Imagination | Inspiration

"Picture this ..." inspiring action *

*we're all in this together

Leslie Alden

Eastern Regional Climate Preparedness Conference Baltimore, Maryland April 4, 2016

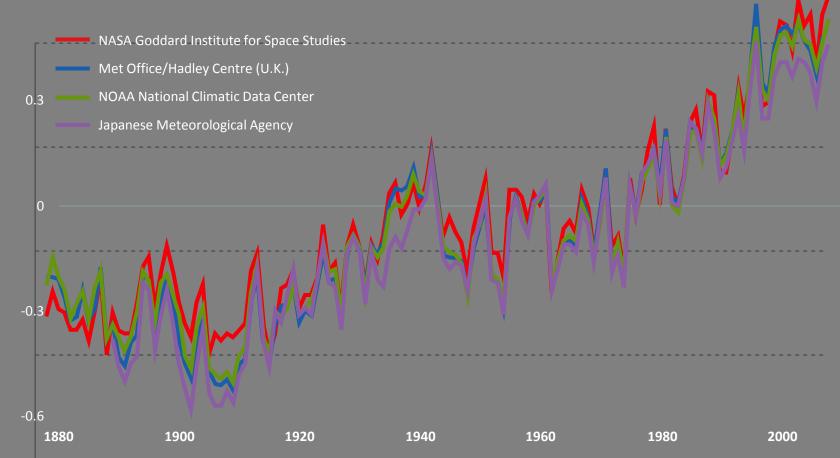
Southern Marin Sea Level Rise Pilot Project The Game of Floods Here-Now-Us (or, "The OWL Project")

Global Surface Temperatures Are Rising

Source: Compilation—NASA Earth Observatory. Data Sources: NASA GISS, NOAA National Climatic Data Center, Met Office Hadley Centre/Climatic Research Unit, and the Japanese Meteorological Agency

0.6

Temperature Anomaly (°C)



...and Greenhouse Gas Emissions Continue to Rise

Positive proof of global warming.

18th Century 1900 1950 1970 1980 1990 2006



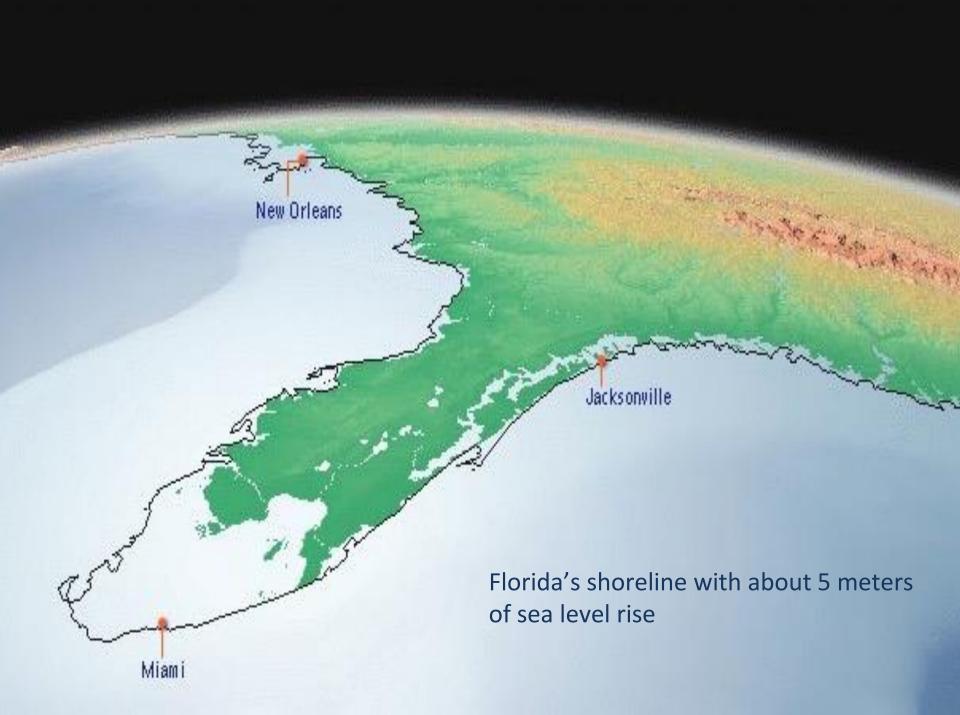
Present-day shoreline

North America

The entire Atlantic seaboard would vanish, along with Florida and the Gulf Coast. In California, San Francisco's hills would become a cluster of islands and the Central Valley a giant bay. The Gulf of California would stretch north past the latitude of San Diego-not that there'd be a San Diego.

