



Core Services

Krout & Associates is a **progressive thinking**, Southern California based, full-service environmental strategic planning consultancy established to **assist you** with your challenging **climate change**, **public policy**, **environmental**, and **finite resource** management projects.

Key services include:

- climate change/adaptation
- energy efficiency
- green building
- public policy



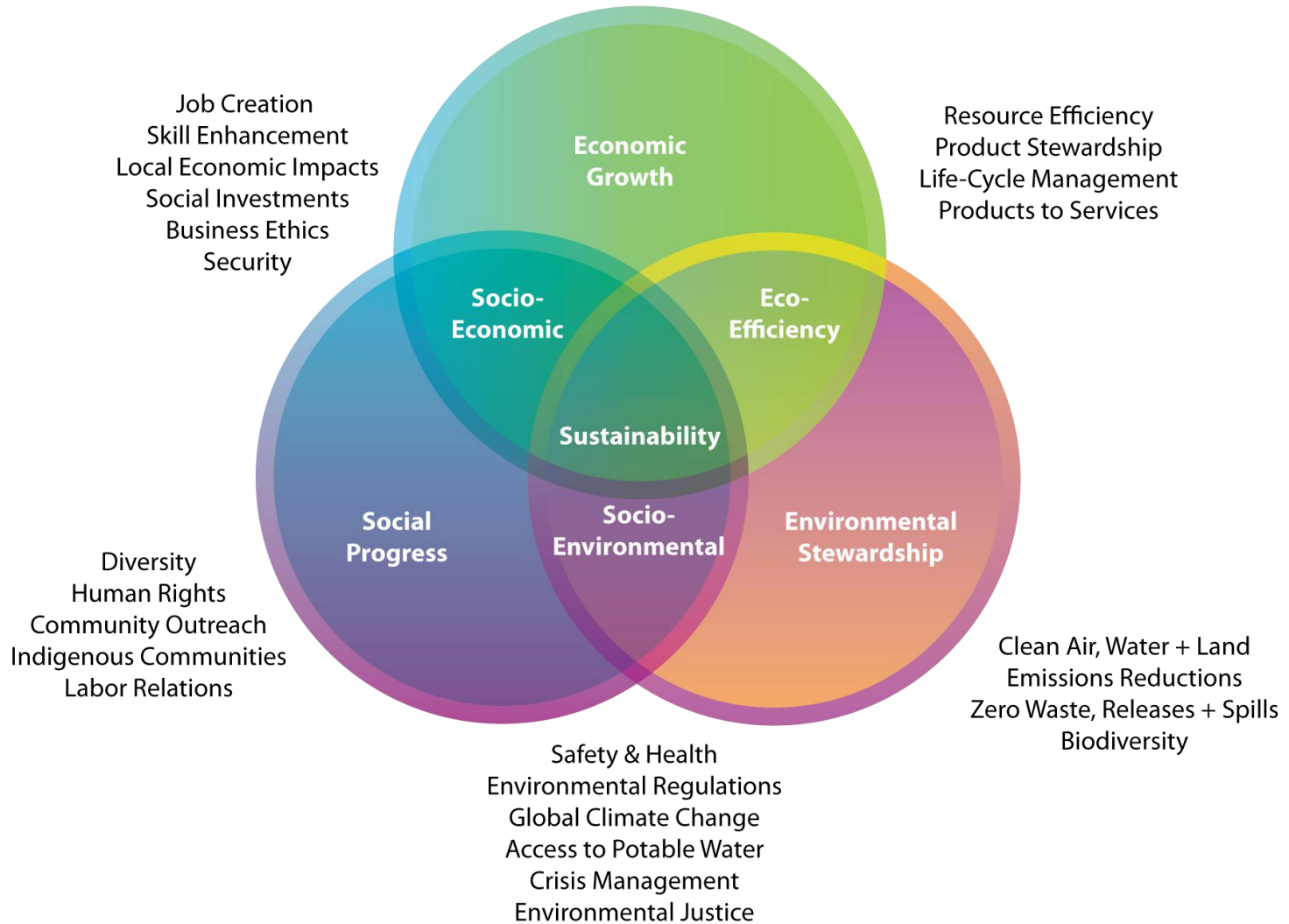
SUSTAINABILITY is a
MOVEMENT
not a **BUZZ WORD.**

Where do I start...?

