



The
Policies for a Rising Bay
Project

Steering Committee Meeting #3

January 22, 2016

Overview



- Brief Presentation of Case Studies
 - Developed in collaboration with subcommittee
 - Case studies are hypothetical
- Brief Presentation of Policy Analysis
 - Incorporates feedback from subcommittee meetings
 - Highlights key policy issues
- Discussion



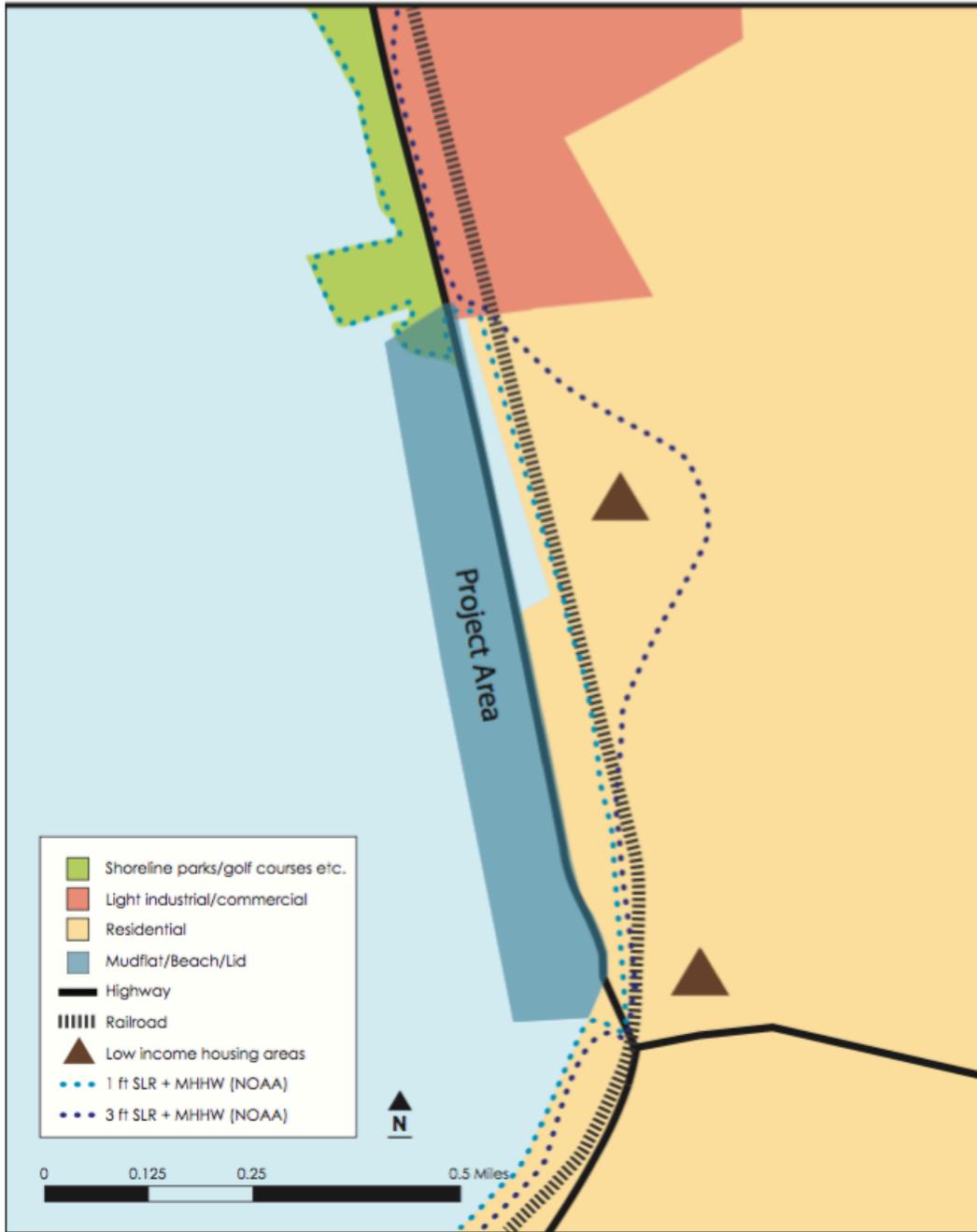
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Transportation Case Study

