



Bay Area
Regional
Collaborative

375 Beale Street
Suite 700
San Francisco, California
94105

Meeting Agenda - Final

Bay Area Regional Collaborative

Cindy Chavez, Supervisor, County of Santa Clara - Chair
Amy Worth, Councilmember, City of Orinda - Vice Chair

Friday, April 19, 2019

10:00 AM

Board Room - 1st Floor

Bay Area Regional Collaborative Governing Board

The BARC Governing Board may act on any item on the agenda.

The meeting is scheduled to begin at 10:00 a.m.

Agenda, roster, and webcast available at <https://barc.ca.gov/>

For information, contact Clerk of the Board at (415) 820-7913.

Roster

ABAG—Jesse Arreguin, Scott Haggerty, Julie Pierce, David Rabbitt

BAAQMD—Cindy Chavez, David Hudson, Nathan Miley, Rod Sinks

BCDC—John Gioia, Anne Halsted, Dave Pine, Brad Wagenknecht, Zack Wasserman

MTC—Nick Josefowicz, Jake Mackenzie, Jim Spering, Amy Worth

CalSTA (Non-voting)—Tony Tavares, Doanh Nguyen (Alternate)

State Coastal Conservancy (Non-voting)—Sam Schuchat

1. Call to Order / Pledge of Allegiance / Roll Call / Confirm Quorum

2. Governing Board Member Announcements

Information. 5 minutes.

3. Consent Calendar

- 3.a. [19-0417](#) Approval of Governing Board Minutes of February 15, 2019

Action: Approval

Presenter: Clerk of the Board

Attachments: [Item 03A Minutes 20190215 Draft.pdf](#)

- 3.b. [19-0418](#) Appointment of Committee for the Executive Director's Performance Review

Action: Approval

Presenter: Allison Brooks

4. Chair's Report

Information. 5 minutes.

5. BARC Member Agency Executive Director Updates

Information. 30 minutes.

5.a. Bay Area Air Quality Management District

Jack Broadbent

5.b. San Francisco Bay Conservation and Development Commission

Larry Goldzband

5.c. Association of Bay Area Governments and Metropolitan Transportation Commission

Therese W. McMillan

6. BARC Executive Director's Report

15 minutes

6. [19-0419](#) BARC Executive Director's Report

Action: Information

Presenter: Allison Brooks

Attachments: [Item 06 ED Update.pdf](#)

7. Approval of BARC Fiscal Year 2020 Budget

10 minutes

7. [19-0420](#) Approval of BARC Fiscal Year 2020 Budget

Action: Approval

Presenter: Allison Brooks

Attachments: [Item 07 FY 2020 Draft Budget.pdf](#)

8. Report on Potential Combined Costs for Climate Adaptation in the Bay Area: How Can We Respond?

8. [19-0421](#) Report on Potential Combined Costs for Climate Adaptation in the Bay Area: How Can We Respond?

Action: Information

Presenter: Mark Northcross, Principal, NHA Advisors

Attachments: [Item 08 Presentation Cost Climate Adaptation.pdf](#)

9. Public Comment

Information. 5 minutes.

10. Adjournment / Next Meeting

The next regular meeting of the BARC Governing Board is on June 21, 2019.

The Governing Board may take action on any item listed in the agenda.

This meeting is scheduled to end promptly at 12:00 p.m. Agenda items not considered by that time may be deferred.

The public is encouraged to comment on agenda items by completing a request-to-speak card and giving it to BARC staff or the chairperson.

Although a quorum of the Governing Board may be in attendance at this meeting, the Governing Board may take action only on those matters delegated to it. The Governing Board may not take any action as the Bay Area Regional Collaborative Governing Board unless this meeting has been previously noticed as a Bay Area Regional Collaborative Governing Board meeting.



Legislation Details (With Text)

File #: 19-0417 **Version:** 1 **Name:**

Type: Report **Status:** Committee Approval

File created: 4/16/2019 **In control:** Bay Area Regional Collaborative

On agenda: 4/19/2019 **Final action:**

Title: Approval of Governing Board Minutes of February 15, 2019

Sponsors:

Indexes:

Code sections:

Attachments: [Item 03A Minutes 20190215 Draft.pdf](#)

Date	Ver.	Action By	Action	Result
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Approval of Governing Board Minutes of February 15, 2019

Clerk of the Board

Approval

Meeting Minutes - Draft

Bay Area Regional Collaborative

Cindy Chavez, Supervisor, County of Santa Clara - Chair
Amy Worth, Councilmember, City of Orinda - Vice Chair

Friday, February 15, 2019

10:00 AM

Board Room - 1st Floor

Bay Area Regional Collaborative Governing Board

The BARC Governing Board may act on any item on the agenda.
Agenda and roster available at <http://bayarearegionalcollaborative.org>
Webcast available at <http://mtc.ca.gov/whats-happening/meetings/live-webcasts>
For information, contact Clerk of the Board at (415) 820-7913.

Governing Board Roster

ABAG—Scott Haggerty, Julie Pierce, David Rabbitt
BAAQMD—Cindy Chavez, David Hudson, Nathan Miley, Rod Sinks
BCDC—John Gioia, Anne Halsted, Dave Pine, Brad Wagenknecht, Zack Wasserman
MTC—Nick Josefowitz, Jake Mackenzie, Jim Spering, Amy Worth
CalSTA (Non-voting)—Tony Tavares, Doanh Nguyen (Alternate)
State Coastal Conservancy (Non-Voting)—Sam Schuchat

1. Call to Order / Pledge of Allegiance / Roll Call / Confirm Quorum

Chair Wasserman called the meeting to order at about 10:04 a.m. Quorum was present. Chair Wasserman welcomed Doanh Nguyen, Acting Chief Deputy District Director, District 4, Caltrans, who was attending for Tony Tavares.

