



# **Health Impact Assessment (HIA) E&B Oil Drilling and Production Project**

January 31, 2015

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# The HIA Team

- **Dr. Mary McDaniel, DO, JD, MPH** – occupational and environmental physician
- **Christopher Ollson, PhD** – senior environmental health scientist with over 17 years of assessment experience
- **Bart Koppe, BSc, PBIOL** – senior risk assessment specialist and expert in petroleum related air quality issues
- **Kathleen Souweine, MPH** – epidemiologist
- **Lindsay McCallum, MEnvSc, PhD (Candidate)** – environmental health scientist
- **Katherine Butler, MPH** – epidemiologist

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# HIA Objectives

- Understand relationships between the (mitigated) project, environmental conditions, and health
- Focus on health priorities identified by community members
- Provide decision-makers with complete and accurate information to make choices
- Motivate health-protective changes to the project design

Each Phase of E&B's Project was considered in the HIA:

**Phase 1:** Site Preparation and Construction (6-7 months)

**Phase 2:** Drilling and Testing (10 to 13 months)

**Phase 3:** Final Design and Construction (16 months)

**Phase 4:** Development and Operations (30 to 35 years)

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# The HIA Process

1. **Screening**



The City sought out an HIA to add input to the decision-making process

2. **Scoping**



Held a scoping meeting and online survey to define 18 priority health determinants for focus in the HIA

3. **Assessment**



Provided profile of existing conditions, predicted what project-related (with EIR mitigation) health effects could occur

4. **Reporting**



Developed HIA report and communicated findings and recommendations at public meetings

5. **Evaluation/  
Monitoring**



If the project moves forward, we recommend that the City monitor health status changes during the project

# Priority Health Determinants

1. Particulate matter (PM)	2. Toxic Air Contaminants (TAC)	} <b>Air Quality</b>
3. Nitrogen dioxide (NO <sub>2</sub> )	4. Odor	
5. Surface water	6. Soil particulates	} <b>Water and Soil</b>
7. Oil spill	8. Well blowout	} <b>Upset Scenario</b>
9. Noise emissions	10. Light emissions	} <b>Noise and Lighting</b>
11. Traffic safety	12. Perceived traffic hazards	} <b>Traffic</b>
13. Property Values	14. Education funding	} <b>Community Livability</b>
15. Access to recreation/ green space	16. Social cohesion	
17. Aesthetics	18. Political Involvement	

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# HIA Assessment Steps

**For each health determinant:**

1. Collected data on baseline conditions
2. Evaluated and weighed evidence of causal effects
3. Characterized health effects

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# Baseline Assessment

- Demographic indicators show Hermosa is not vulnerable to poor health outcomes associated with poverty, unemployment and low education
- Cancer incidence in Hermosa same or lower than LA County for all cancers except melanoma and breast
- Compared to LA, Hermosa has lower mortality due to heart disease and cancer
- Lower hospitalizations for asthma, diabetes, heart attacks, and mental illness in Hermosa compared to California
- Hospitalizations from alcohol and drug use slightly higher in Hermosa compared to California

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# Baseline Community Health

- Community values the outdoors and a healthy lifestyle (Blue Zones Project)
- Nearly half of Beach City Health District (BCHD) residents reported being stressed
- 2014 BCHD report:
  - 60% of adults are overweight or obese (and ~27% of kindergarteners)
  - 7% of adults smoke
  - 37% of adults don't meet minimum exercise and fruit/vegetable intake recommendations

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# HIA Assessment Steps, Cont'd.

**For each health determinant:**

1. Collected data on baseline conditions
2. Evaluated and weighed evidence of causal effects
3. Characterized health effects



# Evaluation Matrix

Parameter	Definition
<b>Geographic Extent</b>	How far are the impacts likely to reach?
<b>Vulnerable Populations</b>	Are there populations that could be disproportionately affected (positively or negatively) by Project activities?
<b>Magnitude</b>	What is the severity of the health impact post-mitigation? Low, Medium, High
<b>Adaptability</b>	How resilient is the community to this type of change; are they able to adapt? Low, Medium, High
<b>Likelihood</b>	What is the probability of the impact occurring based on the expected frequency of the exposure? Unlikely, Possible, Probable
<b>Post-Mitigation Health Effect</b>	What is the 'direction' of the post-mitigation effect? Negative, Positive, or No Substantial Effect



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# Air Quality

Nitrogen Dioxide (NO<sub>2</sub>)

Particulate Matter  
(PM)

Toxic Air Contaminants  
(TAC)

Odor



- Predicted NO<sub>2</sub> and TAC concentrations were lower than health-based thresholds.
- Currently regional airshed PM exceeds health-based thresholds, but Project is not expected to have a health impact.
- Odor-related health effects are negative near the Project Site during production operations (Phases 2 and 4). Odor cannot be completely mitigated.
- Odor can have various health consequences including stress, headaches, irritation, nausea, and sleep disturbances.

