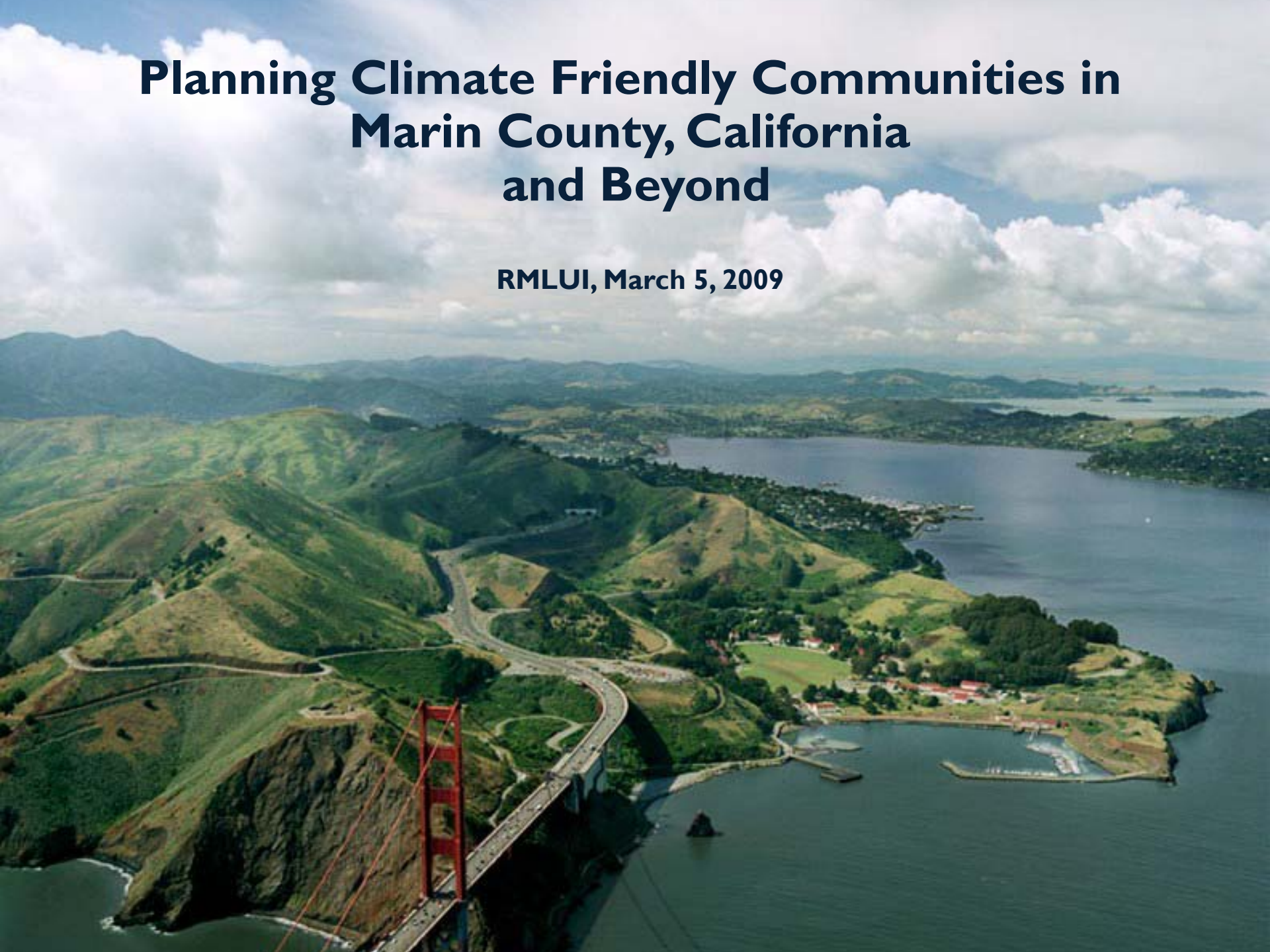
Planning Climate Friendly Communities in Marin County, California and Beyond