Present: 12 - Chavez, Gioia, Halsted, Hudson, Pierce, Sinks, Spering, Wagenknecht, Wasserman, Worth, Nguyen, and Schuchat

Absent: 6 - Haggerty, Josefowitz, Mackenzie, Miley, Pine, and Rabbitt

2. Approval of Governing Board Minutes

2.a. [19-0175](#) Approval of Governing Board Minutes of November 16, 2018

Upon the motion by Chavez and second by Wagenknecht, the BARC Governing Board minutes of November 16, 2018 were approved. The motion passed unanimously by the following vote:

Aye: 10 - Chavez, Gioia, Halsted, Hudson, Pierce, Sinks, Spering, Wagenknecht, Wasserman and Worth

Absent: 6 - Haggerty, Josefowitz, Mackenzie, Miley, Pine and Rabbitt

3. Chair's Report

Chair Wassermen commented on his tenure as Chair. Members acknowledged Chair Wasserman for his service.

4. Election of Chair and Vice Chair

Chair Chavez chaired the remainder of the meeting.

Upon the recommendation of the Selection Committee for BARC Governing Board Chair and Vice Chair, the election of Chavez as Chair and Worth as Vice Chair was approved. The vote was as follows:

Aye: 10 - Chavez, Gioia, Halsted, Hudson, Pierce, Sinks, Spering, Wagenknecht, Wasserman and Worth

Absent: 6 - Haggerty, Josefowitz, Mackenzie, Miley, Pine and Rabbitt

5. Updates from BARC Member Agency Executive Directors

- 5.a. [19-0170](#) Association of Bay Area Governments and Metropolitan Transportation Commission Update

Report on Richmond/San Rafael Bridge

Steve Heminger gave the report.

Members acknowledge Heminger for his service on the occasion of his retirement.

- 5.b. [19-0171](#) Bay Area Air Quality Management District Update

Jack Broadbent gave the report.

- 5.c. [19-0172](#) San Francisco Bay Conservation and Development Commission Update

Larry Goldzband gave the report.

Wasserman and Goldzband present Heminger with a San Francisco Bay Conservation and Development Commission resolution in recognition of his service on the occasion of his retirement.

6. BARC Executive Director's Report

Allison Brooks gave the report and thanked Steve Heminger for his partnership.

- 6.a. [19-0173](#) Report on Level Playing Field Project

7. Public Comment

There was no public comment.

8. Adjournment / Next Meeting

Chair Chavez adjourned the meeting at about 12:01 p.m.



Legislation Details (With Text)

File #: 19-0418 **Version:** 1 **Name:**

Type: Report **Status:** Committee Approval

File created: 4/16/2019 **In control:** Bay Area Regional Collaborative

On agenda: 4/19/2019 **Final action:**

Title: Appointment of Committee for the Executive Director's Performance Review

Sponsors:

Indexes:

Code sections:

Attachments:

Date	Ver.	Action By	Action	Result
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Appointment of Committee for the Executive Director's Performance Review

Allison Brooks

Approval



Legislation Details (With Text)

File #: 19-0419 **Version:** 1 **Name:**

Type: Report **Status:** Informational

File created: 4/16/2019 **In control:** Bay Area Regional Collaborative

On agenda: 4/19/2019 **Final action:**

Title: BARC Executive Director's Report

Sponsors:

Indexes:

Code sections:

Attachments: [Item 06 ED Update.pdf](#)

Date	Ver.	Action By	Action	Result
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BARC Executive Director's Report

Allison Brooks

Information

BARC Executive Director Update

Allison Brooks

BARC Governing Board

April 19, 2019



Bay Area
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To Be Discussed

Project Updates

- Resilient by Design - transition
- ART Bay Area
 - Report on Work w/ BARHII and Community Partners

Developing Next BARC 2-Year Work Plan

- Revisit Organizational Plan and Role of BARC



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Celebrating Success, Project transition



BAY AREA CHALLENGE

RESILIENT

BY

DESIGN



Celebrating Success

Awards

WTS SF Chapter – *Innovative Transportation Solutions Annual Award*

Project Awards:

Hassell+ (South SF)

- *Finalist in Fast Company's World Changing Ideas Awards*
- *Shortlisted in World Landscape Architecture's 2019 WLA Awards.*

Home Team (North Richmond)

- *ASLA Merit Award/Planning & Analysis*

Big+ONE+Sherwood (Islais Creek, SF)

- *ASLA – NY Merit Award*



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Celebrating Success



Project Awards:

Public Sediment (Alameda Creek)

- *Archpaper Best of Design Award*
- *AIA California Council Merit Award in Urban Design*
- *ASLA-NY Honor Award*
- *American AIA Urban Design Merit Award*
- *Architects Newspaper Best of Design Award*



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Celebrating Success

UC Berkeley's Center for Cities and Schools: Y-Plan Partnership with RbD

- Winner of Chancellor's Award for Public Service
- Students across Bay Area now participating in MTC/ABAG Plan Bay Area

