Item 1

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Council File No: 17-0447
Item No. 1
Deputy: L. Campos

# Energy, Climate Change, & Enviornmental Justice

October 15, 2019

# Oil & Gas Health Report

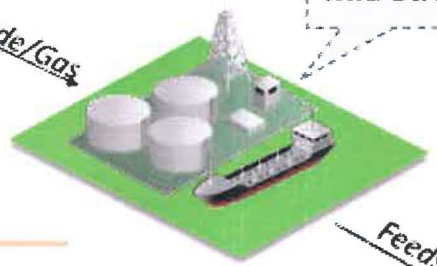
# City of Los Angeles Petroleum Administration Function

## CITY WIDE SCOPE OF WORK

**Upstream Oil & Gas**

- Oil Field Oversight
- Gas Storage Fields
- Drilling & Well Maintenance
- Development Near Oil Wells

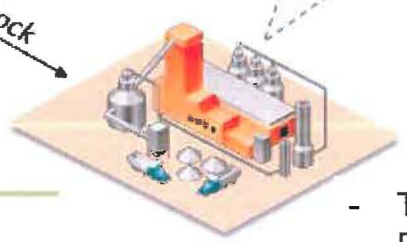
*Raw Crude/Gas*



**Mid Stream**

- Pipeline Franchises
- Insurance & Bonding
- Marine Oil Terminals

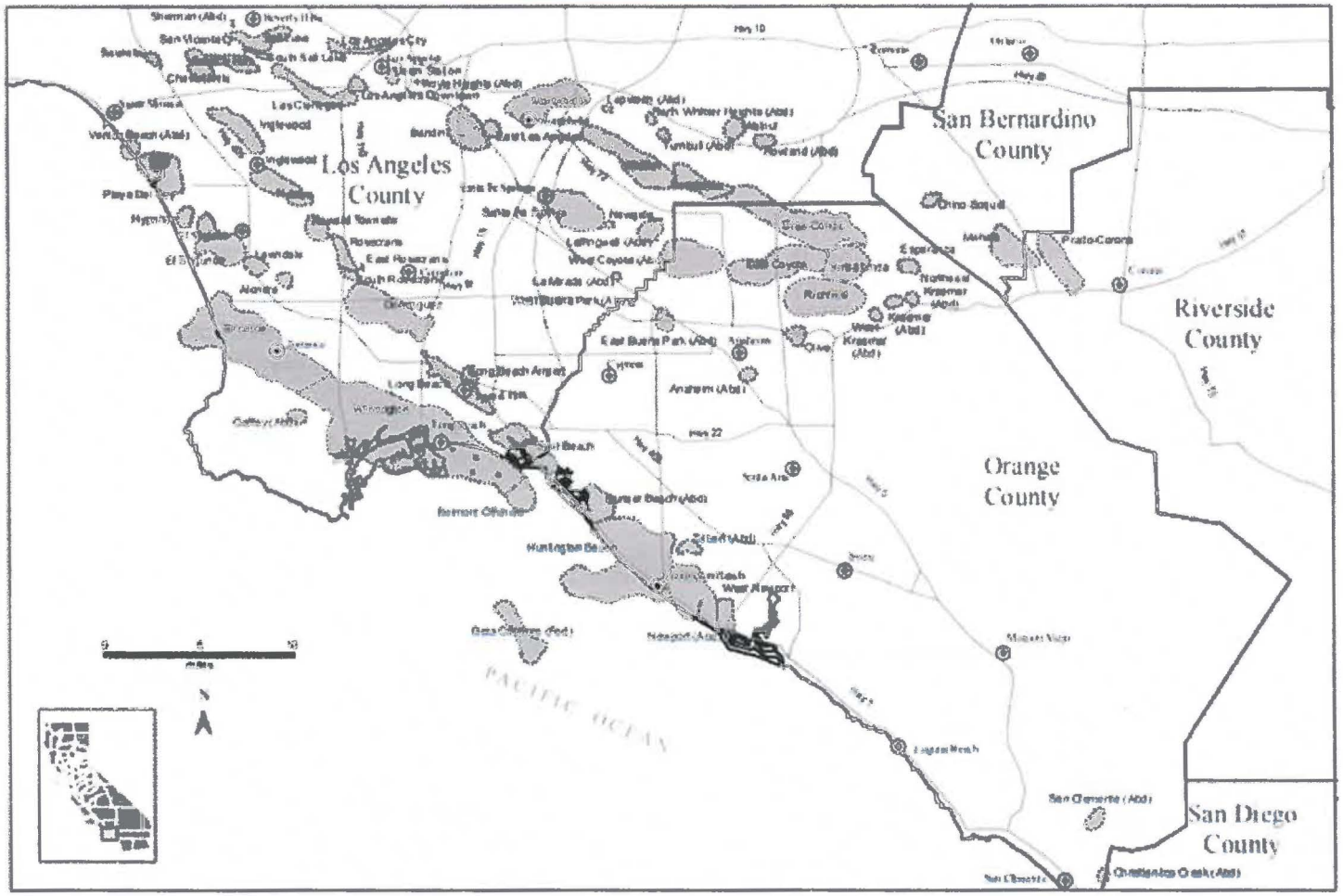
*Feedstock*



**Downstream**

- Toxic Air Emissions
