Urban Land Institute

Advisory Services Program

Wildfire, Energy, and Economic Resilience

SONOMA, CA

AN ADVISORY SERVICES PANEL

APRIL 21, 2021

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Presentation Logistics

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  - A recording will be available on RCPA's website and on ULI's Knowledge Finder resource library at knowledge.uli.org
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COUNTY OF SONOMA

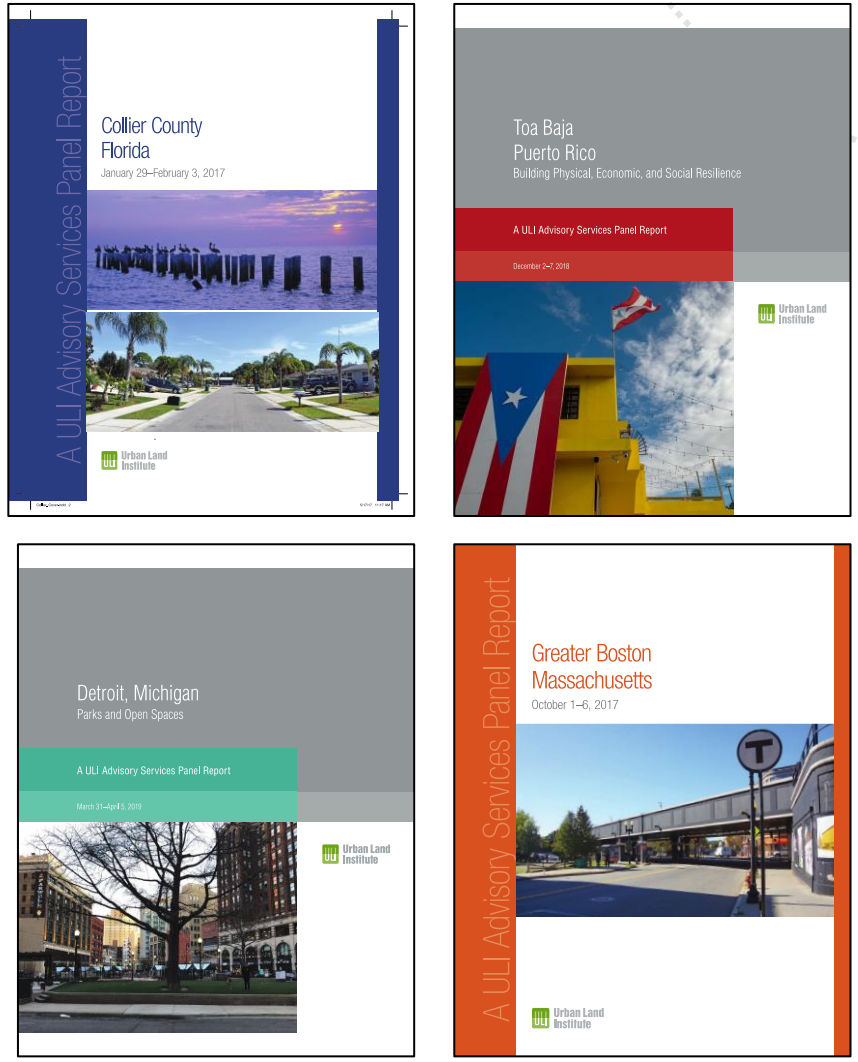
City of Santa Rosa

About the Urban Land Institute

Providing leadership in the responsible use of land and in creating and sustaining thriving communities worldwide

- A multi-disciplinary nonprofit membership organization with more than 45,000 members in private enterprise and public service

- What the Urban Land Institute does:
  - Conducts research
  - Provides a forum for sharing of best practices
  - Writes, edits, and publishes books and magazines
  - Organizes and conducts meetings
  - Directs outreach programs
  - Conducts Advisory Service Panels



Urban Land Institute
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Local and National Collaboration at ULI

This Panel leverages the research and member networks of three ULI Centers

ULI Advisory Services

- Since 1947, delivering creative, practical solutions to complex land use challenges
- More information at: uli.org/advisoryservices

Panel Project Staff
Grace Hill

ULI San Francisco

- Serving North Bay and the Bay Area's public and private sectors with pragmatic land use expertise and education
- More information at sf.uli.org

Member Steering Committee
Rick Dishnica
Clay Gantz
Jim Heid

Panel Project Staff
Natalie Sandoval
Casey Pond

ULI Urban Resilience

- Bringing ULI's expertise in land use, real estate, and climate resilience to communities nationwide
- More information at uli.org/urbanresilience

Panel Project Staff
Katharine Burgess
Elizabeth Foster

Virtual Advisory Services Panel

- Review of briefing materials
- Virtual site briefing and tour
- Stakeholder interviews
- Panelist deliberation and work sessions
- Presentation of recommendations

- Publication of free, publicly accessible final report ~3 months after presentation

ULI Virtual Advisory Services

Since 1947, **ULI Advisory Services** have helped communities' find strategic, practical solutions for the most challenging issues facing today's urban, suburban, and rural areas. Advisory Services offerings areideal for government, nonprofits, public, and private organizations that need independent, timely and unbiased solutions for specific land use and real estate development challenges.

In response to the worldwide COVID-19 pandemic, the ULI Advisory Services team has adapted by creating a new suite of virtual programs which will allow ULI and its members to continue to fulfill ULI's mission and provide strategic advice to communities on programmatic goals to incorporate social distancing as part of the program's execution.

1 **Virtual Advisory Services Panels (vASP)** are a pivot from ULI's traditional five-day Advisory Services offering where ULI members engage with stakeholders through in-depth interview, deliberate recommendations and create a presentation that leads to a letter report synthesizing their findings.

Final deliverables include a video recording of the presentation and Q&A between the sponsor and panelists; a final presentation of recommendations; and a letter report documenting the panel's recommendations.

2.5 Day vASP: This is a virtual offering meeting over 2.5 days tailored to meet a sponsor's needs. Working in partnership with ULI, the sponsor develops a problem statement and 4-6 challenge questions, along with a series of briefing materials to bolster the understanding of the problem scope. These briefing materials are shared electronically in advance with a multi-disciplinary panel of 4-6 member experts who's skills meet the needs of the identified challenge.

Virtual Project Analysis Session (vPAS) encourage creative thinking and problem-solving between a sponsor and a multi-disciplinary panel on a succinct and direct land-use challenge. These intimate, conversational offerings are structured and facilitated to yield provide in-depth, project-specific, and pragmatic recommendations in a short period of time.

Final deliverables include a video recording of deliberations between the panel and sponsor, and an optional memo summarizing the panel's recommendations.

2 **Half Day vPAS:** This is a three-hour analysis of a specific challenge that occurs in an intimate, conversational format. The offering begins with a sponsor-led brief overview of the challenge that complements the briefing materials. Panelists then engage in deliberations with the sponsor through a facilitated virtual convening.

3 **Full Day vPAS:** This is an eight-hour offering builds on the half-day program, an includes an opportunity to engage in a limited capacity with area stakeholders in addition to the sponsor. After engaging with stakeholders, panelists deliberate both with the sponsor and among themselves in order to develop strategic recommendations.

For further information of differentiation of these offerings and cost, please contact advisoryservices@uli.org

Urban Land Institute Advisory Services Program

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Advisory Services Program

ULI Panelists

Selected for their subject matter expertise to provide **objective, volunteer** recommendations

Molly McCabe (Panel Chair)
Co-Founder
Hayden Tanner & The Lotus Campaign
Bigfork, MT

Jose Bodipo-Memba
Director, Sustainable Communities
Sacramento Municipal Utility District
Sacramento, CA

Christopher Calott
Founding Faculty Director, Master of Real Estate Development + Design Program
University of California, Berkeley
Oakland, CA

Jeremy Klemic
Associate Principal
SWA
Los Angeles, CA

John Macomber
Senior Lecturer, Finance
Harvard Business School
Boston, MA

Molly Mowery
Executive Director
Community Wildfire Planning Center
Denver, CO

Peter Quintanilla
Urban Design Studio Lead
Michael Baker International
Pittsburgh, PA

Diana A. Ramirez
Director, Economic Development & Strategic Investments
Travis County Planning & Budget Office
Austin, TX

Neil Webb
Director, Markets & Growth
Ramboll
Syracuse, NY

Panel Scope

Land Use & Development for Wildfire Resilience

- What land use and development strategies and policies can Sonoma County use to equitably address current wildfire risks and set the foundation to meet the predicted increased lengths of fire season and power shut offs?

Energy & Economic Resilience

- How can Sonoma County increase the resilience and reliability of its energy supply as it transitions from fossil fuels to renewable electricity and prepares for the impact of extreme events?

Equitable Governance, Partnerships, & Funding

- How can we ensure that land use, development, and infrastructure investment decisions are transparent and support equity?
- Recognizing that energy and wildfire risks often span jurisdictional and organizational boundaries, what best practices in governance and funding can Sonoma County implement?
- What can we do now and in the next few years to establish and leverage new revenue sources?