STOL ON

386











Hurricane Isabel, 2003: The day after



THE COST OF DOING NOTHING

1 meter SLR: 220,000 people at risk \$49 Billion replacement costs

1.4 meters SLR:270,000 people at risk\$62 Billion replacementcosts

Impacts of Sea Level Rise on the SF Bay Area

Source: "The Impacts of Sea Level Rise on the San Francisco Bay", a White Paper from the California Energy Commission's California Climate Change Center, dated July 2012.



Message From the Mud: East Antarctic Meltdown Could Cause Massive Sea Rise

> Indicators of Climate Change California The Netu Hork Cimes

Estimating Policy-Driven Greenhouse Gas Emissions Trajectories in California: The California Greenhouse Gas Inventory Spreadsheet (GHGIS) Model Climate Modeling at U.

William Collins Head

Professor in Residence, UC Berkeley

Chief Scientist, DOE Earth System

Modeling Program

Carbon Dioxide Passes Much Feared Milestone

BY JUSTIN GILLIS





"avoid the unmanageable"

"manage the unavoidable"





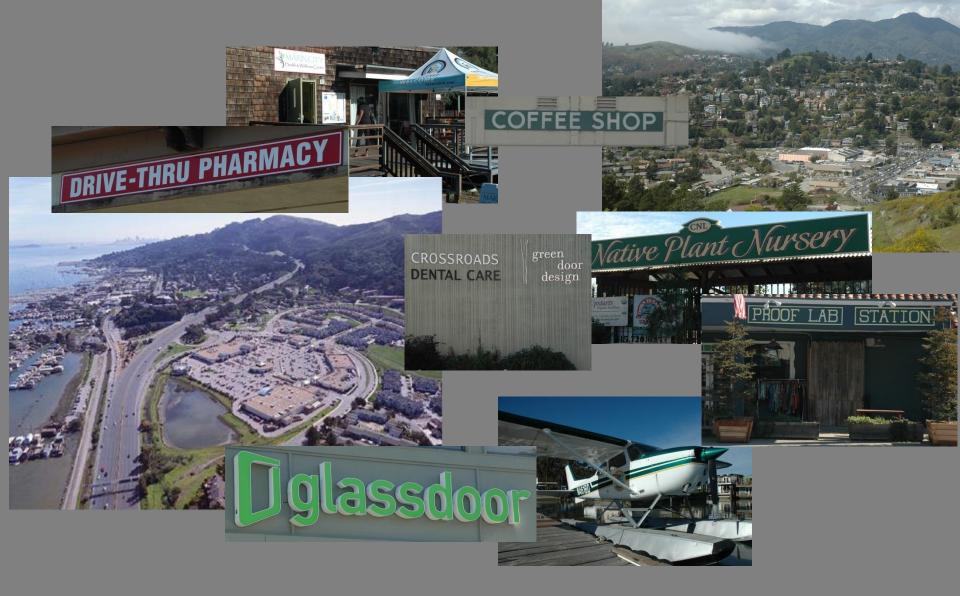


Human Nature?

Sorry, no miracles.



OUR ROADS, TRANSPORTATION, PUBLIC SAFETY, ENERGY GRID, WASTE WATER TREATMENT, AND OTHER CRITICAL INFRASTRUCTURE



OUR BUSINESSES AND COMMUNITY RESOURCES



OUR WETLANDS, MARSHES AND MUDFLATS, PRODUCTIVE ECOSYSTEMS AND HABITATS FOR WILDLIFE, INCLUDING MANY ENDANGERED SPECIES



Our Parks, Recreation Areas, Beaches and Shorelines, Hiking Trails and Bike Paths



Adapting to Rising Tides IMPLEMENT Planning Process & MONITOR Integrate Adaptation **Responses into Plans** Society & Equity Environment **Evaluate & Select** Adaptation Responses Economy **SCOPE & ORGANIZE Develop Adaptation** Governance Responses Convene PLAN Choose Project Area Partners & Select Evaluation **Stakeholders** Set Resilience Goals Criteria Identify Sectors, Services, Assets **Refine Resilience** DEFINE Goals Select Climate Scenarios & Impacts ASSESS Characterize **Vulnerabilities Review Existing** & Risks Conditions Assess Vulnerability Identify Key Planning **Consider Risks** Issues

Southern Marin Sea Level Rise Pilot Project



SASM

Waldo Point Harbor

The **Redwoods**

Manzanita

Bothin Marsh

> Tam Junction

Marin City



Urban design strategy: Hamburg, city on the water

Modern housing, entertainment and retail in the new Hafencity "floodable" district