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# Water and Soil

Surface Water

Soil Particulates



- Water runoff from the Project will be contained on the Site and a pollution prevention plan will be in place to control other releases to the Ocean.
- Mitigation includes removal of current soil contamination and dust control measures.
- Due to these factors, there is no substantial effect on human health with respect to surface water quality and soil particulates.



# Upset Conditions

Crude Oil Spill

Well Blowout



- An oil spill could result in reversible health effects and is an unlikely event (0.07% over the project) that would be contained and cleaned up.
- A blowout also has a low probability of occurrence, but could cause severe injuries including fatalities.
- The HIA also found a negative health effect of stress due to fear of a blowout.



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# Noise and Light

Noise Emissions  
(construction &  
operations)



- There is a potential negative impact from pipeline construction activities in phase 3b.
- Modeled noise (existing conditions + Project noise) is within guidelines for all other phases.

Light Emissions  
(construction &  
operations)



- With exception of drill rig lights, light emissions will be limited to within the Site boundaries
- There is potential for some nearby individuals to experience disruption of typical sleep patterns during periods when the drill rig is present (Phase 2 and Phase 4).

# Traffic



Traffic Safety/Injury

Perceived Traffic  
Hazards



- Due to a number of mandated safety measures and limitations on truck traffic, there is no substantial effect on human health with respect to traffic safety
- There may be some decrease in walking/ biking near the Project Site, but it is not expected to impact the health of the community.

# Community Livability



Property Values

Aesthetics and Visual Resources

Recreation and Green Space

Education Funding

Social Cohesion

Political Involvement



- Whether a decrease in property values is real or perceived, it may cause increased stress and anxiety.
- Negative visual impact due to presence of drill rigs causing stress (Phases 2 and 4)
- Potential positive effect on health from enhanced funding for recreational space and education.
- No substantial effect on human health with respect to social cohesion and a potential benefit from political involvement (i.e., being able to vote on the Project).

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# Assessment Summary

## Negative

- Odor
- Well Blowout
- Noise Emissions (Phase 3 construction)
- Property Values
- Aesthetics and visual resources

## No Substantial Effect

- Particulate Matter
- Toxic Air Contaminants
- Nitrogen Dioxide
- Surface Water
- Soil Particulates
- Crude Oil Spill
- Noise Emissions (construction & operations)
- Light Emissions
- Traffic Safety
- Perceived Traffic Hazards
- Social Cohesion

## Positive

- Recreation and Green Space
- Education Funding
- Political Involvement

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# HIA Recommendations

Noise Emissions: provide local residents and schools with written notification (time and duration) of Phase 3 pipeline construction activities

Light Emissions: provide optional black-out blinds/curtains for residents with a direct sight line of the exposed side of 87-foot electric drill rig

Community Livability – Property Values: conduct a property value analysis to identify potential project-related changes and ensure fluctuations remain within expected local, regional and national levels

Community Livability – Recreation & Green Space: develop a community advisory group to assist the City on how to direct revenue for recreational activities and green space

Optional Follow-up Community Health Assessment: conduct a follow-up community health survey to monitor health over time (post-project)

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# External Peer Review

- Performed by Dr. Elizabeth Hodges Snyder, Assistant Professor and Scientist at the University of Alaska
- Peer review focused on the process, methodology, scope, thoroughness, and neutrality of the June 2014 draft HIA
- Dr. Snyder certified that the comments and recommendations that she provided were adequately addressed in our responses
- Overall, of the HIA, Dr. Snyder stated that: “neutrality in tone and content is achieved”

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# Overall Conclusion

*“Based on the proposed mitigation measures in the EIR and additional recommendations provided in the HIA, we do not believe that the Project will have a substantial effect on community health in Hermosa Beach.*

*Ultimately it is the voters of Hermosa Beach who will decide whether the impacts described in this HIA are acceptable or not.”*

-Final HIA, Sept 3 2014

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# Thank you.



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