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Economic Impacts of the Near-term Strategies on Port Assets

Islais Creek Southeast Mobility Adaptation Strategy

San Francisco Planning

Prepared by AECOM

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Quality information

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Second	6/22/21	Client comments & QA/QC	Patricia Fonseca	Emily Schwimmer	Manager
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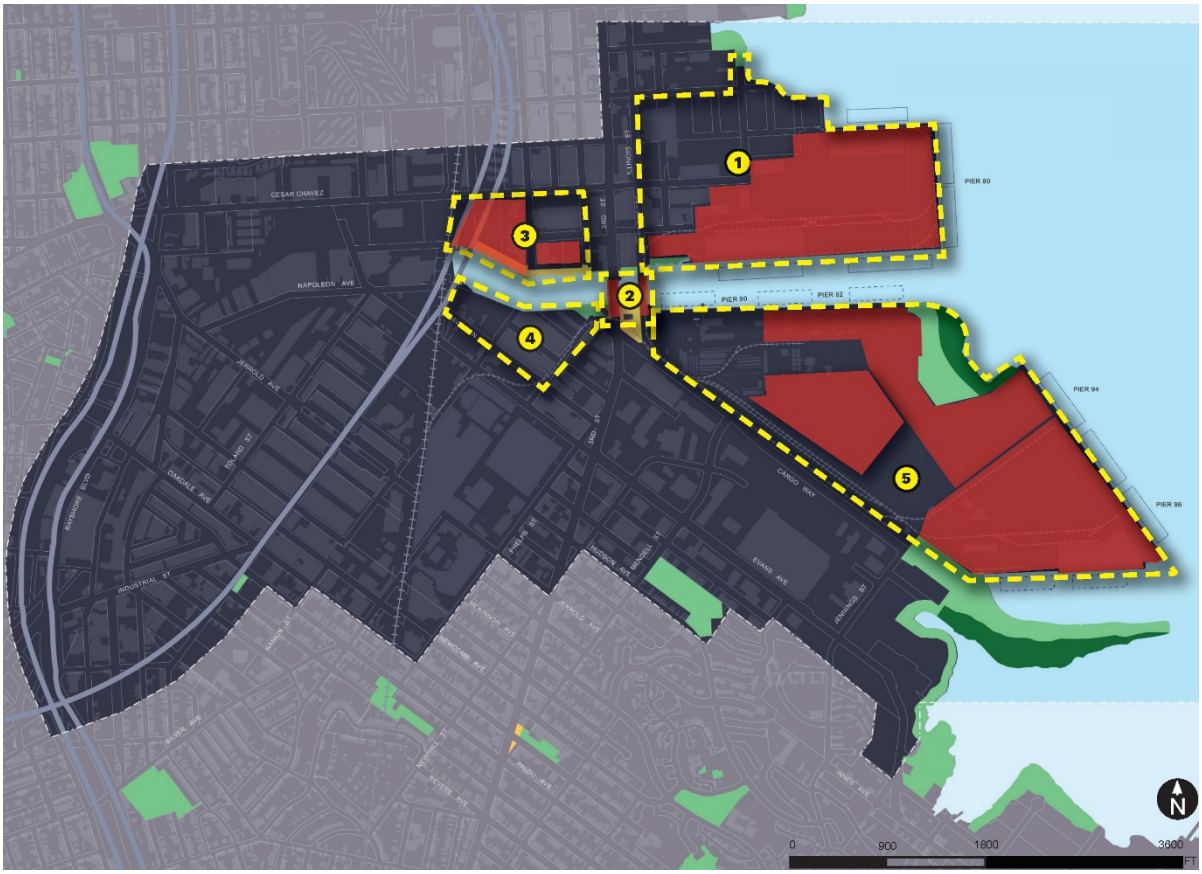
Introduction

This memo summarizes the projected economic impacts of implementing near-term strategies identified in the Islais Creek Southeast Mobility Adaptation Strategy (ICSMAS), focusing on those that are located on or adjacent to the Port of San Francisco's (Port) key assets, Piers 80, 90, 92, 94, 96, and the Backlands. The near-term strategies are those that are intended to be implemented by 2050. This analysis is conducted in recognition of the Port's Public Trust Mandate and its role in the state and regional economies. As such, investments that improve and/or alter Port lands may impact the local and regional economies. This memo specifically details the countywide economic impacts of implementing (e.g. design, engineering, and construction) the strategies that are intended to protect Port key assets, including those that may potentially alter Port land use and operations in order to secure the long-term operability of these assets. These strategies are captured in Reach 1 (Pier 80) and Reach 5 (Piers 90, 92, 94, 96, and the Backlands), as detailed in ICSMAS and illustrated in Figure 1.

