

# Cargill-EBDA Proposal for Enhanced Processing and Removal of Mixed Sea Salts

Presentation to EBDA Commission

March 17, 2022

EBDA

**Cargill**® Helping  
the world  
thrive

# Cargill and the Bay Area

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Cargill's solar sea salt facility in Newark is the only large-scale manufacturer of food-grade sea salt in the United States

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# **Solar Sea Salt Production – Long History in the South Bay**



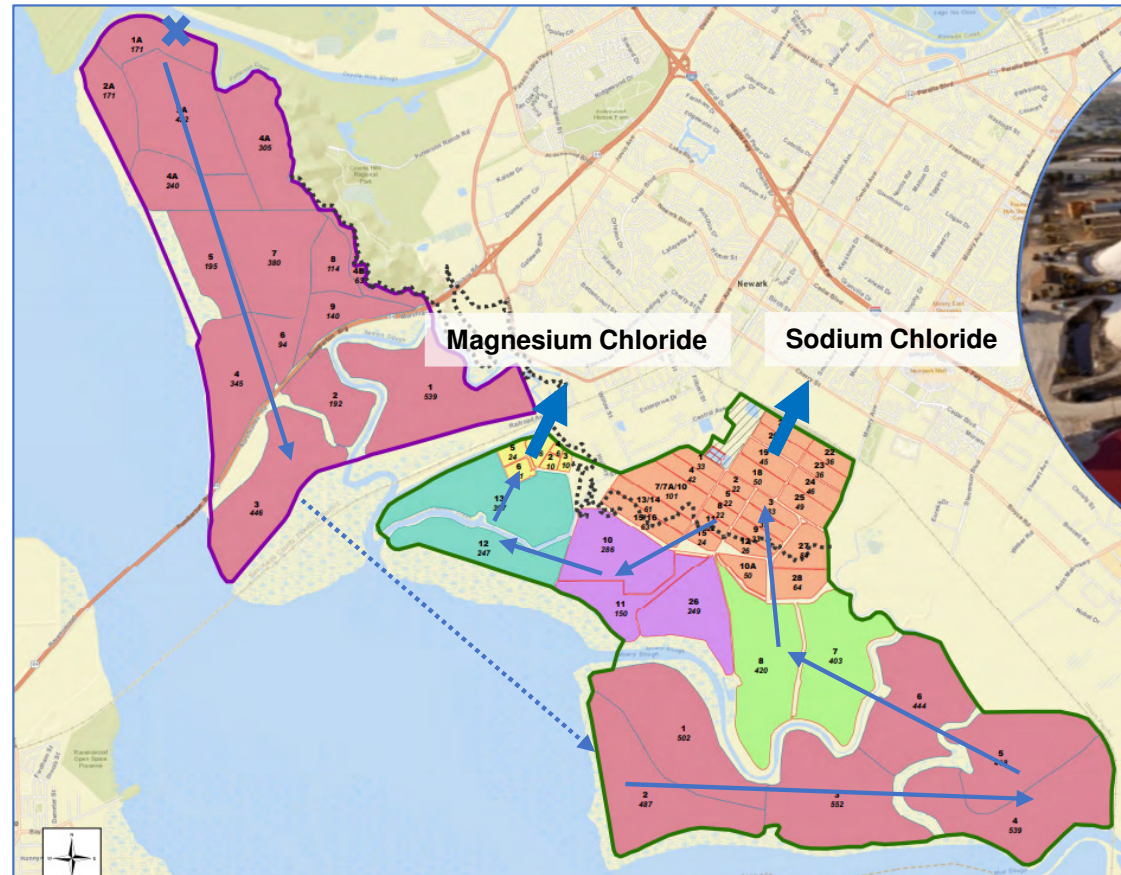
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# Solar Sea Salt Production Process

- ✕ Coyote Slough intake
- Concentration ponds
- Pickle ponds
- Crystallization ponds
- Desalting ponds
- MSS ponds
- FMC ponds



## Addressing Sea Level Rise

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### Cargill's proactive approach

- Climate change and sea level rise will impact all of us.
- The time to act is now so we can protect the Bay and the communities where we live and work.
- Cargill is addressing sea level rise and protecting the Bay for future generations by enhanced processing and removing the natural mixed sea salts from our Newark facility.
- Cargill is proposing to partner with EBDA to safely return the mixed sea salts back to the Bay.



