

GETTING PREPARED: WINTER STORMS & EL NIÑO

September 28, 2026



Disaster Preparedness and Emergency Communications

CITY OF
LONG BEACH

2026-27 WINTER SEASON OUTLOOK

EL NIÑO'S POSSIBLE OUTCOMES

- Higher than average season total rainfall
- More frequent and intense storms
- Higher sea levels

KING TIDES EXPECTED DATES

- Late November 2026: November 24-26
- Late December 2026: December 23-25
- Mid-January 2027: January 21-22

** El Niño-driven ocean effects, like high-water Kelvin waves, are expected to reach Southern California by early to late October 2026, with overall weather impacts peaking between November and February*

PREPARING FOR SEVERE WEATHER

Residents are encouraged to be self-sufficient for up to five (5) days, and take the following steps to prepare:



SIGN UP FOR ALERT LONG BEACH

Visit AlertLB.com to receive emergency notifications by phone, text or email



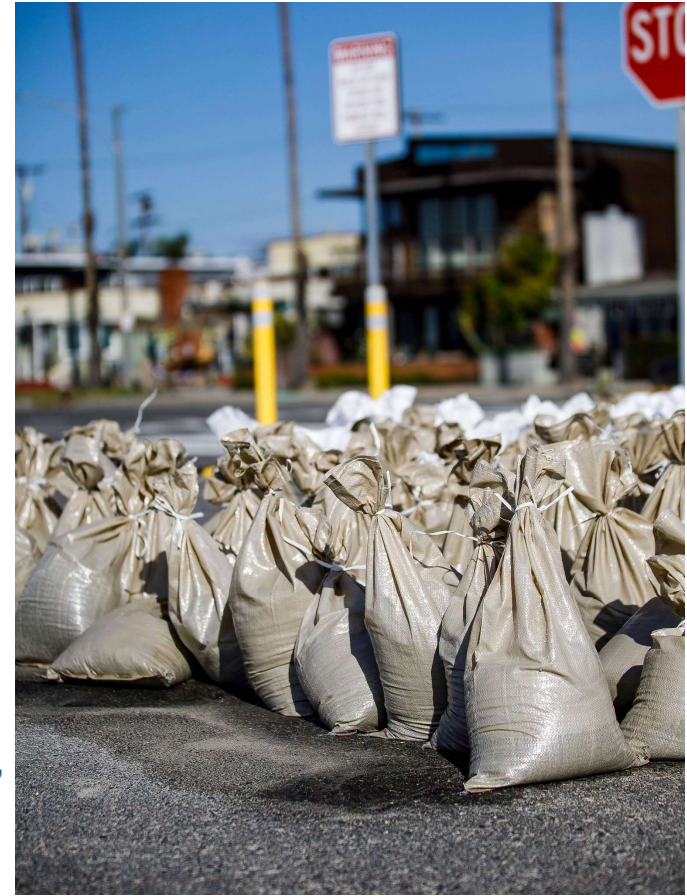
PROTECT YOUR HOME AND PROPERTY

Clean gutters, check for roof leaks, secure outdoor furniture, and consider purchasing a sump pump and generator



BUILD AN EMERGENCY KIT AND GO-BAG

Include 5 days of supplies including water, food, medication, first aid supplies, flashlights, batteries, and pet supplies



PREPARING FOR SEVERE WEATHER



MAKE A FAMILY EMERGENCY PLAN

Identify how family members will communicate and where they will meet if separated



GATHER IMPORTANT DOCUMENTS

Secure/digitize documents like identification, insurance, medical, financial and property records



