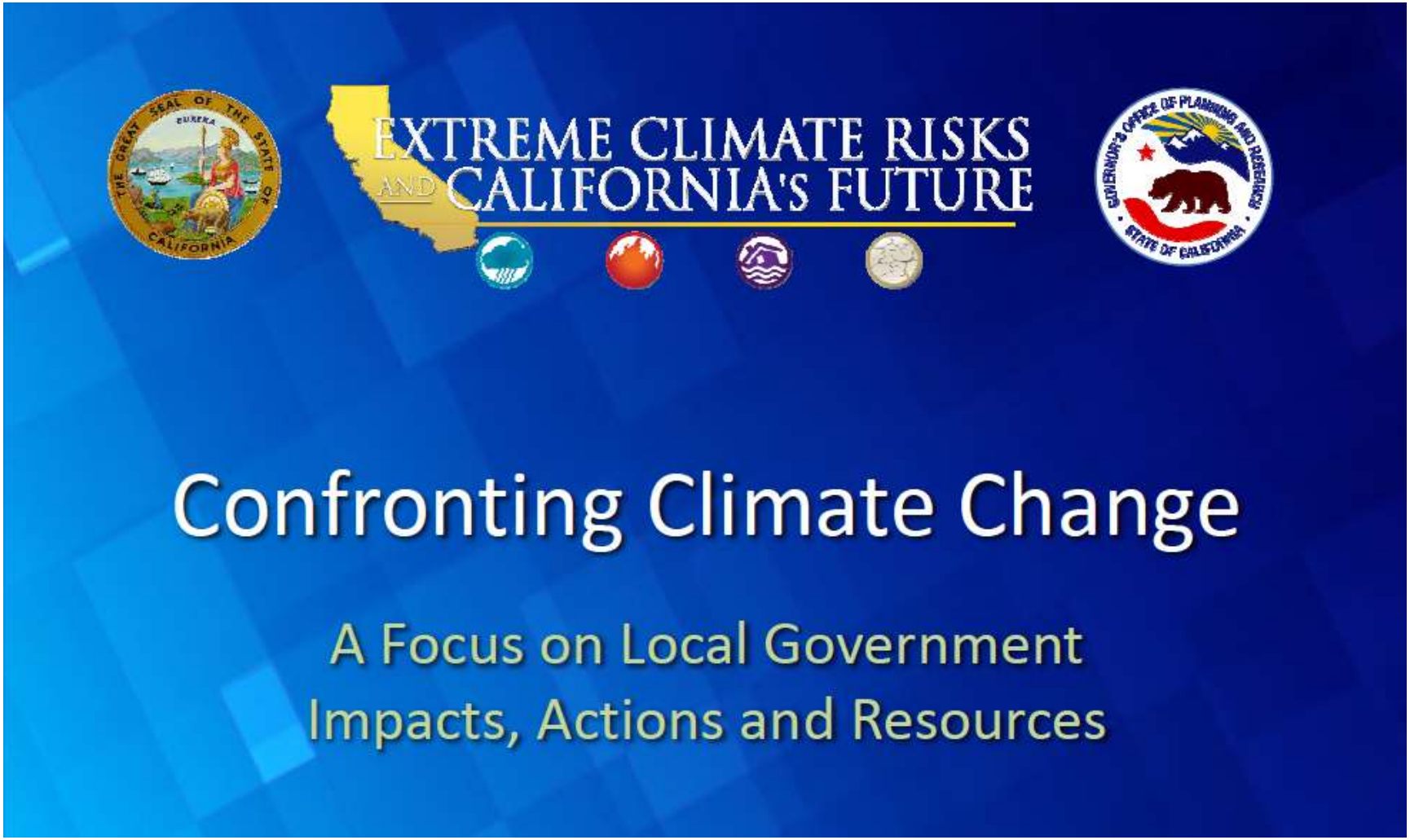
RESILIENT SACRAMENTO: REGIONAL ADAPTATION COLLABORATIVE

Kate Meis,
Associate Director

Public Health Climate Action Team Workgroup, September 26th, 2013

Local Government Commission

GOVERNOR'S OPR CONFERENCE, APRIL 2012



ALLIANCE OF REGIONAL COLLABORATIVES FOR CLIMATE ADAPTATION (ARCCA)

