



# BIOMONITORING CALIFORNIA

## Program Update and Panel Input on Recommendations for the Seventh Report to the Legislature

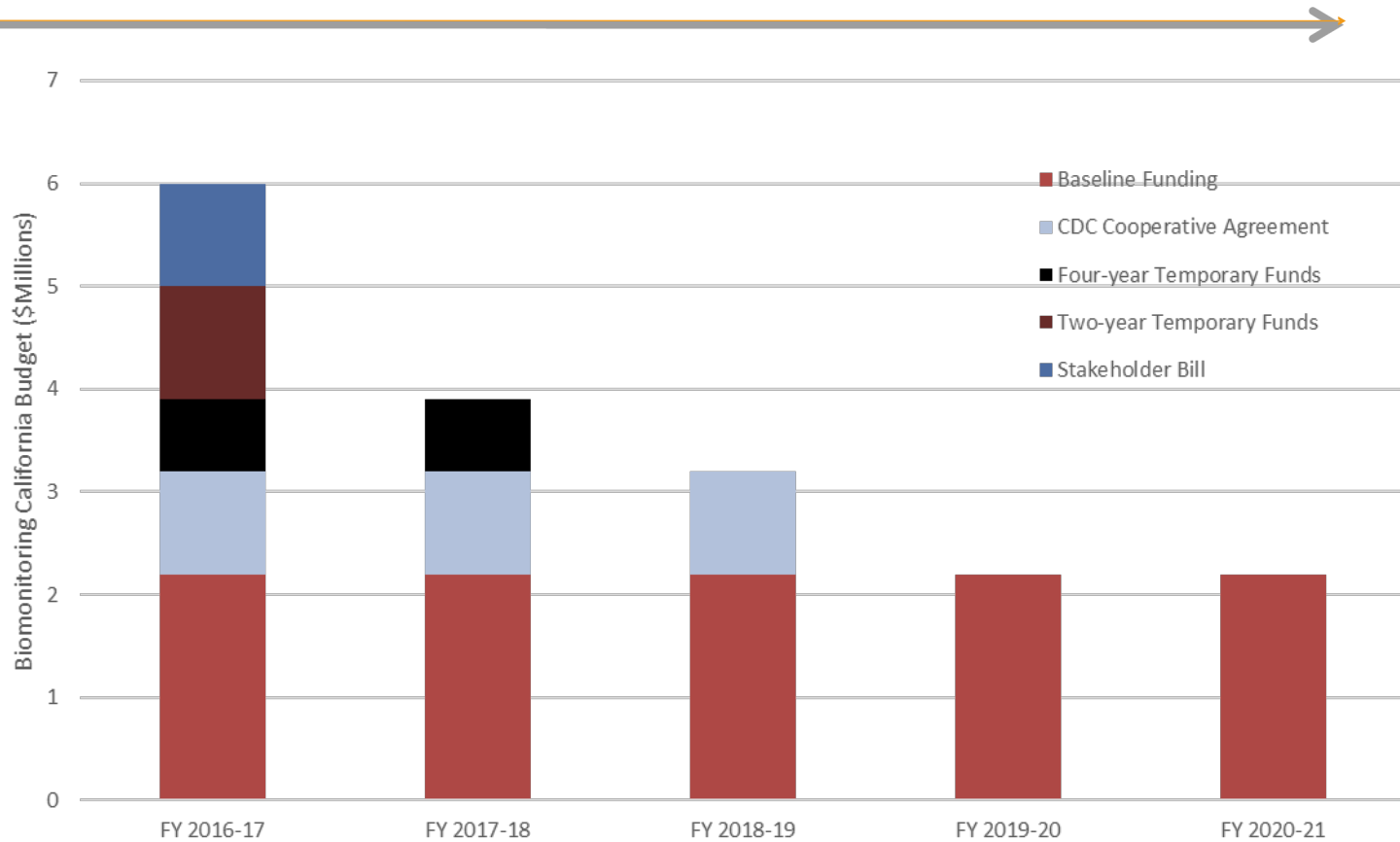
Nerissa Wu, PhD, MPH

Presentation to the Scientific Guidance Panel Meeting  
July 16, 2021

# Program Updates

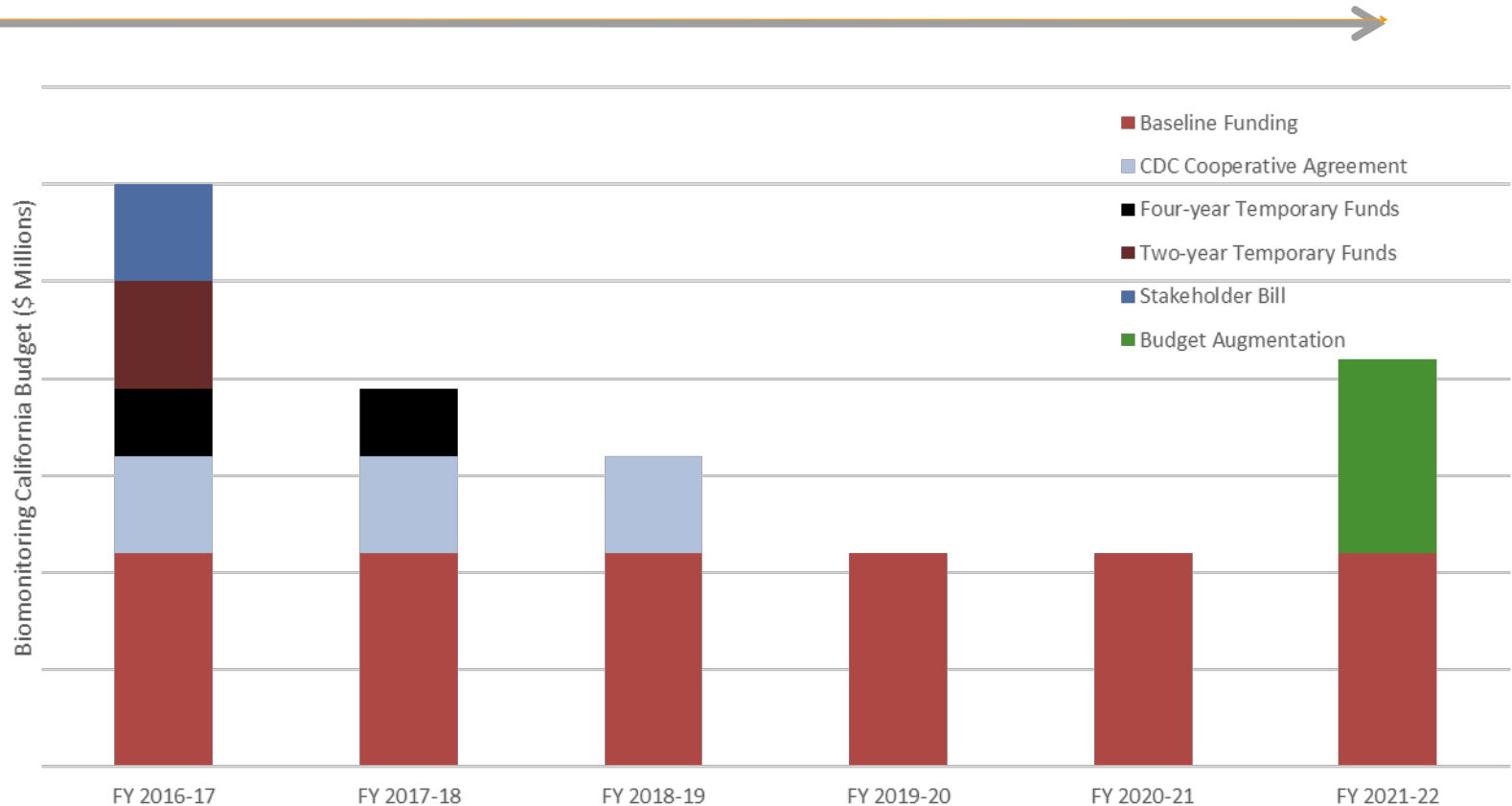
- Budget
- Staff
- Current activities
  - California Regional Exposure (CARE) Study
  - Exploration into surveillance options
  - Laboratory collaborations
  - Legislative report

# Program Budget



See slide 24 for underlying data.

# Program Budget Update



See slide 24 for underlying data.