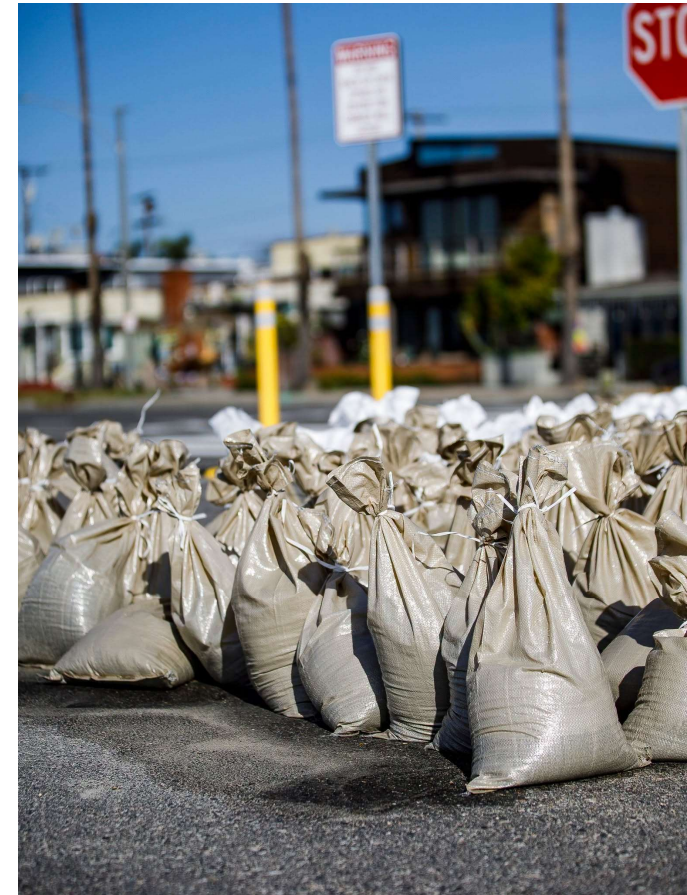
STAY INFORMED ON WEATHER CONDITIONS

Monitor trusted news and weather sources as storms approach and throughout the duration of an event



HELP YOUR NEIGHBORS

Check on those who may need additional assistance, including older adults, people with disabilities, families with children and others who may need support



INTEGRATED ALERT & WARNING FRAMEWORK

The City has redundant methods to communicate pertinent emergency information to the public:

WIRELESS EMERGENCY ALERT (WEA)

- Pushed to mobile carriers (AT&T, Verizon, T-Mobile, etc.)
- English and Spanish

ALERT LONG BEACH

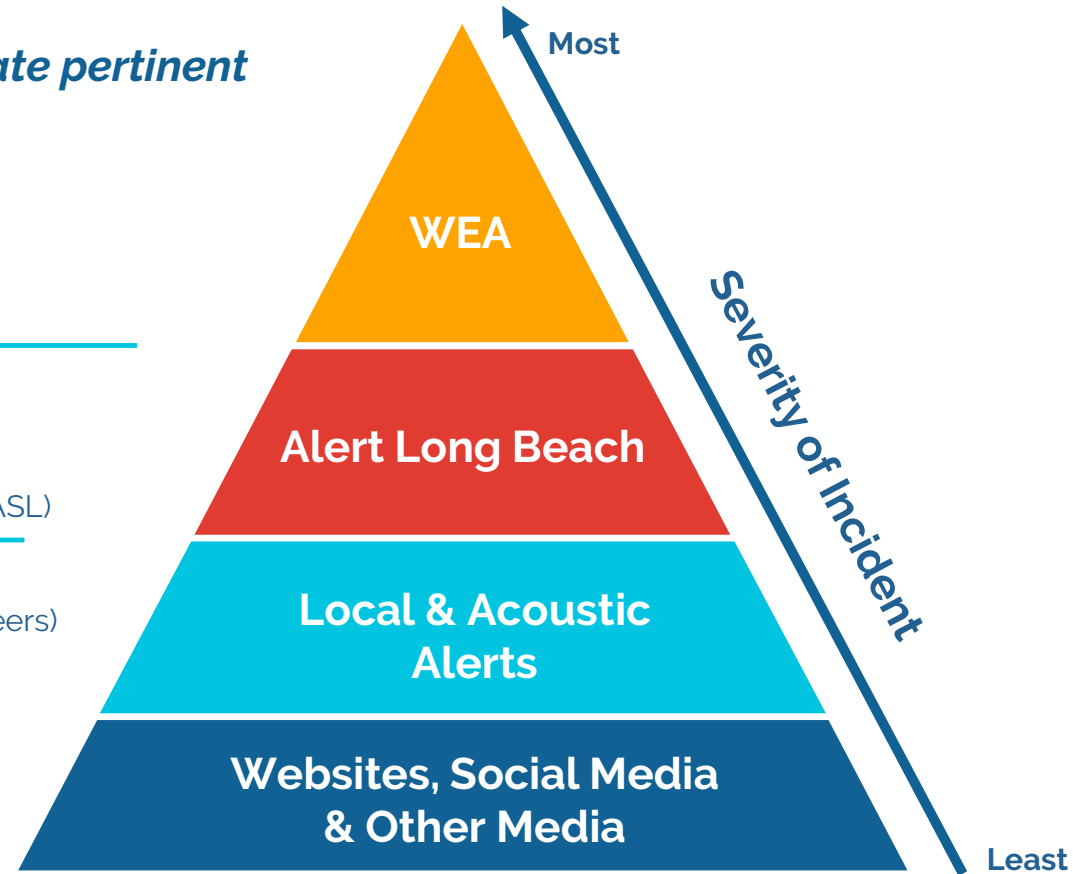
- E-911 Landlines
- Alert Long Beach Registrants
- English, Spanish, Tagalog, Khmer and American Sign Language (ASL)