## Options Considered for Mixed Sea Salt Post-Harvest

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- Land-based options

- Leave it place (local cap-in-place)
  - Risk due to proximity to the Bay; permitting challenges
- Truck to landfill
  - High GHG emissions; additional local traffic; long time frame
- Truck or train to underground injection control well
  - High GHG emissions; additional local traffic

- Bay/Ocean-based options

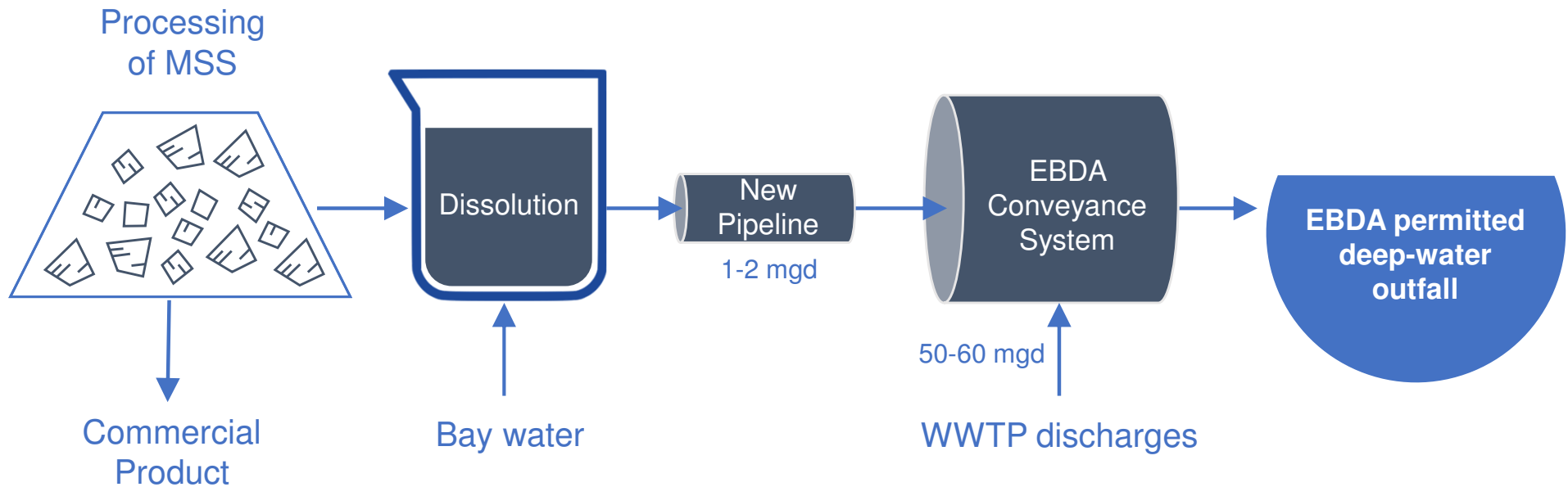
- Barge to deep-water ocean
  - High GHG emissions; requires legislative act
- Direct discharge to the Bay from Cargill's South Bay facility
  - More water intake required than discharge to existing POTW in north Bay
- ★ • **Discharge to the central Bay by connecting to EBDA POTW system**
  - **Limited GHG emissions**
  - **Marginal increase in water use;**
  - **Use existing infrastructure and permit after connecting via to-be-constructed pipeline**

# Proposal Overview



## Enhanced Processing and Removal of Mixed Sea Salts

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## Proposal Overview

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- Cargill would construct pipeline and connection to EBDA
  - Route and connection point will be discussed later in this presentation
  - Cargill will execute Project Labor Agreement with Building Trades for pipeline construction
- Average of 1-2 MGD of brine would be discharged to EBDA year-round
- Brine discharges would be paused in the event of capacity constraints
  - Wet weather
  - Process upset
- Water quality would be monitored to ensure compliance
- Discharges would continue until brine has been fully discharged, or 2040 (JPA expiration), whichever comes first
  - Cargill would be interested in extending agreement

