005).

Architect & Builder

Frederick Hodgdon, the architect of the subject bridge, was born in Dorchester, Massachusetts, in 1894. He attended the Chicago Art Institute between 1918 and 1921 (Koyl 1962). It appears that Hodgdon was primarily an architect of churches. He designed a variety of church buildings throughout his career, including the First Presbyterian Church of Clinton, Iowa, in 1932, and the Evangelical United Brethren Church in Santa Ana, California, in 1956 (Koyl 1962). However, targeted research failed to show that Mr. Hodgdon made any noteworthy contributions to the field of bridge design that would classify him as a master (Ancestry.com 2023; Google 2023: Newspapers.com 2023).

Trautwein Brothers Marine Construction Company was responsible for building the Waters Way Bridge (No. 55C-0265) over Newport Bay. The company was active in the construction of various waterside buildings, including the boat marina in Santa Cruz Harbor, the Ventura West Marina, and docks in Catalina, Huntington Harbour, and Newport Beach. Despite the firm’s prolific activity throughout California, the subject bridge does not represent a remarkable representation of their work, nor is it a noteworthy example of bridge construction (*Press Telegram* 1974; *Ventura County Star-Free Press* 1979).

***Recorded by:** Marcel Young, Michael Baker International ***Date:** August 22, 2023 ☒ Continuation

Evaluation

The Waters Way Bridge (No. 55C-0265) is a reinforced concrete slab bridge constructed in 1953 that carries Park Avenue over Newport Bay between Balboa Island and Collins Island in the City of Newport Beach, California. It is a local agency bridge maintained by the City of Newport Beach (Caltrans 2019a). According to the Caltrans Local Agency Historic Bridge Inventory, this bridge is listed as a Category 5, "Bridge not eligible for NRHP" (Caltrans 2019b).

National Register Criterion A/California Register Criterion 1 – Research did not demonstrate that the Waters Way Bridge (No. 55C-0265) was associated with events significant to the broad patterns of our history at the local, state, or national level. The bridge was constructed in 1953 to replace a footbridge to facilitate automobile traffic between Balboa Island and the small, private Collins Island.

Although the bridge made travel to Collins Island more convenient, it was not significant to the development of Collins Island, Balboa Island, or the Newport area, nor with road and bridge development in Newport Beach or Orange County. The subject bridge is not directly or significantly associated with general bridge development at the state or national level. The Waters Way Bridge (No. 55C-0265) is not known to have made a significant contribution to other broad patterns of local, regional, state, or national culture and history. The Waters Way Bridge (No. 55C-0265) is a ubiquitous concrete slab beam bridge type in similar form in the region since the early twentieth century. As such, it is not one of the first or pioneering reinforced concrete slab bridges, nor was it significant to the development of the Newport Bay. Therefore, the Waters Way Bridge (No. 55C-0265) is recommended as not eligible for listing in the National Register under Criterion A and California Register under Criterion 1.

National Register Criterion B/California Register Criterion 2 – William McNamara purchased Collins Island in 1948 and worked to have it subdivided for residential development. To improve island access, he replaced the existing footbridge with a privately funded automobile bridge, which he deeded to the City of Newport Beach in 1959. McNamara was a successful businessman, and he is responsible for the construction of the subject bridge. However, his local historical significance is not represented by the bridge, but rather by the increased development of Collins Island. There is no demonstrable evidence that any other persons that made significant contributions to history at the local, state, or national level are associated with the bridge. Therefore, the property is recommended not eligible for listing in the National Register under Criterion B and California Register under Criterion 2.

National Register Criterion C/California Register Criterion 3 – The Waters Way Bridge (No. 55C-0265), a reinforced concrete slab bridge, is indistinguishable from other examples of this resource type. It was not the first of its type, nor the most distinguished example of a reinforced concrete slab bridge in the region, state, or nation. Its design and construction do not represent a departure from standard construction practices or design for this resource type. The Waters Way Bridge (No. 55C-0265) is not the representative work of a master, nor does it possess high artistic values. Therefore, the resource is recommended as not eligible for listing in the National Register under Criterion C and the California Register under Criterion 3.

National Register Criterion D/California Register Criterion 4 – The built environment of the subject property is not likely to yield valuable information which will contribute to our understanding of human history because the property is not and never was the principal source of important information pertaining to significant events, people, or engineering. Therefore, the resource is recommended not eligible for listing in the National Register under Criterion D and the California Register under Criterion 4.

Conclusion – Lacking significance, this property is recommended as ineligible for listing in the National Register and California Register.
It is not a historic property as defined by 36 CFR 800.16(l)(1) nor is it a historical resource as defined by CEQA Section 15064.5(a).

Integrity – The Waters Way Bridge (No. 55C-0265) is recommended as ineligible under all four National and California Register criteria. Therefore, an analysis of integrity is not required.

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APPENDIX D
Geotechnical Report/Paleontological Resources Assessment

October 27, 2023

EMI Project No. 23-115

Michael Baker International
5 Hutton Centre Drive, Suite 500
Santa Ana, CA 92707

Attention: Mr. Bradley Mielke, PE, SE

Subject: **Draft Foundation Report**
Collins Island Bridge
Newport Beach, California

Dear Mr. Mielke:

Attached is our Draft Foundation Report (DFR) for the proposed replacement of the Collins Island Bridge in the City of Newport Beach, California. This report has been prepared to provide the geotechnical information to the structural designers. This report follows the 2021 California Department of Transportation (Caltrans) Guidelines – Foundation Reports for Bridges, and presents the findings, conclusions and recommendations for the design and construction of the bridge foundations.

Please submit this report to participating agencies for review. All review comments and approved responses will be incorporated into a final report later.

We appreciate the opportunity to provide geotechnical services for this project. If you have any questions, please do not hesitate to contact us.

Sincerely,

EARTH MECHANICS, INC.

REGISTERED PROFESSIONAL ENGINEER CHIEN-TAI YANG NO. GE 2827 EXP. 06-30-2024 GEOTECHNICAL STATE OF CALIFORNIA

Chien-Tai Yang, GE 2827
Senior Engineer

CERTIFIED ENGINEERING GEOLOGIST MICHAEL Y. HOSHIYAMA NO. 2599 EXP. 01-31-2024 STATE OF CALIFORNIA

Michael Hoshiyama, CEG 2599
Senior Geologist

REGISTERED PROFESSIONAL ENGINEER ALAHESWARAN THURAIRAJAH NO. GE 3123 EXP. 9-30-2025 GEOTECHNICAL STATE OF CALIFORNIA

(Alahesh) A. Thurairajah, GE 3123
Project Manager

DRAFT FOUNDATION REPORT
COLLINS ISAND BRIDGE
NEWPORT BEACH, CALIFORNIA

Prepared for:

Michael Baker International
5 Hutton Centre Drive, Suite 500
Santa Ana, CA 92707

Prepared by:

Earth Mechanics, Inc.
17800 Newhope Street, Suite B
Fountain Valley, California 92708

EMI Project No. 23-115

October 27, 2023

Earth Mechanics, Inc.
Geotechnical & Earthquake Engineering

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1.0 INTRODUCTION

This Draft Foundation Report presents the findings and conclusions of a geotechnical study conducted by Earth Mechanics, Inc. (EMI) for replacement of the Collins Island Bridge and new seawalls in the City of Newport Beach, California. The purpose of the geotechnical study was to obtain information on subsurface soils and conditions, and develop design and construction recommendations to assist Michael Baker International (MBI) in preparing the project Plans, Specifications, and Estimates (PS&E) for the project.

The geotechnical services provided for this project included the following tasks:

- Collection and review of existing geotechnical information;
- Geotechnical field exploration consisting of exploratory borings and Cone Penetration Test (CPT) soundings;
- Laboratory testing of selected subsurface soil samples;
- Engineering analysis to develop foundation design and construction recommendations; and
- Preparation of this report presenting our findings, conclusions, and recommendations.

2.0 PROJECT DESCRIPTION

The existing Collins Island Bridge provides the only means of vehicle and pedestrian access from Balboa Island via Park Avenue to the residential community on Collins Island (See Figure 1). The existing reinforced concrete bridge was constructed in 1953 and is approximately 20 feet and 8 inches long and 19 feet wide. The bridge is supported on concrete sheet pile bulkheads, which are insufficient to resist current code level seismic loads. The existing bridge accommodates one lane of vehicle traffic, one raised sidewalk, and steel railings on each side of the bridge.

The proposed bridge will be designed to be a total of 20 feet and 6 inches in width to accommodate one vehicle travel lane with 13.75 feet wide, one 4-foot-wide sidewalk, and concrete barriers on each side to provide protection from projected sea level rise. The bridge would be 31 feet in length spanning over existing concrete sheet pile bulkheads. The proposed bridge will be supported on secant piles.

In addition, the seawalls adjacent to the proposed bridge will be improved to accommodate the future water surface to up to El. +14 feet. To minimize the disturbance, the proposed seawall will be installed outside of the existing concrete sheet piles.

All elevations referenced within this report are based on the North American Vertical Datum of 1988 (NAVD 88), unless otherwise noted.

REFERENCE: USGS Topographic 7.5 Minute Quadrangle Map - Newport Beach Quadrangle (2018)

Earth Mechanics, Inc. Geotechnical and Earthquake Engineering	COLLINS ISLAND BRIDGE	Site Location Map
	Project No. 23-115 / Date: September 2023	Figure 1

3.0 GEOTECHNICAL INVESTIGATION

EMI conducted a geotechnical field investigation for the proposed bridge replacement consisting of one soil boring and one CPT at Abutment 1 and one CPT at Abutment 2, in May 2023. The locations of the boring and CPTs are shown in Figure 2. Soil exploration information is summarized in Table 1, and LOTB sheet of the recent exploration is included in Appendix A.

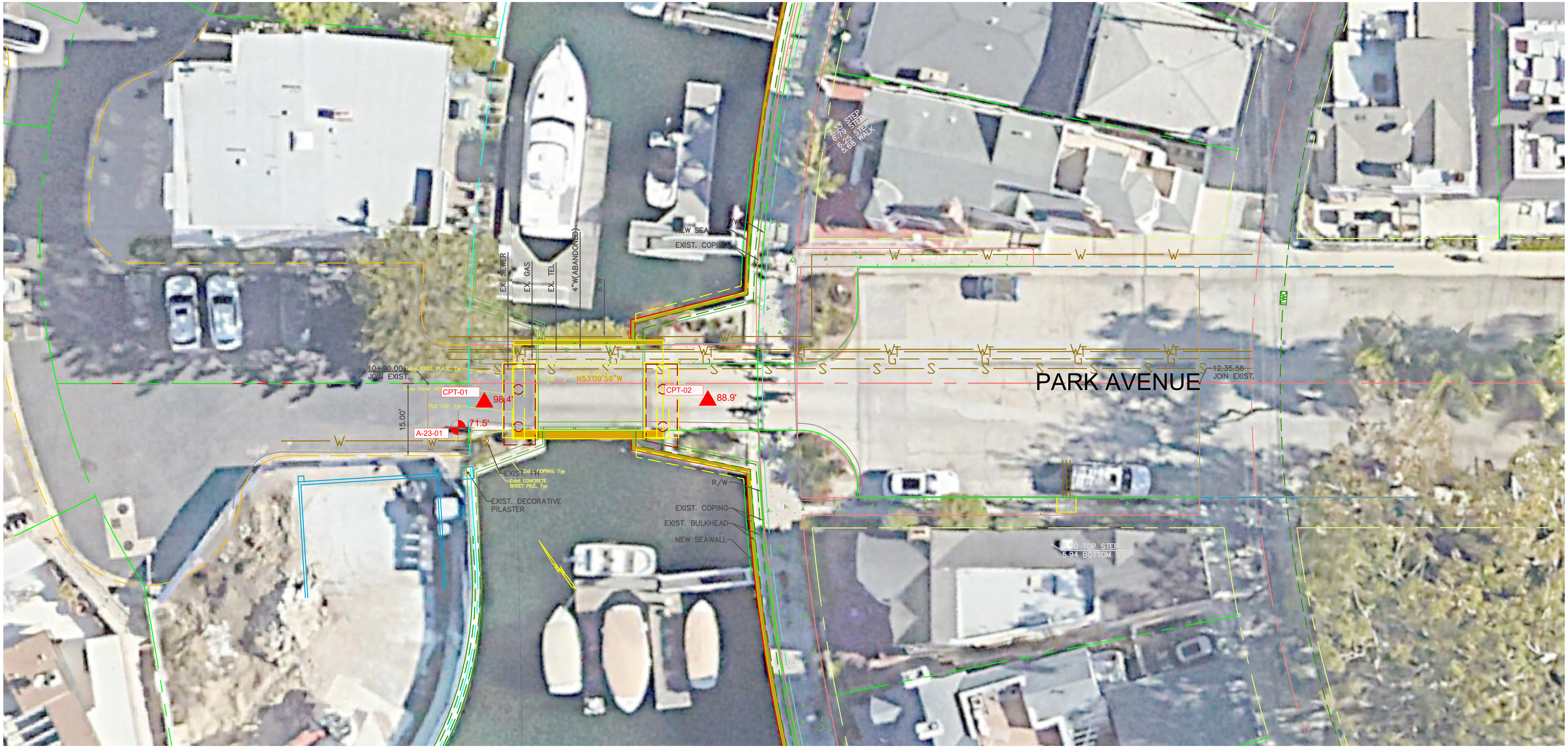
TABLE 1. SOIL EXPLORATION INFORMATION

Boring/CPT No.	Boring Type	Approx. Northing	Approx. Easting	Station	Station Line	Offset (feet)	Ground Surface El. (feet)	Bottom of Hole El. (feet)	Groundwater El. During Drilling (feet)
A-23-001	HSA	2169766	6059075	10+81	Park Avenue	9 Rt	+7.8	-63.7	-1.2
CPT-23-001	CPT	2168958	6059290	10+87		4 Rt	+7.7	-90.7	NM
CPT-23-002	CPT	2168930	6059327	11+33		3 Rt	+6.3	-82.6	NM

Notes:
(1) Ground Surface Elevations were estimated from topographic plans provided by MBI.
(2) HSA = Hollow Stem Auger, CPT = Cone Penetration Test, NM = Not Measured.

The boring was drilled using a modified CME-75 truck-mounted drill rig equipped with 8-inch diameter hollow-stem augers. Subsurface soils and conditions were logged and samples of soils were collected for laboratory testing. Smaller disturbed and relatively undisturbed soil samples were collected from borings generally at 5-foot intervals using the Standard Penetration Test (SPT) sampler and the Modified California Drive (MCD) sampler, respectively. The SPT sampler is unlined and has an inside diameter of 1.4 inches and the MCD sampler is lined with a series of 1-inch tall brass rings with an inside diameter of 2.4 inches.

Blowcounts from the SPT and MCD samplers were recorded during the exploration. The samplers were driven using a 140-lb hammer falling 30 inches down a total depth of 18 inches or until refusal, whichever occurs first. An automatic trip hammer was used by the drilling contractor, and this hammer had a rated efficiency of 88% (hammer efficiency provided by the drilling contractor). The blowcounts for the last 12 inches or less of penetration were recorded and are shown in the LOTB sheet included in Appendix A.



A-23-01 Depth (ft) — Location of Geotechnical Boring

CPT-01 Depth (ft) — Location of Cone Penetrometer Test Sounding

0 20 40 FEET
SCALE

Figure 2

Earth Mechanics, Inc.
Geotechnical and Earthquake Engineering

Collins Island Bridge
Boring Location Plan

The CPT soundings were performed using an electronic cone penetrometer in general accordance with current ASTM Standards (ASTM D5778 and ASTM D3441). The CPT equipment consisted of a cone penetrometer assembly mounted at the end of a series of hollow sounding rods. The cone penetrometer assembly consisted of a conical tip with a 60˚ apex angle and a projected cross-sectional area of 2.33 in^2 (15 cm^2) and a cylindrical friction sleeve with a surface area of 23.25 in^2 (150 cm^2). The interior of the cone penetrometer is instrumented with strain gauges that allow simultaneous measurements of cone tip and friction sleeve resistance during penetration. The cone penetrometer assembly is continuously pushed into the soil by a set of hydraulic rams at a standard rate of 0.79 inch per second (20 mm per second) while the cone tip resistance and sleeve friction resistance are recorded every 1.967 inches (50 mm) and stored in digital form. A specially designed all-wheel drive 30-ton truck provides the required reaction weight for pushing the cone assembly and is also used to transport and house the testing equipment. The computer-generated graphical logs include tip resistance, friction resistance, and friction ratio. Soil behavior type interpretations are based on guidelines by Robertson (2009). Seismic Cone Penetration Test (SCPT) was also used for the soundings to obtain in-situ shear wave velocity. The shear wave is generated using an air-actuated hammer, which is located inside the front jack of the CPT rig. The cone has a triaxial geophone, which recorded the shear wave signal generated by the air hammer.

4.0 LABORATORY TESTING PROGRAM

Selected soil samples were tested to determine soil classification and physical and engineering properties. A list of tests performed, the corresponding test methods, and purpose of testing is presented in Table 2.

The laboratory soil tests were conducted in general accordance with California Test (CT) methods or American Society for Testing and Materials (ASTM) standards. The test results are presented in Appendix B. The locations where tests were performed are shown on the LOTB sheets included in Appendix A.

TABLE 2. EXPLANATION OF LABORATORY TESTS PERFORMED

Type of Test	Applicable Test Method	Purpose
Dry Density	ASTM D 2937	Estimate in-situ soil density
Moisture Content	ASTM D 2216	Estimate in-situ soil moisture content
No. 200 Wash	ASTM D 1140	Estimate percentage of gravel, sand, and fines content
Atterberg Limits	ASTM D 4318	Evaluate plasticity of fine-grained particles
UU Triaxial Test	ASTM D 2850	Determine stress-strain relationship of cohesive soil
Direct Shear	ASTM D 3080	Estimate strength parameters
Soil pH	CT 532/643	Determine corrosion potential
Minimum Resistivity	CT 532/643	
Sulfate Content	CT 417	
Chloride Content	CT 422	

5.0 GEOTECHNICAL CONDITIONS

5.1 Geology

5.1.1 Physiography

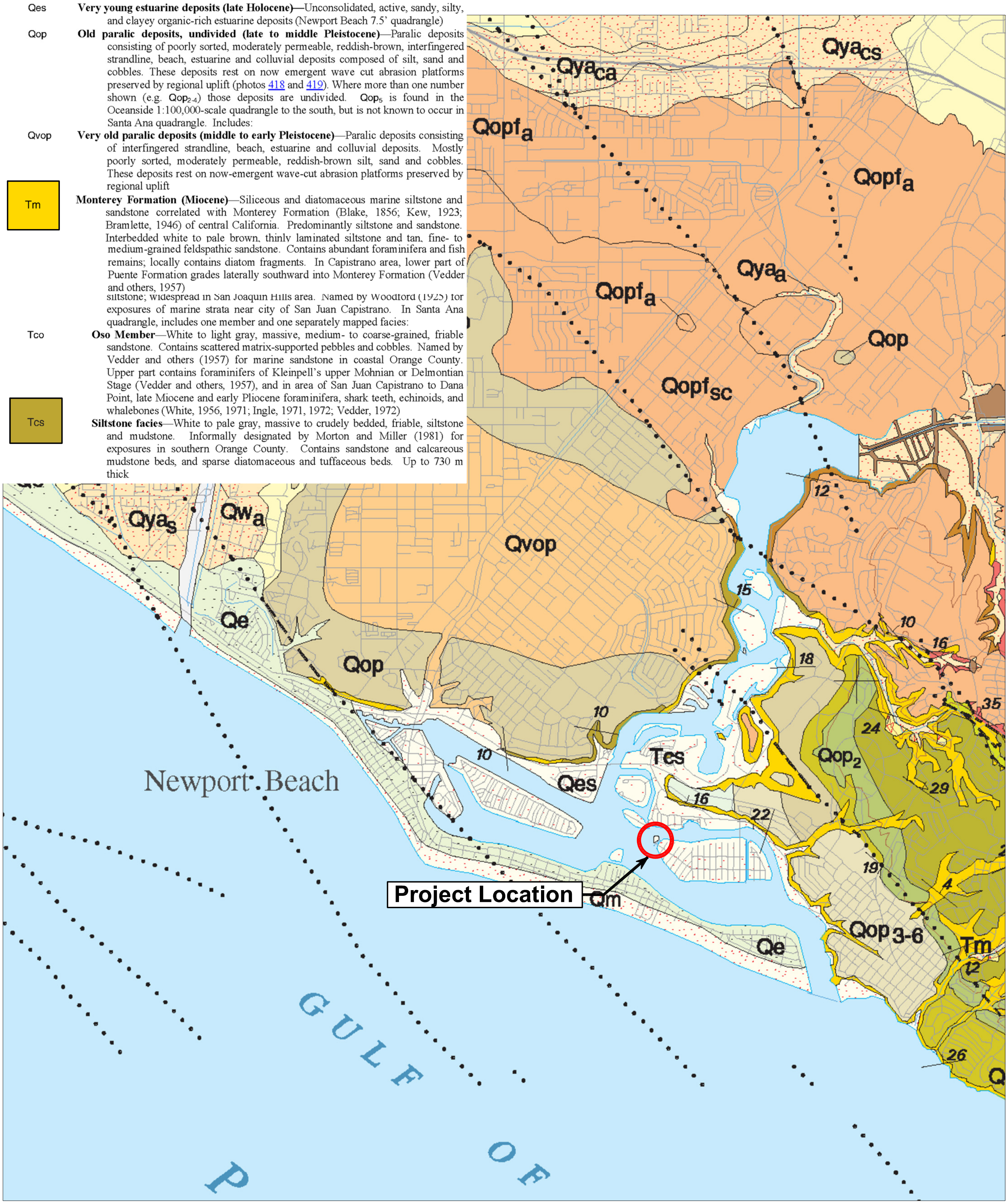
The project site is in Southern California within the Peninsular Ranges physiographic province in the Orange County Coastal Plain. The Orange County Coastal Plain is a broad, gently dipping alluvial plain that extends from the Santa Ana Mountains to the Pacific Ocean. The project site is at the far south-western edge of the Coastal Plain, in the Newport Bay. The Orange County Coastal Plain has been created by run-off from the Santa Ana Mountains covering the area with layers of sediment. The site is generally underlain by hydraulic fill, which was used originally to create the island. Underlying the hydraulic fill are alluvial soils deposited into the bay by way of the Santa Ana River (before being re-aligned). These deposits generally consist of grey, fine sands and silts. Underlying the alluvial deposits is the sedimentary bedrock composed of dark to medium brown, well consolidated, highly fractured fine siltstone and claystone of the Capistrano Formation. See Figure 3 for Regional Geologic Map.

The geologic formations in the area, following the nomenclature of Morton and Miller (2006) in descending stratigraphic order are:

- Hydraulic Fill, Holocene (Af);
- Alluvial Deposits, Holocene (Qa); and
- Capistrano Formation, Pleistocene (Tu1)
- Monterey Formation, Miocene (Tm).

5.1.2 Geologic Structure

The geologic structure at the site is characterized by relatively flat-lying Quaternary-age strata underlain by ancient basement rocks and the result of the Newport-Inglewood Structural Zone. Newport Mesa is a large uplifted geomorphic feature created by faulting along the NISZ that is adjacent to Newport Bay. Geologic structure within the site vicinity consists of deformed, faulted, and folded bedding associated with the NISZ, with regional onshore data showing beds dipping shallowly to the north and west between 15 and 25 degrees. The most influential faults in the vicinity include the Newport-Inglewood Structural Zone, THUMS-Huntington Beach fault, Pelican Hill fault and San Joaquin Hills thrust fault.



0 5,000 10,000 FEET

REFERENCE: Morton, P.K., and Miller, R.V., 2006, Geologic map of the San Bernardino and Santa Ana 30' x 60' quadrangles, California. U.S. Geological Survey: Open-File Report 2006-1217.