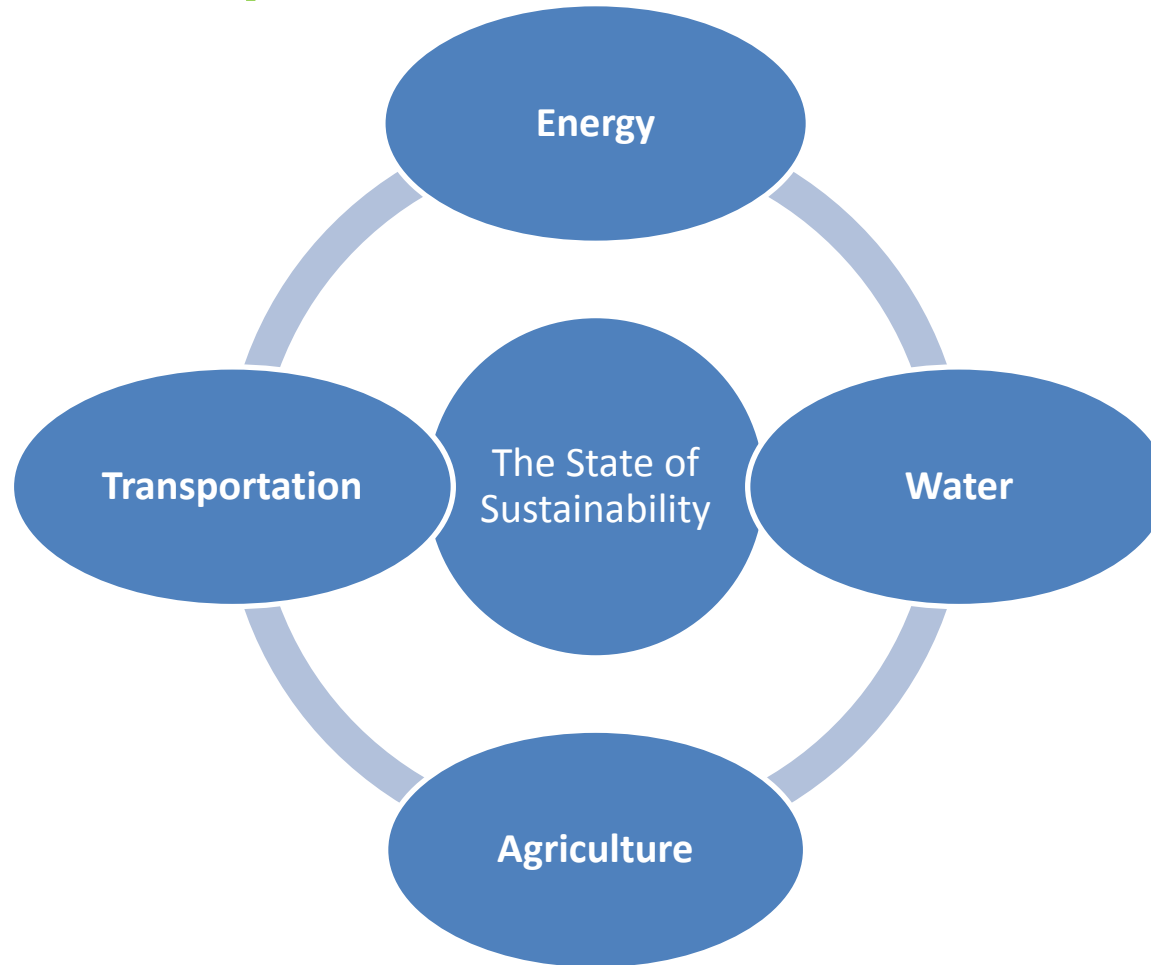


Sustainability Process

Innovation
Capital Efficiency
Risk Management
Margin Improvement
Growth Enhancement
Total Shareholder Return



California Sustainability: Progress Report



Sustainability & Energy

Energy Action Plan Update 2008 :