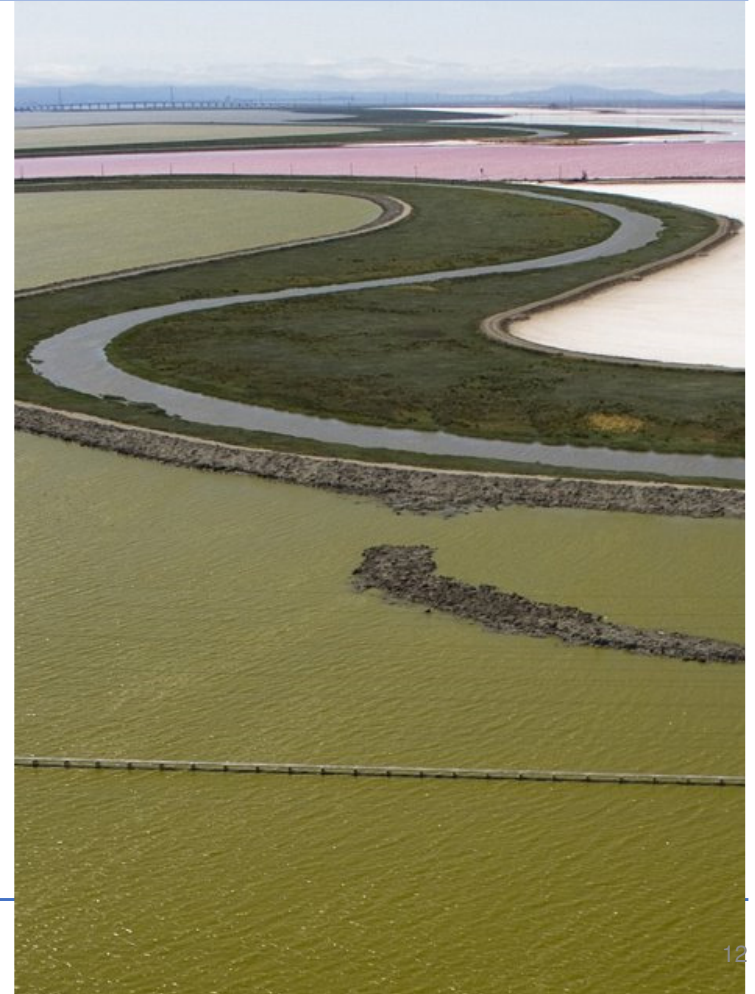
## Mixed Sea Salt Brine Discharge to EBDA System



## Cargill Goals: Adaptation, Resilience, and Sustainability

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- Improve resilience of Cargill MSS ponds to sea level rise
  - Supports renewal of Cargill's permit with BCDC
- Sustainable discharge of MSS brine utilizing EBDA's existing effluent and deep-water outfall



## EBDA Drivers and Potential Benefits

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- Sustainably manage discharge generated within EBDA's service area
  - Consistent with the JPA: *"The purpose of the Agreement is to provide for the more efficient disposal (discharge to San Francisco Bay as well as reclamation or reuse of wastewater) **of the wastewater produced in each Agency's jurisdiction**, all to the economic and financial advantage of each Agency and otherwise for the benefit of each Agency."*
- Utilize excess capacity available in EBDA's existing infrastructure
- Receive financial compensation that will offset EBDA expenses to the benefit of the Member Agencies' ratepayers
- Benefit from new or improved infrastructure that will be more corrosion-resistant and resilient to higher salt levels
  - May be particularly helpful in the event of increased water conservation and/or recycling
- Support efforts to improve resilience of SF Bay to sea level rise by facilitating removal of salts from Cargill's MSS ponds adjacent to the Bay



## Term Sheet

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- EBDA Commission approved Non-binding Term Sheet w/Cargill in July 2020

### Key Non-Financial terms:

- Initial term through the expiration of the current JPA on June 30, 2040
- At end of term, right of first refusal for EBDA to purchase or retain ownership of the pipeline
- 0.9 to 1.8 MGD with upper limits on discharge rates and concentrations