Miriam Torres
Erik Buehmann



- Purpose: maintain ground transportation, shoreline habitat and recreation resources, and protect the surrounding community from future flooding



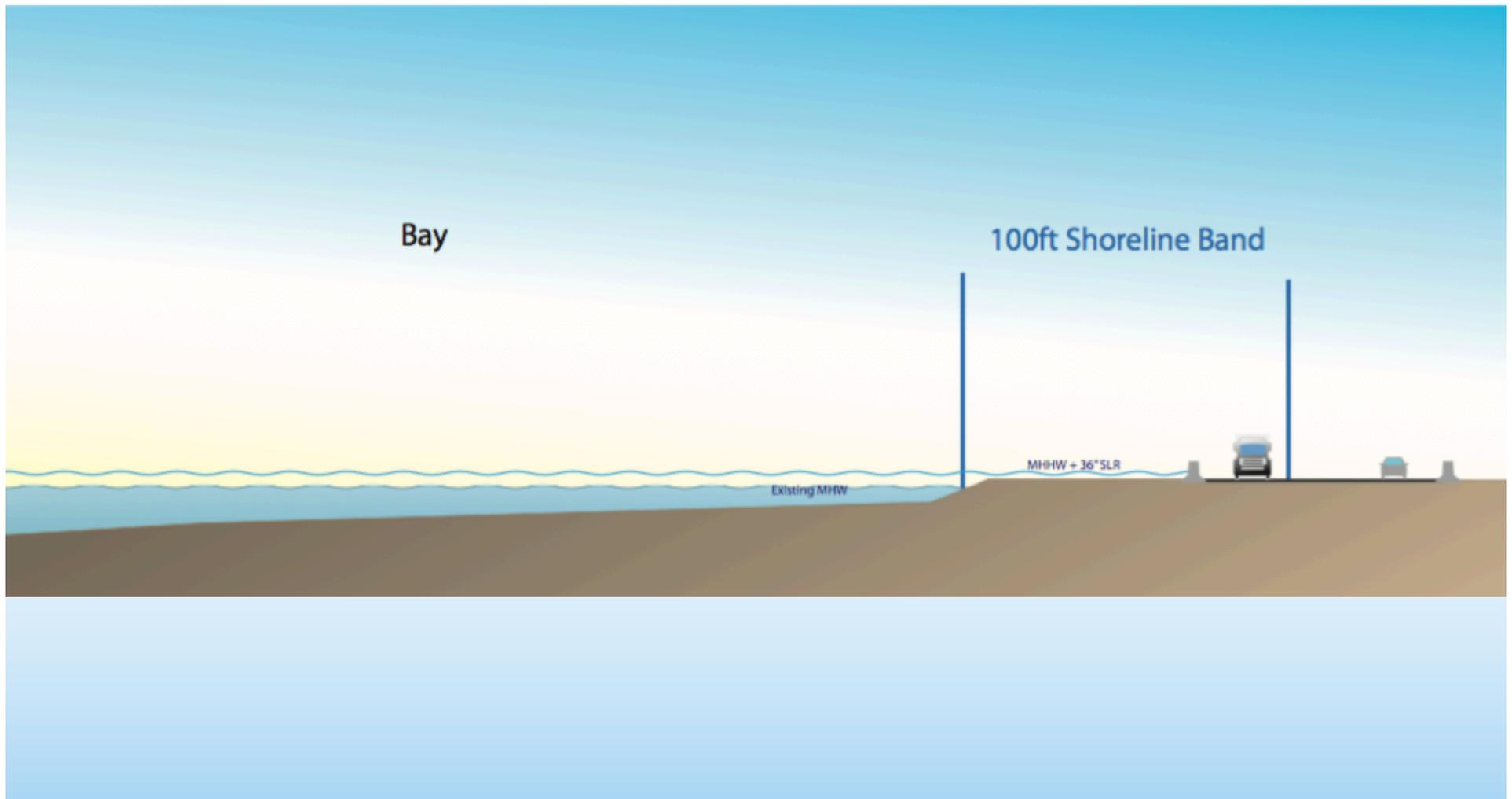
Ground Transportation

Lid + Mudflat Recharge & Beach

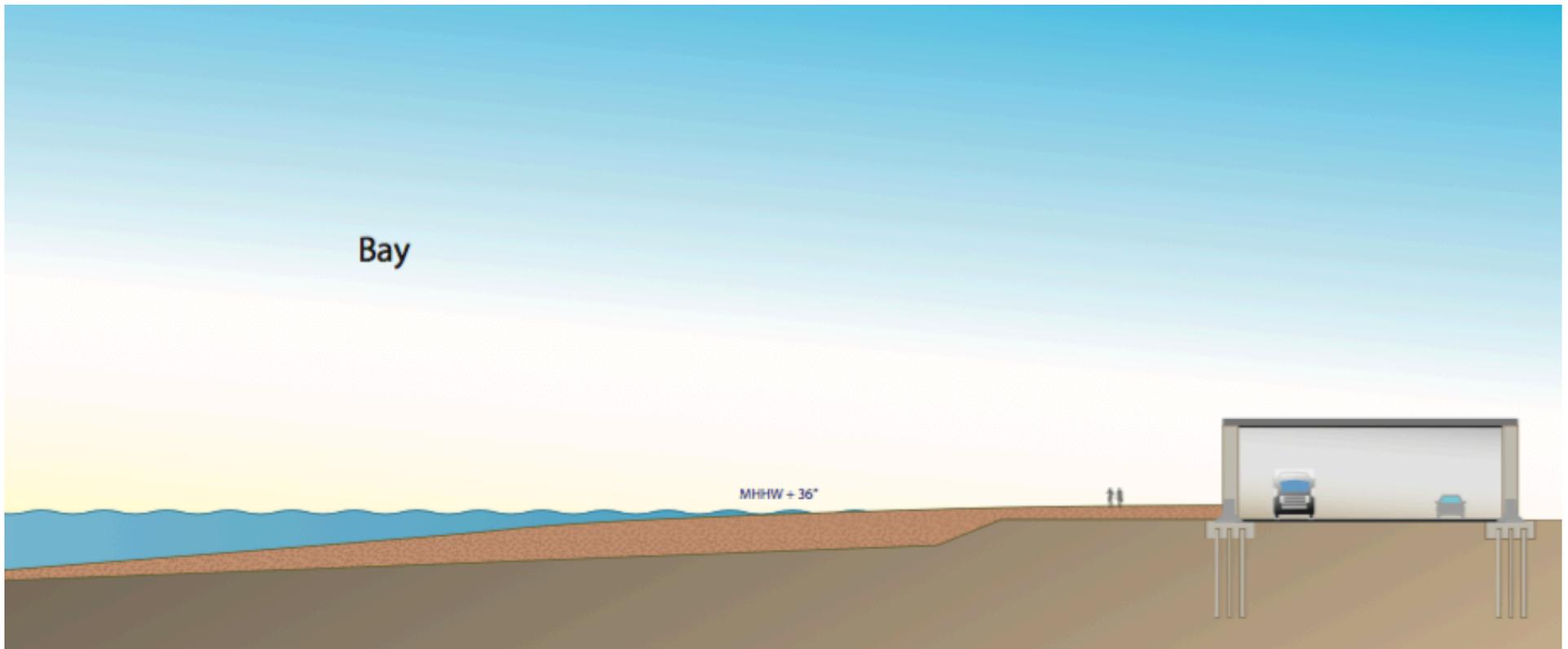


- Seawall and Lid:
 - 30 feet high wall with a park and public access
 - Bay trail is relocated to the top of the lid
 - Protection: 100-year BFE + 5.5 feet of SLR
- Mudflat Recharge & Beach:
 - Initial placement: 98 acres of sediment over 13,000 linear feet
 - Sediment tapering linearly for about 400 feet into the Bay
 - Wave attenuation, recreational, and habitat benefits