- Energy efficiency is California's top priority

Category	Accomplishments	Next Steps
Demand Response	Advanced metering installation	Adopt load management standards
Renewable Energy	Strong progress toward 20% renewables in 2010	Implement dynamic pricing rate design
Electricity Infrastructure	Resource adequacy framework for IOUs and POUs	Promote tech development for carbon capture
Electricity Market		Launch market redesign
Natural Gas	Established procedure for local gas transmission system expansion	Should California utilities enter LNG contracts?
Research & Dev.	Cool Roof and Efficient Lighting	Focus on energy efficiency
Climate Change	Implemented SB 1368	Recs for ARB on AB 32

Governor Brown 2012 State of the State speech, "California is leading the nation in creating jobs in renewable energy and the design and construction of more efficient buildings and new technologies...and California is positioned perfectly to reap the economic benefits that will inevitably flow."

Economics of sustainable energy:

- **Danger of the status quo:** “business-as-usual” demand and supply patterns will create greater reliance on imported energy and more vulnerability to price volatility
- **Benefits of sustainable practices:** If California achieves 50% renewable energy and 1.5% annual efficiency increases, this would yield 500,000 new FTE jobs (renewable energy is more “job intensive” than the traditional carbon fuel supply chain).

Sustainability & Water

California Water Plan Update 2013:

Water Plan Framework for Integrated Water Management and Sustainability



Sustainability & Agriculture

Sustainable Agriculture = Environmental Health + Economic Profitability

1. 2011- California Strategic Growth Council names AB 857 as a core focus: AB 857 promotes **urban infill** and **protecting California's agricultural resources**
2. Communicating with the agriculture industry about climate change forecasts is critical because temperature variations determine the yield and quality of California's crops
3. Best management practices including growing cultivars that succeed in variable climates, investment in irrigation infrastructure, and reducing GHG emissions from agriculture are essential to protect California's agricultural security

Economic implications for agriculture:

SPOTLIGHT ON WINE



\$3.3 billion lost projected in grape and almond industries

This rise is forecasted to eliminate 50% of California land that is suitable to premium wine cultivation

2° F increase by 2040

California is facing rising utility rates and increasing drought

Warming trend creates risk for farmers who must invest upfront in crops that have long term returns.

