CITY OF NEWPORT BEACH
COMMUNITY DEVELOPMENT DEPARTMENT
100 Civic Center Drive
Newport Beach, California 92660
949 644-3200
newportbeachca.gov/communitydevelopment

January 4, 2018

Via FedEx and email (Edward.Curtis@fema.dhs.gov)

Mr. Ed Curtis, Engineer
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607

Re: Response to FEMA's Request for Additional Information dated November 21, 2017 and Request for Scientific Resolution Panel

Case No.: 12-09-1324S **Community: City of Newport Beach, CA**
Docket No.: FEMA-B-1673 **Community No.: 060227**

Dear Mr. Curtis,

The City of Newport Beach ("City") thanks the Federal Emergency Management Agency ("FEMA") for FEMA's initial review of the City's appeal submittals dated August 30, 2017, and September 6, 2017, ("Appeal") regarding requested revision of the Preliminary Flood Insurance Rate Map ("FIRM"), Flood Insurance Study ("FIS") report, and Base Flood Elevations ("BFE") issued on August 15, 2016. The Appeal includes a written opinion (the "Written Opinion") of Dave Kiff, the City's Chief Executive Officer and City Manager, deciding that the evidence presented in support of the City's Appeal is sufficient to justify an appeal on behalf of 326 private owners and lessees of property in the City by the City in its own name, and that the Appeal sets forth the data that tends to negate or contradict the Flood Insurance Administrator's proposed findings and revisions to the FIRM, FIS, and BFE. As a result, the City considers the appeals of such private owners and lessees of property to be consolidated with the City's Appeal.

The City is in receipt of FEMA's response letter to the City dated November 21, 2017, wherein FEMA requested additional information for the Newport Bay analysis. On December 6, 2017, the City sent FEMA, by certified U.S. Mail and email, a request for an extension of time (from December 21, 2017 to January 20, 2018) to allow for the City to more completely respond to FEMA's request for additional information. On December 20, 2017, by email, you approved the extension, allowing for the City to have until January 20, 2018, to respond to FEMA's letter dated November 21, 2017. With that background in mind, the City offers the following in response to FEMA's request for additional information dated November 21, 2017.

Additionally, the City has elected to request that the Appeal be resolved by a Scientific Resolution Panel and concurrently submits the Scientific Resolution Panel Request Form and Community Submittal Agreement regarding the Appeal and Written Opinion.

Request No. 1

For purposes of the National Flood Insurance Program (NFIP), FEMA, in its flood hazard and risk mapping effort, will only recognize coastal flood protection structures that meet, and continue to meet, minimum design and maintenance standards that are consistent with the level of protection sought through the comprehensive floodplain management criteria established by 44 CFR Part 60.3. Please submit a detailed technical review of all coastal protection structures that are included in the flood hazard analysis and mapping, demonstrating that the coastal flood protection structure will survive during the base flood. Specific criteria for evaluating coastal structures are contained in FEMA Guidance for Flood Risk Analysis and Mapping: Coastal Structures (November 2015).

Response to Request No.1

For the reasons stated in the City's letter dated December 6, 2017, the City faces several obstacles inhibiting its ability to prepare a detailed technical review of the 22.5 miles of seawalls that are included in the flood hazard analysis and mapping. Notwithstanding, the City provides herewith information on the seawalls following the certification requirement described under Section 2.2 Coastal Armoring Structure Evaluation Based on Limited Data and Engineering Judgment of the FEMA Guidance for Flood Risk Analysis and Mapping: Coastal Structures (November 2015). Section 2.2 states that the Mapping Partner can apply engineering judgment to determine the likely stability of the seawall during the 1-percent annual chance flood, and the conclusion can be based on archive and local observations, including historical evidence of storm damage and maintenance.

The seawalls along Newport Bay and Balboa Islands were constructed in the early 20th century and rebuilt in 1922. See historical sheet Exhibit 1-C included with this correspondence. The City takes a proactive approach with regard to ensuring proper seawall elevation to minimize flooding from storm events and/or sea level rising. The guidelines in harbor resource document now requires all new seawall elevation be at 10 ft. as required by the City's 2017 Harbor Design Guidelines (Resolution No. 2017-22, adopted April 11, 2017). Here is some additional information regarding the City's ongoing seawall maintenance and flood impact minimization efforts:

- The top of the seawall around Balboa Island ranges in elevation from 7.6 to 8.7 ft. On October 10, 2017, the City Council awarded a contract to Bosco Constructors Inc. to raise 7,400 linear feet of the concrete seawall cap on the north, south, and west sides of Balboa Island by 9'' in elevation, reference contract number 7066-1.
- The City's Municipal Operations Department (MOD) will maintain access to public beaches and will provide barriers as required 48 hours ahead of high tide or storm event.
- The City owns and maintains approximately 20 percent of the 22.5 miles of seawall shown in the attached Exhibits 1-A & 1-A.1.
- The City's Public Works Department administered the contract for maintenance of the seawall from 1977 to 2008. See Exhibit 2-A for a summary of the work history done on Balboa Island and Little Balboa Island during that timeframe.
- MOD currently administers the contract for maintenance of the seawall.
- The City's Community Development Department requires all new development of property located adjacent to the harbor to have an evaluation of the existing seawall as condition of approval for those sites, and will require the seawall's repair or replacement if conditions are

warranted. A list of properties with seawall construction or maintenance permits issued by the City for repair or replacement of the seawall is attached herewith. See Exhibit 1-B & 1-B.1.

Historical data indicates that since the seawalls were constructed, they have experienced many high water level events; some resulted in flooding in local areas. The City staff is often engaged in survey of the seawall pending an event. MOD staff also takes any reports of damage and assigns city crew to repair seawall(s) as required. On one particular flood event that happened on January 10, 2005, the high tide was recorded as peaking at 7.73 ft. NAVD, very close to 1-percent SWEL of 7.88 ft. NAVD. Besides some local flooding, there has been no reported damage of seawall failure in Newport Harbor, including the flood event on January 10, 2005, ordinary wear and tear excepted.

Based on the fact that the seawalls have already experienced a high water event close to the 1-percent SWEL event and have sustained several other high tide events without issue, the City concludes, based on archive and local observations including historical evidence of storm damage and maintenance, that the seawalls included in the flood hazard analysis and mapping at issue will be stable during a 1-percent annual chance flood event. See attached exhibits.

Request No. 2

Submitted raster data for the seawalls around Newport Bay do not accurately represent conditions on the ground for the following reasons:

- *Survey data point density is very low with considerable interpolation between survey points. Higher density of survey points for individual seawalls is needed to interpolate between points, particularly in areas where individual seawalls for each property are present.*
- *The width of the seawall crests in the raster dataset is about 20 ft. whereas the actual width of the seawall crests is generally less than 5 ft.*

Please modify the seawall raster dataset used in the HEC-RAS model to accurately represent ground conditions.

Response to Request No.2

It is the City's understanding that the objective of the seawall height survey additional information is to identify the location and height of the seawalls for the use of the HEC-RAS model to simulate flood extent in Newport Bay. As shown in Figure 1 below, most of the seawall segments along the shoreline of Balboa Island and Newport Bay are straight and of uniform height, which can be confirmed by two survey points each at the two ends of a seawall segment. Hence, the density of the survey points already submitted by the City is sufficient to meet FEMA's stated objective of accurately representing ground conditions. The survey team kept very detailed field notes and photos to ensure all the necessary detail of the seawalls was captured. Example survey field notes and photos are provided in Figures 2 and 3 below.

The HEC-RAS model simulates flow overtop the seawall using a weir formula and the cell width of approximately 20 ft. shown in the raster dataset is irrelevant. The cells along the seawalls are only used to define the locations and heights of the seawalls. Since the City is setting up the HEC-RAS model to simulate the entire Newport Harbor and Bay, the City tried to limit the cell size to be not smaller than

approximately 20 ft. Reducing the cell size along the seawall to approximately 5 ft. will not affect the model simulated flood extents.

Request No. 3

The wind wave estimation was done using the median wind speed. This approach is not consistent with the study objective of looking at the 1 percent-annual-chance coastal flood event. Please examine wave effects from wind speeds concurrent with the surge return event period of interest.

Response to Request No.3

The effect of waves on flood extent for the Newport Harbor area (AE Zone) was not considered in the hydrodynamic modeling using the HEC-RAS model. Not including the effect of waves in mapping the flood extent of the Newport Harbor is consistent with the approach used in the FEMA Open Pacific Coast (OPC) Study. The City substituted the "bathtub" approach used in the OPC study with the use of more accurate 2D hydrodynamic modeling to map the flood extent in Newport Harbor area. However, per the request of Mr. Ed Curtis during a meeting at the City on June 15, 2017, to go over the City's technical analyses, the City provided the typical wind wave conditions for Newport Harbor with its original appeal submittals.

In the OPC Study, three different approaches were developed for mapping the flood hazard in protected or sheltered waters. For Newport Bay, the "basic" treatment was implemented. Under the basic treatment, the 1-percent-chance still water elevation (SWEL) was extended from the open coast into the bay, which defined the extent of the AE Zone. According to the OPC documentation (IDS Submittal 1, pg. 56), the basic approach is justifiable where "*there is very low exposure to wave energy and no VE zones are expected.*" The OPC study (IDS Submittal 1, pg. 42) further states that "*Newport Bay is one of nine embayments along the CA coastline assessed by BakerAECOM to determine the necessity for detailed wave analysis, as requested by FEMA. It was determined that Newport Bay is almost completely sheltered from wave energy from the open coast, and has relatively short fetches within the Bay. Flooding is likely due to SWEL alone; therefore, a more detailed analysis is not required*."

In addition, even if wave effect is considered, it would not be appropriate to examine the wave effects from 1-percent wind speeds concurrent with the SWEL as suggested. This would pair a 1-percent-chance wind-wave event with a 1-percent-chance SWEL, resulting in a 0.01-percent event with return period on the order of 10,000 years.

Request No. 4

Long (swell) wave energy will penetrate the Newport Bay entrance channel. Depending on the frequency and direction of the swell waves and the nearshore bathymetry, this may have a significant effect on flooding in the bay. Please examine long wave penetration and evolution of long wave energy into Newport Bay as a contributing factor to flooding.

Response to Request No.4

Please see response to Request No. 3 above regarding why swell is not considered. Nevertheless, the City provides the following information regarding typical swell conditions in Newport Harbor for FEMA's reference.

Although both stations are currently inactive, historical data is available for the Coastal Data Information Program (CDIP) at Huntington Beach and Dana Point that spans 1992-2001 and 2000-2016, respectively. The mean wave height and peak period are similar at both stations; specifically, the mean wave height and peak period are approximately 2.6 ft. and 13.3 sec at Huntington Beach, and 3.0 ft. and 13.7 sec at Dana Point. As for wave direction, only the station at Dana Point had available data. The data shows that the most significant wave directions were determined to come from the south, west, and south-southwest.

In lieu of conducting wave modeling, a simple wave diffraction analysis was conducted to provide a quick estimate of penetration of offshore swells through the harbor inlet channel into Newport Harbor. Figure 4 below shows the approximated wave diffraction coefficients for a few locations along Balboa Island and Little Balboa Island for a wave direction of 191° from true north (average of the most common wave directions from south and south-south-west based on Dana Point data). As shown in Figure 4, the wave diffraction coefficient (K) along the southern face of Balboa and Little Balboa Islands ranges from approximately 0.02 to 0.03. Even at the corner of Little Balboa Island which directly faces the inlet channel, the diffraction coefficient is only 0.14. Based on the mean wave height of 2.6 ft. to 3.0 ft. outside of the harbor entrance, the corresponding waves reaching the southern face of Balboa and Little Balboa Islands would only be between roughly 0.05 and 0.09 ft. in height. Swell wave heights further inside of the harbor are expected to be even smaller. Only at the corner of Little Balboa Island, which directly faces the inlet channel, swell wave height may reach about 0.4 ft.

