



Integrated Climate Adaptation and Resiliency Program

# Technical Advisory Council 1st Quarter Meeting

APRIL 14<sup>TH</sup>, 2023 | 9:30AM – 4:30PM



# Morning Session Agenda

---

Item 1 | Welcome & Roll Call

Item 2 | Meeting Minutes

Item 3 | State Agency Updates

Item 4 | ICARP Programmatic Updates

Item 5 | 2022 ICARP Impact Report

Item 6 | Science Advisory Group

Item 7 | Local Transportation Climate Adaptation Program

# Welcome, New Council Members!

---



**Denise Kadara**

Allensworth Progressive  
Association



**Alex Ghenis**

Sustain Our Abilities



**Allison Brooks**

Bay Area Regional  
Collaborative



**Roberto Carlos  
Torres**

Institute for Local  
Government

Item 1 | Welcome & Roll Call



# Public Comment Process

---

1. The Council will hear public comments for each agenda item, and general comments unrelated to agenda items at the end of the meeting.
2. The council Chair will call on you in the order your comment was received by ICARP Staff.
3. Prior to making your comments, please state your name for the record and identify any group or organization you represent.
4. **Online participants:** please use the Zoom “raise hand” function.
5. **Phone participants:** please press \*6 to “raise your hand.”

A close-up photograph of a person's hands writing in a notebook with a pen. The image is dimly lit and has a dark, semi-transparent overlay. The text 'Item 2 | Meeting Minutes' is centered over the image in a white, serif font.

# Item 2 | Meeting Minutes



# Item 2 Public Comment



## ACTION

---

Approve the meeting minutes from the ICARP Technical Advisory Council 4<sup>th</sup> Quarter Meeting on 12/09/22 and the Special Meeting on 01/27/23.

---





# Item 3 | State Agency Updates



# Item 3 Public Comment

# Item 4 | ICARP Programmatic Updates



# Welcome New Staff!

---



**Beth Hotchkiss**

Senior Planner,  
Wildfire and Forest Resiliency



**Allie Larman**

Assistant Planner  
*Extreme Heat & Community Resilience  
Program*



**Mariah Padilla**

Assistant Planner  
*Adaptation Planning Grant Program*

# TAC Priority Areas



Actionable Research & Resilience Metrics



Decision Support Tools & Guidance



Building Partnerships & Leveraging Resources



Funding & Financing



Climate Equity & Vulnerable Communities



Additional Special Initiatives

# Actionable Research & Resilience Metrics

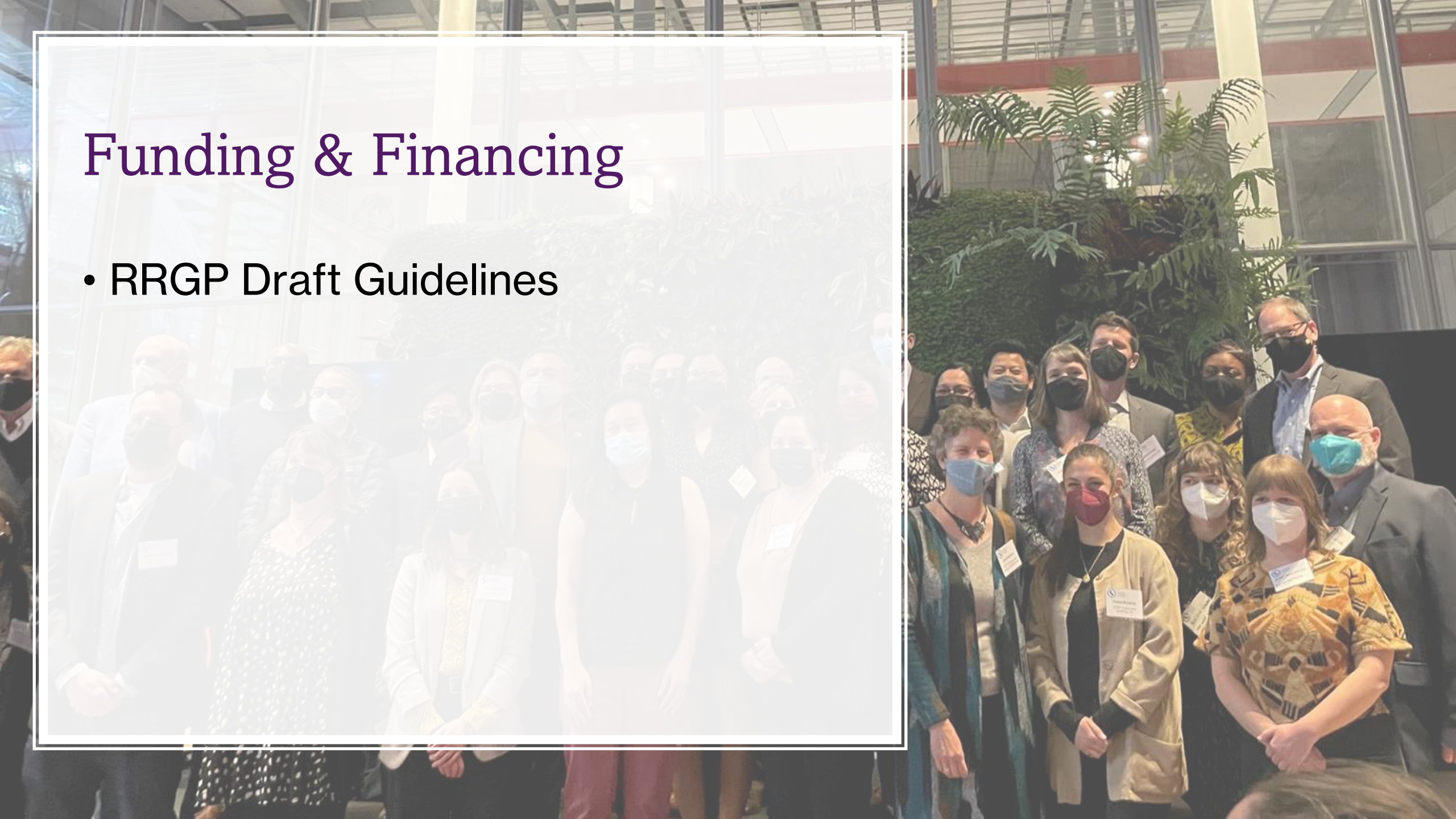
- Fifth Assessment Tribal Advisory Group established
- Draft Fifth Assessment Tribal Research Grant Guidelines available