Earth Mechanics, Inc. Geotechnical and Earthquake Engineering	COLLINS ISLAND BRIDGE				Regional Geologic Map
	Project No.	23-115	Date:	October 2023	Figure 3

5.1.3 Faulting

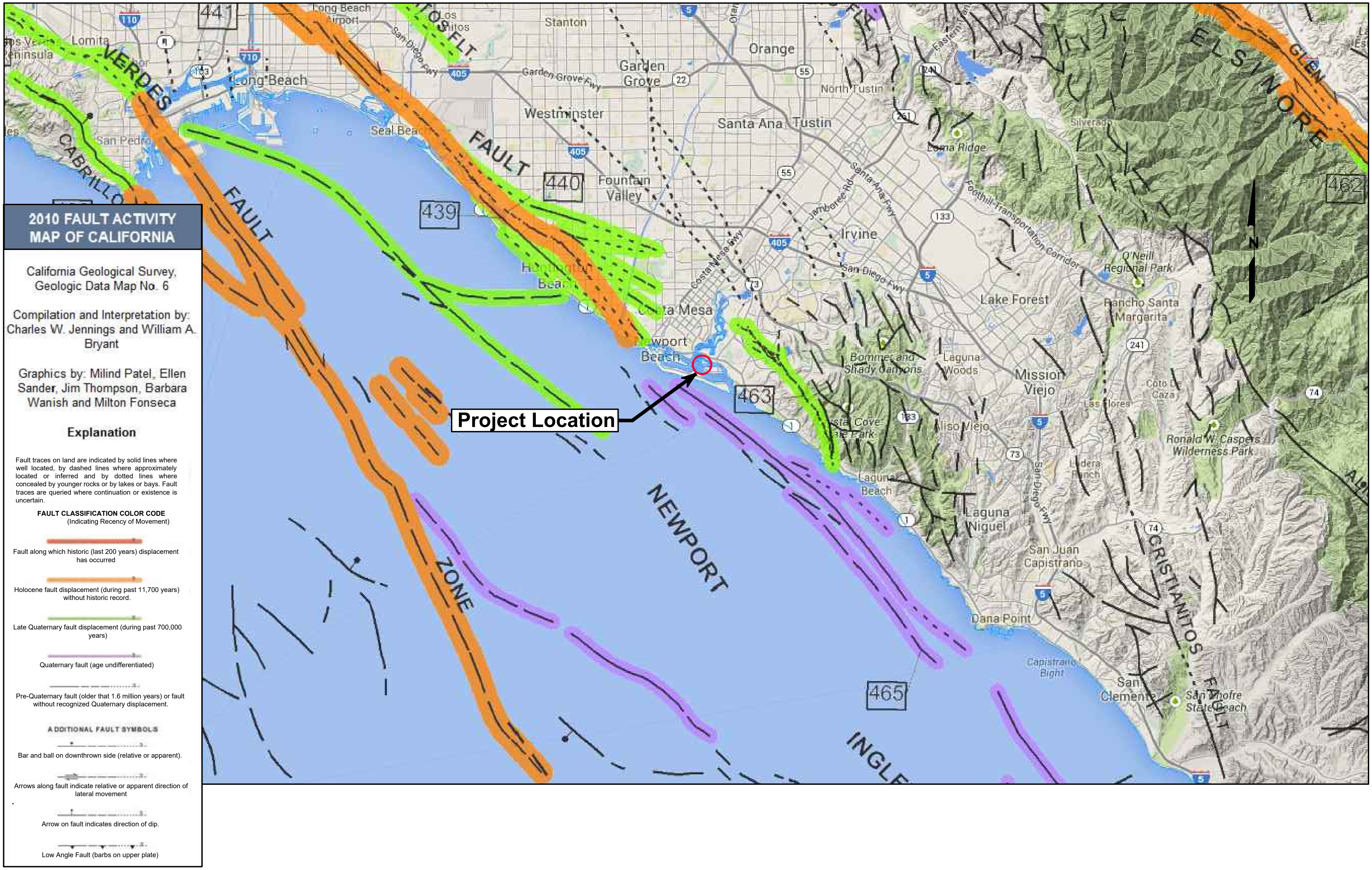
The project site is located within the Salinas Basin region of the Coast Ranges Geomorphic Province. The region consists of numerous active and potentially active faults including the Newport-Inglewood Structural Zone, the Pelican Hill fault and the San Joaquin Hills fault. Of these faults, the NISZ is the nearest fault identified as Alquist-Priolo (AP) Earthquake Fault Zones defined by the Alquist-Priolo Earthquake Hazards Act of 1972 revised in 1994. The AP faults not only represent earthquake shaking hazards but have a potential for surface ground rupture. The type and magnitude of the seismic hazard affecting the site are dependent on the distance and causative faults and the intensity and magnitude of the seismic event. Other potentially active faults may not be identified as AP Earthquake Fault Zones because their locations are not well defined and/or they have not generated earthquakes in historical time. Locally, smaller faults exist within the valley floor within the vicinity of the site location as well. The project site does not enter into any AP fault zones and does not cross any active fault traces (Figure 4).

Newport-Inglewood Structural Zone. The Newport-Inglewood Structural Zone (NISZ) is a northwest to southeast trending fault system and is considered active by the State of California and an Alquist-Priolo Earthquake Fault Zone has been established around the fault (CGS, 1986). The NISZ comprises a zone of faults and folds transecting the western Los Angeles Basin and is 56 miles long extending onshore from the Santa Monica Mountains to the San Joaquin Hills and Newport Bay area, and then continues offshore to approximately the Dana Point area. The overall fault system is generally right-lateral strike slip and it is understood to be capable of generating a magnitude of up to 7.4 (Mw) (Grant, Shearer, 2004). In north San Diego County, and south of where the NISZ disappears in the Dana Point area, the Rose Canyon Fault continues directly south and along the same alignment as the NISZ. It is believed that these two fault systems may actually be one fault system; however, more research is needed to determine the relationship (Grant, Shearer, 2004).

The NISZ has had numerous earthquakes occur within recent time including the Long Beach earthquake in 1933, Inglewood in 1920, Gardena in 1941, and Torrance-Gardena in 1941. The project site is located approximately 2.6 miles southeast of the nearest mapped trace of the NISZ.

THUMS-Huntington Beach Fault. The THUMS-Huntington Beach fault is a continuous right-slip fault zone with three segments and two steps that extends southeastward from the Huntington Beach anticline and merges with the Newport Inglewood fault zone. The fault branches from the Palos Verdes fault zone to form the southwestern border of the Wilmington and Huntington Beach anticlines. The fault should be considered active as it is closely related to the Palos Verdes and Newport-Inglewood fault zones with a possible transfer of slip to or from both fault systems. The fault is located approximately 4.6 miles southwest of the project area.

San Joaquin Hills Thrust Fault. The San Joaquin Hills fault is a blind thrust fault located northeast of the project site beneath the San Joaquin Hills. The project site is located approximately 5.8 miles south of the projected trace according to USGS. The recent uplift of the San Joaquin Hills has been interpreted to be the result of slip along the San Joaquin Hills blind thrust fault.



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Research by Grant et al. (1999, 2002) on the age and rate of uplift of the San Joaquin Hills included a postulation that uplift of the hills was due to the presence of the buried, low-angle, blind, thrust fault below the San Joaquin Hills and, furthermore, that the fault is capable of generating magnitude 6.8 to 7.3 earthquakes. They postulate that the fault dips westerly from about one mile deep under the east side of the San Joaquin Hills to about five miles deep where the fault would intersect the Newport-Inglewood fault. They did not discuss the difficult and critical issue of how the two faults interact where they intersect.

There is no direct evidence for a subsurface thrust fault under the San Joaquin Hills. For example, there are no boreholes showing a fault, no geophysical evidence (seismic reflection or refraction), and no seismological evidence indicating such a fault. A recent small earthquake in the area was predominantly a strike-slip rupture of the type expected on the NISZ rather than a thrust-type event that one would expect from the postulated subsurface fault.

As visualized by Grant et al (2002), the fault would dip southwesterly such that it would not directly underlie the site but at its closest point to the site would be about five miles laterally in the subsurface. The fault is not recognized as an active fault according to the Alquist-Priolo Earthquake Fault zone maps.

Pelican Hill Fault. The Pelican Hill fault is a right-lateral strike slip fault that is located approximately 2.1 miles northeast of the project site. The fault is considered potentially active though its latest activity is believed to have occurred between the early Miocene and late Pliocene.

5.2 Geological Hazards

The proposed bridge site is located off Collins Island located in the Newport Bay. Elevations at the abutments of the bridge approaches range between +7 and +8 feet.

Liquefaction and Lateral Spreading. According to the Seismic Hazard Map (CGS, 1997-1998), (Figure 5) the near-surface alluvial sediments within the project area are susceptible to liquefaction due to moderate to intense ground shaking. Further analysis and potential for liquefaction is discussed in more detail in Section 10.2.

Fault Rupture/Seismic Shaking. There are no known active surface faults within the project limits, so the potential for ground rupture is considered low. The nearest active or potentially active fault is located approximately 2 to 3 miles from the project site. As a result, moderate to intense ground shaking should be anticipated within the project area in the event of an earthquake. Additional discussion of ground rupture is included in Section 10.3.

Slope Stability. No natural slopes are present within or in the vicinity of the site. So, landsliding of natural existing slopes is not a design issue. Existing shoreline slopes are presumed to be constructed of properly and protected with rip rap and should be considered to be grossly stable.

0 4,000 8,000 FEET

SCALE 1" = 4,000'

REFERENCE:
California Geological Survey, 1997 and 1998, Seismic Hazard Zones, Newport Beach Quadrangle California Division of Mines and Geology, Official Map, April 17 and April 15.

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Seismic Hazard Map

Figure 5

<u>Expansive Soils.</u> Expansive soils swell or heave with increases in moisture content and shrink with decreases in moisture content. Montmorillonitic clays are most susceptible to expansion due to their layered crystalline structure. Claystone beds within Capistrano Formation may have potential to be highly plastic and expansive. As part of the laboratory testing program, plasticity index testing will be conducted on any clayey soils/rock encountered during the site-specific geotechnical field investigation.

<u>Tsunami/Flooding.</u> Tsunamis, or seismic sea waves, are large oceanic waves generated by earthquakes, submarine volcanic eruptions or large submarine landslides. They are capable of traveling long distances across ocean basins, and can force large quantities of water up onto shore at high velocities. The forces involved with tsunamis are of such large magnitude that the only positive means of protection is to avoid areas subject to tsunamis. The largest tsunami reported in California followed the 1812 earthquake, in which sea waves as large as 30 to 35 feet reached Santa Barbara. The project site is located within a tsunami inundation according to published inundation maps (CGS, 2009). The probability and severity of tsunami inundation cannot be estimated based on current available information.

5.3 Subsurface Conditions

The subsurface information indicates that the site soils are composed predominantly of coarse-grained soils consisting of loose to medium dense sand at the upper 20 feet. Below that is an approximately 30 feet thick of dense to very dense sand over the sedimentary bedrock (siltstone to claystone).

The idealized soil/rock profile and design strength parameters for geotechnical analyses and foundation design are presented in Table 3. In Table 3, a factor of 0.65 was used to convert Modified California Drive (MCD) sampler blowcounts to Standard Penetration Test (SPT) sampler blowcounts. The equivalent SPT N_{60} blowcounts were obtained from CPT soundings following Robertson (2012) procedures. The shear strength parameters were estimated using laboratory test data and correlations with field blowcounts (Lam and Martin, 1986). In locations where a discrepancy was observed between blowcount correlations and laboratory test results, the design strength parameters were selected using the blowcount correlations considering that the blowcount correlations provide the best indication of in-situ soil strength.

It should be noted that the idealized soil profiles and shear strength parameters in Table 3 were developed primarily for the design of bridge foundations addressed in this report. Direct application of the same idealized profiles and shear strength parameters for other design elements not specifically addressed in details in this report are likely to be invalid. This is because selecting an idealized profile and shear strength parameters, to some extent, is influenced by the preferred design methodologies associated with bridge foundations. The same is true for the laboratory test results: the type and distribution of testing were tailored to bridge foundation design. Selective usage of one or multiple sets of test results for other design elements not specifically addressed in detail in this report will likely provide an erroneous interpretation of onsite soil properties. For design elements not specifically addressed herein, we recommend supplemental field exploration and laboratory tests be performed to establish suitable and representative geotechnical design data for the specific design element.

TABLE 3. IDEALIZED SOIL/ROCK PROFILE AND STRENGTH PARAMETERS

Approximate Elevation (feet)	Predominant Soil/Rock Type	Range of Corrected SPT N_{60} Blowcount (Blows/ft)	Friction Angle (degrees)	Cohesion or Undrained Shear Strength (psf)	Total Unit Weight (pcf)
+8 to -12*	Loose to Medium Dense Sand and Sand with Silt*	7 to 22 Average = 12	30	75	115
-12 to -42	Dense to Very Dense Sand	30 to >50 Average = 40	37	50	125
-42 to -90	Sedimentary Bedrock: Siltstone/ Claystone	15 to >50 Average = 30	-	4,000	125

*: this layer is potentially liquefiable. The undrained shear strength of 200 psf for liquefiable soil was estimated per the procedure listed in Caltrans Memo to Designer 20-15 (2017) under seismic condition.

6.0 GROUNDWATER

Based on recent field investigation, the shallowest groundwater was encountered at El. -1.2 feet in A-23-001. However, the high tide water elevation is at El. +7.7 feet as shown on the general plan. Therefore, a groundwater elevation of +7.7 feet is used for the soil liquefaction evaluation and foundation design.

7.0 AS-BUILT DATA

Based on a review of the as-built plans, the existing foundation information is summarized in Note that the elevations listed in the table below were based on the elevations listed in as-built plans. For as-built plans earlier than 1989, the elevations were based on the National Geodetic Vertical Datum of 1929 (NAVD 29).

Table 4. Note that the elevations listed in the table below were based on the elevations listed in as-built plans. For as-built plans earlier than 1989, the elevations were based on the National Geodetic Vertical Datum of 1929 (NAVD 29).

TABLE 4. SUMMARY OF AS-BUILT FOUNDATION DATA

Support	Foundation Type	Design Load (kips)	Approximate Pile Cap Bottom Elevation (feet)	Approximate As-Built Pile Tip Elevation (feet)
Abutment 1	10”x3’x18’ Precast Sheet Piles	Unknown	+5.97	-12.0
Abutment 2			+6.17	-11.8

8.0 SCOUR AND DREDGING

Based on our discussions with the structural designers, scour is not an issue for the subject bridge but dredging operation is ongoing. Unfortunately, the dredging depth and subsequent cycles of dredging and re-deposition of sediments in the dredged zone are all unknown. The mudline shown in the general plans is about El. -4 feet. Therefore, a lowering of the mudline of 5 feet (i.e El. -9 feet) will be considered for the Service I and Strength Limit State load cases and no lowering of the mudline was considered for the Extreme Event Limit State load case (i.e El. -4 feet).

9.0 CORROSION EVALUATION

Representative soil samples were tested to determine corrosivity including minimum resistivity, pH, soluble sulfate content, and soluble chloride content. Two soil samples were tested for corrosivity and the results are summarized in Table 5.

TABLE 5. SOIL CORROSION TEST RESULTS

Boring No.	Sample No.	Sample Depth (feet)	USCS Soil Type	Minimum Resistivity (ohm-cm)	pH	Chloride Content (ppm)	Sulfate Content (ppm)
A-23-001	S-1	5	Poorly Graded Sand with Silt (SP-SM)	140	8.3	1,030	1,680
	D-11	60	Organic Silt (OH)	91	7.3	565	4,068

According to the Caltrans Corrosion Guidelines V3.0 (Caltrans, 2021b), soils are considered corrosive if the pH is 5.5 or less, or chloride concentration is 500 parts per million (ppm) or greater, or sulfate concentration is 1,500 ppm or greater. Based on the above corrosion test results and the Caltrans criteria, the on-site soil samples are considered to be corrosive.

Therefore, a minimum concrete cover should be in accordance with Table 5.10.1-1 of the California Amendments to the AASHTO LRFD Bridge Design Specifications (Caltrans, 2019a) for chloride concentration more than 500 ppm. Corrosion resistant concrete mix designs that address corrosive conditions are specified in Section 90-1.02H of the Caltrans Standard Specifications (2023b).

10.0 SEISMIC INFORMATION

10.1 Ground Motion

The design ARS curves were determined using the Caltrans ARS Online V3.1.0 (2023a), following the procedures described in Caltrans Seismic Design Criteria Version 2.0 (SDC 2.0) (2019c) and October 2019 Interim Revisions to SDC 2.0 (2019b), and the small-strain shear wave velocity for the upper 100 feet (V_{s30}). This V_{s30} was estimated from the SCPT in-situ shear wave velocity measurements and from the information presented in the LOTB sheet included in Appendix A and the SPT correlations provided in the Methodology for Developing Design Response Spectrum for Use in Seismic Design Recommendations (Caltrans, 2012). The key parameters for determining the design ARS curves are listed in Table 6.

TABLE 6. KEY PARAMETERS FOR DETERMINING DESIGN ARS CURVE

Site Coordinates	Latitude = 33.6083 degrees	Longitude = -117.9000 degrees
Shear Wave Velocity, V_{s30}	934 feet/sec (285 m/sec)	

The design ARS curves are presented in Figure 6. The design magnitude (M) is 6.59 and the mean site-to-fault distance at 1.0 second period is 14.2 miles. The Peak Ground Acceleration (PGA) is 0.49g. Based on the subsurface information collected from the LOTB sheet included in Appendix A and per Sections 6.1.2 and 6.1.3 of SDC 2.0 (2019c), the onsite soils are classified as “Class S2” soils.

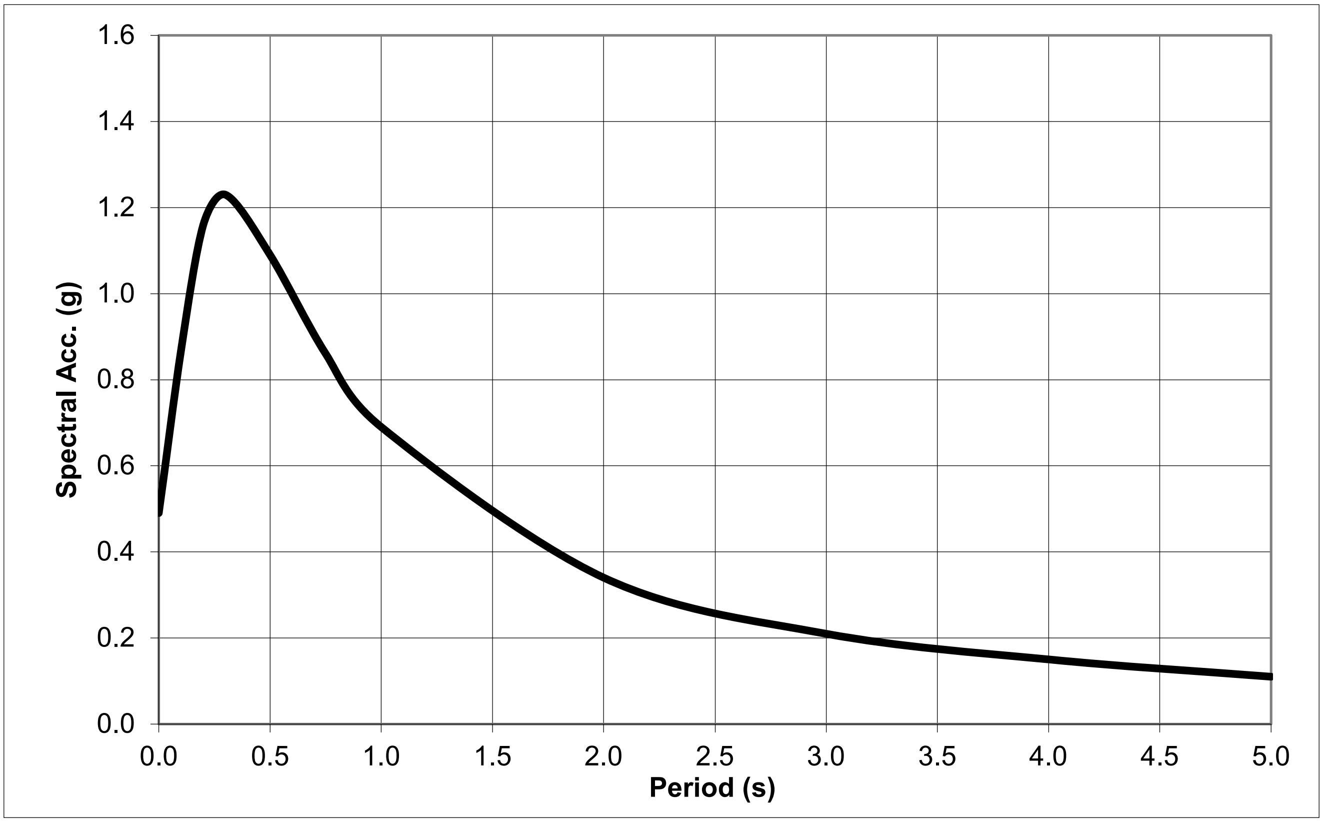
10.2 Liquefaction Potential and Seismically-Induced Settlement

The liquefaction potential screening followed the Caltrans Geotechnical Manual – Liquefaction Evaluation (2020), which used the liquefaction procedure by Youd et al. (2001) with the analysis depth of 70 feet and a factor of safety against liquefaction of 1.0. Based on a design groundwater elevation of +7.7 feet and two site-specific CPTs, results of the analyses indicate that granular materials susceptible to liquefaction were encountered. These potentially liquefiable soil layers are located between El. +8 and -12 feet for both CPTs.

In addition to the reduction in soil strength, liquefaction will also result in seismically-induced settlements. In the liquefiable layers, seismically-induced soil settlements are expected to be up to 4.5 inch. These settlements will generate downdrag forces on the piles, which will be considered in foundation design.

10.3 Ground Rupture

No major faults traverse through the project site. The California Division of Mines and Geology has not identified Alquist-Priolo Fault Zones through the site. Therefore, the risk of ground surface rupture and related hazards at the project site are expected to be low. According to Caltrans Memo To Designers 20-10 (Caltrans, 2013), since the project site does not fall within an Alquist-Priolo Earthquakes Fault Zone or within 1,000 feet of an unzoned fault that is Holocene or younger in age, further fault studies will not be needed.



Design ARS Curve

Latitude: 33.6083 Longitude: -117.9000

Shear Wave Velocity (V_{s30}) = 285 m/s

Design Magnitude (M) = 6.59

Peak Ground Acceleration (PGA) = 0.49g

5% Damping

Spectral Coordinates:

Period (sec)	**Acc.** (g)	**Period** (sec)	**Acc.** (g)
0.00	0.49	1.00	0.69
0.10	0.87	2.00	0.34
0.20	1.16	3.00	0.21
0.30	1.23	4.00	0.15
0.50	1.09	5.00	0.11
0.75	0.86		

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Collins Island Bridge

Design Acceleration Response Spectrum

Figure 6

11.0 GEOTECHNICAL RECOMMENDATIONS

11.1 Bridge Design

11.1.1 Foundation Type

Per Section 10.2, the upper 20 feet of soils is considered liquefiable so spread footing is not suitable for the project site. Pile foundation is considered feasible. Since the seawall in front of the proposed bridge will not be retrofitted or replaced and the wall condition is also in question, secant pile wall abutments are proposed, which is a series of alternating reinforced cast-in-drilled-hole (CIDH) piles and un-reinforced concrete piles. It can serve as both functions of the bridge foundation and seawall, which is similar to the existing bridge.

In addition, to maintain the traffic to Collins Island, a stage construction is proposed to keep a traffic lane open during construction.

11.1.2 Axial Pile Capacity

Load Resistance Factor Design (LRFD) is used for foundation design. The foundation design data sheet and foundation factored design loads were provided by the bridge designers following the latest Caltrans Memo to Designers 3-1 (Caltrans, 2014), and are shown in Table 7 and Table 8, respectively. Note that the axial design is only for the reinforced CIDH piles.

