

March 19, 2024

Honorable Mayor and City Council
City of Long Beach
California

RECOMMENDATION:

Receive and file the attached report, "Elevation Changes in the City of Long Beach, November 2022 through November 2023." (Citywide)

DISCUSSION

The City of Long Beach (City), through the Energy Resources Department (ER), supervises oil production and subsidence control operations in the Wilmington Oil Field. ER conducts surface elevation surveys every six months to monitor surface elevation changes in the oil fields and adjacent city areas. This report focuses on surface elevation changes that have occurred from November 2022 through November 2023. The survey includes the following areas: Civic Center, Central City, Alamitos Bay, Naples, Harbor District, and the offshore area encompassing the four oil islands.

The results of the last two six-month surveys indicate that surface elevations were stable in the Civic Center, Central City, Alamitos Bay, Naples, and the offshore islands. During the first six-month survey period, minor elevation changes were observed within and north of the Wilmington Oil Field in the Harbor District, along the shoreline, and adjacent to Shoreline Village. A minor elevation rise of as much as 0.070 foot (0.84 inch) was observed in the northwest end of the Wilmington Oil Field. A minor elevation rise of 0.083 foot (1.00 inch) was observed along the shoreline. A minor elevation loss of as much as 0.103 foot (1.24 inches) was observed around Shoreline Drive, adjacent to Shoreline Village.

The elevation loss observed in Shoreline Village during the first six-month survey period reversed in the second six-month survey period, resulting in an elevation rise of as much as 0.075 foot (0.90 inch). Minor elevation changes were also observed within the Wilmington Oil Field in the Harbor District and Shoreline Village. An elevation loss of as much as 0.076 foot (0.91 inch) was observed throughout portions of Pier A, Pier A West, Pier B, and Terminal Island. This minor elevation loss was expected due to controlled changes in fluid injection volume. Additionally, an elevation loss of 0.051 foot (0.61 inch) was observed on the Navy Mole.

An annual elevation loss of as much as 0.092 foot (1.10 inches) was observed in the Harbor District in Pier A, Pier A West, and Terminal Island. This minor loss occurred during the second six-month survey period. Annual elevation losses of as much as 0.060 foot (0.72 inch) were also observed in the southeast corner of Pier H, the marina mole, northeast Shoreline Drive, and Central City.

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The ER survey uses a series of benchmarks to determine surface elevation changes. Studies by ER's engineers and geologists show the benchmarks may rise and fall in such a manner as to make a survey either optimistic (slightly up in elevation) or pessimistic (slightly down in elevation). These changes in surface elevations may be associated with tidal cycles, drought, temperature changes, deep earth tectonic changes, dewatering activities, and/or re-pressuring operations in the oil field. Surface elevations over the active Wilmington Oil Field can be expected to fluctuate under changing waterflood conditions.

This matter was reviewed by Deputy City Attorney Richard F. Anthony on February 23, 2024, and Acting Revenue Management Officer Valerie Valentine on February 26, 2024.

TIMING CONSIDERATIONS

City Council action on this matter is not time critical.

FISCAL IMPACT

This recommendation has no staffing impact beyond the normal budgeted scope of duties and is consistent with existing City Council priorities. There is no fiscal or local job impact associated with this recommendation.

SUGGESTED ACTION:

Approve recommendation.

Respectfully submitted,



Robert M. Dowell
Energy Resources

APPROVED:



THOMAS B. MODICA
CITY MANAGER

ATTACHMENT: ELEVATION CHANGES REPORT