# Decision Support Tools & Guidance

- RAP-Map Updates
- Adaptation Clearinghouse statistics

# Funding & Financing

- RRGP Draft Guidelines







# Item 4 Public Comment



# Item 5 | 2022 IARP Impact Report

# Impact Report Purpose

---

- Education about resilience
- Communicate TAC priorities
- Emphasize unique role and value add of ICARP structure and processes
- Highlight programmatic accomplishments
- Identify future opportunities

# 2022 Impact Report

---

1. Executive Summary (English & Spanish)
2. Introduction
3. Narrative Case Studies
4. 2022 Milestones
5. 2023 Work Plan



# Narrative Case Studies: Fifth Assessment

---

## **Fifth Assessment Surveys, Consultation, and Roundtables: Promoting Partnerships and Engagement in Climate Change Research**

- Producing actionable climate science requires an understanding of on-the-ground needs
- Engaged with a broad and diverse audiences to lend their unique perspectives and expertise on the scope and prioritization of research topics
- Early engagement and strategic partnerships are essential to integrating these unique and valuable perspectives

# Narrative Case Studies: Plan Alignment Guides

---

## **Plan Alignment Guides: Promoting Interdisciplinary, Strategic Planning**

- Developing and implementing a vision for resilience through complex planning processes requires a collaborative, multi-sector approach, technical expertise, and capacity
- The Plan Alignment Guides provide a flexible approach, collaboration tools, and best practices
- Meaningful engagement and partnership with vulnerable communities prioritizes the needs of those most exposed to climate impacts

# Narrative Case Studies: APGP & RRGP

---

## **Adaptation Planning Grant Program & Regional Resilience Grant Program: Developing Grant Guidelines That Respond to Community Needs**

- Extensive public engagement identified ways ICARP's grant programs could support integrated planning and implementation
- Also identified ways to reduce barriers for applicants, center the needs of vulnerable communities, prioritize support for disadvantaged communities and tribes, encourage shared decision-making, support capacity-building, and export successes through case studies to scale up solutions

# Narrative Case Studies: Gantt Charts

---

## **Resilience Funding and Financing Gantt Chart: Developing Resources to Support Funding Access and Implementation**

- The ICARP TAC lent valuable perspective to identify a challenge in navigating state resilience funding opportunities
- ICARP Staff leveraged its interagency coordination groups and partnerships to develop a comprehensive resource that illustrates the timelines for grant program guidelines, applications, and awards
- The Gantt Chart is a tool that can help applicants more efficiently navigate the complex environment of state funding opportunities, supporting access to programs that prioritize vulnerable communities





# Item 5 Public Comment



## ACTION

---

Approve the 2022 ICARP Impact Report.

---

A pencil is positioned diagonally across the frame, pointing towards the bottom right. It rests on a document that features a line graph. The graph has a vertical axis with numerical markers at 50 and 100, and a horizontal axis with year markers at '93 and '98. The background is a soft-focus, light-colored surface, possibly a desk or a stack of papers. The overall lighting is soft and even, highlighting the texture of the pencil and the paper.

# Item 6 | Science Advisory Group



# Science Advisory Group (SAG)

---

ICARP review of best practices highlight the role of “actionable science” as a key part of California’s climate agenda, with the goal of supporting science-informed policies and investments that are responsive to the impacts of climate change

TAC highlighted SAG priorities include

- Elevating emergent science priorities
- Identifying best available data and providing scenario guidance
- Facilitating connections between climate science and decision making



# Landscape Review

---

ICARP staff conducted a comprehensive review of similar groups in 2022 to document range of groups and their functions

Roles they identified included

- Review of scientific and technical information
- Use case guidance and translation of climate and adaptation science
- Input on alignment and integration of climate science in policy
- Connecting scientists and agencies for climate related decisions
- Identify priority research areas and gaps



# Themes and Recommendations

---

Decision makers in California are faced with a wide range of climate information for decision-making and planning

Guidance on climate change science and adaptation practice can be challenging to navigate.

## Recommendations for the SAG Framework:

- Draw on subject matter experts focused on relevant climate impacts to provide ad-hoc scientific and technical guidance around climate science and data to facilitate use of climate information in planning and decision making.



# Leverage and Coordination

---

Numerous working groups and advisory groups already provide guidance and input in their respective areas of expertise

Opportunity to leverage their subject matter expertise (SME) to coordinate questions and avoid duplicative effort

An ad-hoc SAG could serve as a resource for climate policy alignment across agencies, and support the use of best available information for decision making



# Addressing Emergent Priorities

---

Working groups can highlight emergent areas of interest

The Fifth California Climate Change Assessment already identified research priorities in an extensive consultation process that included input from scientific experts

SAG could highlight areas of interest or concern for new working groups – based on input and coordination from working groups, Fifth Assessment, etc.





# Implementation

---

Structure: A network of networks that draws on existing groups to leverage expertise that supports use of climate information in decision making and provides a space to summarize emergent priorities

- ICARP staff coordination would facilitate connecting SAG guidance on emergent questions (climate impacts, science, adaptation practices, etc.)

## Workflow

- Organize/identify science guidance questions and relevant group(s)
- Communicate with working groups and connect to SAG expertise
- Summary reporting of questions and answers
- Ongoing coordination between SAG and TAC



# Building out the Network

---

## SAG participation

- Existing working groups
- Expand to include SME and knowledge from diverse perspectives
- Facilitate input on questions from more than one group
- Rotating and flexible participation based on relevance

Nimble framework for curating expertise to support science guidance and decision support and expanding the network



# Questions for the ICARP TAC

---

Does this approach – staff coordination of an ad-hoc network seem feasible to address priorities originally identified for the SAG?

- Actionable Science: supporting science-informed policies and investments that are responsive to the impacts of climate change.
- Draw on subject matter experts focused on relevant climate impacts to provide ad-hoc scientific and technical guidance around climate science and data to facilitate use of climate information in planning and decision making.

What would be an optimal cadence for regular SAG meetings and reports to the TAC, or could this operate as an ad-hoc network responsive to emergent questions and issues?