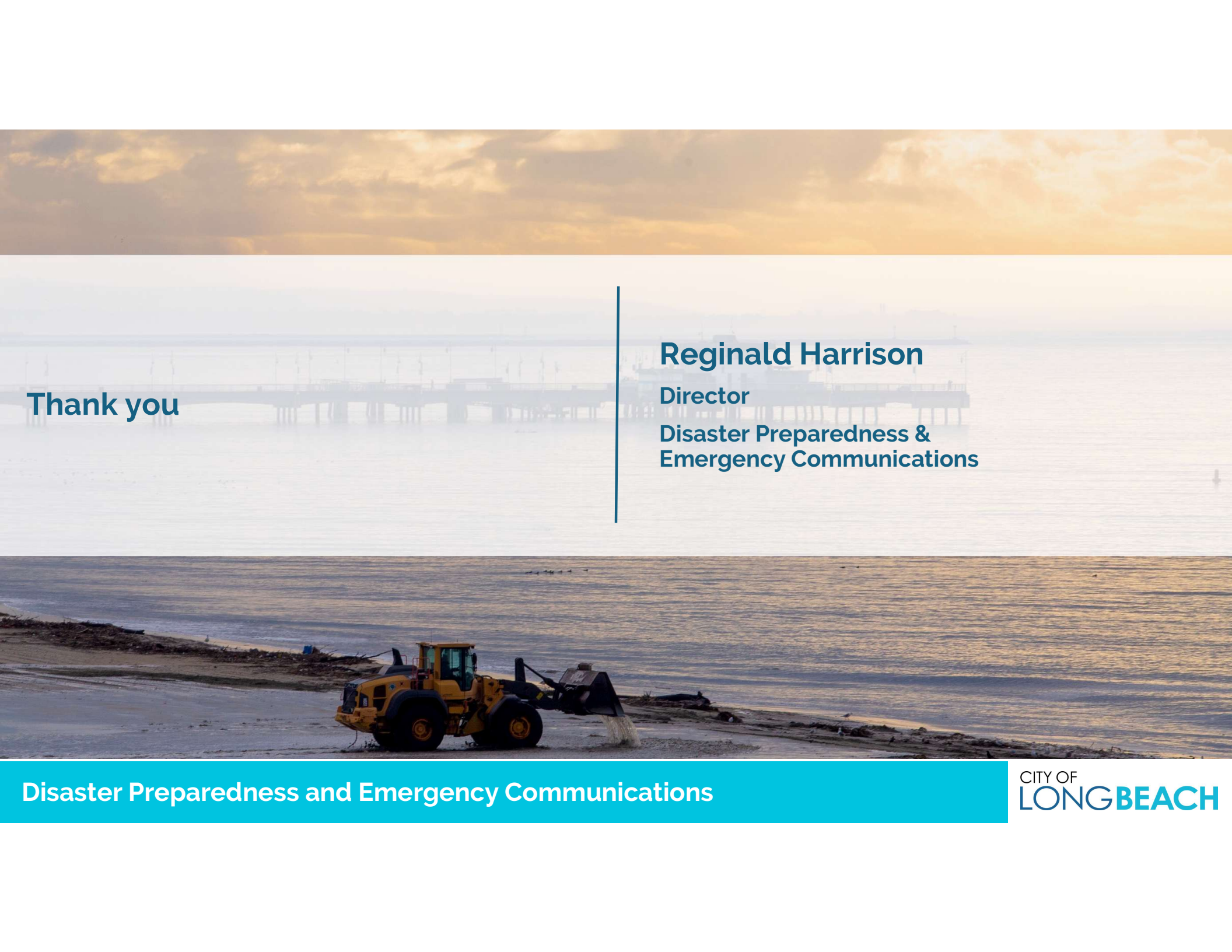
LOCAL & ACOUSTIC ALERTS

- Door knocks (Police, Firefighters, Search & Rescue, CERT, Volunteers)
- Police and Fire vehicle/helicopter public address equipment
- Mobile public address system

WEBSITES, SOCIAL MEDIA & OTHER MEDIA

- Official City Websites and Social Media Accounts
- Press Releases, Press Conferences, Media Interviews, LBTv, etc.



The background image shows a coastal scene at sunset. In the foreground, a yellow front loader is dumping sand onto a beach. In the middle ground, the ocean is calm with some birds visible. In the background, a long pier extends into the water under a sky with orange and yellow clouds.