This memo first outlines the methodology for estimating the economic impacts of the capital investments and then summarizes key findings from the analysis, including expected jobs and value added to the economy. This memo concludes with acknowledgement of the limitations of an economic impact analysis and recognition that an economic impact assessment of capital spending is just one consideration among many that should be used to inform investment decisions.

Figure 1 Plan identifying 'Reaches' – geographic locations selected for grouping strategies



Methodology

Economic impact analysis evaluates how an investment spurs economic activity and job creation in a specific region. Investments ripple through the economy and contribute to increased spending and

employment. This ripple effect, also referred to as a multiplier effect, can be quantified in three main categories: direct, indirect, and induced.

- Direct impacts result from spending on the infrastructure project. For example, direct job impacts from implementing shoreline adaptation strategies or building infrastructure to facilitate maritime use may include environmental scientists, designers, engineers, materials movers, and onsite construction workers.
- Indirect impacts result from funds paid to suppliers providing materials and equipment for the project who, in turn, can grow their businesses and hire more employees. These jobs may consist of manufacturing, office, and service jobs.
- Induced impacts result from workers, including both those hired as a direct result of the infrastructure project and those employed indirectly by suppliers, spending their earnings on goods and services. These jobs are only somewhat related to the infrastructure project itself and may include office and retail services jobs.

This economic impact analysis exclusively evaluates job creation and related economic activity from the design, engineering, and construction of the Port-related near-term strategies. It does not analyze the long-term economic benefits of the strategies, such as avoided flood damages to Port assets and other buildings and improved operability of Port lands.

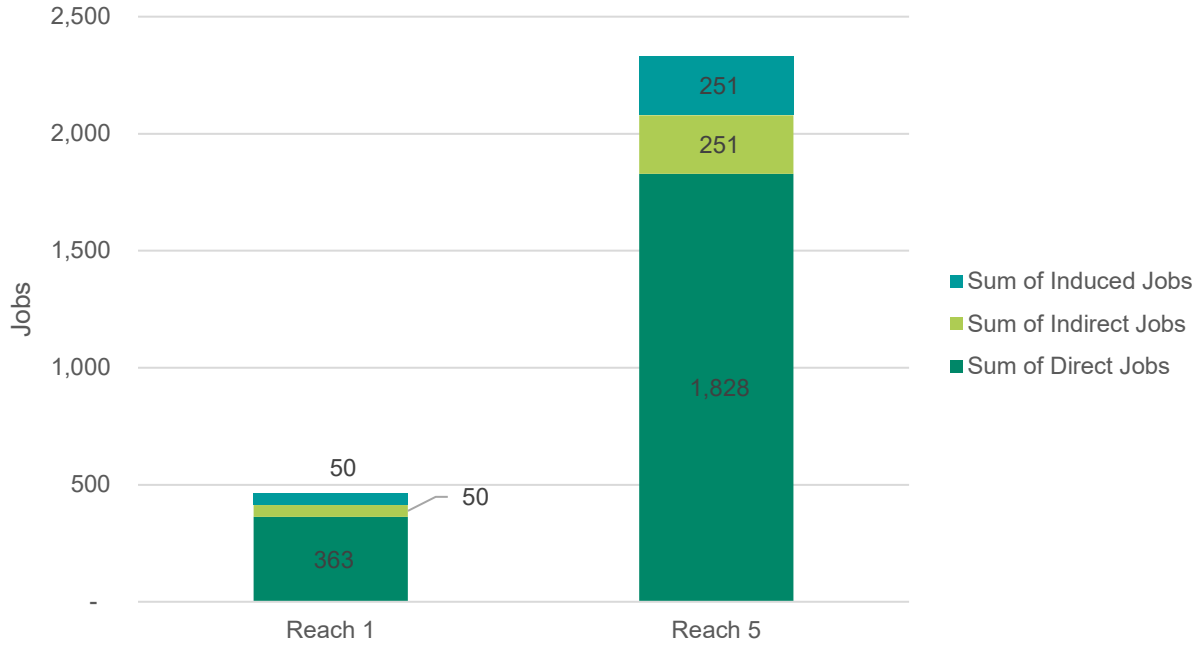
The analysis uses Emsi San Francisco County multipliers[1] to estimate the total economic value created by the implementation of the strategies proposed in Reaches 1 and 5. Multipliers can be used to understand how a dollar spent in one industry creates value throughout the economy. While value can be measured by various metrics (jobs, earnings, output, and value added), the primary metrics of interest for this analysis are *value added* (or Gross Regional Product, GRP) and *total jobs* (direct, indirect, and induced) that will be supported in San Francisco. The conceptual cost estimates serve as the project-related inputs for the analysis. When there are multiple options for a shoreline defense strategy, this analysis only considers the primary option. Details about the strategies are summarized in Appendix A.

