

# Sediment Strategy

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# Overview

- Future Sediment Need
- Additional Sediment Sources
- What Are We Doing About It?!?



# Future Sediment Need (2010-2100)

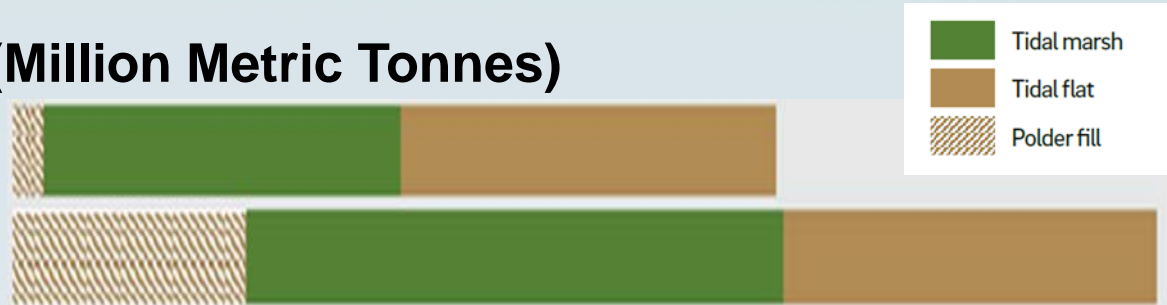
## Future Sediment Demand (Million Metric Tonnes)

**Existing Baylands**

**360**

**With Restoration**

**550**



## Future Sediment Supply from Tributaries (Million Metric Tonnes)

**Drier Scenario**

**160**

**Wetter Scenario**

**280**



Source: Regional Sediment Strategy (SFEI, 2020 - pending)



# Additional Sediment Sources

- Navigational Dredging  
= 60 percent of need
- Excavated Upland Soils  
= 30 percent of need
- Stored Behind Dams  
= 20 percent of need
- Tidal Flood Control Channels  
< 5 percent of need



# What Are We Doing About It!



# Bay Navigational Dredging and Flood Control Channels

- Conservative Screening Process
  - Beneficial Reuse Workshop
  - Floating Percentile
- Cost
  - Strategic Placement
  - Hydraulic Dredging?



# Excavated Upland Soils

- Conservative Screening Process
  - Hazard quotient methodology to assess risk of ecological effects
- Timing Availability with Need
  - Stockpiling for Future Use?
- Cost of Materials?



# Stored Behind Dams

- Other Significant Environmental Effects
  - Pulse flows rather than trucks?
  - Truck only coarse materials?
  - Incorporate downstream maintenance?





# Flood Control Channels

- Tidal Reaches
  - Thin lift for direct placement
  - Reconnect to watersheds
- Nontidal Reaches
  - Truck coarse materials?