Thank you

Reginald Harrison

Director

**Disaster Preparedness &
Emergency Communications**

Disaster Preparedness and Emergency Communications

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Storm readiness and fire department operations

How we prepare, coordinate and prioritize
response

Deputy Chief James Farley
Operations Bureau, Long Beach Fire Department



Before the storm: understand and prepare

- Situational awareness

Review forecasts, tides, surf, rainfall, vulnerable locations and likely citywide impacts.

- Triggers and actions

Set decision points before arrival for staffing, alerts, command, access and possible evacuations.

- Clear messaging

Share consistent information within the City and with the public as conditions change.

A coordinated city and regional response



If substantial impacts to life, property or the environment appear likely, LBFD may establish a command post before the storm arrives.

Unified command

Fire works with other City departments under shared objectives and priorities.

Regional support

Coordinate with regional partners and Cal OES, including requests to position resources near areas of concern.

Disaster Preparedness typically hosts and leads predeployment and deployment meetings.

All hazards operations during severe weather



Swift water rescue

People trapped by moving or rising water

Urban search and rescue

Structural collapse, confined access and technical rescue

Hazardous materials

Fuel, chemicals or other releases

Citywide fire and EMS

Fires, medical calls and other emergencies continue

Teams deploy where conditions and incident priorities require them across Long Beach.

Incident priorities guide every deployment

1. Life safety
2. City Personnel Safety
3. Incident stabilization
4. Property conservation
5. Environmental conservation
6. Restore public and private services

These priorities determine where limited crews and specialized resources go first.

When demand exceeds available resources

- Crews may be needed for life rescue and evacuation elsewhere in the city.
- During a major storm, LBFD cannot be at every property.
Assistance with flooding may be delayed or deprioritized when people need rescue.
- At a flooded property, crews may only be able to help people evacuate.

What residents should do before impact

- Sign up for Alert Long Beach
Get the latest updates in real time from the City.
- Make a plan
Know where you will go, how you will leave and how you will communicate.
- Protect your home
Move valuables and vehicles, clear drainage where safe and use appropriate flood barriers.
- Have a backup option
Prepare supplies and a place to stay if access or utilities are disrupted.
- Follow evacuation orders
Leave when directed. Do not enter flooded roads or areas closed by responders.

Marine Safety Division



- Coastal conditions require specialized assessment and response.

Next: LBFD Marine Safety Division

Coastal hazards, readiness and operations

Marine Safety monitors coastal hazards

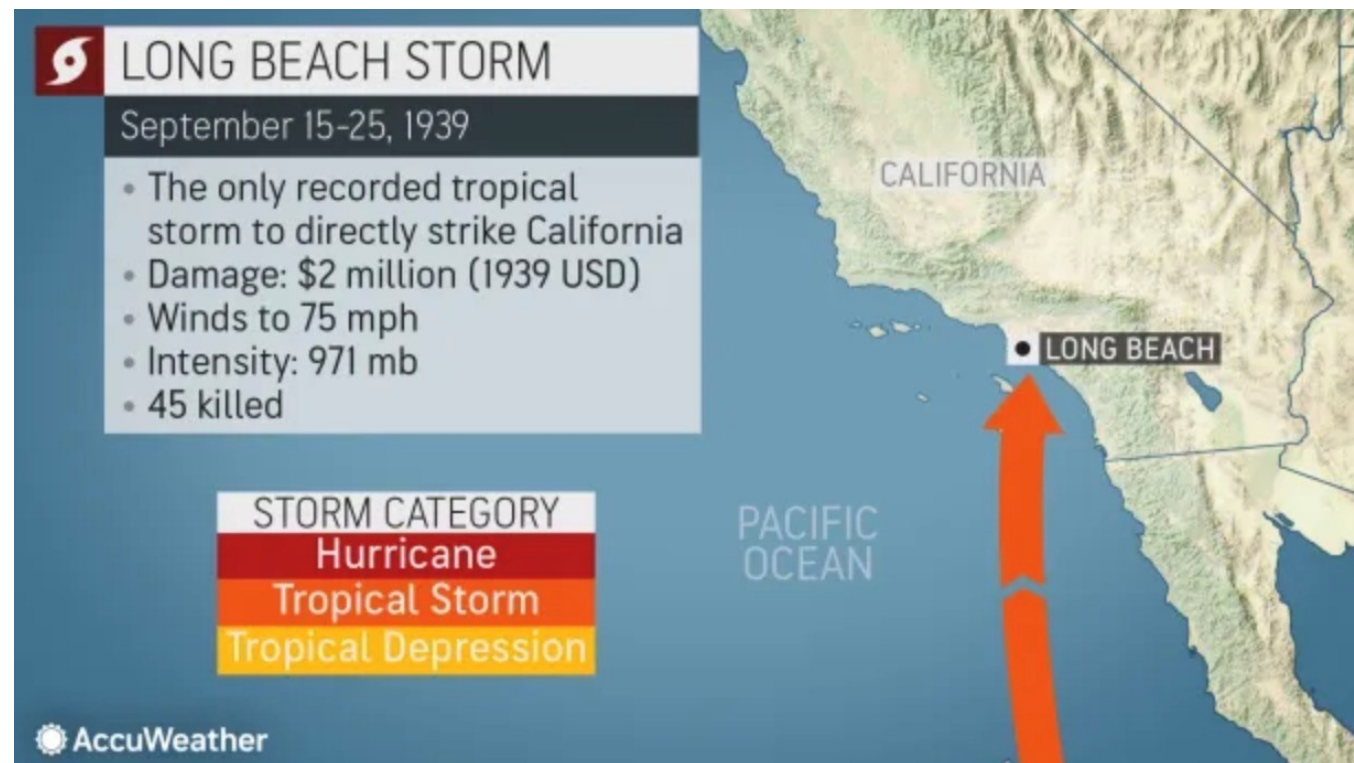
- Weather systems
Rain, flooding and swells
- Earthquakes and tsunamis
Potential coastal impacts
- Environmental hazards
Oil or sewage spills and tarballs
- Marine life
Conditions that could affect Long Beach waters