Thank you, Stakeholders!

Alegria de la Cruz • Amy Nicholson • Brian Ling • Bruce Okrepkie • Caitlin Cornwall • Caryl Hart • Christel Querijero • Christopoher Godley • Clare Hartman • Clayton Gantz• Claudia Luke • Cordel Stillman • Council Member Ariel Kelley • Council Member Melanie Bagby • Council Member Tom Schwedhelm • Cynthia Murray • D'Lynda Fischer • Drew Norton • Evan Wiig • Gabriela Oranges • Geof Syphers • Guadalupe Navarro • Harry Davitian • Jane Elias • Jean Kapolchok • Jeff Kelly • Jeff Owen • Jesus Guzman • Jim Heid • John Mack • Josiah Cain • Keith Christopherson • Lawrence Florin • Leslie Lukacs • Lisa Micheli • Lois Fisher • Mark Farmer • Mayor Chris Rogers • Michael Haney • Michelle Whitman • Misti Arias • Neil Bregman • Oscar Chavez • Pamela Van Halsema • Peter Rumble • Peter Stanley • Ray Lucchesi • Rick Dishnica • Sarah Cardona • Scott Johnson • Sean McGlynn • Suzanne Smith • Sheba Person-Whitley • Sheryl Bratton • Supervisor Chris Coursey • Supervisor Lynda Hopkins • Tawny Tesconi • Ted Tiffany • Tennis Wick • Terry Crowley • Tom Conlon • Trathen Heckman • Valerie Quinto

What we heard

Trauma

- "Disaster is a new constant state of being in Sonoma county."
- "We've gotten a lot better at responding to disasters because we have been in them. But I don't think we have gotten used to this new state of being, of being constantly in disaster and recovery mode."

Capacity/Leadership

- "We have no more capacity and no one is organizing us."
- "The power of the region is not being harvested."

Housing

- "Housing policy is climate policy."
- "The density that people are afraid of already exists."

Grid Resilience

- "PSPS has not proven to really be mitigation."

Equity

- "The lost wages for the working class community in Sonoma County, which is majority Latino/Latinx and families with young kids, created economic instability on a level that no one was prepared for."

Essence

- "We need to meet each community where it is at"
- "We are a confederation of cities, hamlets and unincorporated areas, each with a unique character, its own feel and its own way of life."

"Disasters really emphasize how much people need each other and need to rely on each other, especially in small communities."

"The best solutions might be regional, not local"

One Sonoma

"Though buildings and land remain physical assets,

fundamentally

they are framed in the context of community and region”

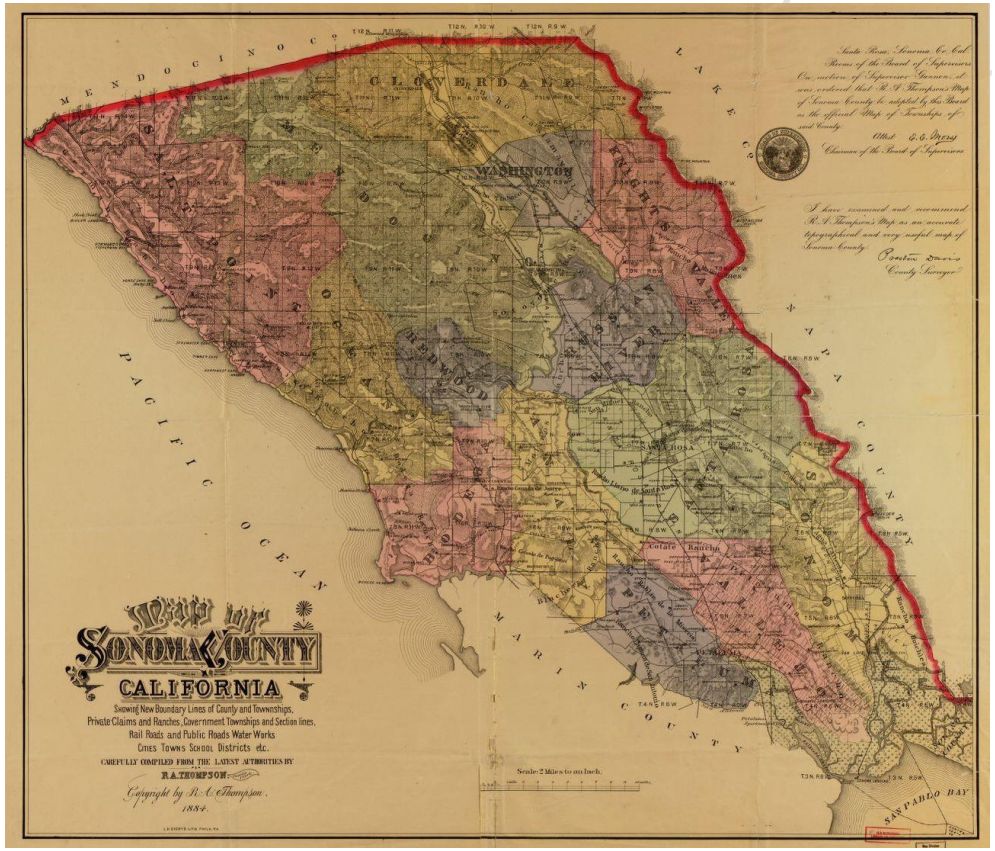
A Confederation

Level-Set

- **Community Essence**
  - The word **community** comes from the **Latin** communis, meaning "common, public, shared by all or many.
  - **Essence** - from the L**atin**: essentia) the set of properties that make an entity or substance what it fundamentally is, and which it has by necessity, and without which it loses its identity.

- **Resilience**
  - Not just going back to the way things were – but, coming back stronger; not just bouncing back, - but bouncing forward.
  - Starting with climate resilience – how cities, buildings and communities can be more prepared for the impacts of climate change.

- **Equity**
  - Just and fair inclusion into a society in which all can participate, prosper, and reach their full potential. (PolicyLink)
  - Wildfires are disproportionately impacting marginalized and otherwise disadvantaged communities, considering age, socioeconomic status, race, immigration status, language spoken, technology access, private vehicular access and other factors.



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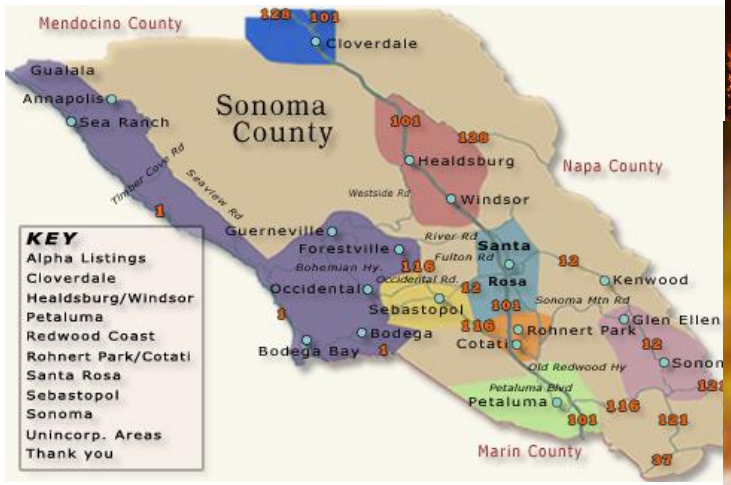
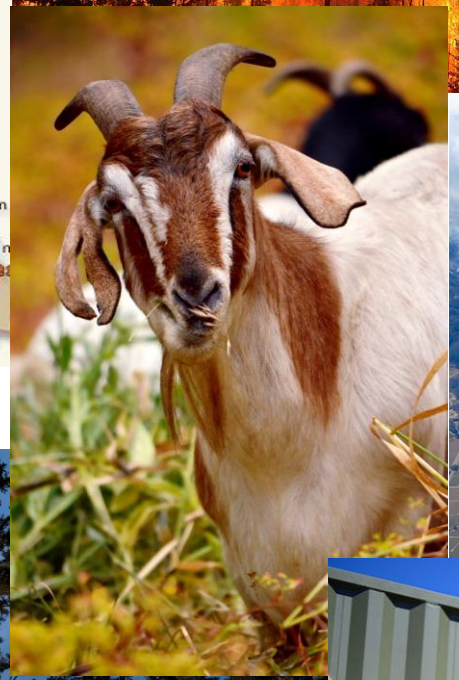
Foreshadowing