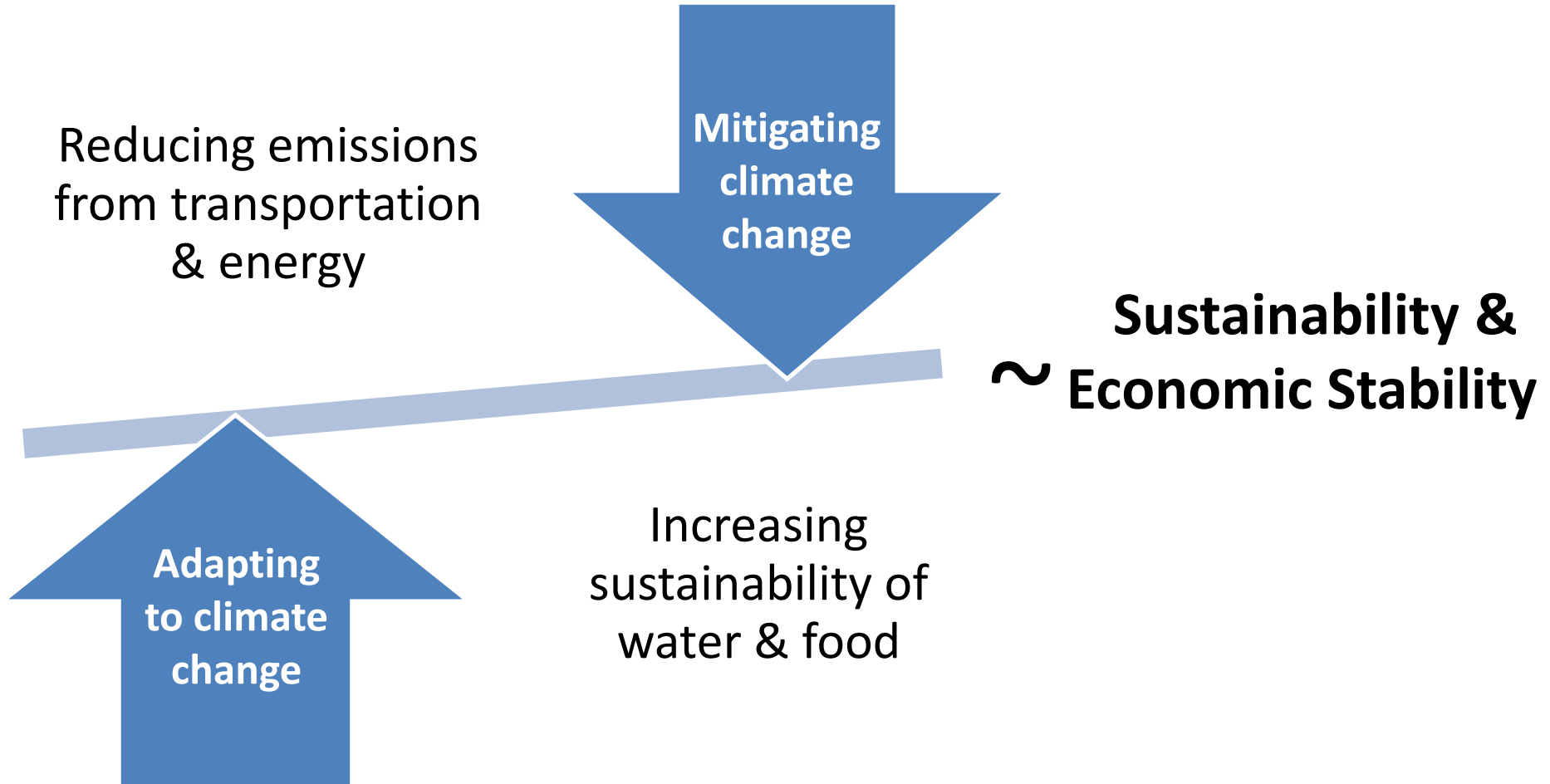
Sustainability & Transportation

Greenhouse gases from transportation are the largest source of emissions in California!



- One of the most promising options for reducing GHGs from transportation is increasing the prevalence of electric vehicles.
- Importance of smart growth and land use policies from local governments = energy efficiency
- By locating homes closer to workplaces, we can reduce the overall vehicle miles traveled in the state and increase use of public transport.

Climate change is significant to each sector:



Sustainability Today

- Public Opinion
- National & Local Policy
- Emerging Themes
- Climate Adaptation and Food Security Planning
- Lessons Learned



Public Opinion National & Local Policy

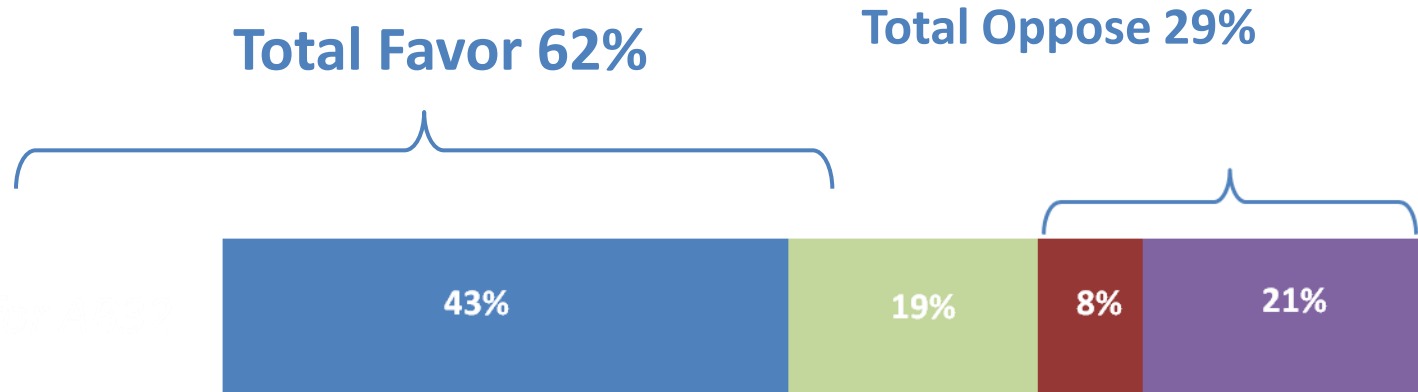
Where are we now?