Marine Safety specialty response teams

- Swiftwater and flood rescue
25 member team

- Rescue dive team
15 member team

- Inclement seas response
Six 32 foot response vessels



Peninsula Update

Hurricane Marie Response and Winter Preparedness

Tom Modica, City Manager
District 3 Community Meeting

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Background and Context

- Peninsula beach shoreline - 54th to 72nd Place, including the west jetty
- Wooden boardwalk constructed in the 1920s provides public access along the coast
 - About 9 feet wide and 3,600 feet long and said to be the last wooden boardwalk in LA County
- Adjacent 22-foot-high timber bulkhead (not a seawall) is mostly buried in sand under typical conditions

Background and Context

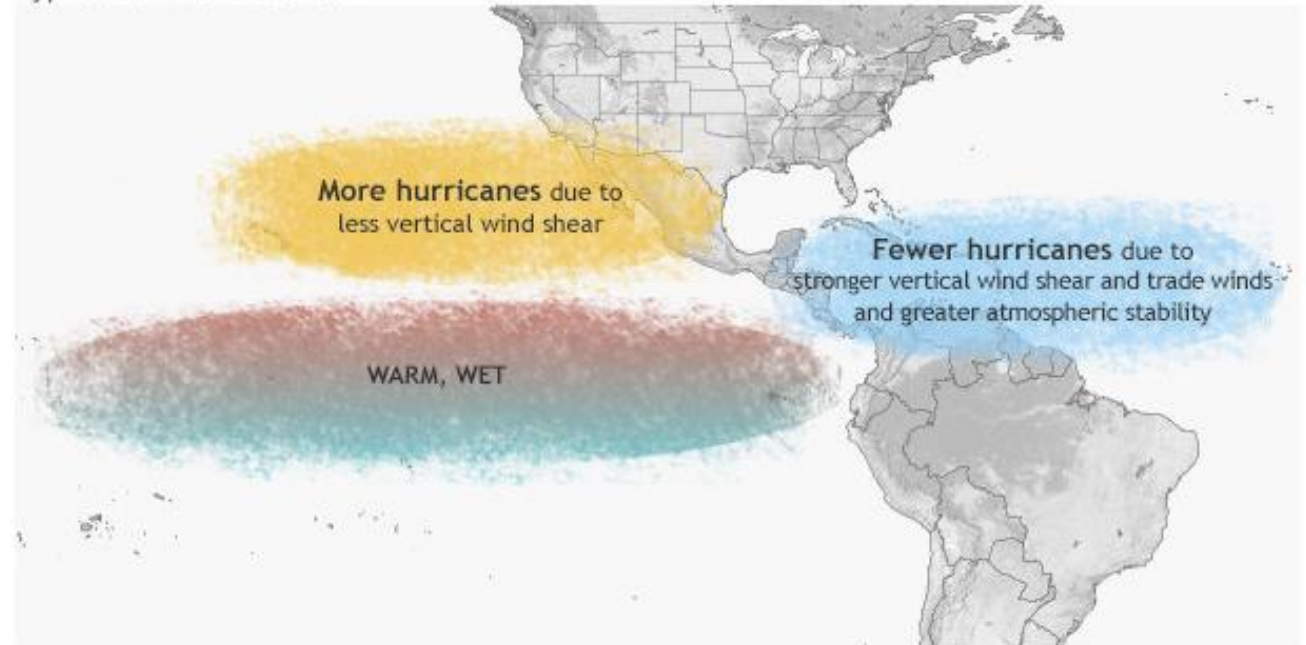
Past nourishment and stabilization efforts