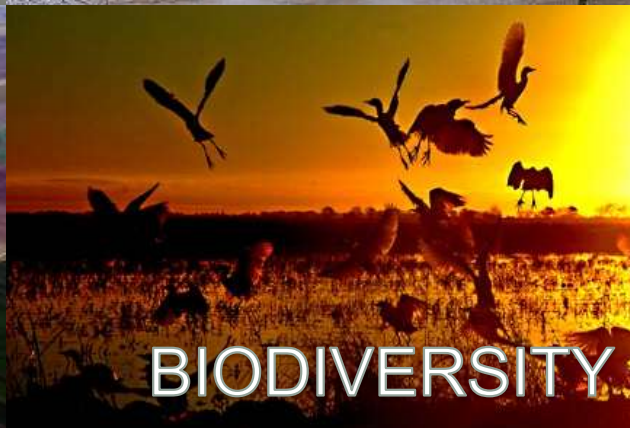
ARCCA was formed to prepare CA's urban centers for the emerging impacts of climate change, including extreme storm events, heat waves, droughts, and sea level rise.

- San Francisco Bay Area
- Los Angeles
- San Diego
- Sacramento

SAC READY: SACRAMENTO REGIONAL ADAPTATION COLLABORATIVE

- UC Davis Policy Institute for Energy, Environment and the Economy
- Sacramento Metropolitan Air Quality Management District
- Sacramento Area Council of Governments (SACOG)
- Greenwise Joint Venture
- Local Government Commission

RESILIENT SACRAMENTO



BROADENING THE PARTNERSHIP

Infrastructure
- SMUD
- PG&E
- Roseville Electric
- Cal ISO

Flood
- Sacramento Regional Flood Control Agency
- Sacramento Climate Partnership

Water
- Regional Water Authority

Fire
- CalFire

Health
- Public Health Departments
- CA Department of Public Health

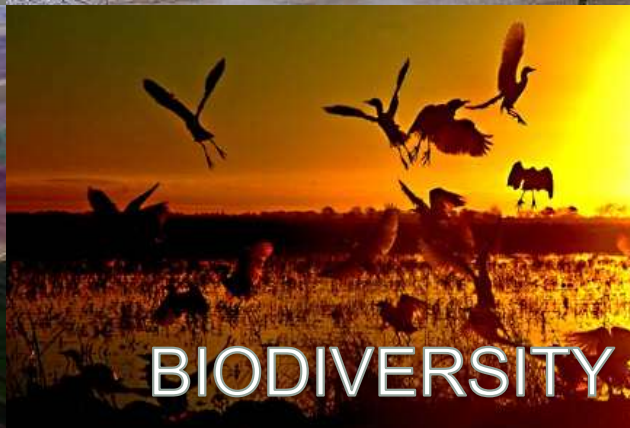
Agriculture
- CA League of Food
- California Farm Bureau Processors

Economy
- Chamber of Commerce

Multiple Sectors
- Emergency Responders
- Sacramento State
- Environment Justice Coalitions
- State Agencies (SGC, Resources, OPR)