Release of Book

- Book launch party April 16th at Oakland SPUR offices



Project Implementation



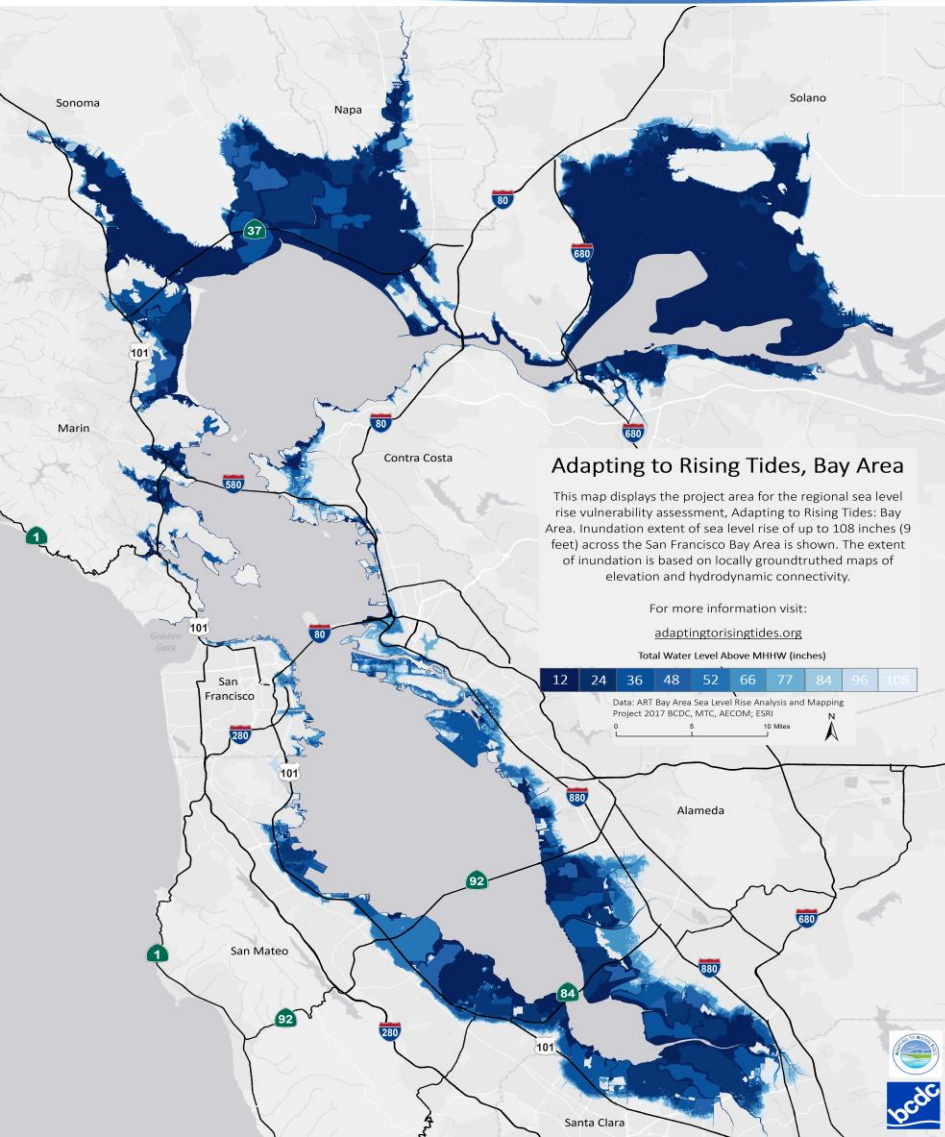
SB1 Planning Grants:

- ☐ **Resilient South City | HASSELL+**
South San Francisco (BARC/MTC)
- ☐ **The Grand Bayway | Common Ground**
San Pablo Bay (BARC/MTC)
- ☐ **Islais Creek | Islais Creek, San Francisco**

Other Grants & Funding:

- ☐ **Unlock Alameda Creek | Public Sediment** SCC lead
- ☐ **Peoples Plan | P+SET**
Marin City – SCC lead
- ☐ **Elevate San Rafael | Bionic Team**
Project integrated into City Climate Action Plan - SCC lead
- ☐ **ouR-HOME | The Home Team**
North Richmond – SFEP and the Watershed Project leading work

Project Update: ART Bay Area



- Complete regional-scale vulnerability assessment
- Establish framework for prioritization
- Increase public participation and local capacity for long-term effort
- Apply project results to related efforts - MTC's Horizon and Plan Bay Area 2050

ART Bay Area Asset Categories

Transportation Infrastructure



Priority Development Areas



Vulnerable Communities



Priority Conservation Areas (PCAs)

New Model for Community Partnerships with Frontline Communities

ART Bay Area

Working with *Bay Area Regional Health Inequities Initiative (BARHII)* and community based partners

- East Palo Alto: *Nuestra Casa, YUCA*
- East Contra Costa: *Ensuring Opportunity*

Level Playing Field

Build off learning underway with ART Bay Area, AB617 (led by BAAQMD), SB1 grants, and Resilient by Design



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BARC 2-Year Work Plan

Next Steps:

- Revisit Role of BARC
- Build upon ongoing efforts, identify areas where coordination will be essential to achieving shared goals and outcomes



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THANK YOU!