Public Opinions on Climate Change

*Key Findings from A Countywide Voters Survey, August 10-18, 2010 Conducted by
Fairbanks, Maslin, Maullin, Metz & Associates – FM3*

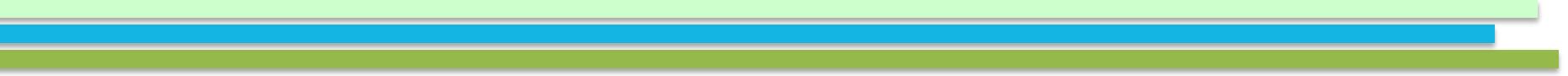
By more than a two-to-one margin, voters support the goals of AB 32- the Global Warming Solutions Act of 2006



Input provided by San Diego Foundation

National Energy Policy Context

- A discrete & unified U.S. energy policy **DOES NOT** exist
- Historically, major shifts in U.S. energy policy have been triggered by interruptions, and subsequent price increases, in crude oil supply
 - 1973 (Arab oil embargo)
 - 1979–80 (triggered by the Iranian revolution)
 - 1990 (associated with the Persian Gulf War)



Updated CEQA Amendments & GHG Emissions Thresholds

March 18, 2010:

- GHG emissions added to the list of environmental impacts that lead agencies must assess
- Requirement to assess GHGs, but amendments do not prescribe *significance thresholds*
- CEQA places responsibility on local air quality management districts to determine GHG significance

Quantitative Thresholds

Bright Line

- A numeric threshold for mass emissions based on a “gap” analysis
- Set at a level that will cover the majority of projects

Efficiency-Based

- Assesses the efficiency of a project on a per-capita basis or a “service population” basis
- Allows highly efficient projects that exceed the bright line threshold to meet overall AB 32 goals

Both methods can be used to quantify emissions and then compare to the numeric standards in AB 32 and SB 375.