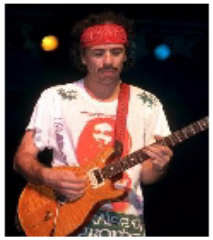
RMLUI, March 5, 2009



Cultural Landscape of Marin


Anne Lamott, writer


Charles Schwab, CEO


Carlos Santana, musician


Frank Lloyd Wright, architect


Sim Van der Ryn, architect


Gary Fisher, bike innovator


Peter Coyote, actor


Grateful Dead, band

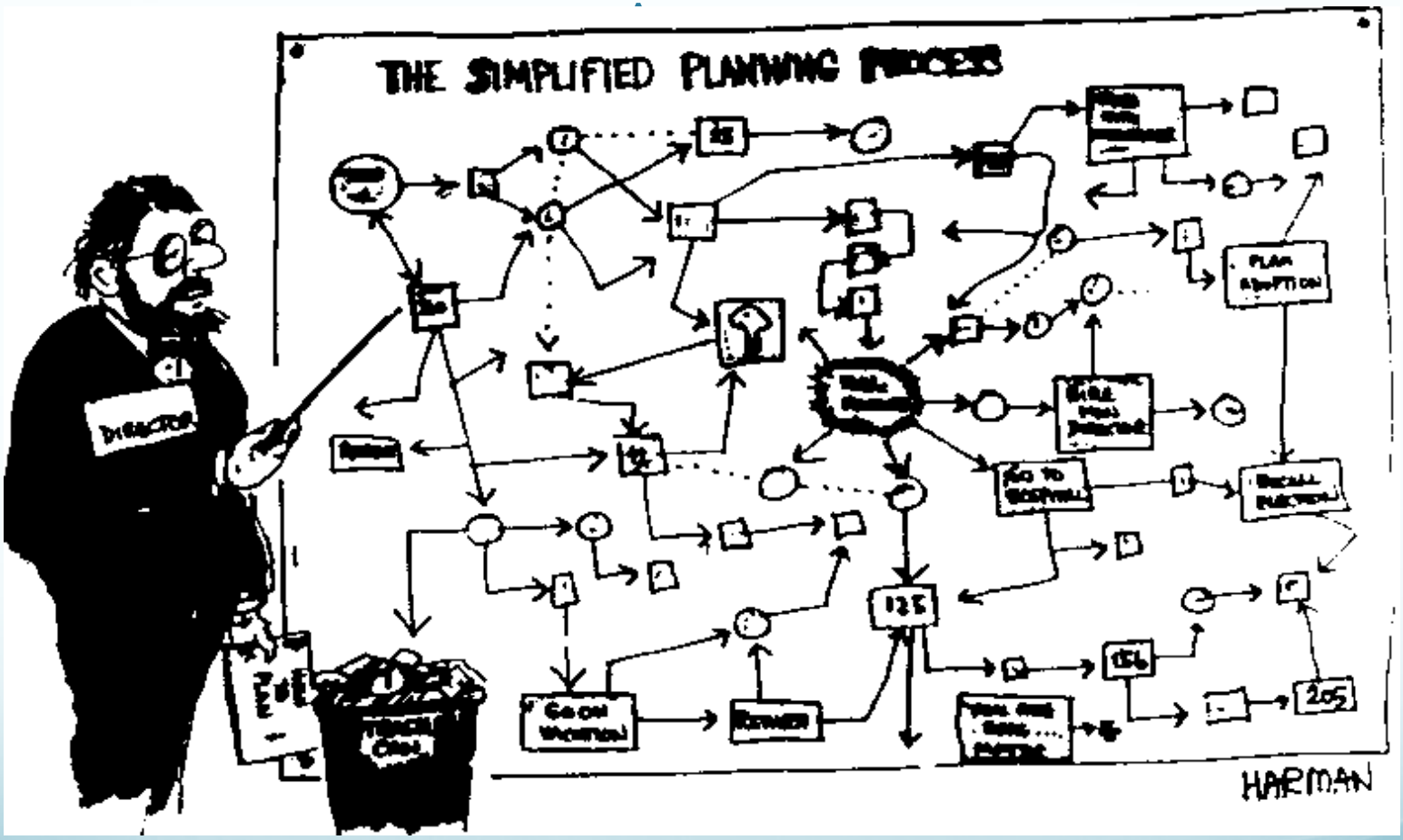

George Lucas (with friend), filmmaker


Bonnie Raitt, musician

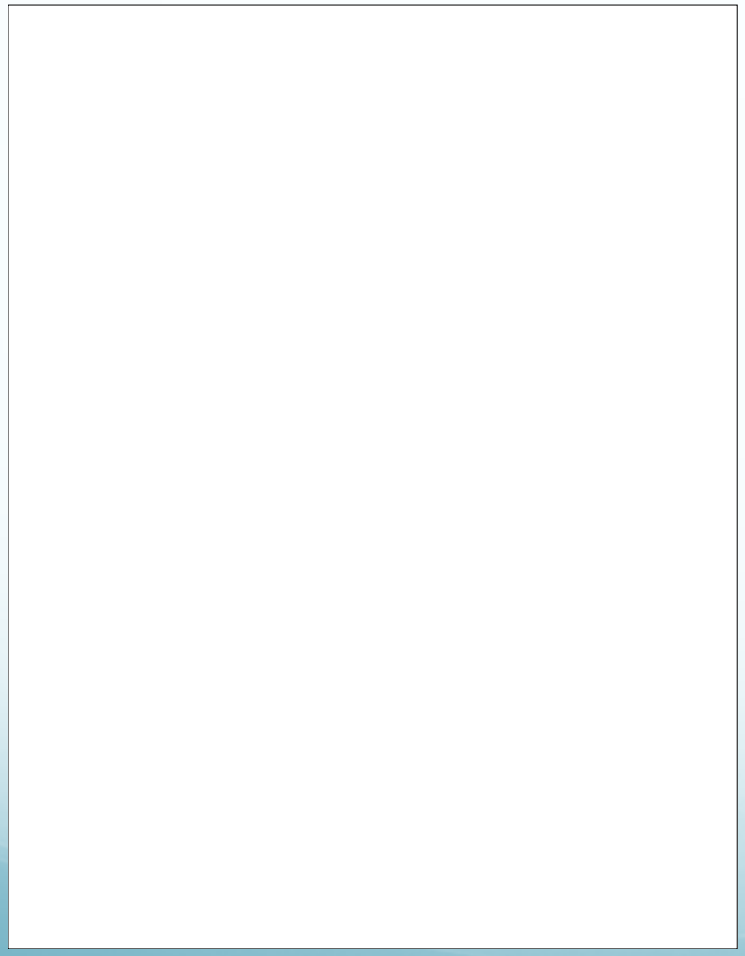

Metallica, band


Hyatt, hotel

"Planning is best done in advance"



Environmental corridors are the bones of Marin's Countywide Plan

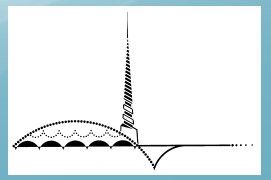


- In 1973 there were three environmental corridors:
  - The City-Centered Corridor
  - The Inland Rural Corridor
  - The Coastal Corridor
- A 4th, Baylands Corridor was adopted in 2007.

"Planning sustainable communities"
is the overarching theme of the 2007 Update

CWP Definition of Sustainability:

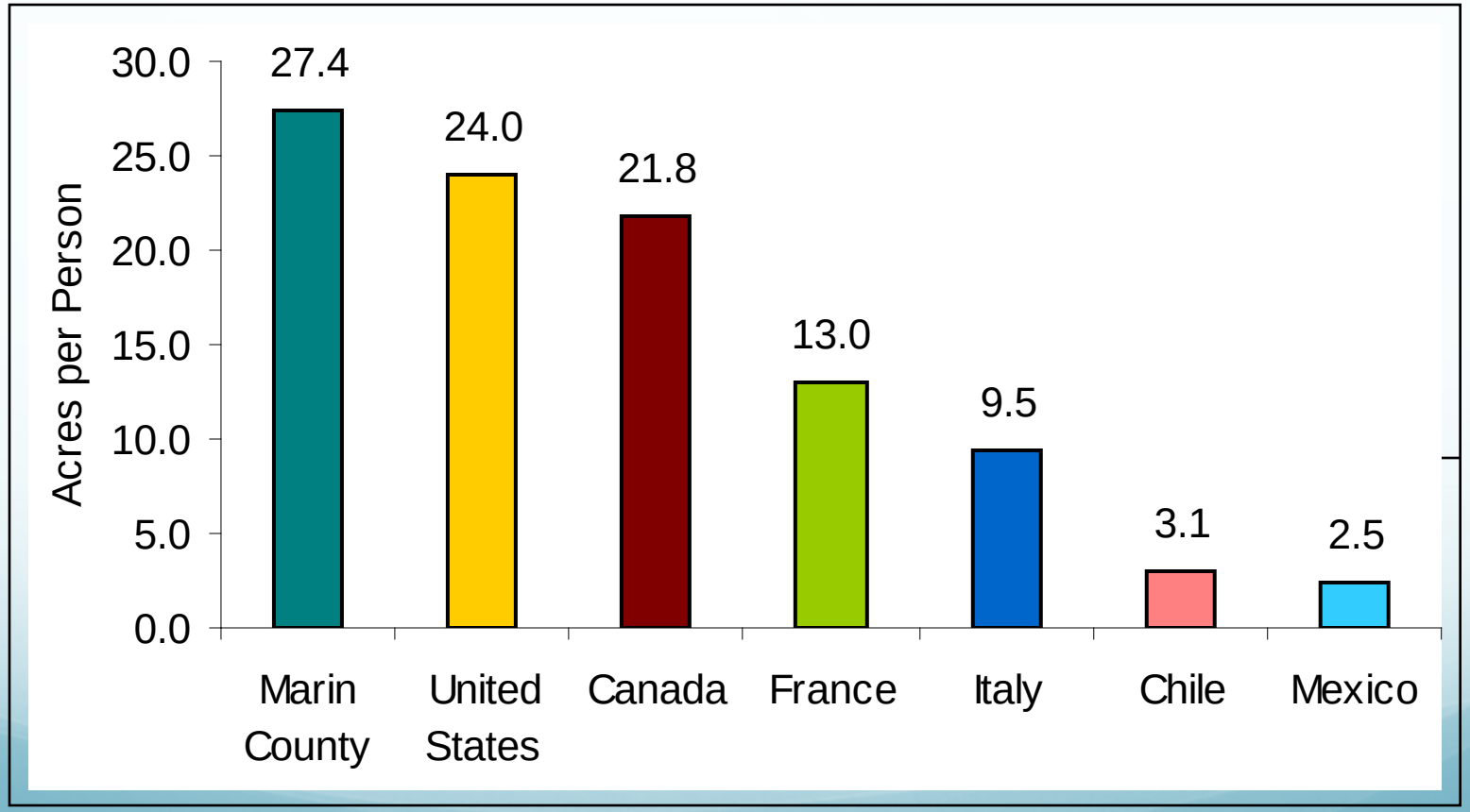
- Aligning our built environment and socioeconomic activities w/ the natural systems that support life
- Adapting human activities to the constraints and opportunities of nature
- Meeting the needs of both the present and the future



What is an Ecological Footprint?

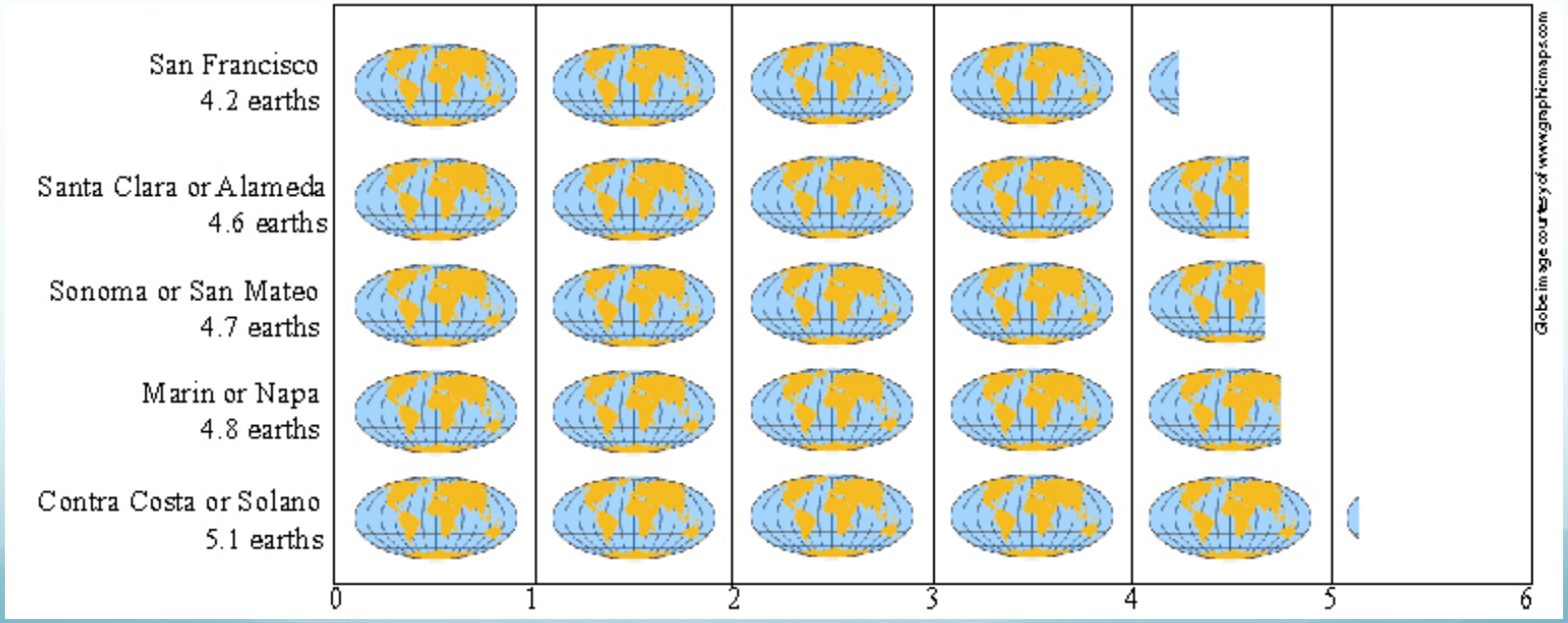
The ***ecological footprint*** is the amount of land and water area a person or human population needs to provide the resources required to sustainably support itself and to absorb its wastes, given prevailing technology.