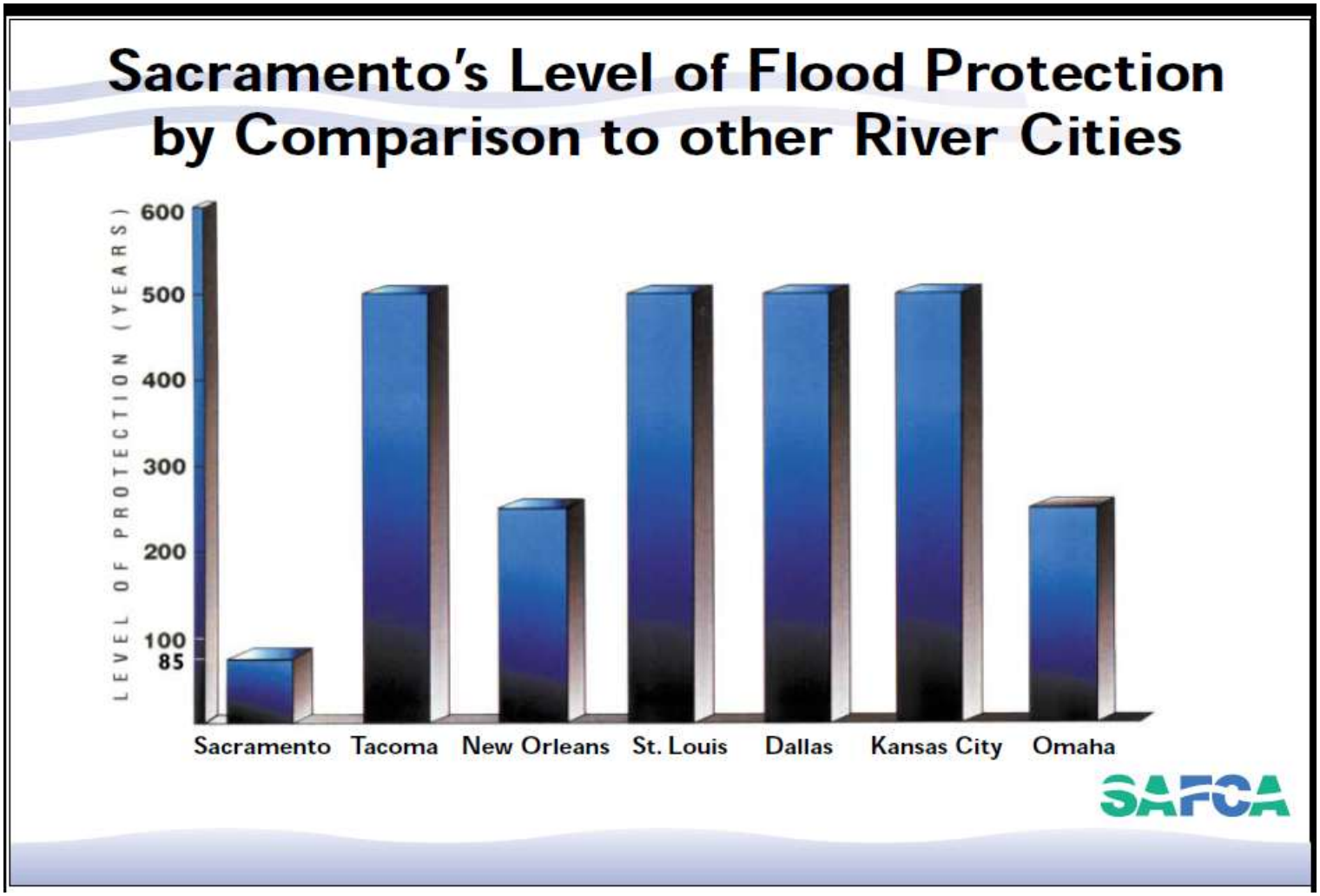
Planned
- Local Environmental Groups
- Insurance Agencies
- Local Businesses
- Non-profit Organizations
- Others?