Floating structures and harbour



Modern housing, entertainment and retail in the new Hafencity "floodable" district

0



Living With Water

Sea Level Rise and Southern Marin: Community Conversation

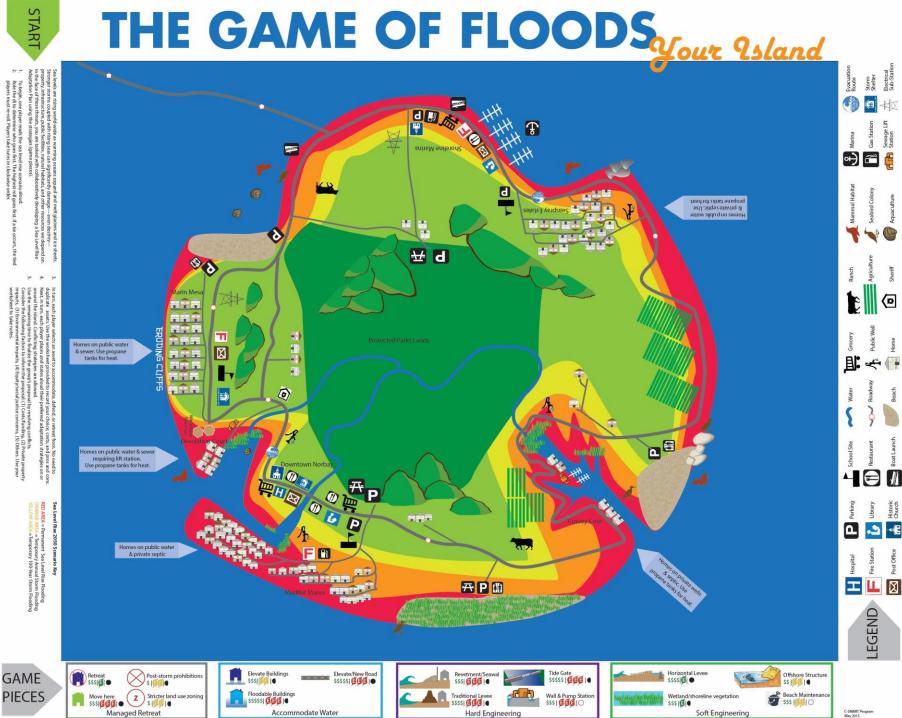
Hermidae 1,2014 Tamataan Jegi bahasi Mili Galay

"Living With Water" Community Workshop

November 1, 2014, Tamalpais High School, Mill Valley

High School Sea Level Rise Adaptation Game

ALANDRY .



es first. The highest roll g turns in clockwise order.

Game of Floods: Pt. Reyes Station



Preparing for Change Along Our Shore

Sea level rise is impacting us HERE in Marin County NOW, with more frequent and damaging floods. It is up to all of US to protect the bayside communities we love.

SEA LEVEL RISE VIRTUAL REALITY EXPERIENCE



Major Funding Provided by: WFEMA

TAKE A LOOK through the OWL viewer to see what higher tide levels mean for this very location now. what it could mean in the near future, and some possible responses to meet the

Please share your thoughts about what you see: answer a few questions in the OWL and/or leave an audio recording.

The OWL is awake every day from 5 AM - 10 PM and sleeps at night.







JOIN THE CONVERSATION with community members. business leaders, and elected officials as we discover what is most vulnerable to sea level rise in Marin County and explore the pathways of action we can take together.

BE A PART OF THE EFFORT.

Tweet us @HereNowUs using #OWLMARIN

Visit www.Here-Now-Us.org for more information and to get involved.





MARIN IS FACING THE CHALLENGE by planning for climate change so we can protect our communities now and into the future. Yet learning to live with rising sea levels is not enough. Reducing risk requires cutting the carbon emissions that drive climate impacts.

That's why:

Marin Clean Energy supplies 50% renewable energy to its customers and promotes energy efficiency. You can run your household and business with MCE's "Deep Green" 100% renewable energy. For more information, visit www.mcecleanenergy.org.





Marin County is taking other steps to cut carbon. such as reducing car traffic by expanding multi-use paths like the one you are standing on, creating a network of EV charging stations, and encouraging public transit use.

The Here-Now-Us Project is a public private-community partnership. The UML installation is a 12 week research project designed to test visualizations as an effective tool to engage the community in planning for climate change. Up Susanne Maser, in compartions with Antioch University, is overseend, the project, AU survey and audio data collected will remain anonymous and condential and kept separate from email contracts that are volumating submitted at here. Now, Us org, Data and responses may be analyzed and reported in scientific publications as part of this research.