Current Conditions & SLR



Mudflat Recharge, Beach, Lid



Bay Fill = 98 acres over 13,000 linear feet / 647,443 cubic yards (cy)
Shoreline Band Fill = 21 acres / 315,519 cy of sediment / 31,551 cy of groins



Impacts

Seawall:

- Erosion of offshore mudflats
- Potential shoreline erosion
- Bay views
- Public access

Mudflat Recharge + Beach:

- Habitat loss and gain
- Siltation

Case Study Analysis



- Minimum Fill
- Benefits and Detriments
- Mitigation

Policy Issues



- **Minimum fill issues**
 - Long-term impacts of beach recharge
 - Potential habitat benefits and impacts
 - Alternatives that could provide benefits with less fill

Policy Issues



- Public Benefits and Public Detriments
 - Flood protection
 - Highway
 - Community
 - Increased public access
 - Habitat loss
 - Loss of open water area



Photo: SF Chronicle

Policy Issues



- Mitigation
 - Substantial amount of fill = substantial mitigation
 - Fee-based mitigation unlikely
 - Supplemental mitigation for beach replenishment





Discussion

Questions



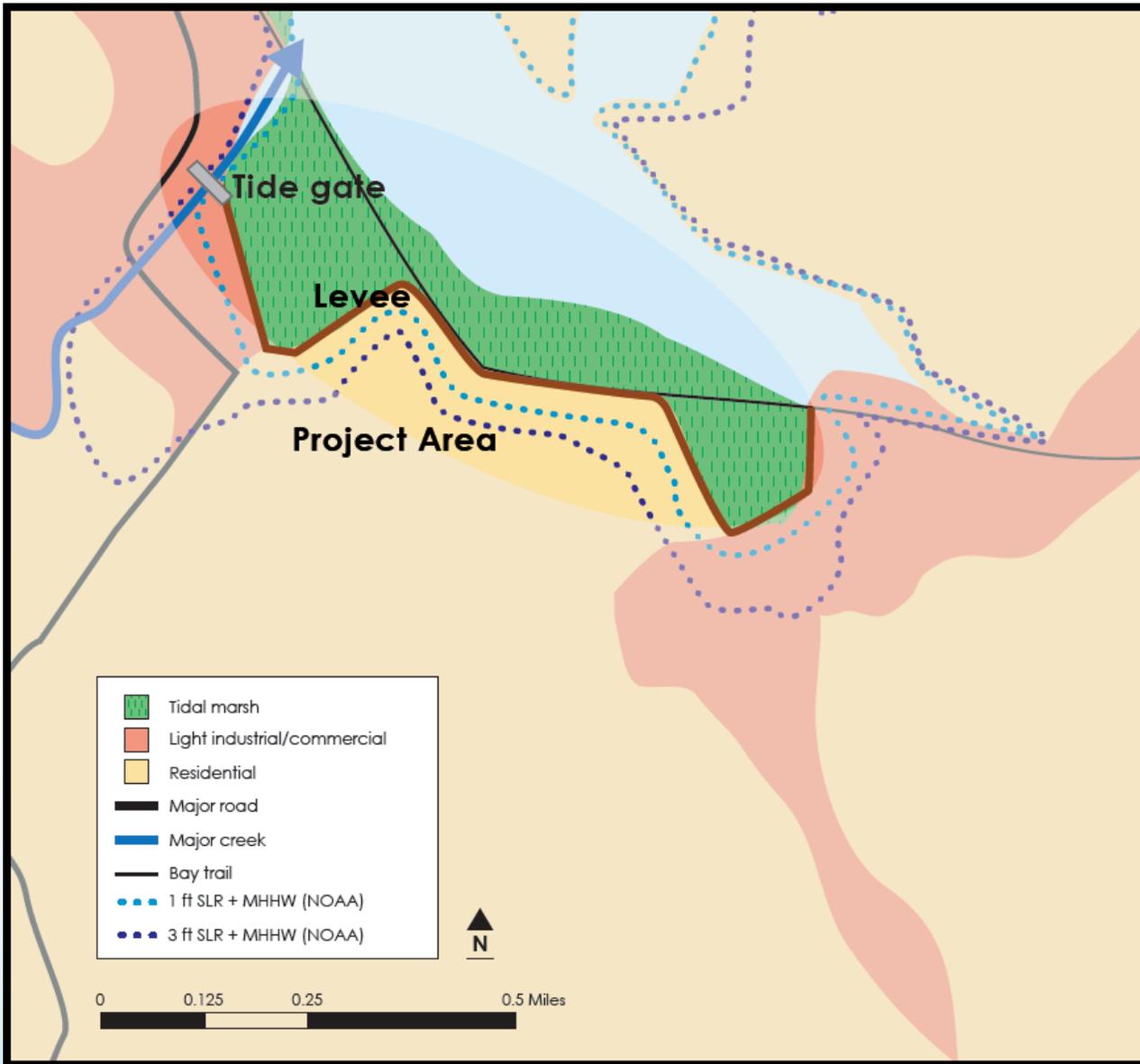
- How to encourage innovative sea level rise approaches and minimize the potential of failure?
- How to weigh long-term potential public benefits over short-term impacts?
- How should mitigation be evaluated for sea level rise adaptation projects?



