

December 8, 2017

Subject: ICARP Adaptation Vision Framework – defining vulnerability and public sector implementation actions and metrics

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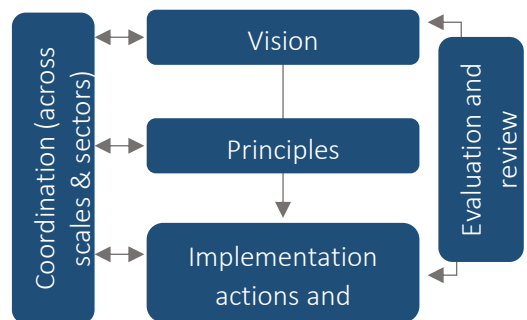
RECOMMENDED ACTIONS:

- *Approve next steps on developing definition of 'social vulnerability'*
- *Approve ICARP public sector implementation actions and metrics for state and local governments (regional implementation actions to be discussed during a subsequent meeting)*

BACKGROUND:

At its first meeting (March 27), the ICARP Technical Advisory Council (TAC) discussed establishing an adaptation vision for California. The goal was to develop a **vision** statement that expresses the characteristics of a resilient California, as well as **principles** that guide *how* adaptation actions should be implemented to achieve this vision. The Council also discussed the need to identify **measurable public sector implementation actions** that track progress over time. These components, outlined below, and as presented at the June 16, 2017, TAC meeting, make up the ICARP TAC's adaptation vision framework.

The vision *framework* is intended to serve as a blueprint for climate adaptation and resiliency efforts in California by articulating a clear vision of the future we want, the principles that will guide how we get there, and the public sector actions that need to be taken. The proposed framework includes (1) a vision statement, (2) guiding principles, (3) implementation actions, and (4) metrics. The framework also highlights the need to undertake (5) coordination across sectors and scales, as well as (6) ongoing evaluation.



To support this effort, the Council formed an Adaptation Vision & Principles Workgroup, which met four times between March 27 and December 8, 2017.¹ During these public meetings workgroup members:

- Developed the TAC's vision and principles, which were adopted at the September 15, 2017, meeting (provided for reference on page 8).
- Conditional to the adoption of the Vision and Principles, the TAC agreed to define climate vulnerability within the context of the adopted Equity Principle. **See pages 2-3 for a discussion of 'social vulnerability', presented for the full TAC's discussion.**
- Discussed public sector implementation actions and metrics, **the results of which are presented for the full TAC's discussion and *proposed* adoption (see page 4-7).**

¹ Meeting minutes from each of the public workgroup meetings are posted to OPR's website (<http://opr.ca.gov/meetings/tac/>) and can be accessed through the following links: [May 1, 2017](#), [July 18, 2017](#), [August 10, 2017](#), [October 26, 2017](#).

Integrating Vulnerability into the TAC Vision and Principles Discussion Materials

RECOMMENDED ACTION:

- *Approve next steps on developing definition of 'social vulnerability'*

California has established priority to protect the most vulnerable communities from the impacts of a changing climate and, in support of this policy priority, the ICARP TAC adopted the following principle:

*Principle 2. Prioritize actions that promote **equity**, foster community resilience, and protect the most vulnerable. Explicitly include communities that are disproportionately vulnerable to climate impacts.*

To provide additional clarity on what is meant by "vulnerable", the TAC has committed to defining this complex term by highlighting the factors of vulnerability that should be targeted by adaptation planning and investment decisions.

To support the TAC's efforts in this area, staff has provided the following summary of existing definitions of vulnerability, highlighting efforts to distinguish between physical and social dimensions.

Defining Vulnerability

According to Neil Adger, vulnerability is "the state of susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt."² This definition aligns with those developed by the Intergovernmental Panel on Climate Change and the US Global Change Research Program.³

The definitions all capture two dimensions of vulnerability:

- **Physical vulnerability:** Exposure to the risks and harms attributable to changing climate conditions, e.g., sea level rise or extreme heat, or changing social conditions, e.g., economic disruption or migration.
- **Social vulnerability:** An exacerbation of the risks or harms resulting from the inability to prepare for, respond to, or recover from changing conditions. Social vulnerability is a result of underlying socioeconomic and environmental conditions, and other conditions that limit the capacity.