## Term Sheet (continued)

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### Key Financial Terms

- The proposed fee structure for Cargill's discharge into the EBDA system is based on the fee structure for discharges to USD:
  - Capacity Fee of \$5 million, made as a series of milestone payments
  - Flow-Based Fees of \$4,370 (December 2020 dollars) per MG of brine
    - Annual increase based on the December-to-December CPI-U for SF-Oakland-Hayward
    - Assuming 2.5% annual inflation, amounts to ~\$35 M over 20 years
  - \*Allocation of revenues among Member Agencies not yet established\*

## Term Sheet (continued)

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### Key Financial Terms (continued):

- **Project Development:**

- Cargill to pay:
  - all reasonable fees and costs, including EBDA labor and consultant costs, related to permitting and regulatory approvals
  - EBDA labor and consultant costs associated with the due diligence phase
  - all costs related to designing, constructing and connecting the brine pipeline
- EBDA would serve as the CEQA lead agency, with the assistance of qualified contractor selected by EBDA and paid for by Cargill

## Term Sheet (continued)

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### Key Financial Terms (continued):

- **Project Operation:**

- Cargill would be responsible for:
  - any additional monitoring and reporting costs it agrees to perform
  - operations and maintenance costs associated with delivery of brine to the System

## Key Due Diligence Issues

Issue	Status
Water Quality / NPDES Compliance	<ul style="list-style-type: none"><li>• Sampling and modeling shows no significant compliance risks for priority pollutants.</li><li>• Dilution will decrease slightly but not expected to impact compliance.</li><li>• New permit (July 2022) will contain provisions that are triggered when EBDA notifies Water Board that brine discharge has commenced.</li></ul>
Scaling / Sedimentation	Not expected to be a significant issue, but will be monitored
Bacteria / Chlorination	Testing ongoing to determine chlorine demand.
Pipeline Corrosion	Brine is expected to lead to accelerated corrosion in segments of pipe that have air entrainment (oxygen is needed for corrosion reaction).
Corrosion at OLEPS & MDF	Brine is expected to lead to accelerated corrosion of exposed equipment at OLEPS and MDF. Recommended protection measures are in development.



## Addressing Pipeline Corrosion Risk

- In-Pipe Protection
  - Connect downstream of UEPS
  - Slipline vulnerable sections
  - Study ongoing to evaluate residual risk to sections that flow full
- Parallel Pipe
  - Connect at or just downstream of OLEPS
  - Multiple routes under consideration



## Segmental Sliplining

- New pipe inserted into the original pipe
  - Hydraulic modeling shows no impact from reduced capacity