Economic Impacts

Conceptual cost estimates for the strategies proposed in Reach 1 and Reach 5 would lead to over $470 million in spending and have the potential to create over 2,700 jobs (direct, indirect, and induced) and over $350 million in value added to the GRP (direct, indirect, and induced).[2] Over 2,300 of the jobs are expected to be created by spending on the Reach 5 strategies implementation, while over 460 jobs will be created by spending on the Reach 1 strategies. Of the total jobs created, over 2,000 are expected to be direct, indicating that most jobs will be created within the San Francisco region. See Figure 2. Likewise, the Reach 1 and Reach 5 strategies will directly add over $250 million to the local GRP. The summary of total economic benefits is detailed in Appendix A (shown both with and without contingency).

[1] Emsi regional multipliers for input-output year 2020
[2] Estimates are derived from hard costs plus all markups (except for bonding and insurance) and contingency. These estimates do not include the optional sub-strategies.

Figure 2 Job impacts by Reach (assuming 30 percent contingency added to project costs)



Both Reach 1 and 5 include strategies that aim to protect and secure the Port's land for continued economic activity and strategies that reconfigure a portion of the Port's land for improved shoreline environments and public access. Both strategy types offer job and economic benefits and the scale of these benefits are driven by their costs. For example, Reach 1, Strategy 1: Expansion of Warm Water Cove is expected to provide 60 jobs and $8 million in value add to the GRP compared to Strategy 2: Protection of Pier 80 to Support Maritime Function, which will add 400 jobs and $50 million to the GRP. This difference in economic impact is derived from the costs of each strategy - $10 million and $65 million, respectively – which are reflective of the resource and labor intensity required to implement each project. Details of economic impact per each Reach's strategies are summarized in Figures 3 and 4.

Figure 3 Value add by strategy (assuming 30 percent contingency added to project costs)