Request No. 5

The Newport Bay HEC-RAS model was validated qualitatively by looking at flood extents for the Jan 10, 2005 flood event. Please provide additional model validation to ensure accuracy of the HEC-RAS model using historic water level observations in Newport Bay. Below are a few examples of data sources that may be used to complete this validation.

- *NOAA hourly tide data from the Newport Bay Entrance Channel (Station ID 9410580) from 1979-1994.*
- *US Army Corps of Engineers (USACE), Los Angeles District, Upper Newport Bay Model Development- Baseline Conditions Analysis, 1998. This study validated an RMA hydrodynamic model of Newport Bay using observed water level data from 1992 at various locations around the bay.*

Response to Request No.5

The comparison of the HEC-RAS model with an actual flood event is to validate the capability of the model to simulate flooding in a coastal urban area due to overtopping of seawall. Generally, any two-dimensional hydrodynamic model such as the HEC-RAS model can accurately simulate water elevations

in open water due to tidal action. The following illustrates the accuracy of the HEC-RAS model in simulating water elevations in the open water of Newport Harbor using the recommended data source (USACE 1998).

In the 1998 U.S. Army Corps of Engineers (USACE) Feasibility Report on Upper Newport Bay Numerical Model Development: Baseline Conditions Analysis, model results were compared with data from two tide gage stations. These stations are situated at Dover Shores and salt dike. Only data from Dover Shore was used in our modeling efforts to compare HEC-RAS model results with the field data. This is because since the USACE study was completed, the salt dike area has undergone extensive restoration and dredging as a part of the Upper Newport Bay Ecosystem Restoration Project and now has completely different bathymetry. The Dover Shore data consisted of observed and simulated water surface elevations for June 11-12 and June 23-24, 1992. A comparison of the USACE data and our modeling results at Dover Shore show an almost exact match for water surface elevations, as presented in Figure 5 below. Specifically, the figure includes a comparison plot for each of the two data timeframes, while each of these individual plots compares RMA modeling results from the USACE study, the City's HEC-RAS modeling results, and observed data from the USACE study. As such, the close match between the USACE data and the City's results provides additional model validation for ensuring accuracy of the HEC-RAS model used in the City's analyses.

Sincerely,

Samir Y. Ghosn, MS, PE, CBO
Deputy Community Development Director | Chief Building Official
City of Newport Beach

SG:ds

c: Rick Sacbibit, Engineering Services Branch Chief, FEMA Federal Insurance & Mitigation Administration
Juliette Hayes, Risk Analysis Branch Chief, FEMA Region IX
Karin Ohman, CFM, Coastal Scientist, Michael Baker International
Seimone Jurjis, Community Development Director & Floodplain Administrator, City of Newport Beach
Dave Kiff, City Manager and Chief Executive Officer, City of Newport Beach

Attachments/Enclosures:
Figures: 1, 2, 3, 4 & 5
Exhibits: 1-A, 1-A.1, 1-B, 1-B.1, 1-C, & 2-A
Scientific Resolution Panel Request Form and Community Submittal Agreement

REFERENCES

USACE 1998. Upper Newport Bay Model Development – Baseline Conditions Analysis.

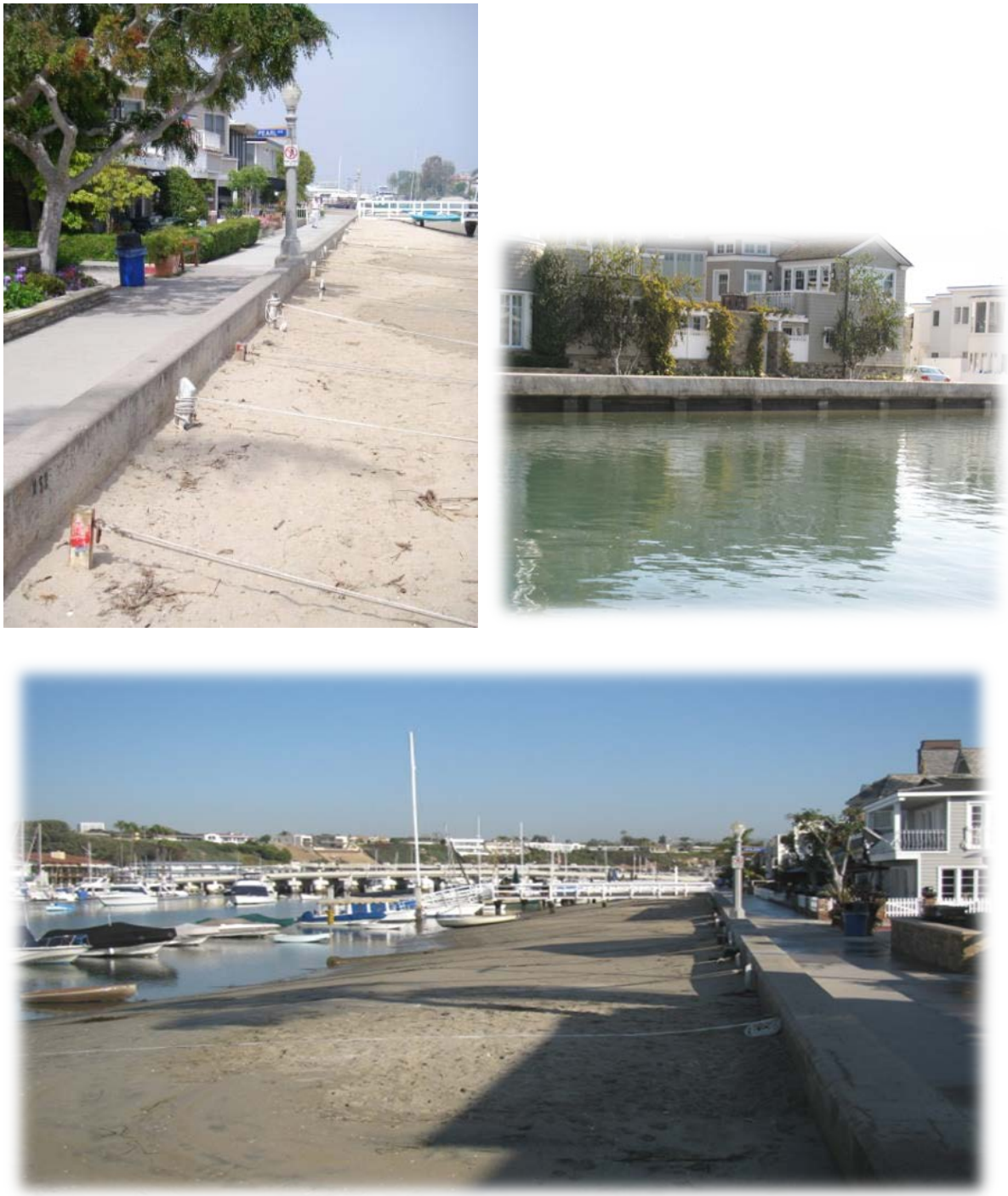


Figure 1. Example Seawalls

Figure 2. Survey Locations on W Bay Avenue between 18th Street and 19th Street

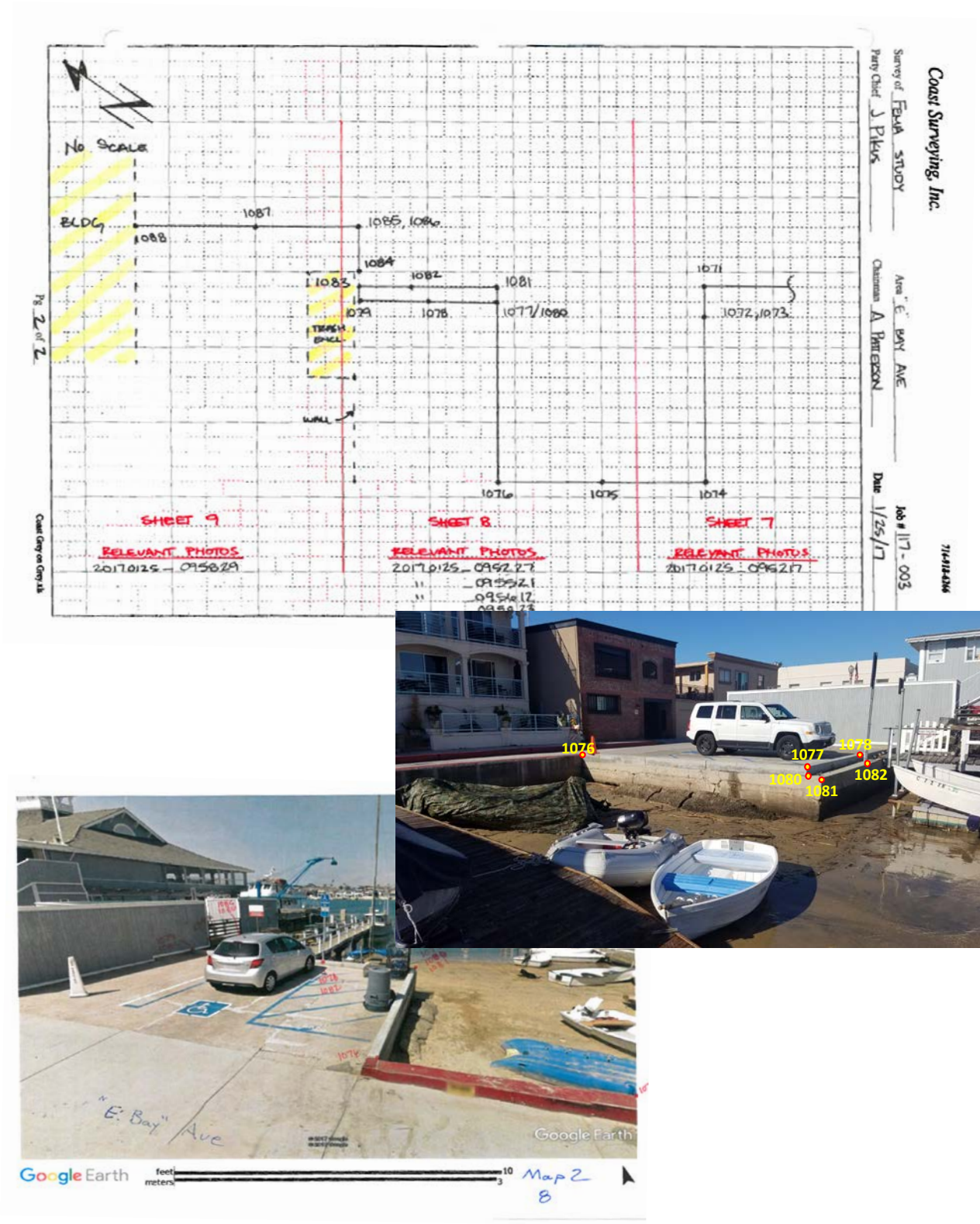
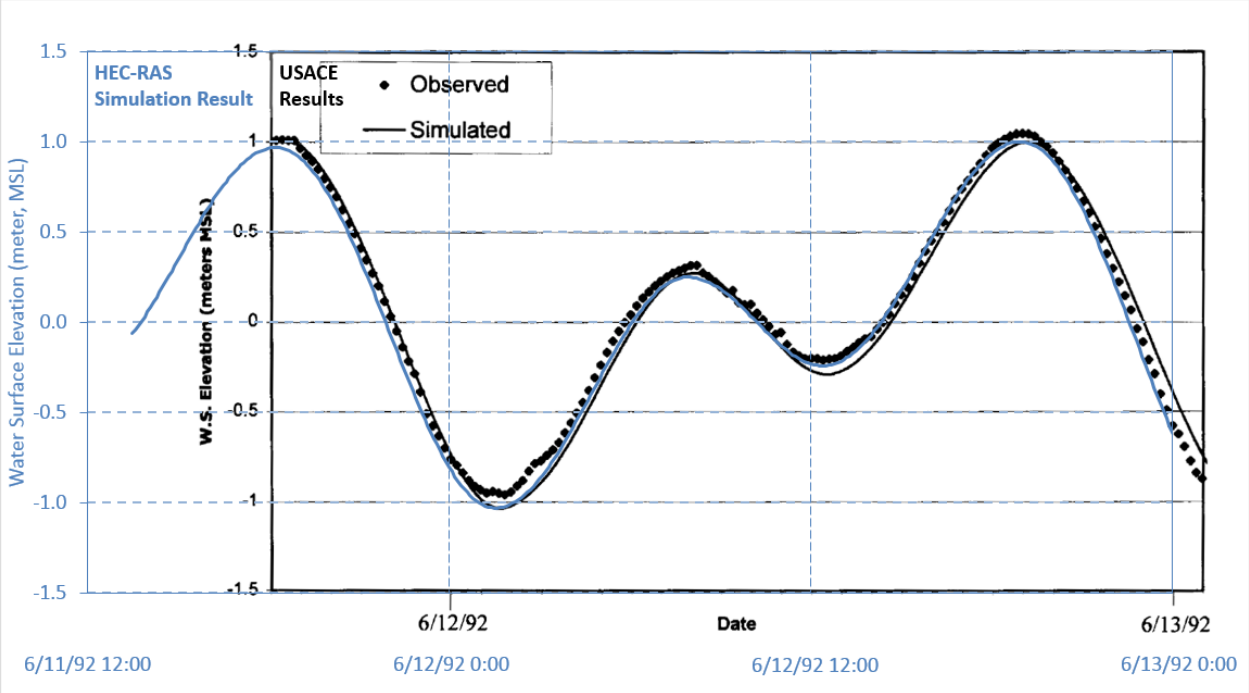


