



**JOHN SMITH ROAD**  
**LANDFILL**

# **JOHN SMITH ROAD LANDFILL EXPANSION**

A Public/Private Partnership



WASTE CONNECTIONS

October 27, 2023



# Environmental Protection

Curt Fujii

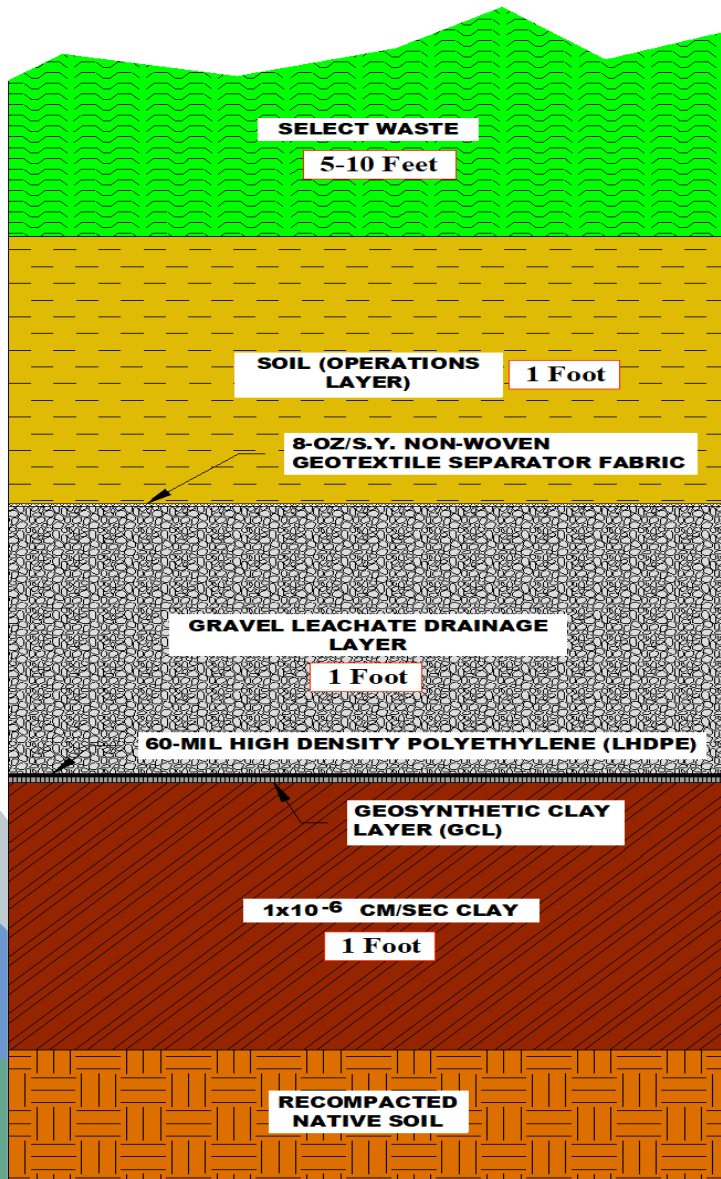
Waste Connections

Northern California Regional Engineer



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# Landfill Liner System





# Environmental Controls

- Regulated by State & Local Agencies
  - State - *CalRecycle, Regional Water Quality Control Board*
  - Local - *Monterey Bay Air Resources District*
- Ground water monitoring
- Leachate collection and control
- Landfill gas monitoring, collection, and control
- Financial assurance bonds for closure and post-closure





# Existing Ground Water Impacts

- Existing “plume” comes from old unlined area.
  - “The Discharger’s operation of their groundwater extraction system has resulted in reduced concentrations of VOCs in groundwater and it achieved hydraulic capture of the VOCs plume. The overall declining concentrations of VOCs indicate that the on-site groundwater extraction system has been effective at capturing impacted groundwater. Improvements in Landfill operations have also reduced leachate production, thus reducing the source for the historic impact identified as originating from unlined Module 1.” (RWQCB, 12/5/13)