# Item 6 Public Comment



# Item 7 | Local Transportation Climate Adaptation Program

# Presentation to the Integrated Climate Adaptation and Resiliency Program



## Local Transportation Climate Adaptation Program

April 14, 2023

Rebecca Light, Assistant Deputy Director  
Local Transportation Climate Adaptation Program Manager

# Program Objective

---

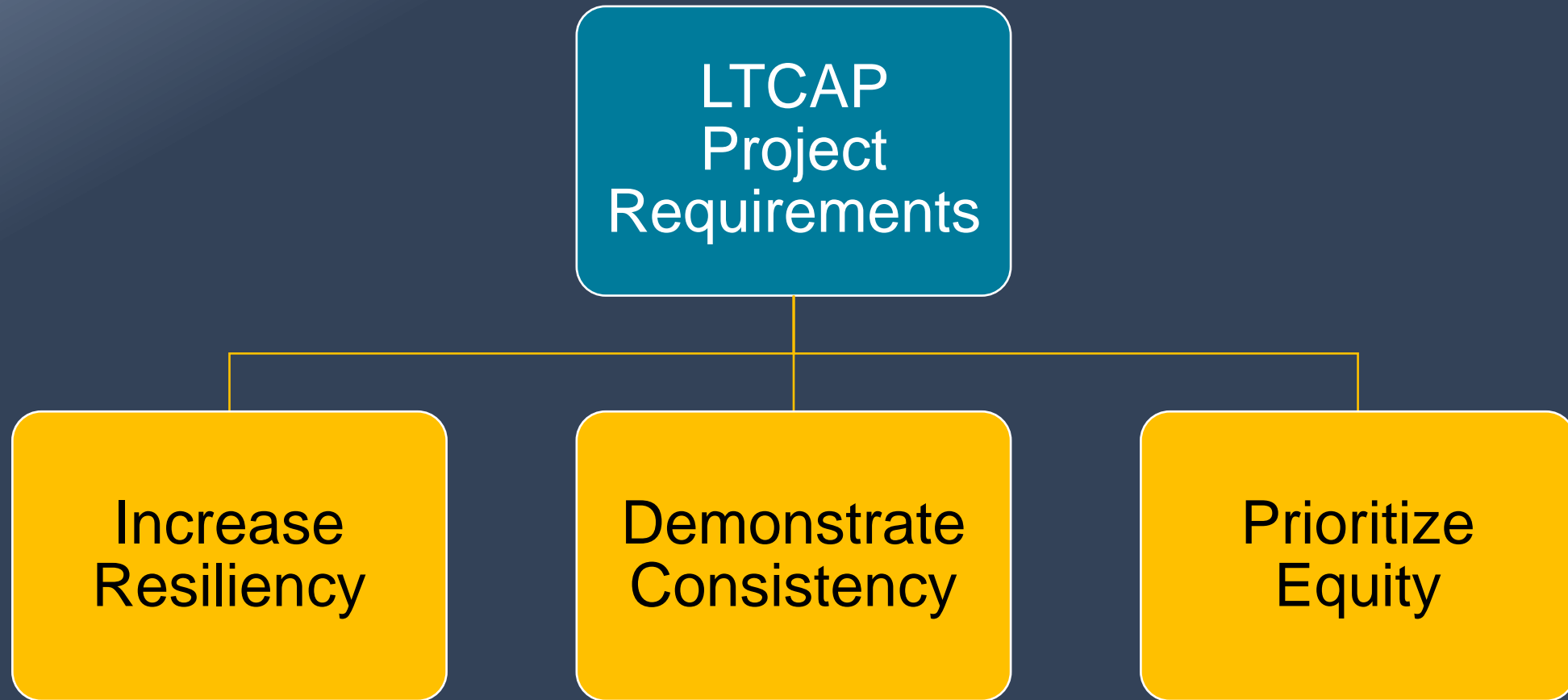


Support the development and implementation of local transportation infrastructure projects intended to adapt to the changing climate.



# Program Goals

---





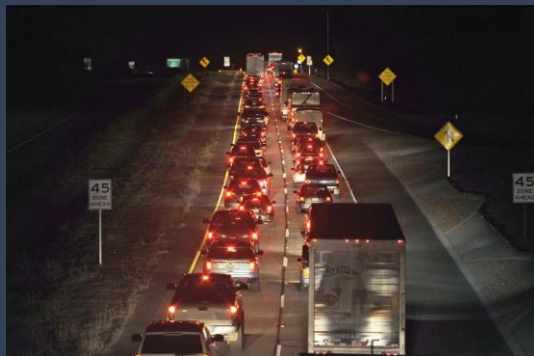
# Eligible Activities



**Resilience Improvements** to an existing transportation asset to withstand impacts of changing climate conditions.



**At-Risk Coastal Infrastructure** activities that enhance the resilience of infrastructure to improve transportation and public safety and to reduce costs by avoiding larger future maintenance or rebuilding costs.



**Community Resilience and Evacuation Route** activities that strengthen and protect evacuation routes that are essential for providing and supporting evacuations.

# Eligible Applicants

---



- Transportation planning agencies.
- Metropolitan planning organizations.
- County transportation commissions.
- Any other local or regional transportation entity that is designated by statute as a regional transportation agency.
- A joint exercise of powers authority established with the consent of a transportation planning agency or a county transportation commission for the jurisdiction in which the transportation project will be developed.
- Local transportation authorities.
- Cities and counties.
- Federally recognized Native American tribes.

# Eligible Facilities

---



- Highway projects eligible for assistance (Title 23 U.S.C. Sec 101)
  - Roads, streets, and parkways.
  - Right-of-way, bridge, railroad-highway crossing, tunnel drainage structure including public road on dams, sign, guardrail, and protective structure in connection with a highway.
  - Portions of any interstate or international bridge or tunnel and the approaches thereto.
- Public Transportation facilities that may include transit facilities, publicly owned railroads, active transportation facilities, public parking structures.
- Ports facilities, including facilities that connect ports with other modes of transportation, improve the efficiency of evacuations and disaster relief, or aid transportation.

# LTCAP Funding Sources and Cycles



- Total Funding- **\$400.5 million**
  - \$148 million from California legislature (SB 198)
  - \$252.5 million from PROTECT

<b>Funding Source</b>	<b>Cycle 1: FY 21/22</b>	<b>Cycle 1: FY 22/23</b>	<b>Cycle 1: FY 23/24</b>	<b>Cycle 2: FY 24/25</b>	<b>Cycle 2: FY 25/26</b>
Federal (PROTECT)	\$48.5	\$49.5	\$50.5	\$51.5	\$52.5
State	\$148.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>FY Total</b>	<b>\$196.5</b>	<b>\$49.5</b>	<b>\$50.5</b>	<b>\$51.5</b>	<b>\$52.5</b>