Figure 3. Example Survey Field Notes

Figure 4. Wave Diffraction Coefficients for Newport Harbor



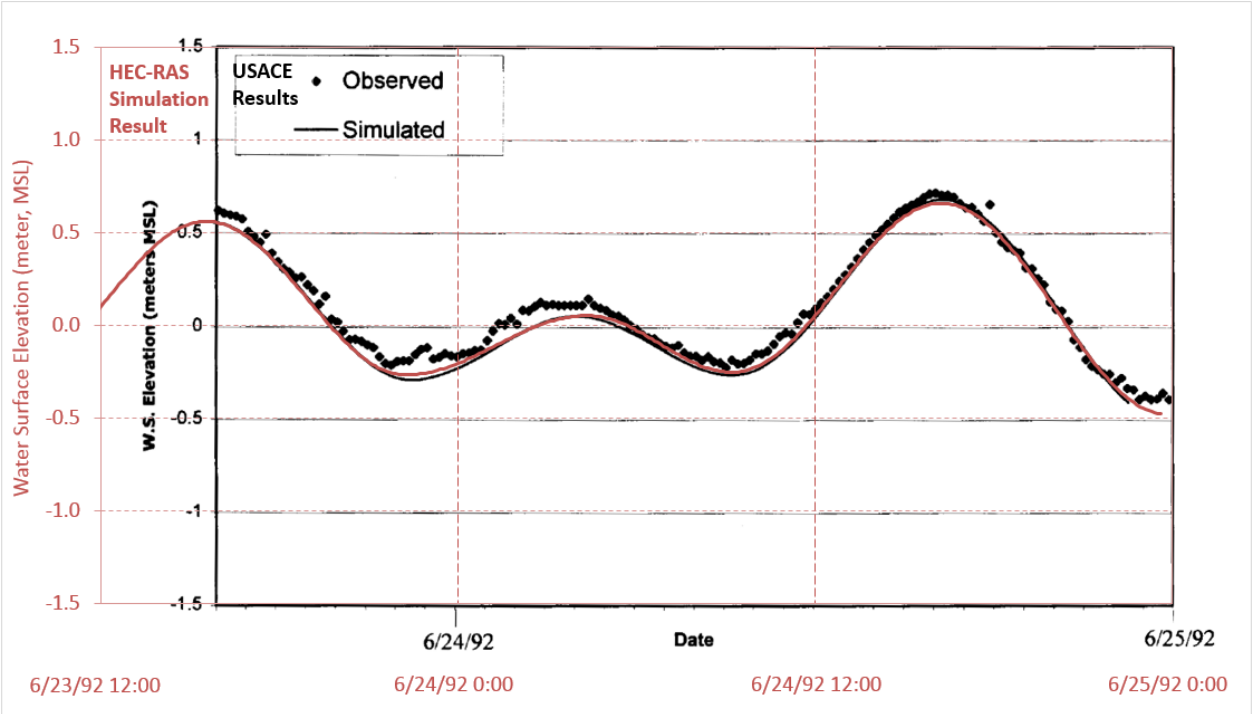


Figure 5. Comparison of Water Surface Elevation Results at Dover Shore for June 11-12, 1992 & June 23-24, 1992 ***(HEC-RAS results shown in blue & red-orange, original USACE results shown in black)***

Harbor Seawalls

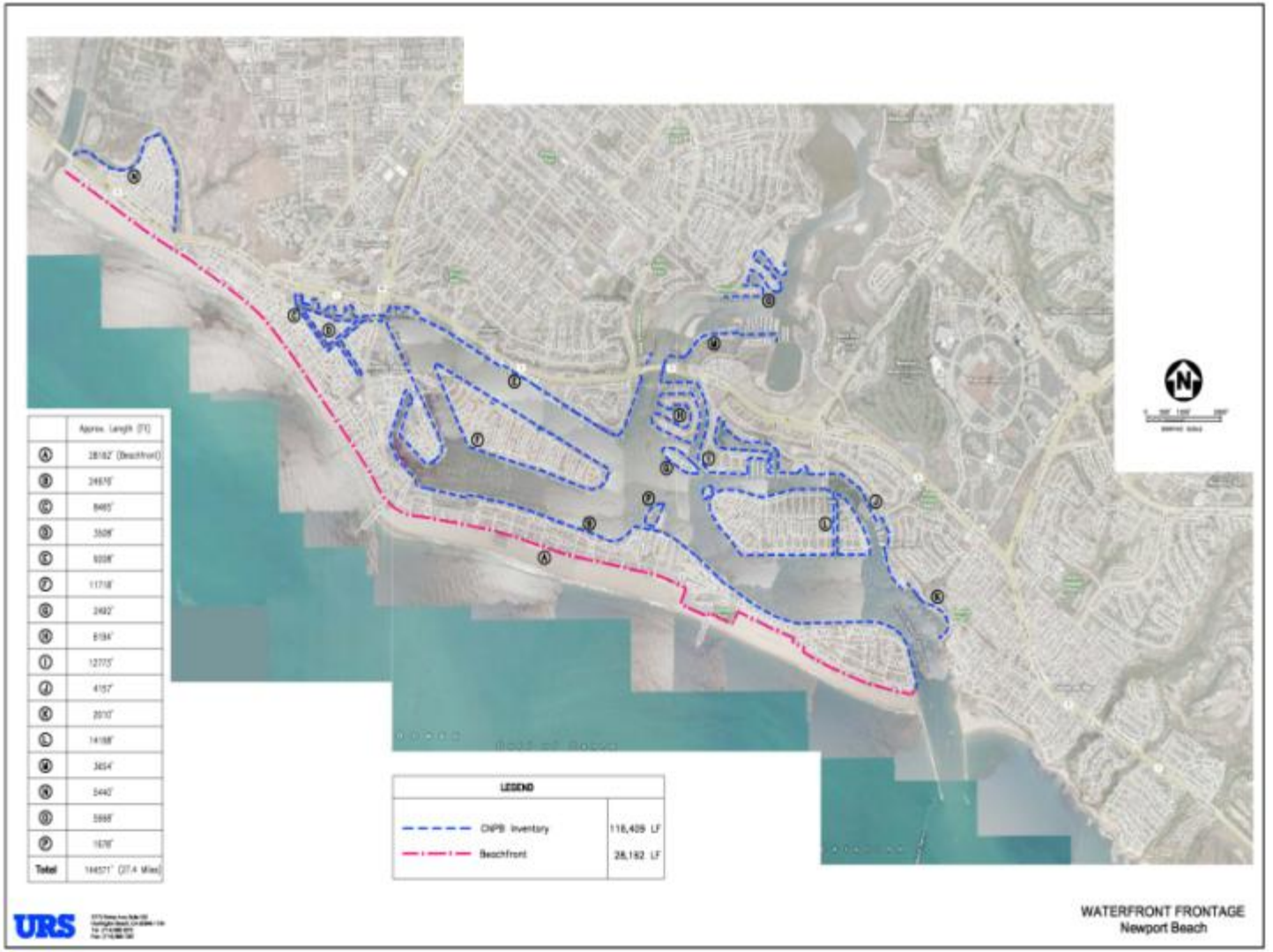
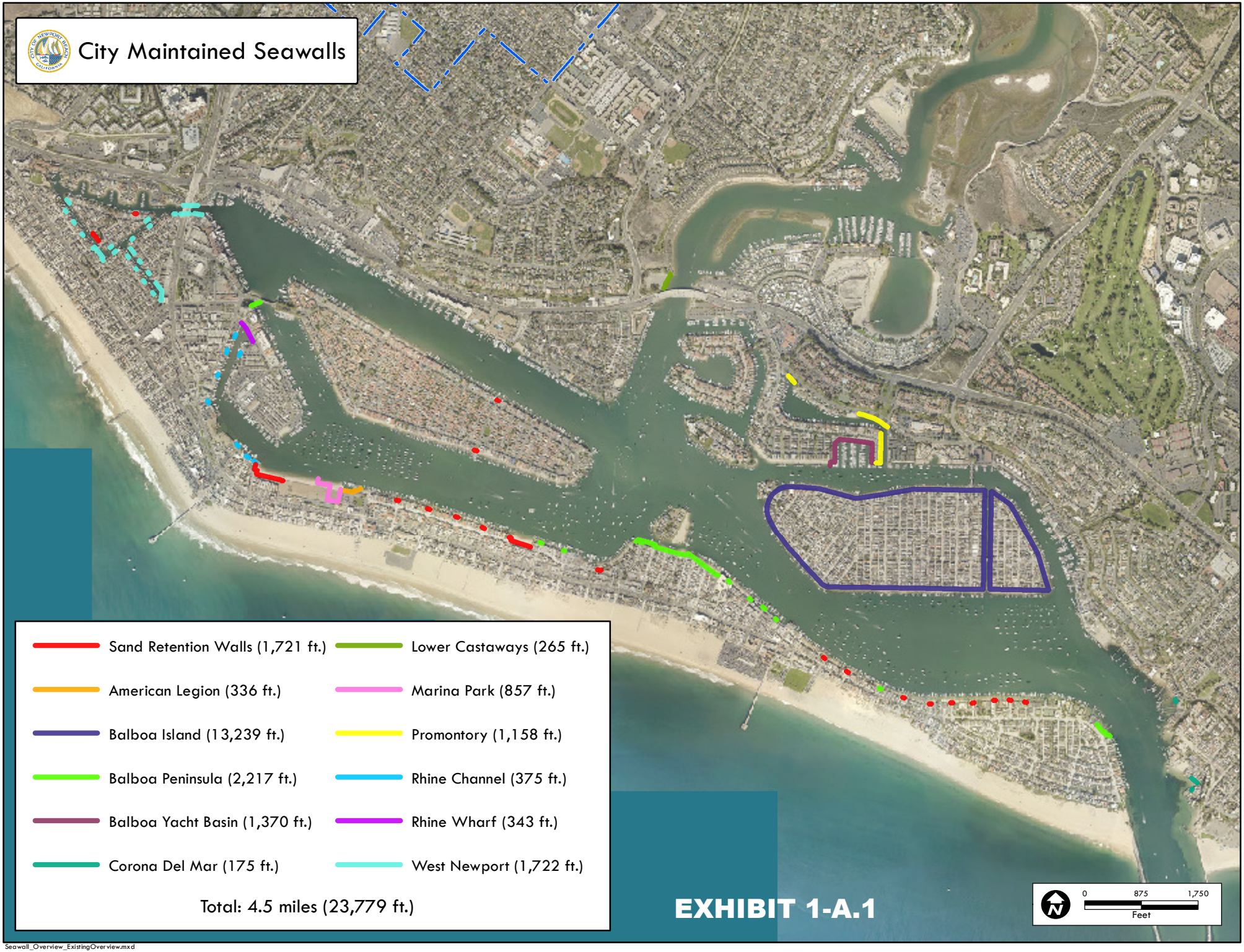
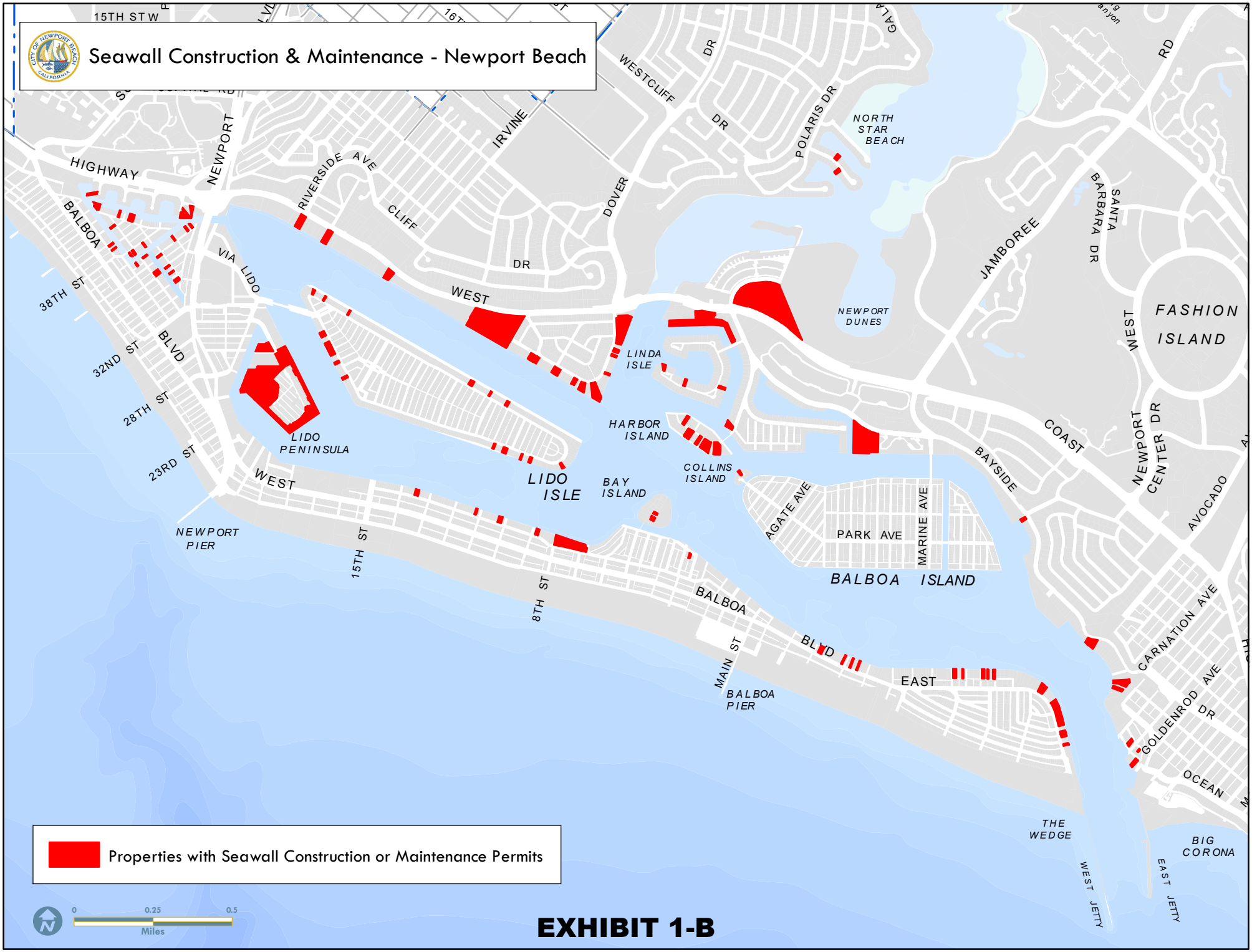