Ecological Footprint Comparison



How Does Marin's Footprint Compare to Other San Francisco Bay Area Counties?

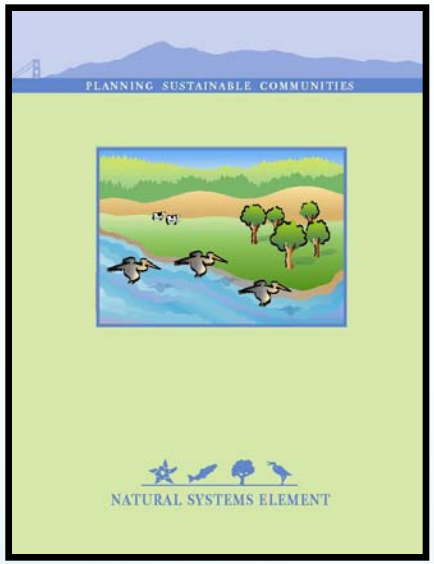
Number of earths that would be required to serve the footprint of each S.F. Bay Area County:



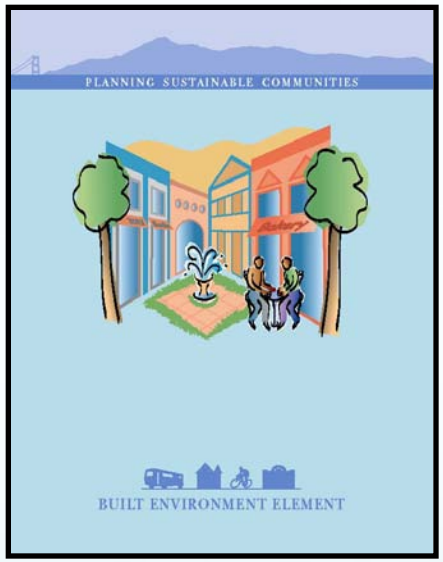
Elements of the General Plan

- According to California law, there are seven mandatory elements:
  - Land Use
  - Circulation
  - Housing
  - Conservation
  - Open Space
  - Noise
  - Safety

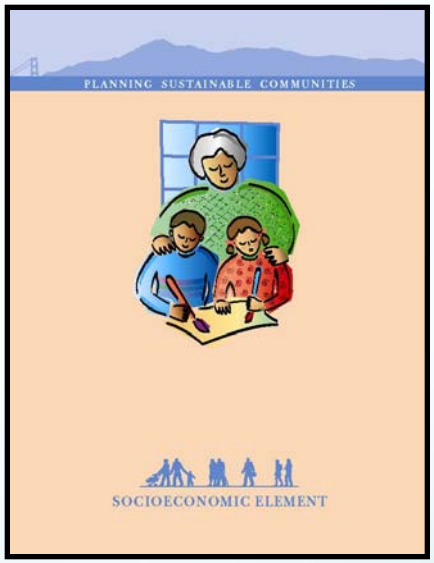
Marin Countywide Plan



Natural Systems and Agriculture

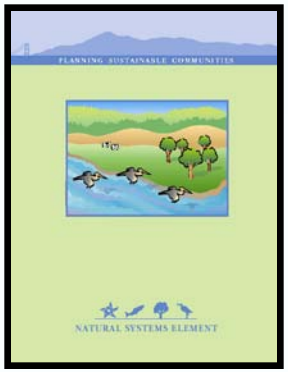


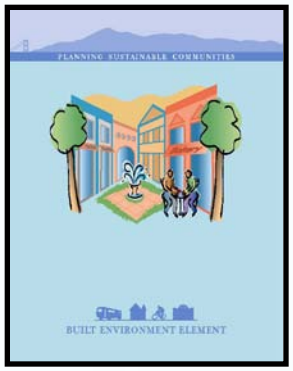
Built Environment

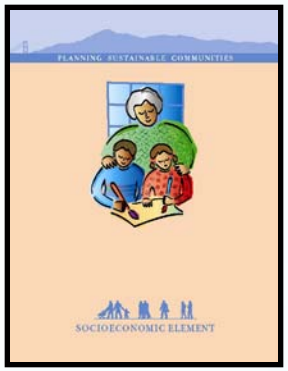


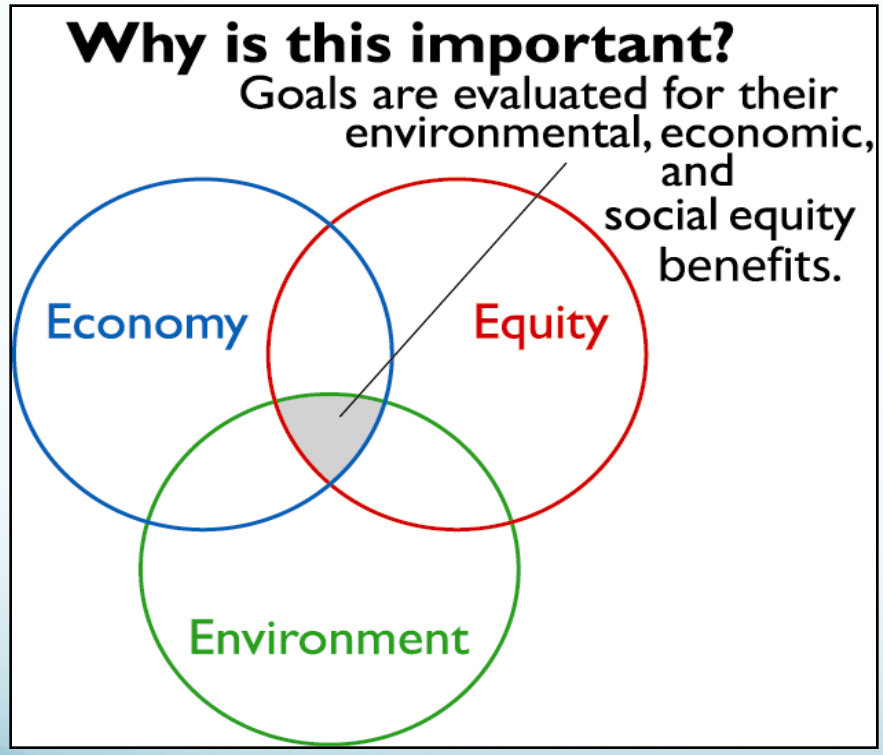
Socioeconomic

Countywide Plan









- Each element addresses:
- What are the desired outcomes?
- Why it is important?
- How will results be achieved?
- How will success be measured?