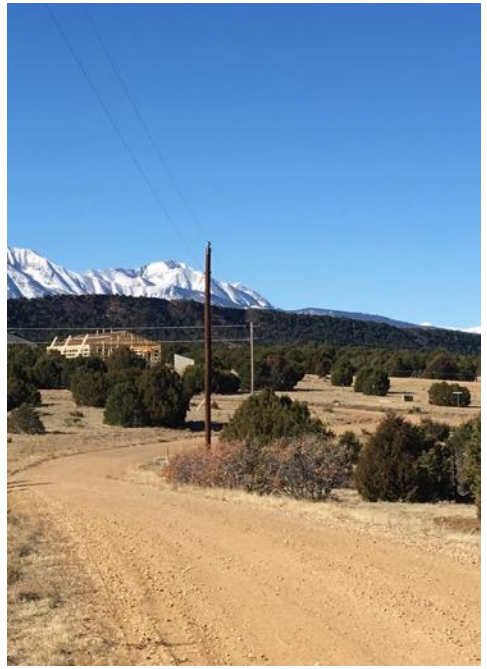
WILDLAND-URBAN INTERFACE (WUI)

“In its simplest terms, the fire interface is any point where the fuel feeding a wildfire changes from natural (wildland) fuel to man-made (urban) fuel…”

- C.P. Butler, Stanford Research Institute

Expertise from Molly Mowery, Executive Director, Community Wildfire Planning Center

Image: istockphoto (purchased by CWPC)



WILDLAND-URBAN INTERFACE (WUI)

Expertise from Molly Mowery, Executive Director, Community Wildfire Planning Center

Images: Molly Mowery

Re-Envisioning the WUI

- Expand support for new development through promotion of minimum countywide wildfire construction standards for housing
- Support existing development through increased investments in home hardening program
- Promote WUI education/trainings for industry professionals (developers, architects, planners, landscapers) and residents

Images: Molly Mowery

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Expertise from Molly Mowery, Executive Director, Community Wildfire Planning Center

Wildfire / Land Use

What is a Healthy / Intact Forest – Current status

- Forests were intended to grow to survive fire
  - **Native ‘old growth’ forests were fire ‘resistant’**
  - Historic ‘natural forest burn cycle’ has been prevented
  - Modern Forest Management = Fire Suppression
  - Drought + Bark Beetle = deadwood & fuel increase
  - Majority of fires are anthropogenic (human caused)
  - Difference between low fire vs catastrophic fire
  - Fire occurrence in the WUI is increasing
  - Vicious cycle - **mismanagement equals megafires**

Image Credits: Flickr/Government of Alberta & Wikimedia

Wildfire / Land Use

What is a Healthy / Intact Forest – Changing Perception

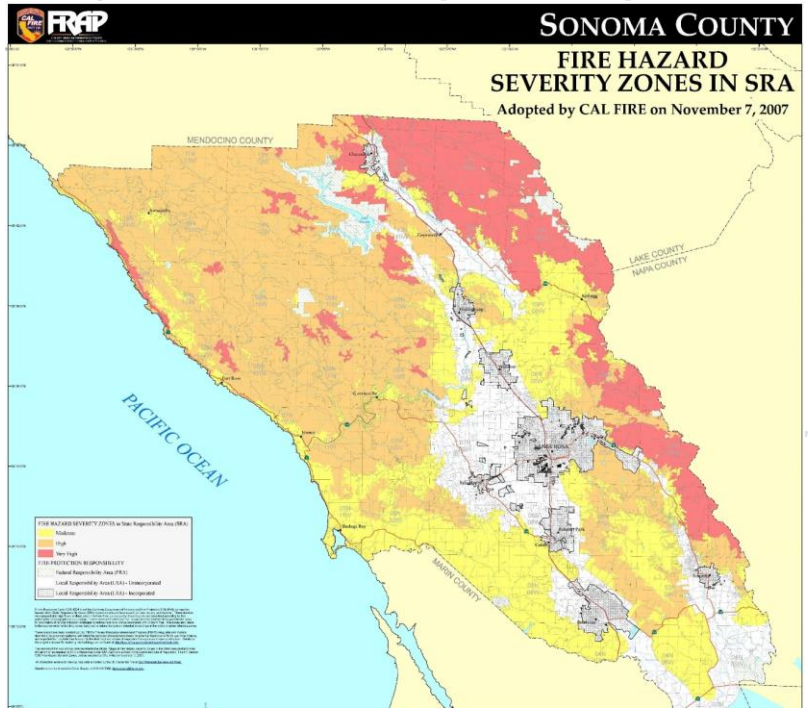
- Utilize Healthy Foresting Practices = Resilience
  - Vegetation management – **promote prescribed burning** and mechanical thinning
  - Recognize that fuel treatment is not to reduce the amount of fire – but the severity
  - Reintroduction of fire tolerant species & essential thinning of tree stands to encourage stronger growth
  - Incentivize innovations in forest products to utilize materials from fuel reduction projects
  - Proper Urban Forest management – mitigate heat island effect created by proposed urban infill

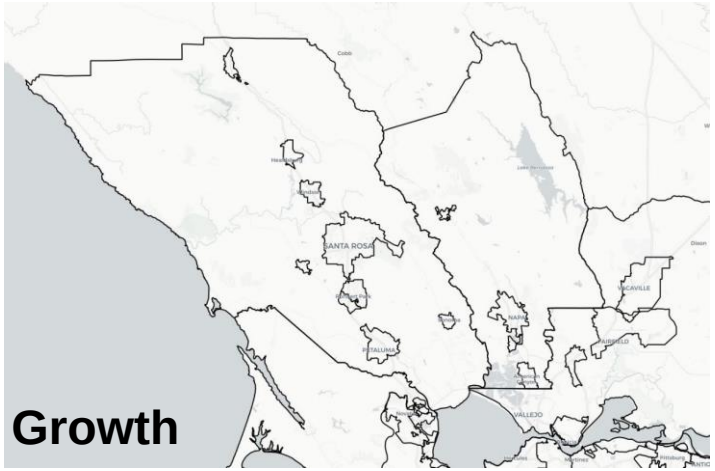
Image Credits: Austin AFD

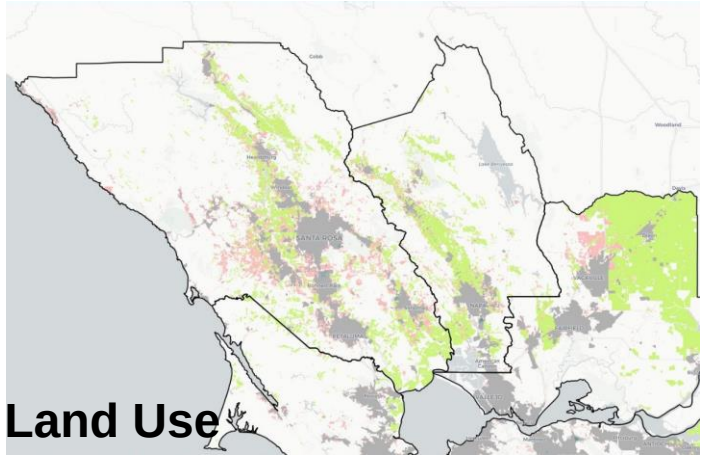
Wildfire / Land Use

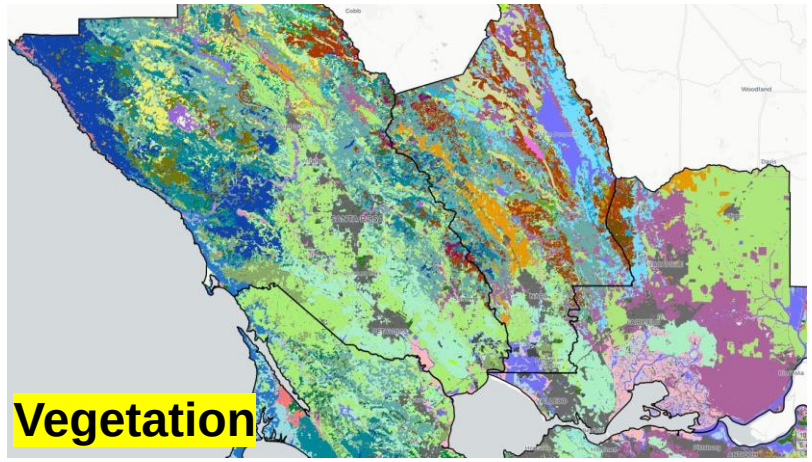
Living With Fire – Fire Science

- Aggregation of metadata – data overload
  - Existence of maps, maps and more maps
  - Work towards the data informed Wildfire Action Plan
  - **Need a ‘holy grail’ (singular) map for public understanding**
  - Vegetation typology to influence fire mitigation techniques
  - Maps for fire fighters – water sources and access roads