EXHIBIT 1-A



Seawall_Overview_ExistingOverview.mxd


Seawall Construction & Maintenance - Newport Beach
15TH ST W
WESTCLIFF DR
POLARIS DR
NORTH STAR BEACH
HIGHWAY
NEWPORT
IRVINE
RIVERSIDE AVE
CLIFF
DOVER
DR
BALBOA
VIA LIDO
WEST
38TH ST
32ND ST
BLVD
28TH ST
23RD ST
LIDO PENINSULA
LINDA ISLE
HARBOR ISLAND
LIDO ISLE
BAY ISLAND
COLLINS ISLAND
NEWPORT DUNES
JAMBOREE
SANTA BARBARA DR
FASHION ISLAND
COAST
BAYSIDE
NEWPORT CENTER DR
AVOCADO
AGATE AVE
PARK AVE
MARINE AVE
BALBOA ISLAND
NEWPORT PIER
15TH ST
8TH ST
BALBOA BLVD
MAIN ST
BALBOA PIER
EAST
CARNATION AVE
GOLDENROD AVE
OCEAN
THE WEDGE
WEST JETTY
EAST JETTY
BIG CORONA
Properties with Seawall Construction or Maintenance Permits
0
0.25
0.5
Miles
EXHIBIT 1-B
Seawall_ConstructionPermits.mxd

Properties with Seawall Construction or Maintenance Permits

Start Date	01/01/1980

End Date	01/01/2017

NUMBER_KEY	STREET_NAME	STREET_DIRECTION	STREET_NO	DATA_STATUS	DESCRIPTION	DATE_A
M2001-0015	VIA LIDO SOUD		755	FINAL	BUILD SEAWALL	03/09/2001 0:00
M2001-0026	CHANNEL RD		2204	FINAL	REPAIR SEAWALL	04/09/2001 0:00
M2001-0027	COAST HWY	W	1221	FINAL	MAINTENANCE ON SEAWALL TIE BACK	04/12/2001 0:00
M2001-0039	BALBOA BLVD	E	1204	FINAL	REPL SEAWALL IN SAME LOCATION	05/22/2001 0:00
M2001-0085	BAY SHORE DR		2832	FINAL	REPAIR SEAWALL AND ADD RETAINING WALL	10/23/2001 0:00
M2001-0088	HARBOR ISLAND		28	FINAL	REPAIR SEAWALL	10/25/2001 0:00
M2001-0098	HARBOR ISLAND		34	FINAL	ADD CAISSONS TO REINFORCE SEAWALL	11/26/2001 0:00
M2001-0099	BAY SHORE DR		2476	FINAL	ADD DEADMAN AND TIE RODS TO EXISTING SEAWALL	12/10/2001 0:00
MD2002-027	VIA LIDO SOUD		751	APPROVED	Approved as Requested: Request to allow construction of a seawall on the front property line adjacent to the bay. The wall is located within the required 10-foot front yard setback where the Zoning Code limits the height to a maximum of 3 feet. The proposed seawall and required 3-foot high glass guardrail will have an overall height of 7.25 feet above the existing top of seawall. The wall and rail will match the construction on the neighboring properties. The property is located in the R-1 District.	03/11/2002 0:00
M2002-0022	BAYSIDE PL		105	FINAL	REINFORCE SEAWALL W/DEADMEN & TIEBACKS	04/16/2002 0:00
M2002-0037	CHANNEL RD		2278	FINAL	REPAIR SEAWALL	05/23/2002 0:00
M2002-0039	36TH ST		615	FINAL	REPLACE SEAWALL - EXISTING ALIGNMENT	06/03/2002 0:00
M2002-0076	CHANNEL RD		2210	FINAL	A-C-R/R 98 LF SEAWALL & 16 LF RETURN WALL	08/14/2002 0:00
M2002-0104	VIA LIDO SOUD		929	FINAL	NEW SEAWALL TIEBACKS	10/18/2002 0:00
M2002-0106	BAY SHORE DR		2686	FINAL	REPAIR SEAWALL	10/24/2002 0:00
M2002-0108	COAST HWY	E	300	FINAL	REPAIR SEAWALL TIEBACKS	10/30/2002 0:00
M2003-0007	BALBOA BLVD	E	1132	FINAL	REPLACE SEAWALL/BUILD NEW DECK	01/30/2003 0:00
M2003-0021	EVENING STAR LN		305	FINAL	ADD 3' RET WALL ONTOP SEA WALL	04/08/2003 0:00
M2003-0028	BAY SHORE DR		2762	FINAL	INCREASE SEAWALL HEIGHT & ADD TIEBACKS	05/02/2003 0:00
M2003-0029	MARCUS AVE		4001	FINAL	REPLACE 30' OF SEAWALL NAD 12' OF RET WALL	05/07/2003 0:00
M2003-0034	VIA LIDO NORD		118	FINAL	SEAWALL REPAIR, REPL COPING & TIEBACK SYSTEM	05/15/2003 0:00
M2003-0044	VIA LIDO SOUD		323	FINAL	REINFORCE SEAWALL W/TIEBACKS & ADD COPING	06/12/2003 0:00
M2003-0045	FINLEY AVE		3513	FINAL	SEAWALL BULKHEAD EXT	06/13/2003 0:00
MD2003-074	BAY SHORE DR		2762	APPROVED	Request as Modified and Approved: The Modifications Committee approved the request to allow the construction of a retaining wall on top of a seawall and a 3-foot guardrail on top of the retaining wall (to adhere to the Building Code) that will encroach 10 feet into the 10-foot front yard setback (on the water side of the property). Also approved is the construction of a new 5-foot high fence located on the side property line within the 10-foot front setback (in order to satisfy the requirements for pool protection safety for the existing swimming pool on the easterly adjacent lot). The overall height of the retaining wall, guardrail and pool protection fence will exceed the maximum height of 3 feet allowed by the Zoning Code within a front yard setback. All work is being done in conjunction with the construction of a new single-family dwelling. The property is located in the R-1 District.	07/09/2003 0:00
M2003-0081	VIA LIDO SOUD		235	FINAL	RMV & REPL SEAWALL	09/12/2003 0:00
M2003-0091	BAY AVE	W	1104	FINAL	R/R SEAWALL	11/24/2003 0:00