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Shoreline Community Case Study

Miriam Torres
Brenda Goeden



- Purpose: flood protection along the creek and Bay front, prepare marsh for a rising Bay.

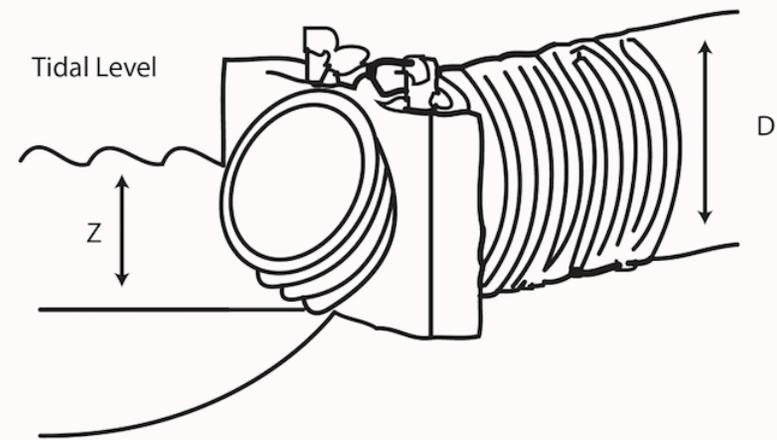
Shoreline Community

Tide Gate



Tide Gate:

- Concrete structure with gated culverts
- Top of the gate at 11ft. NAVD88
- Protection: 3 feet of SLR above MHHW (with 2 ft. of freeboard)