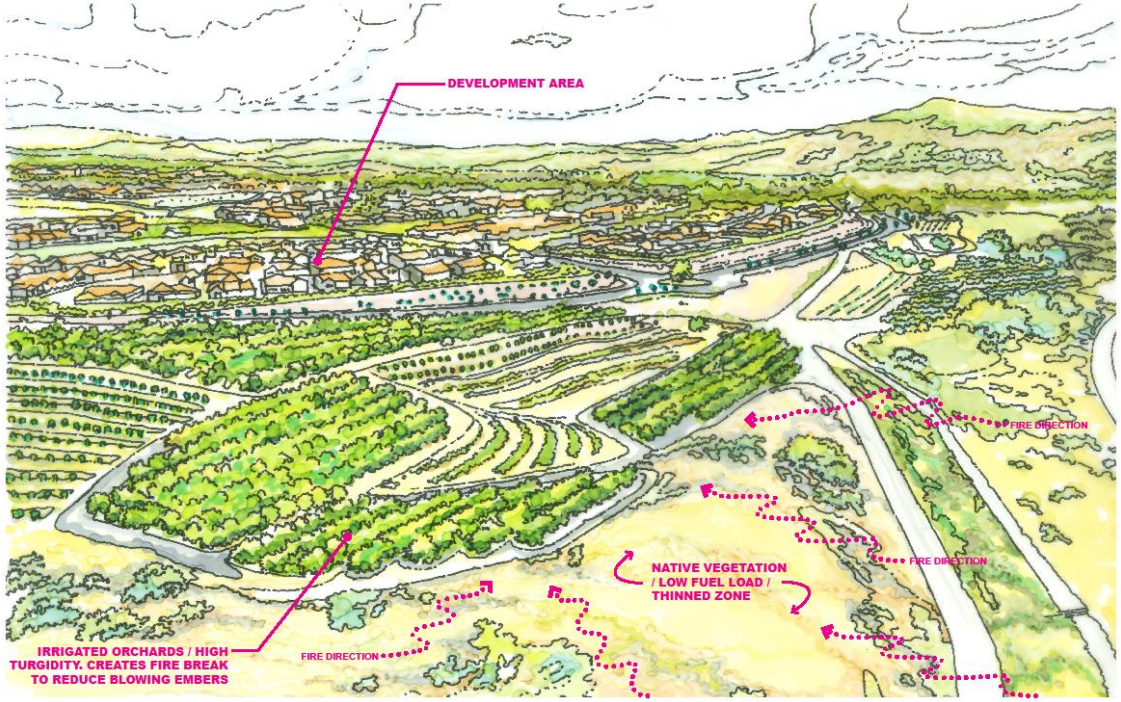


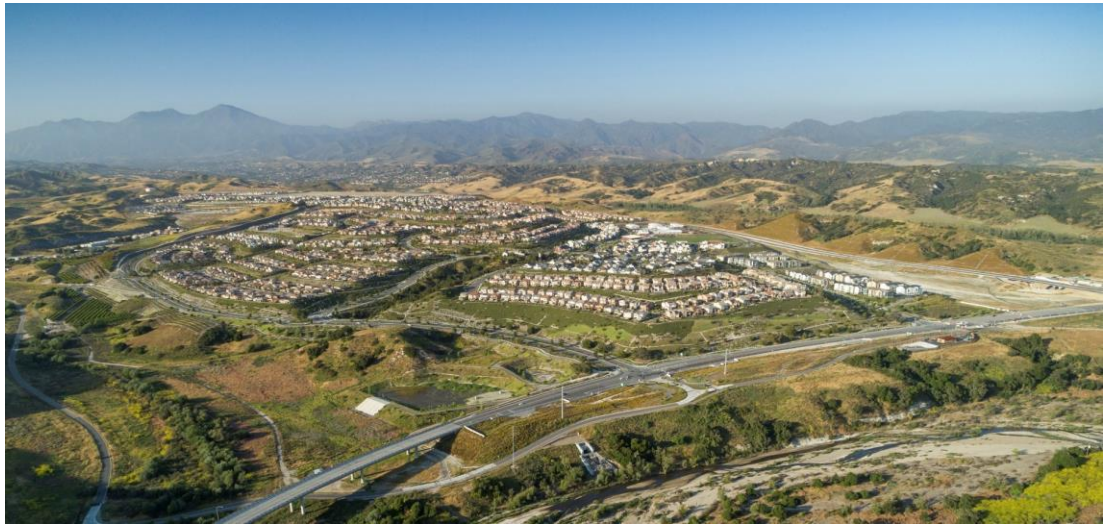


Wildfire / Land Use

Living With Fire – Local

- Local Landscape Relationship = Resilience
  - Build and Rebuild with Wildfire Protection Plans
  - Defensible space and fire resilient planting
  - **Increase turgid areas – (agriculture / infiltration)**
  - Roads for emergency access and egress
  - Home hardening with fire resistant materials
  - Ember spreading suppression with irrigation
  - **C**itizens **O**rganized to **P**repare for **E**mergencies
  - Study existing & proposed CA precedents
    - Mariposa County Fire Advisory Committee
    - Esencia Village, Rancho Mission Viejo
    - Santa Monica Mountains Conservancy
    - Guenoc Valley Project, Lake County