M2004-0034	MARCUS AVE		3500	FINAL	R/R SEAWALL	04/19/2004 0:00
M2004-0035	MARCUS AVE		3502	FINAL	R/R SEAWALL	04/19/2004 0:00
M2004-0042	BAYSIDE PL		111	FINAL	REPAIR SEAWALL	05/19/2004 0:00
M2004-0065	BAY AVE	W	1008	FINAL	NEW SEAWALL 11' HI X 64 LF/RET WALLS 5'-6' HI X 24' LNG	08/10/2004 0:00
M2005-0030	FINLEY AVE		3513	FINAL	ADD 2' TO EXTG SEA WALL	03/31/2005 0:00
M2005-0052	BALBOA COVES		64	FINAL	ADD (3) COURSES & CAP TO (E) SEAWALL	06/13/2005 0:00
M2005-0063	COAST HWY	E	201	FINAL	BULKHEAD REPAIR (2000 LF OF SEA WALL)	08/03/2005 0:00
M2005-0077	BAY AVE	W	1324	FINAL	REPLACE EXTG SEAWALL	08/18/2005 0:00
M2005-0083	CHANNEL PL		3908	FINAL	REINFORCE (E) SEA WALL	08/31/2005 0:00
M2005-0084	VIA LIDO SOUD		239	FINAL	IRON RAILING ON SEA WALL 36" X 32' LONG	09/12/2005 0:00
M2005-0085	HARBOR ISLAND		3	FINAL	DEMO & REBUILT SEAWALL & 8' SIDE RETURN RET. WALL	09/19/2005 0:00
M2005-0088	VIA LIDO NORD		724	FINAL	REINFORCE (E) SEA WALL, NEW HELICAL ANCHORS	09/20/2005 0:00
M2005-0097	MARCUS AVE		3504	FINAL	SEAWALL RPR STAIRS & BENCH DRAINAGE	10/26/2005 0:00
M2006-0080	38TH ST		410	FINAL	R/R 30' OF SEAWALL	08/28/2006 0:00
M2006-0085	BAY SHORE DR		2672	FINAL	R/R COPING,DEADMAN,TIEBACKS @ SEAWALL	09/08/2006 0:00
M2006-0088	BAY AVE	E	1711	FINAL	ADD CAP TO TOP OF SEAWALL	09/28/2006 0:00
M2006-0106	VIA LIDO NORD		104	FINAL	R/R GUARDRAIL @ SEAWALL	11/29/2006 0:00
M2007-0017	BALBOA COVES		61	FINAL	REINFORCE (E) SEAWALL (FROM LAND SIDE)	03/29/2007 0:00
M2007-0023	VIA LIDO NORD		618	FINAL	R/R SEAWALL/R/R DOCK	04/30/2007 0:00
M2007-0024	VIA LIDO SOUD		733	FINAL	REINFORCE EXTG 35' SEAWALL W/1" RODS & 20' DEADMAN	04/30/2007 0:00
M2007-0029	BALBOA COVES		60	FINAL	REINFORCE (E) SEAWALL (FROM LAND SIDE)	05/10/2007 0:00
MD2007-049	BAY AVE	E	1903	APPROVED	ON JULY 23, 2007, THE ZONING ADMINISTRATOR APPROVED THE APPLICATION REQUEST TO EXCEED THE 3 FOOT HEIGHT LIMIT ALLOWED IN FRONT YARDS ADJACENT TO NEWPORT BAY. A PORTION OF THE EXISTING WOOD FENCE ALONG THE EASTERLY SIDE PROPERTY LINE WILL BE REPLACED WITH A 5 FOOT HIGH TEMPERED GLASS WALL. A PORTION OF THE EXISTING 5 FOOT HIGH WROUGHT IRON FENCE ALONG THE WESTERLY SIDE PROPERTY LINE WILL BE REPLACED WITH A 5 FOOT HIGH, NON-CLIMBABLE PLANTER WALL. ALSO REQUESTED, A PORTION OF THE EXISTING WROUGHT IRON FENCE ATOP THE EXISTING SEAWALL, FROM THE EASTERLY SIDE PROPERTY LINE TO THE EDGE OF THE PROPOSED POOL WALL, WILL BE REPLACED WITH A 5 FOOT HIGH, TEMPERED GLASS WALL, GATE AND RELATED GUARDRAIL. THE GLASS WALLS, PLANTER AND GATE ARE FOR BUILDING CODE REQUIRED POOL PROTECTION PURPOSES. THE PROPERTY IS LOCATED IN THE R-1 DISTRICT. THE ZONING ADMINISTRATOR'S APPROVAL IS BASED ON THE FOLLOWING FINDINGS AND SUBJECT TO THE FOLLOWING CONDITIONS.	05/22/2007 0:00
M2007-0034	BALBOA BLVD	E	2136	FINAL	R/R SEAWALL	05/25/2007 0:00
X2007-1866	VIA LIDO NORD		618	FINAL	PRECISE GRADING/R/R SEAWALL/R/R DOCK	08/02/2007 0:00
M2007-0051	VIA LIDO SOUD		221	FINAL	REINFORCE EXTG SEAWALL	08/22/2007 0:00
M2007-0070	HARBOR ISLAND		31	FINAL	SEAWALL RPR 135 SF	11/06/2007 0:00
M2007-0077	RIVER AVE		3806	FINAL	REINFORCE EXIST SEAWALL(3 TIES & 1 DEADMAN	11/16/2007 0:00
M2007-0083	CHANNEL RD		2238	FINAL	RPR SEAWALL & CONCRETE PATIO DECK	12/04/2007 0:00
M2007-0089	LINDA ISLE		14	FINAL	REINFORCING SEAWALL	12/21/2007 0:00
M2008-0004	COAST HWY	E	201	FINAL	SEAWALL REPAIR 9' X 1,200 LF	01/28/2008 0:00
M2008-0024	BAY SHORE DR		2572	FINAL	SEAWALL REPAIR	04/23/2008 0:00
M2008-0039	BAY SHORE DR		2702	FINAL	RPR GROIN WALL & SEAWALL	06/18/2008 0:00
M2008-0044	BEACH DR		55	FINAL	RAISE SEAWALL	07/25/2008 0:00
M2008-0060	BEACH DR		55	FINAL	RET SEAWALL 5'6"MAX HT X 25' LONG	09/24/2008 0:00
M2009-0010	VIA LIDO SOUD		301	FINAL	REINFORCE SEAWALL BY USING HELICAN ANCHORS	03/03/2009 0:00
M2009-0011	BAY SHORE DR		2812	FINAL	REINFORCE (E) SEAWALL	03/04/2009 0:00

M2009-0013	VIA LIDO SOUD		305	FINAL	REINFORCE SEAWALL BY USING HELICAN ANCHORS	03/10/2009 0:00
M2009-0014	VIA LIDO SOUD		309	FINAL	REINFORCE SEAWALL BY USING HELICAN ANCHORS	03/10/2009 0:00
M2009-0015	COAST HWY	E	201	FINAL	INSTALL 1,400 LF SEAWALL GUARDRAIL & GANGWAY GATES	03/12/2009 0:00
M2009-0032	BAY AVE	W	824	FINAL	ADD 1' 6" TO TOP OF (E) SEAWALL (ON PRVT PROP)	05/28/2009 0:00
M2009-0035	BAY AVE	E	1701	FINAL	R/R SEAWALL ALONG EXTG ALIGNMENT	06/10/2009 0:00
M2009-0040	CHANNEL RD		2258	FINAL	REPAIR (E) SEAWALL: ADD COPING & DEADMAN TIEBACK/DECK	07/02/2009 0:00
M2009-0042	FINLEY AVE		3311	FINAL	REPAIR (E) SEAWALL (9' X 28" 11" LF)	07/07/2009 0:00
M2009-0043	CHANNEL PL		3912	FINAL	REINFORCE (E) SEAWALL	07/28/2009 0:00
M2009-0045	FINLEY AVE		3313	FINAL	REPAIR (E) SEAWALL (9' X 1' 1" LF)	08/06/2009 0:00
M2009-0054	COAST HWY	W	2547	FINAL	REINFORCE (E) SEAWALL	09/30/2009 0:00
M2009-0067	CHANNEL RD		2226	FINAL	SEAWALL REPAIR "NEW CONCRTE COPING, TIEBACKS & DEADMAN"	12/07/2009 0:00
X2009-2357	CHANNEL RD		2226	FINAL	GRADING @ SEAWALL REPAIR	12/08/2009 0:00
M2009-0068	COVE ST		2709	FINAL	REINFORCEMENT OF SEAWALL & R/R STAIRS	12/23/2009 0:00
X2009-2477	COVE ST		2709	FINAL	REINFORCEMENT OF SEAWALL	12/23/2009 0:00
X2010-0154	CHANNEL RD		2234	FINAL	INSTALL HARD PILE BEHIND SEAWALL	01/27/2010 0:00
M2010-0018	BALBOA BLVD	E	2130	FINAL	SEAWALL REPAIR/NEW COPING & TIEBACKS	05/13/2010 0:00
X2010-1149	COAST HWY	W	2547	FINAL	GUARDRAIL ABOVE SEAWALL 42" x 50 LF	05/19/2010 0:00
M2010-0042	COVE ST		2619	FINAL	REPAIR (E) SEAWALL W/ NEW COPING AND DEADMEN. TEMP SHORING AT NORTHERLY SIDEYARD	10/12/2010 0:00
X2010-3037	COVE ST		2619	FINAL	REMOVE (E) 12" FROM INTERIOR SEAWALL	12/17/2010 0:00
M2010-0053	BAYSIDE DR		2121	FINAL	REINFRC EXIST 175 FT SEA WALL W/CNCRETE WALL	12/23/2010 0:00
M2010-0054	CHANNEL RD		2218	FINAL	INSTALL NEW TIEBACKS AND DEADMAN AT (E) SEAWALL. ADD 42" GUARD AT TOP OF SEAWALL.	12/23/2010 0:00
M2010-0055	CHANNEL RD		2222	FINAL	INSTALL NEW TIEBACKS AND DEADMAN AT (E) SEAWALL. ADD 42" GUARD AT TOP OF SEAWALL.	12/23/2010 0:00
X2011-0032	CHANNEL RD		2218	FINAL	EXCAVATION FOR INSTALLATION OF DEADMAN ANCHORS FOR ADJ SEAWALL	01/05/2011 0:00
X2011-0034	CHANNEL RD		2222	FINAL	EXCAVATION FOR INSTALLATION OF DEADMAN ANCHORS FOR ADJ SEAWALL	01/05/2011 0:00
M2011-0008	SHIPYARD WAY		101	FINAL	REINFORCE (E) SEAWALL W/CHANCE HELICAL ANCHORS	02/09/2011 0:00
X2011-0340	BAYSIDE DR		2121	FINAL	INSTALL 24' SECANT PILE WALL ALONG SOUTH PROPERTY LINE AND GRADING FOR REINFORCEMENT OF SEAWALL (M2010-0053)	02/10/2011 0:00
M2011-0010	BAYSIDE PL		109	FINAL	SEAWALL REINFORCEMENT	02/17/2011 0:00
X2011-0405	BAYSIDE PL		109	FINAL	(12) CAISSONS @ SEAWALL	02/17/2011 0:00
M2011-0014	VIA LIDO SOUD		813	FINAL	ADD GUARD AND REINFORCE SEAWALL WITH DEADMAN TIEBACKS	03/29/2011 0:00
X2011-1229	VIA LIDO SOUD		813	FINAL	GRADING/ADD GUARD AND REINFORCE SEAWALL WITH DEADMAN TIEBACKS	05/19/2011 0:00
M2011-0031	BALBOA BLVD	E	1106	FINAL	REMOVE/REPLACE (E) SEAWALL 9'-7" X 50 LF	06/06/2011 0:00
X2011-1631	VIA LIDO SOUD		823	FINAL	EXTEND HEIGHT OF EXTG SEAWALL TO REPAIR (E) SUBGRADE STORAGE VAULT	06/28/2011 0:00
M2011-0051	BAY AVE	W	822	FINAL	REINFORCE SEAWALL	09/27/2011 0:00
M2011-0067	COAST HWY	W	2601	FINAL	REPAIR (E) SEAWALL	12/14/2011 0:00
M2012-0005	BAY SHORE DR		2888	FINAL	REINFORCE (E) SEAWALL	01/24/2012 0:00
M2012-0007	FINLEY AVE		3413	FINAL	REINFORCE EXISTING SEAWALL	01/31/2012 0:00
M2012-0011	BAY SHORE DR		2782	FINAL	REINFORCING (E) SEAWALL	03/29/2012 0:00
M2012-0013	BAY AVE	E	1913	FINAL	REPL EXTG SEAWALL, CONSTRUCT CANTILEVERED DECK	04/10/2012 0:00
M2012-0021	COAST HWY	W	2751	FINAL	REINFORCE (E) SEAWALL	08/01/2012 0:00
M2012-0040	BAY AVE	E	1907	FINAL	VENEER EXISTING SEAWALL W/TONGUE AND GROOVE PLASTIC (COSMETIC ONLY)	11/15/2012 0:00
M2013-0007	VIA LIDO SOUD		201	FINAL	REPAIR OF DISTRESSED JIB CRANE FOUNDATION & (E) SEAWALL	02/26/2013 0:00
X2013-0911	38TH ST		312	FINAL	SEAWALL REPAIR	04/11/2013 0:00