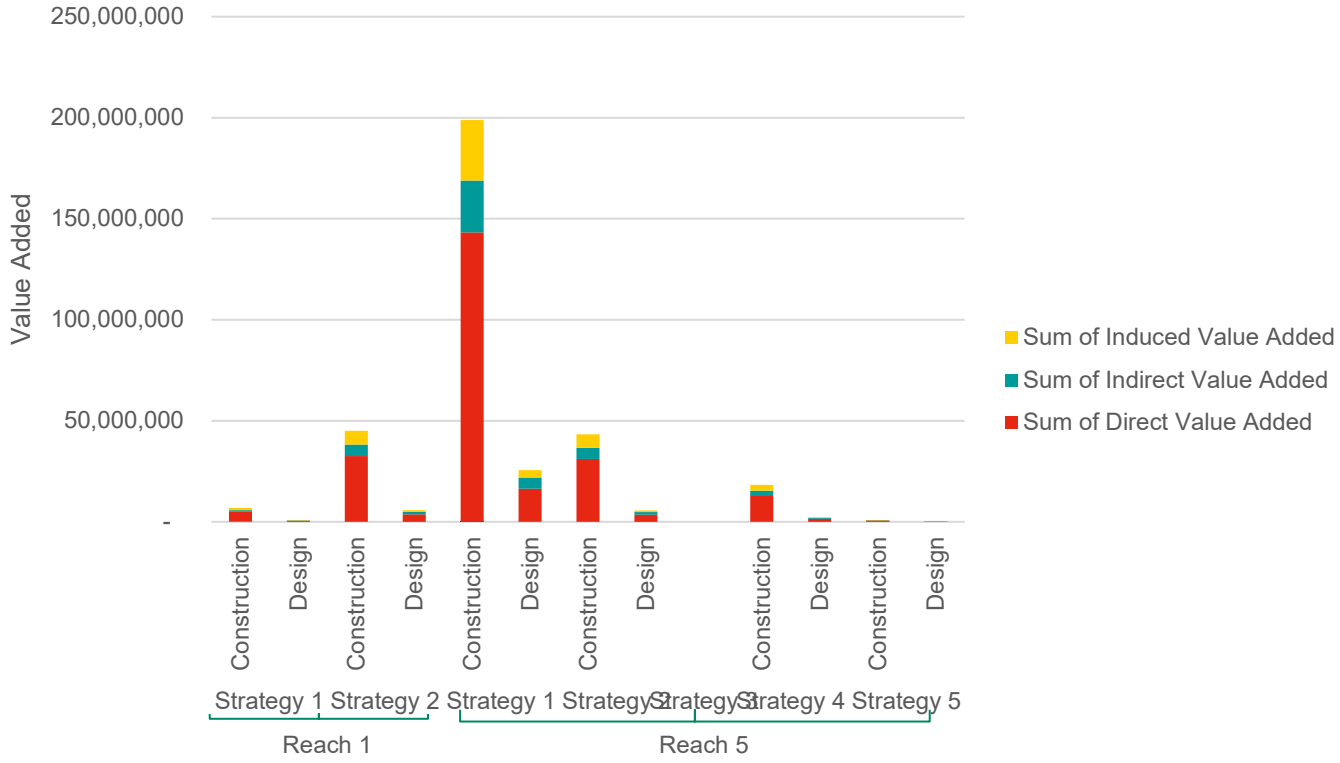
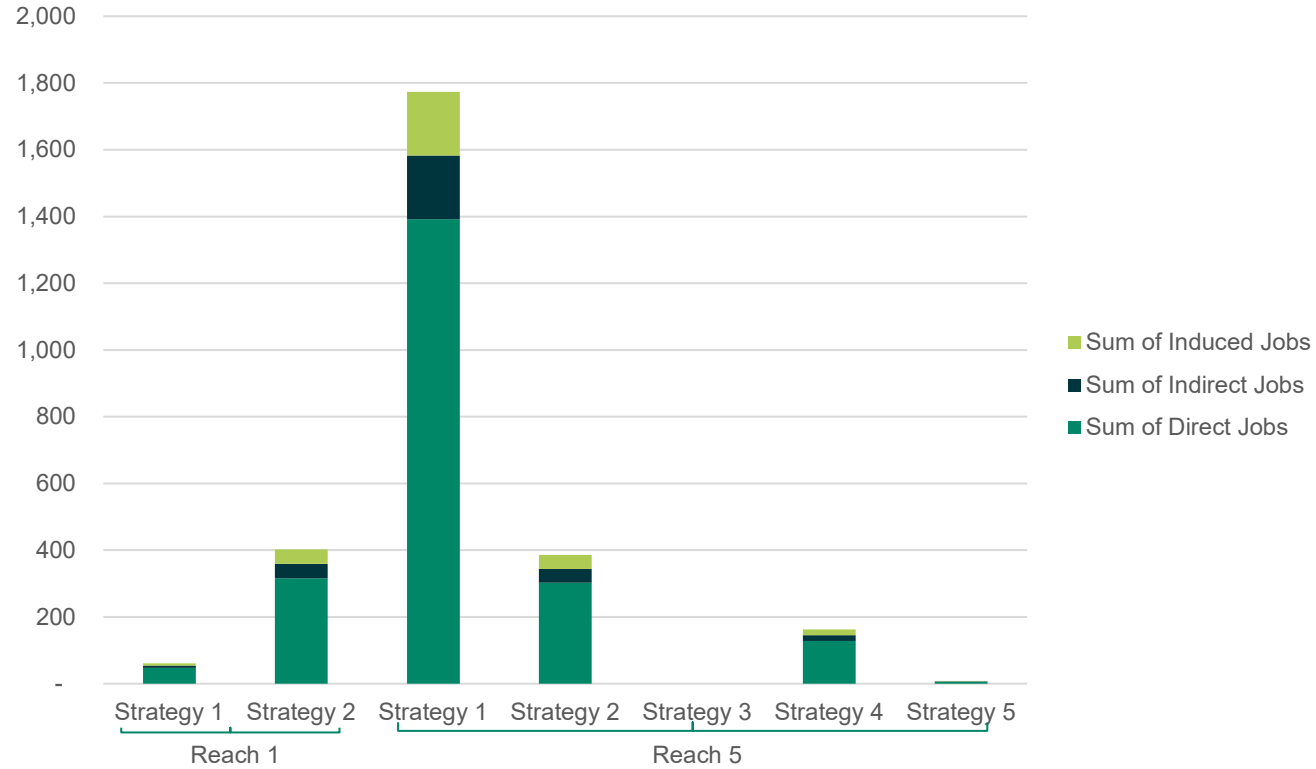