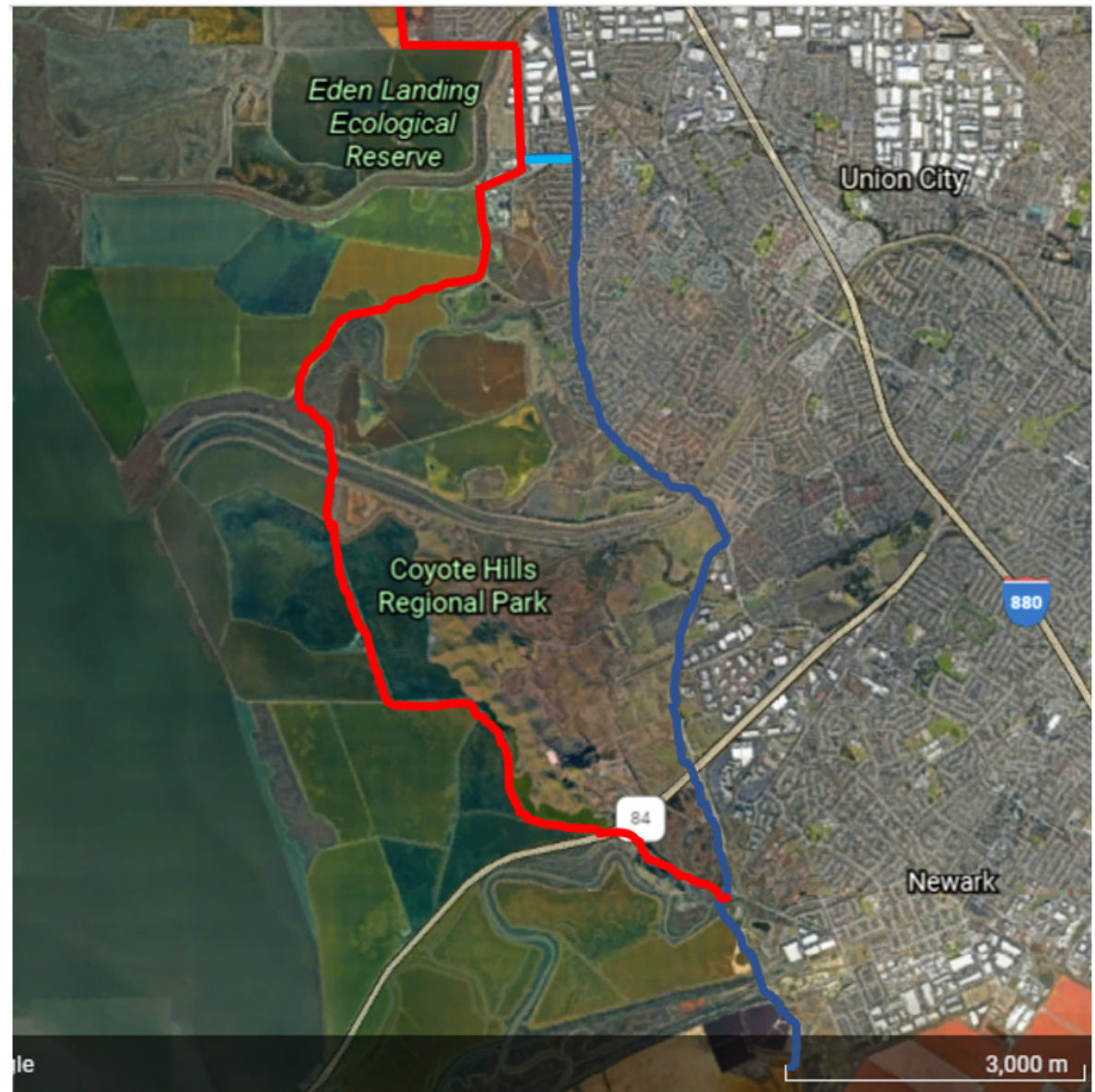


# Brine Pipeline Route Options currently under consideration

**South End**

**City Street**

**Bay Side**



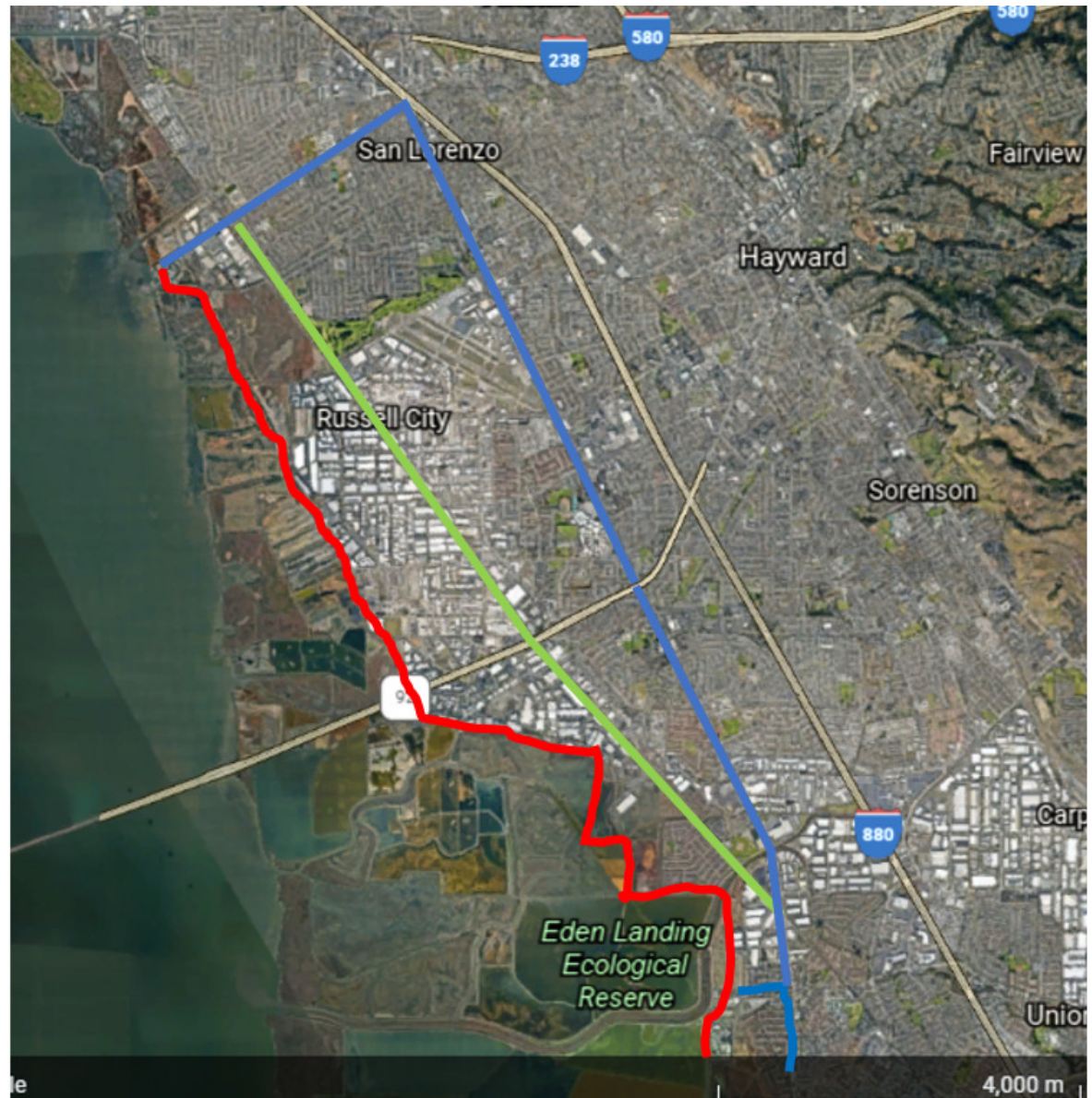
# Brine Pipeline Route Options currently under consideration