# Program Requirements



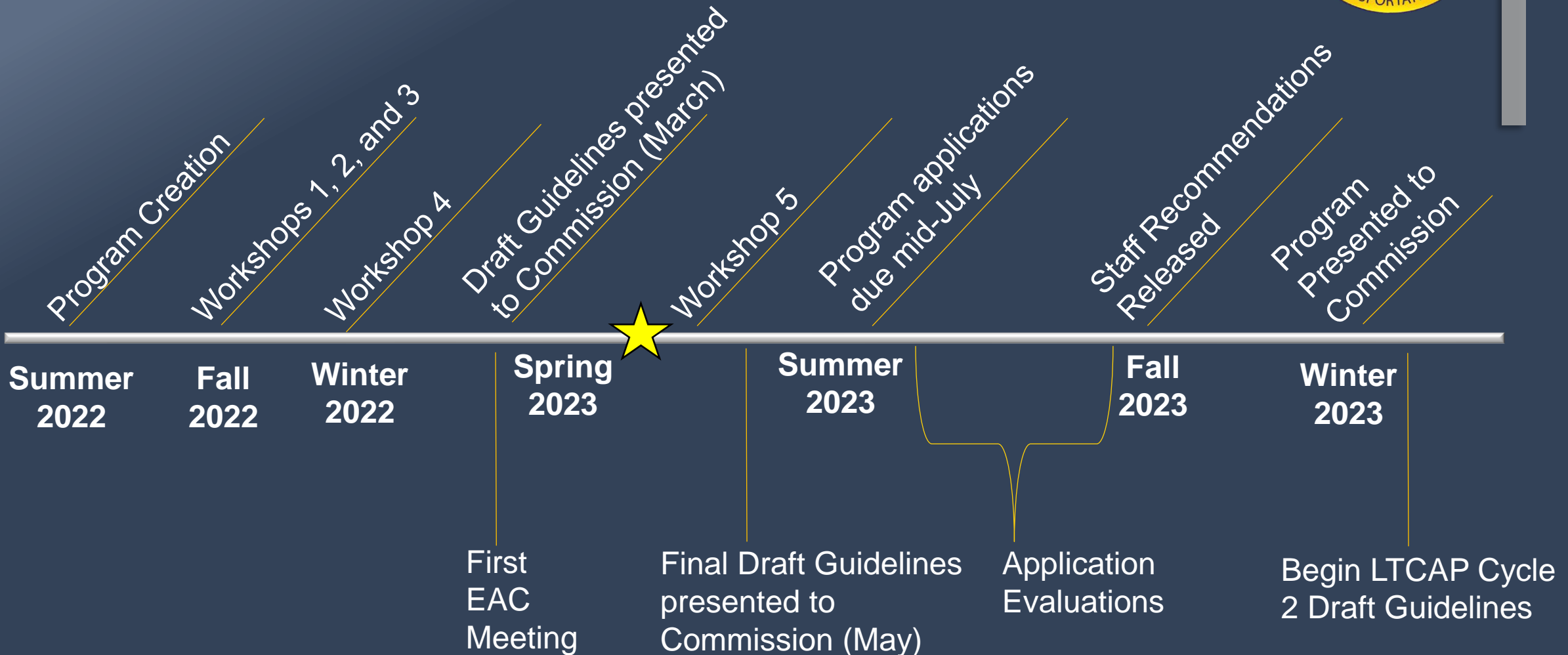
Topic	SB 198 / GOV 14564	PROTECT
Funding	<ul style="list-style-type: none"> <li>• Requires no less than two awarded project nominations.</li> <li>• \$148 million appropriated from State Highway Account*</li> </ul>	<ul style="list-style-type: none"> <li>• 40% funding limit of new capacity.</li> <li>• 10% limit for funding pre-construction activities.</li> <li>• 20% non-federal match.</li> </ul>
Climate	<ul style="list-style-type: none"> <li>• The project increases climate resiliency and protects at-risk transportation infrastructure <b>using California's climate projections.</b></li> <li>• Project consistency with:               <ul style="list-style-type: none"> <li>• Sustainable Communities Strategy, and</li> <li>• State, regional, and local climate adaptation reports, plans, and the <b>Adaptation Planning Guide.</b></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Eligible Activities               <ul style="list-style-type: none"> <li>• Resilience Improvements</li> <li>• Community Resilience &amp; Evacuation Route Activities</li> <li>• At-Risk Coastal Infrastructure</li> </ul> </li> <li>• System Resilience / Natural Infrastructure elements.</li> </ul>
Equity	<ul style="list-style-type: none"> <li>• Conduct outreach to under-resourced and vulnerable communities, consistent with the <b>California State Adaptation Strategy.</b></li> <li>• Identification of measures to improve equity and protect under-resourced and vulnerable communities in actions to meet the region's climate resiliency goals.</li> <li>• Consideration of climate equity across program cycles.</li> </ul>	<ul style="list-style-type: none"> <li>• Justice40               <ul style="list-style-type: none"> <li>• Engagement in stakeholder consultation and meaningful involvement of community stakeholders in determining program benefits.</li> <li>• Report data on the benefits directed to disadvantaged communities.</li> </ul> </li> </ul>

# Additional Proposed Policies



<b>Consideration</b>	<b>Outcome</b>
Climate Action Plan for Transportation Infrastructure (CAPTI) - Transportation, Land Use, and Housing Goals	Additional Evaluation Criteria
Increase Program Equity	Cover 20% match requirement with priority for rural, underserved, or Tribal applicants who request assistance
Increase pre-construction funding in Cycle 1	Provide state-only funding requests for pre-construction phases, with priority for rural, underserved, or Tribal applicants who request assistance
Data Collection	Alignment with the Commission's Accountability and Transparency Guidelines for metric reporting

# Program Development Timeline





# Discussion



# Thank You

---



## More Information

---

[www.catc.ca.gov](http://www.catc.ca.gov)

Local Transportation Climate Adaptation  
Program Manager email:

[Rebecca.Light@catc.ca.gov](mailto:Rebecca.Light@catc.ca.gov)

---



@California\_CTC



facebook.com/CATransportationCommission



# Item 7 Public Comment



# BREAK

## Back at 1pm

---

ICARP Council Q1 2023  
Meeting





# Afternoon Session Agenda

---

Item 8 | Fifth Assessment Update

Item 9 | Workshop: Extreme Heat

Item 10 | General Public Comment

Item 11 | Closing, Future Agenda Items, & Meeting Adjourned

The background features a complex financial chart with teal and orange lines and numbers. The numbers 1500, 45, and 10 are visible in the background. The chart appears to be a combination of a bar chart and a line graph.

# Item 8 | Fifth Assessment Update



# California Climate Change Assessments

---

California's Climate Change Assessments contribute to the **scientific foundation for understanding climate-related vulnerability at the regional and local scale** and informing resilience actions, while also directly informing State policies, plans, programs, and guidance, to promote effective and integrated action to safeguard California from climate change.