- Fire Prevention & Safety
- Refinery Notifications

# City of Los Angeles Oil & Gas Fields




- The City of Los Angeles has twenty-six (26) oil and gas fields that intersect city boundaries and 5,229 oil and gas wells.
- There are approximately 819 active, 296 idle, 3,181 plugged, and 933 buried wells.
- There are oil and gas facilities in nearly every section of the 503 square miles of the City.
- The oil well information in this report is based on March 2018 data provided by the CA DOGGR and verified by the City's Petroleum Administrator.
- City of Los Angeles produces 2% of California's total production

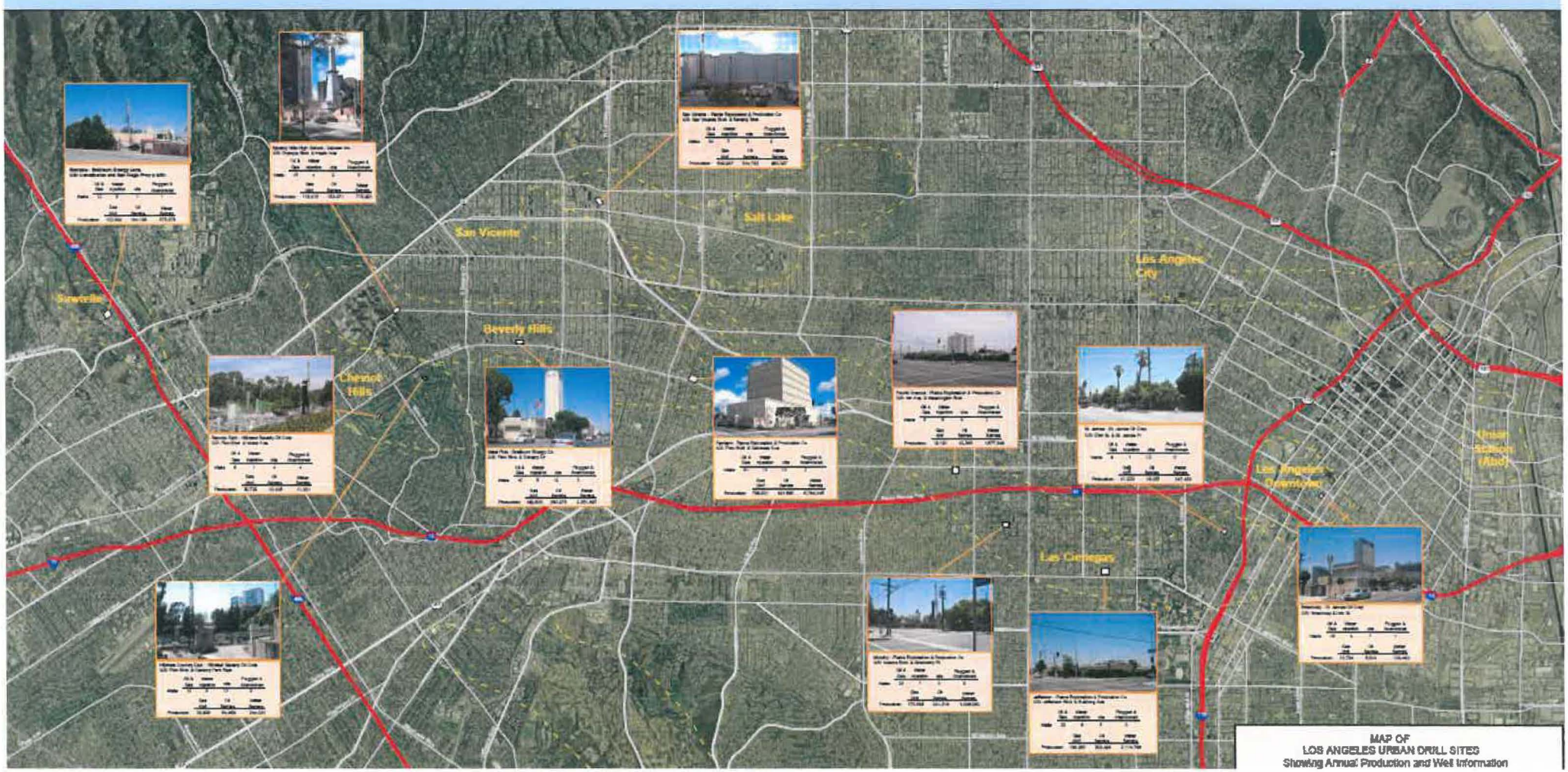
# Health Impacts at Oil & Gas Wells and Drill Sites Report Back