TABLE 7. FOUNDATION DESIGN DATA SHEET

Support No.	Pile Type	Finished Grade Elevation (feet)	Cut-off Elevation (feet)	Pile Cap Size (feet)		Permissible Settlement under Service Load (inch)	Number of Piles per Support
				B	L		
Abut 1	24" CIDH	~ +7.4	+5.9	3	25	1	3
Abut 2	24" CIDH	~ +7.1	+5.6	3	25	1	3

TABLE 8. FOUNDATION FACTORED DESIGN LOADS

Support No.	Service-I Limit State (kips)		Strength/Construction Limit State (Controlling Group, kips)				Extreme Event Limit State (Controlling Group, kips)			
	Total Load Per Support	Perm. Loads Per Support	Compression		Tension		Compression		Tension	
			Per Support	Max. Per Pile	Per Support	Max. Per Pile	Per Support	Max. Per Pile	Per Support	Max. Per Pile
Abut 1	180	109	262	87	0	0	109	36	0	0
Abut 2	180	109	262	87	0	0	109	36	0	0

The axial capacities of CIDH piles were estimated using the computer program SHAFT v2017 (Ensoft, 2017). The axial pile capacities are based on soil resistance only and may be further limited by the pile-head connection details and structural material strength. The skin frictions obtained from Shaft results were reduced using a factor of 0.63 (=2/pi) to consider the efficiency of closely spaced adjacent piles. Only skin friction was included in the axial capacities and end bearing was ignored. The calculated pile tip elevations are presented in Table 9. The pile data table is presented in Table 10. As mentioned above, the pile data table is for the reinforced CIDH piles. The unreinforced concrete piles should be tipping to El. -17 feet, which is 5 feet below the competent materials as shown in. Table 3, for the slope stability purpose.

Since the secant pile abutments are also designed as a backup seawall in case the existing wall is not functioning, the axial capacity above the mudline discussed in Section 8 (El. -9 feet) is ignored for the service and strength limit states. For the extreme case, the downdrag force of 32 kips between the cutoff elevation and the bottom of the liquefiable soils (El. -12 feet) were added to the pile load assuming that the existing seawall is still intact (i.e downdrag force induced from both sides of piles) for the worst scenario.

TABLE 9. FOUNDATION DESIGN RECOMMENDATIONS

Sup. No.	Pile Type	Cut-off El. (feet)	Service-I Limit State Load per Support (kips)	Total Permissible Settlement (inches)	Nominal Resistance (kips)				Design Tip El. (feet)	Spec. Tip El. (feet)
					Strength / Construction		Extreme Event			
					Comp φ=.7	Tens φ=.7	Comp φ=1	Tens φ=1		
Abut 1	24" CIDH	+5.9	180	1	130	0	40	0	-48(a-I) -32(a-II) -19(c)	-48
Abut 2	24" CIDH	+5.6	180	1	130	0	40	0	-48(a-I) -32(a-II) -19(c)	-48

Notes:

(1) Design tip elevations are controlled by: (a-I) Compression (Strength Limit), (a-II) Compression (Extreme Limit), (c) Settlement, (d) Lateral Load.

(2) The Specified Tip Elevation shall not be raised.

(3) Column heading modified from “Required Factored Nominal Resistance” to “Nominal Resistance”.

(4) The lateral pile tip will be determined by the structural designers.

TABLE 10. PILE DATA TABLE

Support No.	Pile Type	Nominal Resistance (kips)		Design Tip Elevation (feet)	Specified Tip Elevation (feet)
		Compression	Tension		
Abut 1	24" CIDH	130	N/A	-48(a) -19(c)	-48
Abut 2	24" CIDH	130	N/A	-48(a) -19(c)	-48

Notes:
(1) Design Tip Elevations are controlled by the following demands: (a) Compression, (b) Tension, (c) Settlement, and (d) Lateral Loads.
(2) The Specified Tip Elevation shall not be raised.
(3) The lateral pile tip will be determined by the structural designers.

11.1.3 Lateral Pile Solutions

Nonlinear soil resistance (p) versus pile deflection (y) curves estimated using the computer program LPILE (Ensoft, 2019a) based on Table 11 were provided to the structural designers to estimate the lateral pile capacity. Both liquefaction and scour (or dredge) are considered in the model. As discussed earlier, the secant pile wall abutment will be designed in case of no existing seawalls in front.

The pile spacing of the reinforced CIDH piles is assumed to be 42 inches, which is based on 3-inch overlapping with 24-inch diameter unreinforced concrete piles. With the assumed pile spacing, a p-multiplier of 0.6 can be used along the longitudinal direction based on the Ensoft Pywall Technical Manual (Ensoft, 2019b). For the liquefied soils, a p-multiplier of 0.07 can be used following the procedure listed in Caltrans Memo to Designer 20-15 (2017) under the seismic conditions.

TABLE 11. LPILE INPUT PARAMETERS

p-y Curve Model	Top of Layer Elevation (feet)	Bottom of Layer Elevation (feet)	Effective Unit Weight (pcf)	Friction Angle (Deg.)	Undrained Shear Strength (psf)	k (pci)	ε_{50}
Abutments (Strength Limit)							
API Sand (O'Neill)	-9	-12	52.6	30	0	35	-
API Sand (O'Neill)	-12	-42	62.6	37	0	110	-
Stiff Clay w/o Free Water (Reese)	-42	-90	62.6	0	4,000	-	0.005
Abutments (Extreme Limit)							
API Sand (O'Neill)[2]	-4	-12	52.6	30	0	35	-
API Sand (O'Neill)	-12	-42	62.6	37	0	110	-
Stiff Clay w/o Free Water (Reese)	-42	-90	62.6	0	4,000	-	0.005

Notes:
(1) A p-multiplier of 0.6 can be used for the LPile analysis along longitudinal direciton
(2) This layer is liquefiable. a p-multiplier of 0.07 should be used for seismic conditions.

11.1.4 Bridge Abutment Wall Earth Pressures

If walls are free to move laterally at the top, a static active lateral earth pressure of 20 psf per foot of depth is recommended in addition to a hydrostatic pressure of 62.4 pcf for the portion of abutment wall above the design mudline described in Section 8.

A uniform lateral pressure due to traffic loading, equivalent to a vertical pressure produced by at least 2 feet of earth with a soil unit weight of 120 pcf, should be added to the above lateral earth pressure. Therefore, for abutment walls that are free to move laterally at the top, the recommended uniform lateral earth pressure is 80 psf.

The seismic earth pressures were estimated following Caltrans design criteria using one third of Caltrans PGA of 0.49g. The seismic incremental earth pressure should be modeled as a triangle with an equivalent fluid pressure of 35 psf per foot of depth, which is a larger of the seismic earth pressures due to 30 degree of sand materials and due to 200 psf of undrained shear strength of liquefiable soil.

11.1.5 Approach Embankments

Settlement and Settlement Period. Based on the profiles provided by the designers, the finish grade and existing grade of the approaches at both abutments are similar. Therefore, we don't expect any embankment settlement. The settlement period is not required.

Global Stability. Global stability analyses were conducted for both static and pseudo-static conditions for potential deep-seated failures below the abutment footing. The analysis was performed using the computer program Slide2 (Rocscience, 2020).

Slope stability analyses were conducted for the static condition including a 2-foot soil surcharge to represent traffic loading. In accordance with Caltrans guidelines (2014a), stability analysis for the seismic condition was performed using the pseudo-static approach with a seismic coefficient of 0.163, which is equal to one-third PGA.

Under the seismic conditions, both cases of 30 degree of sand materials and 200 psf of liquefiable soil were checked for the liquefiable layer (upper 20 feet).

According to the results of the analyses, the proposed models meet the minimum required factor-of-safety for deep-seated failure of 1.5 for the static condition and 1.1 for the pseudo-static condition per Caltrans guidelines (2014a).

11.2 Design of Seawalls

The proposed seawalls are located in front of the existing seawalls. Design of seawalls is assumed in case of no existing seawalls. The seawalls are proposed using either sheet piles or king piles with sheet piles. At the time of preparing this report, the pile type is still under evaluation.

Please note that the sheet piles should be embedded at least 5 feet below the competent soils, which is similar to the bridge unreinforced piles, if the king piles with sheet piles are used.

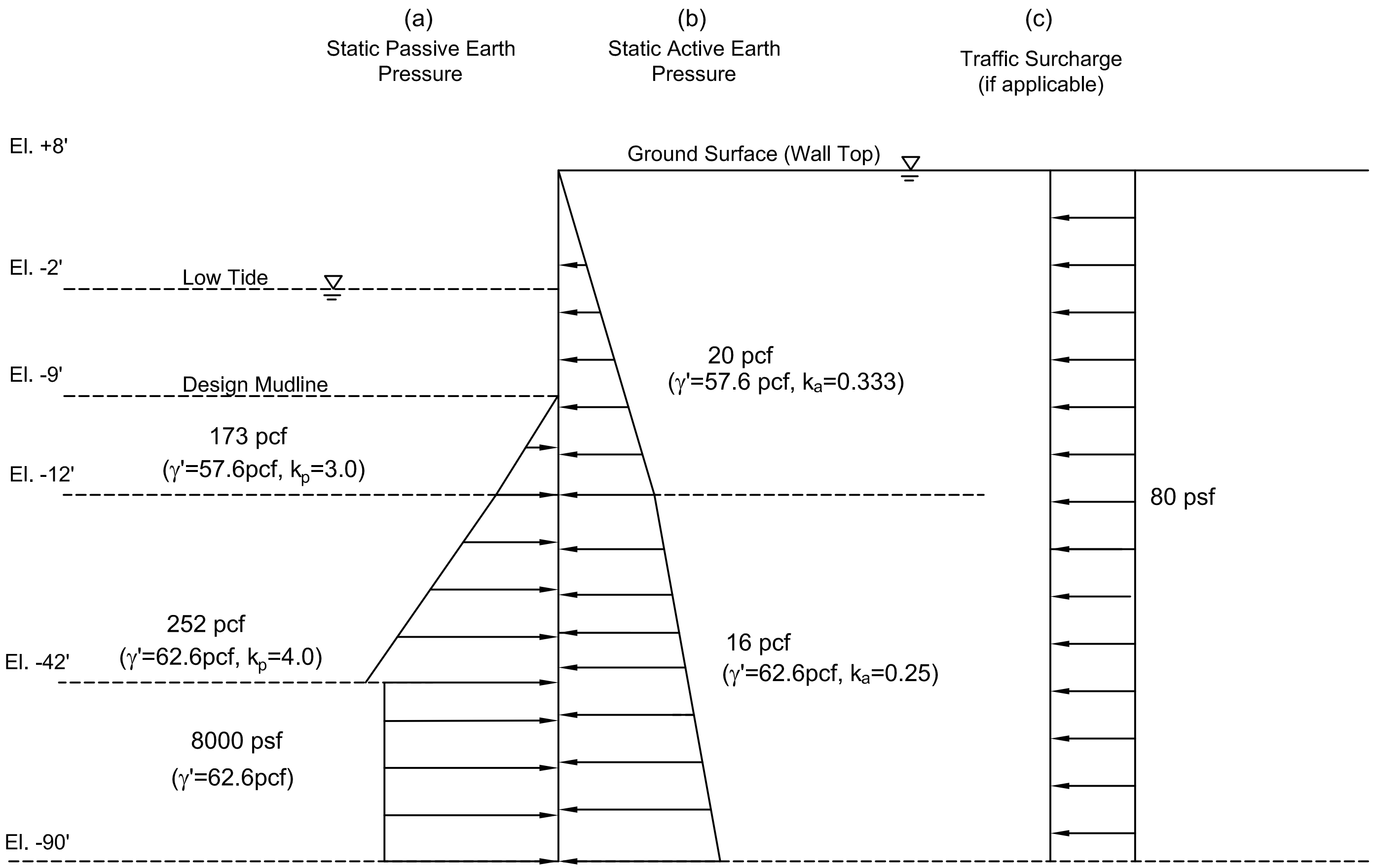
11.2.1 Lateral Earth Pressures

The lateral pressure diagrams for the seawalls are shown in Figure 7 and Figure 8 for the static and seismic conditions, respectively. The walls are assumed to be free to move laterally at the top and under undrained condition. In addition to the pressures shown in Figure 7 and Figure 8, the hydraulic static pressure of 62.4 psf should be added.

The seismic earth pressures were estimated following Caltrans design criteria using one third of Caltrans PGA of 0.49g. The seismic incremental lateral earth pressure of 35 psf per foot can be used as shown in Figure 8, which is a larger of the seismic earth pressures due to 30 degree of sand materials and due to 200 psf of undrained shear strength of liquefiable soil.

11.2.2 Passive Resistance

The lateral passive diagrams along the seawall are shown in Figure 7 and Figure 8. The undrained shear strength is used for the liquefiable soils in front of the seawalls. The full passive resistance is expected to be mobilized at a horizontal movement of 5 percent of the embedment depth, measured from the lowest adjacent grade to the bottom of the pile/wall.



Notes:

(1) The above earth pressure can be directly used for sheet pile walls.

(2) For the king piles with sheet piles,

(2a) Above design grade, multiply active earth pressure and traffic surcharge (if applicable) by center-to-center king pile spacing.

(2b) Below design grade, multiply active earth pressure and traffic surcharge (if applicable) by king pile size.

(2c) Below design grade, multiply passive earth pressure by king pile size with a arching factor of pile spacing to pile size (up to 2.5).

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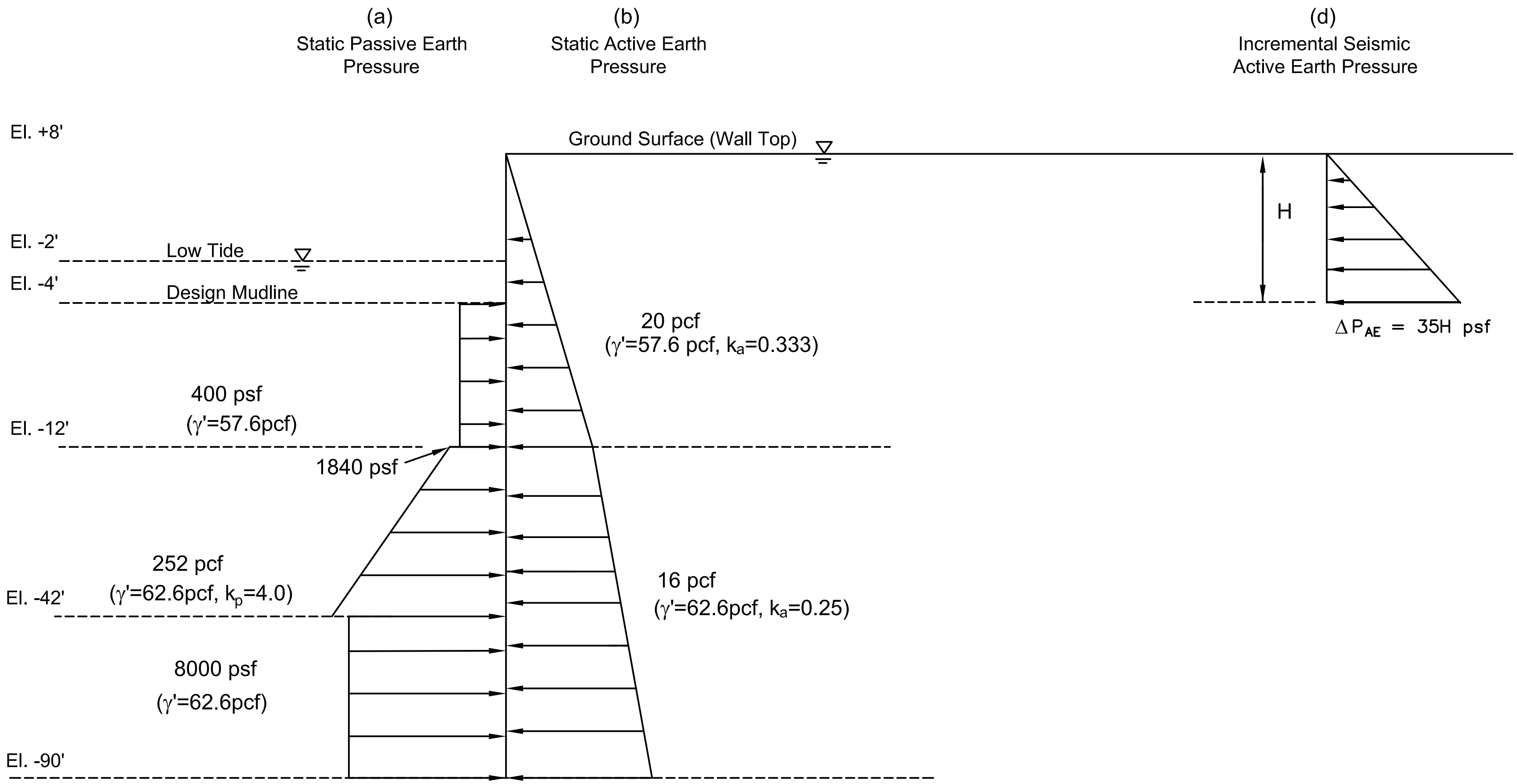
Lateral Earth Pressure Diagram for Seawalls (Static Condition)

FIGURE 7



Notes:

(1) The above earth pressure can be directly used for sheet pile walls.

(2) For the king piles with sheet piles,

(2a) Above design grade, multiply active earth pressure and traffic surcharge (if applicable) by center-to-center king pile spacing.

(2b) Below design grade, multiply active earth pressure and traffic surcharge (if applicable) by king pile size.

(2c) Below design grade, multiply passive earth pressure by king pile size with a arching factor of pile spacing to pile size (up to 2.5).

Earth Mechanics, Inc. Geotechnical and Earthquake Engineering	Collins Island Bridge and Seawalls Project No. 23-115 / Date: October 2023	Lateral Earth Pressure Diagram for Seawalls (Seismic Condition) FIGURE 8

12.0 NOTES FOR SPECIFICATIONS AND CONSTRUCTION

12.1 Earthwork

Earthwork should be performed in accordance with Section 19 of the Caltrans Standard Specifications (2023b). Appropriate measures should be taken to prevent damage to adjacent existing structures and utilities. Any design and construction of temporary sloping, sheeting, or shoring should be made the contractor's responsibility. It should be noted that it is the responsibility of the contractor to oversee the safety of the workers in the field during construction. The contractor shall conform to all applicable occupational and health standards, rules, regulations, and orders established by the State of California. In addition, other State, County, or Municipal regulations may supersede the recommendations presented in this section. If a trench shoring design and safety plan is required, the geotechnical consultant should review the plan to confirm that recommendations presented in this report have been applied to the design.

12.2 Groundwater Control

The high tide water elevation is located at El. +7.7 feet as shown in the general plan. Groundwater will be encountered during construction of the CIDH piles. Contractor should be fully prepared for a wet construction when bidding and selecting construction equipment and methods.

12.3 CIDH Pile Construction

Construction of CIDH piles should follow Section 49-3.02 of the Caltrans Standard Specifications (2023b). Per Caltrans Memo To Designers 3-1 (2014b), a minimum of 3-inch of concrete cover over reinforcement should be provided to improve the construction of the 24-inch diameter CIDH piles. Very challenging CIDH pile construction is anticipated due to a wet construction and high groundwater. The project site is also located in a tidal zone and marine environment. Difficult drilling conditions are anticipated because the project site is underlain by saturated, caving soils with localized dense and hard soil layers. The bedrock has high SPT blowcounts; drilling and excavating are anticipated to be slow and difficult.

For a wet pile construction, the contractor is required to maintain a minimum 10-foot head of slurry over the piezometric surface at all times during CIDH pile construction. This minimum head of slurry is required to prevent a "quick" condition during the CIDH pile excavation. Water is not allowed as slurry, even if full length casing is used during pile excavation. As a standard Caltrans practice for "wet" construction, PVC tubings must be installed within the reinforcement cage of the CIDH pile for gamma-gamma testing per Caltrans Memo-To-Designers 3-1 (2014b).

Soil caving can be controlled using a temporary casing or slurry. The use of temporary casing is left to the contractor's discretion. Temporary casings should have an outer diameter equal to or exceeding the pile diameter, and should be placed tight in hole. Temporary casing installation may be difficult due to the presence of dense and hard soil layers. The temporary casing should be pulled as the concrete is being poured while always maintaining at least a 5-foot head of concrete inside the temporary casing.

The Contractor should be required to drill the bottom of the shaft boring with a clean-out bucket to ensure adequate removal of loose soils. The shaft borings should be inspected and approved by the Resident Engineer prior to installation of reinforcement. Extreme care in drilling, placement of steel, and the pouring of concrete is essential to avoid excessive disturbance of pile boring walls. Concrete placement by pumping or tremie tube to the bottom of the pile borings will be required. Sufficient space should be provided in the pile reinforcing cage during fabrication to allow the insertion of a tremie tube for concrete placement.

The pile reinforcing cage should be installed and the concrete pumped, immediately after drilling is completed. No borings should be drilled immediately adjacent to another pile until the concrete in the other pile has attained its initial set.

In the event that any boring becomes bell-shaped and cannot be advanced due to severe caving, all loose material should be removed from the bottom of the boring and the caved region filled with a low strength sand-cement slurry. Drilling may continue when the slurry has reached its initial set.

The above information is not meant to direct the pile contractor to excavate and build the CIDH piles; any construction means and methods remain the responsibility of the pile contractor.

12.4 Sheet Piling

Piles should be installed in accordance with Section 49-2 of the Caltrans Standard Specifications (2023b). Piles should be driven at least to the specified tip elevation shown. Piles that are materially out of line should be removed and re-driven or replaced.

Contractors should review the LOTB sheet (Appendix A) and follow the requirements in the Caltrans Standard Specification (2023b) in selecting the pile driving equipment.

12.5 Review of Construction Plans

Recommendations contained herein are based on current design information. The geotechnical consultant should review the final construction plans and specifications in order to confirm that the general intent of the recommendation contained in this report have been incorporated into the final construction documents. Recommendations presented in this report may require modification or additional recommendations may be necessary based on the final design.

12.6 Geotechnical Observation and Testing

Qualified geotechnical personnel should perform inspections and testing during the following stages of construction:

- Shoring installation, if necessary.
- Construction of CIDH piles.
- Construction of sheet piles / king piles with sheet piles.
- When any unusual subsurface conditions are encountered.

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APPENDIX A

LOG-OF-TEST-BORING SHEET

NOTES:

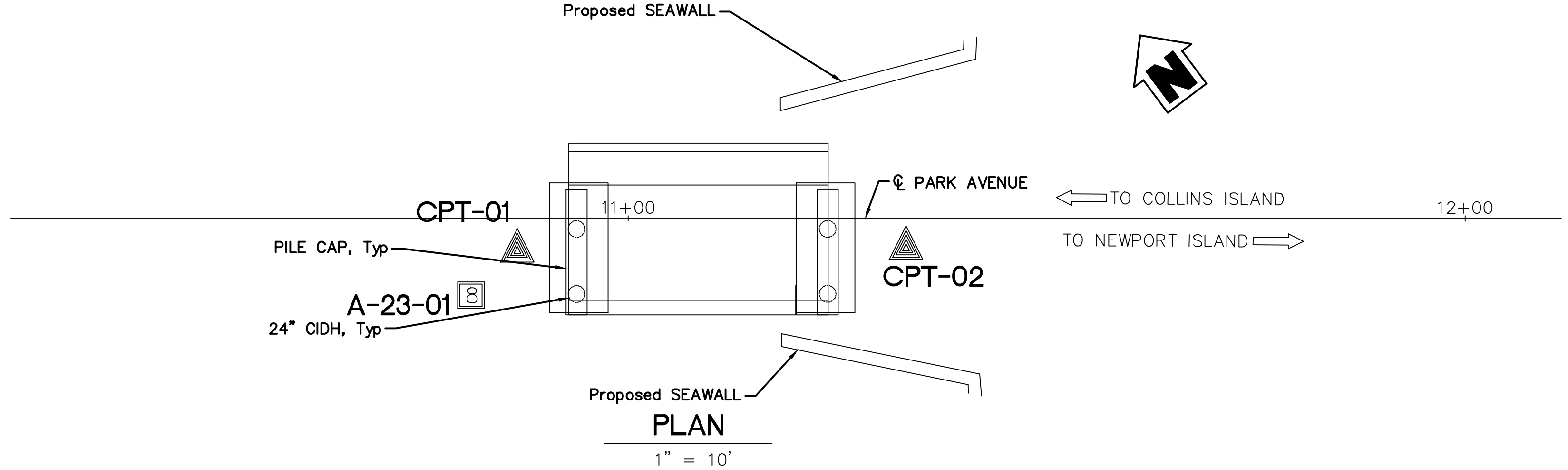
(1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).

