



**COMMUNITY DEVELOPMENT DEPARTMENT**

**CITY OF SANTA BARBARA SEA LEVEL RISE  
ADAPTATION PLAN SUBCOMMITTEE**

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December 10, 2019

# Agenda

- A. Follow-up Discussions:
  - 1. Economic study
  - 2. Recommendations for the low-lying flood areas
- B. General Implementation Recommendations
- C. Summary of Near-Term Actions
- D. Schedule Review and Next Steps

# FOLLOW-UP DISCUSSIONS

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## Summary Results by Impact Type: No Action (\$2018)

IMPACT TYPE	EXISTING CONDITIONS	2060 CONDITIONS	2100 CONDITIONS
Direct Property	\$26.6 M	\$206.9 M	\$816.8 M
Displacement	\$1.1 M	\$0.7 M	\$12.2 M
Business	\$2.4 M	\$57.6 M	\$127.8 M
Infrastructure	\$0.0 M	\$402.7 M	\$444.3 M
Fiscal	\$0.7 M	\$15.2 M	\$24.4 M
Non-Market	\$0.0 M	\$27.0 M	\$34.9 M
<b>TOTAL</b>	<b>\$30.8 M</b>	<b>\$710.2 M</b>	<b>\$1460.3 M</b>

## Direct Property Impact Breakdown (%)

DIRECT PROPERTY TYPE	EXISTING CONDITIONS		2060 CONDITIONS		2100 CONDITIONS	
	Tidal + Erosion Impacts	100-Year Storm Impacts	Tidal + Erosion Impacts	100-Year Storm Impacts	Tidal + Erosion Impacts	100-Year Storm Impacts
Public Property	NA	68%	92%	55%	96%	76%
Private Property	NA	32%	8%	45%	4%	24%



## Adaptation Costs by Decade (\$2018)

DECADE	PROTECT SCENARIO				PROTECT / RETREAT HYBRID SCENARIO			
	Capital	Capital / Maintenance	Maintenance	TOTAL COSTS	Capital	Capital / Maintenance	Maintenance	TOTAL COSTS
2020	\$0.0 M	\$0.0 M	\$0.0 M	<b>\$0.0 M</b>	\$1.0 M	\$0.0 M	\$0.1 M	<b>\$1.1 M</b>
2030	\$1955.9 M	\$128.3 M	\$5.8 M	<b>\$2089.9 M</b>	\$67.8 M	\$11.6 M	\$2.3 M	<b>\$81.7 M</b>
2040	\$0.0 M	\$0.0 M	\$7.5 M	<b>\$7.5 M</b>	\$0.0 M	\$0.0 M	\$7.5 M	<b>\$7.5 M</b>
2050	\$0.0 M	\$0.0 M	\$10.7 M	<b>\$10.7 M</b>	\$0.0 M	\$0.0 M	\$10.7 M	<b>\$10.7 M</b>
2060	\$361.3 M	\$107.1 M	\$2321.1 M	<b>\$2789.5 M</b>	\$649.8 M	\$107.1 M	\$227.3 M	<b>\$984.2 M</b>
2070	\$0.0 M	\$0.0 M	\$34.3 M	<b>\$34.3 M</b>	\$0.0 M	\$0.0 M	\$34.3 M	<b>\$34.3 M</b>
2080	\$0.0 M	\$65.8 M	\$426.2 M	<b>\$492.0 M</b>	\$0.0 M	\$65.8 M	\$293.7 M	<b>\$359.4 M</b>
2090	\$0.0 M	\$0.0 M	\$2086.3 M	<b>\$2086.3 M</b>	\$0.0 M	\$0.0 M	\$93.5 M	<b>\$93.5 M</b>
2100	\$119.4 M	\$162.6 M	\$579.0 M	<b>\$860.9 M</b>	\$202.3 M	\$162.6 M	\$445.4 M	<b>\$810.3 M</b>
<b>TOTAL</b>	<b>\$2436.6 M</b>	<b>\$463.7 M</b>	<b>\$5470.9 M</b>	<b>\$8371.2 M</b>	<b>\$920.8 M</b>	<b>\$347.0 M</b>	<b>\$1114.8 M</b>	<b>\$2382.7 M</b>

# Flood Area Adaptation Framework

Sea-Level Rise:	0.8' rise (2030)	2.5' rise (2060)	6.6' rise (2100)
	NEAR-TERM	MID-TERM	LONG-TERM
Key Vulnerabilities (with no action):	By 0.8' rise: <ul style="list-style-type: none"> <li>Continued flooding along creeks, similar to existing</li> </ul>	By 2.5' rise: <ul style="list-style-type: none"> <li>More frequent flooding along Laguna, Mission, and Arroyo Burro Creeks</li> </ul>	By 6.6' rise: <ul style="list-style-type: none"> <li>Increased frequency of flooding of areas north of Highway 101 as sea levels back up into creek channels</li> <li>Tidal inundation and increase in extent and depth of storm flooding south of Highway 101</li> <li>Coastal flooding overtops Cabrillo Boulevard at Andrée Clark Bird Refuge and floods Highway 101</li> </ul>
POTENTIAL ADAPTATION APPROACHES	Options for Near-Term	Plan & Permit	Upgrade tide gates and weirs at Laguna Creek
		Plan & Permit	Modify floodplain ordinances to elevate and waterproof new development and substantial redevelopment
		Plan & Permit	Modifications to sewer system and other utilities
	Additional Options for Mid- to Long Term	Plan & Permit	Install dewatering wells across low-lying areas to achieve a lowered groundwater table
		Plan & Permit	Install pumps to remove stormwater from low-lying areas during rain events
		Begin planning for relocation of public assets	Abandon or relocate structures and infrastructure in low-lying areas
		Plan & Permit	Build levees or flood walls along the creeks in addition to raising or building a sea wall along Cabrillo Boulevard, associated roads, and other public infrastructure



# Flood Area Near-Term Actions

- {see handout}

# Major Infrastructure Near-Term Actions

- {see handout}



# GENERAL IMPLEMENTATION RECOMMENDATIONS

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# General Implementation Near-Term Actions

- {see handout}

# SCHEDULE AND NEXT STEPS

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## Schedule

- City Council January 14<sup>th</sup> information meeting: Vulnerability Assessment and process
- Subcommittee Meeting January 28, 2019
- February City Council information meeting on recommendations of Adaptation Plan
- February-April public outreach period and Commission meetings



## Schedule

- April/May Subcommittee reconvenes and makes recommendation to City Council
- Late spring/early summer City Council adoption hearing
- Implementation phase



# Subcommittee Appointments

- January 7<sup>th</sup> City Council appointments to subcommittee