## CF #17-0447 (Wesson-Huizar)

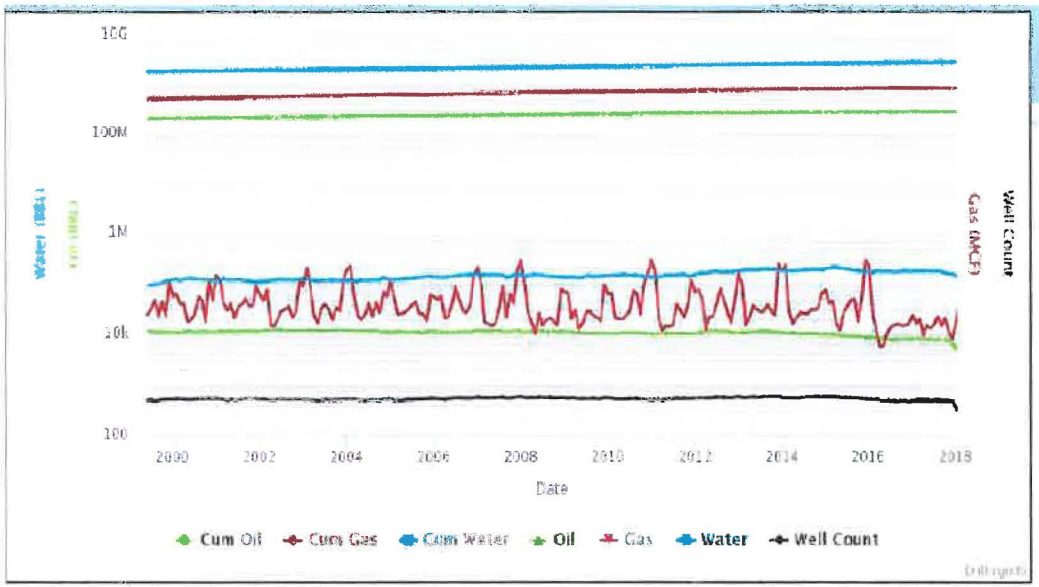
### Amended Directives of Health, Mental Health, and Education Committee

1. What types of health and environmental impacts drill sites?
2. What distance a setback and potential mitigation measures?
3. Evaluation of the various types of materials used at oil and gas sites.
4. Evaluation of the various types of drill sites.
5. What agencies currently govern or regulate oil and gas sites?
6. Summary of the LACDPH Interim Guidance on Urban Oil and Gas Operations.
7. Any recommendations from the LACDPH on whether a Health Impact or Health Risk Assessment.
8. Any recommendation to enhance public health collaboration regarding oil and gas drill site.
9. Draft Memorandum of Agreement between the City and the LACDPH
10. An economic, employment, and fiscal impacts analysis of implementing a setback
11. Analysis of the human rights standards and environmental standards of the countries exporting oil to Los Angeles refineries