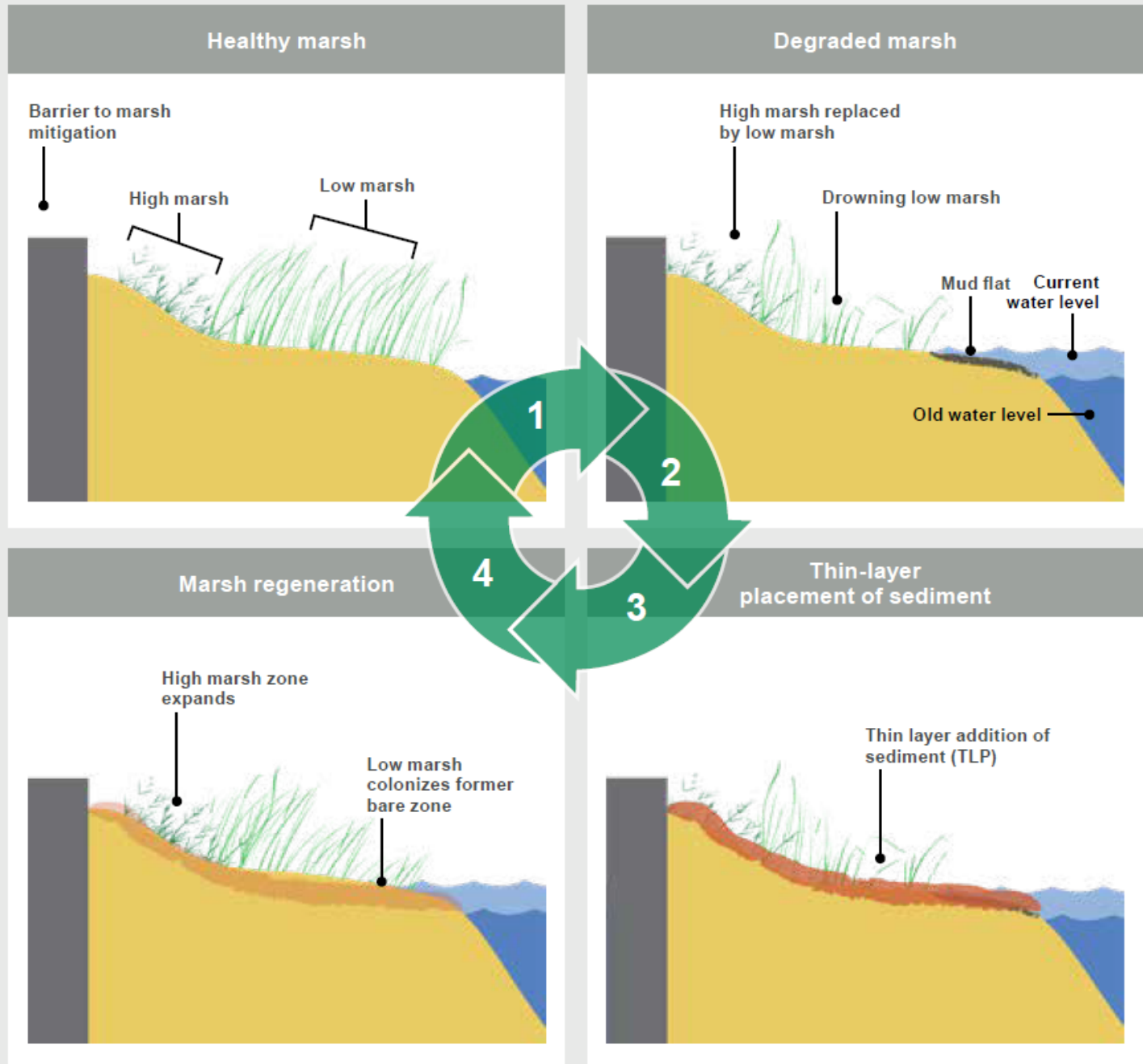
# ENHANCING MARSH RESILIENCE THROUGH THIN-LAYER PLACEMENT OF SEDIMENT

1. A healthy marsh is exposed to additional inundation due to sea level rise or land subsidence.

2. In the intertidal zone, high marsh plants are replaced by those typically found in low marsh areas and the low marsh drowns and converts to mudflats.

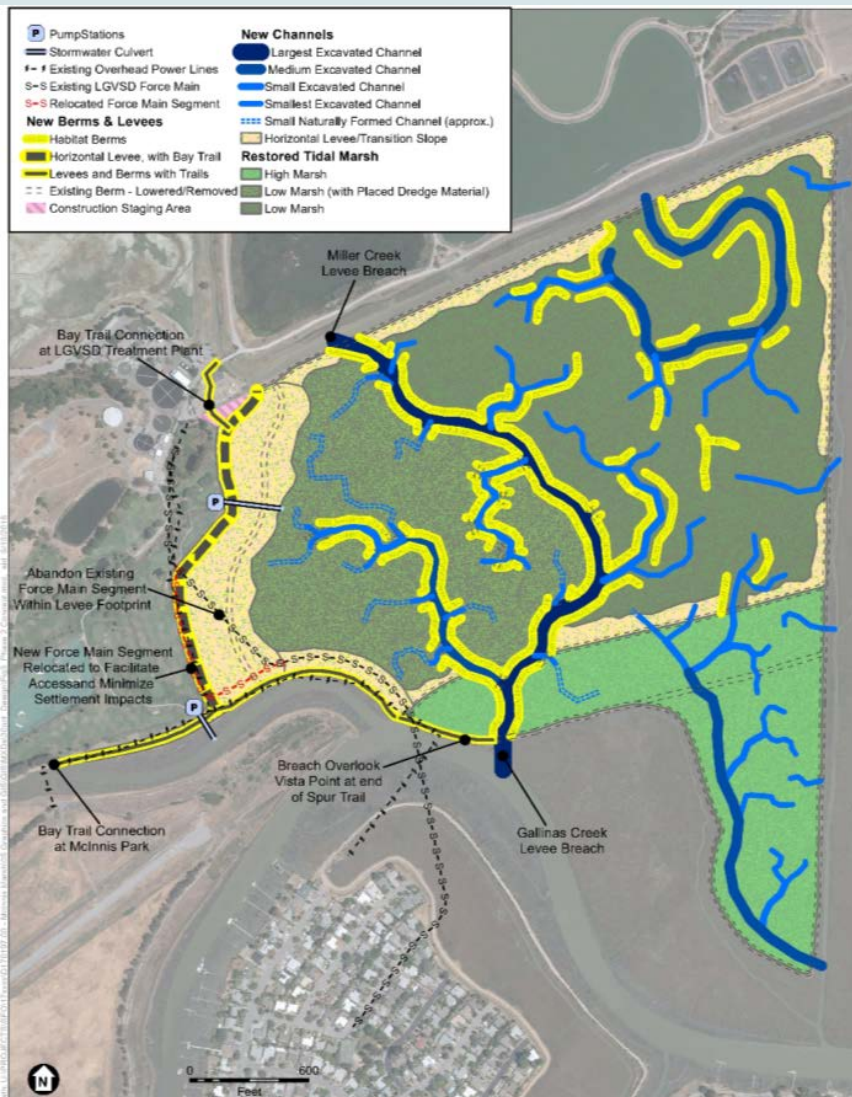
3. A layer of sediment restores the marsh's vertical elevation relative to sea level.