- 1940s: approximately 3 million cubic yards of sand placed on the beach
- Smaller nourishment and stabilization efforts continued between the 1950s and 1980s
- By 1980, much of that sand had depleted
- Artificial kelp beds installed during the 1980s have not shown evidence of reducing erosion
- 1993-1993 moved 145,000 cubic yards
- 2000s - backpassing harvested local sand, local dredging not always suitable

Impacts of Hurricane Season, High Tides, and El Niño

- Eastern Pacific hurricane season: May 15 - November 30
- Tropical storms can generate long-period southerly swells
- King tides generally occur during fall and winter
- Elevated water levels and energetic waves increase erosion, overtopping, and coastal flooding

Typical El Niño influence



Typical Erosion Management Strategies

- Sand back passing moves sand that has migrated west back to the eastern Peninsula
- Crews work five days a week throughout the year, inclement weather increases operations to six or seven days
- Eight-hour shifts can extend up to 18 hours with additional staffing
- Annual cost: \$1 million - \$1.5 million to PRM in Tidelands Operating fund

Hurricane Marie Storm Preparation

- Inspected all 23 City-managed pump stations
- Inspected and cleaned 5,600 catch basins during the dry season, with targeted recleaning before Marie
- Rented three additional pumps
- Berm-building crews began 12-hour shifts on September 3



Impacts from Hurricane Marie 2026

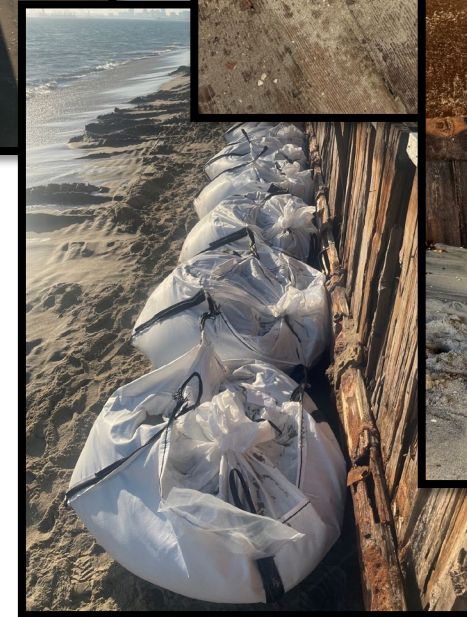
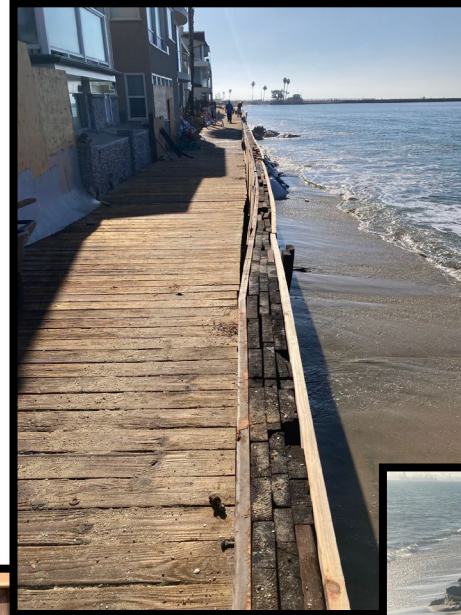
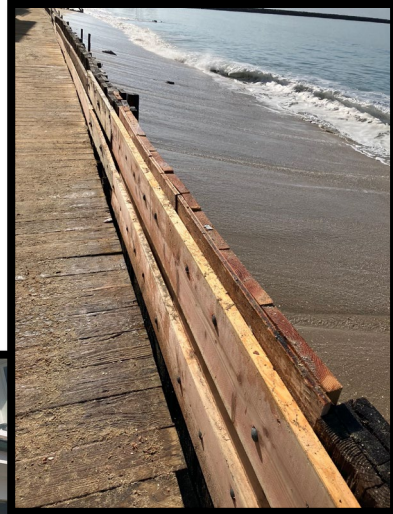
- Long-period south swell coincided with elevated tides and warmer water
- 8 to 10-foot waves eroded berms between 63rd and 68th Place
- Approximately 20 residences temporarily evacuated and boardwalk closed