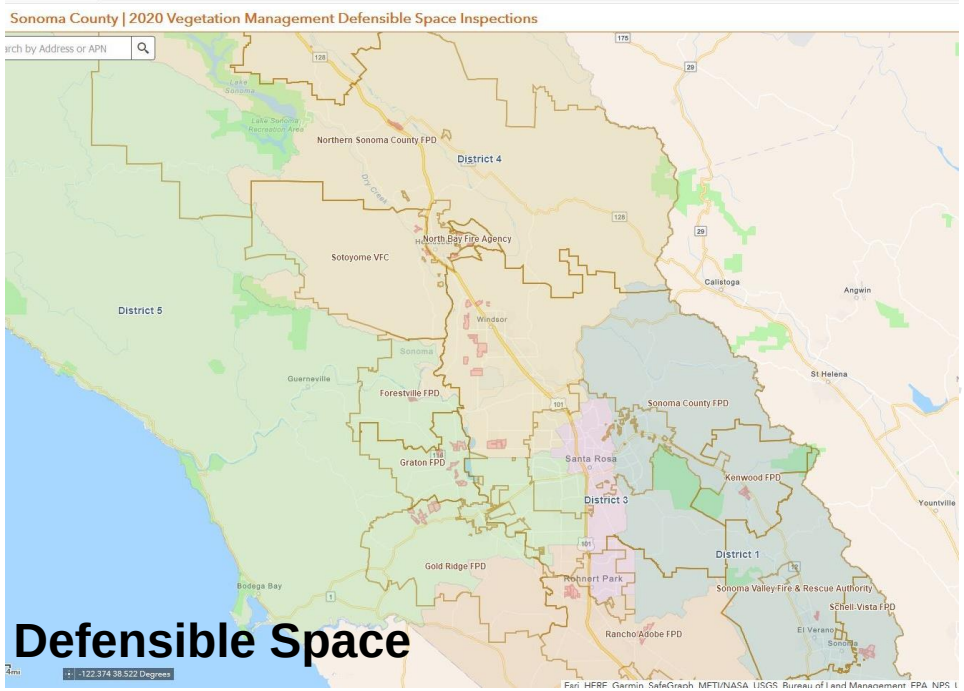


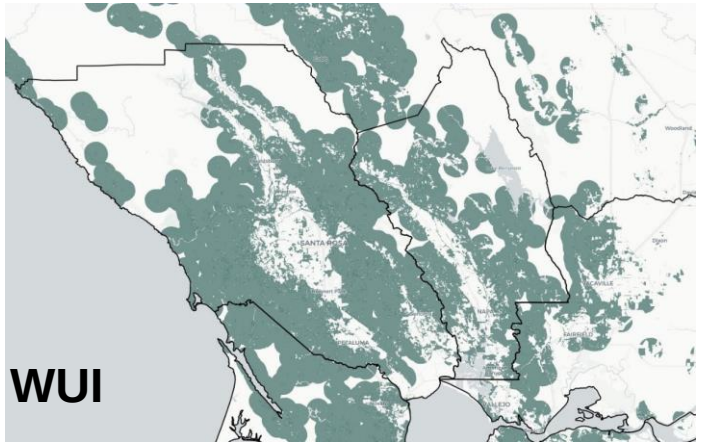


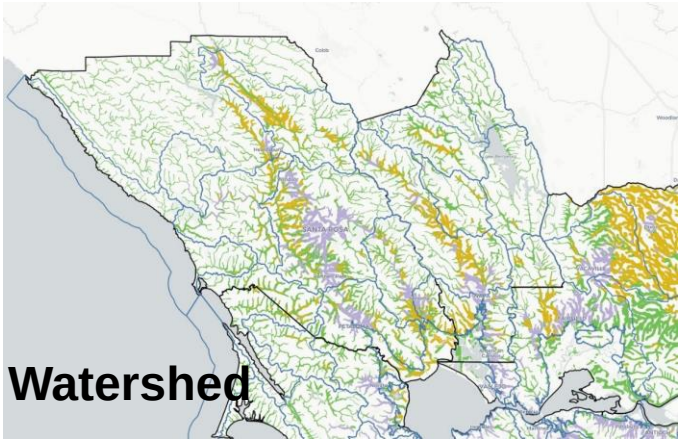
Wildfire / Land Use

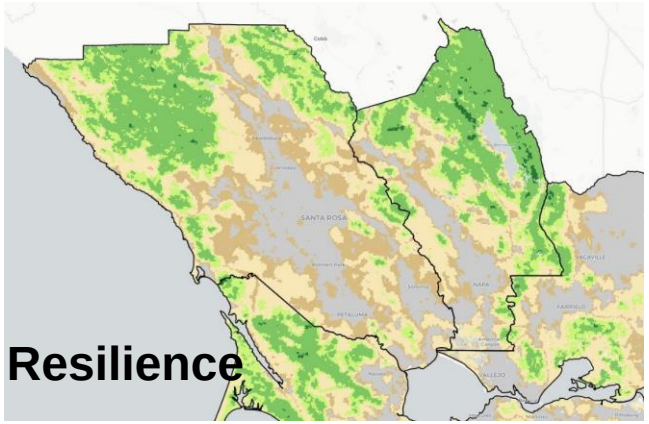
Living With Fire – Regional

- Regional Landscape Relationship = Resilience
  - Fire is a natural system with no borders
  - One vision, co-creation for investment & implementation
  - Sonoma and adjacent County cooperative
  - **Establish Wildfire Buffer Zones & Protective Corridors**
  - Put animals to work - sheep, goats, cows, beavers, birds
  - Encourage people to cooperate - public, private, non-profit









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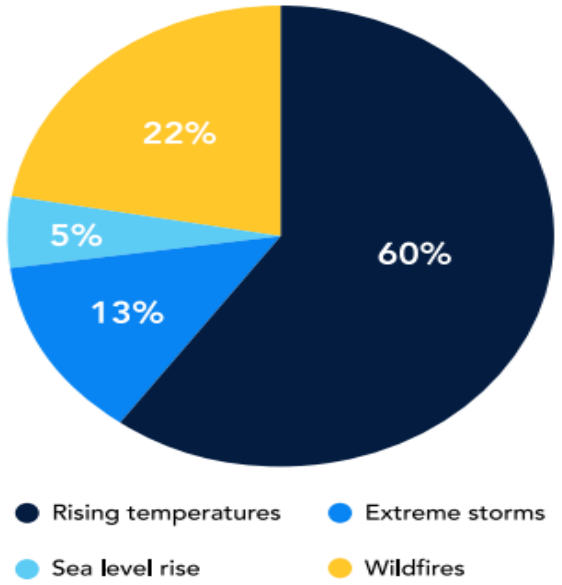
Energy & Economic Resilience

How can Sonoma County increase the resilience and reliability of its energy supply as it transitions from fossil fuels to renewable electricity and prepares for the impact of extreme events?

Assessment	Planning	Execution
• Vulnerabilities • Assets • Communications • Response • Recovery	• Priorities • Context • Formalize but be Flexible • Communicate/ Educate	• Find Champions • Establish Structure • Centralize • Funding/Finance • Monitor/Evaluate • Dialogue

Sonoma's Energy Infrastructure

Rising temperatures account for nearly 60% of the $500B climate resilience investment gap



ICF

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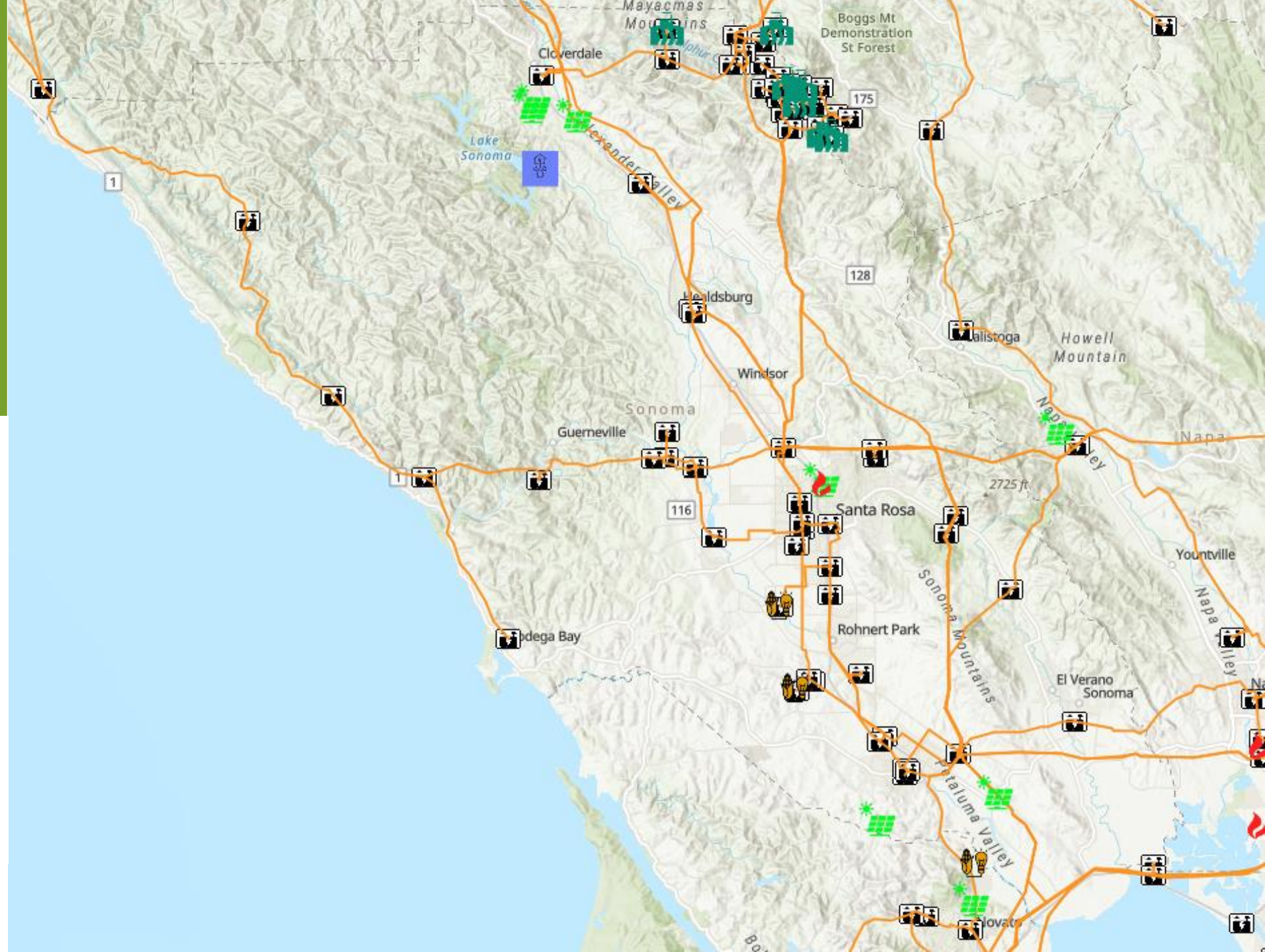

Energy & Economic Resilience

How can Sonoma County increase the resilience and reliability of its energy supply as it transitions from fossil fuels to renewable electricity and prepares for the impact of extreme events?

Assessment

Planning

Execution

Repeat

Existing energy infrastructure assets should be not be replaced in kind if it ultimately impairs our energy transition ambitions.

- What is the age of our infrastructure and how should we view replacement and retirements?
- Are we maintaining, monitoring and coordinating programs from vegetation management to physical assets?
- Can we sectionalize the grid and build greater intelligence locally to manage and isolate – i.e. microgrids?
- How can we view energy independence as a community?
  - Are there opportunities to rethink solar and storage for local benefits and independence?
  - What other emerging technologies can we evaluate?
- What can individual residences and properties do to lessen the need for large scale infrastructure and investment?
  - Retrofits – Codes – Standards
- Can electrification and transportation create a future benefits for our community?