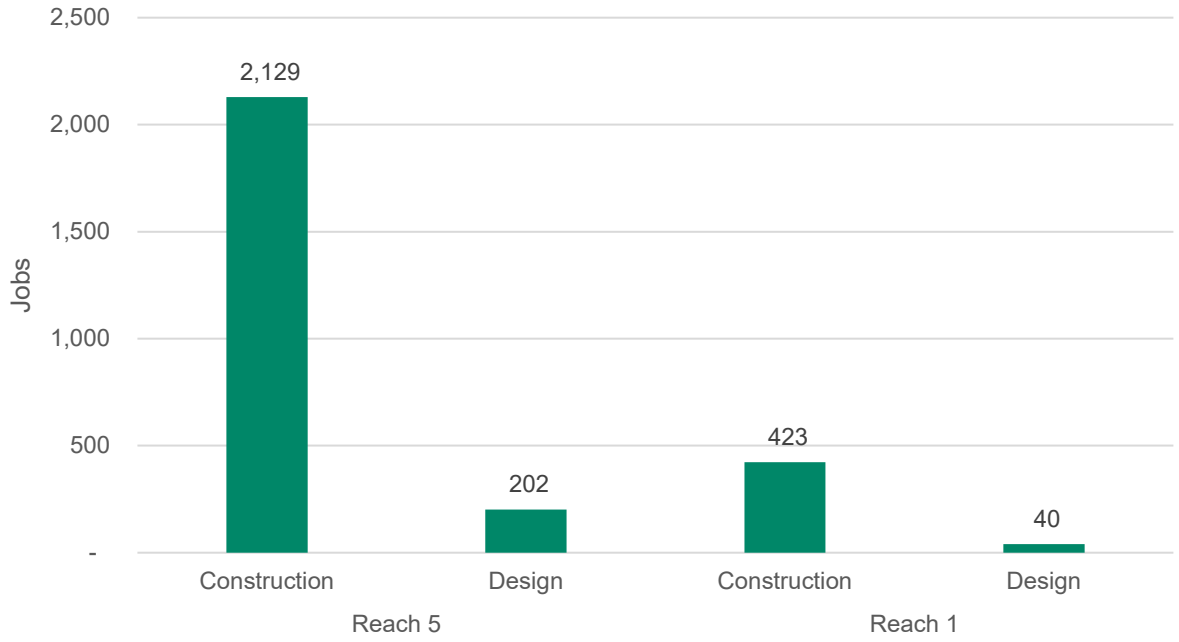