Social vulnerability is captured in two terms defined in State statute:

- **Vulnerable Communities:** Communities that include, but are not limited to, women, racial or ethnic groups, low-income individuals and families, individuals who are incarcerated and those who have been incarcerated, individuals with disabilities, individuals with mental health conditions, children, youth and young adults, seniors, immigrants and refugees, individuals who are limited-English

² Adger, W. Neil. 2006. Vulnerability. *Global Environmental Change* 16: 268-281.

³ IPCC, 2007: The extent to which a person, community, or natural or social system is susceptible to sustaining harm or damage from climate change, and is a function of the magnitude of climate change, the sensitivity of the system to changes in climate and the ability to adapt the system to changes in climate (Intergovernmental Panel on Climate Change. Climate Change 2007: Working Group II: Impacts, Adaptation and Vulnerability).

IPCC, 2014: The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC Climate Change 2014: Impacts, Adaptation, and Vulnerability).

USGCRP: The degree to which physical, biological, and socio-economic systems are susceptible to and unable to cope with adverse impacts of climate change (US Global Change Research Program <http://www.globalchange.gov/climate-change/glossary>)

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proficient (LEP), and Lesbian, Gay, Bisexual, Transgender, Queer, and Questioning (LGBTQQ) communities, or combinations of these populations. (California Health and Safety Code Section 131019.5)

- **Vulnerable Places:** Places or communities with inequities in the social, economic, educational, or physical environment or environmental health and that have insufficient resources or capacity to protect and promote the health and wellbeing of their residents. (California Health and Safety Code Section 131019.6)

Social vulnerability is also often the focus of certain definitions. For example, James Lewis defines vulnerability as “a pervasive socio-economic condition; it is the reason why the poor and disadvantaged are the predominant victims of disasters.”⁴

Recommendation

Staff recommends that the TAC approve of the next steps (which are outlined in the next section) in developing the definition of “social vulnerability.” It is the recommendation of staff that the TAC focus their efforts to define “social vulnerability” for the following reasons:

- Through state investments in Cal-Adapt, there are existing, publicly available resources and datasets to define and understand physical vulnerabilities. While the underlying research and data that inform Cal-Adapt are evolving and dependent on continued investment in climate research, there is a strong existing body of work to define and measure physical vulnerability.
- There are a number of tools and data sets that measure social vulnerability, however, unlike with Cal-Adapt, there is not a single publicly accessible state resource that defines social vulnerability relative to climate impacts. While OPR and the TAC do not have the resources to build such a tool, the TAC's efforts to define social vulnerability could help inform other efforts.

Proposed next steps

- OPR staff will include information on how state, regional (tbd) and local implementation actions address conditions of “social vulnerability” in the proposed Implementation Action Report (see pages 4-7 for additional detail).
- At the September 15, 2017 meeting, the TAC requested additional information on existing efforts to develop climate impact metrics. OPR staff will request the Office of Environmental Health Hazard Assessment (OEHHA) to provide the TAC with an update on the 2017 Update to the Indicators of Climate Change in California. Staff anticipates this presentation at the early 2018 TAC meeting after the updated report is released.

Questions for ICARP TAC consideration and feedback:

1. Does the Council support the staff recommendation to focus on “social vulnerability”?
2. Are there components of the Climate Justice Working Group definition that should be incorporated into the TAC's definition of vulnerability?
3. Does the Council have feedback or modifications to the proposed next steps?

⁴ Lewis, James. Development, Vulnerability and Disaster Reduction; Bangladesh Cyclone Shelter Projects and Their Implications. Reconstruction After Disaster: Issues and Practices. Ed. Awotona, Adenrele. Chapter 4, page 46. 1997.