Microgrids & Modernization

Clean, Affordable, Reliable, Equitable, and Safe

Hydrogen

New Construction

Storage

Retrofits

Transportation

Images: The Climate Center & Flickr/blmoregon

Community/Utility

Residential

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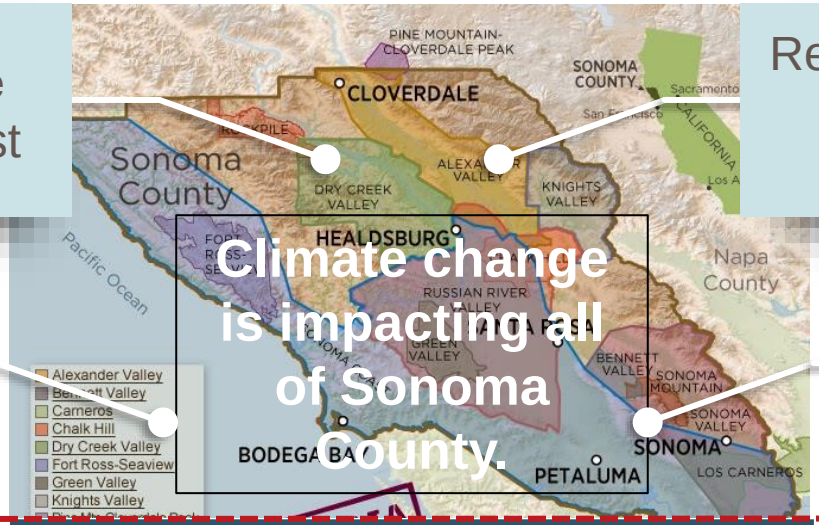
Why Regional Energy Resilience

Sonoma County regional agencies recognize that we're facing a climate crisis and must act.

Recent wildfires have reduced air quality and devastated local economy.

Impacts of Climate Change have devastated the local economy.

Cost of new energy storage technology slows ability to adopt.



Climate change is impacting all of Sonoma County.

Leverage energy resilience focus to strengthen the entire region.

Economy-
Jobs and inclusive economics

Safety-
Reduce droughts, wildfires and severe weather.

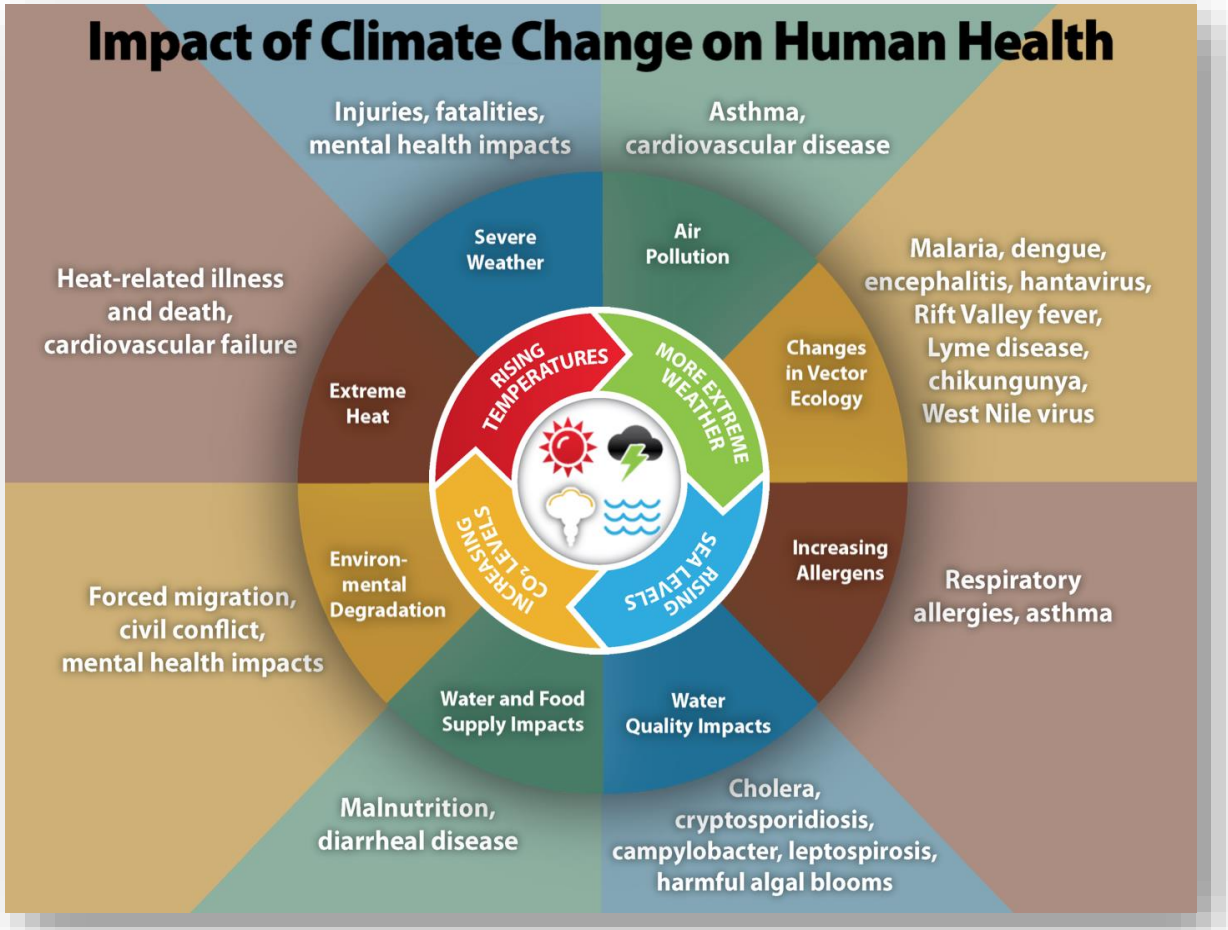
Environment-
Improve health and air quality

Innovation-
Attract innovation and investments to the region

Equity-
Address environmental justice and inclusion

How Do We Plan For an Equitable Resilient Future That Works Today?

Regional Strategy: Leave No Community Behind



New Normal of Energy Resilience: Impact of Power Shutoffs

How can Sonoma County increase the resilience and reliability of its energy supply as it transitions from fossil fuels to renewable electricity and prepares for the impact of extreme events?

Regional Partnership Approach

Communicate and Align
- Regional Resilience Goals
- More Lead Time
- Align Technical Experts
- Evacuation

Collaborate and Coordinate
- Vegetation Management
- Regional Undergrounding Strategy
- Regional Funding Strategy

Innovate
- Existing Programs
  - Commercial and Residential
  - Low Income Retrofits
- New Options
  - Segmentation
  - MicroGrids
  - Storage Technology

Regional Energy Resilience Strategy

Call to Action

Near term/Immediate- Leverage Community Assets: (Assessment)

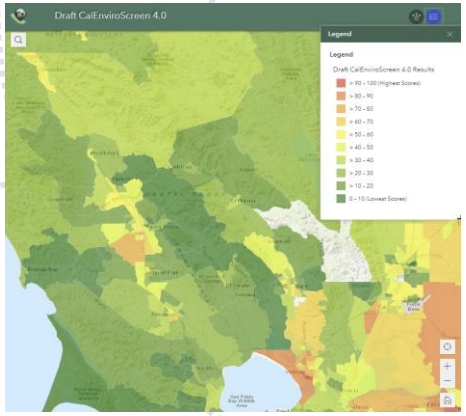
- **Communicate-** Regional Partnership Structure
  - Agency, Community Groups, and PG&E
- **Align-** "One Sonoma County" Regional Resilient Energy Strategy
- **Prioritize-** Identify Equitable Regional Wildfire Prioritization Metrics
- **Leverage-** Incorporate and communicate existing energy resilience programs

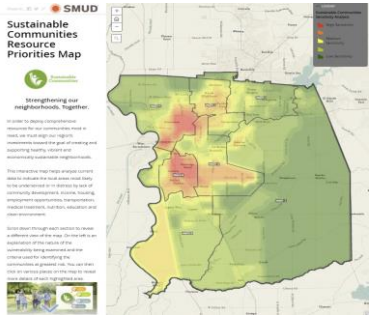
Mid term- Promote Equity & Maximize Regional Co-Benefits: (Planning)

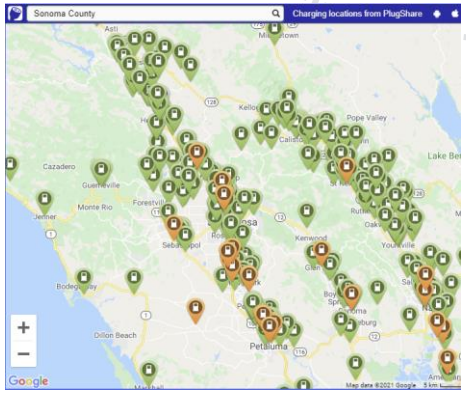
- Establish/Solidify Regional Resilience Consortium
- Regional Policy Development Areas
  - One Sonoma Zero Carbon Plan
  - Resilience Mitigation Funding Strategy
  - "Green Jobs" and Workforce Pipeline
  - Community Partner Outreach Resilience Prioritization Areas- Equity Lens
- Regional Resilience Data Consolidation
- Language, Income Demographic, Age, Health Risk, and Geographic Metrics

Long term- Harness Innovation & Technology; Maximize Regional Co-Benefits: (Execution)

- Regional Infrastructure Improvement Strategy
- Aligned Regional EV and Grid Infrastructure Improvement Strategy
- Innovative Energy Storage Phasing
- Regional Energy Resilience Prioritization/Sustainable Communities Mapping







Sonoma Governance – You Already Know What You Need to Do

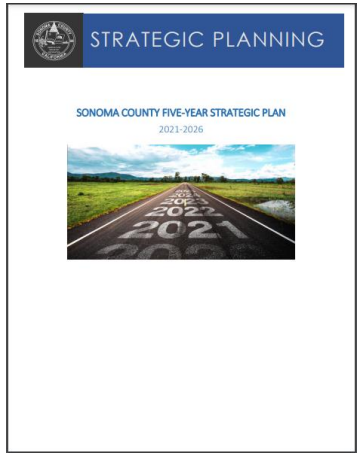
There are many great plans and planning efforts underway that demonstrate all the players' understanding of the resiliency issues facing the community. Implementing them is HARD.