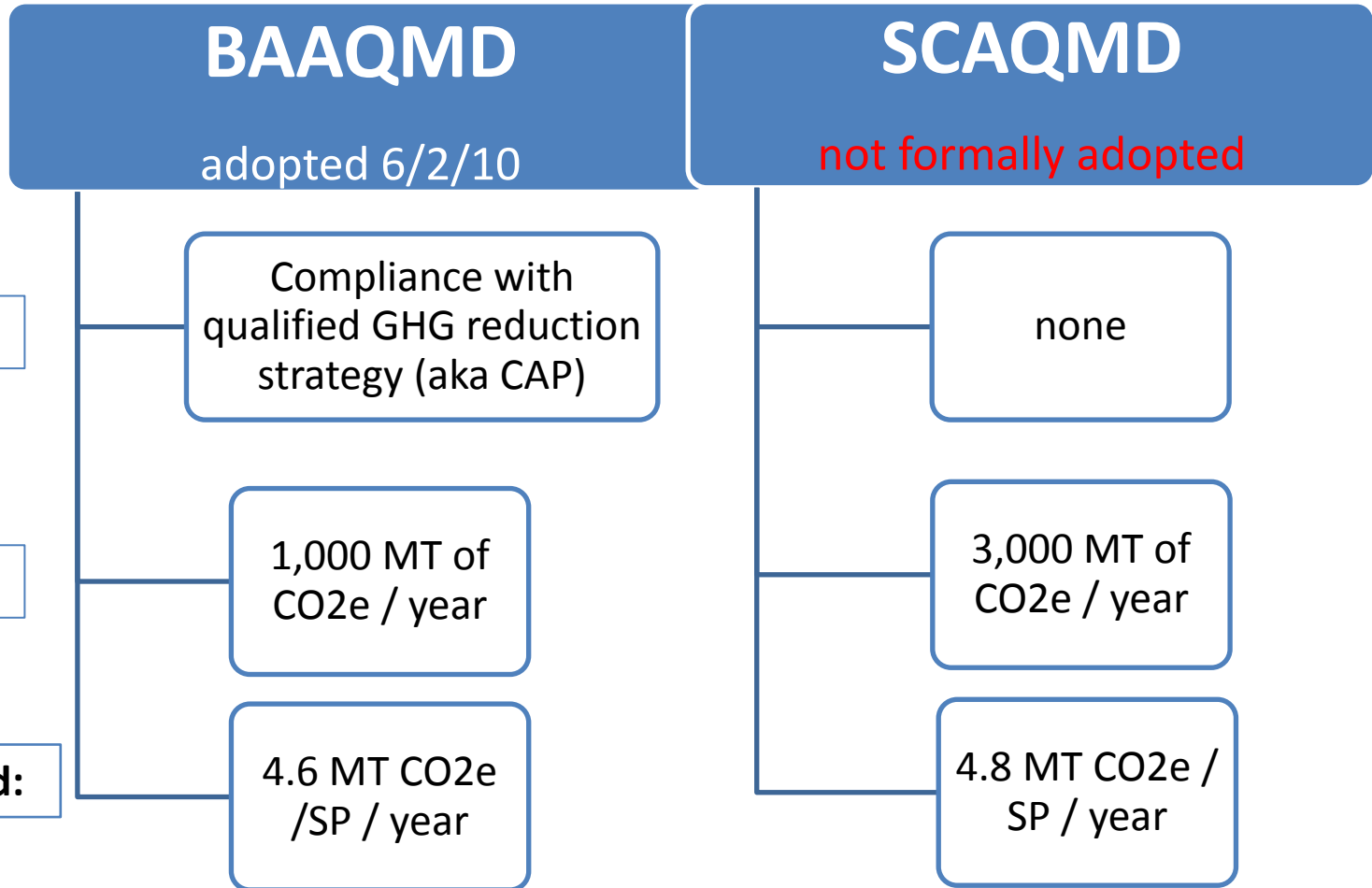
Qualitative Thresholds

Qualitative significance can be evaluated by testing for compliance with a [qualified GHG reduction strategy](#) or [Climate Action Plan](#)- a project must demonstrate that it will implement each relevant GHG reduction strategy set forth in the CAP.

To use a [CAP](#) as a threshold, a lead agency must be sure to include the following components in the CAP:

- 1) Emission reduction targets that are consistent with AB 32
- 2) GHG emissions must be quantified by geographic area, population density, and time
- 3) Reduction measures must apply to new development projects
- 4) Mechanisms for oversight and monitoring

Status of thresholds...



Advisory for southern California cities:

- Take a “multi-pronged” approach to thresholds- include both qualitative and quantitative methods
- Evaluate what reduction levels would constitute a “fair share” regional contribution to AB 32 targets
- Allow “tiering” from a Climate Action Plan- this encourages the development community to implement CAP measures

SB 375: Funding Challenges Ahead

- Recent state takeaways: spillover & redevelopment – fun times!
- SB 732 - \$90 million in new planning money—is it enough for 480 cities, 58 counties, & 18 COGs, CEQA included? We need a **sustainable source** of planning funds!
- What about funding for infill infrastructure gaps for GHG- reducing development?
- **Local officials need to make the case:** explain connection between storm water, sewer lines, and urban centers; or police infrastructure and safe neighborhoods

Emerging Themes

Where are we going
from here?