RESILIENT SACRAMENTO

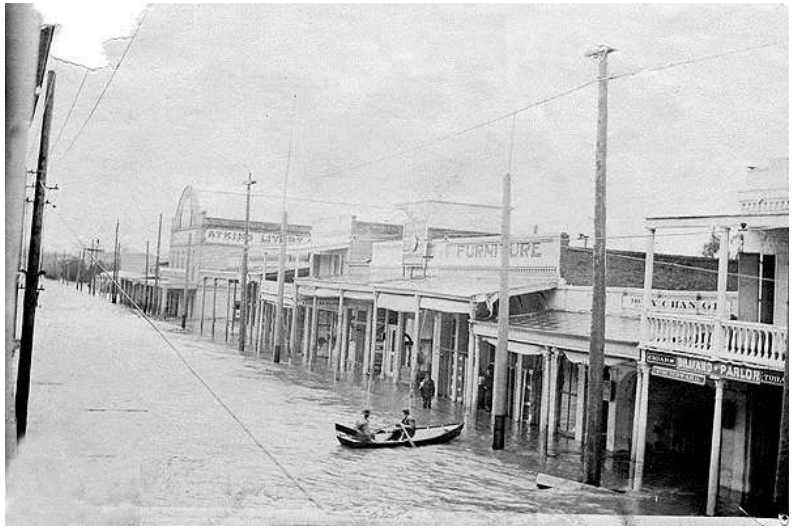


INFRASTRUCTURE

PRIMARY CONCERNS



1907 FLOODING



SAFCA
Sacramento Area Flood Control Agency

POTENTIAL IMPACTS TO SMUD INFRASTRUCTURE & OPERATIONS

Ambient Temperatures	• More extreme summertime high temperature events, including daytime and nighttime heat waves • Increased warm season electrical load and peak demand • Reduced thermal and hydroelectric generation • Extreme temperature and variability impacts on system reliability • Increasingly severe "one-in-ten" heat storms effects on overall system reliability • Less efficient operation of transmission and distribution systems, including decreases in facility ratings and loss of operating life
Wildfires	• Projected increase in wildfire frequency and intensity • Potential wildfire impacts to transmission and out-of-district generation sources
Wind Patterns	• Increases or decreases in wind energy production and timing • Increases or decreases in delta breeze cooling capacity
Regional Hydrology	• Effects of changes in temperature and precipitation on snowpack in the Sierra Nevada mountains • Changes in timing and volumes of streamflow and impacts on hydroelectric capacity
Flooding	• Sacramento flood threats • Localized impacts on electricity infrastructure • Indirect impacts on gas transmission infrastructure in the San Francisco Bay Delta region

STAKEHOLDER INPUT

Key Research

- SMUD: Adaptation report- to be released in May: Looked at wind, wildfire, flooding, precipitation
- PG&E: Study from 2008 on threats to the grid (snowpack, extreme weather, wildfire), series of reports (10-30 year focus plans looking at operational risks including temperature, rainfall run-off, storms)
- Roseville Electric: Roseville multi-hazard mitigation plan, specific plan that addresses wildfire
- Cal ISO: Most of their research is conducted by the CEC. They are focused on balancing the grid, transmission line scheduling and running the wholesale market for energy.

Key Needs

- SMUD: Research on air quality, health impacts, etc.
- PG&E: Connect to their work with local governments on energy efficiency/climate mitigation
- Roseville Electric: Wildfire risk to transmission lines; Mitigation strategies to combat intermittency issues with solar
- Cal ISO:
  1. Resources - climate change will make it more difficult to produce hydropower due to reduced snow pack, earlier runoff, and higher rates of evaporation.
  2. Forecasting - Change in temperatures changes demand, a few degrees has a huge impact on demand.
  3. Transmission Lines - More susceptible wind/wildfires, lose capacity in high temperatures.