Allison Brooks

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(415) 778-5265



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Legislation Details (With Text)

File #: 19-0420 **Version:** 1 **Name:**

Type: Report **Status:** Committee Approval

File created: 4/16/2019 **In control:** Bay Area Regional Collaborative

On agenda: 4/19/2019 **Final action:**

Title: Approval of BARC Fiscal Year 2020 Budget

Sponsors:

Indexes:

Code sections:

Attachments: [Item 07 FY 2020 Draft Budget.pdf](#)

Date	Ver.	Action By	Action	Result
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Approval of BARC Fiscal Year 2020 Budget

Allison Brooks

Approval

BARC Fiscal Year 2020 Budget

BARC DRAFT BUDGET FY2019 (07/01/19 - 06/30/20)

	% Assumptions	Cost	Notes
Salaries		\$ 312,273	Executive Director, Program Coordinator
Benefits	53%	\$ 165,505	
Indirect Rate	50%	\$ 238,889	
Subtotal		716,667	
Project Expenses:			
Website maintenance		\$ 15,000	
Government Alliance on Race and Equity (GARE)		\$ 24,000	Covers participation of staff from BARC member agencies
Metro Talks Speaker Series		\$ 10,000	Up to 3 times/year
Travel Expenses		\$ 10,000	
Memberships		\$ 2,000	Funders Network, GARE
Subtotal		\$ 61,000	
Contingency		\$ 100,000	to support consultants, technical support and expertise needed to advance shared workplan
Total		\$ 877,667	
AGENCY CONTRIBUTIONS			
MTC/ABAG Total (40% =)		\$351,067.00	
BAAQMD Total (40% =)		\$351,067.00	
BCDC Total (20% =)		\$175,533.00	
		\$ 877,667	



Legislation Details (With Text)

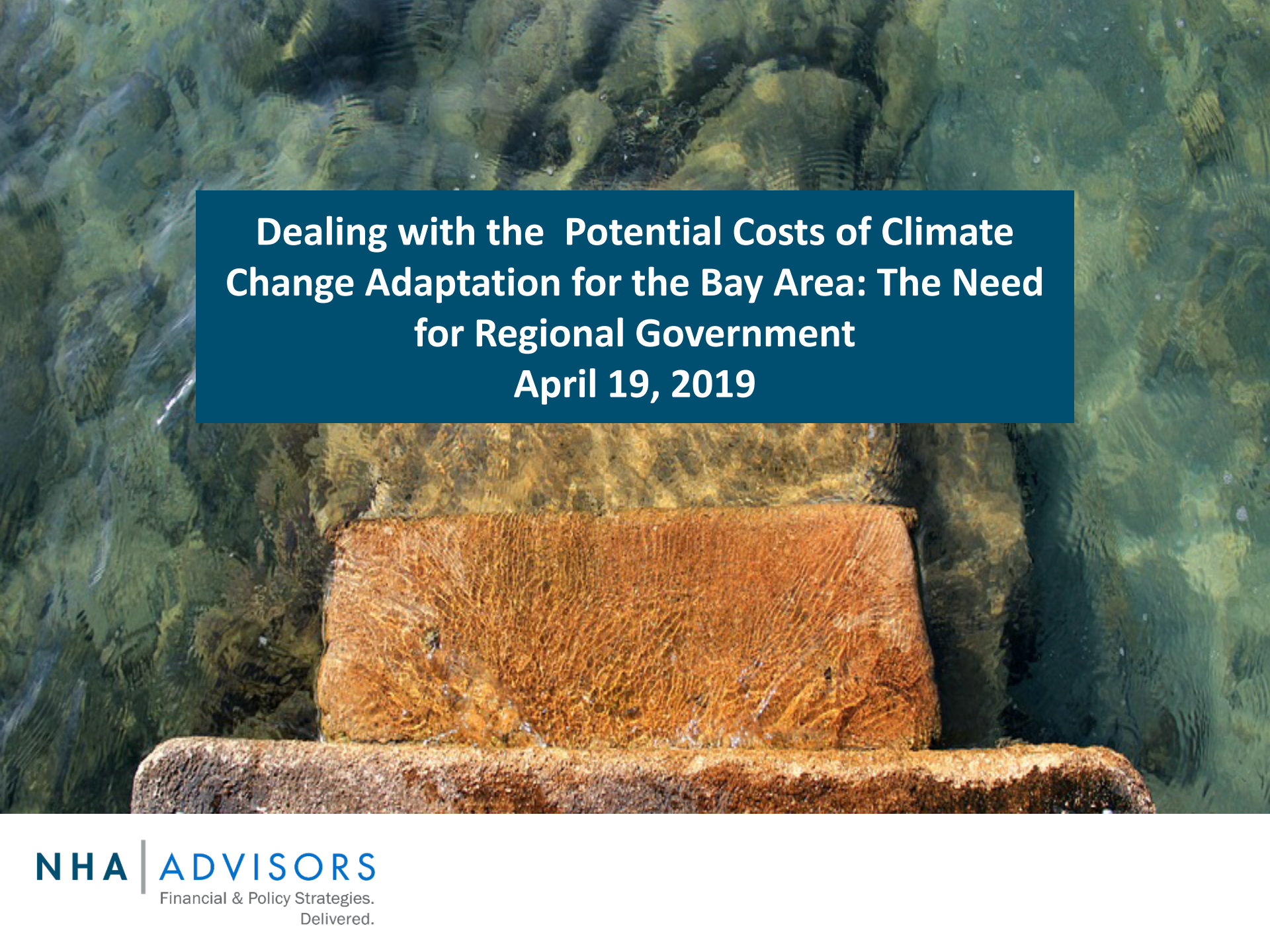
File #:	19-0421	Version:	1	Name:	
Type:	Report	Status:		Informational	
File created:	4/16/2019	In control:		Bay Area Regional Collaborative	
On agenda:	4/19/2019	Final action:			
Title:	Report on Potential Combined Costs for Climate Adaptation in the Bay Area: How Can We Respond?				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	Item 08 Presentation Cost Climate Adaptation.pdf				

Date	Ver.	Action By	Action	Result
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Report on Potential Combined Costs for Climate Adaptation in the Bay Area: How Can We Respond?