# City of Los Angeles Oil & Gas Drill Sites



# Oil & Gas Production and Drill Site Inventory

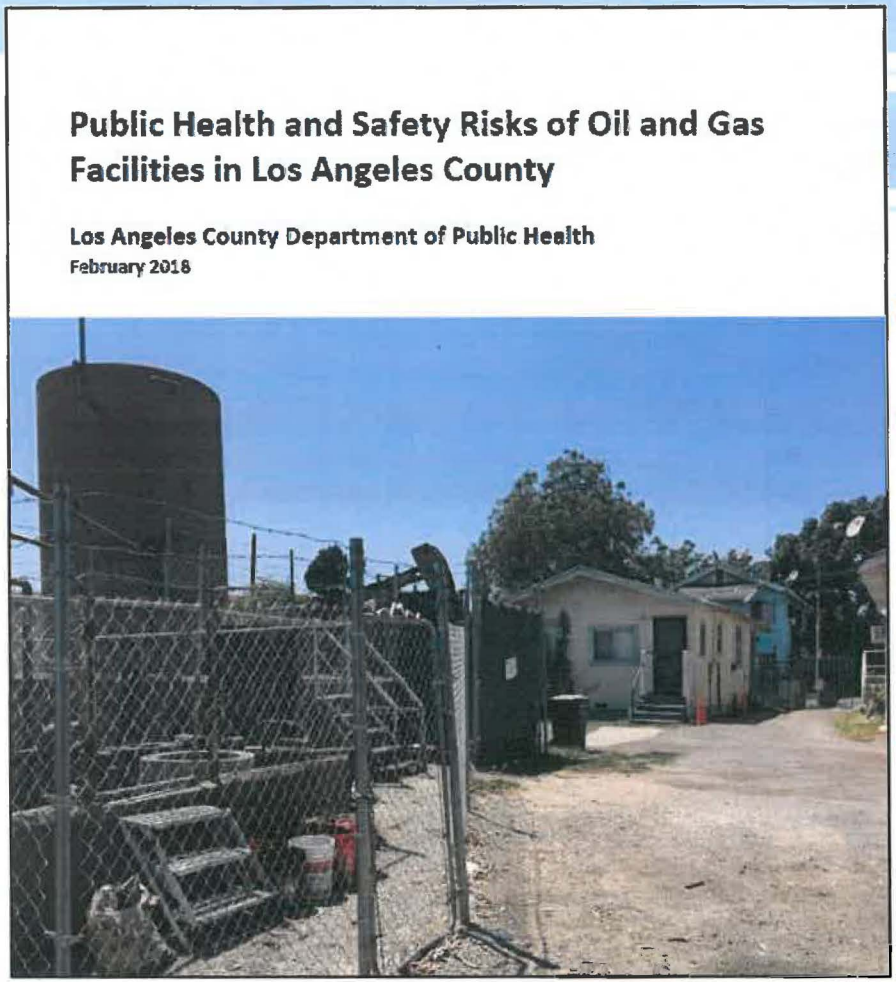



## City of Los Angeles Oil and Gas Production (2000 - 2018)

| Oil Field | Active | New | Idle | Plugged | Buried | Total |
|---|---|---|---|---|---|---|
| Aliso Canyon | 25 | 0 | 5 | 11 | 0 | 41 |
| Beverly Hills | 92 | 0 | 33 | 80 | 0 | 205 |
| Boyle Heights (ABD) | 0 | 0 | 0 | 4 | 0 | 4 |
| Cascade | 21 | 0 | 2 | 12 | 0 | 35 |
| Cheviot Hills | 14 | 0 | 14 | 45 | 0 | 73 |
| Horse Meadow (ABD) | 0 | 0 | 0 | 5 | 0 | 5 |
| Hyperion | 0 | 0 | 0 | 5 | 0 | 5 |
| La Cienegas | 66 | 0 | 37 | 30 | 0 | 133 |
| Los Angeles City | 5 | 0 | 10 | 317 | 854 | 1,186 |
| Los Angeles Downtown | 15 | 0 | 13 | 6 | 0 | 34 |
| Mission (ABD) | 0 | 0 | 0 | 13 | 0 | 13 |
| Pacoima (ABD) | 0 | 0 | 0 | 10 | 0 | 10 |
| Playa Del Rey | 42 | 0 | 5 | 35 | 4 | 86 |
| Rosecrans | 11 | 0 | 0 | 0 | 3 | 14 |
| Salt Lake | 5 | 0 | 2 | 1 | 29 | 37 |
| Sawtelle | 0 | 0 | 0 | 1 | 0 | 1 |
| South Salt Lake | 11 | 0 | 5 | 2 | 4 | 22 |
| Torrance | 58 | 0 | 12 | 65 | 0 | 135 |
| Union Station (ABD) | 0 | 0 | 0 | 12 | 0 | 12 |
| Venice Beach (ABD) | 0 | 0 | 0 | 3 | 0 | 3 |
| Wilmington | 284 | 0 | 80 | 745 | 0 | 1,109 |
| Total | 649 | 0 | 218 | 1,402 | 894 | 3,163 |

## Oil and Gas Infrastructure in City of LA:

- 18 of 23 oil fields are still active
- 650-870 active & idle oil and gas wells
- 7,600-8,000 barrels of oil production per day
- 67% of oil wells are within Drill Sites
- 9 abandoned &17 active Drill Sites