Horizontal Levee & Sediment Augmentation

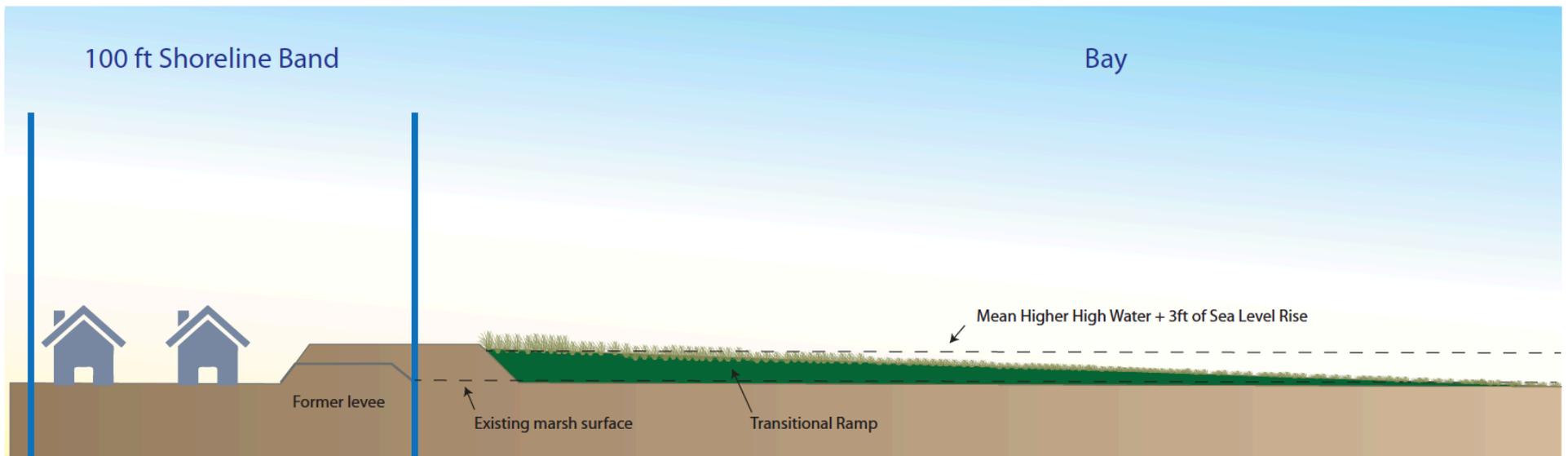


Proposal:

- Flood protection
 - Build levee to 16' NAVD88 with a 30:1 slope
 - Protection: 3 feet of SLR
 - Provide transition habitat
-
- Reuse finer grained dredged sediment from creek to raise grades of the marsh



Horizontal Levee



Bay Fill = 69 acres over 10,000 linear feet / 555,555 cubic yards



Potential Impacts

Tide Gate:

- Hydrology
- Habitat & Wildlife
- Sediment transport

Horizontal Levee:

- Habitat
- Wildlife
- Public access

Applicable BCDC Laws & Policies



- McAteer Petris Act Sections 66601, 66605, and 66632*
- Relevant San Francisco Bay Plan Policies*
- Fish, Other Aquatic Organisms and Wildlife (1, 2, & 4)
- Water Quality (1, & 2)
- Water Surface Area and Volume (1, 2 & 3)
- Tidal Marsh and Tidal Flats (1, 2, 3, 5, 6 & 8)
- Climate Change (1, 2, 3, 5 & 7)
- Safety of Fill (1, 2, & 4)
- Shoreline Protection (1, 3, 4, & 5)
- Dredging (2, 3, 4, & 11)
- Public Access (1, 2, 5)
- Appearance, Design and Scenic Views (2)
- Fill in Accord with the Bay Plan (1)
- Mitigation (All)



Tide Gate

- Protects existing development from flooding
- Policies that protect species, habitat and physical processes and impacts
- Near term flood protection benefits vs. long-term strategy
- Mitigation



Horizontal Levee

- Protects community and provides transitional habitat
- Impacts to healthy marsh and policies
- Expected time lag in habitat development
- Mitigation may be required



Sediment Augmentation

- Beneficial reuse of sediment
- Temporal loss of habitat within creek
- Marsh plain elevation capital
- Potentially self-mitigating



Other Considerations

- Policy consistency depends on details of the project
- More information is necessary
- Short-term vs. long-term impacts and benefits
- Public detriments and benefits apply to the region



Discussion

Questions



- How to evaluate tide gate impacts to long-term land use decisions and natural processes?
- How to weigh long-term potential public benefits over short-term impacts?
- How should mitigation be evaluated for sea level rise adaptation projects?