Immediate Post-Storm Response

- Rebuilt berms where possible and removed sand and debris
- Braced damaged bulkhead and made repairs to sections of the bulkhead and boardwalk.
- Installed 30 large 3,000lb sandbags to mitigate wave impact on bulkhead
- Inspected public infrastructure and private homes
- Engaged Moffatt & Nichol for coastal engineering expertise at a cost not to exceed \$75,000
- No homes red-tagged. One yellow-tagged for unsafe access as of September 25
- Homeowners obtaining repair permits and Community Development will assist through the process, including priority permitting and inspections
- Response total cost is still being calculated – anticipated to exceed \$1 million

Immediate Post-Storm Response (cont.)



Boardwalk and Bulkhead Repairs

Repair Scope of Work

- 200 feet of deck and support beams
- 1,000 feet of bulkhead, largely top cap repairs
- 450 feet of vertical wall planks

Anticipated Schedule and Cost

- Early October start
- Substantial completion in November, subject to conditions
- \$1 - \$1.5 million estimate

Repairs restore public access. However, the existing boardwalk has limited resilience to future storms.

Short Term Support – Alamitos Bay Channel Dredging Project

Project scope and beach benefits

- Initiated in 2023 to restore channel depths to –20 feet MLLW and reuse approximately 415,000 cubic yards on the Peninsula
- Original design anticipated 200–250 feet of added beach width

Bidding and funding

- Initial bids: \$13 million and \$14 million. Revised plans and bid requirements produced an \$8.06 million lowest responsive bid, approximately \$5 million lower
- Council approved the construction contract August 11, 2026. The \$11.4 million total project was fully funded ahead of the normal budget process

Accelerated schedule

- Anticipated mid-October start, with an end-of-November completion goal, advanced from early 2027

Interim Coastal Engineering Evaluation

Alternative	Design and protection	Duration	Cost range
1. Full Profile Rock Revetment	- About 2 feet above existing bulkhead - Dissipates wave energy and limits runup and overtopping - Cannot reasonably be buried in sand	2-3 months	\$7.4 - 9.5M
2. Low Profile Rock Revetment by Bulkhead	- 30-foot base beside bulkhead - Not conducive to sand cover - Severe storms can still overtop and cause localized water intrusion on the boardwalk	2-3 months	\$3.5 - 4.75M

Interim Coastal Engineering Evaluation

Alternative	Design and protection	Duration	Cost range
3. Low Profile Rock Revetment	- About 45 feet wide, farther seaward of bulkhead - Top about +11 feet MLLW - Can be fully buried with sand and vegetated dunes - More protection than Alternative 2 under future erosion	2-3 months	\$5 - 7M Depends on sand cover depth
4. Large-scale Beach Nourishment and Backpassing	- At least 100,000 cubic yards strategically placed over a short period - Maintain a beach berm at least 75–100 feet wide	8 weeks	\$4.2 - 7M

Interim Coastal Engineering Evaluation

Alternative	Design and protection	Duration	Cost range
5. Sheet Piles	- Reconstruct existing bulkhead and boardwalk - Only halt erosion landward of installation - For runup and overtopping protection, wall higher than existing bulkhead needed with modified geometry and a maintained beach berm at least 75–100 feet wide	3-4 months	\$2.1 - 3.8M Excludes large-scale beach nourishment and back passing

Interim Engineering Recommendations

- Add 100,000 cubic yards through back passing before or alongside channel dredging
- Advance rock revetment design and permitting at the same time
- Establish beach-width trigger criteria to construct a rock revetment when needed
- Large-scale beach nourishment is most compatible with the anticipated mid-October 2026 dredging start
- Constructing either a small or large rock revetment would require postponing the dredging project

Future Planning – Port Deep Draft Project

- Port and United States Army Corps of Engineers (USACE) project would deepen and widen selected waterways
- Potential Peninsula sand source: 900,000 - 1 million cubic yards
- Preliminary costs: about \$3 million for studies and \$20–30 million for placement
- Initial Port work expected in 2029, with opportunities to expedite under review

Partnerships with United States Army Corps of Engineers (USACE)