Mark Northcross, Principal, NHA Advisors

Information

The background of the slide is a photograph showing a close-up of a rusty, brown metal structure, possibly a pier or a piece of machinery, partially submerged in greenish, rippling water. The water's surface is textured with small waves and reflections. The metal has a rough, corroded appearance with visible rust patterns.

Dealing with the Potential Costs of Climate Change Adaptation for the Bay Area: The Need for Regional Government April 19, 2019

Table of Contents

- ▶ Regional Government Needs to Start Addressing Potential Costs Now
- ▶ How “Wrong” Numbers Can Help Us
- ▶ Potential Combined Costs of Bay Area Climate Change
- ▶ A Paradoxical Approach to Climate Change: Making Projects Bigger to Make Them Cost Less
- ▶ Next Steps: Regional Government is Key



**Regional Government Needs to Start Addressing
Potential Costs Now**

The Combined Costs are Potentially Staggering

- ▶ The combined costs of climate change adaptation - *if solely paid from inequitable exactions on Bay Area residents and businesses*- could be staggering
- ▶ Typical sources of revenue that may be tapped to pay for more adaptive infrastructure - taxes, utility rates or fees from multiple public or private entities
- ▶ How do we monitor and manage the combined cost impact on Bay Area households, and ensure it is equitable?

Climate Change Adaptation Challenges for the Bay Area

Challenges

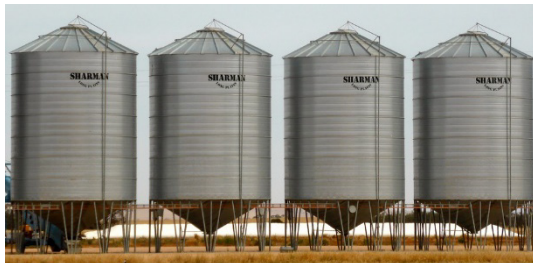
- Rising bay levels
- Algae bloom due to a warming bay (nutrient levels)
- WUI fire risk mitigation
- Sierra snowpack water storage “lost” as rainfall
- Bay Delta flow concerns will be exacerbated by climate change
- Losing the Delta through sea level rise will have a major adverse impact on the Bay Area: the Delta is part of the Bay
- Heat waves may necessitate air-conditioned “heat wave refugee centers”

Insurance Markets May Force Our Hand on Action Now

- ▶ Since the 2017 and 2018 wildfires, thousands of homeowner's insurance policies are not being renewed
- ▶ Home buyers may not be able to obtain insurance required for mortgage lending, other than the State mandated "FAIR" program
- ▶ 2017 insurance premium collected for homeowner's insurance totaled \$7.8 billion against \$15.4 losses (so far) in incurred losses
- ▶ 2018 incurred losses are estimated at \$18+ billion against a similar amount of premium
- ▶ **This math does not work: our Bay Area homeowners facing major premium increases in addition to non-renewal risk?**

Forging Consensus and Cooperation

- ▶ Climate change adaptation will result in a need for taxes and fees from businesses and the public in multiple forms
- ▶ Currently, various public entities that formulate responses to climate change tend to operate in silos
- ▶ But.....the public and businesses paying these fees will feel the combined impact of all potential responses, some more than others
- ▶ Ignoring the combined costs can lead to voter unrest
 - ▶Like Prop 13 in 1978
 - ▶Like the yellow-vest movement in France now

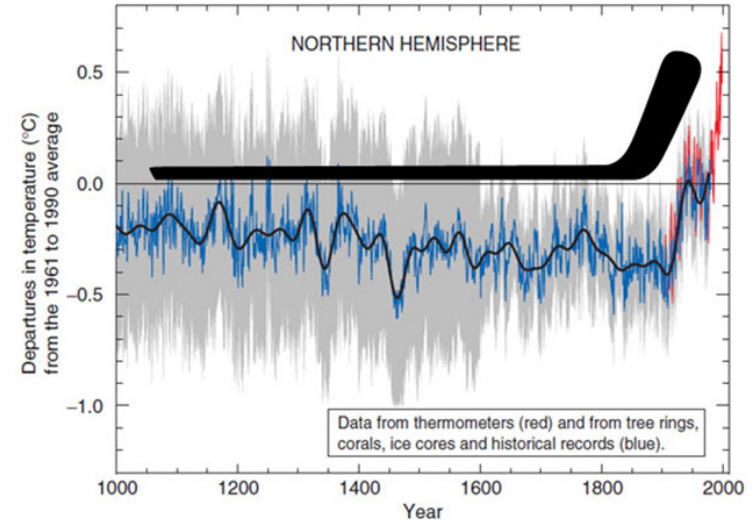


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Our biggest challenge to forging consensus: the “hockey stick”

- ▶ Climate change scientists frequently use the shape of a hockey stick as an analogy
 - ▶ The rate of change in climate starts gradually and then accelerates abruptly
- ▶ We want to design and fund projects while we are on the shallow part of the hockey stick
- ▶ We do not really know where we are on the hockey stick— change may be in shallow part for years or we may be nearing the steep part
- ▶ **Will voters approve tax/fee/utility rate increases now if we cannot tell them when the projects are actually needed?**





How “Wrong” Numbers Can Help Us






“Wrong” Numbers Can Be the Right Numbers

- ▶ The precise costs for each category of climate change adaptation for the Bay Area cannot presently be determined
 - ▶ Estimates can be provided to help frame the conversation
- ▶ Forming rough estimates can deliver benefits for staff and elected officials of Bay Area public entities:
 - ▶ Shock at how high the potential costs could be can drive public agencies out of their “silo’s” into cooperative work on climate change adaptation
 - ▶ Ensure payment burden is equitable and fair
 - ▶ Sharpen focus on making climate change adaptation a higher priority
 - ▶ Drive a search for alternate funding sources in addition to new taxes and fees, reorienting existing funding to better address new challenges