Properties with Seawall Construction or Maintenance Permits

M2013-0017	BALBOA COVES		6	FINAL	MOVE EXISTING DOCK OUT FROM SEAWALL 5', REMOVE & REUSE (2) 12" CONCRETE GUIDE PILES	05/01/2013 0:00
M2013-0021	BAY SHORE DR		2588	FINAL	SFR - REINFORCE SEAWALL	05/24/2013 0:00
M2013-0022	LIDO PARK DR		711	FINAL	MFR - REINFORCE SEAWALL	05/24/2013 0:00
M2013-0029	FINLEY AVE		3405	FINAL	REINFORCING (E) SEAWALL (NO-WORK OVER WATER)	08/15/2013 0:00
M2013-0032	LIDO PARK DR		701	FINAL	MFR - REINFORCE 25 LF OF SEAWALL	09/10/2013 0:00
M2013-0033	LIDO PARK DR		703	FINAL	MFR - REINFORCE 25 LF OF SEAWALL	09/10/2013 0:00
M2013-0034	LIDO PARK DR		705	FINAL	MFR - REINFORCE 25 LF OF SEAWALL	09/10/2013 0:00
M2013-0035	LIDO PARK DR		707	FINAL	MFR - REINFORCE 25 LF OF SEAWALL	09/10/2013 0:00
X2013-3516	BAY SHORE DR		2482	FINAL	ADD 32" STEM WALLS & HANDRAILS TO EXTG SEAWALL	12/17/2013 0:00
M2014-0002	LIDO PARK DR		630	FINAL	REINFORCING (E) SEAWALL 48 LF	01/21/2014 0:00
M2014-0009	BAY SHORE DR		2500	FINAL	SEAWALL TIEBACK AND REPLC DEADMAN, RETAINING WALL AND GUARDRAIL	03/03/2014 0:00
M2014-0022	36TH ST		621	FINAL	SFR FILL IN SECTION OF (E) SEAWALL TO LEVEL HEIGHT OF (E) WALL	04/17/2014 0:00
X2014-1200	BAY SHORE DR		2782	FINAL	NEW CONCRETE STEM/RETAINING WALL ON TOP OF (E) SEAWALL 60 LF	04/29/2014 0:00
X2014-1647	BAY SHORE DR		2658	FINAL	REINFORECE (E) SEAWALL 4.5' X 63 LF	06/12/2014 0:00
M2014-0040	CHANNEL PL		4004	FINAL	REPAIR SEAWALL CAP, PILES, & TIE BACK	08/04/2014 0:00
X2014-2372	CHANNEL RD		2254	FINAL	REPLACE SEAWALL HANDRAIL 3'6" H	08/14/2014 0:00
M2014-0048	HARBOR ISLAND RD		107	APPROVED	CONSTRUCT NEW SEAWALL 70 LF W/CANTILEVERED DECK (X2014-2726)	09/18/2014 0:00
X2014-3160	38TH ST		308	FINAL	SFR REPAIR (E) SEAWALL	10/28/2014 0:00
M2015-0002	HARBOR ISLAND		24	FINAL	REINFORCE APPROX 114 LF OF SEAWALL UTILIZING DYWIDAG ANCHORS	01/29/2015 0:00
X2015-0260	HARBOR ISLAND		24	FINAL	REINFORCE APPROX 114 LF OF SEAWALL UTILIZING DYWIDAG ANCHORS (M2015-0002)	01/29/2015 0:00
M2015-0003	VIA LIDO NORD		218	APPROVED	SFR -RE-INFORCE (E) SEAWALL, W/GROUTED TIE-BACKS	01/30/2015 0:00
M2015-0015	BAYSIDE DR		1611	APPROVED	SEAWALL 21' X 54 LF & REINFORCE EXTG SEAWALL/BULKHEAD	05/06/2015 0:00
M2015-0019	LINDA ISLE		45	FINAL	REPAIR (E) SEAWALL	05/13/2015 0:00
M2015-0023	VIA LIDO SOUD		343	FINAL	REPLACE SIX PILES. REDECK PLATFORM. REPAIR COPING AT SEAWALL. REPLACE SIX T-PILES	06/18/2015 0:00
M2015-0025	HARBOR ISLAND		30	FINAL	SEAWALL REPAIR	06/25/2015 0:00
M2015-0032	EDGEWATER AVE	E	307	FINAL	RAISE (5) T-PILE TO BRING PIER APPROACH TO SAMELEVEL AS SEAWALL "WORK IN PRGRS"	07/30/2015 0:00
X2015-2284	COAST HWY	W	2001	FINAL	TEMPORARY EXCAVATION BEHIND A SEAWALL WITH FAILED TIE-BACKS	08/13/2015 0:00
M2015-0034	RIALTO		306	FINAL	SFR REMOVE/REPLACE (E) SEAWALL	08/21/2015 0:00
M2015-0041	BAYSIDE DR		919	FINAL	REINFORCE (E) SEAWALL W/HELICALS ANCHORS	10/08/2015 0:00
M2015-0058	COAST HWY	W	2001	FINAL	COMM- *CHANGE OF CONTRACTOR* RPLC EXTG SEAWALL BY UTILIZING HELICAL TIEBACKS	12/21/2015 0:00
M2016-0010	SHELL ST		2727	FINAL	SEAWALL REPAIR	02/08/2016 0:00
X2016-0606	COAST HWY	W	2001	FINAL	COMM -ADDL SCOPE- DELTA 1 - MODIFY STRUCT SEA WALL WITH (2) ROWS OF HELICAL ANCHORS	02/23/2016 0:00
M2016-0014	RIVER AVE		3812	APPROVED	REPAIR EXISTING SEAWALL 30LF	03/29/2016 0:00
M2016-0015	LINDA ISLE		53	APPROVED	SFR REINFORCE SEAWALL AND REPLACE CONCRETE DECK	04/05/2016 0:00
X2016-2508	BAY ISLAND		3	FINAL	SFR STUCCO, MASONRY, & CONCRETE RPR, INSTL ELEC TO THE SEAWALL	07/29/2016 0:00
X2016-2510	BAY ISLAND		5	FINAL	SFR STUCCO, MASONRY, & CONCRETE RPR, INSTL ELEC TO THE SEAWALL	07/29/2016 0:00
X2016-3042	BAY ISLAND		2	FINAL	SFR STUCCO, MASONRY, & CONCRETE RPR, INSTL ELEC TO THE SEAWALL	09/16/2016 0:00
M2016-0048	BALBOA BLVD	E	1212	FINAL	SFR REINFORCEMENT @ (E) SEAWALL ON HELICAL PIERS (NO WORK IN WATER)	10/17/2016 0:00
M2016-0063	BAY AVE	W	700	APPROVED	REINFORCE EXISTING SEAWALL UTILIZING NEW TIE-BACKS AND DEADMAN, NEW CANTILEVERED CONCRETE DECK.	11/07/2016 0:00
M2016-0065	EVENING STAR LN		312	FINAL	REINFORCE EXTG SEAWALL/BULKHEAD	11/21/2016 0:00
M2016-0076	VIA LIDO SOUD		225	APPROVED	REINFORCING (E) SEAWALL W/DYWIDAG TIEBACKS	12/22/2016 0:00

In 1909, the first "seawall", a wooden bulkhead that protected part of the island, was built.[10]

In 1910, the McFaddens sold Newport, Lido and Balboa Island for US$35,000.

In 1912, the seawall was partially replaced by a cement barrier (cheap German cement).[10]

in 1914, water lines to the island were first laid.[10]

In 1916, Balboa Island was annexed to city of Newport Beach.

In 1919, water for the Island came from the famous "Wooden Water Tower" built on Agate St. (removed in 1929).[10]

In 1920, Park Ave. was the only road paved on the island. People had outhouses behind their house as there was no sewer. They buried trash in big holes dug in vacant lots. Also in this same year, gas utility came to the Island (heating, cooking, lights).[10]

Newport Beach and Balboa Island, 1921

In 1919, Joseph Beek, while still a student at Pasadena City College, was enchanted with the area, and became one of Collins' salesmen. Joe Beek played a crucial role in the development of Balboa Island, and spent a lifetime devoted to it. Beek got the first contract for a ferry between the island and Balboa Peninsula.[10]

In 1920, the first car was pushed across the bay (for 10 cents). In 1922, Joe Beek got a 15-year franchise, using the ferry boat *Joker*, which could hold two cars. That franchise has continued until this day, with three 64 ft (20 m) boats that can carry three cars. He later served as Secretary of the California State Senate until his death in 1968.[10]

In 1922, the seawall was rebuilt.[10]

In 1923, the city annexed Corona del Mar.

In 1926, the Pacific Coast Highway was built through the city. Also a bridge over the Upper Bay was built.

In 1929, The Grand Canal wooden bulkhead and walk were rebuilt in concrete.[10]

In 1936, Newport Harbor was officially dedicated. This occurred after a $1.8 million project dredged out the sandbars and extended the jetties.

In 1938, James Cagney, a famous Hollywood actor at the time, purchased Collins Island. The US Coast Guard used this island during World War II and Cagney eventually sold the island in 1948.

Balboa pavilion and surrounding docks in Newport Beach, circa 1924

Later in the 20th century, Newport Beach became the home of a number of famous celebrities. The most popular Newport Beach celebrity was John Wayne, also known as “the Duke”. Orange County later named its airport for Wayne. Other celebrities residing and/or keeping boats in Newport Beach included James Cagney, Humphrey Bogart, Shirley Temple, and Errol Flynn. Furthermore, "Roy Rogers and Dale Evans" as well as George Burns resided in Newport Beach. Other notables included television star Buddy Ebsen (Beverly Hillbillies, Barnaby Jones), as well as Johnny Carson's most frequent guest host, Joey Bishop. Arizona Senator and 1964 Republican Presidential candidate Barry Goldwater spent many summers living at the Balboa Bay Club.