# RECOMMENDATIONS:

- EXPAND MINIMUM SETBACK BEYOND 300'
- IMPLEMENT CONTINOUS AIR MONITORING SYSTEMS
- LOCAL INSPECTION AUDITS OF OIL & GAS SITES
- COMPRENSIVE SAFETY PLANS
- ENHANCED EMERGENCY PREPARDNESS PLANS
- SITE SPECIFIC HEALTH RISK ASSESSMENTS
- IMPROVE COORDINATION BETWEEN STAKEHOLDERS

# Consultant Literature Review and Chemical Inventory Analysis

## RECOMMENDATIONS:

- CONDUCT HEALTH STUDIES IN THE CITY OF LOS ANGELES*
- FIELD BASED AIR MONITORING NEAR SENSATIVE RECEPTORS
- IMPLEMENT A MINIMUM SETBACK DISTANCE**
- UTILIZE BEST AVAILABLE TECHNOLOGY
- CONSIDER LIMITING DENSITY OF WELLS WITHIN CITY
- CHEMICALS OF CONCERN ARE PRESENT WITHIN CITY & REGION
- MAJOR DATA GAPS LIMIT CHEMICAL RISK ASSESSMENT

*Health risks found in literature from 0.1 mile – 1 mile
**Setback distance alone is not a policy recommendation

Human health and oil and gas development: An assessment of chemical usage in oil and gas activities in the Los Angeles Basin and the City of Los Angeles

Seth B.C. Shonkoff, PhD, MPH[1,2,3], Jeremy K. Domen, MS[3], Lee Ann L. Hill, MPH[1]

Human health and oil and gas development: A review of the peer-reviewed literature and assessment of applicability to the City of Los Angeles

Seth B.C. Shonkoff, PhD, MPH[1,2,3], Lee Ann L. Hill, MPH[1]