How Success Is Measured

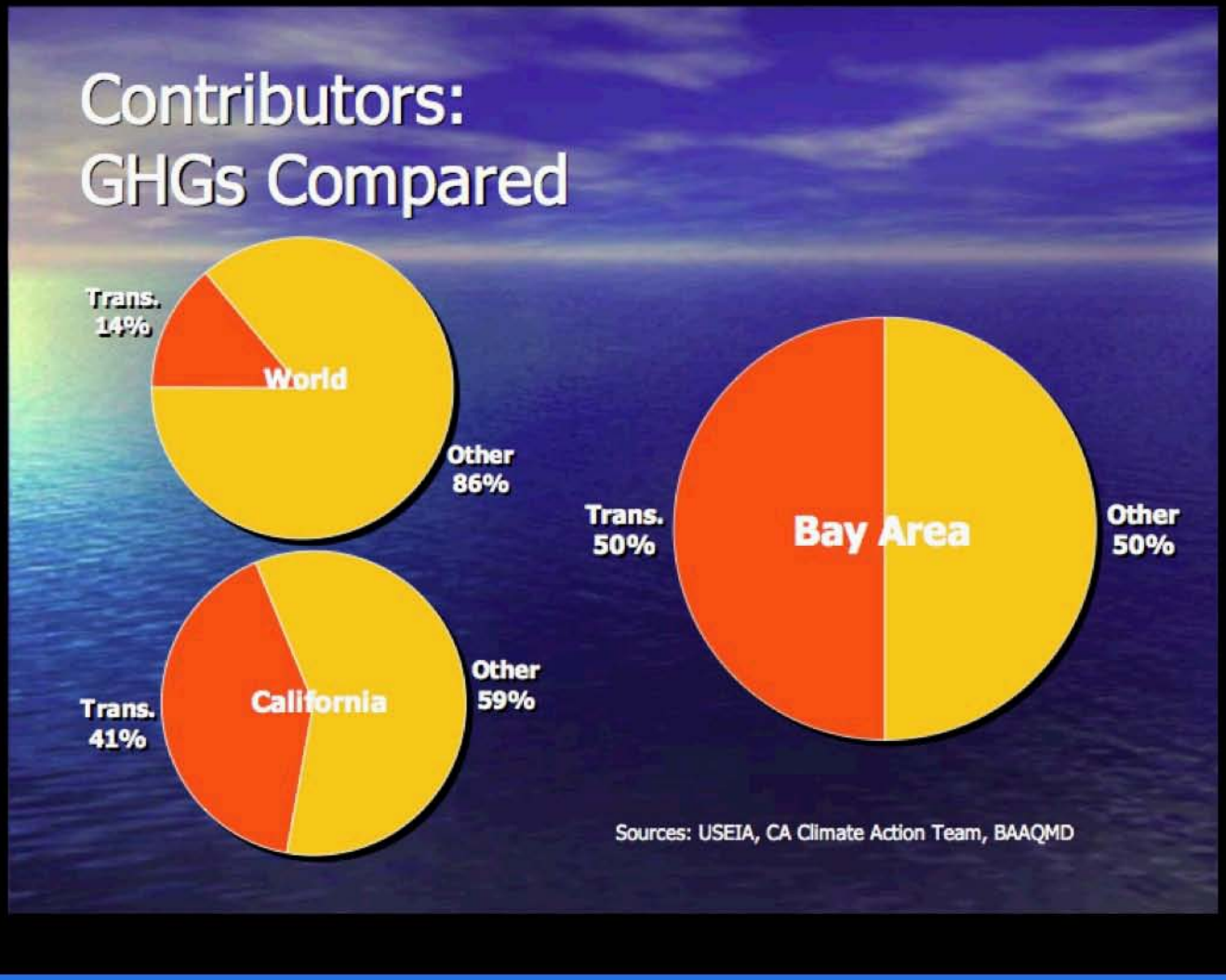
INDICATOR	BENCHMARK	TARGET
Number of dwelling units within ½ mile of a transit stop	82,773 dwelling units	89,997 dwelling units
Energy use per capita countywide	16,636 kWh unincorporated per capita in 2000	Reduce consumption of electricity per capita 10% by 2020
Total megawatts of photovoltaic systems installed countywide	0.0255 MW in 2000	15 MW by 2015 and 30 MW by 2020
Total megawatts of photovoltaic systems installed by County government	0 MW in 2000	0.5 MW by 2010 and 1 MW by 2015
Regional fair share housing allocation	Met in 2000	Meet regional fair share allocation in 2010 and 2015
Jobs-housing balance countywide	1.22 workers per household in 2000	Reach and maintain a 1.3-employed-resident-workers-to total-jobs ratio through 2015
Number of employees who live and work in Marin	61% in 2000	No decrease
Number of vehicles with a fuel economy of at least 45 miles per gallon countywide	362 in 2002	Increase the number of zero and partial zero emission vehicles with a fuel economy of at least 45 mpg through 2020
Vehicle miles traveled overall countywide (VMT)	2,764 million VMT in 2000	No or minimal increase through 2015
Miles of class I and II bicycle pathways in unincorporated areas	3.5 miles of class I in 2000 and 2.25 miles of class II in 2000	Increase to 4.5–10 miles by 2010 and 9–25 miles by 2015
Public transportation ridership share of modal split countywide	11% (bus and ferry) in 2000	Increase public transportation ridership by 2015, again by 2020
Per capita use of potable water	299 gallons daily per capita in 2000	No increase through 2020
Per capita use of non-potable water for appropriate end use	5 gallons daily per capita in 2000	Increase through 2020

Natural Systems & Agriculture

Topics in the Natural Systems & Agriculture Element:

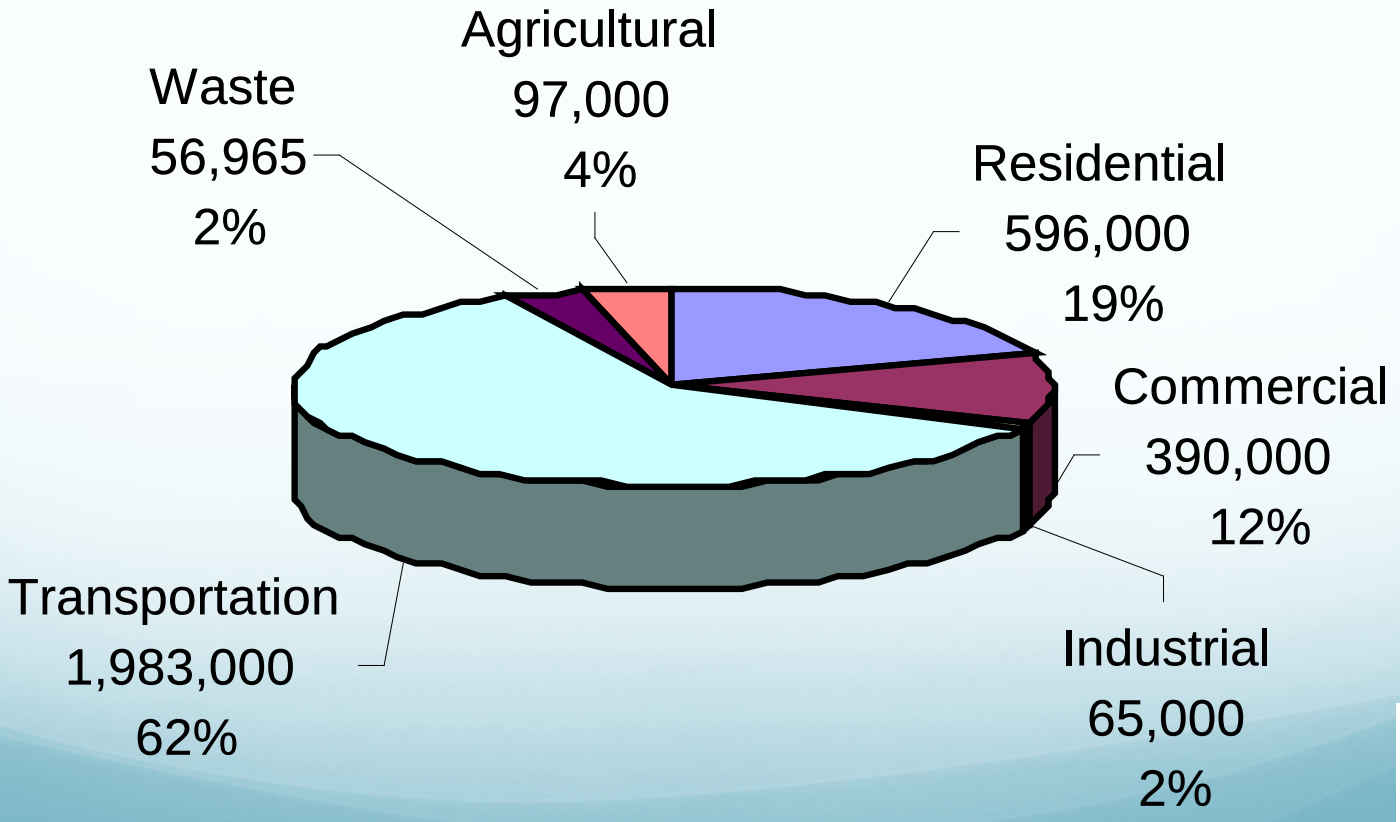
- Biological resources
- Water resources
- Environmental Hazards
- Atmosphere and climate
- Open space
- Trails
- Agriculture and food

Contributors: GHGs Compared



2005 Countywide GHG Emissions:

Tons CO2e & Percent by Sector



Climate Change –

What are the Desired Outcomes?