Public Sector Implementation Actions and Metrics Discussion Materials

RECOMMENDED ACTION:

- *Approve ICARP public sector implementation actions and metrics for state and local governments (regional implementation actions to be discussed during a subsequent meeting)*
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The following proposal outlines a series of public agency implementation actions that should be undertaken to achieve the TAC's adaptation vision and to meet current statutory adaptation requirements for state and local governments.

Each of the proposed implementation actions includes (1) a corresponding goal or metric to evaluate against a 2018 baseline, (2) a brief summary of existing tracking mechanisms, and (3) linkages to existing legislative and executive order requirements.

Implementation actions

It should be noted that the current proposal does not include implementation actions for regional public agencies; OPR staff are working to identify a set of proposed actions at this scale. It is the intent of staff to bring this information to the TAC at a subsequent meeting in early 2018.

Implementation Action Update process

The proposed implementation actions should also be considered as a starting point since they only focus on *output* metrics and do not provide insight into the quality of implementation actions – or *outcomes*. Because of this, OPR staff propose that the implementation actions and metrics be reevaluated and updated by the TAC at regular intervals to ensure they are reflective of the evolving state of practice of adaptation in California.

Staff recommend implementation actions and metrics be reviewed and discussed by the TAC in advance of the data collection process for each implementation action.

- For state agency implementation actions, the sustainability roadmap template, administered by the Government Operations Agency, would be brought to the TAC for input before it is sent out to state agencies.
- For local government implementation actions, the TAC will provide input into the Annual Planning Survey, administered by OPR, to ensure the adaptation-related questions posed to local governments align with the TAC's implementation actions and metrics.
- A similar process will be established for the regional implementation data collection process, once actions are identified.

Reporting

OPR staff will develop an "implementation tracking report" that will be hosted on the ICARP clearinghouse. Over time the report can include longitudinal trends on public agency adaptation efforts, as well as more outcome-based metrics. OPR will issue its first implementation action report in late summer 2018, after results from the Annual Planning Survey and Sustainability Roadmaps are compiled.

California Governor's Office of Planning and Research
 Integrated Climate Adaptation and Resiliency Program (ICARP)

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| SCALE | IMPLEMENTATION ACTION | GOAL | Metric | FOCUS OR CLIMATE IMPACT | FREQUENCY | TRACKING MECHANISM |
|-----------------|--|---|-----------------------------------|--|----------------------------------|--|
| STATE | Executive Order B-30-15 | Pursuant to EO B-18-12, all State agencies and departments with state-owned or leased facilities prepare and submit Sustainability Roadmaps to the California Government Operations Agency. Beginning in 2017, these roadmaps will include data on climate impacts and guided discussion of climate risk, in accordance with the guidance developed under EO-B-30-15. | Number of sustainability roadmaps | <p><u>Facility-level discussion/ review of climate risk and vulnerability for existing facilities, including:</u></p> <ul style="list-style-type: none"> • Extreme Heat Events • Precipitation • Sea Level Rise • Consideration of Disadvantaged Communities • Urban Heat Islands <p><u>Planning and Funding Programs</u></p> <ul style="list-style-type: none"> • Integration of climate considerations in Department Planning • Engagement and Planning Processes • Funding Programs | Every 2 years (starting in 2017) | <p>Government Operations Agency (GovOps) <i>Sustainability Roadmap</i> Process.</p> <p>Roadmaps will be publicly accessible on the Sustainability dashboard. http://www.green.ca.gov/</p> |
| REGIONAL | TBD – OPR staff will bring proposed regional implementation actions convene a meeting with MPOs to identify existing actions and metrics. | | | | TBD | TBD |