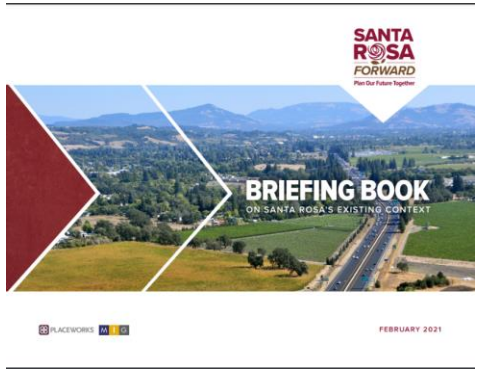
Key Insights

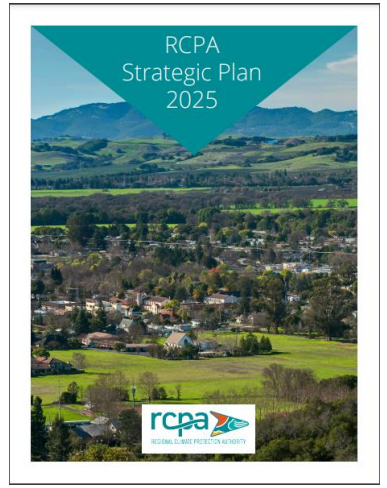
- You need champions.
- You need everyone pulling together.
- You need to keep your sense of urgency.

Ready for Next Fire Season

- Establish mutual aid and interlocal agreements.
- Pre-position contracts.
- Fund the regional groups.







Funding Sources

Tool	Source of Funding	Capacity	Authorization	Political Dimension	Additional Observations
SB1, the Road Repair and Accountability Act	State Road Maintenance and Rehabilitation Account	$10.9mm for FY 22; funding amount determined by state funding apportionment formula	County Board of Supervisors adoption of list of proposed projects by resolution	County must comply with accountability and transparency provisions	Can fund core road maintenance, rehabilitation, and critical safety needs on its road system and the purchase and upgrade of heavy equipment
American Rescue Plan	Local Fiscal Recovery Fund	Est. $95.87mm for Sonoma County; $36.43mm for City of Santa Rosa; $8.75mm for City of Petaluma; $2.23mm for City of Healdsburg; $1.44mm for City of Sebastopol, etc.	US Treasury Department or state allocation	Staff time	Uses should be considered transparently to help address overlapping impacts of wildfires and COVID public health emergency
PG&E Settlement	PG&E	Sonoma entities received $149,347,589.50 on June 20, 2020	Boards of the various entities approve the allocation of funds	Focus is on funding projects identified in the Recovery and Resiliency Framework	Agriculture and Open Space District will facilitate allocating funds for near-term community projects totaling $2-$4 million
BRIC (Building Resilient Infrastructure and Communities)	Grant	$50mm grant request submitted. Project selection occurs in Summer 2021.	FEMA	Regional cooperation and participation	Grant application submitted; funding focus is away from reactive disaster spending and toward research-supported, proactive investment in community resilience
Moon Shots*	Grants	TBD	Various	Staff time + likely matching funds	State and federal funds – usually one-time
American Jobs Act	Federal Infrastructure Funding	If passed, will provide $2+ trillion for high-speed broadband, a renewed electric grid; build, preserve and retrofit 2+ million homes and commercial buildings; incentive the purchase of electric vehicles; build infrastructure resilient to floods, fires, storms and other threats	Congressional vote	Staff time and planning to apply for and spend funds for greatest impact	

*Moon Shots: Public or private grants that may exist but will require some exploration into their availability

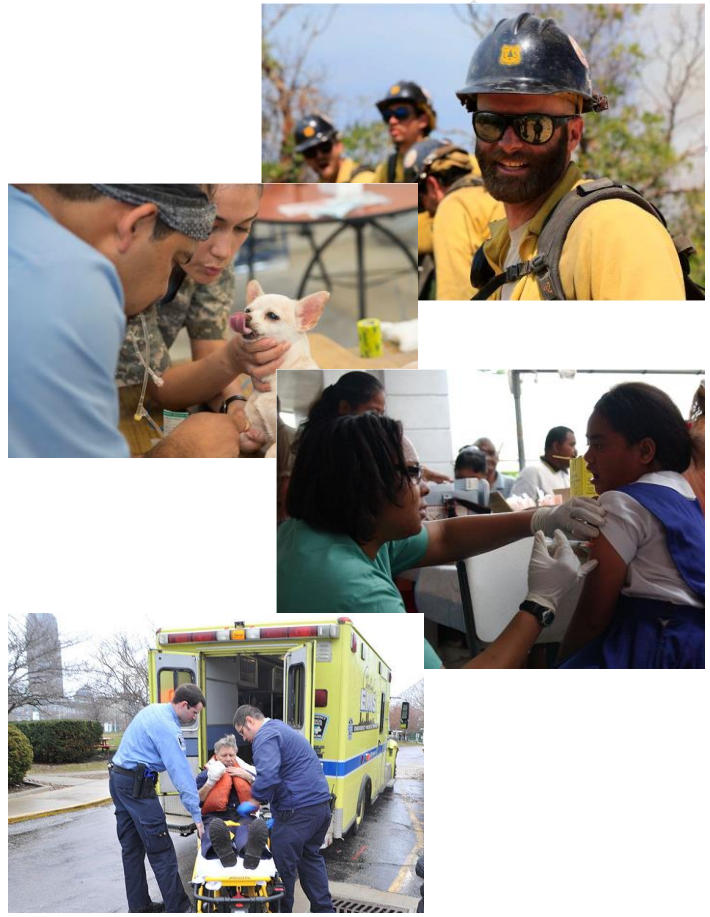
Build Trust & Buy-In

- ✓ Transparency in funding
- ✓ Alignment of funding
- ✓ Follow financial and risk best practices
- ✓ Leverage funding with partnerships

Housing & Resilience

Affordable Housing serves your neighbors, employees and co-workers, and your first responders

The Job	Median Salary	% AMI	Income Band	HH Size
Veterinary Tech	$39,155	<50%	Very low income	1 Person
EMT/Paramedic	$34,496	<50%	Very low income	1 Person
Lic Voc Nurse	$67,629	<80%	Low income	2 Person
Firefighter	$72,829	<80%	Low income	2 Person



Creating affordable housing builds resilience by

- ✓ Providing housing that's affordable to low to middle income residents
- ✓ Keeps critical service provider capacity in your community
- ✓ Allows for a mix of incomes in neighborhoods and equitable development