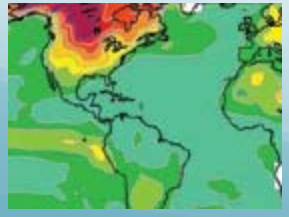
- Reduce GHG emissions
- Monitor climate change
- Adapt to climate change

Climate Change –
How will results be achieved?

Policies for reducing GHG Emissions:

- Increase Renewable Energy
- Conserve Electricity
- Change Commuting & Driving Patterns
- Divert Solid Waste
- Increase Biocapacity of Open Space & Agriculture
- Increase Local Food & Sustainable Agriculture

Climate Change –
How will results be achieved?



Adaptive Climate Change policies:

- Plan for sea level rise
- Seek levee assistance
- Consider future threat of sea level rise
- Establish a climate change planning process
- Implement floodplain ordinance

Study the Effects of Climate Change

- **Built Environment**: Effect of flooding & rising sea level on sewage systems, property & infrastructure
- **Water Resources**: Runoff, changes in precipitation, drought, salinity, sea level rise & shifting seasons
- **Agricultural and Food Systems**: Food supply, economic impacts & effect on grazing lands
- **Public Health**: Temperature-related health effects, air quality impacts, extreme weather events, vector, rodent, water & food-borne diseases

TOP STORY: GLOBAL WARMING

Marin warned to not develop its lowlands

Official: Bay waters may rise 3 feet, flood areas by century's end

By Brad Breithaupt
Marin Independent Journal

Global warming could raise the level of San Francisco Bay by more than 3 feet by the end of the century, flooding low-lying areas in Marin and elsewhere.

That warning Tuesday from Will Travis, executive director of the San Francisco Bay Conservation and Development Commission, came as county supervisors reviewed how to gird for climate change.

marinij.com
Connection this story at marinij.com

"Its impacts aren't limited to penguins in Antarctica or polar bears in Alaska, it's going to affect us profoundly here," Travis told the county board.

Travis did not detail Marin trouble spots, but his agency's maps indicate shoreline areas such as Hamilton Field, Highway 37 and low-lying portions of the lower Ross Valley, San

'We are going to have to build levees ... we are going to have to build lots of levees,' Will Travis of the San Francisco Bay Conservation and Development Commission told Marin supervisors.

MORE ON A2
> Coastal planners warned of sea-rise threats


Copyright © 2005 Antonio Valentino

Climate Change –
How will success be measured?

Set Target to Reduce Emissions

Indicator	Benchmark	Targets
Amount of GHG Emissions Countywide	2,634,000 tons CO2 in 1990	Reduce 15-20% by 2020.

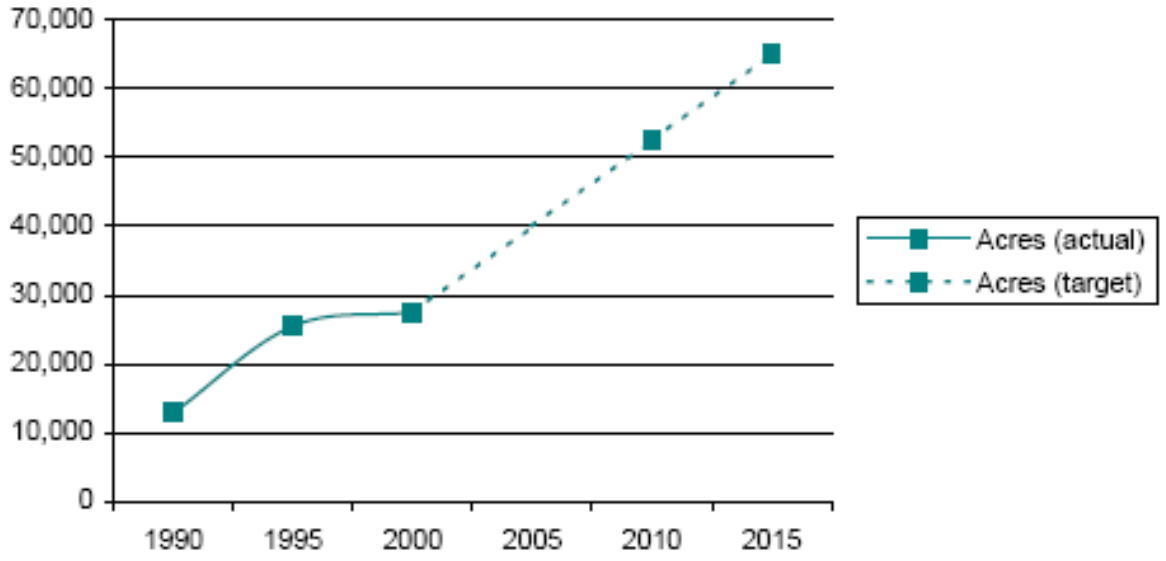
Marin Agriculture & Food –
How will the results be achieved?

- Preserve Agricultural Lands and Uses
- Promote Local & Organic Food Products
- Support Sustainable Agriculture

Encourage Community Gardens & Healthy Food in Schools

Marin Agriculture & Food

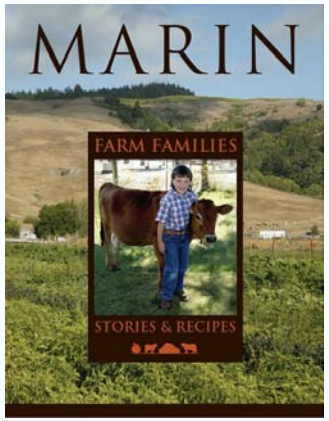
Figure 1–8 Marin Agricultural Land Trust Easements



Source: 2003 Marin Agricultural Land Trust

Indicator	Benchmark	Targets
Acres preserved with agricultural easements.	27,517 acres preserved in 2000.	Increase by: 25,000 acres by 2010; 12,500 additional acres by 2015

Marin Agriculture & Food –
How will success be measured?



Indicator	Benchmark	Targets
Acres of land farmed organically	357 acres in 2000	Increase by 1,500% by 2010 and 1,700% by 2015

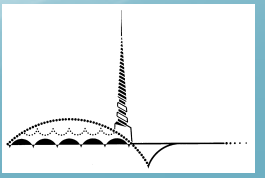
Built Environment

Topics in the Built Environment:

- Community Development
- Design
- Energy and Green Building
- Mineral Resources
- Housing
- Transportation
- Noise
- Public Facilities and Services
- Planning Areas

Greening our Built Environment

- Prevent sprawl and restrict development in environmentally sensitive areas
- Require mixed-use in commercial areas
- Enact a Housing Overlay Designation – focus affordable & workforce housing near jobs, transit, services
- Require Green Building
- Retrofit existing buildings



Giving Physical Shape to Community

Infill New urbanist developments are **walkable neighborhoods,** rather than large, single-use places with streets hostile to pedestrians.

Marinwood Shopping Center

Before:

After:

San Quentin Vision Plan
Land Use Plan

Utilize European design approaches

Amphitheater park

Boulevard

Affordable housing

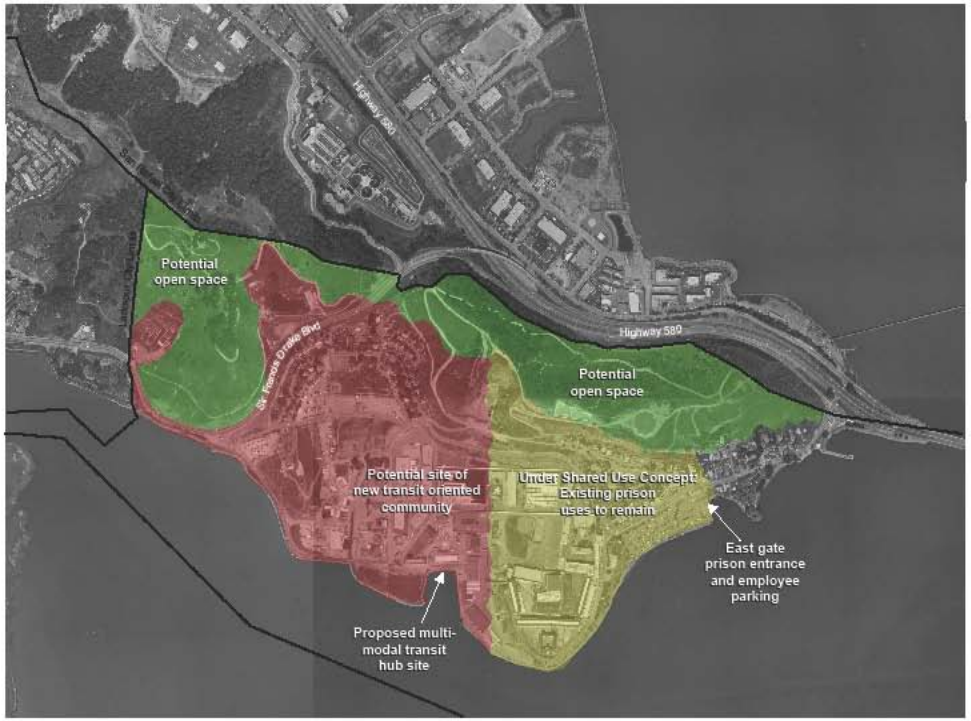
Pedestrian-only optional area

Ridge open space

School / Ballfields

World-class cultural arts facility

Central plaza



Waterfront park

Road along waterfront

Historic park

Map 3-36
San Quentin Re-use Conce

Marin Energy & Green Building Policies

Goal #1: Decrease Energy Use

Goal #2: Increase Renewable Resource Use

Goal #3: Adopt Green Building Standards


How do we Green Transportation?