Likely Category of Fees/taxes for Climate Change Adaptation Challenges

Climate Change Adaptation Infrastructure/Service Needed	Stakeholder Groups Affected		
	Wastewater Ratepayers	Water Ratepayers	Property Tax Payers
Horizontal levees	Yes - if utility provides funding as an alternative to treating nutrient levels through conventional means	No cost impact likely	Maybe - if voter approved special assessments or <i>ad valorem</i> taxes are used
Sea walls	No cost impact likely	No cost impact likely	Yes - San Francisco and Foster City are funding initial levy/sea wall improvements through <i>ad valorem</i> taxes or special assessments
New Water Supplies for Loss of Snowpack for Water Storage and/or Bay Delta Flows	No cost impact likely	Yes - Major impact on nearly all water ratepayers Statewide	No cost impact likely
Bay nutrient levels	Yes - costs will have major impact on WW ratepayers if mitigated through wastewater treatment plant improvements	No cost impact likely	Maybe - Some WW utilities in the Bay bill their ratepayers through their property tax bills
Twin Tunnels	No cost impact likely	Yes - Water users in San Joaquin Valley, southern California, and Silicon Valley will pay majority of costs for Twin Tunnels	Maybe - Burns Porter Act allows some of Twin Tunnels costs to be levied as special assessments
Save the Delta	Maybe - cost of horizontal levees in the Bay may become part of the saving the Delta	Maybe - costs of saving the Delta may be passed on to SWP and CVP water users in order to get Twin Tunnels approved	No cost impact likely
WUI fire risk mitigation	No cost impact likely	Yes - water utilities with watersheds in the WUI are likely to have to pay for fire risk mitigation	Yes - <i>ad valorem</i> tax overrides were approved by multiple jurisdictions in November 2018 in the North Bay
Heat wave refugee centers	No cost impact likely	No cost impact likely	Yes - a parcel or <i>ad valorem</i> tax is the most likely funding source for this cost

Potential Cross Connections – Opportunities for Collaboration

	Nutrient Removal	Save the Delta	Twin Tunnels	Loss of Snowpack Water Storage	WUI ¹ Fire Risk Mitigation	Bay Delta Flows
Horizontal Levees	Yes - horizontal levees help with nutrient removal	Yes - horizontal levees can reduce magnitude of sea level rise	Yes - by reducing magnitude of sea level rise in the Delta, need for Twin Tunnels may be deferred	No apparent connection	Yes - long term costs of WUI fire risk mitigation escalate total costs of climate change adaptation	Yes - to extent that DPR ² used as new water supply reduces nutrient flows, it reduces the need for horizontal levees for that purpose
	Nutrient Removal	Yes - horizontal levees used for nutrient removal can help save the Delta	No apparent connection	No apparent connection	Yes - long term costs of WUI fire risk mitigation escalate total costs of climate change adaptation	Yes - DPR used for new water supply reduces treated effluent flows into the Bay
		Save the Delta	Yes - Twin Tunnels could eliminate need to save the Delta in order to save State Water Project and Central Valley Project	Yes - snowpack turning into rainfall will significantly alter flows through the Delta	No apparent connection	Yes - improves water quality, but does not save Delta levees. Question: What happens to Delta water quality if levees fail?
			Twin Tunnels	Yes - reduced water deliveries through Twin Tunnels drive up cost per acre foot	Yes - water utilities that will pay for Twin Tunnels also likely have to pay for "watershed" maintenance in their boundaries	No apparent connection
				Loss of Snowpack Water Storage	Yes - longer dry season is already having a major impact on WUI	Yes - DPR is a potential solution for Bay Delta Flows
					WUI Fire Risk Mitigation	Yes - long term costs of WUI fire risk mitigation escalate total costs of climate change adaptation

1) WUI in this table refers to Wildland-urban interface
 2) DPR in this table refers to Direct Potable Reuse

Potential Cross Connections Between Utility and Other Public Sector Climate Change Adaptation Issues



Potential Combined Costs of Bay Area Climate Change

The potential cost of doing nothing

- ▶ Two detailed studies on cost of Bay Area sea level rise so far: Marin County and San Mateo County
 - ▶ Marin County: \$15.6 billion in current assessed valuation would be flooded with a 60" rise
 - ▶ San Mateo County: \$38.2 billion in current assessed valuation flooded with an 80" rise.
- ▶ While both studies identified all major public infrastructure that would be impacted or lost under different scenarios, neither quantifies the cost of lost infrastructure
- ▶ What is the combined cost for lost private property and public infrastructure for the entire Bay Area?



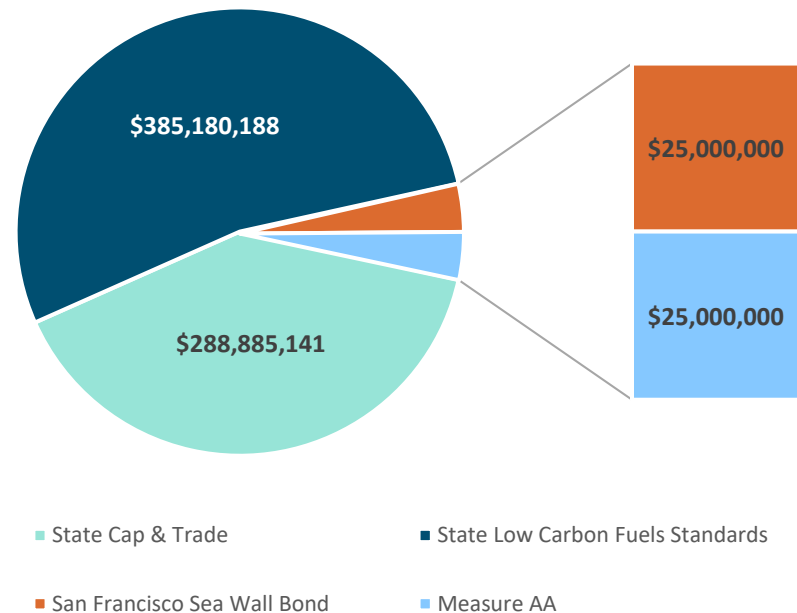
Numbers We Hope are Wrong: Potential Climate Change Adaptation Costs for the Bay Area

