

**CALENDAR ITEM  
C77**

A 70  
S 33, 34

04/20/17  
W 10443  
R. B. Greenwood

**CONSIDER APPROVAL OF SUBSIDENCE COSTS  
FOR VERTICAL MEASUREMENTS AND STUDIES,  
2017-2018 FISCAL YEAR, CITY OF LONG BEACH,  
LOS ANGELES COUNTY**

**APPLICANT:**

City of Long Beach  
Long Beach Gas and Oil Department

**BACKGROUND:**

The City of Long Beach (City) conducts ground elevation measurement surveys and studies twice each year throughout the Harbor District for the purpose of monitoring changes that may be attributable to subsidence. The project consists of vertical measurements and studies in the City of Long Beach, utilizing state-of-the-art Global Positioning System (GPS) and Real Time Network (RTN) technology, between July 1, 2017, and June 30, 2018. The City estimates the cost of the work to be:

GPS Real-Time Network (RTN) Hardware/Software	\$61,600
Management, GPS Elevation Surveys, and Reports (Staff)	<u>\$620,142</u>
<b>Total</b>	<b>\$681,742</b>

Historically, the primary method for monitoring vertical subsidence in Long Beach has been spirit leveling, a manual survey method that uses an instrument to measure elevation changes between horizontal surfaces. The semi-annual surveys are now being conducted via GPS and RTN technology. Field data collection time has been reduced, and the 800 spirit leveled benchmarks have been reduced to approximately 240 GPS benchmarks. The projected 2017-2018 total cost is \$681,742, an increase of \$47,035 (+7.4%) over last year's total cost of \$634,707.

**GPS and RTN Hardware/Software**

Costs for GPS and RTN Hardware/ Software for fiscal year 2017-2018 (\$61,600)

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have increased from the 2016-2017 budget (\$50,050) due to increased software costs, replacement hardware cost of a GPS base station, and 10 percent contingency for other unforeseen GPS equipment costs or repairs.

**Management, GPS Elevation Surveys, and Reports**

The Management, GPS elevation surveys, and report cost category includes costs for GPS elevation surveys by City professional staff and/or contract surveyors, in-house studies, evaluations, report generation, and daily oil field surveillance and monitoring. These staff costs have increased \$35,485 from fiscal year 2016-2017 (\$584,657) to 2017-2018 (\$620,142) to cover increased staff salaries and contingency costs of future employee benefits.

**FISCAL IMPACT:**

Subsidence costs for vertical measurements and studies conducted in Long Beach are deducted from the Long Beach Tidelands Oil Revenues, with the prior approval of the California State Lands Commission in accordance with Chapter 138, Statutes of 1964, First Extraordinary Session, section 1(e).

**STATUTORY AND OTHER REFERENCES:**

The proposed expenditures are authorized by Chapter 138, Statutes of 1964, First Extraordinary Session, and section 1(e) subject to prior approval by the California State Lands Commission.

**OTHER PERTINENT INFORMATION:**

1. On June 27, 1979, the Commission approved proposed expenditures for subsidence maintenance and repairs and subsidence studies ([Minute Item 27, June 27, 1979](#)). Exhibit B of that Item included the procedures for performing subsidence studies and reimbursement for associated costs. Work performed under this current 2017-2018 proposal will conform to the standards identified in that document. Actual City expenditures over the last 5 years have consistently been less than budgeted funds (Exhibit C, attached).
2. Subsidence monitoring is consistent with Strategy 1.5 of the Commission's Strategic Plan to ensure the highest level of environmental protection and public safety in the production and transportation of oil and gas resources by applying Key Action 1.5.2, ensuring lease and contract compliance with sound oil and gas development practices in compliance with regulatory and statutory requirements.
3. The staff recommends that the Commission find that this activity is exempt from the requirements of the California Environmental Quality Act (CEQA) as a categorically exempt project. The project is exempt under Class 6,

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Information Collection; California Code of Regulations, title 14, section 15306.

**EXHIBITS:**

- A. Location Map
- B. Cost Estimate
- C. Actual and Expected Expenditures 2011-2018

**RECOMMENDED ACTION:**

It is recommended that the Commission:

**CEQA FINDING:**

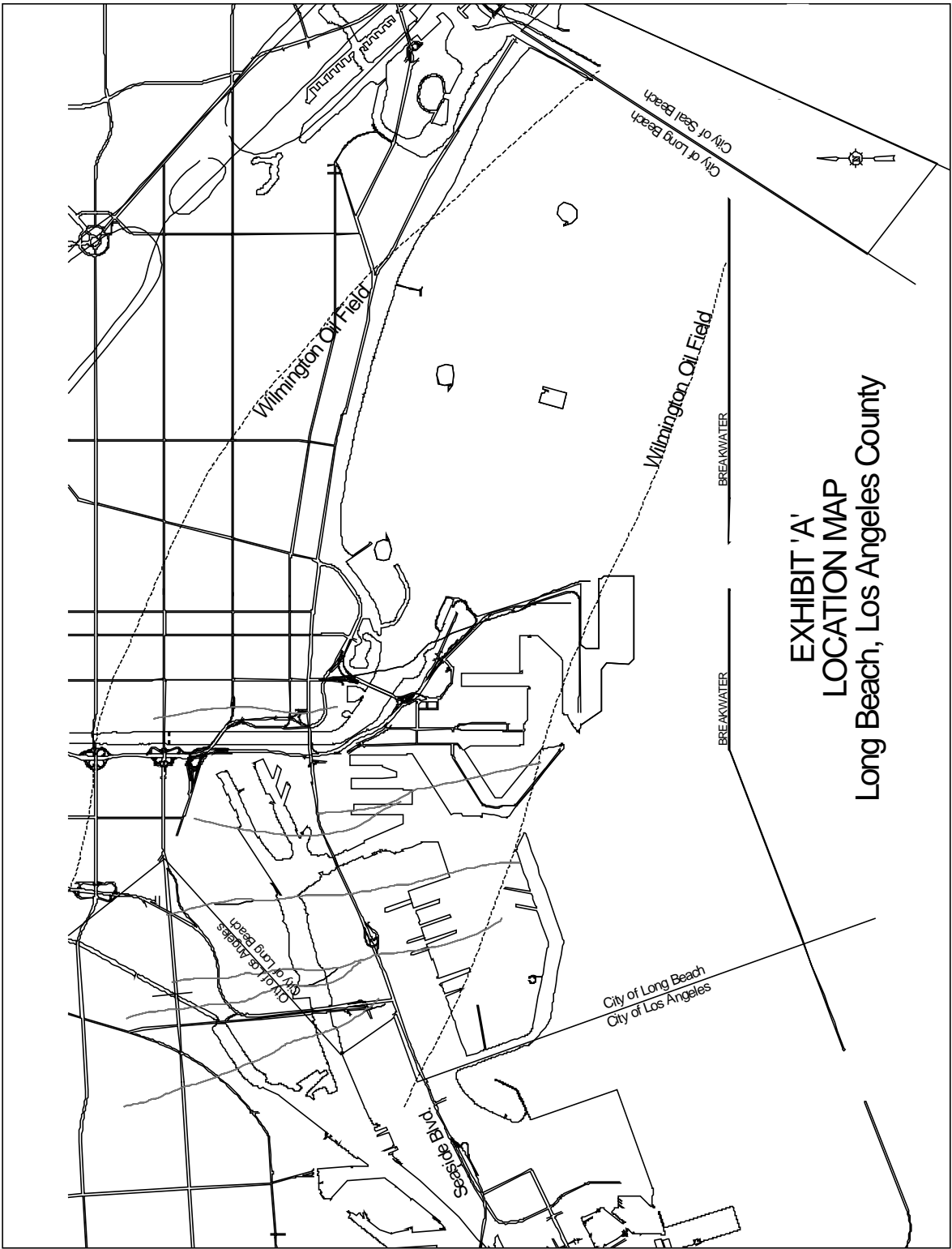
Find that this activity is exempt from the requirements of CEQA pursuant to California Code of Regulations, title 14, section 15061 as a categorically exempt project, Class 6, Information Collection; California Code of Regulations, title 14, section 15306.

**AUTHORIZATION:**

Approve subsidence costs, as defined in Chapter 138, Statutes of 1964, First Extraordinary Session, section 1(e) and as shown on Exhibit B, attached hereto, by this reference made a part hereof, proposed to be expended by the City of Long Beach, for subsidence vertical measurements and studies to be conducted in the Long Beach Harbor District between July 1, 2017, and June 30, 2018, subject to the condition that the work conforms in essential details to the definitions and procedures for such work established by the Commission on June 27, 1979, Minute Item 27.

EXHIBIT A

W 10443



**EXHIBIT B**

W 10443

**COST ESTIMATE**  
**LONG BEACH WORK ORDER NO. W 10443**  
Estimates Submitted by City of Long Beach for  
Subsidence Vertical and Horizontal Surveys  
2017-2018 Fiscal Year

<b>ITEM</b>	<b>PROPOSED WORK</b>	<b>RECOMMENDED APPROVAL</b>
1.	GPS and RTN Hardware/Software	\$61,600
2.	Management, GPS Elevation Surveys, Reports	\$620,142
<b>Total</b>		<b>\$681,742</b>

## Exhibit C

Tidelands Oil (OPT) Budget & Expenditures (2011 – 2018)				
Fiscal Year	Budget	Expenditures	Over / Under (+/-)	Notes
2011-2012	\$598,500	\$512,644	\$85,856	Budgeted costs decreased due to completion of GPS Base equipment replacement
2012-2013	\$569,600	\$534,270	\$35,330	Budgeted Staff costs decreased
2013-2014	\$516,450	\$471,788	\$44,662	Budgeted GPS RTN costs decreased due to completion of GPS Rover equipment replacement
2014-2015	\$710,335	\$510,509	\$199,826	Budgeted GPS RTN costs increased due to software upgrade
2015-2016	\$626,390	\$413,960	\$212,430	Budgeted GPS RTN costs decreased due to completion of software upgrade
2016-2017	\$634,440	\$212,649**	\$421,791**	Budgeted Staff costs increased due to additional staff **Expenditures are for 6 months only (Jul 2016 – Jan 2017)
2017-2018	\$681,742	N/A	N/A	Budgeted GPS RTN costs increased due to software renewal and budgeted Staff costs increased due to future increases in employee benefits.