(2) 1.4" samples were taken using a Standard Penetration Sampler and 2.4" samples were taken using a California Modified Sampler.

(3) An automatic trip hammer system consisting of a hammer weight of 140 lbs falling a distance of 30" was used to advance samplers.

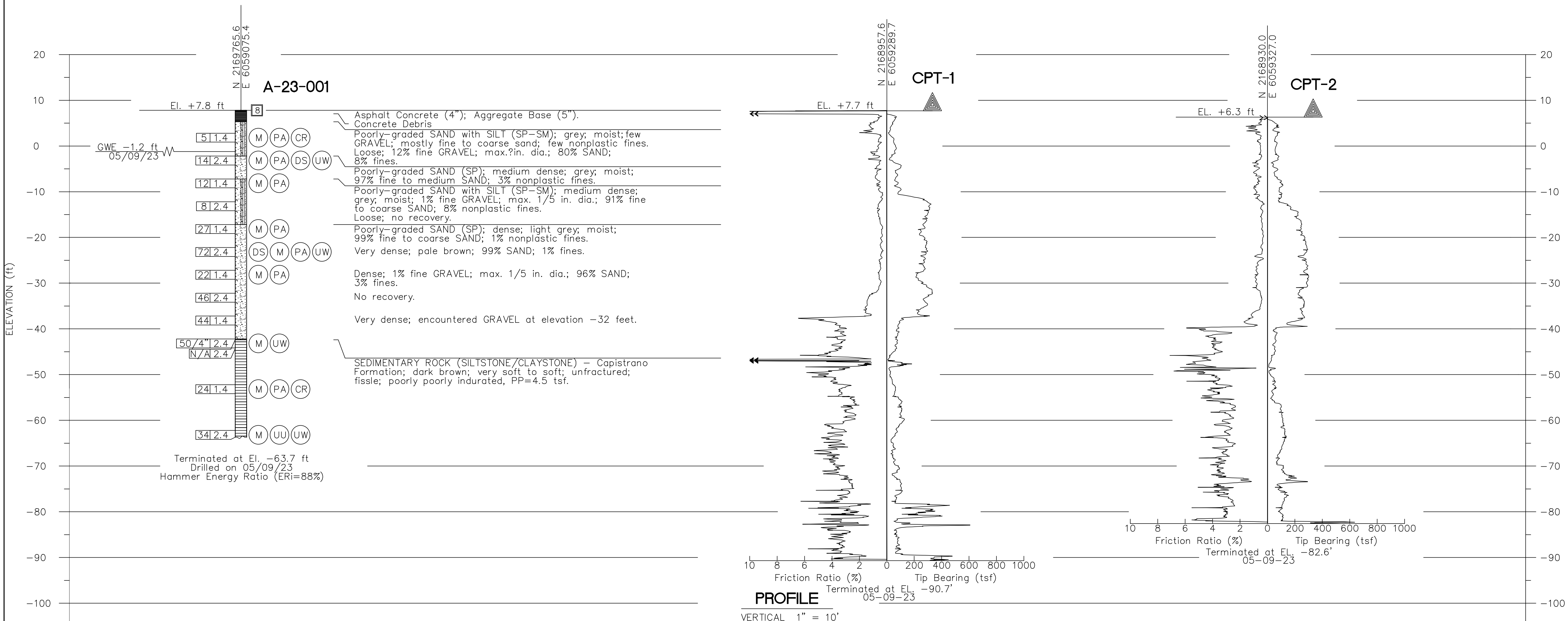
(4) For Soil Legend, see Caltrans Standard Plans A10F and A10G.

(5) Strong odor of petroleum/hydrocarbon was encountered in the soil samples collected through out the project site.



PLAN

1" = 10'



PROFILE

VERTICAL 1" = 10'

Earth Mechanics, Inc.
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FOUNTAIN VALLEY, CA 92708.
P: 714-751-3826

REGISTERED PROFESSIONAL ENGINEER — NO. GE 3123 — EXP. 9-30-2023 — GEOTECHNICAL — STATE OF CALIFORNIA

REVIEWED:		NO.	DATE	DESCRIPTION OF REVISIONS	APPROVED
(ALAHESH) A. THURAIRAJAH GE 3123 DESIGN ENGINEER'S NAME					
DESIGNED: MH	DRAWN: MH				
CHECKED: AT	DATE: 10/18/23				

REVIEWED:

[NAME] RCE XXXXX
CITY PROJECT MANAGER

DATE

LOG OF TEST BORING 1 OF 1
COLLINS ISLAND BRIDGE

CITY OF NEWPORT BEACH
PUBLIC WORKS DEPARTMENT

X-XXXX-X

SHEET XX OF XX

X:\Projects\2023\23-115 - MBI, Collins Island Bridge\Field Investigation\LOTB\CollinsIsland_LOTBs_rev.dwg 10/23/23 - 9:59am M.Hoshiyama

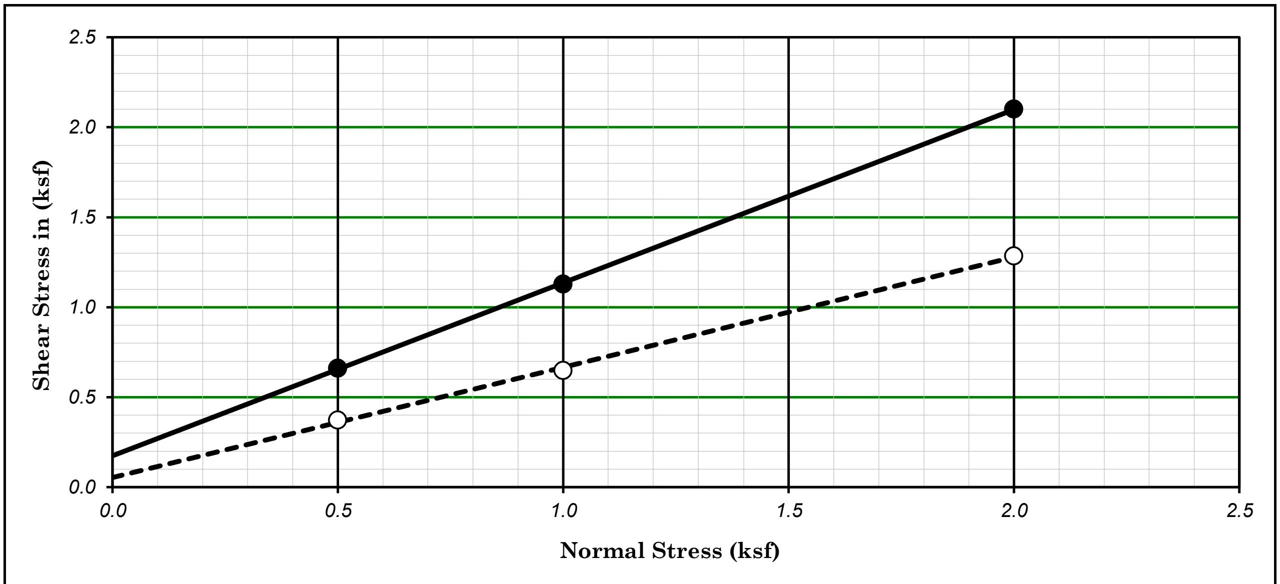
APPENDIX B

LABORATORY TEST RESULTS

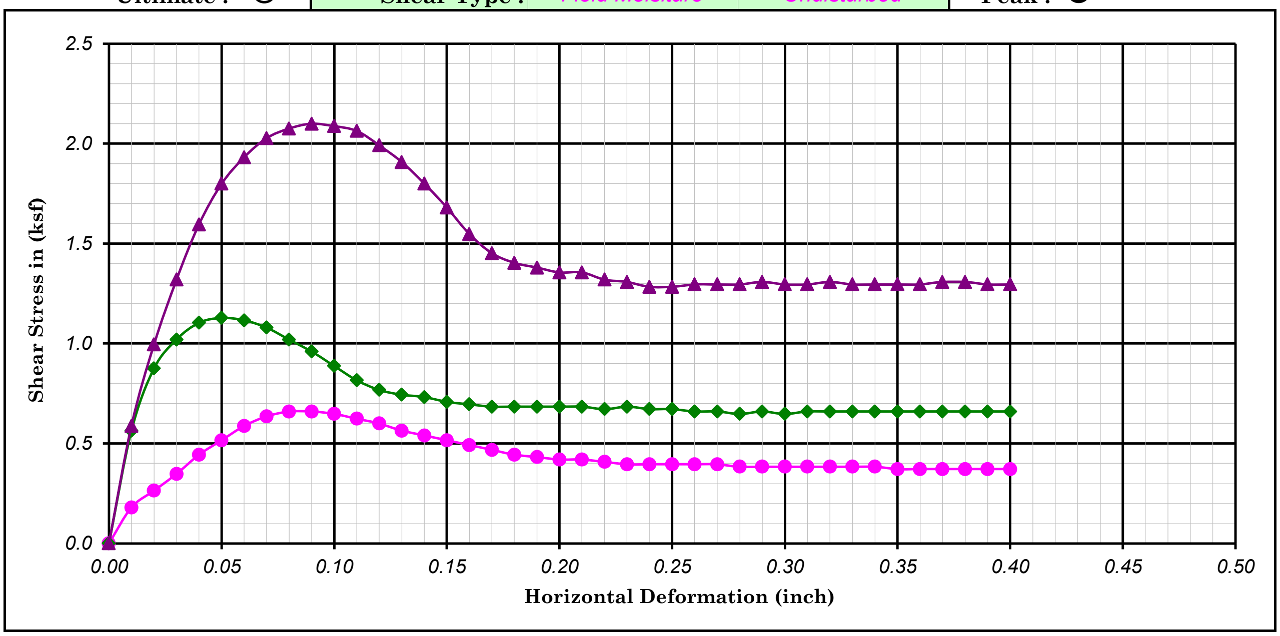
TABLE B-1 SUMMARY OF LABORATORY TEST RESULTS

Project No. : *23-115* **Project Name :** MBI, Collins Island Bridge

Boring No .	Sample No.	Sample Depth (ft)	Soil Identification (group symbol) ASTM D2488/D2487	Moisture Content ASTM D2216 (%)	Total Unit Weight ASTM D2937 (pcf)	Pocket Penetrometer (tsf)	Torvane Shear (tsf)	Grain Size Distribution GR:SA:FI (%)	Sand Equivalent (CT-217)	Atterberg Limits ASTM D4318 (LL/PL/PI)	Soil-Minimum Resistivity CT-643 (ohm-cm)	Soil-pH CT-643	Soil-Soluble Sulfate Content CT-417 (ppm)	Soil-Moisture Free Chloride Content CT-422 (ppm)
A-23-001	*S-1*	5	SP-SM	30.6				12:80:8			140	8.3	1680	1030
A-23-001	*D-2*	10	SP	20.7	125.8			0:97:3						
A-23-001	*S-3*	15	SP-SM	25.5				1:91:8						
A-23-001	*S-5*	25	SP	18.9				0:99:1						
A-23-001	*D-6*	30	SP	17.3	125.1			0:99:1						
A-23-001	*S-7*	35	SP	17.4				1:96:3						
A-23-001	*D-10*	50	SP-SM to CL	20.7	116.6	>4.5								
A-23-001	*S-11*	60	OH	52.2						89/52/37	91	7.3	4068	565
A-23-001	*D-12*	70	OH	71.0	90.5	>4.5								



Ultimate : ○	Shear Type :	Field Moisture	Undisturbed	Peak : ●



Boring No. : A-23-001	Strength Intercept (C) :	0.17	(ksf)	Peak	0.05	(ksf)	Ultimate
Sample No. : D-2		8.33	(kPa)		2.59	(kPa)	
Depth (ft/m) : 10.0 / 0.00	Friction Angle (ϕ) :	43.88	Degree		31.47	Degree	

Description : Dark gray, Poorly graded SAND (SP)

Shear Rate (inch/minute) : 0.02

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DRY DENSITY (kN/m^3)	VOID RATIO	NORMAL STRESS (ksf)	NORMAL STRESS (kPa)	PEAK STRESS (ksf)	PEAK STRESS (kPa)	ULTIMATE STRESS (ksf)	ULTIMATE STRESS (kPa)
●	20.67	105.25	16.57	0.60	0.50	23.94	0.66	31.60	0.37	17.81
◆	20.95	105.15	16.55	0.60	1.00	47.88	1.13	54.01	0.65	31.03
▲	21.00	107.10	16.86	0.57	2.00	95.76	2.10	100.55	1.28	61.48

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MBI, Collins Island Bridge

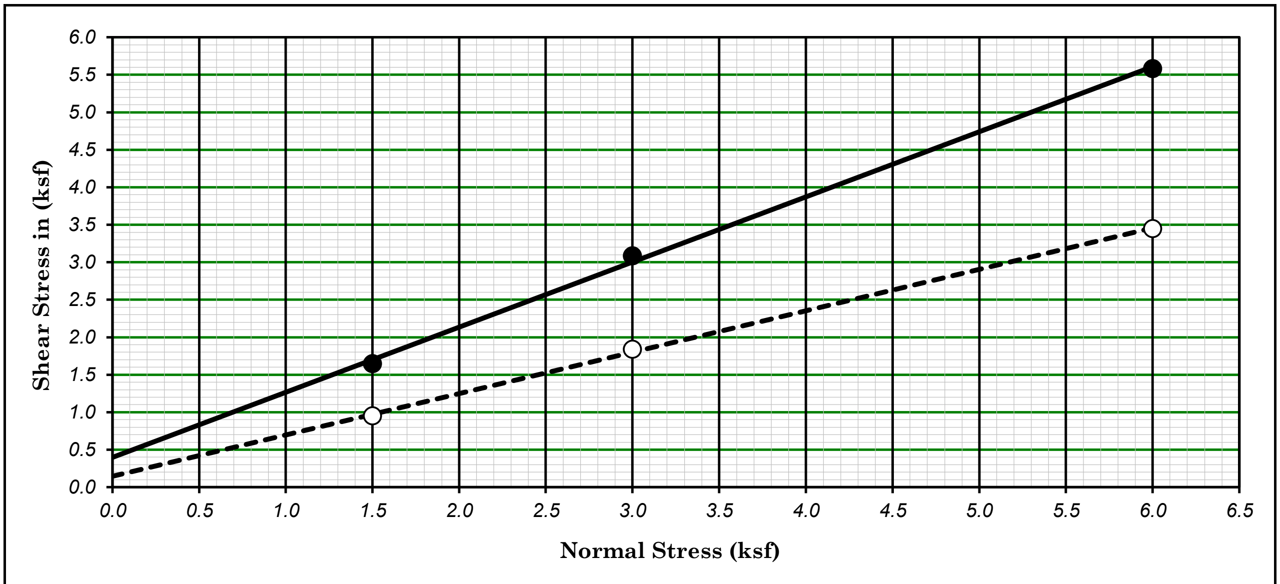
DIRECT SHEAR TEST

(ASTM D-3080)

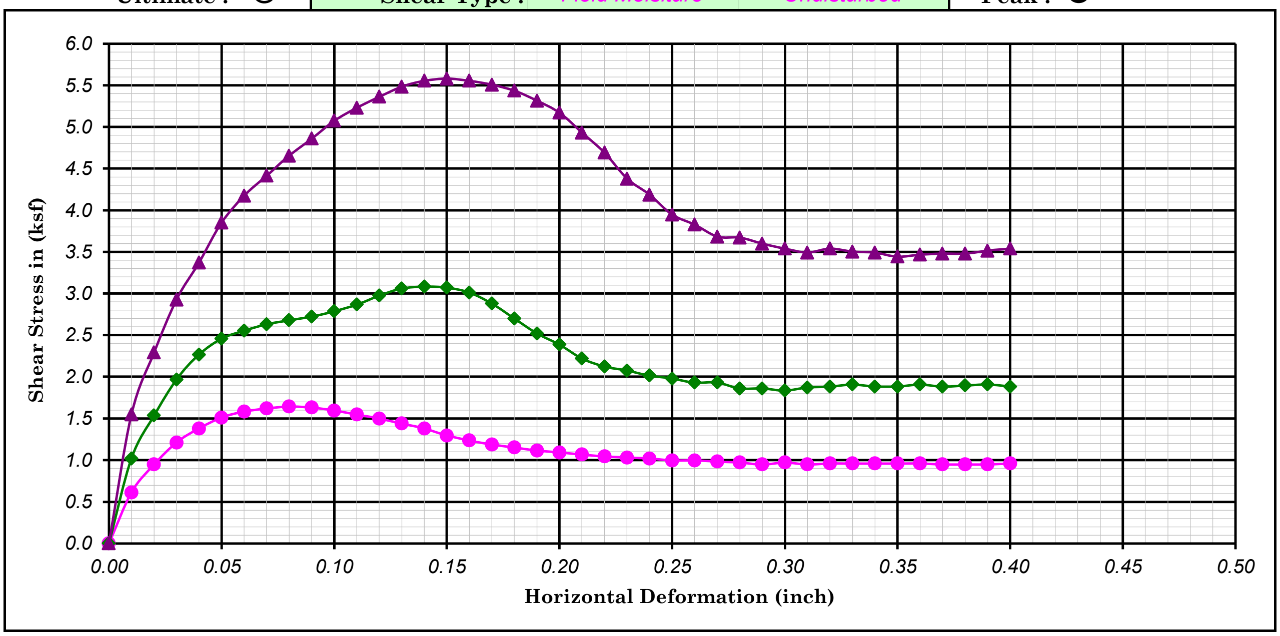
Project No. : 23-115

Date : 05/22/23

Figure No.



Ultimate : ○ | Shear Type : *Field Moisture* | *Undisturbed* | Peak : ●



Boring No.	: A-23-001		Strength Intercept (C) :	0.40	(ksf)	Peak	0.14	(ksf)	Ultimate	
Sample No.	: D-6			18.96	(kPa)		6.89	(kPa)		
Depth (ft/m)	: 30.0	0.00	Friction Angle (ϕ) :	40.98	Degree		28.90	Degree		
Description	: Brown, Poorly graded SAND (SP)						Shear Rate (inch/minute) :	0.02		

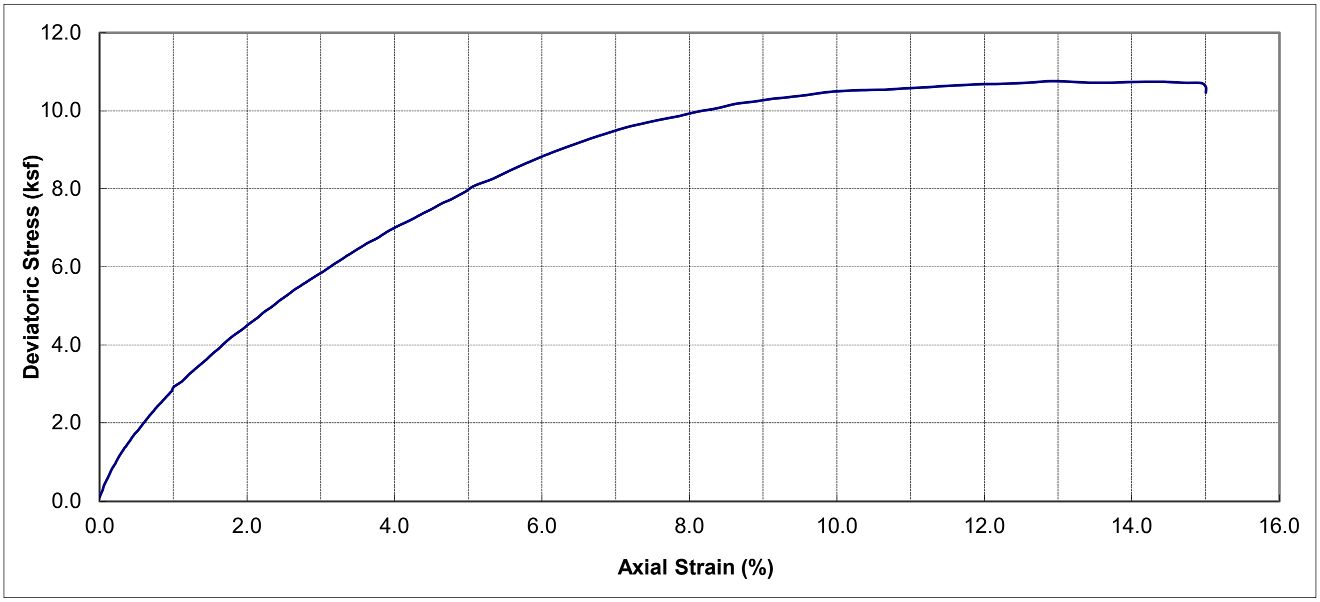
SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DRY DENSITY (kN/m³)	VOID RATIO	NORMAL STRESS (ksf)	NORMAL STRESS (kPa)	PEAK STRESS (ksf)	PEAK STRESS (kPa)	ULTIMATE STRESS (ksf)	ULTIMATE STRESS (kPa)
●	17.26	104.28	16.41	0.62	1.50	71.82	1.64	78.71	0.95	45.39
◆	17.14	104.92	16.51	0.61	3.00	143.64	3.08	147.66	1.84	87.91
▲	17.38	107.54	16.93	0.57	6.00	287.28	5.58	267.17	3.44	164.90

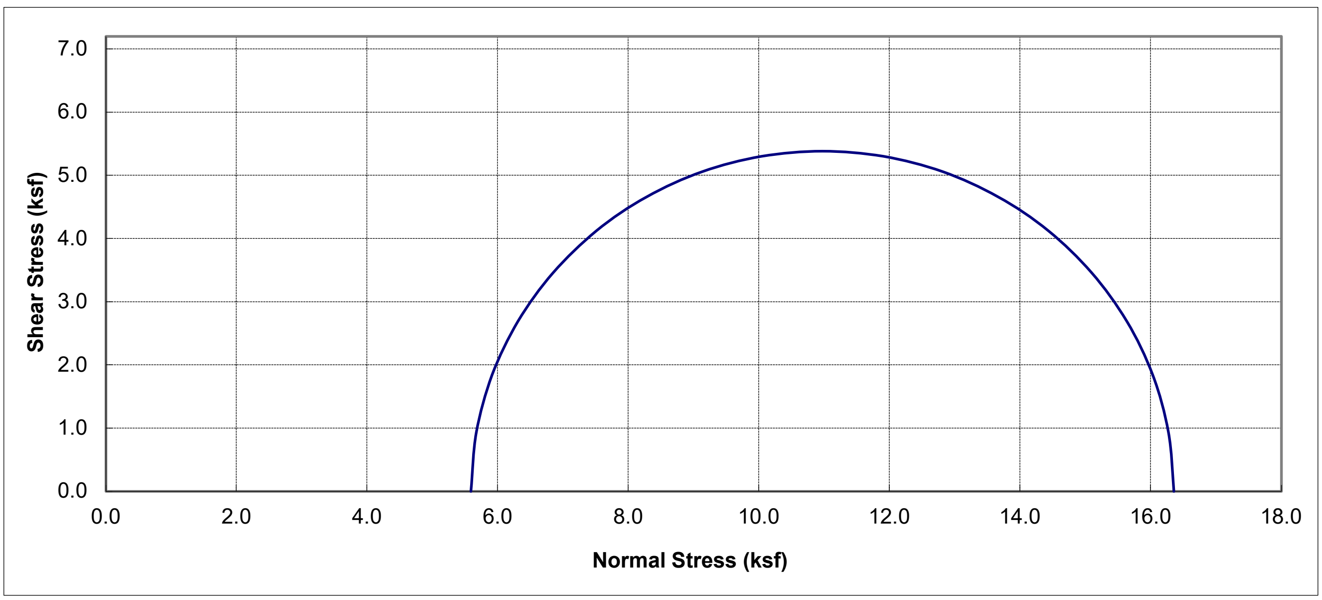
Earth Mechanics, Inc.
Geotechnical and Earthquake Engineering

MBI, Collins Island Bridge

DIRECT SHEAR TEST
(ASTM D-3080)

Project No. : 23-115 | Date : 05/22/23 | Figure No.