Project	High Cost Estimate (Billions)	Estimated Bay Area Share (%)	Estimated Cost to Bay Area (Billions)	Background Hypotheses of "Wrong" Numbers
Horizontal levees	\$40	100%	\$40	200 linear miles of levees at \$200M/mile
Sea walls	\$10	100%	\$10	Sea walls in Seattle and NYC start at \$1B/mile. Certain parts of the Bay will require a sea wall.
New Water Storage for Loss of Snowpack for Water Storage	\$20	25%	\$5	Based on the cost/AF for the Sites Reservoir proposal, assuming that approach is used to make up for lost storage capacity from snowpack loss
New Water Supplies for Loss of Snowpack or Bay Delta Flows (DPR or Desalination)	\$10	100%	\$10	Based on cost/AF of the Carlsbad Desalination Project, if applied for 1/3 of the Bay Area's water supply
Bay Nutrient Levels	\$10	100%	\$10	Numbers sourced from the BACWA report
Twin Tunnels	\$20	5%	\$1	DWR's "as-built" cost at time of completion multiplied by Table A % for Bay Area SWP contractors.
Save the Delta	\$20	50%	\$10	Based on MWD's apparent assumption that saving the Delta costs at least as much as Twin Tunnels
WUI Fire Risk Mitigation	\$2	100%	\$2	Present value of \$200/parcel over 40 years for 20% of Bay Area parcels; parcel taxes recently approved in California for fire risk mitigation have been around \$200 per parcel. Assumes that 20% of Bay Area parcels are considered WUI, or are otherwise liable for non-renewal by insurance carriers
Heat Wave Refugee Centers	No Estimate	100%	No Estimate	There is no current estimate of what it will cost to provide air conditioned refugee centers for elderly and families with infants.
Total	\$131.72 billion		\$87.72 billion	

What does the Bay Area Pay for Climate Change Now?

- ▶ Indirect tax: Cap and trade, \$1.5 billion per year statewide, estimated \$289 million per year in Bay Area
- ▶ State Low Carbon Fuels Standards - \$2 billion per year statewide, estimated \$385 million per year in Bay Area
- ▶ San Francisco sea wall bond: \$25 million per year
- ▶ Measure AA: \$25 million per year
- ▶ Combined estimated climate revenue in Bay Area - \$725 million per year

Other Climate Change Payments by the Bay Area



Another Potential Climate Change Cost: What if Homeowner's Insurance Premiums Dramatically Increase?

Estimated Bay Area Homeowner's Insurance Premiums

\$1.58 billion per year



Annual Cost of 50% Increase in Premiums

\$790 million per year



\$300 annually per Bay Area household

Making Sure Funding Mechanisms are Fair: West Oakland Compared with Facebook on Measure AA

- ▶ In June 2016, Measure AA adopted a \$12 per year parcel tax earmarked for the restoration of wetlands surrounding the San Francisco Bay
- ▶ As the tax is levied on a per-parcel basis, various sub-regions of the Bay Area can pay **differing amounts of taxes per acre** based on the size of respective parcels

Facebook

- ▶ Estimated 0.3 parcels/acre
 - ▶ Approximately 135 acres
 - ▶ Approximately 40 parcels
- ▶ **Roughly \$4 in taxes per acre**
- ▶ Roughly **\$540** in annual Measure AA taxes

West Oakland

- ▶ Estimated 9.6 parcels/acre
 - ▶ Approximately 4,160 acres
 - ▶ Approximately 39,940 parcels
- ▶ **Roughly \$108 in taxes per acre**
- ▶ Roughly **\$479,200** in annual Measure AA taxes