# Fifth Climate Change Assessment Implementation Team



CALIFORNIA  
STRATEGIC  
GROWTH  
COUNCIL



CALIFORNIA  
NATURAL  
RESOURCES  
AGENCY

# Fifth Climate Change Assessment Products



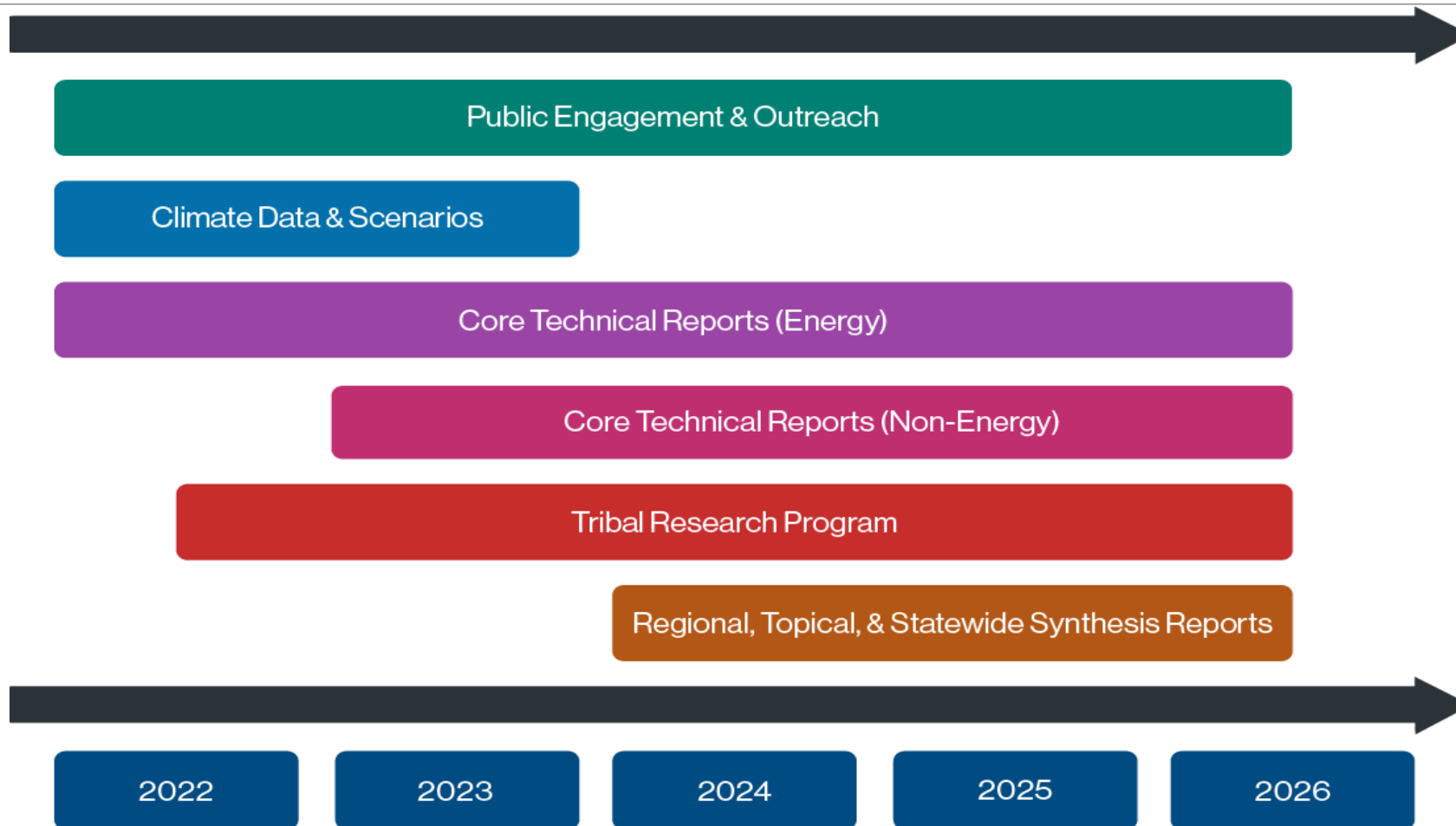
The Fifth Assessment will produce **a suite of research and tools** that report the impacts and risks of climate change in California, based on the best available science. These include:

1. **Downscaled global climate change projections data and modeling** on wildfire risk, hydrology, and sea level rise that will be hosted on the State's Cal-Adapt website.
2. **Core Climate Research Reports** include research funded through CEC's EPIC Grant Program and CNRA's Core Climate Research Program.
3. **A Tribal Research Program** that funds tribally led research through CEC's Tribal Research Grants Program and establishes a Tribal Advisory Group to support traditional knowledge(s) in Fifth Assessment products.
4. **Synthesis Reports** to integrate various research findings through two sets of deliverables: 1) nine **Regional Synthesis Reports**, and 2) at least two **Statewide Topical Synthesis Reports**.
5. **A Statewide Summary Report** to capture key takeaways throughout all Fifth Assessment research products.





# Fifth Climate Change Assessment Implementation Timeline



# Fifth Climate Change Assessment Research Topic Identification Process



In 2022, the **Fifth Assessment team collected input from more than 200 individuals.**

- *Responses included over 600 proposed climate research topics!*

A final list of **26 Climate Research Topics** consider knowledge gaps that will help inform the scope of future Fifth Assessment research.

***Additional input is needed*** to determine how these, and other more locally relevant themes can be addressed throughout the Fifth Assessment regional reports.

# Fifth Climate Change Assessment Regional Synthesis Reports: Overview



**Community-led research process** developed in partnership with diverse experts and community representatives

**Actionable science** including new climate data scenarios and models

**Locally relevant information and resources** designed to help communities understand and respond to the impacts of climate change in their region



# Fifth Climate Change Assessment Regional Synthesis Reports: Themes



The Fifth Assessment Research Topic Identification Process determined four cross-cutting themes to be considered throughout Fifth Assessment research:

- Governance
- Economics and financing
- Traditional knowledge(s)
- Monitoring and evaluation

**What *additional* general themes are important to consider within each of the Fifth Assessment Regional Synthesis Reports?**



# *Fifth Climate Change Assessment*



## **THANK YOU!**

***Email us:***

**[climateassessment@opr.ca.gov](mailto:climateassessment@opr.ca.gov)**

***Learn About the Fourth Assessment:***

**<http://climateassessment.ca.gov/>**

***Track Updates and Announcements:***

**<https://opr.ca.gov/climate/icarp/climate-assessment/>**





# Item 8 Public Comment



# Item 9 | Extreme Heat Workshop



---

# 9a: Extreme Heat and Community Resilience Program

---

EXTREME HEAT WORKSHOP

---





# Extreme Heat Overview

---

- Extreme heat impacts
  - California communities, natural systems, & economy
  - Disproportionate impacts on vulnerable communities
- Amplified by urban heat island effect
- Increasing in frequency & severity as a result of climate change

# Extreme Heat and Community Resilience Program (EHCRP)



OPR, through ICARP, received funding in the state budget to support an EHCRP

Funding aims to:

- ❖ Support local, regional, & tribal efforts to prevent & mitigate the impacts and public health risk of heat
- ❖ Invest in local, regional, & tribal heat reduction & mitigation efforts through planning & implementation



# Key Findings from Prior Extreme Action Plan Engagement



Extreme heat...