# Groundwater Extraction System

- Impacts occurred before Waste Solutions operated site
- Extraction System continues to be an effective County program protecting public health and the environment
- Extraction System operations, monitoring, and maintenance will likely continue for more than 15 years
- If landfill not expanded, County must fund Extraction System without landfill revenue





# Liner Life Expectancy & Gas Line Safety

Clayton Coles

Lawrence & Associates

Principal Engineering Geologist

37 years of landfill permitting, design, construction, and operation experience



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# Liner Life

- People commonly think of landfill liners solely as the geomembrane element of the liner system; in this case an HDPE geomembrane.
- A geomembrane element in landfill liner systems has been required by 40CFR Part 258, Subtitle D, since 1993 (approximately 30 years).
- The primary cause of HDPE geomembrane degradation is ultraviolet light exposure that does not occur when buried in landfill.
- The literature on the life of a geomembranes in a landfill setting varies, but is commonly stated in terms of hundreds of years.
- The other liner elements in the liner system provide long-term redundancy.
- References:
  - Knight Piesold Consulting February 4, 2023 *Black Butte Copper Project – Life Expectancy of HDPE Geomembrane* (over 400 years).
  - Pegs, Ian D., June 3, 2010. *Geomembrane Liner Durability: Contributing Factors and the Status Quo.* (200 to 700 years and over 400 years with proper installation practices).
  - <https://agruamerica.com/hdpe-liner-history/>