Boring No.	Sample No.	Depth (ft)	Soil Type	Dry Density (pcf)	Moisture Content (%)	Conf. Stress (ksf)	Max Dev. Stress (ksf)	Initial Saturation (%)
A-23-001	D-12	70	Dark olive, Organic SILT (MH)	54.5	70.96	5.59	10.76	91.7

Earth Mechanics, Inc. Geotechnical and Earthquake Engineering		MBI, Collins Island Bridge
Project No. : 23-115	Date : 05/23/23	UNCONSOLIDATED UNDRAINED TEST (ASTM D2850) Figure No. :

October 11, 2023

Robert Stein, PhD, PE
Assistant City Engineer
City of Newport Beach
100 Civic Center Drive
Newport Beach, CA 92660

RE: PALEONTOLOGICAL RESOURCES ASSESSMENT FOR THE COLLINS ISLAND BRIDGE REPLACEMENT PROJECT, NEWPORT BEACH, ORANGE COUNTY, CALIFORNIA

Dear Dr. Stein:

In support of the proposed Collins Island Bridge Replacement Project (project), Michael Baker International staff conducted a fossil locality search at the Natural History Museum of Los Angeles County (NHMLAC), literature and geologic map review, and a paleontological resources sensitivity analysis. These efforts identified the paleontological sensitivity of the project area and determined whether the project could result in significant impacts to paleontological resources in accordance with the California Environmental Quality Act (CEQA). Methods, results, and recommendations are summarized below; figures are provided in **Attachment 1**.

PROJECT SITE

The project site is located in the City of Newport Beach in Orange County, California. The project site is the Waters Way Bridge (No. 55C-0265), colloquially known as the Collins Island Bridge, and its immediate vicinity on Balboa Island in Newport Bay. Collins Island is located on the western tip of Balboa Island and is connected to the greater Balboa Island via the Collins Island Bridge. Regional access to the project site is provided via State Route 1 (SR-1; Pacific Coast Highway) and local access to the site is provided via Marine Avenue (across the Balboa Island North Channel), and North Bay Front and Park Avenue on Balboa Island (**Figure 1**). The project site is within Section 35 of Township 6 South and Range 10 West, San Bernardino Baseline and Meridian of the Newport Beach OE S, California 7.5-minute US Geological Survey (USGS) topographic quadrangle (**Figure 2**).

PROJECT DESCRIPTION

The project includes three major components: 1) bridge replacement, 2) seawall improvements, and 3) future pump station accommodations.

Bridge Replacement: The proposed new bridge would be designed to be a total of 20 feet and 6 inches in width to accommodate one vehicle travel lane that is 13 feet and 9 inches wide, one 4-foot-wide sidewalk, and concrete barriers on each side to provide protection from projected sea level rise. The bridge would be 31 feet in length spanning over existing concrete sheet pile

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bulkheads. The existing bridge slope along the roadway and sidewalk bridge approaches on both sides of the bridge exceed 5 percent. Therefore, the project includes adjusting the profiles to comply with Americans with Disabilities Act (ADA) standards. Landscaped areas and the bridge monument would be improved to increase sight distance along the adjacent walkways to increase pedestrian safety. A new stop sign and limit line would be added at the intersection on both ends of the bridge.

Additionally, street, sidewalk, and landscaping improvements are proposed on the Balboa Island side along the Bay Front sidewalk and Park Avenue eastward until the alley. Anticipated improvements include monument sign construction, irrigation, paving, and landscaping.

Seawall Improvements: The project includes increasing the height of existing seawalls adjacent to the bridge to protect properties from water levels associated with high tides and storm surges and anticipated future water surface elevation increases due to climate change. Currently, most seawalls along Collins Island Bridge and the Bay Front sidewalk consist of concrete sheet pile bulkheads with a concrete cap (coping) elevation of approximately 9 feet North American Vertical Datum of 1988 (NAVD 88). The proposed seawall improvements would be designed to have a top of wall coping elevation of 11 feet NAVD 88 with a future cap extension elevation up to 14 feet NAVD 88.

To maintain consistency between Collins Island and Balboa Island, existing seawalls along the Bay Front sidewalk would also be improved to meet ADA requirements and to accommodate future sea level rise. The Bay Front sidewalks adjacent to the new proposed seawalls would be raised to provide a minimum of 42 inches from sidewalk to top of coping.

The new seawalls would be designed to allow access to existing boat ramps and docks. However, certain docks would be temporarily relocated during construction activities. Where possible, the existing concrete sheet pile bulkhead system would remain in place to reduce disturbance and associated environmental impacts. In the case of Bay Front sidewalk seawall improvements, new steel sheet piles would be placed seaward from the existing concrete sheet piles. A new sidewalk and parapet cap would provide seawall protection.

Future Pump Station Accommodations: The City is currently in the process of designing a new stormwater pump station on Park Avenue near the Collins Island Bridge as part of a separate project. The pump station is designed to have discharge outlets located near the east abutment of the Collins Island Bridge (Waters Way Bridge [No. 55C-0265]). As such, given that the project and pump station project are being designed concurrently, the project includes pump station accommodations to convey anticipated stormwater outflow into the bay adjacent to the new bridge. Specifically, weir structures would be constructed adjacent to the proposed seawalls along the east abutment of the bridge to control the rate of stormwater outflow. In addition, portions of the future pump station outlet pipes that connect to the weir structure are proposed within this project. Two outlet pipes are proposed on the northern side of the bridge and two outlet pipes are proposed on the southern side of the bridge. It should be noted that while the pump station project is being designed by the City concurrently with the project, the pump station project is not a part of the project and would be approved separately.

GEOLOGIC SETTING

California is divided into 11 geomorphic provinces, each defined by unique geologic and geomorphic characteristics. The project site is located along the central coastal portion of the Peninsular Ranges geomorphic province, distinguished by northwest-trending mountain ranges and valleys following the branching San Andreas fault. This geomorphic province also includes physiogeographic features such as the Los Angeles Basin, the southern members of the Channel Islands, and the continental shelf (CGS 2002). The Peninsular Ranges province crosses several counties, as well as Baja California. The Pacific Ocean borders it to the west, the Transverse Ranges geomorphic province to the north, and the Colorado Desert geomorphic province to the east. The Peninsular Ranges batholith dominates the Peninsular Ranges.

The geology of Newport Beach has been mapped by Morton and Miller (2006) at a scale of 1:100,000. Geologic units underlying the project area have been mapped as late Holocene-aged very young estuarine deposits (Qes of Morton and Miller 2006). Deposits from the Holocene epoch (less than 11,700 years ago) can contain remains of animals and plants; however, only those from the middle to early Holocene (older than about 5,000 radiocarbon years) are considered scientifically important or significant (SVP 2010). Less than 3 miles from the project site, Pliocene- to Pleistocene-age localities have also been mapped (Palos Verdes Sand and Fernando Formation) (**Tables 1** and **2**). Soils of the project site are mapped as Beach sand (hclq) (NRCS 2023).

PALEONTOLOGICAL RESOURCES IDENTIFICATION METHODS

The records search results, literature review, and paleontological sensitivity analysis are presented below.

RECORDS SEARCHES AND LITERATURE REVIEW

The NHMLAC completed a paleontology collection records search for locality and specimen data on August 20, 2023. The results of that search are included in **Attachment 2**. The records search identified 12 known fossil localities in the NHMLAC's collection in the vicinity of the project site (**Table 1**). Pliocene- and Pleistocene-age marine deposits have yielded scientifically important fossils, including sharks, ducks, horses, mammoths, and invertebrates, within 3 miles of the project site.

Table 1: NHMLAC Paleontological Records Search Results

Locality Number	Distance to Project Site	Formation	Taxa	Depth
LACM VP 5466	~ 0.5 miles NE	Palos Verdes Sand (Pleistocene)	Horse (*Equus*)	Unknown
LACM IP 25839	~ 0.5 miles NE	Palos Verdes Sand (Pleistocene)	Invertebrates including: *Eulithidium, Flossaulax, Ostrea, Donax, Callianax, Mitrella, Chama, Balcis, Strioterebrum, Melampus, Amphissa, Aesopus, Laevicardium, Bulla, Crepidula, Dentalium, Leptopecten, Tellina*	Unknown
LACM IP 31435, 4760	~ 0.75 miles SE	Palos Verdes Sand (Pleistocene)	Invertebrates including: bivalves (*Leukoma, Ostrea, Crepidula, Saxidomus, Tresus, Leptopecten, Macoma, Lucinisca, Brachidontes, Tellina*); gastropods (*Caesia, Pseudomelatoma, Callianax*); barnacle (Balanidae); scaphopod (*Dentalium*)	Unknown
LACM VP 4254; LACM IP 17103, 17104	~ 1.5 miles E	Palos Verdes Sand (Pleistocene)	Duck (*Chendytes*); saltwater clam (*Chama, Septifer, Epilucina*); mussel (*Mytilus*); sponge trace (*Entobia*); feeding trace (*Oichnus*); oyster (*Ostrea*); turban snail (*Megastraea*); limpet (*Lottia*)	Unknown
LACM VP 3408	~ 2 miles NE	Fernando Formation (Pliocene to Pleistocene)	Shark (*Charcharodon, Carcharocles, Alopias*); fragmentary marine mammal bones	Unknown
LACM VP 3407, 4426; LACM IP 71, 5627	~ 3.3 miles NE	Palos Verdes Sand (Pleistocene)	Mammoth (*Mammuthus*); uncatalogued birds, fish, mammals, and invertebrates	Surface

Formation ages from National Geologic Map Database (2023)

Additionally, Michael Baker International conducted a supplemental investigation within 3 miles of the project site using the following online sources:

- University of California Museum of Paleontology Locality Search (UCMP 2023)

- San Diego Natural History Museum Collection Database (SDNHM 2023)
- The Paleobiology Database (PBDB 2023)

The supplemental investigation identified no additional fossil-bearing localities within the project site. Fourteen localities from Pleistocene-aged geologic formations (Palos Verdes Sand or unknown sediments) were identified within 3 miles of the project site. Nine additional localities from the Palos Verdes Sand have been recorded in the SDNHM database, though their exact distance to the project site is unknown. The UCMP database records numerous localities from Holocene and Recent Quaternary sediments using search terms such as “Balboa Bay” and “Newport Beach,” though their exact distance to the project site is unknown. The records searches were limited to data available online (**Table 2**).

Table 2: Supplemental Paleontological Records Search

Locality Number	Distance to Project Site	Formation	Taxa	Depth
81919 (PBDB)	~0.5 miles W	Unknown (late Pleistocene)	*Eumetopias jubatus* (eared seal)	Unknown
160361, 219032 (PBDB)	~1 mile SE	Palos Verdes Sand (late Pleistocene)	Fish (sharks, wrasses, sculpins, cusk-eels, perches), Invertebrates (barnacles, crabs, polychaete worms brachiopods, bryozoans, sea urchins, sea stars, bivalves, gastropods, scaphopods, chitons)	Unknown
219029, 219030 (PBDB)	~1.5 miles N	Palos Verdes Sand (late Pleistocene)	Fish (sharks), Invertebrates (bryozoans, crabs, bivalves, gastropods, scaphopods, chitons)	Unknown
226458 (PBDB)	~2 miles W	Palos Verdes Sand (late Pleistocene)	Crabs	Unknown
96930, 96935–96939 (PBDB)	~2 miles NE	Unknown (late Pleistocene)	Invertebrates (bivalves, gastropods, barnacles, sea stars, scaphopods)	Unknown
219855, 226567 (PBDB)	~3 miles NE	Unknown (Pleistocene)	Cancridae (crabs), Myctophidae (lLanternfish)	Unknown
P1268 (UCMP)	Unknown (Balboa Bay)	Unknown Holocene sediments	Pollen samples	Unknown

Locality Number	Distance to Project Site	Formation	Taxa	Depth
E6100, 6127, 6210, 6211, 6215, 6216, 6458, 6512, 8281 (UCMP)	Unknown (Balboa Bay or Balboa)	Recent Quaternary sediments	None currently identified	Unknown
RS6706 (UCMP)	Unknown (Balboa)	Recent Quaternary sediments	*Bittium quadrifilatum* (sea snail)	Unknown
RS9328 (UCMP)	Unknown (Balboa)	Recent Quaternary sediments	*Barnea subtruncata* (bivavle)	Unknown
A3991, B6865, E1662, E477, E6161, E6213, E6350, E6436, E8328, E8853, E9761, IP10203, IP14860, RS11091, RS2480, RS2534, RS5197, RS5906, RS6010, RS719, RS7747, RS779, RS789, RS9242 (UCMP)	Unknown (Newport Beach, Newport Bay, or Newport Harbor)	Recent Quaternary sediments	Gastropods, corals, bivalves	Unknown
2619, 2726, 2992, 5276–5281 (SDNHM)	Unknown (Newport Beach)	Palos Verdes Sand (Pleistocene)	Numerous invertebrates (bivalves, gastropods, echinoderms, barnacles, scaphopods, bryozoans, forams)	Unknown

Paleontological Resources Sensitivity Analysis

The NHMLAC paleontological records search and fossil locality searches in online databases (PBDB, SDNHM, and UCMP) did not identify any paleontological resources within the project site. Several localities have been found within 3 miles of the project site; however, these localities are from rock formations (Pleistocene Palos Verdes Sand and Fernando Formation deposits) older than those mapped as underlying the project site. One locality of Holocene age, equivalent to sediments underlying the project site, was found within 3 miles of the project site (UCMP 2023). Per mitigation impact guidelines set forth by the Society of Vertebrate Paleontology (SVP 2010), due to the fossil sensitivity of the rock formations present within the project site, the project has a low potential to disturb paleontological resources within undisturbed sedimentary deposits and bedrock.

RECOMMENDATIONS

The following mitigation measure (MM) is recommended to be implemented in the event of any discovery of unknown paleontological resources during earthwork.

MM PALEO-1: Paleontological Resources Inadvertent Discovery. In the event that paleontological resources are encountered during earth-disturbing activities, all construction activities within 100 feet of the discovery shall be temporarily halted until a qualified paleontologist shall evaluate the findings and make a recommendation. The assessment will follow Society of Vertebrate Paleontology (SVP) standards as delineated in the *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources* (2010). If the qualified paleontologist finds that the resource is not a significant fossil, then work may resume immediately. If the qualified paleontologist finds the resource is potentially significant, then the qualified paleontologist shall make recommendations for appropriate treatment in accordance with SVP guidelines for identification, evaluation, disclosure, avoidance, recovery, and/or curation, as appropriate. The City shall determine the appropriate treatment of the find. Work cannot resume within the no-work radius until the City, through consultation as appropriate, determines that appropriate treatment measures have been completed to the satisfaction of the City. Any fossils recovered during mitigation shall be cleaned, identified, catalogued, and permanently curated with an accredited and permanent scientific institution with a research interest in the materials, such as the Cooper Laboratory in Santa Ana.

A qualified professional paleontologist is a professional with a graduate degree in paleontology, geology, or related field, with demonstrated experience in the vertebrate, invertebrate, or botanical paleontology of California, as well as at least one year of full-time professional experience or equivalent specialized training in paleontological research (i.e., the identification of fossil deposits, application of paleontological field and laboratory procedures and techniques, and curation of fossil specimens), and at least four months of supervised field and analytic experience in general North American paleontology as defined by the SVP.

PREPARER QUALIFICATIONS

This memorandum was prepared by Michael Baker International Senior Paleontologist Peter Kloess, PhD. Senior Cultural Resources Manager Margo Nayyar reviewed the memo for quality control.

Peter A. Kloess, PhD, Principal Investigator—Paleontology is a principal investigator and paleontologist with over 20 years of experience in paleontology, with 8 years in paleontology mitigation. His experience includes private and public consultation, field monitoring, excavation, and laboratory research on projects across the western United States, predominantly in California. He has consulting experience with a range of projects, including construction, transportation, utility, transmission, monitoring, and surveys, as well as expertise recovering a diversity of fossils from project sites, such as marine invertebrates, microfossils, plants, small mammals, and birds, large marine and terrestrial mammals, and dinosaurs. He also has extensive experience in paleontological museum collections and lab settings. He has worked on and co-led scientific excavations of large mammals and dinosaurs in California, Utah, New Mexico, and Montana. Mr. Kloess has served as a lab preparator and assistant curator for paleontology museums in California and Montana, where his duties included manual preparation of specimens, casting, jacketing, public outreach, cataloging, and curation. He meets the Society of Vertebrate Paleontology's standards for paleontological Principal Investigator.

Margo Nayyar, MA, is a senior architectural historian with 13 years of cultural management experience in California, Nevada, Arizona, Texas, Idaho, and Mississippi. Her experience includes built environment surveys, evaluation of historic-era resources using guidelines outlined in the California and National Registers, and preparation of cultural resources technical studies pursuant to CEQA and NHPA Section 106, including identification studies, finding of effect documents, memorandum of agreements, programmatic agreements, and Historic American Buildings Survey/Historic American Engineering Record/Historic American Landscapes Survey mitigation documentation. She prepares cultural resources sections for CEQA environmental documents, including infill checklists, initial studies, environmental impact reports, and NEPA environmental documents, including environmental impact statements and environmental assessments. She also specializes in municipal preservation planning, historic preservation ordinance updates, Native American consultation, and provision of Certified Local Government training to interested local governments. She develops Survey 123 and Esri Collector applications for large-scale historic resources surveys, and authors National Register nomination packets. Margo meets the Secretary of the Interior's Professional Qualification Standards for history and architectural history.

Sincerely,

Peter Kloess, PhD
Senior Paleontologist/Principal Investigator

Attachments:

Attachment 1 – Figures

Attachment 2 – Records Search Results

REFERENCES

CGS (California Geological Society). 2002. "California Geomorphic Provinces Note 36." https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-36.pdf.

Morton, D. M. and F. K. Miller. 2006. *Geologic Map of the San Bernardino and Santa Ana 30′ x 60′ quadrangles, California*. US Geological Survey Open-File Report OF-2006-1217; map scale 1:100,000.

National Geologic Map Database. 2023. Project site search. Electronic database. Accessed March 2023. https://ngmdb.usgs.gov/ngmdb/ngmdb_home.html.

NRCS (Natural Resources Conservation Service). 2023. Project site search. Electronic georeferenced soil map. Accessed October 2023. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

PBDB (The Paleobiology Database). 2023. Project site search. Electronic database. Accessed October 2023. https://paleobiodb.org/#/.

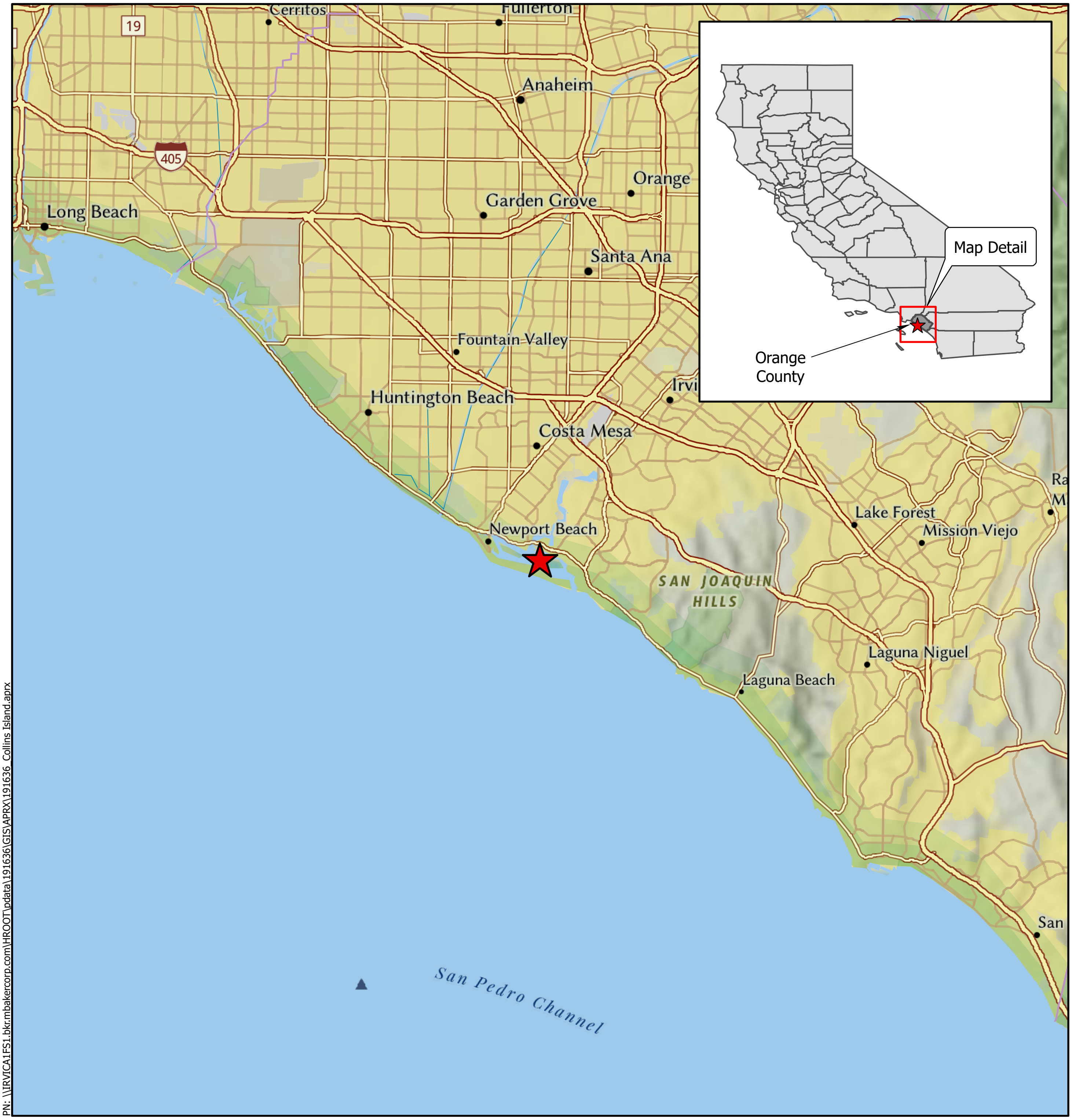
SDNHM (San Diego Natural History Museum). 2023. Project site search. Paleontology Collections Database. Accessed October 2023. https://www.sdnhm.org/science/paleontology/resources/collection-database.

SVP (Society of Vertebrate Paleontology). 2010. "Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources." https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines.pdf.

UCMP (University of California Museum of Paleontology) Locality Search. 2023. Project site search. Electronic database. Accessed October 2023. https://ucmpdb.berkeley.edu/loc.html.