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May 9, 2019

PSE
Bringing science to energy policy

# Summary of surface setback distance from oil and gas development

## LOCAL & STATE SETBACK DISTANCES

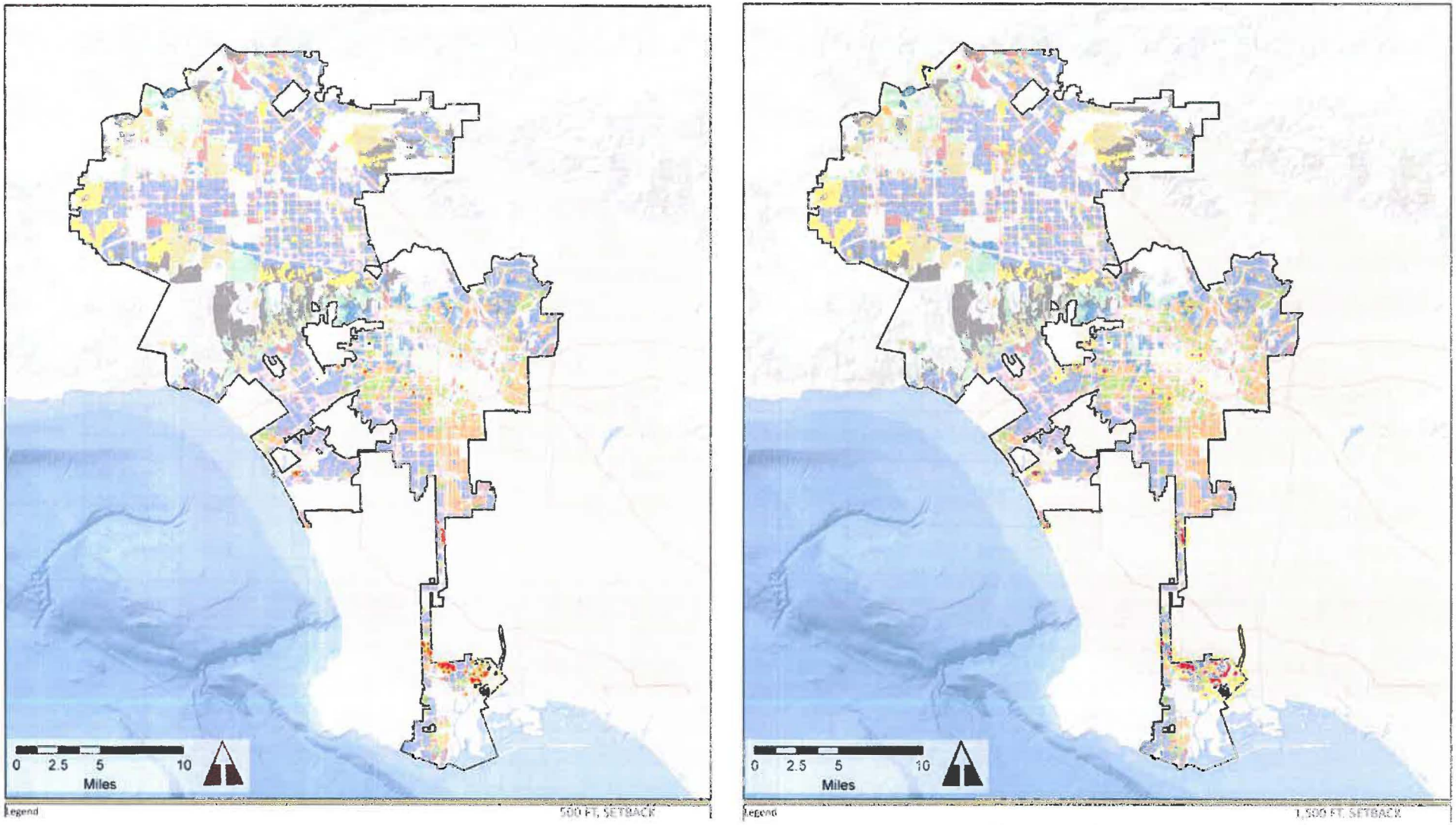
| State | Jurisdiction | Year Adopted | Setback Distance (ft) | Setback Target | Source |
|---|---|---|---|---|---|
| California | City of Arvin | 2018 | 300 | New Development | City of Arvin (2018) |
| | | | 600 | Sensitive sites, such as parks, hospitals, and schools | |
| | City of Carson | 2015 | 750 | Housing, schools, hospitals | LACDPH (2018) |
| | City of Los Angeles | 2011 | 200 | School, hospital, sanitarium, or assembly occupancy | City of Los Angeles (2011) |
| | | | 50 | Building (>400 ft² area, 36 ft tall) | |
| | Los Angeles County | 2013 | 100 | Building not necessary to the operation of a well | LA County Fire Department (2013) |
| | | | 300 | Place of assembly, institution, or school | |
| | Kern County | 2015 | 210 | Housing, schools, hospitals | LACDPH (2018) |
| | SCAQMD[1] | 2015 | 1,500 | Requires notification of nearby sensitive receptors (residences, schools, health care facilities) | SCAQMD Rule 1148.2 (2015) |
| Colorado | State | 2013 | 500 | Housing or commercial buildings | LACDPH (2018); Haley et al. (2016) |
| | | | 1000 | High occupancy buildings – schools, day care centers, hospitals, nursing homes, and correctional facilities) | Haley et al. (2016); (COGCC (2013) |
| | | | 350 | Outdoor recreational areas (playgrounds and sports fields) | Haley et al. 2016; COGCC (2013) |
| | | | 150 | Surface property line | Haley et al. (2016); COGCC (2013) |

| State | Jurisdiction | Year Adopted | Setback Distance (ft) | Setback Target | Source |
|---|---|---|---|---|---|
| Maryland | State | 2016 | 1,000 | Housing, schools, faith institutions | LACDPH (2018) |
| | | | 2,000 | Private drinking water wells | |
| New Mexico | Santa Fe County | 2008 | 750 | Housing, schools | LACDPH (2018) |
| | | | 1,000 | Groundwater and surface water resources | LACDPH (2018) |
| Oklahoma | Oklahoma City | 2015 | 300 | Housing, fresh water well | LACDPH (2018) |
| | | | 600 | Faith institutions | LACDPH (2018) |
| Pennsylvania | State | 2012 | 500 | Housing and commercial buildings | Haley et al. (2016) |
| Texas | City of Arlington | 2011 | 200 | Fresh water well | LACDPH (2018) |
| | | | 600 | Housing, schools, faith institutions, hospitals | |
| | City of Dallas | 2013 | 1,500 | Housing, schools, faith institutions | LACDPH (2018) |
| | City of Flower Mound | 2011 | 1,500 | Housing, schools, faith institutions, hospitals, existing water wells | LACDPH (2018) |
| | City of Fort Worth | 2010 | 200 | Fresh water well | LACDPH (2018) |
| | | | 600 | Housing, schools, faith institutions, hospitals | |