PRIMARY CONCERNS

- Future energy infrastructure
  - Storage (water and electricity)
  - Funds/pricing
  - Land use
    - Active transportation
    - Tree canopies
- Educating the general public
- Flood bypass systems
  - Regional cooperation & compensation
- Water Supply
  - Conservation
  - Incentive programs
- Agencies out of sync

AGRICULTURE AND THE ECONOMY

PRIMARY CONCERNS

- Water*
  - Cost and supply
- Concerns about regulation*
  - Change discussion-monetize ghg reductions & carbon sequestration
  - Need benefit to think about system as a whole instead of individuals
  - Market driven approach
- Social Justice/Inequalities*
  - Mindful of the populations
- Changes in cycle of seasons (temperature & water)
- No mandate of reg planning for water supply
  - Nothing beyond specific plans
  - Need to consider earlier plan process
  - Modeling needs to look at the future not just historic
- Resources to adapt to CC
  - Money to local/regional level
  - Money for projects
  - Need federal/state support
- Funding
  - Proactive rather than reactive
- Education/outreach (x2)
  - Science/data
  - Resources available
  - Methods
  - Who
- Competition between urban/rural
  - Economic development depends on water
- Need to look at full spectrum of agriculture
  - Land
  - Processing plants
  - Industry cluster*
- Pair UC research and RUCS
  - Understand system-translate to individual operator
- Show value of open space/rural land
  - Flood plain potential
  - Carbon sink
- Determine who is affected
  - Stakeholders in agriculture realm to be reactive
- Find the correct messenger
  - Science based, good communicator
  - Local impacts
  - Trend data
  - Forecast data is questioned more
- Heat
  - Impact to production rate and workers
- Need for technology/efficiency/adaptable farming
  - More challenging for small growers
  - Make technology cost effective

STAKEHOLDER INPUT

Key Research

- Research on offsets on farmland is occurring but continues to be challenging. The top 10 crops are doing a lot of research on this but it isn't penciling out (California Farm Bureau)

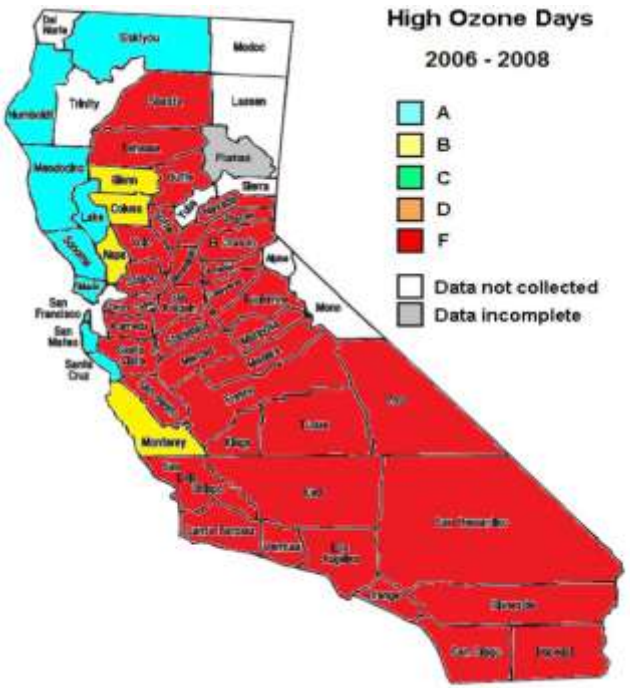
Key Needs

- Incentives- Need to determine how to do offsets on farmland (California Farm Bureau)
- Balance near and long term needs- Getting the attention of farmers about adaptation will be a challenge because it is a long distance issue. Water bridges short and long term needs (California Farm Bureau)
- Economic development opportunities for ex. Ag resiliency hubs being developed under Obama's climate change plan (California Farm Bureau)
- Identify vulnerability to plants/facilities (CA League of Food Processors):
  1. Energy: Food processors are huge consumers of energy, especially with the move toward more technology use. Loss of power leads to huge losses in revenue. Renewables and the reliability of the grid/intermittency is another concern.
  2. Water: Food processors are huge consumers of water, they need an ongoing source of potable water for their processing needs.