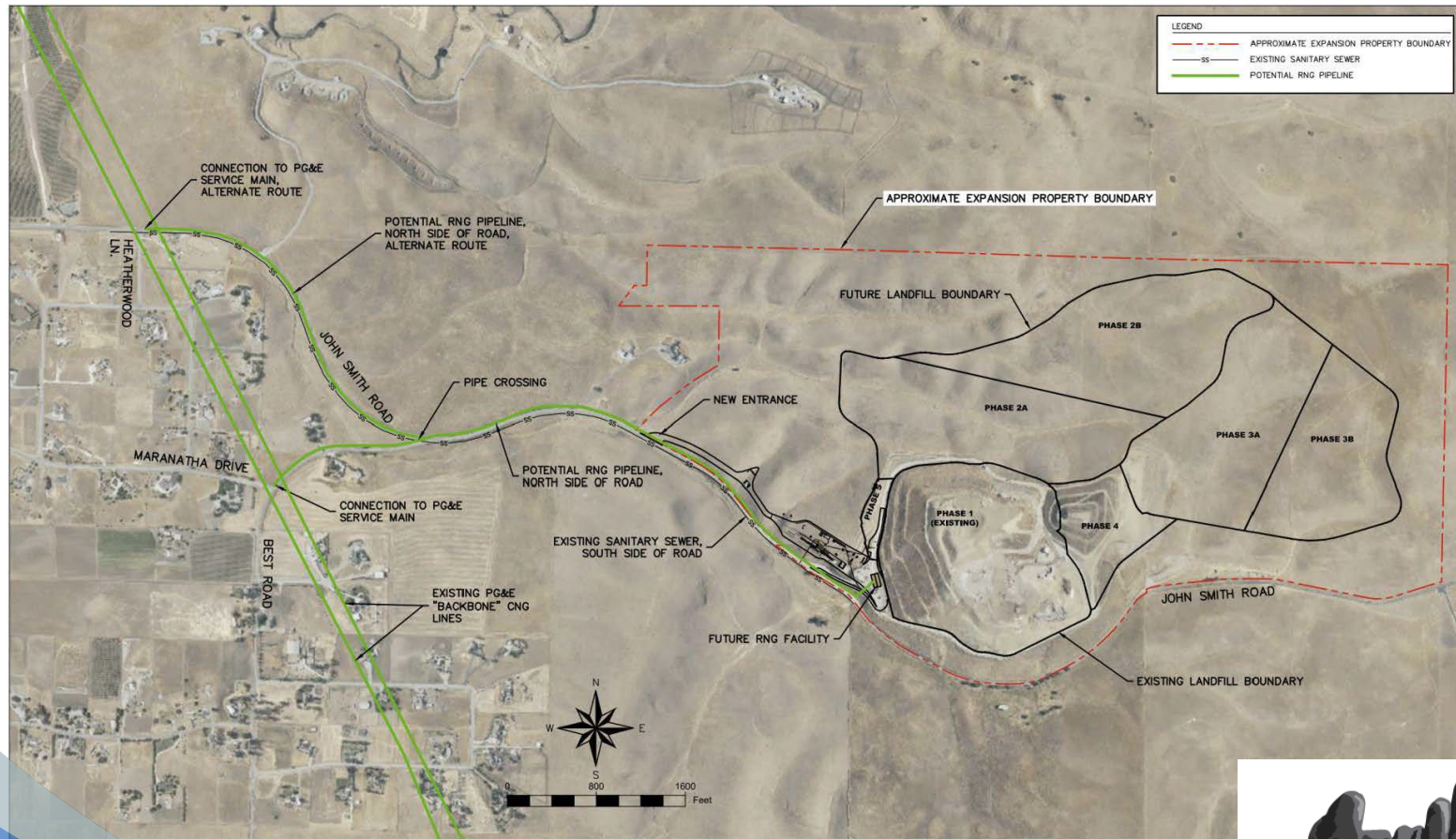
# CNG/RNG Piping

- Existing PG&E “backbone” compressed natural gas (CNG) lines run through the area and can be viewed at:
  - [https://www.pge.com/en\\_US/safety/how-the-system-works/natural-gas-system-overview/gas-transmission-pipeline/gas-transmission-pipelines.page](https://www.pge.com/en_US/safety/how-the-system-works/natural-gas-system-overview/gas-transmission-pipeline/gas-transmission-pipelines.page)
- The lines are likely steel and 16” diameter or larger (PG&E does not readily share this information).
- Figure 3-11 in the DEIR shows the approximate location.
- PG&E is responsible for maintaining the existing backbone lines.
- The backbone lines are existing and not part of the project.
- If the Renewable Natural Gas (RNG) from the landfill is pumped into the line, it would be done so using a much smaller approximately 4” line, carrying a relatively small quantity of gas, posing a small risk.
- Material type (likely steel), pressure, and burial depth, would be specified by PG&E during design.
- The selected RNG plant developer would be responsible for coordinating with PG&E and County Public Works Department during design and would be responsible for construction and operational safety practices for the RNG system and 4” line.



# CNG/RNG Piping

- Below is Figure 3-11 from the DEIR. The backbone locations are approximate. The RNG Pipe is conceptual but would be located with on JSRL Property and within utility rights-of-way.





# Near Term Emission (GHG) Reductions

Sean Edgar

CleanFleets.net LLC

Director



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# Relevant Project Experience

- Over 30 years of experience in waste transportation and clean fuels
- Since 2000 I have been involved in every on-road and off-road rulemaking by the California Air Resources Board (CARB)
- Contracted by CARB on three occasions for our technical expertise in implementing fleet rules and grant administration
- Appointed on 10/20/2023 to the Truck Regulations Implementation Groups (TRIG)
- Providing CARB compliance services to municipalities, Fortune 500 companies and privately-owned fleet owners like JSRL



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# Carbon Intensity for Diesel & Substitutes

Certified Pathways 2020 - grams CO<sub>2</sub> emitted per unit of energy adjusted for energy economy ratio [EER] (g CO<sub>2</sub> e/MJ)