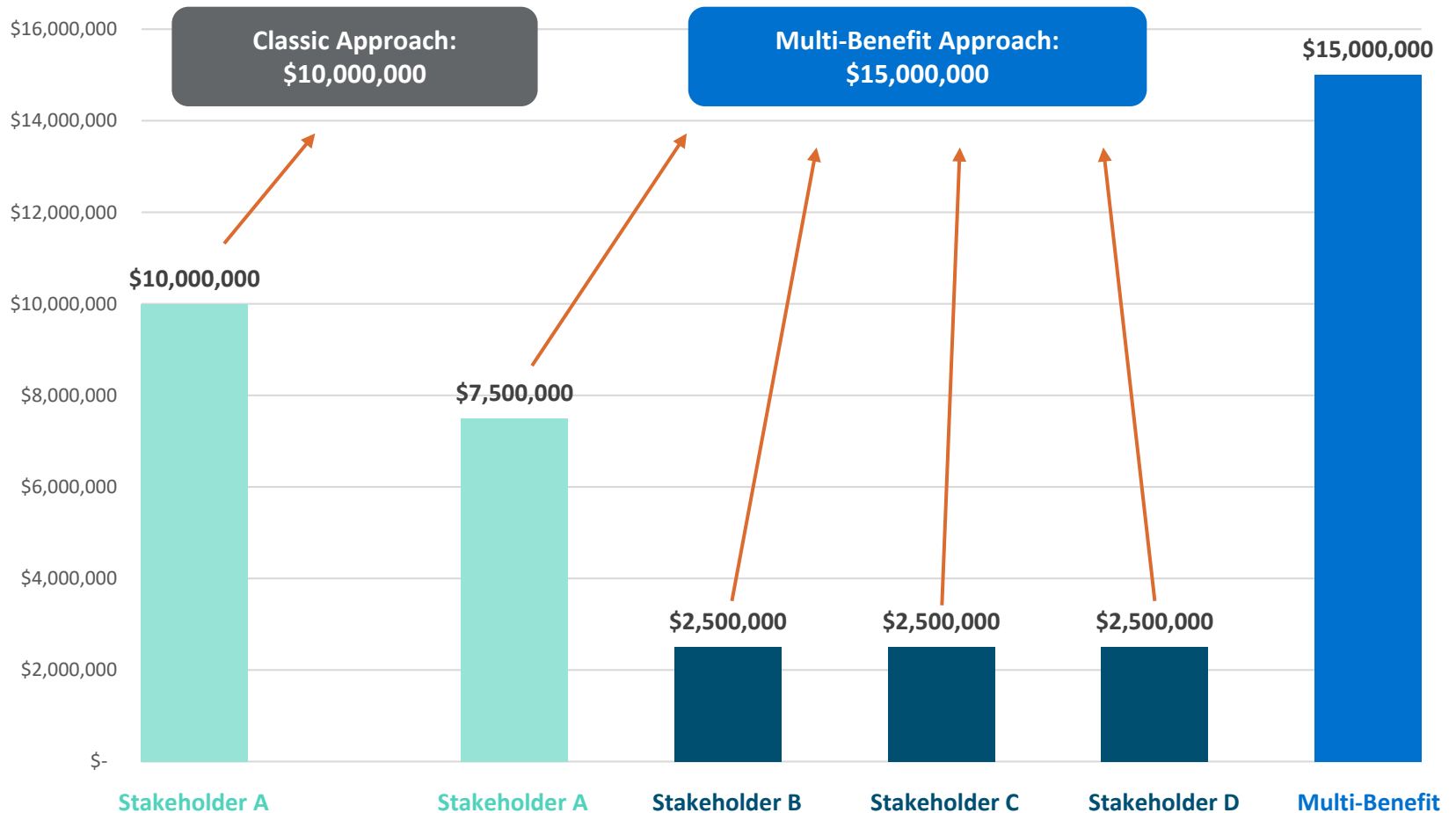
**A Paradoxical Approach to Climate Change:
Making Projects Bigger to Make Them Cost Less**

An Example of How the Numbers Can Work

Stakeholders can benefit from a lower allocable cost in a multi-benefit approach

Project Cost by Stakeholder			
	Funding Source	Classic Approach	Multi-Benefit Approach
Stakeholder A	Local Share	10,000,000	7,500,000
Stakeholder B	Grants	-	2,500,000
Stakeholder C	Grants	-	2,500,000
Stakeholder D	Grants	-	2,500,000
Total Cost		10,000,000	15,000,000

Multi-Benefit Cost Approach Comparison



“Holistic Funding”: Integrating Funding for Multiple Benefits

- ▶ Federal Emergency Management Agency (FEMA)
- ▶ Army Corps of Engineers (ACOE)
- ▶ Prop 64
- ▶ SB 1
- ▶ Cap and Trade
- ▶ Metropolitan Transportation Commission (MTC)
- ▶ Regional Measure 3 (RM3)
- ▶ Measure AA
- ▶ Opportunity Zones



Next Steps: Regional Government is Key

Advance Integrated Projects to Reduce Costs

- ▶ Can a silo'd public agency be expected to deliver a complex project with both regional and local benefits?
- ▶ Who should be in charge of complex, multi-source, multi-benefit projects?
 - ▶ Who has that skill set?
 - ▶ Localities lost some of that expertise with the end of redevelopment
- ▶ As with Highway 37, can regional government help support complex multi-jurisdictional projects?

A Regional Government role: Examine Potential Project Cross-Connections

Cross Connections

- May uncover other stakeholders who may contribute to funding
- May reveal ways to reduce the overall combined cost on the Bay Area
- Are drivers for regional consensus and collaboration

Examples

- Horizontal levees may reduce the chances of algae bloom
- DPR or desalinization may reduce both algae bloom and the need for replacement water storage
- Potential for “Twin Tunnels” project to be cheaper than saving the Delta

Climate Change Adaptation for Bay Area Regional Government: Some Ground Rules

- ▶ Can't just fall back on old funding systems. Multi-benefit approach requires creative funding programs
 - ▶ Design projects that have multi-benefits and multi-funding sources
 - ▶ Important regional role in finding the cross-connections
 - ▶ **The goal: the project may cost more, but constituents bear the burden more fairly**
- ▶ Work collaboratively: no silos
 - ▶ Our constituents also pay property taxes, sales taxes, gas taxes, etc. How are we integrating these resources to accomplish multiple goals in an accountable way?
 - ▶ Give regional government a leading role in project development and funding
- ▶ Social equity is crucial
 - ▶ A perception of social inequity in funding climate change adaptation will result in failure in attempts to raise new revenue streams to fund climate change adaptation
- ▶ Confront the “hockey stick”: Start early
 - ▶ Rising seas may be in the future, but project development and collaborative funding can also take years to realize