Attachment 1

Figures



PN: \\IRVICA1FS1.bkr.mbakercorp.com\HROOT\pdata\191636\GIS\APRX\191636_Collins Island.aprx

Legend

Project Area

Michael Baker INTERNATIONAL

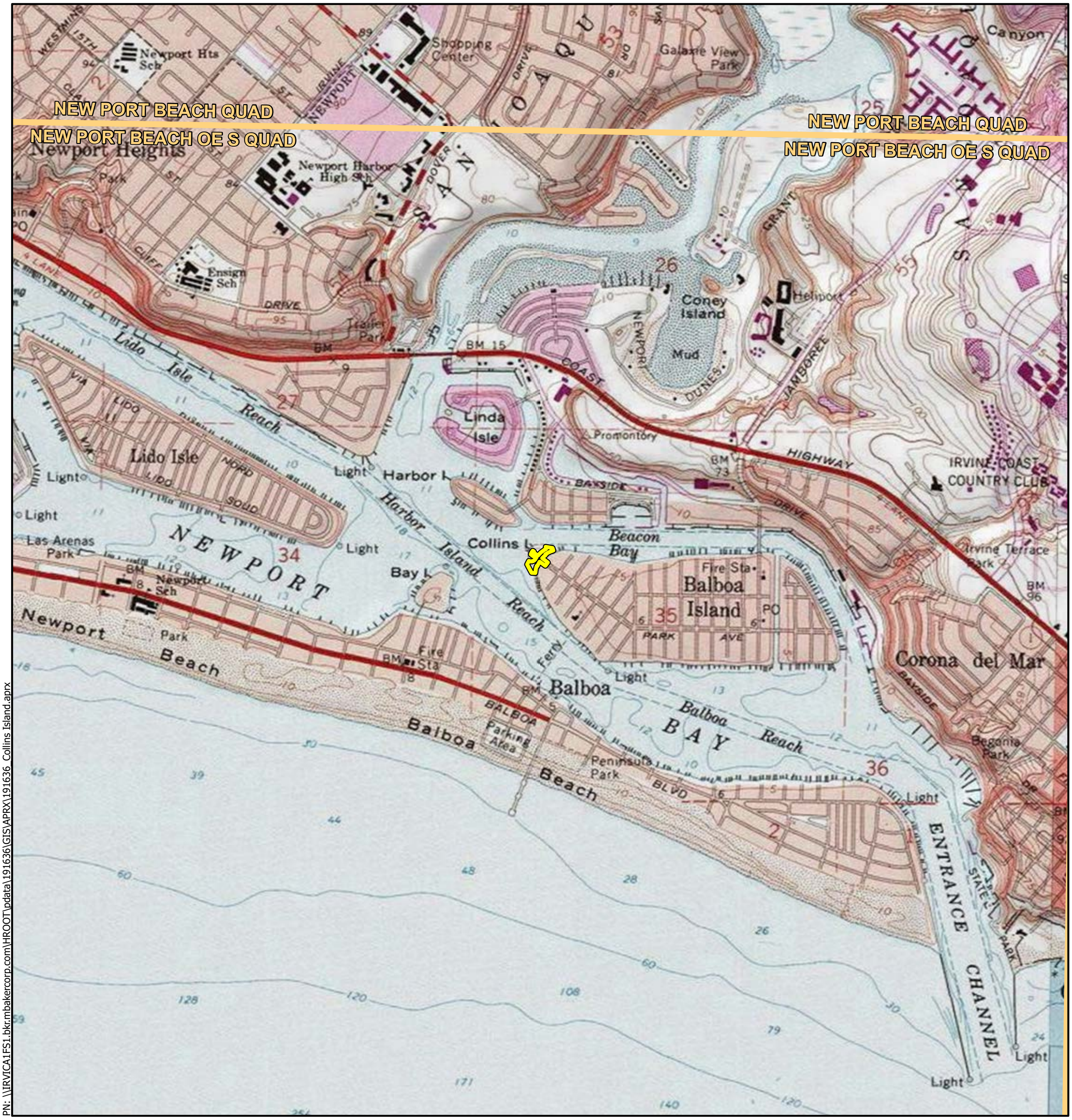
0 2.5 5 Miles

Source: Esri, ArcGIS Online, National Geographic World Map: *Newport Beach, California*

COLLINS ISLAND BRIDGE
NEWPORT BEACH, CA

Regional Vicinity

Figure 1



Legend

Project Area

0 0.25 0.5
Miles

Source: Esri, ArcGIS Online, Newport Beach OE S USGS 7.5-Minute topographic quadrangle maps: *Newport Beach, California*

PN: \\IRVICA1FS1.bkr.mbakercorp.com\HROOT\pdata\191636\GIS\APRX\191636_Collins Island.aprx

Michael Baker INTERNATIONAL

COLLINS ISLAND BRIDGE
NEWPORT BEACH, CA

Project Vicinity

Figure 2

PN: \\IRVICA1FS1.bkr.mbakercorp.com\HROOT\pdata\191636\GIS\APRX\191636_Collins Island.aprx

Legend

Project Area

Michael Baker INTERNATIONAL

0 50 100 Feet

Source: Esri, ArcGIS Online, 2023 Nearmap Imagery: *Newport Beach, California*

COLLINS ISLAND BRIDGE
NEWPORT BEACH, CA

Project Area

Figure 3

Attachment 2

Records Search Results

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

NATURAL HISTORY MUSEUM LOS ANGELES COUNTY

Research & Collections

e-mail: paleorecords@nhm.org

August 20, 2023

Michael Baker International
Attn: Marc Beherec

re: Paleontological resources for the Collins Bridge Replacement Project

Dear Marc:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the Collins Bridge Replacement Project area as outlined on the portion of the Newport Beach OE S USGS topographic quadrangle map that you sent to me via e-mail on August 18, 2023. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County (NHMLA).

Locality Number	**Location**	**Formation**	**Taxa**	**Depth**
LACM VP 5466	Northwest corner of the intersection of Jamboree Road & Pacific Coast Highway; Newport Beach	Palos Verdes Sand	Horse (*Equus*)	Unknown
LACM IP 25839	Promontory Drive, Bayport, Newport Bay	Palos Verdes Sand	Invertebrates (including *Eulithidium, Flossaulax, Ostrea, Donax, Callianax, Mitrella, Chama, Balcis, Strioterebrum, Melampus, Amphissa, Aesopus, Laevicardium, Bulla, Crepidula, Dentalium, Leptopecten, Tellina*)	Unknown
LACM IP 31435, 4760	Newport Bay (more precise location not available)	Palos Verdes Sand	Invertbrates: bivalves (*Leukoma, Ostrea,Crepidula, Saxidomus, Tresus, Leptopecten, Macoma, Lucinisca, Brachidontes, Tellina*) ; gastropods (*Caesia, Pseudomelatoma, Callianax*); barnacle (Balanidae); scaphopod (Dentalium)	Unknown
LACM VP 4254; LACM IP 17103, 17104	Corona del Mar Plaza, Newport Beach	Palos Verdes Sand	Duck (Chendytes); saltwater clam (*Chama, Septifer, Epilucina*), mussel (*Mytilus*), sponge trace (*Entobia*),	Unknown

Locality Number	Location	Formation	Taxa	Depth
			feeding trace (*Oichnus*), oyster (*Ostrea*), turban snail (*Megastraea*), limpet (*Lottia*)	
LACM VP 3408	West of the intersection of Ford Road and Jamboree Road	Fernando Formation	Shark (Charcharodon, Carcharocles; *Alopias*); fragmentary marine mammal bones	unknown
LACM VP 3407, 4426; LACM IP 71, 5627	Top of roadcut East side of McArthur Blvd. approx. 1/2 mile S. of Bonita Canyon intersection.	Palos Verdes Sand	Mammoth (*Mammuthus*); and uncatalogued birds, fish, mammals, and invertebrates	Surface

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface

This records search covers only the records of the NHMLA. It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,

Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

enclosure: invoice

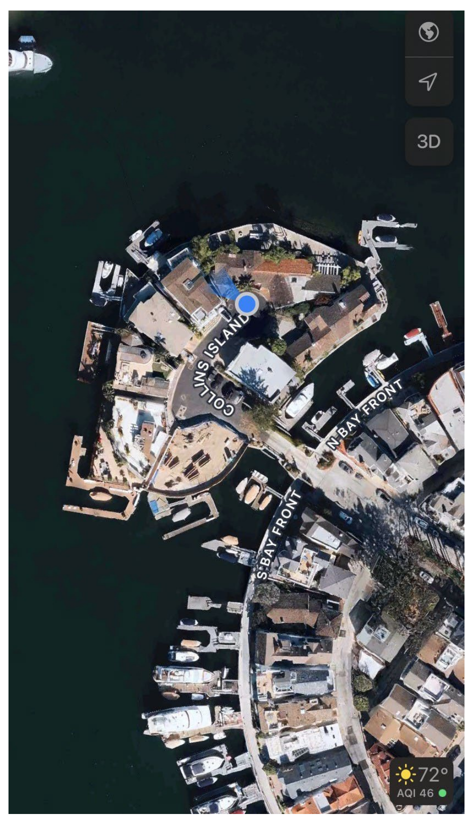
APPENDIX E
Noise Data

Site Number: NM-1		
Recorded By: Winnie Woo, Dennis Dinh		
Job Number: 191636		
Date: 8/30/2023		
Time: 10:05 AM		
Location: In front of 6 Collins Isle		
Source of Ambient Noise: Construction noise and vehicles passing by		
Source of Peak Noise: Construction noise		
Noise Data		
L_{eq} (dB)	**L_{max}(dB)**	**L_{min} (dB)**
60.9	84.5	37.9

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**06/04/2023**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**06/04/2023**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**06/04/2023**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**06/04/2023**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Sunny
	Note: dBA Offset = 0.02		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	3 mph	74	29.83

Photo of Measurement Location



2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		08/30/2023 10:05:00
End Time:		08/30/2023 10:19:43
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.20

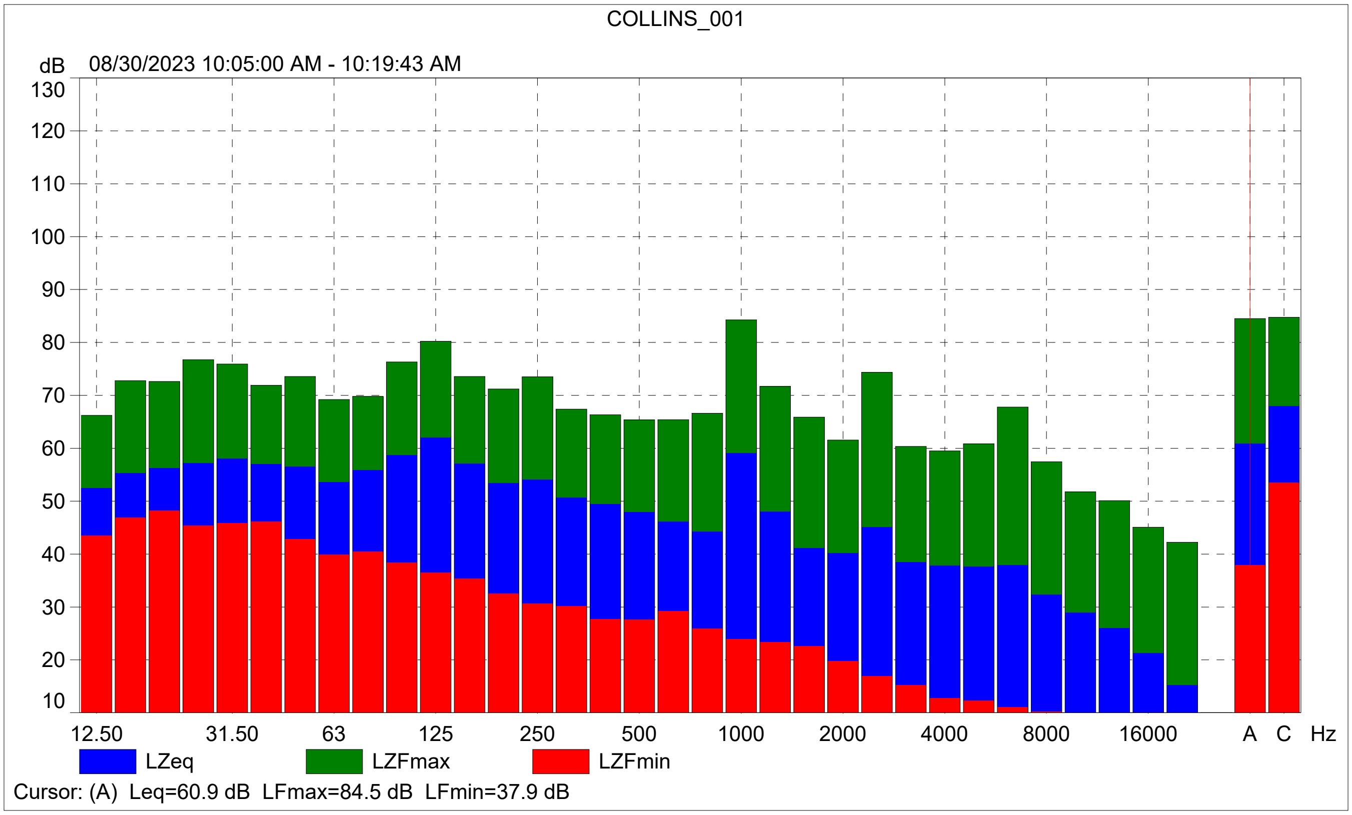
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

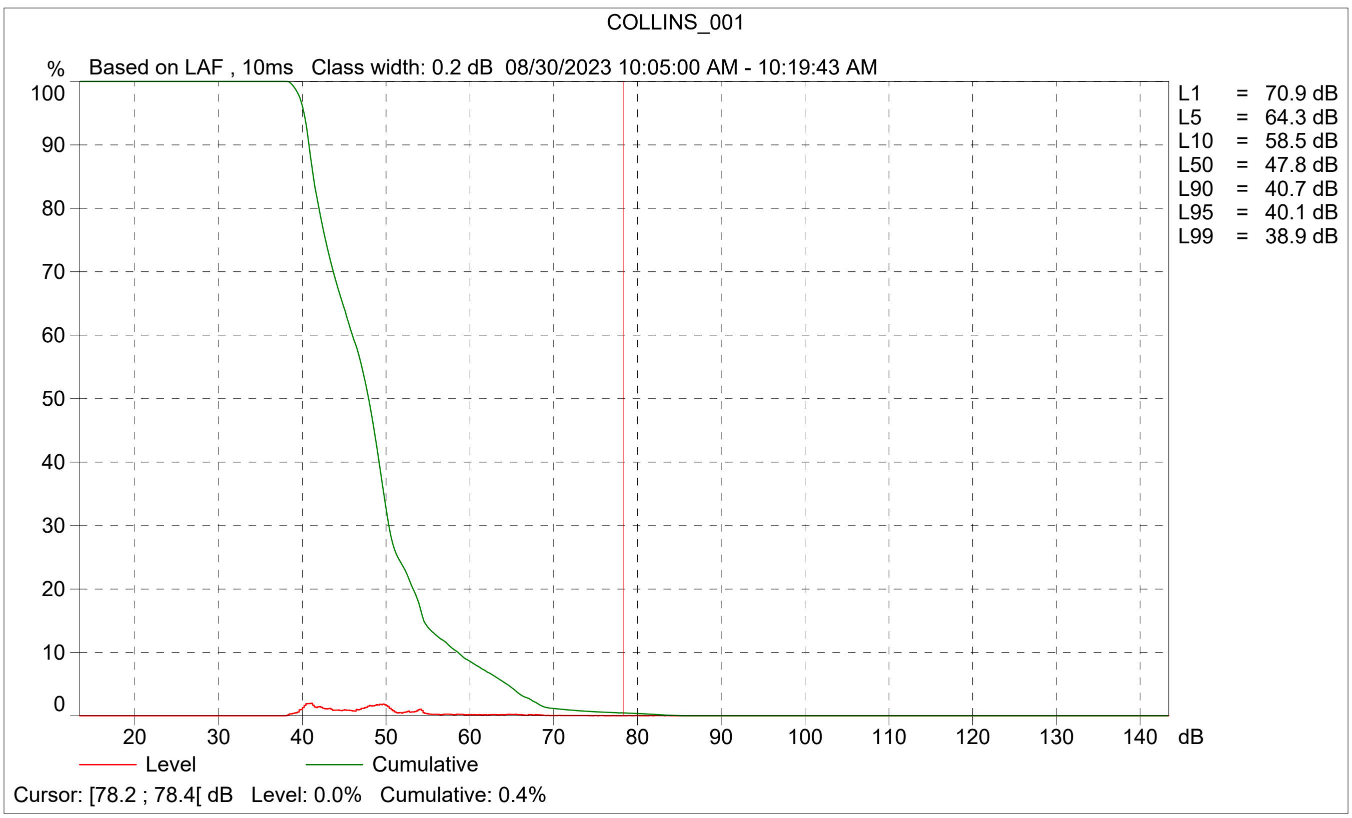
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

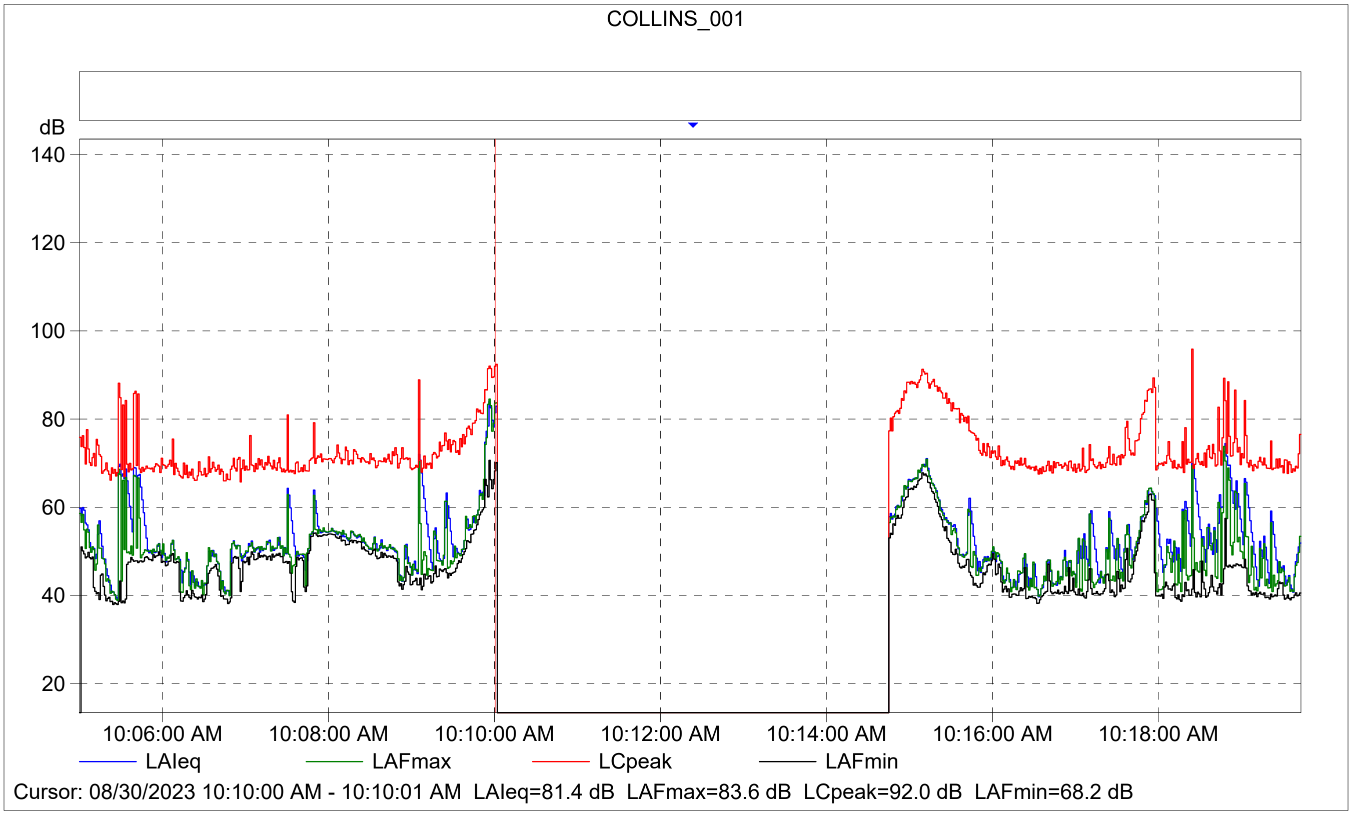
Calibration Time:		08/30/2023 07:16:59
Calibration Type:		External reference
Sensitivity:		43.2439148426056 mV/Pa

COLLINS_001

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	60.9	84.5	37.9
Time	10:05:00 AM	10:19:43 AM	0:10:00				
Date	08/30/2023	08/30/2023					

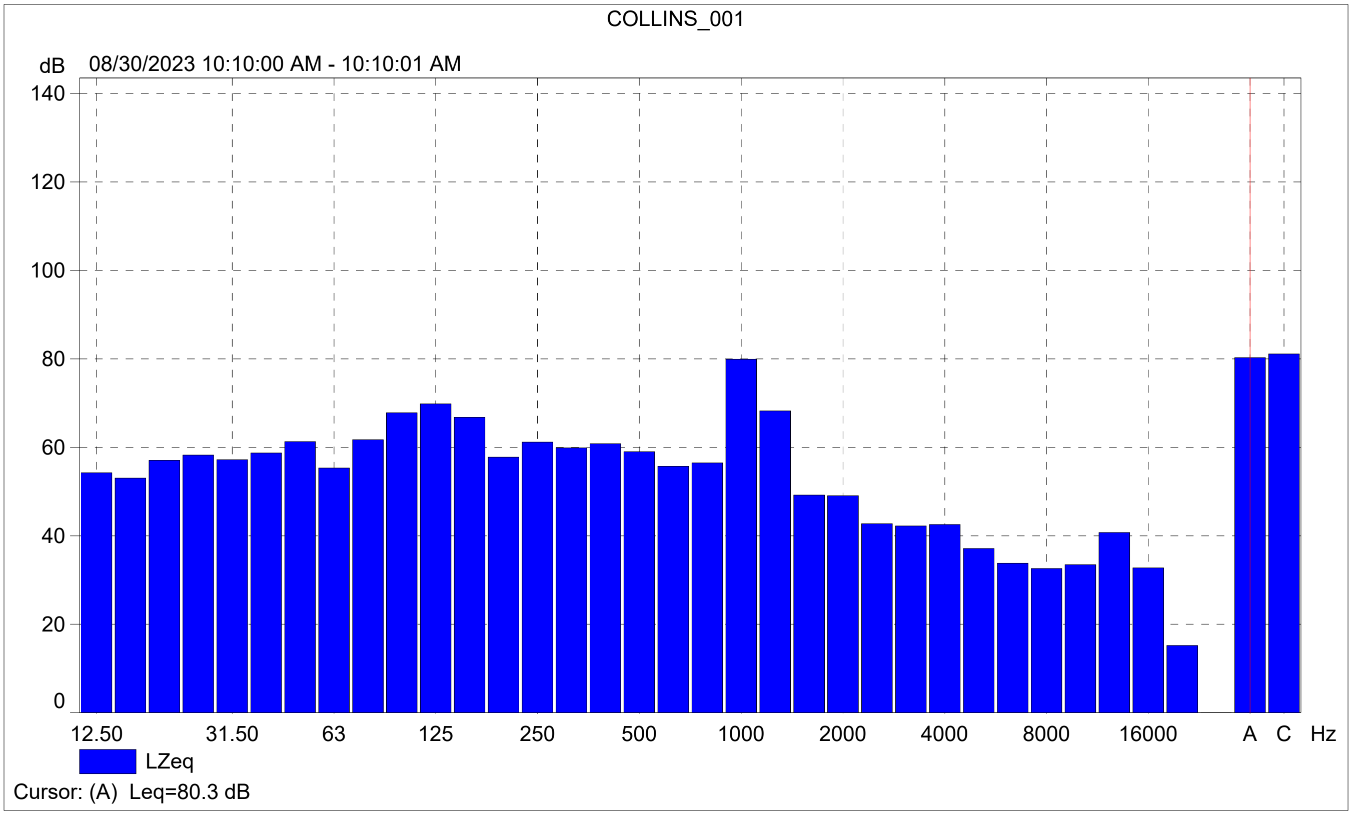

COLLINS_001
dB 08/30/2023 10:05:00 AM - 10:19:43 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=60.9 dB LFmax=84.5 dB LFmin=37.9 dB