A AUTODESK Project Leaders Anne ClimateAccess OOWLIZED

Project Advisors:





MOSER Project Researchers



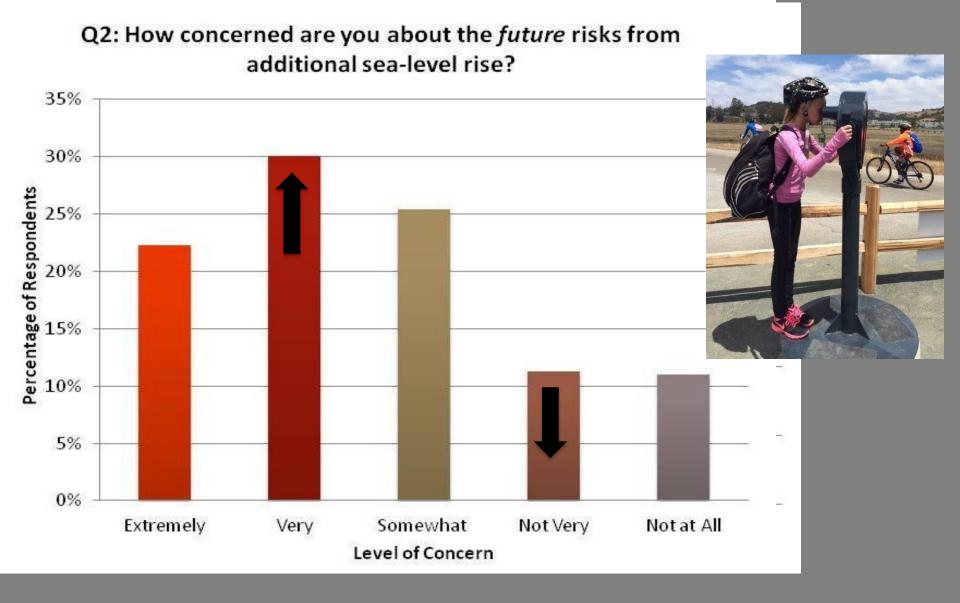
HERE – NOW – US



The "OWL" Project

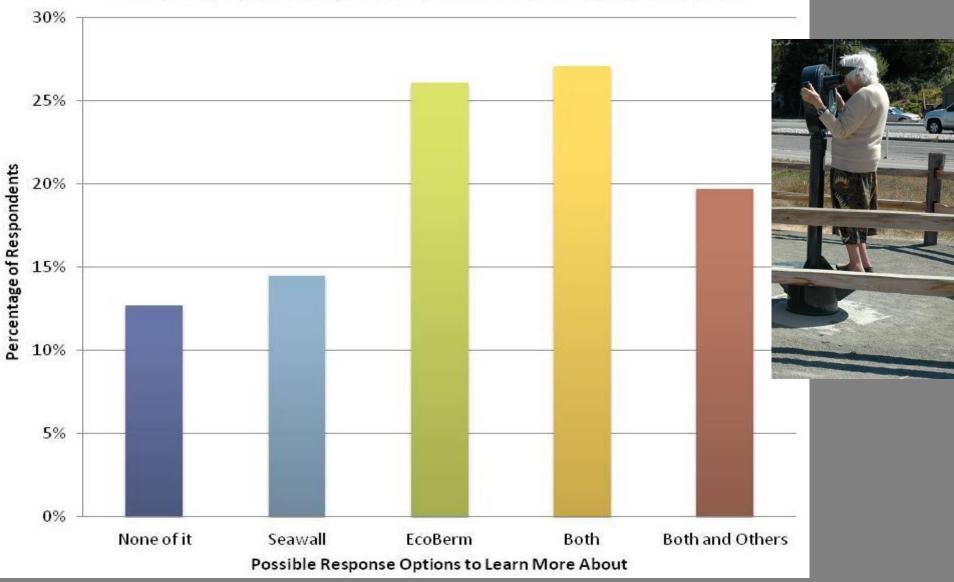


...and three feet of sea level rise



WHAT WE LEARNED





Q3: Which option are you most interested to learn more about?