Figure 4 Job creation by strategy (assuming 30 percent contingency added to project costs)



For both Reach 1 and 5, most jobs created will be related to construction spending. Construction-related jobs tend to have lower barriers to entry, offer living wages, and provide union benefits. Meanwhile, design jobs tend to require higher levels of educational attainment. These figures are detailed in Figure 5.

Figure 5 Total job creation by spending type (assuming 30 percent contingency added to project costs)



Limitations of Economic Impact Analysis

Economic impact analysis describes a limited set of the benefits from infrastructure investments (jobs and value added). The results summarized above do not consider the following:

- **Long-term benefits:** Economic impact analysis measures the short-term economic activity generated by over $470 million in capital spending but does not quantify the strategies' additional long-term benefits or cost savings that may result from improved adaptation to climate change. The ICSMAS near-term strategies will provide a multitude of benefits, including avoided flood damages, continued operability of industry and businesses, and protection of jobs that may otherwise be impacted by flood events.
- **Quality of jobs:** The jobs created as indicated by the multipliers are not of equal quality. Some jobs created may be higher paying and offer pathways for career development, while other jobs may be lower-paid and temporary. For workers with less than a bachelor's degree, infrastructure jobs tend to offer higher median wages than other low barrier-to-entry jobs, however, they also tend to be shorter-term and less stable.
- **Accessibility of jobs:** Likewise, not all jobs that are created will be accessible to everyone. Some jobs, such as those in the design, engineering, and construction management industries, will require higher levels of education or unique skills. Jobs with higher education requirements, which tend to have higher wages, will be disproportionately inaccessible to Black and Brown communities, which tend to have lower levels of educational attainment.
- **Opportunity costs:** All investment choices have opportunity costs – investments or opportunities that are not pursued because of pursuing another opportunity. While opportunity costs are difficult to quantify, infrastructure investments have been shown to be an effective use of public spending that supports long-term as well as short-term economic growth.

- **Timeframe:** The timing and duration of jobs are not captured in this analysis as it is difficult to estimate these details when projects exist only at a conceptual level.

Conclusion

The strategies affiliated with the Port's key assets will protect and enhance Port operations and improve the shoreline environment, while having the added benefit of creating over 2,700 jobs and over $350 million in value added to the GRP. This analysis is intended to support the Port and City and County of San Francisco in understanding the near-term economic impacts of proposed capital spending as recommended in the ICSMAS. Further research on the long-term economic impacts of the proposed strategies is needed to understand the full scope of impacts, particularly as they relate to Port land use and operations.

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Appendix A

Economic Impacts of Reaches 1 and 5

Figure 6 Estimated economic impacts of Reach 1 and Reach 5, including 30 percent contingency

	Strategy	Direct Jobs	Indirect Jobs	Induced Jobs	Direct Value Added	Indirect Value Added	Induced Value Added
Reach 1: Northwestern Waterfront							
(R1)1	**Warm Water Cove Park[1]**	**48**	**7**	**7**	**$5,477,698**	**$1,069,477**	**$1,156,588**
	Construction	45	5	6	$4,916,978	$879,529	$1,028,146
	Design	3	1	1	$560,721	$189,948	$128,442
(R1)2	**Pier 80[1]**	**316**	**43**	**43**	**$36,200,975**	**$7,067,951**	**$7,643,652**
	Construction	295	35	38	$32,495,288	$5,812,625	$6,794,803
	Design	21	9	5	$3,705,686	$1,255,326	$848,849
	Reach 1 Total	**363**	**50**	**50**	**$41,678,673**	**$8,137,428**	**$8,800,240**
Reach 5: Southeastern Waterfront							
(R5) 1	**Piers 90 & 92[2]**	**1,391**	**191**	**191**	**$159,602,882**	**$31,161,188**	**$33,699,339**
	Construction	1,299	154	168	$143,265,250	$25,626,706	$29,956,932
	Design	93	38	23	$16,337,633	$5,534,482	$3,742,408
(R5) 2	**Pier 94 Wetlands**	**303**	**42**	**42**	**$34,705,078**	**$6,775,889**	**$7,327,801**
	Construction	282	33	37	$31,152,518	$5,572,436	$6,514,028
	Design	20	8	5	$3,552,560	$1,203,453	$813,773
(R5) 3	**Cargo Terminal[3]**	**-**	**-**	**-**	**$0**	**$0**	**$0**
	Construction	-	-	-	$0	$0	$0
	Design	-	-	-	$0	$0	$0
(R5) 4	**Pier 96**	**128**	**18**	**18**	**$14,642,412**	**$2,858,814**	**$3,091,671**
	Construction	119	14	15	$13,143,553	$2,351,065	$2,748,332
	Design	9	3	2	$1,498,860	$507,749	$343,339
(R5) 5	**Lash Lighter Basin**	**6**	**1**	**1**	**$706,156**	**$137,871**	**$149,101**
	Construction	6	1	1	$633,871	$113,384	$132,543
	Design	0	0	0	$72,285	$24,487	$16,558
	Reach 5 Total	**1,828**	**251**	**251**	**$209,656,528**	**$40,933,763**	**$44,267,913**
	GRAND TOTAL	**2,191**	**301**	**301**	**$251,335,201**	**$49,071,191**	**$53,068,153**