2007 Erosion Study

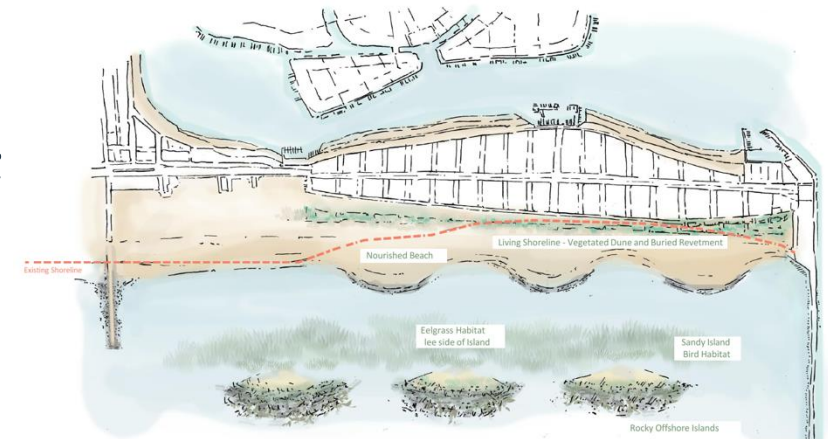
- Groins and reefs could reduce erosion, but would not eliminate it
- Large-scale beach fill was most effective at slowing erosion
- Study did not model combined storm water levels, swells and high tides
- Conducted a 1.23 million cubic yards sand project, most effective

East San Pedro Bay study

- Focused on aquatic habitat and biodiversity, not long term erosion management
- \$262 million estimate, including a \$92 million City share, at 2020 prices
- Formally deauthorized in 2023

Future Planning – Peninsula Ecosystem Restoration

- 2024: City retained Moffatt & Nichol for concepts combining shoreline protection with a habitat mitigation bank
- Concepts: major beach nourishment, shoreline headlands, pier groin, offshore rocky reefs staggered with headlands, eelgrass and kelp habitat, and public access improvements
- \$150–350 million rough conceptual cost estimate
- Colorado Lagoon offers a potential funding model
- FY 2027: Councilmember Duggan requested \$30,000; recommended by Budget Oversight Committee, approved by City Council
- Funds support umbrella mitigation bank research, regulatory engagement and stakeholder coordination



Concept illustration

El Niño Preparations

Potential storm impacts

The City may experience:

- Repeated heavy rainfall, strong winds, high surf and large waves
- Coastal and localized flooding, and erosion
- Transportation disruptions and power outages
- Damage to homes and critical infrastructure, and interruptions to essential services



Residents should take steps to protect their families, homes and neighborhoods now

El Niño Preparations

Emergency proclamations

- September 21, 2026: Governor Gavin Newsom proclaimed a State of Emergency
- September 21, 2026: City Manager issued a Proclamation of Local Emergency
- September 22, 2026: City Council ratified the local proclamation

Preparedness authority

- Rapidly identify, procure, stage and pre-position equipment, supplies, materials, services, personnel and other resources
- Enter necessary agreements and contracts; coordinate preparedness and mitigation activities
- Work with neighboring jurisdictions, regional agencies, Los Angeles County, State agencies (including the Coastal Commission), federal agencies, utilities, transportation agencies and private partners

Recommended Plan of Action

Recommended action	Estimated cost	Funding source
1. Boardwalk and bulkhead repairs Expected early or mid-October through November; may extend with future storms	\$1 - 1.5M	Tidelands Emergency Reserve
2. Accelerate channel dredging Anticipated mid-October start, through November	\$11.4M	Marina Fund Already budgeted
3. Additional sand backpassing Approx. 50,000–100,000 additional cubic yards with dredging	\$230,000 Initial effort	Tidelands Emergency Reserve
4. Low-profile rock revetment and coastal dunes Design now; approach Coastal Commission alongside dredging. Ready if nourishment does not hold; implement only when sand is absent.	Approx. \$6.8M project	Project unfunded Initial design: Tidelands Emergency Reserve

Recommended Plan of Action

Recommended action	Estimated cost	Funding source
5. Continue Port and Army Corps discussions to accelerate the Deep Draft project Advocate for federal funding for beach nourishment	N/A	Federal funding to be pursued
6. Review funding for beach nourishment and habitat restoration	N/A	Potential sources: Proposition 4, State grants and federal dollars
7. Initiate Umbrella Mitigation Bank study	\$30,000	Measure A Infrastructure Already budgeted

- City Manager will identify a funding plan for the recommended actions
- City Manager will recommend that the Mayor and City Council allocate \$3 million of the \$10.3 million Tidelands Emergency Reserve for immediate steps
- City Manager will begin drawing down funding immediately, as authorized under the emergency declaration

Summary

- Maintain public safety and restore damaged public infrastructure
- Replenish the beach while advancing interim protection
- Prepare for additional storm impacts throughout the City
- Continue monitoring and provide updates as engineering and project work advance

Q&A

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