## North End

City Street

Bay Side

Rail





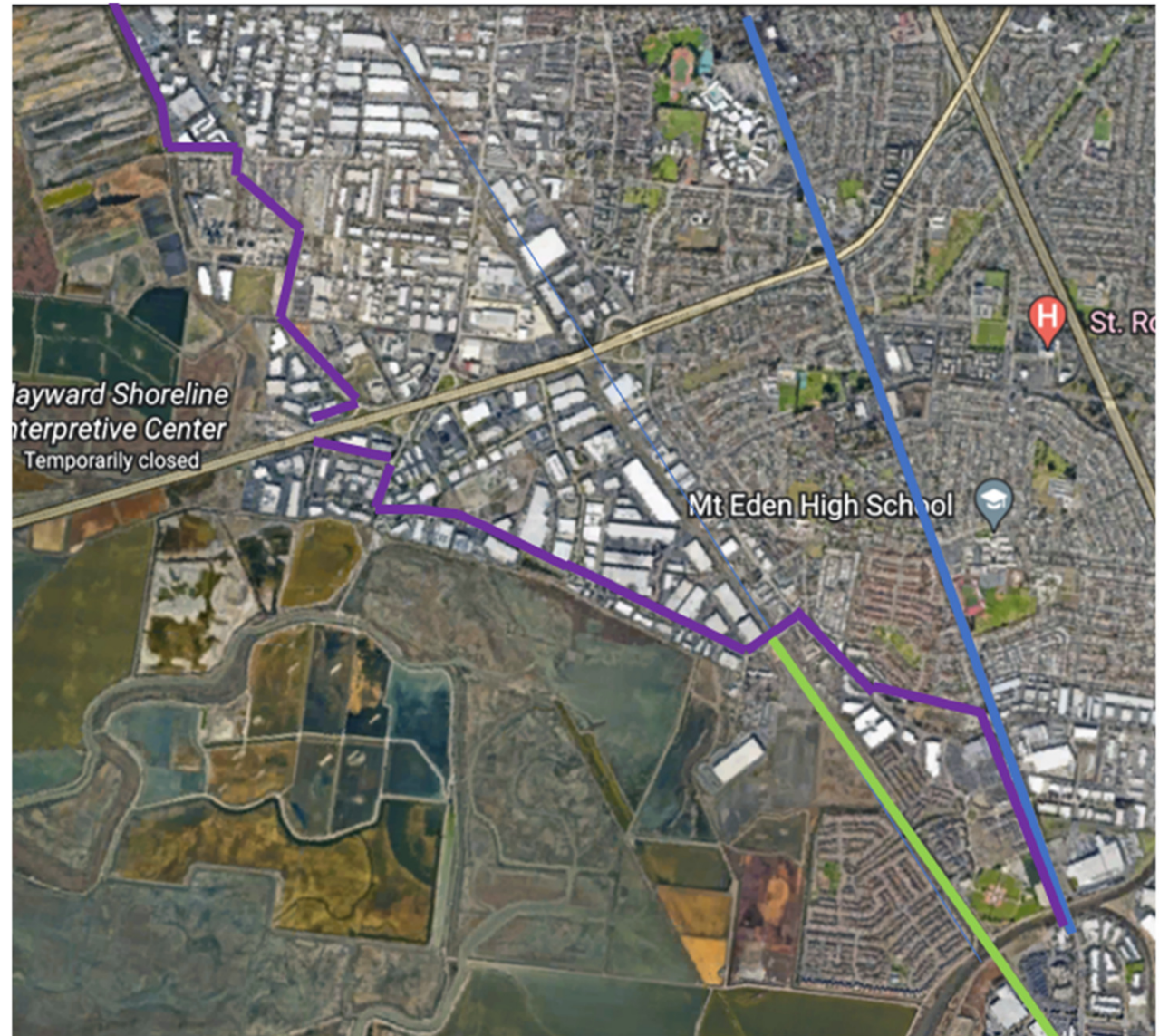
# Brine Pipeline Route Options currently under consideration