# On-going Budget Augmentation (Approved FY 2021-22)



- Additional staff
- Operations budget
- Focus on surveillance to track temporal trends and help interpret community-focused exposure data

# Staff Updates

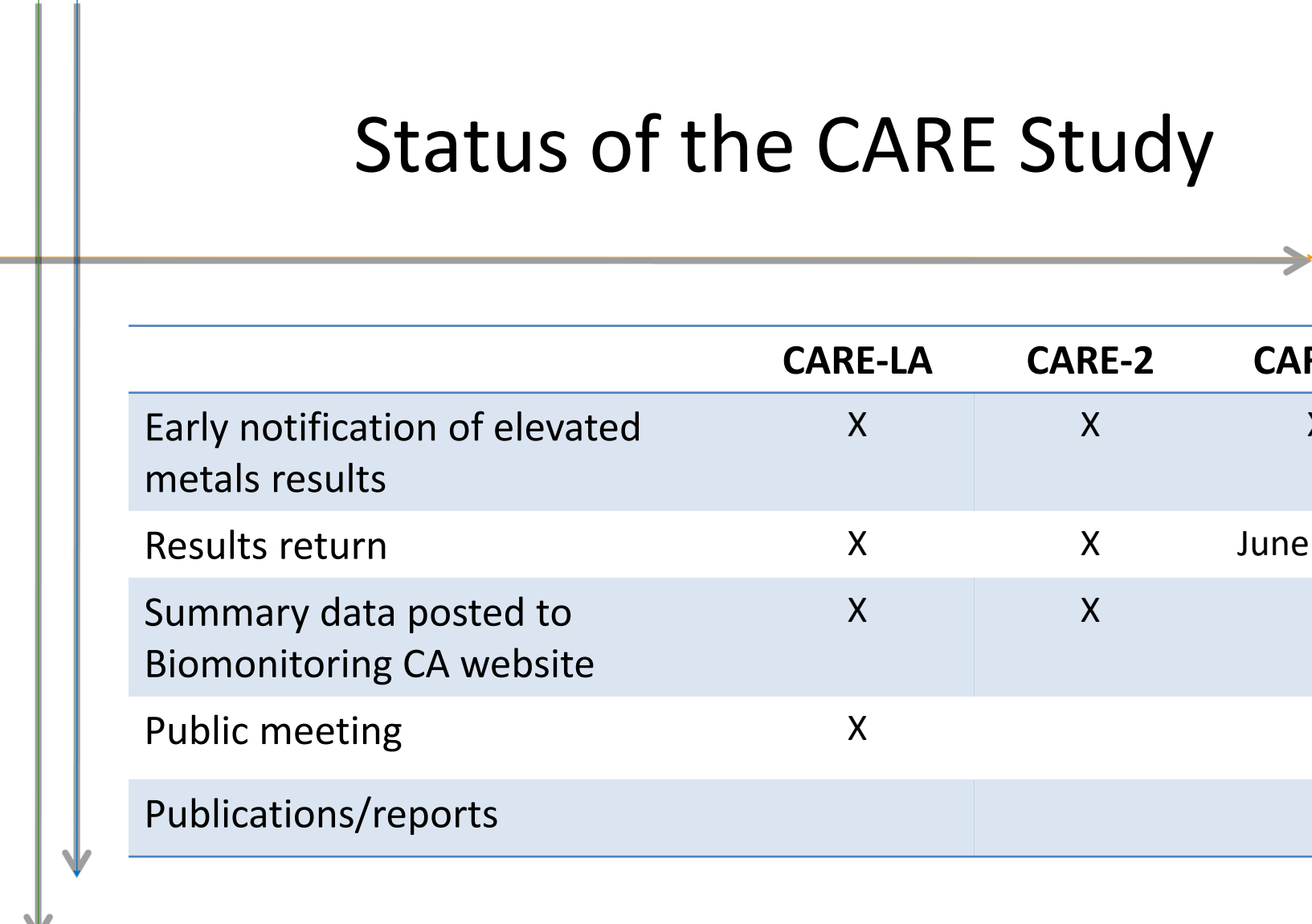


Dinesh Adhikari	Jagdish Dhaliwal	Simon Ip	Martha Sandy
Kathleen Attfield	Joginder Dhaliwal	Shoba Iyer	Jianwen She
Hyoung Gee Baek	<b>Dina Dobraca*</b>	Stephanie Jarmul	Dan Sultana
Paramjit Behniwal	Jeff Fowles	Duyen Kauffman	<b>Julia Varshavsky^</b>
Key-Young Choe	Qi Gavin	Alveen Kumar	Jed Waldman
Sabrina Crispo Smith	Songmei Gao	<b>Jennifer Mann^</b>	Miaomiao Wang
Adam D'Amico	Sara Hoover	June-Soo Park	Shizhong Wang
Josephine DeGuzman	Susan Hurley	Myrto Petreas	Yunzhu Wang
			Nerissa Wu