GREENING Transportation

- Reduce vehicle miles traveled & automobile trips
- Prioritize funding for projects that reduce fossil-fuel use & single-occupancy auto trips
- Reduce parking requirements
- Enact telecommuting & alternate work schedules
- Encourage live-work, cottage industry, home occupations
- Encourage innovative bicycle techniques employed in Europe
- Ensure children have safe walking and bicycling to school
- Support regional rail, bus, bike & trail initiatives

SAFE ROUTES TO SCHOOLS
MARIN COUNTY BICYCLE COALITION

Regional Transit Initiatives

Sonoma Marin Area Rail Transit (SMART)

- Proposes use of light diesel cars vs. traditional locomotives
- Light diesel cars are self-propelled, generate less noise, use less fuel and result in lower emissions
- Biodiesel fuel mixtures will be considered
- Project reduces GHC's & overall growth of VMT

Marin County Employee Commute Alternatives Program

- One year pilot program initiated in September 2007
- $4 daily incentive for employees who commute via walking, bicycling, carpool, vanpool and public transit

First Quarter Results:

- 19% employee participation
- Total CO_2 reduction = 305 tons = 12,000 fewer cars
- Avg. CO_2 reduction per commute day = 5.3 tons

Socioeconomic

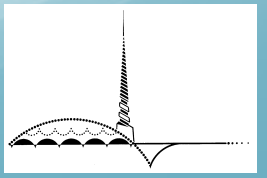
Topics in the Socioeconomic Element:

- Economy
- Childcare
- Public Safety
- Community Participation
- Diversity
- Education
- Environmental Justice
- Public Health
- Arts and Culture
- Historical and Archaeological Resources
- Parks and Recreation

Socioeconomic

Targeted Industries Screening Criteria

Screening Criteria	
Economic	Above-average wages
	Emphasis on value added activities
	Primary vs. secondary engine of growth
	High productivity
	Occupational diversity and upward mobility
	Industry diversity
Environment	Average firm size
	Reduce dependence on inputs from other regions
	Employs local residents
	Telecommuting or transit-friendly
	Allows flexitime
	Potential sustainable partner
Equity	Creative and innovative
	Links to aging population
	Consistent with County goals and principles



Socioeconomic

Existing and Targeted Businesses

Existing Clusters	Targeted Businesses
Real Estate and Construction	Green Building
Business Services	Boutique Consulting Environmental Technology
Multimedia	Digital Imaging (Motion Pictures) Interactive Media and Game Development Engineering and Design Software
Finance and Insurance	Integrated Wealth Management Services Online Financial Services Personal Financial Advising
Restaurants and Tourism	Agri-Tourism Outdoor Recreation and Equipment Arts and Crafts
Health Services	Alternative Healing and Meditation Alternative Medicine Biotech Emergent Care
Agriculture	Organic Value-Added (Niche) Agricultural Products Food Product Manufacturing

Source: Marin Economic Commission, *Targeted Industries Study, 2004.*

Socioeconomic Element

Indicator	Benchmark	Targets
Number of certified "green" businesses	0 in 2000	Increase to 250 by 2010, and 400 by 2015

Countywide Plan
Public Outreach & Community Participation:

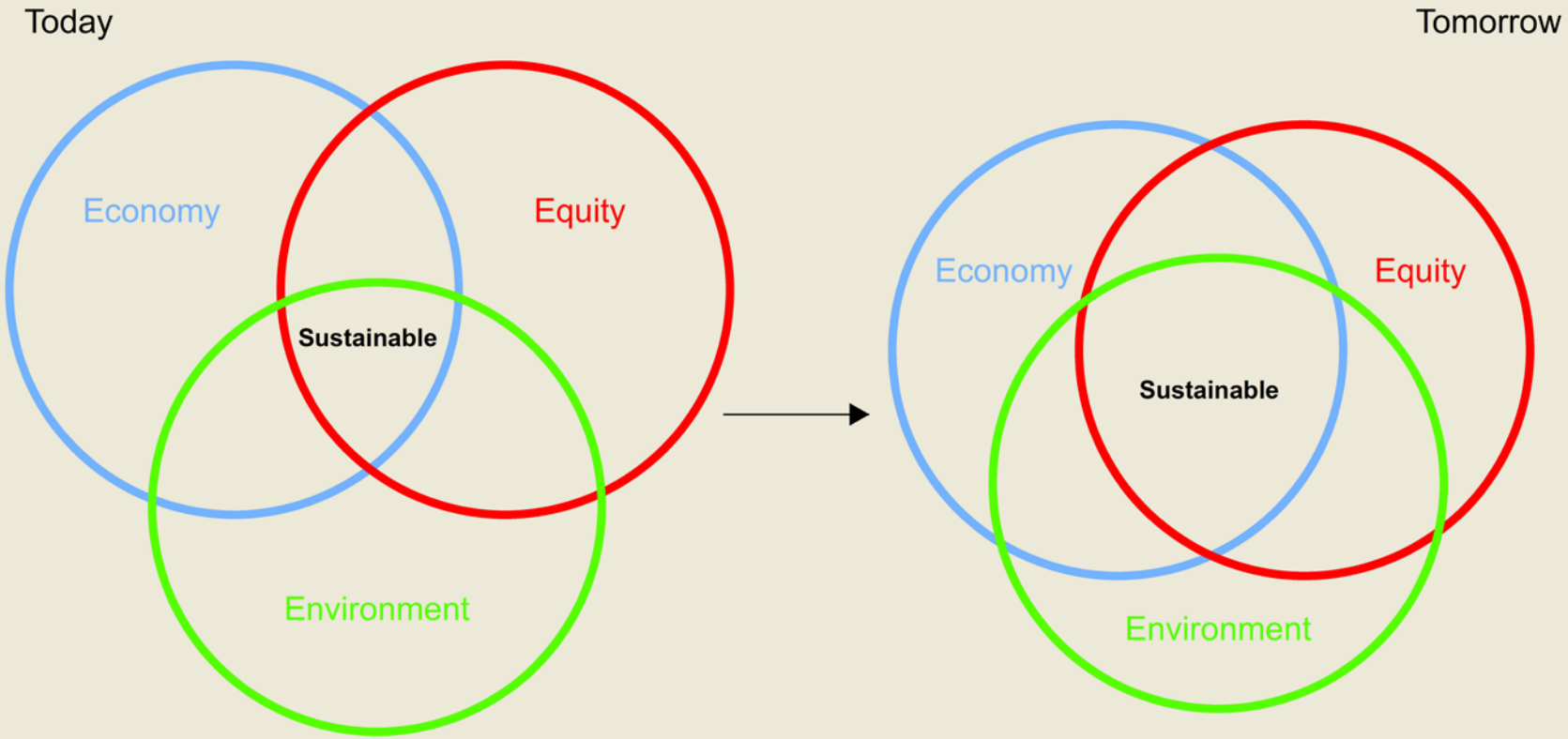
- Extensive public outreach and education (since 2000)
- 4 Working Groups (2001-2002)
- Over 115 meetings open to the public
- Plan was adopted November 6, 2007

Public Process Takes It's Toll!