1 Setback table updated with information from the peer-reviewed literature and California county and city policies

2 Distance that requires notification of sensitive receptors, not a setback distance.

**Every jurisdiction's setback distances are for future development or did not impact production**




**Source: Catalyst Environmental Solutions, "Evaluation of the Effects of Buffer Zone Setbacks on City of Los Angeles Oil and Gas Production" (2018)**

# Summary of fiscal impacts of surface setback distances

## OIL & GAS IMPACT BY SETBACK DISTANCES

| Setback from Sensitive Land Use (Feet) | Number of Potentially Affected Wells (Shutdown) | Percentage of All Active Oil & Gas Wells in City of LA |
|---|---|---|
| 500 | 403 | 64% |
| 1,000 | 470 | 74% |
| 1,500 | 535 | 84% |
| 2,500 | 548 | 87% |

| Setback (Feet) | Total Prduction Loss from Setbacks | |
|---|---|---|
| | Oil (bbl) | Gas (MCF) |
| 500 | 1,726,409 | 1,118,081 |
| 1,000 | 2,136,245 | 1,468,486 |
| 1,500 | 2,344,374 | 1,669,230 |
| 2,500 | 2,383,435 | 3,190,458 |

| City/County | Setback from Potentially Sensitive Land Use (Feet) | Number of Potentially Affected Wells | Percentage of All Active Oil & Gas Wells in City of LA |
|---|---|---|---|
| City of Los Angeles | 300 | 347 | 55% |
| | 500 | 403 | 64% |
| | 750 | 440 | 70% |
| | 1,000 | 470 | 74% |
| | 1,500 | 535 | 84% |
| | 2,500 | 548 | 87% |

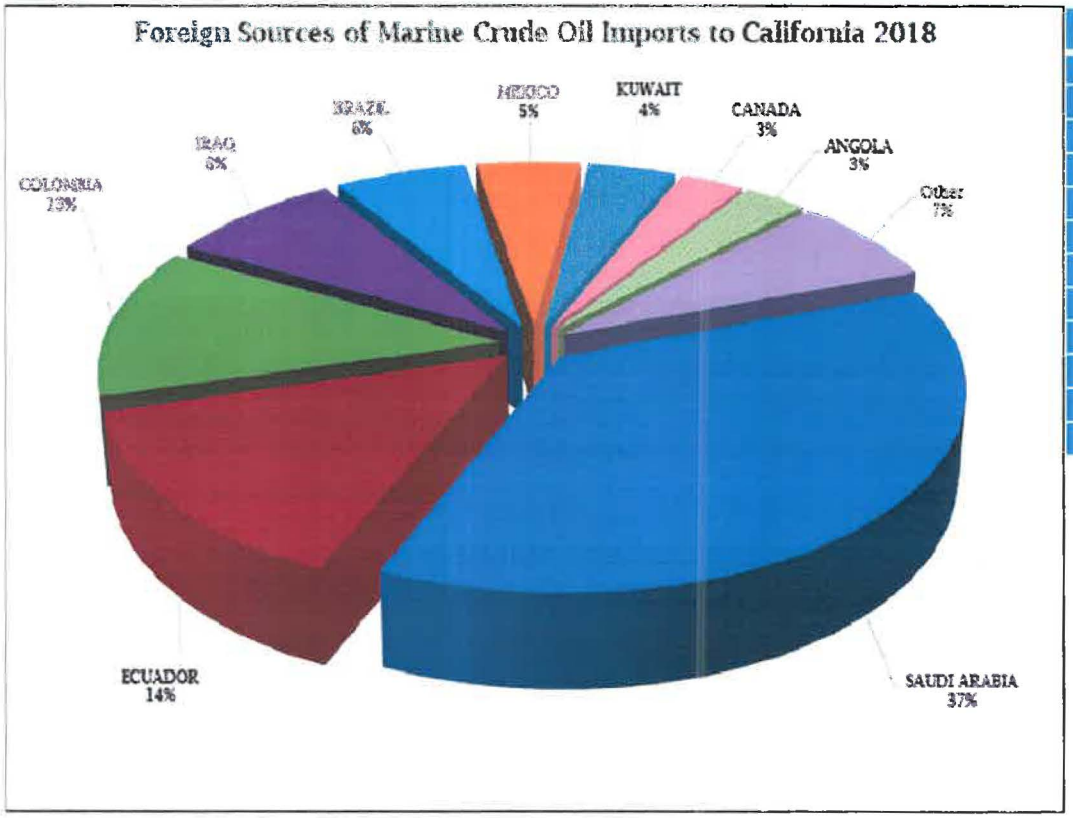
### Potential Production and Economic Impacts for City of Los Angeles:

- Current Oil Production - **$148 million**
- Future Oil Reserves - **$97.6 billion**
- Land Value (24 acres) - **$100 million**
- Well Abandonment - **$321 million**
- Environmental Clean Up - **$150 million**
- Litigation - **$1 million per year**

### Total Potential Economic Costs and Job Impacts:

- Total Direct Costs - **$724 million**
- Total Jobs - **575 to 1,221 Jobs**

# Crude Oil Imports to California and Los Angeles




| 2018 Foreign Sources of Crude Oil Imports to California | | |
|---|---|---|
| Source | Barrels of Crude Oil | Percentage |
| Saudi Arabia | 134,818,000 | 37.0% |
| Ecuador | 51,799,000 | 14.2% |
| Colombia | 44,648,000 | 12.2% |
| Iraq | 29,828,000 | 8.2% |
| Kuwait | 22,548,000 | 6.2% |
| Brazil | 17,688,000 | 4.9% |
| Mexico | 15,064,000 | 4.1% |
| Canada | 10,989,000 | 3.0% |
| Angola | 10,691,000 | 2.9% |
| Other | 26,294,000 | 7.2% |
| Total | 364,367,000 | 100.0% |

**Foreign Countries Exporting Oil to Los Angeles Refineries:**

- Angola
- Canada
- Columbia
- Ecuador
- Iraq
- Mexico
- Panama
- Saudi Arabia
- Singapore
- South Korea
- Uruguay

***Ports of LA & LB imported 130 million barrels of crude oil in 2017**



| 2018 Freedom House Human Rights Ranking | | | | |
|---|---|---|---|---|
| Country | Freedom Rating | Political Rights | Civil Liberties | Freedom Status |
| Saudi Arabia | 7 | 7 | 7 | Not Free |
| Ecuador | 3 | 3 | 3 | Partly Free |
| Colombia | 3 | 3 | 3 | Partly Free |
| Iraq | 5.5 | 5 | 6 | Not Free |
| Kuwait | 5 | 5 | 5 | Partly Free |
| Brazil | 2 | 2 | 2 | Free |
| Mexico | 3 | 3 | 3 | Partly Free |
| Canada | 1 | 1 | 1 | Free |
| Angola | 6 | 6 | 6 | Not Free |

| 2018 Environmental Performance Index | | | | |
|---|---|---|---|---|
| Source | EPI Ranking | EPI Index | Environmental Health | Ecosystem Vitality |
| Angola | 170 | 37.44 | 33.79 | 39.88 |
| Canada | 25 | 72.18 | 97.51 | 55.29 |
| Colombia | 42 | 65.22 | 71.05 | 61.33 |
| Ecuador | 87 | 57.42 | 72.58 | 47.31 |
| Iraq | 152 | 43.20 | 61.46 | 31.02 |
| Mexico | 72 | 59.69 | 66.04 | 55.46 |
| Panama | 56 | 62.71 | 66.96 | 59.87 |
| Saudi Arabia | 86 | 57.47 | 72.81 | 47.25 |
| Singapore | 49 | 64.23 | 72.14 | 58.96 |
| South Korea | 60 | 62.3 | 73.3 | 54.96 |
| Uruguay | 47 | 64.65 | 84.72 | 51.27 |

# Health Impacts at Oil & Gas Wells and Drill Sites Report Back

## Petroleum Administrator's Recommendations

1. Establish a **setback distance of 600 ft.** for all existing oil and gas wells;
2. Establish a **setback distance of 1,500 ft.** for all future oil and gas development;
3. Ask that City Attorney's Office to **report back with a legal analysis;**
4. Begin the process of on **modernizing and adding enhanced operating conditions in the City's Oil Code** for all drill sites to create health and safety technology zones;
5. Identify funding for **Health Risk Assessments (HRA)** at each drill site;
6. Update **Emergency Preparation & Community Safety Plans** for each Drill Site;
7. **Participate in SNAPS & AB 617** to incorporate findings into fenceline air monitoring;
8. **Designate Health Office Authority** from LA County to LAFD;
9. **Transfer Hazardous Waste Generator Program** from LA County to LAFD;
10. Add to **City's Legislative Agenda** to identify funding for oil and gas health studies;
11. Establish **Mitigation Funds** for cleanup and transition costs & **explore a barrel tax**

## Contact Information

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**Petroleum Administrator**

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