\*New staff

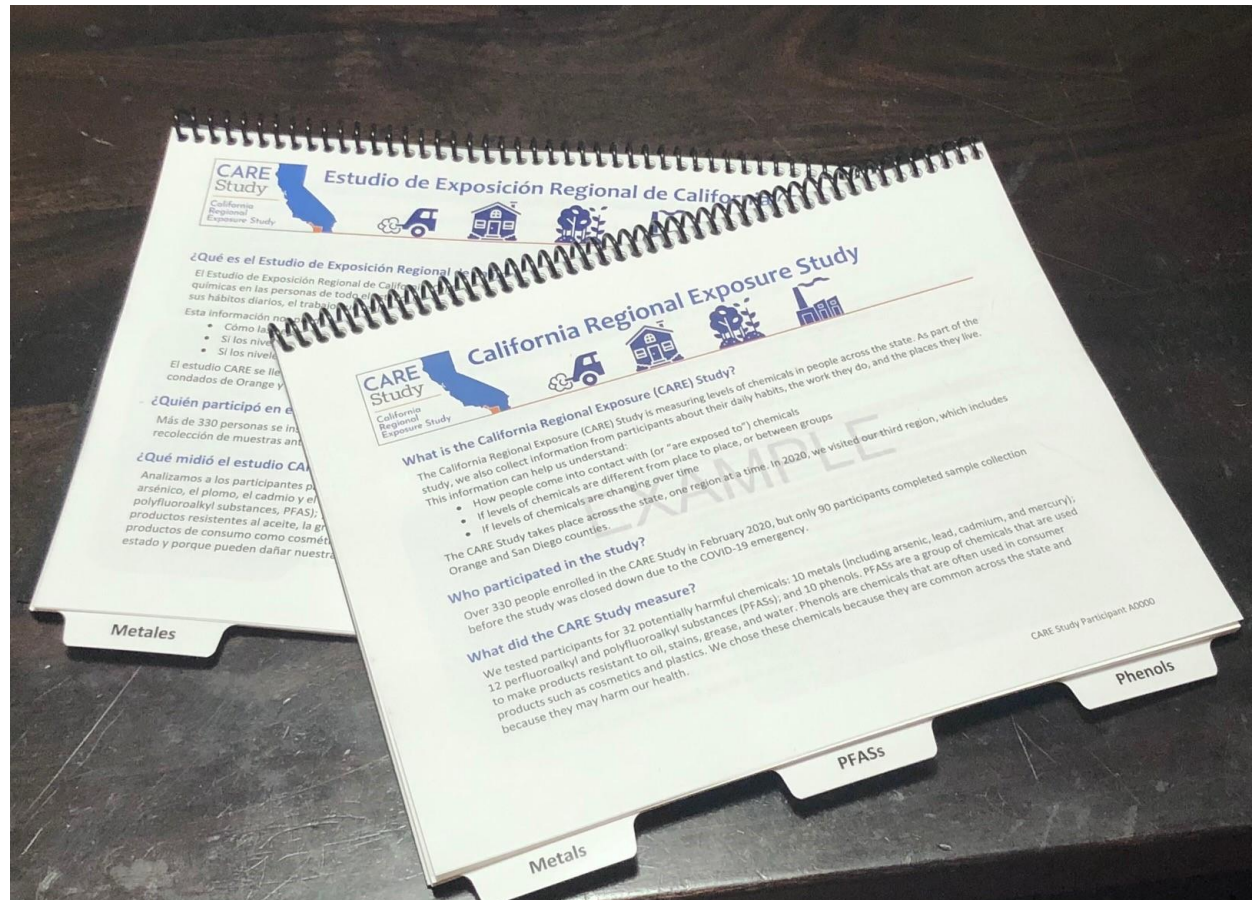
^Former staff

# Status of the CARE Study



	CARE-LA	CARE-2	CARE-3
Early notification of elevated metals results	X	X	X
Results return	X	X	June 2021
Summary data posted to Biomonitoring CA website	X	X	
Public meeting	X		
Publications/reports			

# Results Return Packet





# Results Return: Participant Feedback

“I had no idea I would receive such a comprehensive analysis of the personal and collective results. Color me impressed.”

“I am very impressed with the CARE study results package you sent me. The information you provided is beautifully presented, explained and useful.”

“...would like to suggest, that there also be included a page summary of all the results so we can give it to our medical provider...”