4. Over time, the high marsh zone expands, low marsh plants recolonize mudflats, and the marsh thrives in place.



*Original graphic courtesy of Caravan Lab and LandSea Science.*

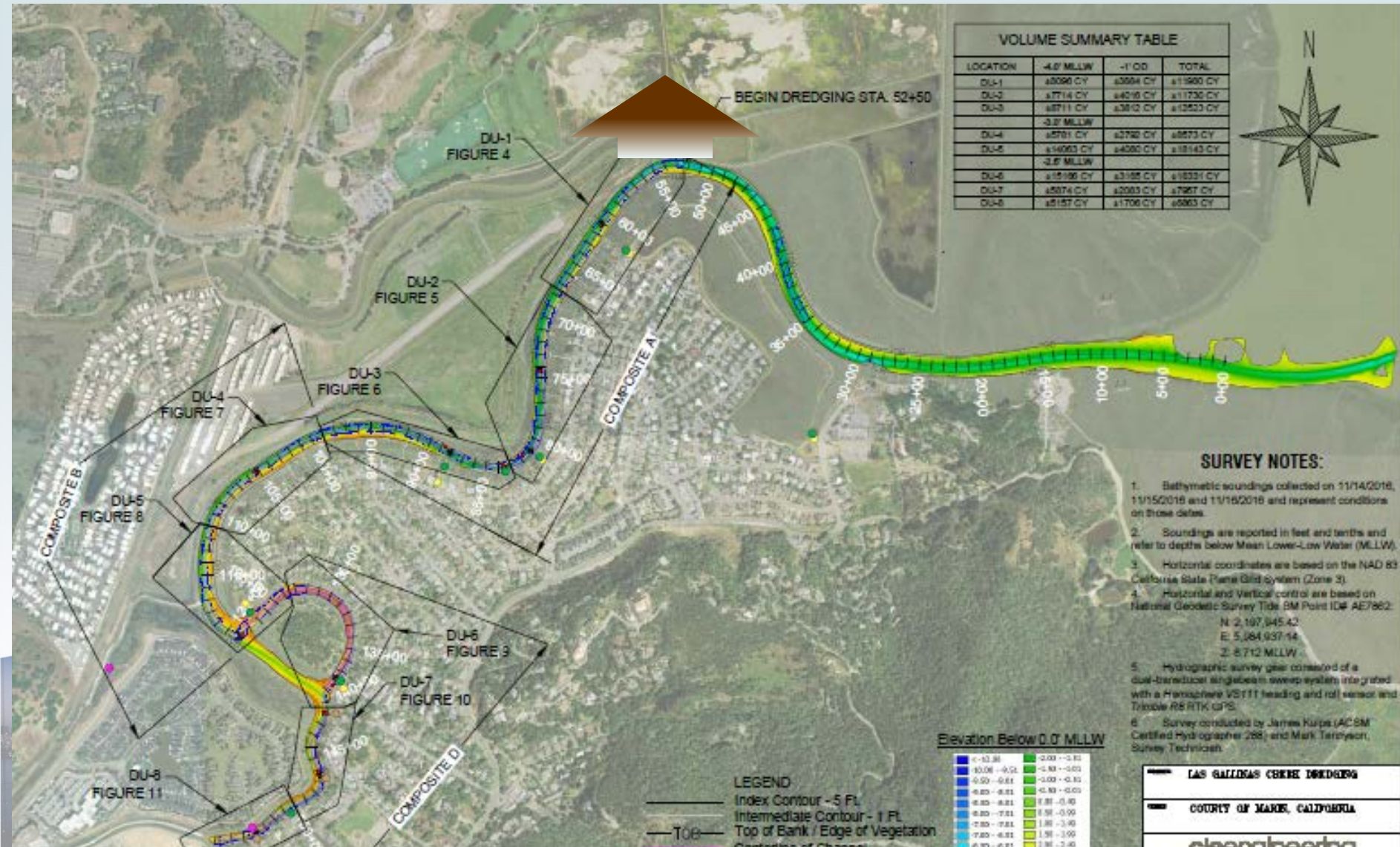
# Gallinas Creek Dredging and McInnis Marsh Restoration



- ~1 Million yd<sup>3</sup> Needed
  - Creek Reconnection
  - 100,000 yd<sup>3</sup> from Las Gallinas dredge project



# Gallinas Creek Dredging and McInnis Marsh Restoration



**Thank You!**