Emerging Themes

Adaptation Planning

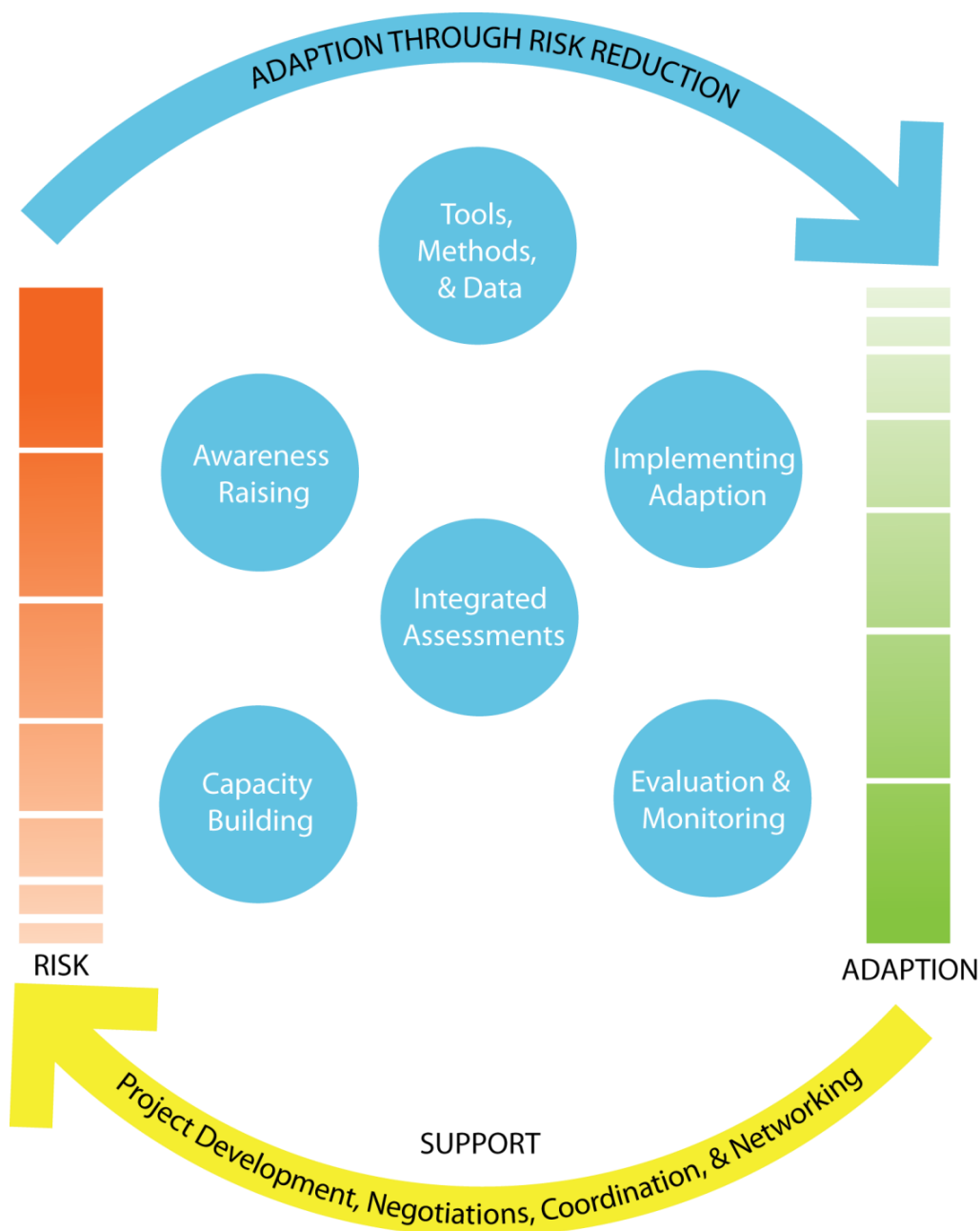
Adaptation planning as the “next frontier” in addressing the ever-evolving nature of the climate as well as giving clients the tools to actively plan for environmental changes ranging from:

- rising sea levels
- increasing storm water collection
- **increasing heat waves and associated wildfires**
- **food security**



City of San Diego Climate Mitigation and Adaptation Plan

- Undertake a risk assessment to clarify risk priorities and align with organizational risk portfolio
- Identify strategic planning processes that need to be revised to incorporate climate resilience considerations



What is Adaptation?