## North End Additional Alternatives

Original City Streets

Western City Streets

Rail





## Each Option has its Challenges

Option	Key Challenges
Sliplining (connection near USD)	<ul style="list-style-type: none"> <li>• Disruption to EBDA during construction</li> <li>• Significant bypass pumping</li> <li>• Work in environmentally-sensitive areas including Oro Loma Marsh</li> <li>• Residual risk to EBDA for unlined sections</li> <li>• Coordination with Union City Bike Path Project</li> </ul>
Parallel Pipe – Street Route (connection at OLEPS)	<ul style="list-style-type: none"> <li>• Impact on paving of streets currently in good condition</li> <li>• Disruption to traffic during construction</li> <li>• Construction-related impacts on neighbors</li> <li>• Coordination with Union City Bike Path Project</li> </ul>
Parallel Pipe – Bayside Route (connection at OLEPS)	<ul style="list-style-type: none"> <li>• Disruption to Bay Trail</li> <li>• Work in environmentally-sensitive areas including Oro Loma Marsh, Eden Landing</li> <li>• Long lead time and uncertainty regarding permitting</li> <li>• Coordination with South Bay Salt Ponds improvements at Eden Landing</li> </ul>
Parallel Pipe – Rail Route (connection at OLEPS)	<ul style="list-style-type: none"> <li>• Sufficient space from tracks not available for all segments</li> <li>• Coordination with Union Pacific</li> </ul>

## Next Steps

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- Continue due diligence process and route evaluation
  - Includes ongoing discussions with cities/agencies regarding pipeline alignment and options for property rights
- CEQA
  - Environmental Impact Report (EIR) development underway for street route – target completion end of 2022/early 2023
- Draft and negotiate Operating Agreement between Cargill and EBDA
  - Incorporation of cost/risk vs. benefit

## Actions for Commission Consideration in Late 2022

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- EIR Certification
- Allocation of Cargill fees among member agencies
- Approval of Operating Agreement

## Summary: Cargill and EBDA Partnership

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- Cargill is ready to partner with EBDA to move forward with sea level adaptation and to protect our Bay and shoreline.
- Removing Mixed Sea Salts and returning them to the Bay via pipeline is the most environmentally responsible option.
- Area stakeholders, including government entities and environmental organizations, support this option and agree this is the best path forward. To date we have encountered no opposition.
- The route location and process for the pipeline option is challenging, but with our partnership we can find a resolution.