**Diesel**

CI = 100.45<sup>2</sup>



1.0 EER



**CNG**

CI = 79.21<sup>2</sup>

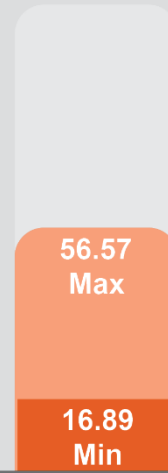


0.9 EER



**Renewable Diesel**

CI = 31.59<sup>2</sup> Average



1.0 EER

$$CI_{\text{EER adj.}} = CI$$

See: LCFS Regulation, Table 4

<sup>1</sup> UC Davis; <sup>2</sup> Adopted LCFS Regulations

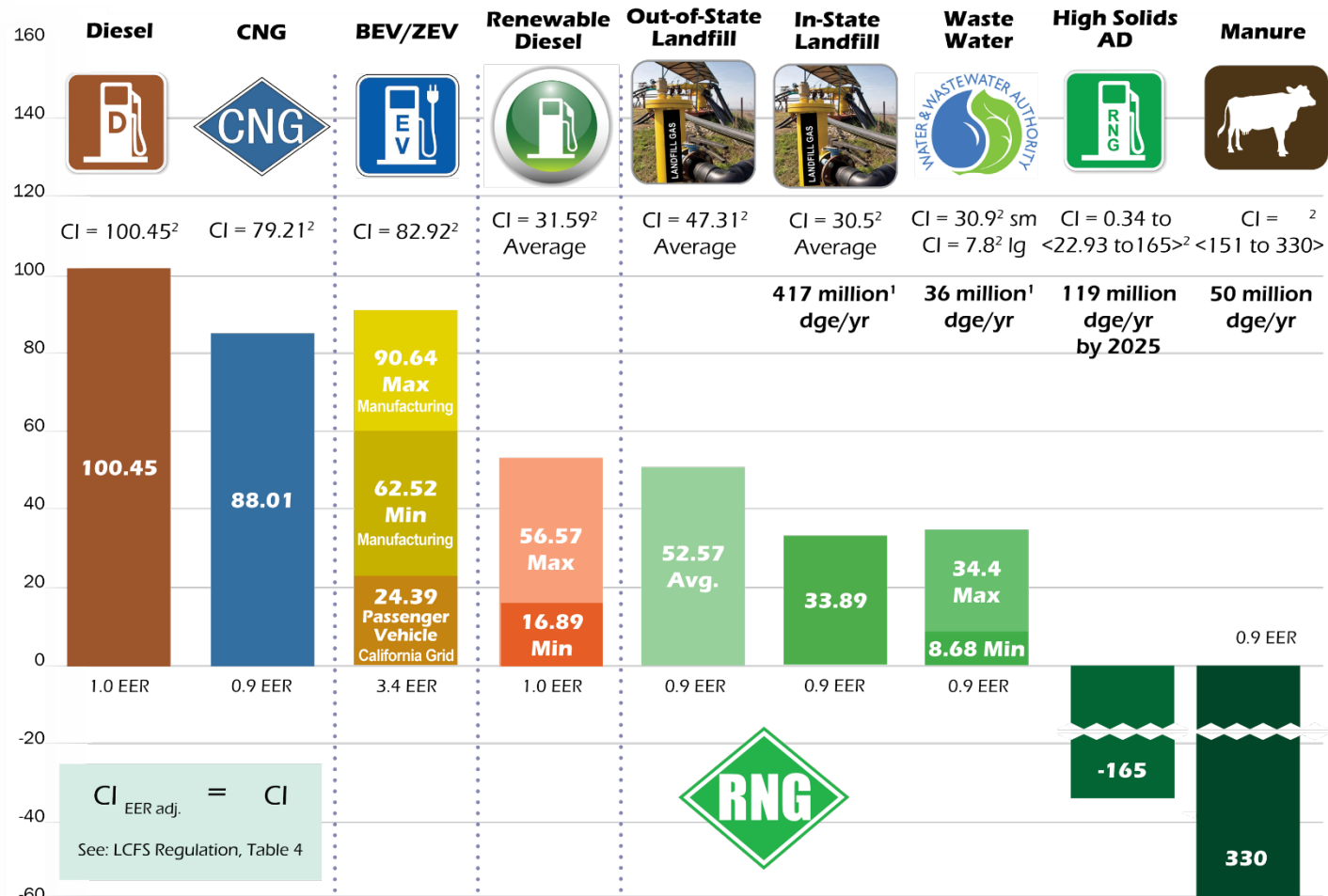
Prepared by Edgar & Associates, Inc.  
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## Carbon Intensity for Diesel & Substitutes

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Prepared by Edgar & Associates, Inc. 03/21/2022  
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