Emerging Themes

City of San Diego CMAP public health co-benefits:

- Increased physical activity through active transport
- Increased opportunity for the formation of close social bonds through improved availability of and access to green-space social spaces where social events may occur
- Decreased noise levels by switching to electric and hybrid cars



Public Health Impact Assessment

Through years of devising climate change solutions, we have come to appreciate that **public health** entails many of the critical factors such as **local community food** systems to be taken into consideration when analyzing measures to reduce GHG emissions

Public Health Impacts of Climate Change

Climate Change Effect



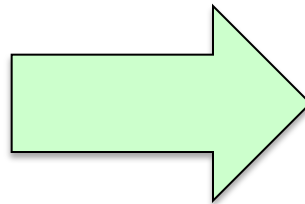
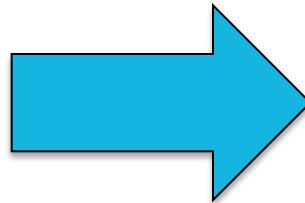
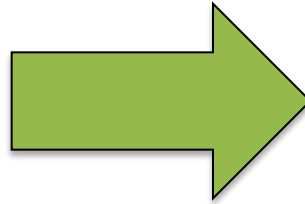
Increase in Extremes Heat Events



Increase Air Pollution



Floods, Droughts, Wildfires, Storms,
Changes in Weather Patterns



Examples of Human Health Risk

Heat Related Illness/Death
Worsening of Chronic Health Conditions

Increased Respiratory Illnesses and
Seasonal Allergies

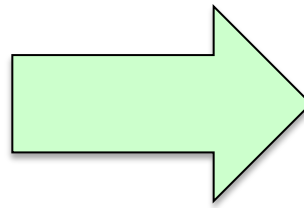
Injury/Death
Respiratory Illness
Waterborne Illness
Foodborne Illness
Displacement
Stress Related Disorders
Mental Health Impacts
Increase/Shift in Infectious Disease

Public Health Impacts of Climate Change

Climate Change Effect



Higher Food Prices and Food Scarcity

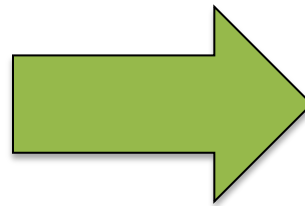


Examples of Human Health Risk

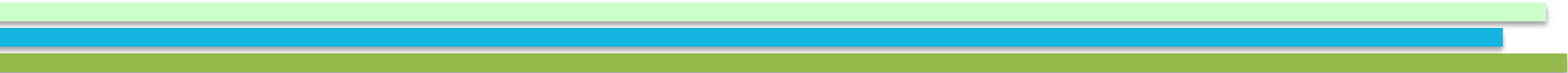
**Increased Hunger
Decreased Nutrition**



**Sea Level Rise, Storm Surge, Longer Red
Tides (toxic algae blooms in the ocean)**



**Injury/Death
Wastewater System Impacts
Displacement
Stress Related Disorders
Mental Health Impacts
Poisoning from Contaminated Shellfish**



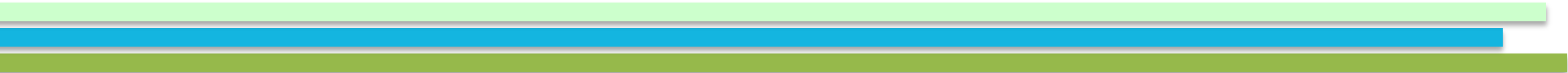
Lessons Learned

- Communication & presentation of materials is **critical**
 - Within the City, external stakeholders, public education
- This is **unlike** anything you've done before
 - Not legally mandated and no common standards
 - Do by trial and error



Lessons Learned

- View sustainability from a programmatic perspective
- Make sure it is actually useful for Implementation



Final Thoughts...

“If **sustainability** is the driver, it must drive our economy, our social compact, and our environmental stewardship... It means retrofitting suburbs, not building more of them with front porches (and SUVs parked out back), with a flower shop nearby but the grocery store several miles away. It also must mean TODs by right, the next “big thing” **that responds to who we are becoming rather than who we were.**”

- *W. Paul Farmer, FAICP, Chief Executive Officer, American Planning Association*

Questions

Chandra Krout

AICP, LEED AP (BD+C/O&M), CGBP, GPR

Principal

619.316.7645

chandrakrout@kroutandassociates.com

www.kroutandassociates.com