EXHIBIT 1-C

BALBOA ISLAND AND LITTLE BALBOA ISLAND WORK HISTORY						
Fiscal Year	Contract No.	Drawing No.	Project Name	Descriptions	Limits of Work	Notes
2008-2009	C-3962	H-5167-S	Balboa Island Bulkhead and Seawall Repairs			
2005-2006	C-3796	R-5897-S	2005-06 Balboa Island Bayfront Repairs	Replace sidewalk, and improve drainage	- SBF: Sapphire Ave. to Apolena Ave.; and Onyx Ave. to Marine Ave.; NBF: Marine Ave. to WGC; WGC: NBF to Park. Ave.; Little Island: EGC.	- Have coping work in the work area
		R-5816-S				Missing plans.
2002-2003	C-3544	R-5815-S	2002-03 Balboa Island Bayfront Repairs	Replace sidewalk, and improve drainage	- NBF: Park Ave. to Emerald Ave.; WGC: Park Ave. to SBF.; Little Island: EBF: xxx' EGC to xxx' north of Park Ave.	
2000-2001	C-3420	R-5761-S	2000-01 Balboa Bayfront Repairs	Replace sidewalk, and improve drainage	- Balboa Island: NBF: Emerald Ave. to Pearl Ave.; - SBF: Opal Ave. to Collins Ave.; - Little Island: EBF: EGC to alley; - EBF: xxx' north of Park Ave. to xxx' Park Ave.; - SBF: Abalone Ave. to EBF.	- No coping/bulkhead work.
2001-2002	C-3458	R-5789-S	2001-02 Balboa Island Bayfront Repairs	Replace sidewalk, and improve drainage	- NBF: Ruby Ave. to Marine Ave., and Schedule of Work Locations attached.	- No coping/bulkhead work.
2001-2002	C-3501	H-5159-S	Balboa Island Seawall Repairs	Horizontal and Vertical Joints Repairs	-100 Block of South Bay Front (SBF)	- H-5159-L is the same H-5148-L (?)
1999-2000	C-3303	R-5753-S	1999-00 Balboa Bayfront Repairs	Sidewalk replacement	- E Grand Canal & SBF in Little Balboa Island; W Grand Canal & SBF in Balboa Island	- No coping/bulkhead work.
1998-1999	C-3166	H-5148-L	Balboa Island Seawall Joint Repairs	Horizontal and Vertical Joints Repairs	- Schedule of Work Locations attached.	
1988-1989	C-2468	H-5122-S	Little Balboa Island Seawall Raising	Raise coping along EBF in Little Island	- EBF in Little Island	
1987-1988	C-2525	H-5111-S	Balboa Island Bulkhead Repair Near Waters Way		- SBF: Park Ave. to Emerald Ave.	
1983-1984		H-5099-S	Balboa Island Bulkhead Elevations	Repair coping & bulkhead with gunite; heighten coping 9-inches along Grand Canal	- Coping along Grand Canal (both sides).	
1980-1981	C-2185	H-5091-L	Phase III Balboa Island Bulkhead Coping Repairs	Repair coping & bulkhead with gunite; heighten coping 9-inches along Grand Canal	- Last blocks along Grand Canal & NBF (~464' on W Grand Canal; 433' on E Grand Canal	
1979-1980	C-2104	H-5088-S	Phase II Balboa Island Bulkhead Coping Repairs	Repair coping & bulkhead with gunite; heighten coping 9-inches along Grand Canal	- WGC and EGC at north of Park Ave. See Plans.	
1977-1978	C-1860	H-5078-S	Balboa Island Bulkhead Coping Repairs	Repair coping & bulkhead with gunite; heighten coping 9-inches along Grand Canal	- WGC and EGC at south of Park Ave. See Plans.	

EGC: East Grand Canal
WGC: West Grand Canal
NBF: North Bay Front
SBF: South Bay Front
WBF: West Bay Front
EBF: East Bay Front

EXHIBIT 2-A

BALBOA ISLAND AND LITTLE BALBOA ISLAND WORK HISTORY						
Fiscal Year	Contract No.	Drawing No.	Project Name	Descriptions	Limits of Work	Notes
2007-2008 8 9	C-3962					
2005-2006	C-3796	R-5897-S	2005-06 Balboa Island Bayfront Repairs	Replace sidewalk, and improve drainage	- SBF: Sapphire Ave. to Apolena Ave.; and Onyx Ave. to Marine Ave.; NBF: Marine Ave. to WGC; WGC: NBF to Park. Ave.; Little Island: EGC.	- Have coping work in the work area
		R-5816-S				Missing plans.
2002-2003	C-3544	R-5815-S	2002-03 Balboa Island Bayfront Repairs	Replace sidewalk, and improve drainage	- NBF: Park Ave. to Emerald Ave.; WGC: Park Ave. to SBF.; Little Island: EBF: xxx' EGC to xxx' north of Park Ave.	
2000-2001	C-3420	R-5761-S	2000-01 Balboa Bayfront Repairs	Replace sidewalk, and improve drainage	- Balboa Island: NBF: Emerald Ave. to Pearl Ave.; - SBF: Opal Ave. to Collins Ave.; - Little Island: EBF: EGC to alley; - EBF: xxx' north of Park Ave. to xxx' Park Ave.; - SBF: Abalone Ave. to EBF.	- No coping/bulkhead work.
2001-2002	C-3458	R-5789-S	2001-02 Balboa Island Bayfront Repairs	Replace sidewalk, and improve drainage	- NBF: Ruby Ave. to Marine Ave., and Schedule of Work Locations attached.	- No coping/bulkhead work.
2001-2002	C-3501	H-5159-S	Balboa Island Seawall Repairs	Horizontal and Vertical Joints Repairs	-100 Block of South Bay Front (SBF)	- H-5159-L is the same H-5148-L (?)
1999-2000	C-3303	R-5753-S	1999-00 Balboa Bayfront Repairs	Sidewalk replacement	- E Grand Canal & SBF in Little Balboa Island; W Grand Canal & SBF in Balboa Island	- No coping/bulkhead work.
1998-1999	C-3166	H-5148-L	Balboa Island Seawall Joint Repairs	Horizontal and Vertical Joints Repairs	- Schedule of Work Locations attached.	
1988-1989	C-2468	H-5122-S	Little Balboa Island Seawall Raising	Raise coping along EBF in Little Island	- EBF in Little Island	
1987-1988	C-2525	H-5111-S	Balboa Island Bulkhead Repair Near Waters Way		- SBF: Park Ave. to Emerald Ave.	
1983-1984		H-5099-S	Balboa Island Bulkhead Elevations	Repair coping & bulkhead with gunite; heighten coping 9-inches along Grand Canal	- Coping along Grand Canal (both sides).	
1980-1981	C-2185	H-5091-L	Phase III Balboa Island Bulkhead Coping Repairs	Repair coping & bulkhead with gunite; heighten coping 9-inches along Grand Canal	- Last blocks along Grand Canal & NBF (~464' on W Grand Canal; 433' on E Grand Canal	
1979-1980	C-2104	H-5088-S	Phase II Balboa Island Bulkhead Coping Repairs	Repair coping & bulkhead with gunite; heighten coping 9-inches along Grand Canal	- WGC and EGC at north of Park Ave. See Plans.	
1977-1978	C-1860	H-5078-S	Balboa Island Bulkhead Coping Repairs	Repair coping & bulkhead with gunite; heighten coping 9-inches along Grand Canal	- WGC and EGC at south of Park Ave. See Plans.	

EGC: East Grand Canal
WGC: West Grand Canal
NBF: North Bay Front
SBF: South Bay Front
WBF: West Bay Front
EBF: East Bay Front

EXHIBIT 2-A

US. Department of Homeland Security
500 C Street, SW
Washington, DC 20472

FEMA

Scientific Resolution Panel Request Form

This form is to be completed by the community's Chief Executive Officer (CEO) or the authorized representative of the community for which the appeal is being filed. The CEO will consolidate all unresolved appeals by private persons and submit them on their behalf. The CEO will also forward to FEMA copies of appeals not endorsed by the community and certify that no further appeals will be brought to FEMA for the community.

Date: January 4, 2018

Name of Community: City of Newport Beach

County and State of Community: Orange County

Name of Community CEO or authorized representative: Dave Kiff, City Manager

Mailing Street Address: 100 Civic Center Drive

City: Newport Beach State: CA Zip: 92660

Phone Number (Work): (949) 644-3001

Phone Number (Cell):

Email Address: dkiff@newportbeachca.gov

Does the data submitted constitute an **appeal**? (Y/N) Yes

If yes, does the submitted data satisfy the data requirements outlined in 44 CFR Section 67.6 (b) of the National Flood Insurance Program (NFIP) regulations and demonstrate that FEMA's proposed flood hazard determinations (proposed flood hazard determinations may include the addition or modification of Base Flood Elevations (BFEs), base flood depths, Special Flood Hazard Area (SFHA) boundaries or zone designations, or regulatory floodways) are:

☐ (1) technically incorrect due to a mathematical or measurement error or changed physical conditions?

☑ (2) technically incorrect due to error in application of hydrologic, hydraulic or other methods or use of inferior data in applying such methods?

☑ (3) scientifically incorrect?

If an oral presentation to the SRP is necessary to support this appeal, please justify here.

First, the City appeals the base flood elevation determination in the Newport Bay and harbor (AE Zone) because the proposed base flood elevations are scientifically incorrect. Second, the City appeals the base flood elevation determinations in the Newport Coast (VE Zone) because the proposed base flood elevations are technically incorrect due to error in the application of hydrologic, hydraulic or other methods or use of inferior data in applying such methods.

Oral presentation will be helpful the support the appeal based on scientific methods that otherwise might not have been listed in FEMA but widely used.

Community Commitment and Certification

The community certifies that:

1. the data provided for SRP review was entirely submitted to FEMA during the 90-day appeal period.
   ■ Y ☐ N
   After FEMA reviewed the City's appeal submittals dated August 30, 2017 and September 6, 2017, FEMA requested additional information from the City on November 21, 2017. The City responded to FEMA by providing such additional information on January 4, 2018. Concurrent with such additional information, the City submitted this SRP Request Form.
2. no additional data will be submitted for this or any other appeal for SRP consideration
   ■ Y ☐ N
   As part of this SRP request, the City submits a copy of its appeal submittals to FEMA dated August 30, 2017 and September 6, 2017 as well as the additional information requested by FEMA on November 21, 2017 (submitted by the City on January 4, 2017).
3. there may be no submission of any other appeals not consolidated with this submission.
   ■ Y ☐ N
   On August 30 and September 6 of 2017, at the time the City submitted its appeal, the City also submitted a written opinion from Dave Kiff deciding to consolidate 326 appeals of private owners and lessees of property in the City with that of the City. The City's SRP request intends to cover the City's appeal, which is consolidated with the appeals of such private owners and lessees.

Location of Contested Flood Hazard Determination Data

4. *Identify the specific river reaches or coastal transects challenged by the data.*

   The exact river reaches or coastal transects are found in the City's appeal submittals dated August 30, 2017 and September 6, 2017 submitted herewith including Table 3 on Page 6, letter dated August 30, 2017, using average slope for transects VE Zones 16, 17, 18, 19, 20, 21, 22, 23, and 24.

5. *Please identify areas of expertise the community believes are pertinent for representation on the SRP.*

   The coastal flood hazard analysis and coastal storm and hydraulic engineering.

6. **Description of information to be submitted by the community indicating that the flood hazard data proposed by FEMA are scientifically or technically incorrect**
Please include on a separate page labeled "Attachment A: Summary of Appeal Information" a summary of the specific technical issues, errors in FEMA's data, or different technical processes submitted to contest the flood hazard determination data proposed by FEMA.

See attachment labeled "Attachment A: Summary of Appeal Information."