Notes:

1. The kayak launch (1.4) is not included in the economic impact analysis for (R1) 1.
2. For Pier 80's Strategy (R1) 2, only Option A, reinforced concrete floodwall (2.2A), is included in the economic impacts analysis.
3. For Piers 90 and 92's strategy (R5) 1, only Option A, new raised wharf and edge (1.3A), is included in the economic impacts analysis. Strategies 1.3B.1 (bridge installment) and 1.3B.2 (barge unloading facilities) are not included.
4. This strategy, (R5) 3, is not included in the cost estimates so economic impacts are not calculated.

Figure 7 Estimated economic impacts of Reach 1 and Reach 5, not including contingency

	Strategy	Direct Jobs	Indirect Jobs	Induced Jobs	Direct Value Added	Indirect Value Added	Induced Value Added
REACH 1: NORTHWESTERN WATERFRONT							
(R1)1	**Warm Water Cove Park[1]**	**36**	**5**	**5**	**$4,071,726**	**$774,609**	**$857,182**
	Construction	34	4	4	$3,782,291	$676,561	$790,881
	Design	2	1	0	$289,436	$98,048	$66,300
(R1)2	**Pier 80[2]**	**243**	**33**	**33**	**$27,846,904**	**$5,436,886**	**$5,879,732**
	Construction	227	27	29	$24,996,376	$4,471,250	$5,226,771
	Design	16	7	4	$2,850,528	$965,635	$652,961
	Reach 1 Total	**279**	**38**	**38**	**$31,918,630**	**$6,211,495**	**$6,736,914**
REACH 5: SOUTHEASTERN WATERFRONT							
(R5) 1	**Piers 90 & 92[3]**	**1,070**	**147**	**147**	**$122,771,448**	**$23,970,145**	**$25,922,569**
	Construction	999	118	129	$110,204,038	$19,712,851	$23,043,794
	Design	71	29	18	$12,567,410	$4,257,294	$2,878,775
(R5) 2	**Pier 94 Wetlands**	**233**	**32**	**32**	**$26,696,213**	**$5,212,223**	**$5,636,770**
	Construction	217	26	28	$23,963,475	$4,286,489	$5,010,791
	Design	16	6	4	$2,732,738	$925,733	$625,979
(R5) 3	**Cargo Terminal[4]**	**-**	**0**	**0**	**$0**	**$0**	**$0**
	Construction	-	0	0	$0	$0	$0
	Design	-	0	0	$0	$0	$0
(R5) 4	**Pier 96**	**98**	**14**	**13**	**$11,263,394**	**$2,199,088**	**$2,378,209**
	Construction	92	11	12	$10,110,425	$1,808,512	$2,114,102
	Design	7	3	2	$1,152,969	$390,576	$264,107
(R5) 5	**Lash Lighter Basin**	**5**	**1**	**1**	**$543,197**	**$106,055**	**$114,693**
	Construction	4	1	1	$487,593	$87,219	$101,956
	Design	0	0	0	$55,604	$18,836	$12,737
	Reach 5 Total	**1,406**	**193**	**193**	**$161,274,252**	**$31,487,510**	**$34,052,240**
	GRAND TOTAL	**1,685**	**231**	**231**	**$193,192,882**	**$37,699,005**	**$40,789,154**

Notes:

1. The kayak launch (1.4) is not included in the economic impact analysis for (R1) 1.
2. For Pier 80's Strategy (R1) 2, only Option A, reinforced concrete floodwall (2.2A), is included in the economic impacts analysis.
3. For Piers 90 and 92's strategy (R5) 1, only Option A, new raised wharf and edge (1.3A), is included in the economic impacts analysis. Strategies 1.3B.1 (bridge installment) and 1.3B.2 (barge unloading facilities) are not included.
4. This strategy, (R5) 3, is not included in the cost estimates so economic impacts are not calculated.