Severely impacts public health & safety (24%)

Exacerbates existing inequities (18%)

Increases the threats of wildfire, drought, & poor air quality (12%)

Burdens energy infrastructure (9%)

Threatens the health of natural systems (7%)

Has economic costs (8%)

# Key Findings from Prior ICARP Engagement

---



- ❖ Meet organizational needs through eligible costs & activities
- ❖ Connect planning grant activities to implementation funding
- ❖ Increase accessibility of the grant application process



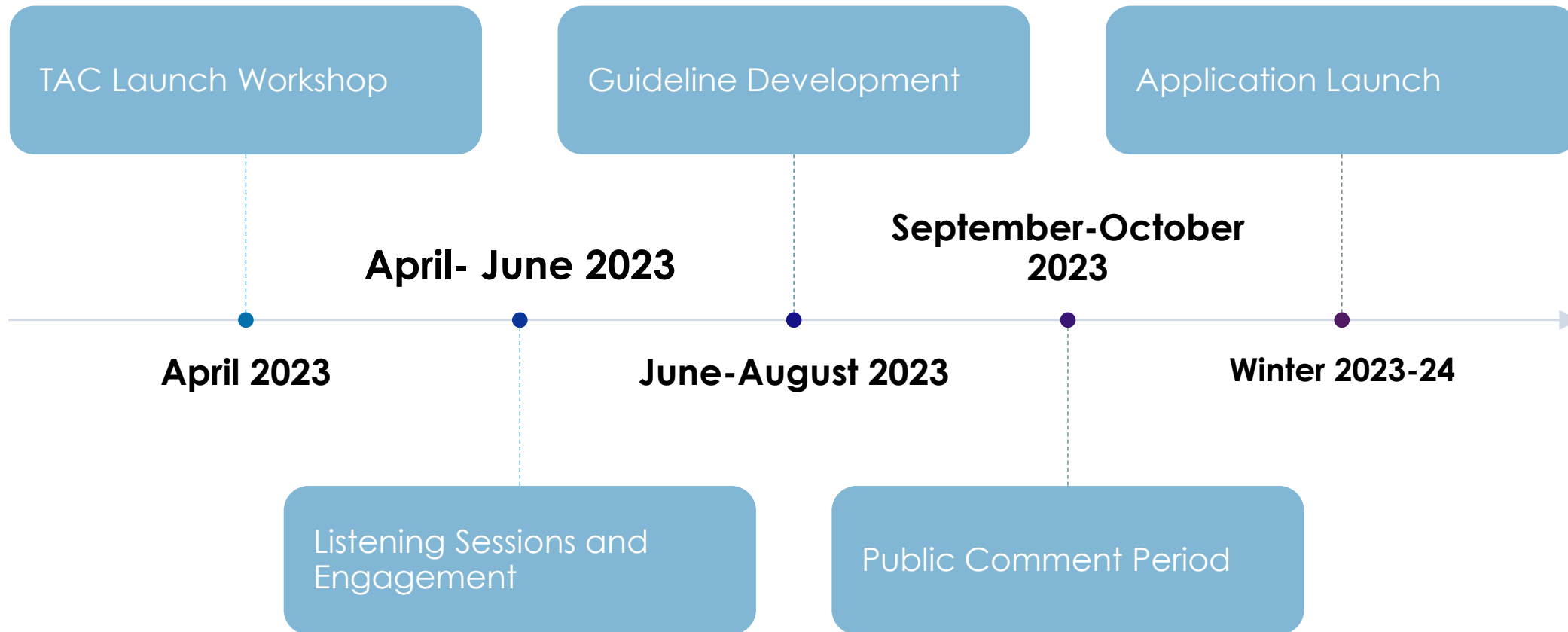
# Breakout Group Questions

---

- ❖ What type of extreme heat planning and implementation activities could this program support? What obstacles are in place that prevent communities who are vulnerable to extreme heat from implementing these activities?
- ❖ The budget language for this program requires multi-stakeholder partnerships. What partnerships and collaborations do you think are needed for a project's success?
- ❖ How can this funding work in coordination with other state investments? What opportunities exist to align this program so recipients can leverage other funding opportunities?



# Tentative Timeline





# Thank you!

---

Abby Edwards  
*Manager- Adaptation Planning Grant  
Program*  
[abby.edwards@opr.ca.gov](mailto:abby.edwards@opr.ca.gov)

Allie Larman  
*Assistant Planner- Extreme Heat and  
Community Resilience Program*  
[allie.larman@opr.ca.gov](mailto:allie.larman@opr.ca.gov)



Post Workshop  
Poll



Listserv Sign Up



---

# 9b: Extreme Heat Awareness Campaign

---

EXTREME HEAT WORKSHOP

---



# Office of Community Partnerships and Strategic Communications

---

**ICARP TAC** | April 14, 2023

Yumi Sera, Executive Director



# About the Office of Community Partnerships and Strategic Communications

The Office of Community Partnerships and Strategic Communications (OCPSC) manages the State's highest priority community engagement and public awareness efforts including COVID-19 vaccines, water conservation and extreme heat.

The Office works with the respective agencies and departments to help inform campaign efforts and supports greater coordination and collaboration within state government.

- Builds upon models developed through Census 2020 and Vaccinate ALL 58 COVID-19 vaccine campaigns
- Housed within the Governor's Office of Planning and Research (OPR)



# Extreme Heat Public Awareness Campaign

OCPSC is charged with **implementing a public awareness campaign to bolster preparedness of vulnerable Californians before and during extreme heat events**

OCPSC will launch rapid response campaigns by supporting:

- Media campaign and message / content development
- Outreach through a network of trusted community messengers

# Discussion Questions

1. How can we leverage and support your efforts in the communities where you work?
2. What information could you share about your communities (population or geographic area) that would be useful for the campaign?
3. What channels of communications and outreach approaches do you find most relevant and effective to reach the most vulnerable communities?
4. What is the best way to provide you information when we launch our campaign?