7. **Acceptance by Community of Terms and Conditions for the Initiation of an SRP**
To initiate the SRP process, the community's CEO or authorized representative must accept the following terms and conditions on behalf of the community and individuals whose appeals are consolidated with this submission.

a) The community understands that the FEMA Administrator is not required to accept the recommendation of the SRP, and that upon the Administrator's final determination that no further consideration will be given to the community's appeals. The parties will maintain their right to appeal to the appropriate Federal District Court pursuant to 44 CFR Section 67.12 of the NFIP regulations.

b) The community has read the FEMA-prepared Guidance Memorandum titled "Implementing the Scientific Resolution Panel Process" and agrees to work with the National Institute of Building Sciences (NIBS) in the timely completion of the SRP review, including timely selection of panel members and participation in additional review procedures if requested.

c) The community agrees that no contact will be made with the Panel members except as expressly requested by NIBS before, during or after the SRP review is undertaken.

d) The community agrees that they have read and signed the "Community Submittal Agreement."

city manager

Signature of Community CEO or Authorized Representive

Attachment A: Summary of Appeal Information

NEWPORT BEACH SUMMARY OF APPEAL

Upon reviewing the Preliminary Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) for the City of Newport Beach (City), the City has identified major issues and concerns with the data and methods used by the Federal Emergency Management Agency (FEMA) to establish the Base Flood Elevations (BFEs) and corresponding flood zones for the City, specifically the Newport Bay and Harbor as well as Newport Coast. The City appeals FEMA's analysis for the proposed FIRM, FIS, and BFEs based on the City's finding that FEMA's analysis conducted for the AE zone is scientifically incorrect and the VE zone is technically incorrect. In submitting its appeal, the City submitted a written opinion of Dave Kiff, the City's Chief Executive Officer and City Manager, deciding that the evidence presented in support of the City's appeal is sufficient to justify an appeal on behalf of the several private owners and lessees of property in the City by the City in its own name, and that the appeal sets forth the data that tends to negate or contradict the Flood Insurance Administrator's proposed findings and revisions to the FIRM, FIS, and BFE. As a result, the City considers the appeals of such private owners and lessees of property to be consolidated with the City's appeal.

SUMMARY OF SPECIFIC TECHNICAL ISSUES, ERRORS IN FEMA'S DATA, AND DIFFERENT TECHNICAL PROCESSES SUBMITTED TO CONTEST THE FLOOD HAZARD DETERMINATION DATA PROPOSED BY FEMA

NEWPORT BAY AND HARBOR (AE ZONE)

For the AE Zone the City requests revisions of the flood boundaries. The City identified the following major issues with the mapping of the FIRM's flood boundary that the City found to be scientifically incorrect:

(1) The topographic data used in mapping the flood zone did not incorporate the seawall elevations of Newport Bay, especially those along Newport Peninsula and the Balboa Islands.

(2) The use of the "bathtub" model to map the flood extent is incorrect.

Following the FEMA guidelines (FEMA 2009), the City provides the following data and new analysis—based on a more scientific and accurate method--to support the City's request for revision to the flood boundaries shown in the Preliminary FIRM for the AE Zone within the City.

The bathtub approach is scientifically incorrect and does not provide an accurate model for flood mapping. The City believes that the use of 2D hydrodynamic modeling is critical for providing accurate flood mapping for the AE Zone of Newport Bay and Harbor.

Hence, the City used the FEMA-approved HEC-RAS model (version 5.0) to conduct flood modeling of the Newport Bay and Harbor. HEC-RAS version 5.0 includes 2D flood routing capabilities and allows a time-varying stage hydrograph that can be used to simulate tidal forcing at the ocean boundary. Figure 2a shows the HEC-RAS model domain for the Newport Bay and Harbor. In setting up the model, the City started with the Newport Beach topographic data that was used in the Open Pacific Coast (OPC) Study provided to the City by FEMA's mapping contractor Ms. Karin Ohman, and added the seawall elevation survey data to the model. Figure 2b provides an example of the model grid setup with seawall data.

Specifically, the figure shows a zoomed view of the computational mesh, and the modeled seawall, which surrounds the corners of Balboa Island and Little Balboa Island. For the HEC-RAS model, the effect of waves on flooding was not considered because the waves in the Newport Harbor are generally very small. Since the Harbor is sheltered by land, no significant ocean swell is expected to penetrate within, and the wave conditions in the harbor are likely to be governed by local wind waves instead. Figure 3 shows a wind rose developed based on available wind data from the nearby Balboa Pier (Station no. H0498) for the period from June 2004 through May 2008 (MesoWest 2017). As shown in the figure, the majority of the winds come from the southwest quadrant, while calm winds (speeds below 2 mph) were reported over 37% of time. Based on the wind data, the median wind speed for the given period was calculated to be 3 mph. Using this median wind speed, wind waves across three example fetches in the Harbor (shown in Figure 4) were estimated using the ACES program within the CEDAS (version 4.03) suite of programs developed by the U.S. Army Corps of Engineers (Veri-Tech, Inc. 2010). Table 1 presents the wave heights and corresponding fetch lengths resulting from this analysis, and shows that typical wind waves in Newport Harbor are expected to be less than or equal to 0.1 ft. in height.

NEWPORT COAST (VE ZONE)

The proposed BFE's for the VE Zone are technically incorrect. For the VE Zone that applies along the open coastline of the City, the City requests revisions for both the BFEs and flood zone boundaries. The City agrees with the methodology used for this VE Zone, but disagrees with the select use of a few non-representative beach transects to calculate the BFEs. Instead, the City proposes an improved approach that uses existing beach slope data to calculate the BFEs. In addition, the City has a program, which has been active since the 1960s, for constructing beach berms along the Newport Peninsula as needed prior to high wave events to protect houses and public facilities from flooding. The policy for constructing winter beach berms when needed is written in both the City's Storm Action Plan (attached) and Local Coastal Plan. Hence, the beach berm program should be considered in the determination of the most likely winter profile and subsequent overtopping analysis. Details of the City's Beach Berm Program are provided in the attached document, entitled "Balboa Peninsula Flood Protection Program: Evolving Measures to Protect the Peninsula from Flooding Due to High Tides and Waves."

In the OPC Study documentation, a "backshore feature" was loosely defined as a backshore crest or beach transition point. Overtopping extent was then calculated at the selected backshore feature, using the 1% TWL calculated at the foreshore. The VE Zone was mapped to the inland limit of the calculated overtopping extent caused by the 1% TWL overtopping of the backshore feature. In the OPC Study documentation, the authors state that before overtopping analysis is performed, it is important to first estimate whether the beach profiles extracted from the study terrain exhibit beach profile conditions that exist just before the occurrence of an episodic winter storm (IDS#3, pg. 33). Due to the City's Beach Berm Program described in the "***Newport Coast (VE Zone)***"section above and detailed in City of Newport Beach (2017), the raw beach profile data extracted from the study terrain represents a condition that is highly unlikely to precede a large winter storm event. Figure 13 shows examples of beach berms constructed at various locations throughout the City.

CHRONOLOGY OF EVENTS

- On August 15, 2016, FEMA issued the Preliminary FIRM, FIS report, and BFEs
- On April 12, 2017, the City issued a comment letter to FEMA to request that the preliminary FIRM, FIS, and BFEs be revised.

- On June 15, 2017, the City met with FEMA representatives Mr. Ed Curtis and Ms. Karin Ohman. At that meeting, suggestions were made by FEMA to the City to improve the analysis and provide additional documentation as follows:
    - Model must be set up to create and re-create historical run.
    - Include wind effects such as wind set up and wind wave effect.
    - Sea wall elevation data to be provided by a licensed surveyor
- On August 30, 2017, the City submitted a letter of appeal with supporting documents.
- On September 6, 2017, the City submitted additional supporting analysis for its appeal.
- On November 21, 2017, the City received a letter from FEMA requesting additional information.
- On December 6, 2017, the City requested an extension to provide the additional data in response to FEMA letter dated November 21, 2017.
- On December 20, 2017, Mr. Ed Curtis, by e-mail, approved the requested extension of the City allowing the City to respond to FEMA's November 21, 2017 letter on or before January 20, 2018.
- On December 21, 2017, the City forwarded Mr. Ed Curtis via e-mail a letter requesting an affirmation of a resolution letter to the City's appeal and requesting clarification on the ability of the City to request resolution of the appeal by a Scientific Resolution Panel (SRP).
- On December 21, 2017, Mr. Ed Curtis e-mailed the City with an acknowledgement that a formal resolution letter regarding the City's appeal would issue regardless of outcome, and that the City could request a SRP within thirty days of the issuance of the resolution letter.

FEMA has indicated that formal letters memorializing the emails of Mr. Ed Curtis granting the City's extension request and confirming the SRP request timeline are forthcoming. As of January 3, 2018, the City is not in receipt of such letters. The City has elected to file a request for its appeal to be resolved by a SRP within the initial 120 period during which the City is allowed to request a SRP. Should the SRP request additional data or analysis from the City or clarification on information submitted with the appeal, please advise.

NATIONAL INSTITUTE OF BUILDING SCIENCES
SCIENTIFIC RESOLUTION PANEL

Community Submittal Agreement

This AGREEMENT is made this 4th day of January, 2018, by and between the NATIONAL INSTITUTE OF BUILDING SCIENCES ("Institute"), a District of Columbia not-for-profit corporation, 1090 Vermont Avenue, NW, Suite 700, Washington, D.C. 20005-4950, and City of Newport Beach ("Community").

1. The National Flood Insurance Act (42 U.S.C. § 4104(e)) and Federal Emergency Management Agency (FEMA) regulations (44 C.F.R. § 67.8) provide that the FEMA Administrator shall review and take fully into account any technical or scientific data submitted by a community that tend to negate or contradict the information upon which FEMA's proposed flood elevation determination is based. The Act and regulations further state that the Administrator may submit the conflicting data to an independent scientific body or appropriate Federal agency for advice. The decision of such body or agency serves as their recommendation to the FEMA Administrator. The Administrator makes the final flood elevation determination.

2. The Institute, pursuant to contract with FEMA, has the responsibility as Panel Sponsor to develop and maintain a cadre of scientific experts (hereinafter referred to as "SRP cadre members" or "Panelists") to constitute the Scientific Resolution Panel cadre of experts (hereinafter referred to as "SRP cadre of experts"), from which will be convened an independent scientific body (hereinafter referred to as an "SRP" or "Panel"); to make the SRP available to FEMA and communities pursuant to the Act; and to administer SRP operations. The purpose of this Agreement is to set forth the understanding, terms and conditions by which the Community submits its conflicting data to an SRP Appeal Panel for resolution.

3. The Institute has selected and invited a number of qualified, independent experts to serve on the SRP based on their scientific expertise in the field of surface water hydrology, hydraulics, coastal engineering, or other relevant engineering and scientific fields.

4. The Community has challenged FEMA's proposed flood elevation determination and has elected to have its technical and/or scientific data reviewed by an SRP to determine whether it negates or contradicts the information upon which FEMA's proposed flood elevation determination is based. By doing so, the Community represents that it understands and agrees to abide by the SRP process as described in the applicable law, FEMA Regulations, and the SRP Rules and Procedures.

5. The Community shall be entitled to designate a simple majority of the Panel members, e.g., three of the members of a Panel of five, from the cadre of SRP members provided by the Institute. The SRP shall consist of persons who do not have a personal or professional interest in the appeal or the result of the appeal and do not reside in the State from which the appeal is taken.

6. The Panel, once appointed, shall consider the submission of the conflicting data and render a written simple majority advisory decision with rationale, as to whether the Community's technical or scientific data negates or contradicts the information FEMA relied upon in proposing its flood elevation determination according to the applicable rules and procedures of the SRP. The Panel's written simple majority advisory decision constitutes a recommendation to the FEMA Administrator for final determination of the appeal.

7. The Community agrees to hold the Panel members and the Institute harmless from and against all claims of loss, liability or damages resulting from the decision of the Panel, from an individual panelist's decision or conduct in serving on the Panel, or from the Institute's administration of the SRP or the Panel.

8. The Institute's point of contact for all communications with the SRP is:

Dominique Fernandez
1090 Vermont Ave., NW, Suite 700
Washington, DC 20005
Telephone: 202.289.7800
Email: dfernandez@nibs.org

Henry L. Green, Hon. AIA (Date)
President
National Institute of Building Sciences

1-4-18
(City Manager) (Date)
City of Newport Beach
(Community Name)