# Next Steps: Surveillance

- Looking back to inform the future
- Evaluation of Biomonitoring Exposure Study (BEST) and CARE methods and data
  - To weight or not to weight
- Lessons learned
  - Logistics
  - Data usability

# CARE Study Report

- Overall study design
- Methods
  - Field methods
  - Lab methods
- Results
  - Participant demographics
  - Data summaries
  - Comparisons between regions (CARE-LA and CARE-2)

# Surveillance: Further Exploration



- Continue exploring potential collaborations
- Learning from other states' experiences
  - Temporal trends in PFASs (NJ)
  - Utilizing existing surveillance systems (NH, MA)
  - Focus on prenatal exposures to lead and mercury (MN, NJ)

# Laboratory Collaborations

## Environmental Health Lab

- **Pregnancy Exposure to Cannabis and Tobacco (PRECATO) Study** Measure cotinine, THC, and THC-COOH in maternal serum to determine level of exposure to tobacco and cannabis products in pregnant women from the Central Valley & Southern California. n=1800
- **Women Workers Biomonitoring Collaborative (WWBC) Firefighter Study** Measure OH-PAHs collected at multiple time points from 18 active-duty female firefighters from the San Francisco Fire Department. n=68

# Laboratory Collaborations (continued)

## Environmental Chemistry Lab

- **Discovery of Novel Environmental Chemicals in Maternal-Infant pairs (UCSF)** – Non-targeted screening. n = 300 cord-maternal serum pairs
- **Women Workers Biomonitoring Collaborative (UC Berkeley/Silent Spring)** – Non-targeted screening. n= 130
- **PFASs and Maternal Cardiovascular Disease Risk (Harvard/George Washington)** – Expanded PFAS panel. n=250
- **Environmental Research and Translation for Health (EaRTH) Center (UCSF)** – Persistent organic pollutants (POPs), flame retardants, PFASs, and non-targeted screening. n = TBD
- **Environmental Influences on Child Health Outcomes (ECHO) Pediatric Cohorts (UIUC/UCSF)** – PFASs in mothers in California and Illinois. n=~1000

# Other Laboratory Activities



- **Environmental Health Laboratory**
  - Mercury speciation method
  - VOC metabolites in urine
- **Environmental Chemistry Laboratory**
  - Automation of expanded PFAS panel
  - Developing new GC-QTOF/MS non-targeted method to screen for volatile and semi-volatile chemicals

# Legislative Reports

- Founding legislation requires submittal of a report every two years
- Report contains:
  - Program findings
  - Additional activities
  - Recommendations for improving the program



# Legislative Report #6

## SGP Recommendations (July 2019)

- Maintain core laboratory capabilities and develop innovative and efficient laboratory methods to protect the public's health
- Improve the CARE Study, the Program's statewide surveillance project
- Conduct biomonitoring studies that seek to better understand and mitigate environmental health inequities
- Expand assistance to local agencies in responding to chemical exposures

# Legislative Report #6

## SGP Recommendations (continued)



- Inform evidence-based decision-making by improving access to biomonitoring data
- Expand and improve health education for individual participants, health care providers, community organizations, and the general public
- Conduct biomonitoring studies to evaluate the effectiveness of regulatory programs

# SGP Feedback (2019-2021)

## General Program Directions

- Conduct studies that seek to better understand and mitigate environmental health inequities
- Design studies that focus on differences across demographics and types of communities (e.g., rural vs. urban)
- Conduct intervention studies to link community needs with biomonitoring
- Prioritize studies of exposures among children
- Study impact of wildfires, including on occupational groups (firefighters, clean-up crews, field workers)

# SGP Feedback (2019-2021)

## General Program Directions (continued)

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- Promote fee-for-service laboratory capabilities
- Maintain core lab capabilities and develop innovative and efficient lab methods
- Ensure that study results are distributed to the broader public

# SGP Feedback (2019-2021)

## Surveillance Studies

- Consider less expensive ways to collect samples: in-home self-collected samples, banked samples, or wastewater treatment samples as an indicator of exposure
- Collaborate with others on participant recruitment, interpretation of non-targeted screening data, data analysis
- Ensure that surveillance studies reflect the population with respect to education and income level

# SGP Feedback (2019-2021)

## Surveillance Studies (continued)

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- Recognize that studies cannot address all questions; prioritize temporal trends over geographic trends
- Conduct studies that can help evaluate the effectiveness of regulatory programs
- Publicize policy-relevant studies
- Focus on what makes California different



# Discussion

# Program Budget

Funding Source	Fiscal Year (millions of dollars)				
	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Baseline Funding	2.2	2.2	2.2	2.2	2.2
CDC Cooperative Agreement	1	1	1		
Four-year Temporary Funds	0.7	0.7			
Two-year Temporary Funds	1.1				
Stakeholder Bill	1				
Budget Augmentation					2