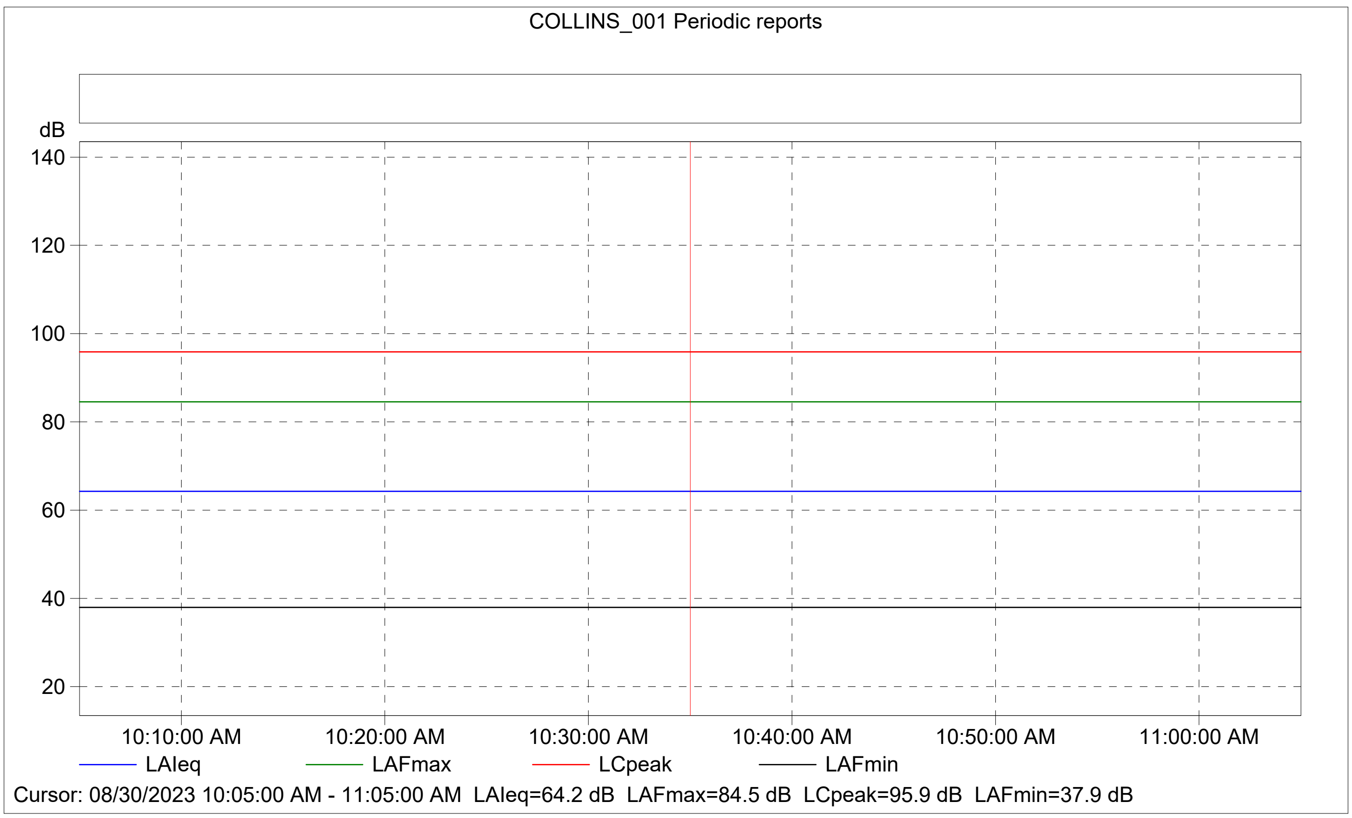

COLLINS_001
% Based on LAF , 10ms Class width: 0.2 dB 08/30/2023 10:05:00 AM - 10:19:43 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 70.9 dB
L5 = 64.3 dB
L10 = 58.5 dB
L50 = 47.8 dB
L90 = 40.7 dB
L95 = 40.1 dB
L99 = 38.9 dB
Level
Cumulative
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.4%



COLLINS_001

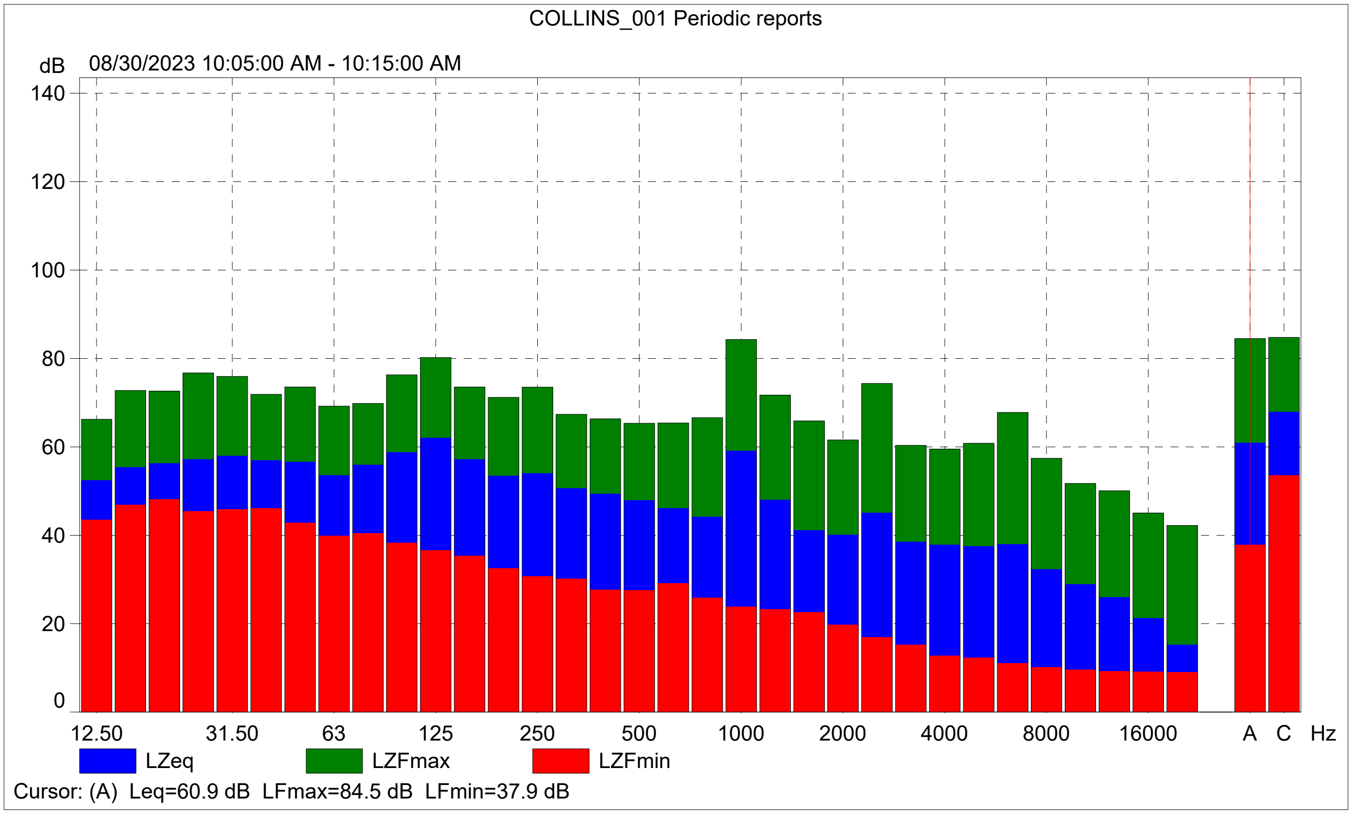
	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	81.4	83.6	68.2
Time	10:10:00 AM	0:00:01				
Date	08/30/2023					

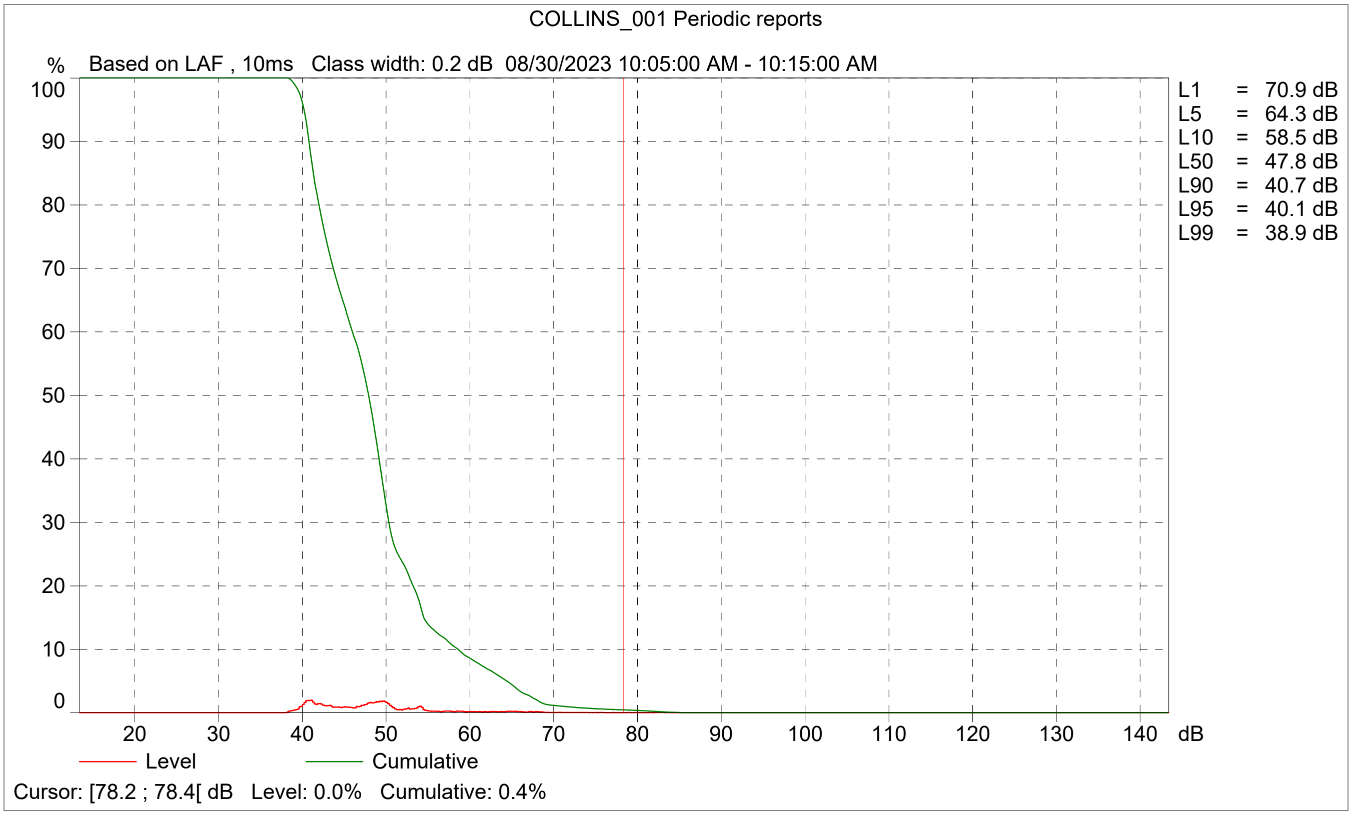

COLLINS_001
dB 08/30/2023 10:10:00 AM - 10:10:01 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=80.3 dB


COLLINS_001 Periodic reports
dB
140
120
100
80
60
40
20
10:10:00 AM
10:20:00 AM
10:30:00 AM
10:40:00 AM
10:50:00 AM
11:00:00 AM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 08/30/2023 10:05:00 AM - 11:05:00 AM LAIeq=64.2 dB LAFmax=84.5 dB LCpeak=95.9 dB LAFmin=37.9 dB

COLLINS_001 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	64.2	84.5	37.9
Time	10:05:00 AM	0:10:00				
Date	08/30/2023					





COLLINS_001 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 08/30/2023 10:05:00 AM - 10:15:00 AM
100
90
80
70
60
50
40
30
20
10
0
20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 70.9 dB
L5 = 64.3 dB
L10 = 58.5 dB
L50 = 47.8 dB
L90 = 40.7 dB
L95 = 40.1 dB
L99 = 38.9 dB
Level
Cumulative
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.4%

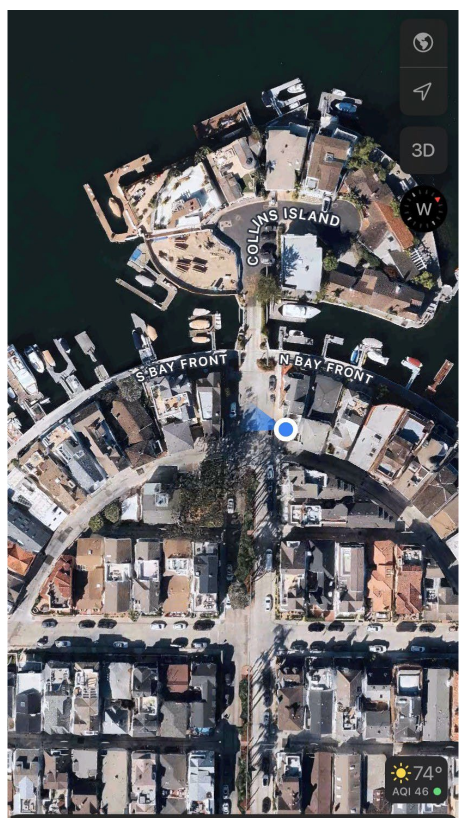
Site Number: NM-2
Recorded By: Winnie Woo, Dennis Dinh
Job Number: 191636
Date: 8/30/2023
Time: 10:29 AM
Location: In front of 101 North Bay Front
Source of Ambient Noise: Traffic along Park Avenue and North Bay Front; Plane overhead
Source of Peak Noise: Traffic along North Bay Front

Noise Data		
L_{eq} (dB)	L_{max}(dB)	L_{min} (dB)
54.5	68.0	40.3

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**06/04/2023**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**06/04/2023**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**06/04/2023**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**06/04/2023**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Sunny
	Note: dBA Offset = 0.02		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	3 mph	74	29.83

Photo of Measurement Location



2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		08/30/2023 10:29:38
End Time:		08/30/2023 10:39:50
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.20

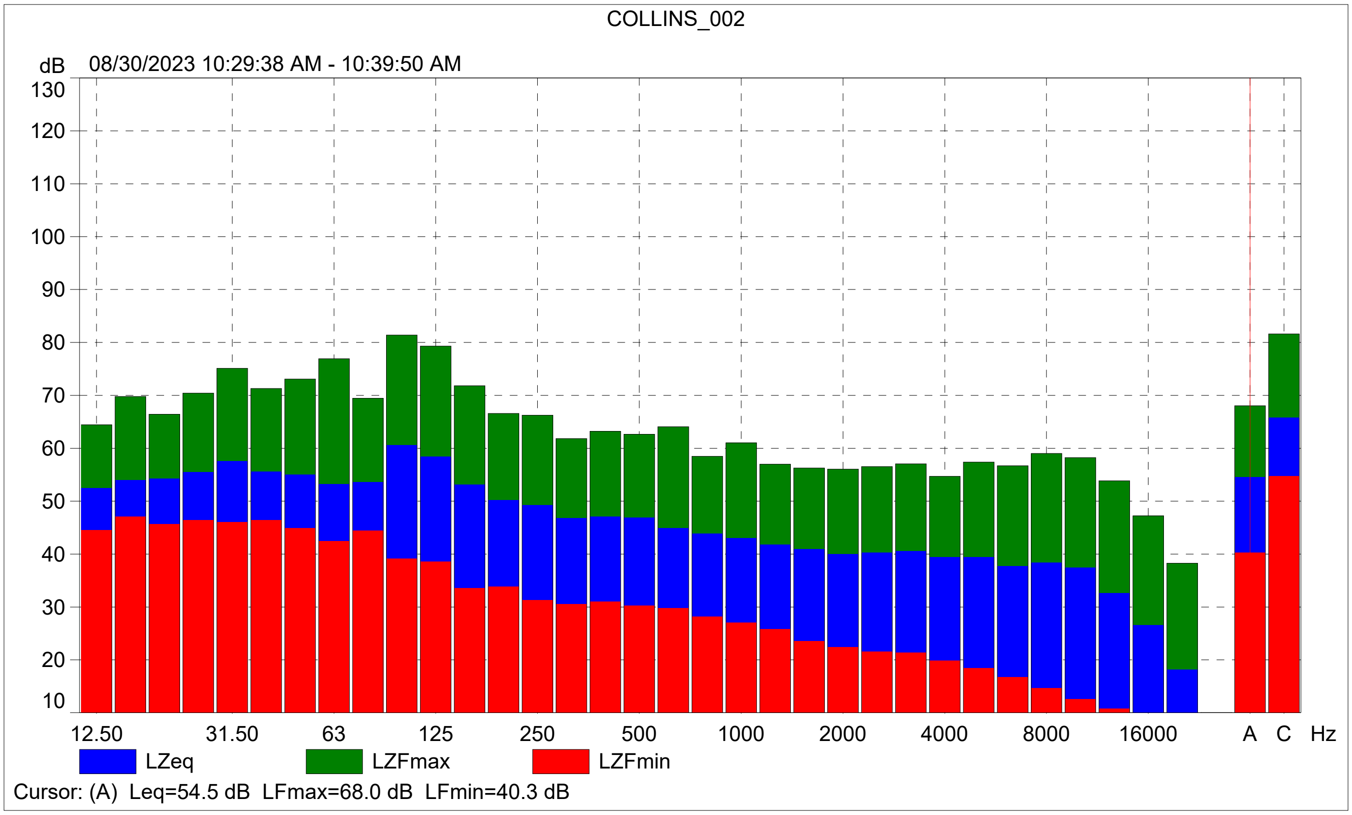
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

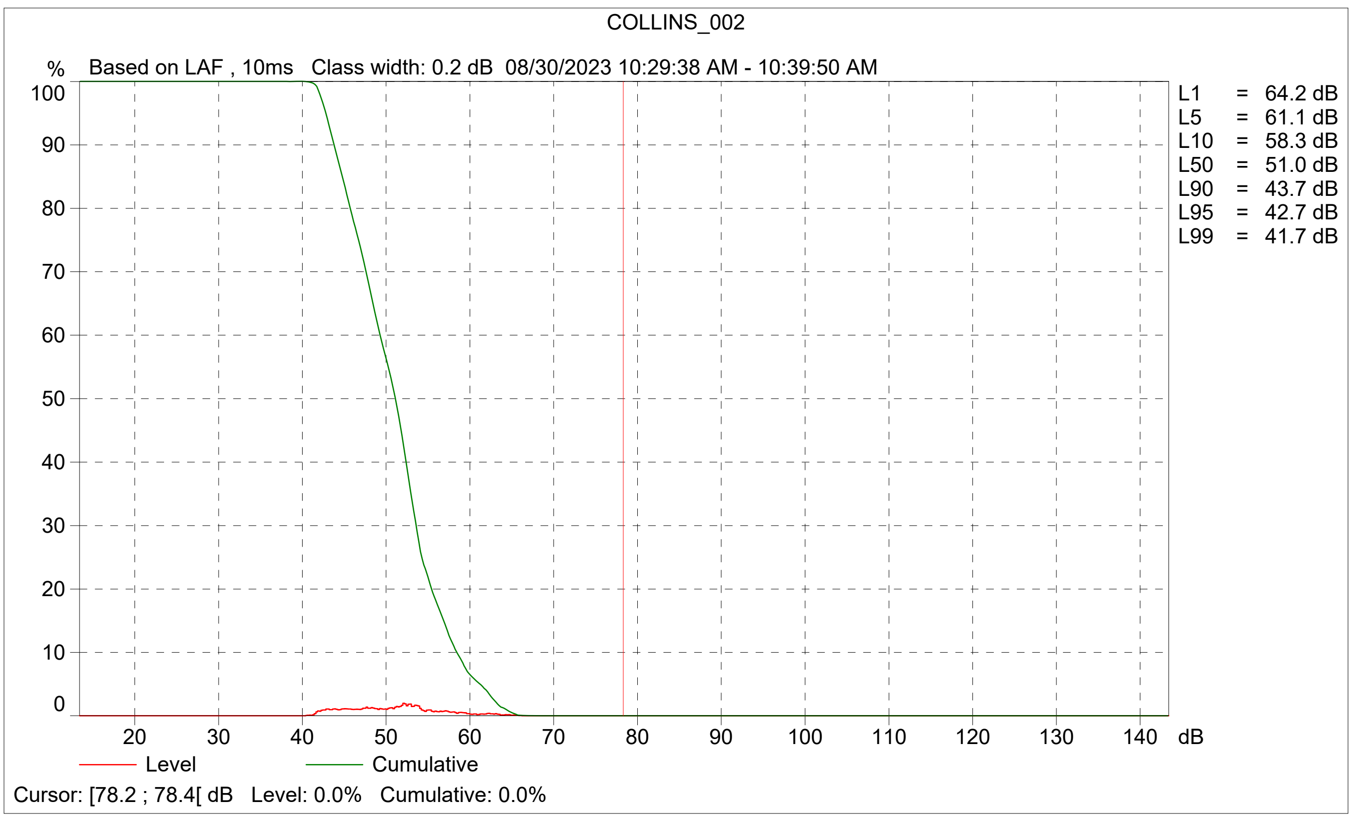
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

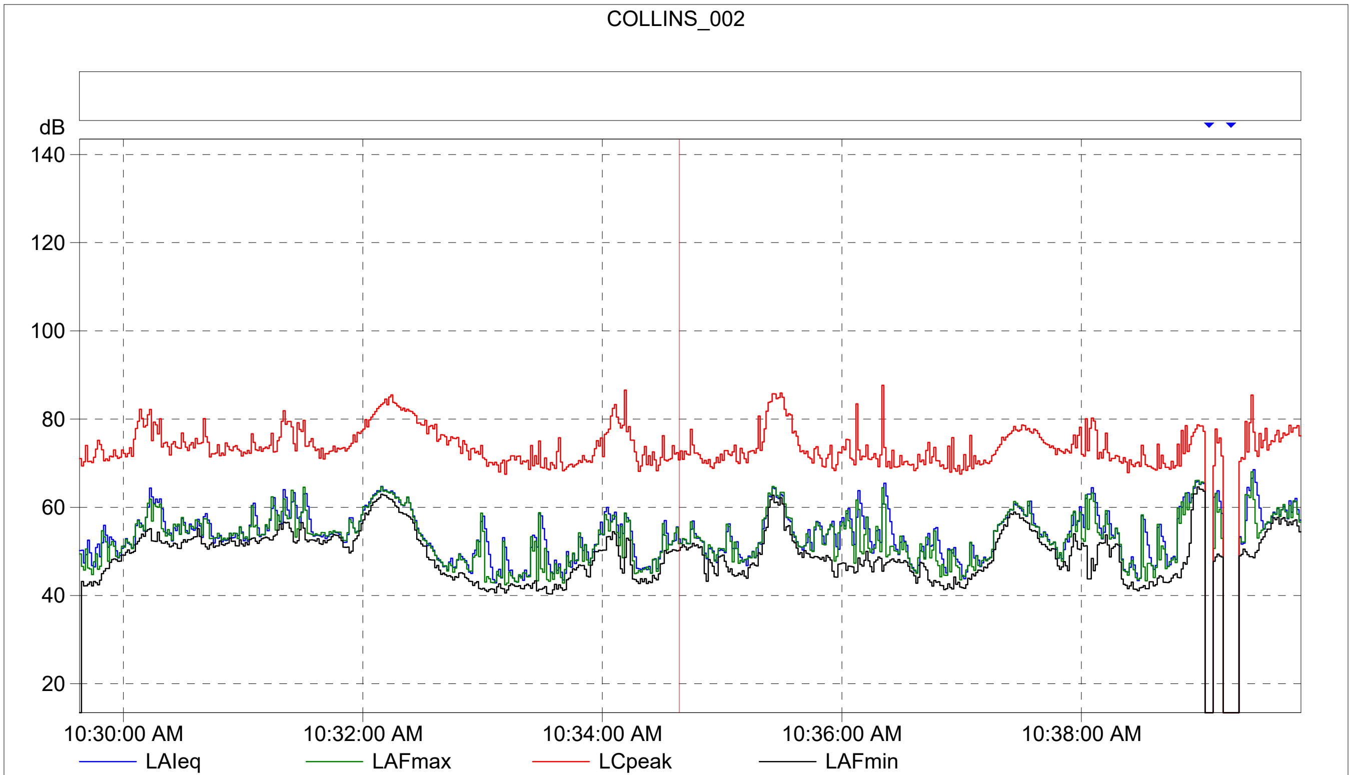
Calibration Time:		08/30/2023 07:16:59
Calibration Type:		External reference
Sensitivity:		43.2439148426056 mV/Pa