# Item 9b Public Comment



---

# 9c: Gaps & Opportunities Panel

---

EXTREME HEAT WORKSHOP

---

# Extreme Heat and Livestock

Annette Jones, DVM

State Veterinarian and Director

Animal Health and Food Safety Services

California Department of Food and Agriculture

# Outline

- Animal Agriculture in California
- Adaptation
- Problem





# California Agriculture

- Most abundant supply of crops and livestock in the country
- DIVERSE farms and ranches
- Most valuable product: Milk
  - ❖ 19% of national supply; 1,200 farms (2-3% decline every year)
- Other major types of ranchers:
  - ❖ Cattle, poultry, aquaculture, sheep, swine



# Dairy



- U.S. Rank: 1 (19%)
- 1,164 cow dairy farms in 34 counties
  - ❖ Average: 1,400 milking cows
  - ❖ Range: 10 to 9,000 milking cows
- Also goat (45) and sheep (7), water buffalo (3)
- Tulare, Merced, Stanislaus, Kern, Kings



# Beef Cattle



- U.S. Rank: 7 (5%)
- 12,000 commercial cattle ranches
  - 10,000 have less than 100 cattle
- Tulare, Fresno, Imperial, Merced, Kern



# Poultry



- U.S. Rank: top 10, varies by commodity
- 800+ large ranches; Uncounted backyard to medium size
- Fresno, Merced, Stanislaus, Kings, San Joaquin, San Bernardino, Kern, Riverside (eggs), San Diego (eggs)



# Sheep



- U.S Rank: 2 (10%)
- Fresno, Solano, Kern, Imperial, Merced
- Lambs, wool and vegetation control
  - ❖ Inch-wide, self-propelled lawnmowers → controlled vegetation without the use of costly herbicides and gas powered machinery, better control of invasive weeds that are rapidly engulfing millions of acres and reduced fuel for wildfires



# Swine

- U.S Rank: 29 – Very few pig farmers in CA
- Fresno, Tulare, Stanislaus, San Bernardino, Sutter



# Numbers

- Cattle: 8.1 million
- Goats and Sheep: 666 thousand
- Turkeys: 6 million
- Broilers: ALOT
- Layers: 14 million



# How is routine mortality handled?

(Regardless of species, all animals experience illness and death)

- **Rendering**
- Landfill
- Burial
- Composting





# Extreme Heat

- Stewards understand animal purpose, but live everyday responsible for their care
- Unusual event → business stress = economic, employees, **animals**
- Aware of environment and have adapted



The majority of the poultry farmers use barns to house chickens which provide optimal living conditions.

Modern housing has significantly increased the welfare of birds by increasing livability and decreasing stress levels.





When power is critical...



Feedlot:  
Shade, riders  
check every  
animal,  
hospital pen

---





Dairy – Shade, fans, nutrition, individual monitoring







When water is available, there are more cooling options.





# Problem

- Rendering is close to full capacity
  - Oil, meat by-product, retail waste, 4.5% of material is deadstock
- Limits on alternate mortality management
- Heat impacts rendering plants also
- Daily pick-ups
- Challenges with decomposition
- If all renderable product sent to landfill, all available space would be used in 4 years





# CALIFORNIA FARMWORKERS, HEAT, AND HEALTH AND SAFETY MEASURES

Edward Flores

Associate Professor of  
Sociology

UC Merced Community and  
Labor Center

# OBJECTIVE

The purpose of this presentation is to review the following:

- Agricultural work and worker disadvantage
- The threat of heat and warming to agricultural workers
- How existing California policies can make the agricultural industry more resilient

# CALIFORNIA AGRICULTURE STATISTICS

California is the nation's largest producer of agriculture.

In 2019, California accounted for \$50b in crop cash receipts.

This was 13.5% of the nation's \$371b total crop cash receipts.

*Source: California Agricultural Statistics Review 2019-2020.*



(Credit: Krobyn Beck)

# CALIFORNIA AGRICULTURAL WORKER PROFILE

California farmworkers have a profile of acute disadvantage.

Farmworkers typically live in large and low-income households.

Nearly 1 in 2 (48.4%) farmworker households live “below a living wage”—the amount it takes to avoid chronic housing and food insecurity.

Table 1. Characteristics of Farmworker Households (versus all others), California only

		Ag worker	All other
<i>Demographics</i>	Latino	92.8%	37.6%
	Immigrant	78.0%	33.3%
	Non-citizen	64.9%	15.1%
<i>Earnings</i>	Median salary and wages	\$20,197	\$35,345
<i>Household Size</i>	Persons per household	4.3	3.0
	Subfamily rate	0.24	0.11
<i>Household Structure</i>	Adults per household	2.9	2.3
	% of households with 1+ child	62.6%	39.3%
	% of households with 2+ children	44.1%	22.5%
	Children per household	1.4	0.7
<i>Worker Households</i>	% of households with 2+ workers	73.6%	51.2%
	Employees per household	2.3	1.7
<i>Socio-economic</i>	No internet access at home	20.9%	3.8%
	Home ownership rate	33.7%	53.2%
	% Households below living wage	48.4%	21.6%
	Total number of households	173,331	9,582,824
	Total number of workers	242,820	17,847,579

Source: UC Merced Community and Labor Center analysis of IPUMS- American Community Survey 2019 data

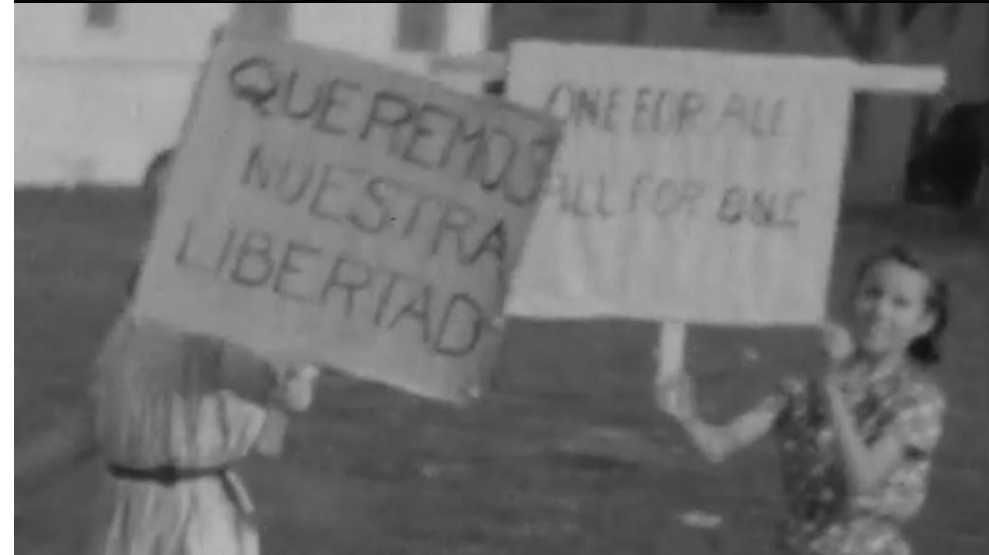
# WORKER DISADVANTAGE: HISTORY

California agriculture was modeled upon the southern plantation (Arax and Wartzman 2005).