Then:

Now:

Marin Countywide Plan



Getting Traction

Photo Credit: Marin Sanitary District

Photo Credit: Marin Green Business Program

Photo Credit: Marin Green Business Program

RESULTS:

Fireside Affordable Housing Project

- 50 Units with Affordable Rents – by transit
- Solar PV Systems
- Daylighting
- Energy Efficiency
- Durable Construction Materials
- Green Materials
- Low VOC finishes
- Stormwater Protection
- Construction Waste Recycling

Implementing programs that link people, the economy and the environment

The Community Development Agency offers a broad array of programs to help move Marin towards a more sustainable future including:

- ***Solar Incentives***
- ***Climate Protection***
- ***Energy Efficiency***
- ***Green Business***
- ***Green Building***
- ***Waste Tire Education***
- ***Sustainable County Operations***
- ***Sustainability in the Countywide Plan***

SUSTAINABILITY TEAM
COUNTY of MARIN

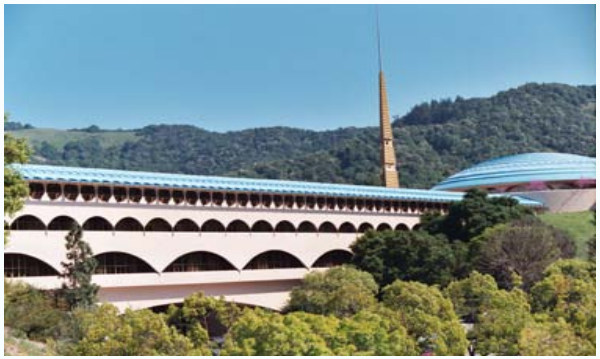
COMMUNITY DEVELOPMENT AGENCY
ALEX HINDS, DIRECTOR

For more info. contact the Marin County Community Development Agency at one of the numbers below, or visit:
www.sustainablemarin.org

Dawn Weisz	*Sustainability Team Coordinator*	**507-2706**
Dana Armanino	*Green Business & Energy Coordinator*	**499-3292**
Alec Hoffmann	*Green Building Program Coordinator*	**507-2659**
Omar Peña	*Sustainability Aide*	**507-2797**

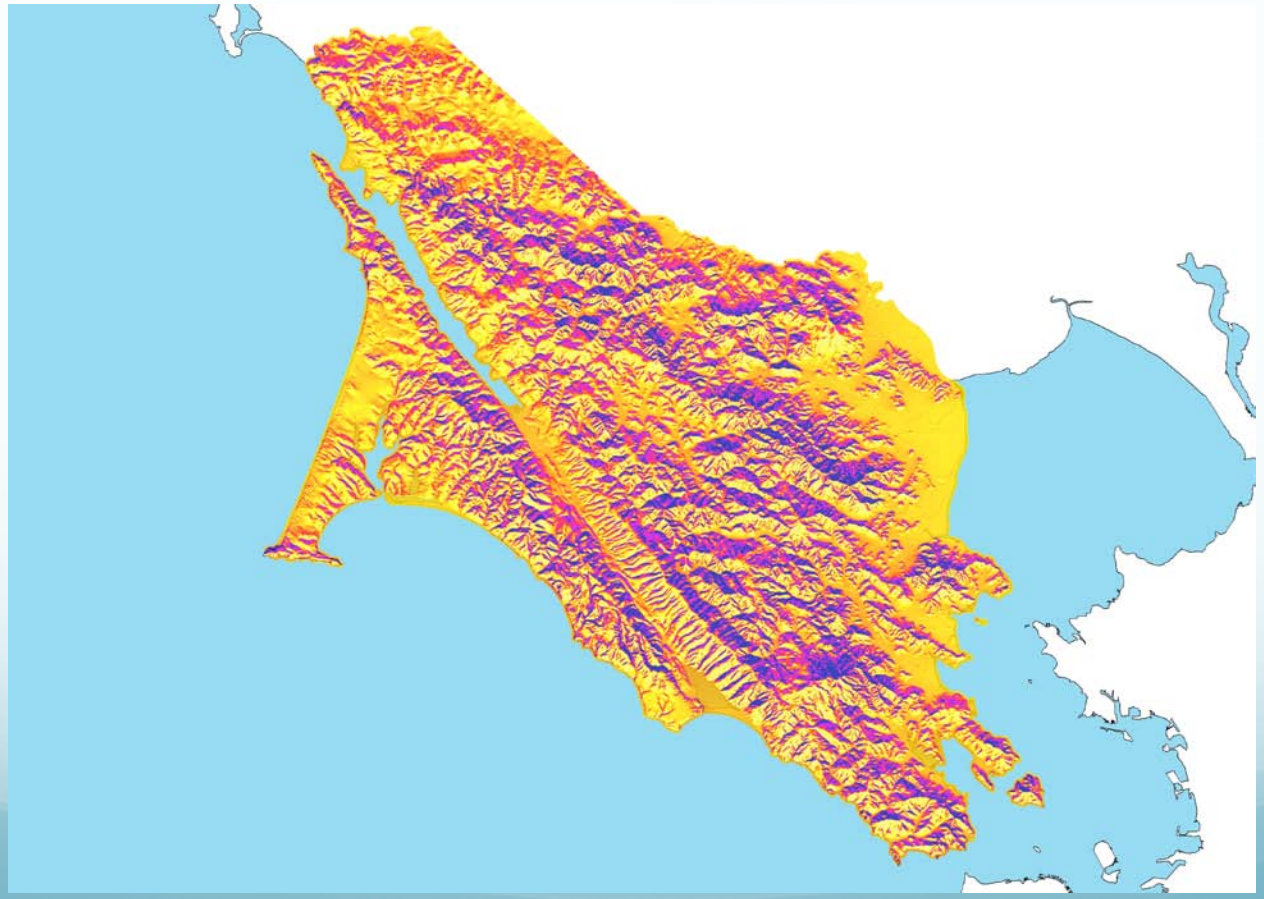
--- County Operations Report:

Measuring Progress Toward Sustainability



- Which highlights successful initiatives from all County departments and divisions
- Identifies potential areas for further progress, and soon will include
- Indicators & targets to track progress

Promoting Renewable Energy



Results

- **$60,000** in solar rebates have been distributed since last August 2005
- Annual solar installations countywide grew from **8** in 2000 to **138** in the year 2005
- Currently there are over **800** systems countywide – exceeding CWP targets
- And these are reducing GHG emissions by **2,465** tons annually

Promoting Green Building

- Education: trainings, events, materials displays
- Free technical assistance
- Woodstove rebate program
- Residential Energy Ordinance which reduces the energy use in new large homes
- Construction & Demolition Waste Ordinance
- Green points checklist which has been integrated into our permitting process

Energy Efficiency:

2008 Building Code Amendments

- New homes, remodels or additions >1,500 sf must exceed Title 24 energy standards by at least 15%.

- Energy requirements increase with size

- No home can exceed the requirements for a 3500 sf house

COMMUNITY DEVELOPMENT AGENCY

Marin County Design Review Requirements for Green Building

Building Area	Rating Level
Up to 2,500 square feet	Certified
Greater than 2,500 square feet up to 4,000 square feet	Silver
Greater than 4,000 square feet up to 5,500 square feet	Gold
Greater than 5,500 square feet up to 7,000 square feet	Platinum
Greater than 7,000 square feet	Platinum plus Carbon Neutral

Green Building Results

- New homes exceeded State energy standards by an average of 20%
- Remodels exceeded State standards by an average of 10%
- 10 new homes reduced GHG emissions by 1,300 lbs annually
- 75,000 tons of diverted waste reduced GHG emissions by 150,000 tons

Promoting Green Business

Green business standards include:

- Reduce energy use, water use, waste and pollution generation

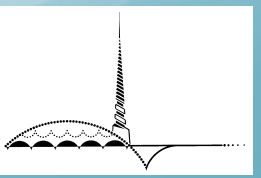
RESULTS:

- Certified over 250 green businesses between 2002 - 2008
- Exceeded Countywide Plan target for 2010

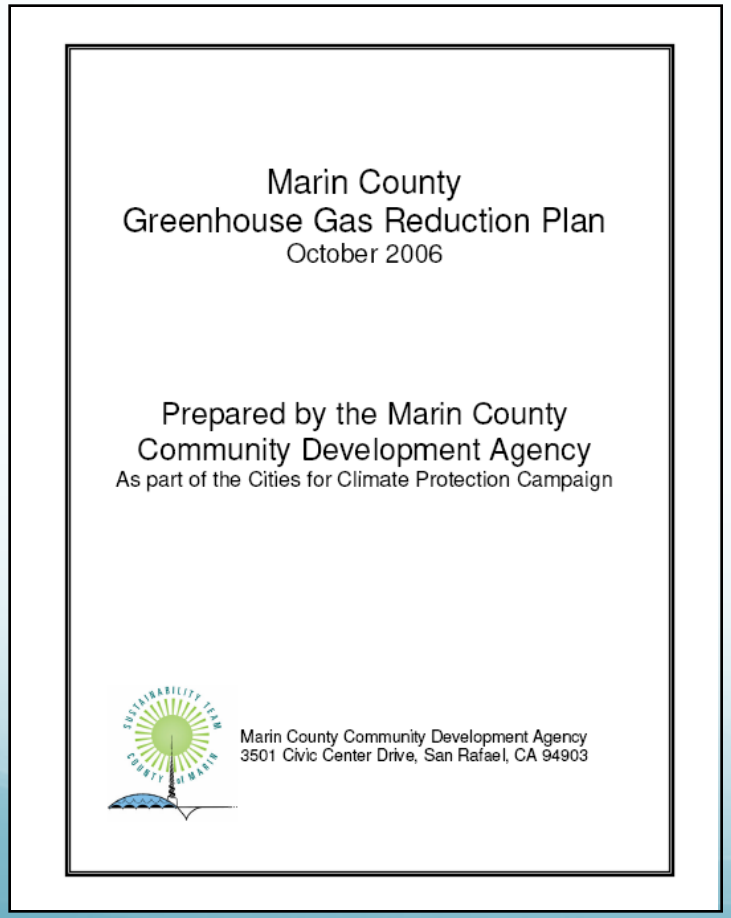
Promoting Climate Protection

Joined International Council Of Local Environmental Initiatives (ICLEI) five step program in 2002:

- ✓ 1. Assessed Marin's greenhouse gas (GHG) emissions
- ✓ 2. Set target to reduce emissions
- ✓ 3. Developed implementation plan to meet the target
- ➢ 4. Implement GHG reduction plan
- ✓ 5. Reassess GHG emissions



Implementation Plan to Reduce Emissions



- Plan adopted in Sept. 2006
- Measures include:
  1. Buildings Energy Use
  2. Transportation
  3. Waste Management
  4. Land Use

Other programs

- The *MarinEMT program* helps local gov's and schools with energy audits and upgrades - also assisting the residential sector.
- Marin Clean Energy

Marin Energy Watch Partnership:

California Youth Energy Services

- Provides employment and training to local youths to become Energy Specialists

- Provides energy assessments and hardware installations to residential customers

Marin City

Novato

Canal District

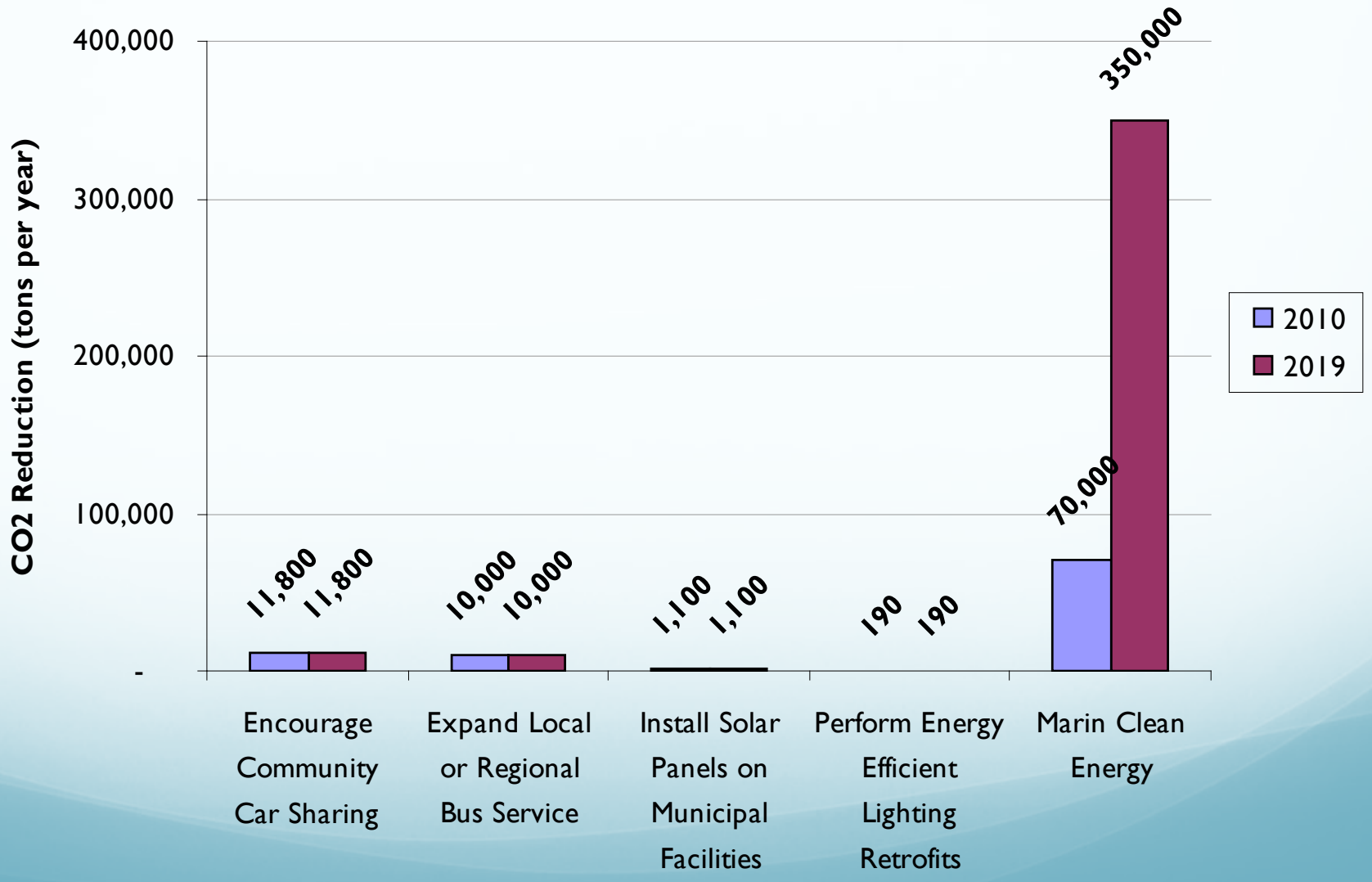
What is Marin Clean Energy?

Local governments purchase power for their communities

- Purpose – increase renewables, energy efficiency, and price stability
- Reduce GHG emissions
- Light green & dark green options
- Or customers may “opt-out”
- JPA created – starting up in 2009

PG&E continues to deliver electricity & serve customers

MCE GHG Reduction Potential



New See-it Viewer: allows the public to follow progress of key indicators

Green Cities California

- To address these issues: Berkeley, Los Angeles, Pasadena, Sacramento, San Diego, San Francisco, San José, Santa Barbara, Santa Monica, Marin County have joined together to form Green Green Cities of California
- Collectively we represent more than 8 million California residents

Green Cities California

And each of us has:

- Adopted local sustainability plans, the United Nations Urban Environmental Accords, and the U.S. Conference of Mayors Climate Protection Agreement
- Demonstrated leadership in achieving effective solutions to these environmental challenges

San Francisco Initiatives

Climate Change:

- Issued Climate Action Plan, committing the City to reduce greenhouse gas emissions to 20% below 1990 levels by 2012
- Setting up Local Carbon Offset Fund

Sustainable City Plan –Overview

- **Proposed by City staff and the Task Force on the Environment in 1992**
- **Adopted by Council in 1994**
  - **Municipal operations**
  - **Environmental sustainability**
  - **20 indicators**

"We ignore the things we don't track"

California Communities with Mandatory Green Building Ordinances

Example	Effective Date
Albany	July 2007
Brisbane	January 2008
Calabasas	February 2004
Cotati	January 2008
Culver City	March 2008
Livermore	January 2008
Long Beach	Ord. Pending
Los Altos	December 2007
Los Angeles	May 2008
Novato	October 2005
Palm Desert	February 2007
Palo Alto	July 2008
Pasadena	May 2008
Pleasanton	January 2003

Example	Effective Date
Rohnert Park	July 2007
San Francisco	August 2008
San Jose	Ord. Pending
San Rafael	August 2007
San Mateo (Co.)	March 2008
Santa Barbara	March 2008
Santa Cruz	January 2007
Santa Monica	May 2008
Santa Rosa	June 2008
Sebastopol	March 2005
Marin (Co.)	June 2008
Windsor	June 2007
West Hollywood	October 2007

ONE PLANET COMMUNITIES

Sonoma Mt. Village, Rohnert Park, CA

- **ZERO USE OF FOSSIL FUELS FOR BUILDING ENERGY**
- New Buildings Exceed CA T24 by 50-80%
- Existing Buildings Exceed T24 by 30%
- 100% on-site renewable energy
- 100% renewable heating & cooling
- Efficient Water Infrastructure

Sonoma Mt. Village -1.14 MW Array – so far…

LOCAL & SUSTAINABLE MATERIALS

- Manufacture at least 20% of materials on-site
- Buy and additional 40% of materials within 500 miles
  - Create Standard Specifications
  - Healthy Materials Standard
  - Track Embodied Carbon in Materials and Activities

A Building that Teaches

Contact: Alex Hinds, Interim Director
Center for Sustainable Communities,
Dept of Environmental Studies and Planning
Sonoma State University, Rohnert Park, CA
hindsa@sonoma.edu