WHAT WE LEARNED



WHAT WE LEARNED



SEA LEVEL RISE 'paint Marin blue'

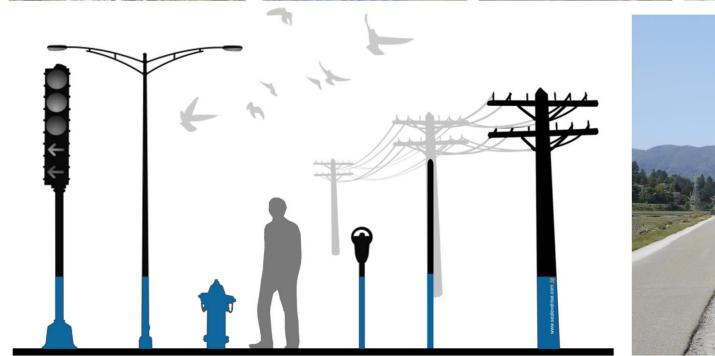


















Political Leadership Technical Expertise An Engaged Community



Courageous leaders make the difference

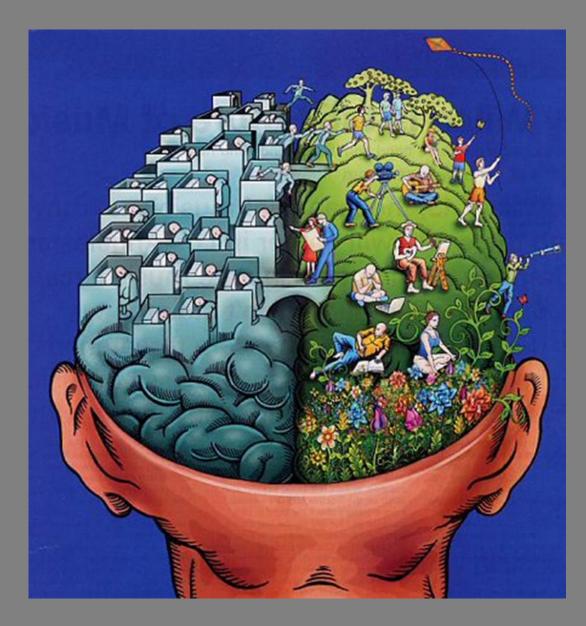




NEW COMMUNICATION



NEW COMMUNICATION







BAYAREA

COUNCIL





action



Securing our Future by Investing in our Water Resources, Environment & Community









Clean Power

Local. Renewable. Ours.



"Temperature rise and the physical effects it causes may be inevitable,

but how humans react is up to us.

There is still time, if we hurry, to enlarge our vision of how to cope with climate change, to recognize that we must not only reverse it but also adapt to it."

> - Mark Hertsgaard "Hot – Surviving the Next 50 years on the Planet"

The BIG Picture

Global National Regional Local



THANK YOU!

Preparing for Change Along Our Shore

Sea level rise is impacting us NERE in Marin County NOW, with more frequent and damaging floods. It is up to all of US to protect the bayside communities we love.

SEA LEVEL RISE VIRTUAL REALITY EXPERIENCE TAXE A LUDOR brough to diverte form what hoper to diverte form what hoper to diverte form were location and very l

Provide responses to meet the provide responses to meet the contracting of living with water.

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The Mannes

AT why Marin Den Force yanguine 50% recommission energy in its containers and pranides army efficiency from Can not your historisheld and business with WCL's "Date Green" 100% energy for more "Dates Green" 100% energy for more and the weat wear more taxonergy art.



Martin Colority is taking after stray to some sock as reflecting car traffic by oppointing motions paths like the new you are transfer on cratified a setterist of CV charging stational, and encounty of public transfer unit.

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PERCH.CLUB

www.MarinSLR.org

RESOURCES

CLIMATE ACCESS www.climateaccess.org

CITIZENS CLIMATE LOBBY www.citizensclimatelobby.org

CLIMATE READINESS INSTITUTE http://climatereadinessinstitute.org

YALE ENVIRONMENT 360 http://e360.yale.edu

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION http://www.noaa.gov/climate

THE CLIMATE MOBILIZATION http://www.theclimatemobilization.org

LOCAL ENERGY AGGREGATION NETWORK – LEAN ENERGY US http://www.leanenergyus.org

350.Org www.350.org

100 RESILIENT CITIES http://www.100resilientcities.org

BAY CONSERVATION AND DEVELOPMENT COMMISSION http://www.bcdc.ca.gov

RESILIENT NEIGHBORHOODS www.resilientneighborhoods.org

STRATEGY FOR A SUSTAINABLE REGION

MANDINI CLEANI ENIEDCV

Contact Information:

LESLIE ALDEN Policy Aide Marin County Board of Supervisors 415-473-7862 <u>lalden@marincounty.org</u> <u>leslie.alden.sf@gmail.com</u>

and... "OWL" VR: perch.club "Game of Floods": marinslr.org