Modern worker protections excluded agricultural workers and domestic workers

- The 1935 National Labor Relations Act
- The 1938 Fair Labor Standards Act

*Credit: Madera County Library, California History and Family Research Room*



# WORKER DISADVANTAGE: PRESENT

Today, California farmworkers still lack many rights.

- Many are immigrant, non-citizen and undocumented.
- The undocumented do not have access to unemployment insurance.
- Farmworkers may hesitate to report non-compliance with wage and hour violations or health and safety standards.

This has allowed farmworkers to remain vulnerable to unsafe working conditions amid record-breaking heat waves.





# CLIMATE CHANGE: CURRENT CONDITIONS

California has experienced several record-breaking heat events in recent years.

Such high temperatures are a major occupational hazard to farmworkers.

Strenuous exercise during temperatures above 80 degrees may lead to heat illness and death.



(Source: Dreamstime/tribune)

# CLIMATE CHANGE: FUTURE THREATS

Climate change will continue to make agricultural work more dangerous. The number of days agricultural workers spend in unsafe heat levels is projected to double by mid-century (Tigchelaar, Battisti, and Spector 2020).



(Credit: Cronkite News, Heat, smoke, pandemic: Dangers multiply for farmworkers in 2020, Sept. 28, 2020)

# CAL/OSHA HEAT STANDARD

Cal/OSHA has one of the nation's few heat standards. The heat illness prevention (§3395) requires that all outdoor employers have:

- A written heat illness prevention plan
- Monitoring of hot days with a thermometer
- On days 80 degrees or hotter, shade for all workers during breaks
- When 95 degrees or higher a 10-minute cool-down rest every two hours; and a co-worker to monitor one for heat illness



(Credit: Andia/Universal Images Group via Getty Images)

# HEAT STANDARD NON-COMPLIANCE

However, many California employers—and many of the state's 5,791 labor contractors—are unaware of the heat standard.

In 2017, Cal/OSHA conducted 1,495 inspections that resulted in citations for unsafe heat load conditions (Public Citizen 2018)



(Credit: Sandy Huffaker)

# US OCCUPATIONAL ILLNESS, INJURY AND ACCIDENTS

In 2019, US farmworkers experienced **183 deaths** resulting from occupational illness, injury, and accidents. (All workers experienced **5,333** deaths.)

In 2019, US farmworkers experienced **1.5x the nonfatal injury rate** (130.5 per 10,000) of all workers (86.9 per 10,000).

*Source: Bureau of Labor Statistics*



(Credit: Al Seib)

# CA OCCUPATIONAL ILLNESS, INJURY AND ACCIDENTS

In California in 2019, farmworkers' nonfatal injury rate (6.0 per 100,000 FTE) was nearly **2x** that of all private sector jobs (3.2 per 100,000 FTE)

In California in 2019, agricultural workers accounted for **10.6%** (48 of 451) **worker deaths, despite only comprising 1.4% of all workers.**

*Source: Bureau of Labor Statistics*



(Credit: Len Wood)

# HEAT-RELATED DEATHS REMAIN UNDERCOUNTED

However, heat-related deaths are highly under-counted.

Case studies suggest that death may not occur until after a shift is over, and that underlying health problems may disguise the role of heat in occupational deaths.

Experts have noted there is no accurate figure for heat-related deaths (i.e. [EPA 2021](#)).



(Credit: Patrick T. Fallon)

# FARMWORKER HEALTH STUDY: OVERVIEW

The UC Merced Farmworker Health Study was the largest-ever academic survey on the health of farmworkers.

Questions ask about climate adaptation including topics such as:

- Employer compliance with the California heat standard, wildfire standard, sanitation



(Credit: David Rodriguez)



# FARMWORKER HEALTH STUDY: EXPOSURE

The UC Merced Farmworker Health Study found hundreds of cases of non-compliance with climate-related worker safety standards.

Nearly half (43%) of respondents said their employer had no posted heat plan.

**Table 13b. Employer Compliance with Workplace Health and Safety Standards**

<i>Heat Standard</i>	Employer never:	
	Provided Heat Illness Prevention Plan	43%
	Monitored temperature on hot days	20%
	Monitored for heat illness when >95 degrees	22%
	Provided enough shade during breaks when >80 degrees (Respondent never) received heat-related illness training	15%
<i>Pesticide Training</i>	Applied pesticides	9%
	Did not receive training on use of pesticides	25%
<i>Wildfire Smoke</i>	Respirators lacking but "always" needed	32%

Source: UC Merced Community and Labor Center analysis of Farmworker Health Survey 2021-2022.

# FARMWORKER HEALTH STUDY: COMPLIANCE

One in three (36%) said they would be unwilling to report employer non-compliance that they witnessed.

Among those, two in three (64%) said they would be unwilling to report due to fear of retaliation (such as job loss, deportation).

**Table 13c. Employer Compliance with Workplace Health and Safety Standards**

<i>Filing Reports</i>	If witnessed non-compliance, unwilling to file a report	36%
	Unwilling to file due to fear of retaliation	64%

Source: UC Merced Community and Labor Center analysis of Farmworker Health Survey 2021-2022.

# POLICY RECOMMENDATIONS

Our report ends with several policy recommendations for making agricultural work more resilient, including:

- Continue to invest public resources in protecting workers' rights.
- To increase or align public investments (e.g. “High Road” economic development, food and agricultural subsidies) to raise agricultural work standards.
- Expand access to the economic safety net.

The background of the slide is a blurred photograph of a public meeting. Numerous people are seated at long tables covered with white cloths. The room has large windows in the background, and the overall atmosphere is that of a formal public gathering.

# Item 9c Public Comment



# Item 10 | General Public Comment

# General Public Comment Process

---

1. The Council will hear public comments for each agenda item, and general comments unrelated to agenda items at the end of the meeting.
2. The council Chair will call on you in the order your comment was received by ICARP Staff.
3. Prior to making your comments, please state your name for the record and identify any group or organization you represent.
4. **Online participants:** please use the Zoom “raise hand” function.
5. **Phone participants:** please press \*6 to “raise your hand.”



# Item 11 | Closing, Future Agenda Items, & Meeting Adjourned



# Next Meetings

---

Q2: June 30

Q3: September 29

Q4: December 15



Thank You!



- ∅ Sloane Viola, ICARP Council Program Manager [Sloane.Viola@opr.ca.gov](mailto:Sloane.Viola@opr.ca.gov)
- ∅ Text **ICARP** to **22828** to join the ICARP Newsletter & Announcements email list
- ∅ Email [icarp@opr.ca.gov](mailto:icarp@opr.ca.gov) for general ICARP inquiries