COLLINS_002

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	54.5	68.0	40.3
Time	10:29:38 AM	10:39:50 AM	0:10:00				
Date	08/30/2023	08/30/2023					


COLLINS_002
dB 08/30/2023 10:29:38 AM - 10:39:50 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=54.5 dB LFmax=68.0 dB LFmin=40.3 dB

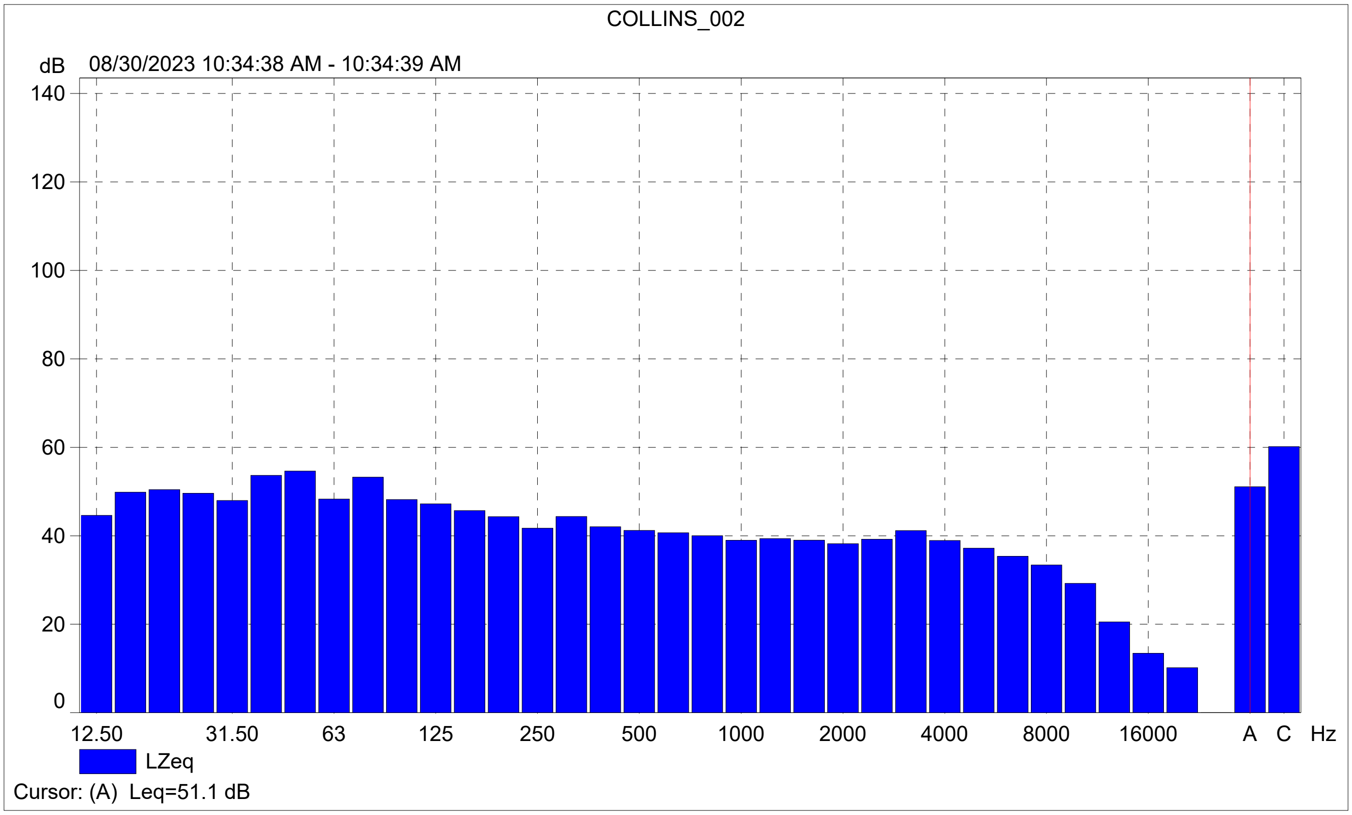

COLLINS_002
% Based on LAF , 10ms Class width: 0.2 dB 08/30/2023 10:29:38 AM - 10:39:50 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 64.2 dB
L5 = 61.1 dB
L10 = 58.3 dB
L50 = 51.0 dB
L90 = 43.7 dB
L95 = 42.7 dB
L99 = 41.7 dB
Level
Cumulative
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.0%

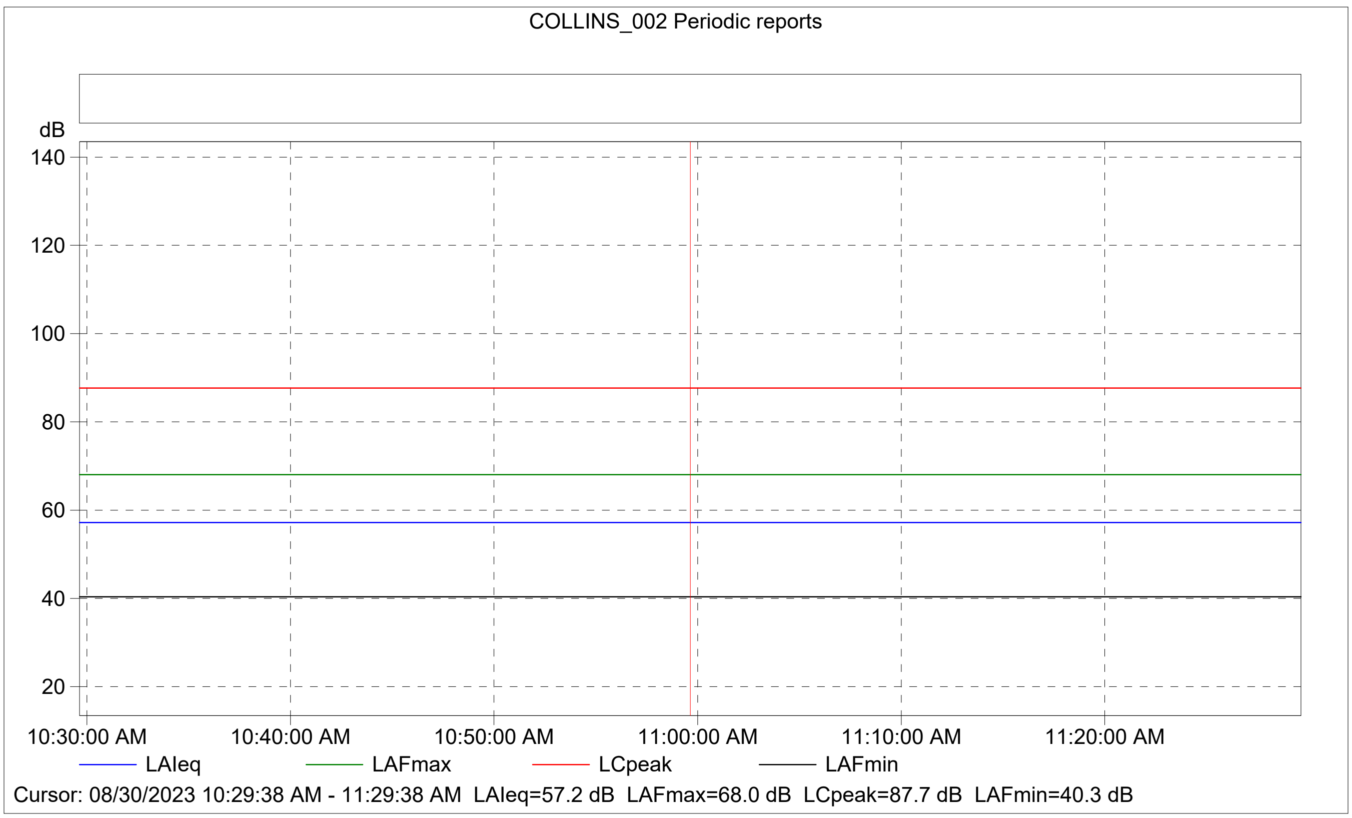


Cursor: 08/30/2023 10:34:38 AM - 10:34:39 AM LAIeq=52.8 dB LAFmax=51.8 dB LCpeak=70.8 dB LAFmin=50.2 dB

COLLINS_002

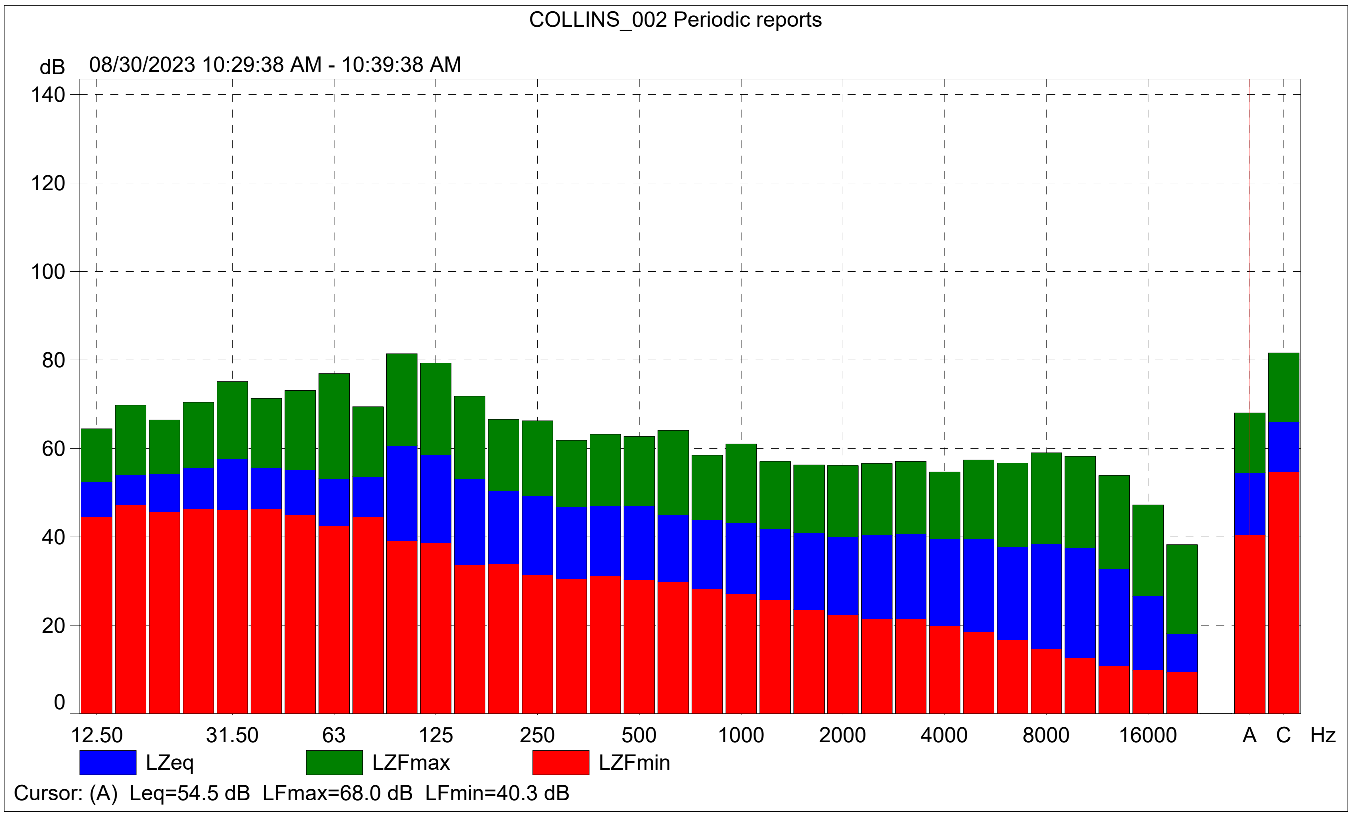
	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	52.8	51.8	50.2
Time	10:34:38 AM	0:00:01				
Date	08/30/2023					

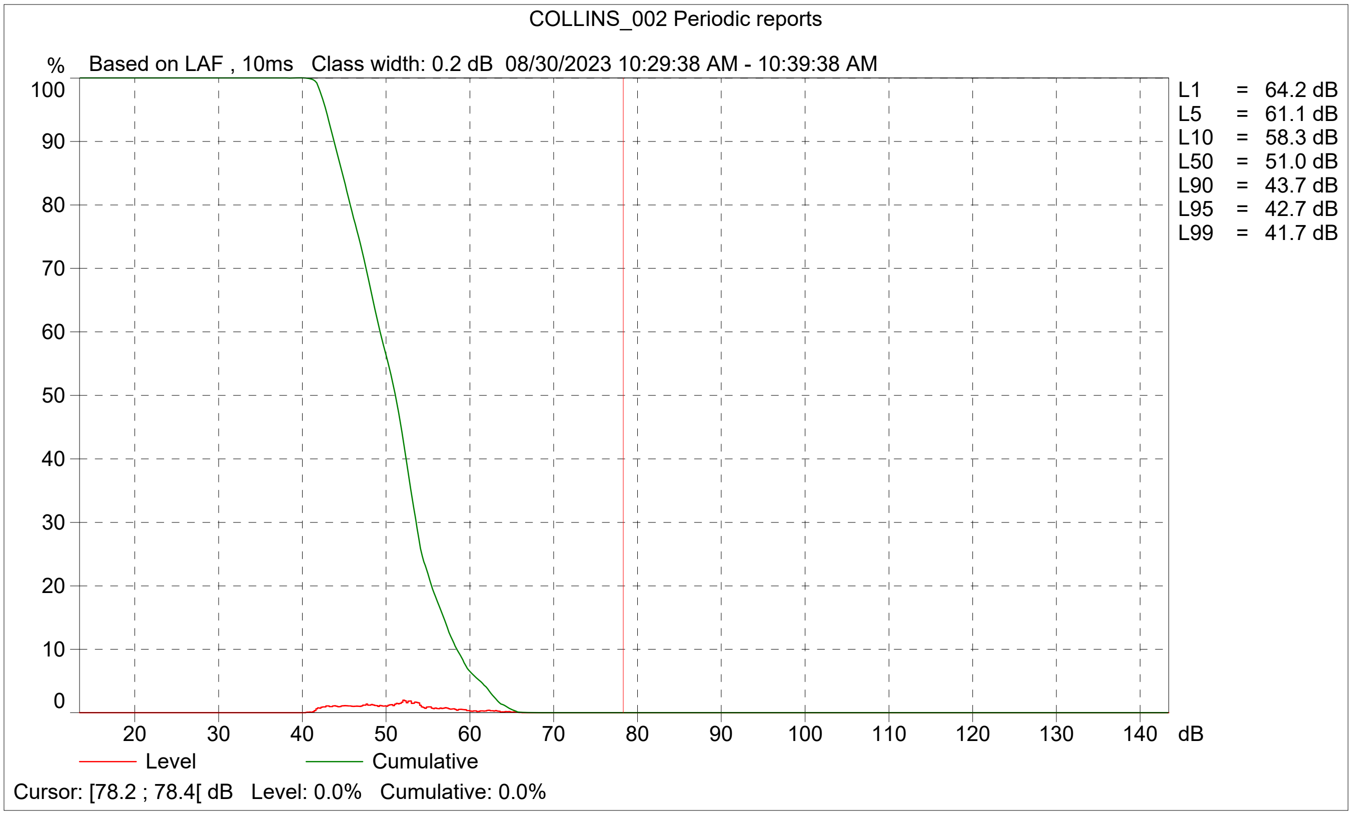

COLLINS_002
dB 08/30/2023 10:34:38 AM - 10:34:39 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=51.1 dB


COLLINS_002 Periodic reports
dB
140
120
100
80
60
40
20
10:30:00 AM
10:40:00 AM
10:50:00 AM
11:00:00 AM
11:10:00 AM
11:20:00 AM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 08/30/2023 10:29:38 AM - 11:29:38 AM LAIeq=57.2 dB LAFmax=68.0 dB LCpeak=87.7 dB LAFmin=40.3 dB

COLLINS_002 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	57.2	68.0	40.3
Time	10:29:38 AM	0:10:00				
Date	08/30/2023					





COLLINS_002 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 08/30/2023 10:29:38 AM - 10:39:38 AM
L1 = 64.2 dB
L5 = 61.1 dB
L10 = 58.3 dB
L50 = 51.0 dB
L90 = 43.7 dB
L95 = 42.7 dB
L99 = 41.7 dB
dB
Level
Cumulative
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.0%

APPENDIX F
AB 52 Documentation

CITY OF NEWPORT BEACH
100 Civic Center Drive
Newport Beach, California 92660
949-644-3055 | 949-644-3308 FAX
newportbeachca.gov

September 7, 2023

Andrew Salas
Gabrieleno Band of Mission Indians – Kizh Nation
PO Box 393
Covina, CA 91723

RE: AB 52 CONSULTATION FOR THE COLLINS ISLAND BRIDGE REPLACEMENT PROJECT

Dear Mr. Salas:

The City of Newport Beach has initiated the Collins Island Bridge Replacement Project in the City of Newport Beach, Orange County, California. Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) 21080.3.1 and Chapter 532, Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC 21080.3.1(d), if you would like to consult on this project.

The project site, Collins Island Bridge and its immediate vicinity, is located at the confluence of the Newport Channel and the Balboa Island Channel, adjacent to the greater Balboa Island in the Newport Bay. Collins Island is an artificial island located on the western tip of Balboa Island and is connected to the greater Balboa Island via the Collins Island Bridge. Regional access to the project site is provided via State Route 1 (SR-1; Pacific Coast Highway) and local access to the site is provided via Marine Avenue (across the Balboa Island North Channel), and North Bay Front and Park Avenue on Balboa Island.

The project has three major components: 1) bridge replacement, 2) seawall improvements, and 3) future pump station accommodations. Street, sidewalk, and landscaping improvements are also proposed on the Balboa Island side along the Bay Front sidewalk and Park Avenue eastward until the alley. Anticipated improvements include monument sign construction, irrigation, paving, and landscaping. As part of the pump station accommodations, pump station outlet pipes and weir structures would be installed.

A Native American Heritage Commission Sacred Lands File search was conducted for the project site. The results of the search were positive. However, a California Historical

Resources Information System records search was negative for the project area. An intensive pedestrian survey of the project area was also negative.

We are requesting any information or concerns that you may have regarding potential tribal cultural resources within the project area. Please let us know of your interest to consult with the City of Newport Beach regarding this project within 30 days of the receipt of this letter. If you have any questions or need additional information, please contact me at rstein@newportbeachca.gov or 949.644.3322.

Sincerely,

Bob Stein
City of Newport Beach

CITY OF NEWPORT BEACH
100 Civic Center Drive
Newport Beach, California 92660
949-644-3055 | 949-644-3308 FAX
newportbeachca.gov

September 7, 2023

Joyce Stanfield Perry
Juaneno Band of Mission Indians/Acjachemen Nation
4955 Paseo Segovia
Irvine, CA 92603

RE: AB 52 CONSULTATION FOR THE COLLINS ISLAND BRIDGE REPLACEMENT PROJECT

Dear Ms, Perry:

The City of Newport Beach has initiated the Collins Island Bridge Replacement Project in the City of Newport Beach, Orange County, California. Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) 21080.3.1 and Chapter 532, Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC 21080.3.1(d), if you would like to consult on this project.

The project site, Collins Island Bridge and its immediate vicinity, is located at the confluence of the Newport Channel and the Balboa Island Channel, adjacent to the greater Balboa Island in the Newport Bay. Collins Island is an artificial island located on the western tip of Balboa Island and is connected to the greater Balboa Island via the Collins Island Bridge. Regional access to the project site is provided via State Route 1 (SR-1; Pacific Coast Highway) and local access to the site is provided via Marine Avenue (across the Balboa Island North Channel), and North Bay Front and Park Avenue on Balboa Island.

The project has three major components: 1) bridge replacement, 2) seawall improvements, and 3) future pump station accommodations. Street, sidewalk, and landscaping improvements are also proposed on the Balboa Island side along the Bay Front sidewalk and Park Avenue eastward until the alley. Anticipated improvements include monument sign construction, irrigation, paving, and landscaping. As part of the pump station accommodations, pump station outlet pipes and weir structures would be installed.

A Native American Heritage Commission Sacred Lands File search was conducted for the project site. The results of the search were positive. However, a California Historical

Resources Information System records search was negative for the project area. An intensive pedestrian survey of the project area was also negative.

We are requesting any information or concerns that you may have regarding potential tribal cultural resources within the project area. Please let us know of your interest to consult with the City of Newport Beach regarding this project within 30 days of the receipt of this letter. If you have any questions or need additional information, please contact me at rstein@newportbeachca.gov or 949.644.3322.

Sincerely,

Bob Stein
City of Newport Beach

CITY OF NEWPORT BEACH
100 Civic Center Drive
Newport Beach, California 92660
949-644-3055 | 949-644-3308 FAX
newportbeachca.gov

September 7, 2023

Sam Dunlap
Gabrielino Tongva Tribe
Cultural Resources Representative
TongvaTCR@gmail.com

RE: AB 52 CONSULTATION FOR THE COLLINS ISLAND BRIDGE REPLACEMENT PROJECT

Dear Mr. Dunlap:

The City of Newport Beach has initiated the Collins Island Bridge Replacement Project in the City of Newport Beach, Orange County, California. Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) 21080.3.1 and Chapter 532, Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC 21080.3.1(d), if you would like to consult on this project.

The project site, Collins Island Bridge and its immediate vicinity, is located at the confluence of the Newport Channel and the Balboa Island Channel, adjacent to the greater Balboa Island in the Newport Bay. Collins Island is an artificial island located on the western tip of Balboa Island and is connected to the greater Balboa Island via the Collins Island Bridge. Regional access to the project site is provided via State Route 1 (SR-1; Pacific Coast Highway) and local access to the site is provided via Marine Avenue (across the Balboa Island North Channel), and North Bay Front and Park Avenue on Balboa Island.

The project has three major components: 1) bridge replacement, 2) seawall improvements, and 3) future pump station accommodations. Street, sidewalk, and landscaping improvements are also proposed on the Balboa Island side along the Bay Front sidewalk and Park Avenue eastward until the alley. Anticipated improvements include monument sign construction, irrigation, paving, and landscaping. As part of the pump station accommodations, pump station outlet pipes and weir structures would be installed.

A Native American Heritage Commission Sacred Lands File search was conducted for the project site. The results of the search were positive. However, a California Historical

Resources Information System records search was negative for the project area. An intensive pedestrian survey of the project area was also negative.

We are requesting any information or concerns that you may have regarding potential tribal cultural resources within the project area. Please let us know of your interest to consult with the City of Newport Beach regarding this project within 30 days of the receipt of this letter. If you have any questions or need additional information, please contact me at rstein@newportbeachca.gov or 949.644.3322.

Sincerely,

Bob Stein
City of Newport Beach