PUBLIC HEALTH

Stakeholder Input on Primary Concerns and Needs

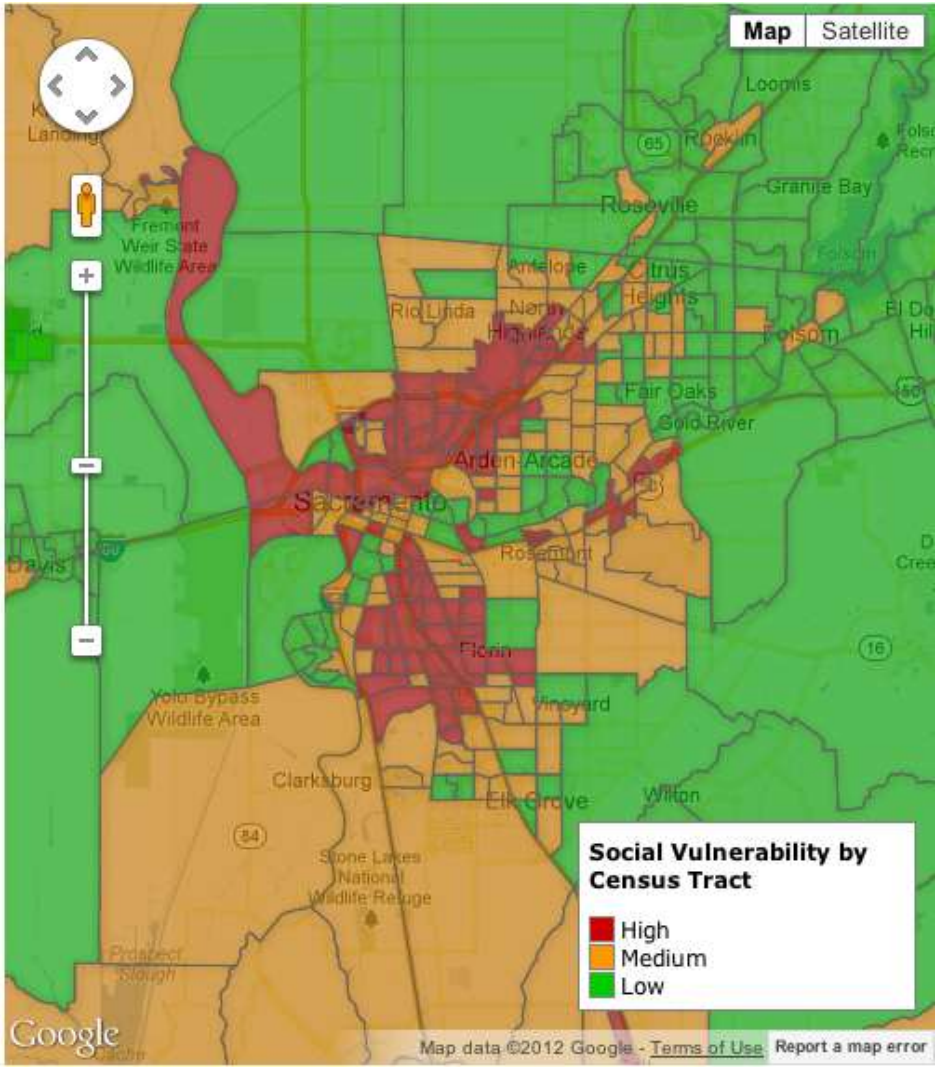
PUBLIC HEALTH IMPACTS

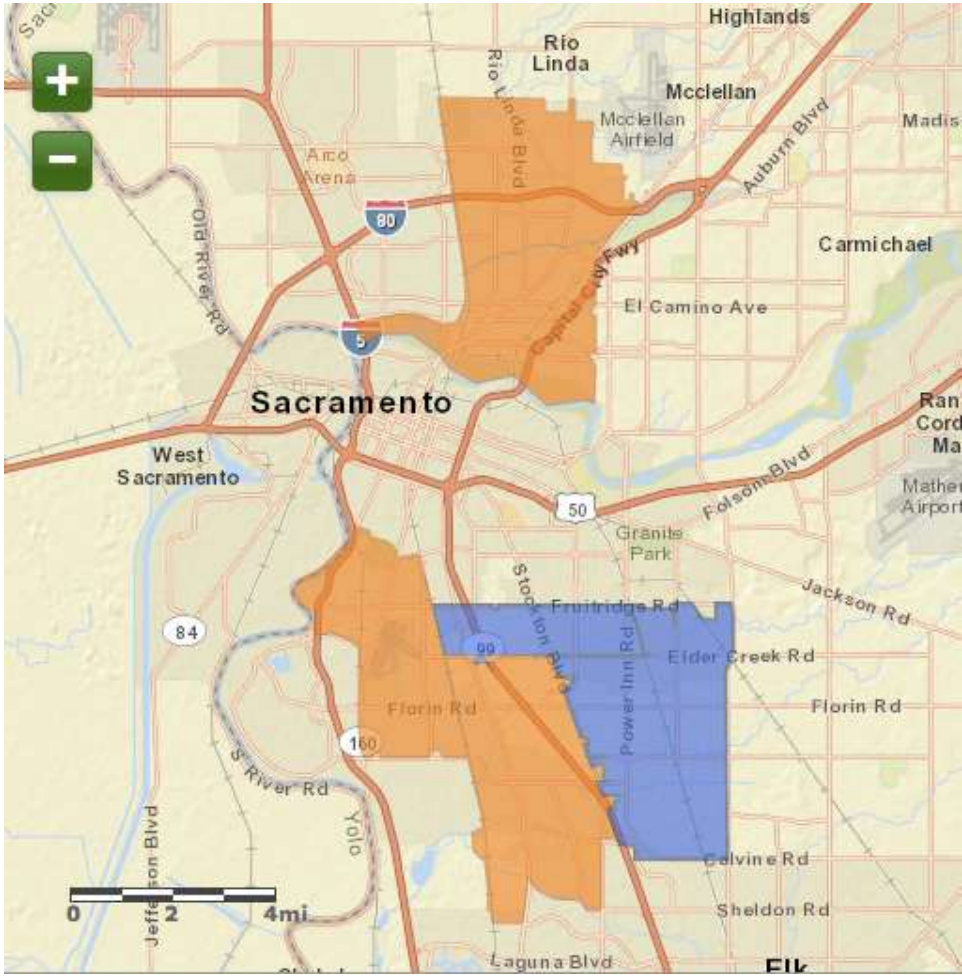


PRIMARY CONCERNS

- Lack of community awareness of risks
- West Nile Virus
- Out of date plans that don’t include climate change
- Lack of institutional continuity and training due to staff turnover
- Social media: Rumors & outreach/communications, hard to find information
- Need for preventative, proactive investment
- Can’t base on historical information, need to base on future forecasts/modeling
- Communication holistic impact to monetize and encourage preventative measures.
- How to build in recognition that we are thinking about long term benefits

SOCIAL VULNERABILITY





Source: Pacific Institute

Blue top 5%, Orange 6-10% in CA
Source: CalEnviroScreen

STAKEHOLDER INPUT

Key Research

- Research and response infrastructure for flooding (historical projections)

Key Needs

- Consider projected impacts on current response for flooding based on climate change
- Research and response for increase heat impacts
- Education on climate impacts to various parties and community groups (ex. Connecting volunteer efforts to plant trees to reduce urban heat islands, outreach to disadvantaged communities)

QUESTIONS FOR YOU

- Other critical health related issues we should be considering?
- Health-Climate Change research needs?
- Other groups that should be at the table?
- How can regional efforts like Resilient Sacramento best engage public health departments and health organizations?