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| SCALE | IMPLEMENTATION ACTION | GOAL | Metric | FOCUS OR CLIMATE IMPACT | FREQUENCY | TRACKING MECHANISM |
|---|--------------------------------------|--|---|---|---|---|
| LOCAL | Senate Bill 379 | All cities and counties will have incorporated adaptation and resiliency strategies applicable to that jurisdiction into the safety element of their General Plan by 2021 or upon the next update of their LHMP. | Number of cities and counties | Incorporation of climate considerations in local planning documents | Annual (starting in 2018) | OPR Annual Planning Survey (APS) <i>2018 APS could include adaptation specific questions to track Safety Elements and related documents that are created to meet SB 379 requirements.</i> |
| | Local Hazard Mitigation Plans | All FEMA approved LHMPs incorporate adaptation and resiliency considerations | Number of Local Hazard Mitigation Plans | Incorporation of climate considerations in local planning documents | Annual (starting in 2018) | CalOES currently tracks the status of FEMA approved Local Hazard Mitigation Plans by County . <i>Possible inclusion of adaptation considerations in CalOES tracking approach; or inclusion in OPR Annual Planning Survey</i> |
| REPORTING APPROACH | | | | | FREQUENCY | REPORTING MECHANISM |
| Implementation tracking report compiled by OPR and hosted on the ICARP clearinghouse (the 2018 report will establish a baseline of public sector implementation actions). | | | | | State: biennial Regional: TBD Local: annual | ICARP adaptation clearinghouse and TAC webpage |

Proposed next steps

- OPR staff will bring regional implementation actions/metrics for future consideration in early 2018.
- In spring 2018, OPR will bring the draft Annual Planning Survey to the TAC for input and guidance to ensure the 2018 survey questions reflect the TAC's SB 379 implementation actions.
- OPR will request a presentation to the TAC from the Government Operations Agency once the Sustainability Roadmaps are completed and published.

Questions for ICARP TAC consideration and feedback:

1. Do adjustments need to be made to the state and local implementation actions prior to adoption?
2. Are there suggestions for regional implementation actions?

ICARP Technical Advisory Council
ADAPTATION VISION AND PRINCIPLES
Adopted September 15, 2017

Vision Statement

All Californians thrive in the face of a changing climate. Leading with innovation, California meets the challenge of climate change by taking bold actions to protect our economy, our quality of life, and all people. The state's most vulnerable communities are prioritized in these actions. Working across all levels of government, the state is prepared for both gradual changes and extreme events. Climate change adaptation and mitigation is standard practice in government and business throughout the state. California meets these goals with urgency, while achieving the following long-term outcomes:

- **All people and communities** respond to changing average conditions, shocks, and stresses in a manner that minimizes risks to public health, safety, and economic disruption and maximizes equity and protection of the most vulnerable.
- **Natural systems** adjust and maintain functioning ecosystems in the face of change.
- **Infrastructure and built systems** withstand changing conditions and shocks, including changes in climate, while continuing to provide essential services.

Principles

1. Prioritize **integrated** climate actions, those that both reduce greenhouse gas emissions and build resilience to climate impacts, as well as actions that provide **multiple benefits**.
2. Prioritize actions that promote **equity**, foster community resilience, and protect the most vulnerable.⁵ Explicitly include communities that are disproportionately vulnerable to climate impacts.
3. Prioritize **natural and green infrastructure** solutions to enhance and protect natural resources, as well as urban environments. Preserve and restore ecological systems (or engineered systems that use ecological processes) that enhance natural system functions, services, and quality and that reduce risk, including but not limited to actions that improve water and food security, habitat for fish and wildlife, coastal resources, human health, recreation and jobs.
4. **Avoid maladaptation** by making decisions that do not worsen the situation or transfer the challenge from one area, sector, or social group to another. Identify and take all opportunities to prepare for climate change in all planning and investment decisions.
5. Base all planning, policy, and investment decisions on the **best-available science**, including local and traditional knowledge, including consideration of future climate conditions out to 2050 and 2100, and beyond.
6. Employ **adaptive and flexible governance** approaches by utilizing **collaborative partnerships** across scales and between sectors to accelerate effective problem solving. Promote mitigation and adaptation actions at the regional and landscape scales.
7. Take **immediate actions** to reduce present and near future (within 20 years) climate change risks for all Californians; do so while also **thinking in the long term** and responding to continual changes in climate, ecology, and economics using adaptive management that incorporates regular monitoring.

⁵ The ICARP Technical Advisory Council is working to define "vulnerable" within the context of implementation action and metrics; the definition will be added to the adopted vision and principles once completed.