For More Information:

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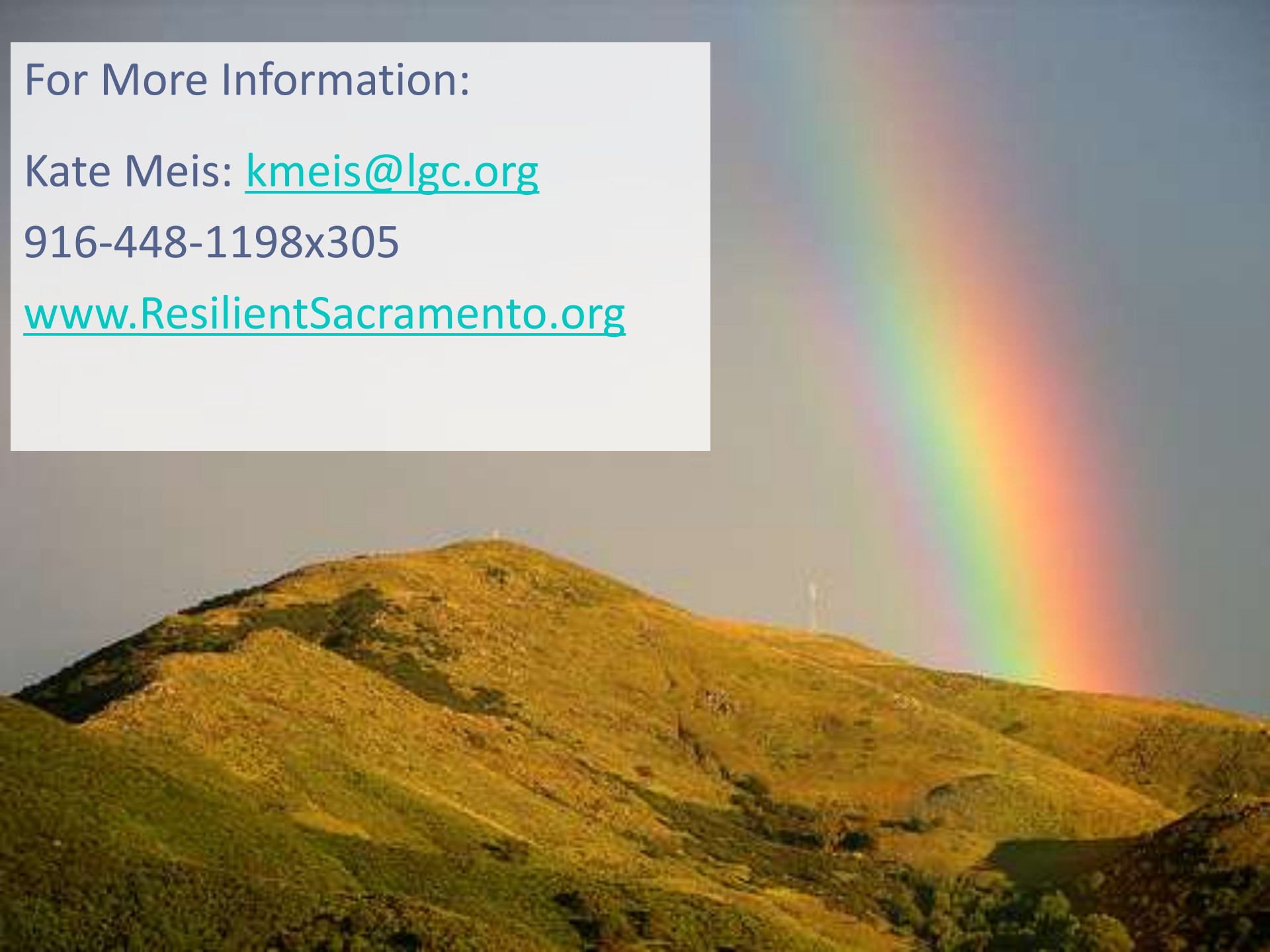
www.ResilientSacramento.org