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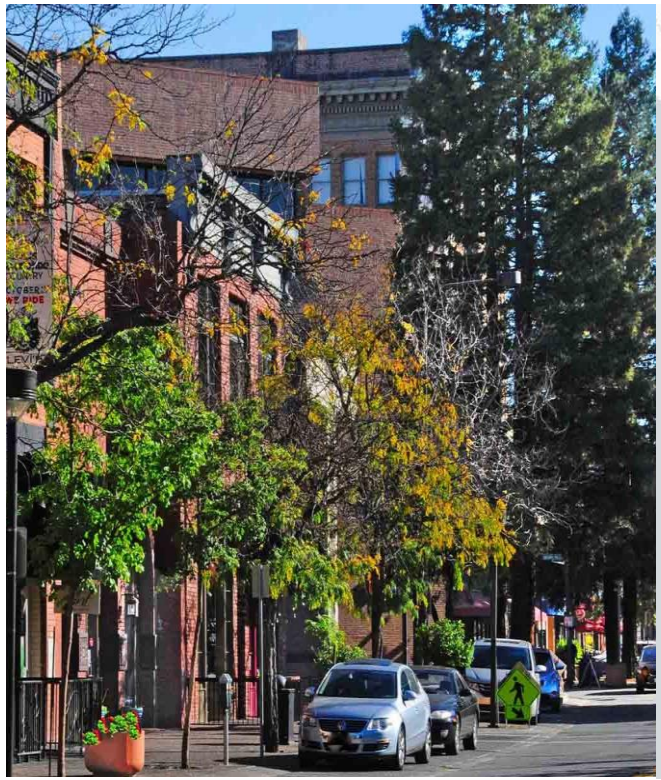
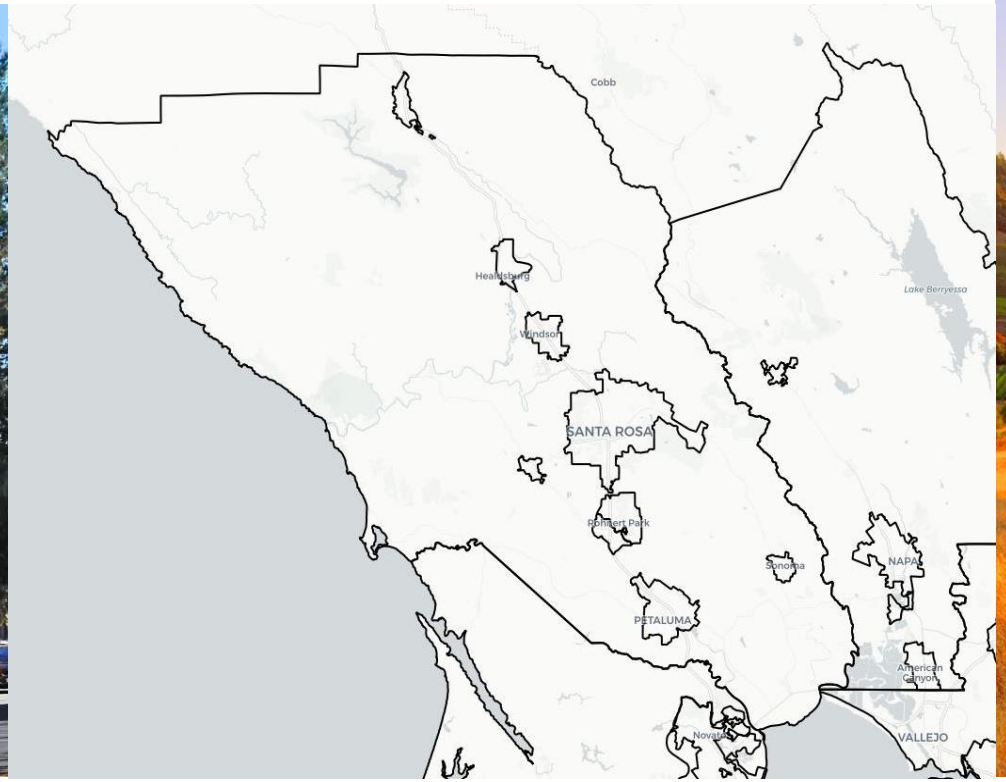
Sonoma's Urban Growth Boundaries Naturally Support the Concept of "Infill" Housing





Where does “infill” Housing go…on Downtown Core Parking Lots and in the neighborhoods!

THE CASE FOR INFILL HOUSING

1. The Right Place to Preserve Open Space
2. Can meet extraordinary Housing Demands
3. Creates more Vibrant Communities
4. Vital Support for Business Economies
5. **Fundamentally Addresses Issues of Equity**

Housing is really our “Social Infrastructure”

5-over-1 “infill” Apartment Building, for Transit-Oriented Downtown Core Housing

Image: Paca House, courtesy of ULI Terwilliger Center

Adaptive Reuse Loft Apartments in Downtown Core, using Historic Tax Credit funding

PARKING, PARKING, PARKING

1. Reduce Requirements so projects “Pencil”
2. Parking Share with existing facilities
3. Wrap new Parking Garages
4. Allow Reservoir Parking
5. **Improve Transit Options – TOD!**

ROOM FOR INFILL: Missing Middle housing for neighborhood blocks

Infill Duplex

Image credits: Flickr, Sightline Institute Middle Homes Library

Infill Fourplex

Image: Kirkpatrick Park House, courtesy of ULI Terwilliger Center

SKY ISN'T FALLING: Street with Missing Middle Infill Housing for neighborhood blocks

Image: Valley View, courtesy of ULI Terwilliger Center

Infill Subdivision of Duplexes, suitable for redeveloped land, Affordable and Workforce Housing

ADUs installed after Tubbs Fire

Image credit: Burbank Housing/Josh A Katz

PULLING THEIR WEIGHT: Bungalow Court Apartments for “infill” density in Sonoma’s smaller towns

Cottage Compound Single-family Houses for “infill” density in Sonoma’s smaller towns

THE CASE FOR A "HOUSING BOND"

1. To fill the gap to become competitive for State LIHTC Affordable Housing funds

2. To fund a Home Hardening Program supporting expenditures on existing at-risk homes

3. **To fulfill the County's commitment in making this Community more Equitable for All**

Protect what You Have!

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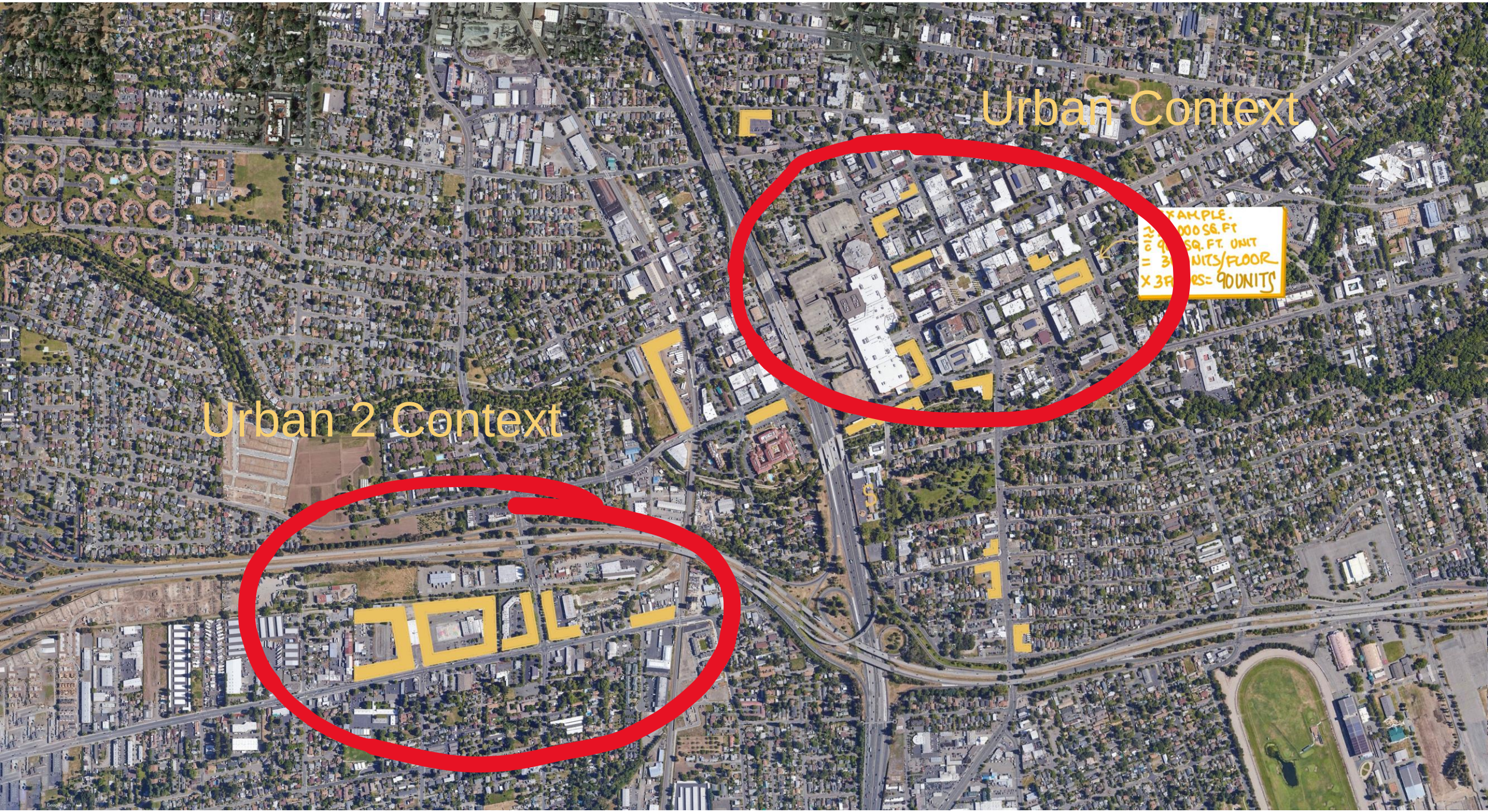
We heard you need more housing…

Urban and Suburban Infill

- Use typology that is context sensitive
- Minimize parking requirements
- Add “Sonoma Flavor”


Urban Context
Urban 2 Context

Urban Typology

20 Units

35 DU/AC

20 Garage Spaces

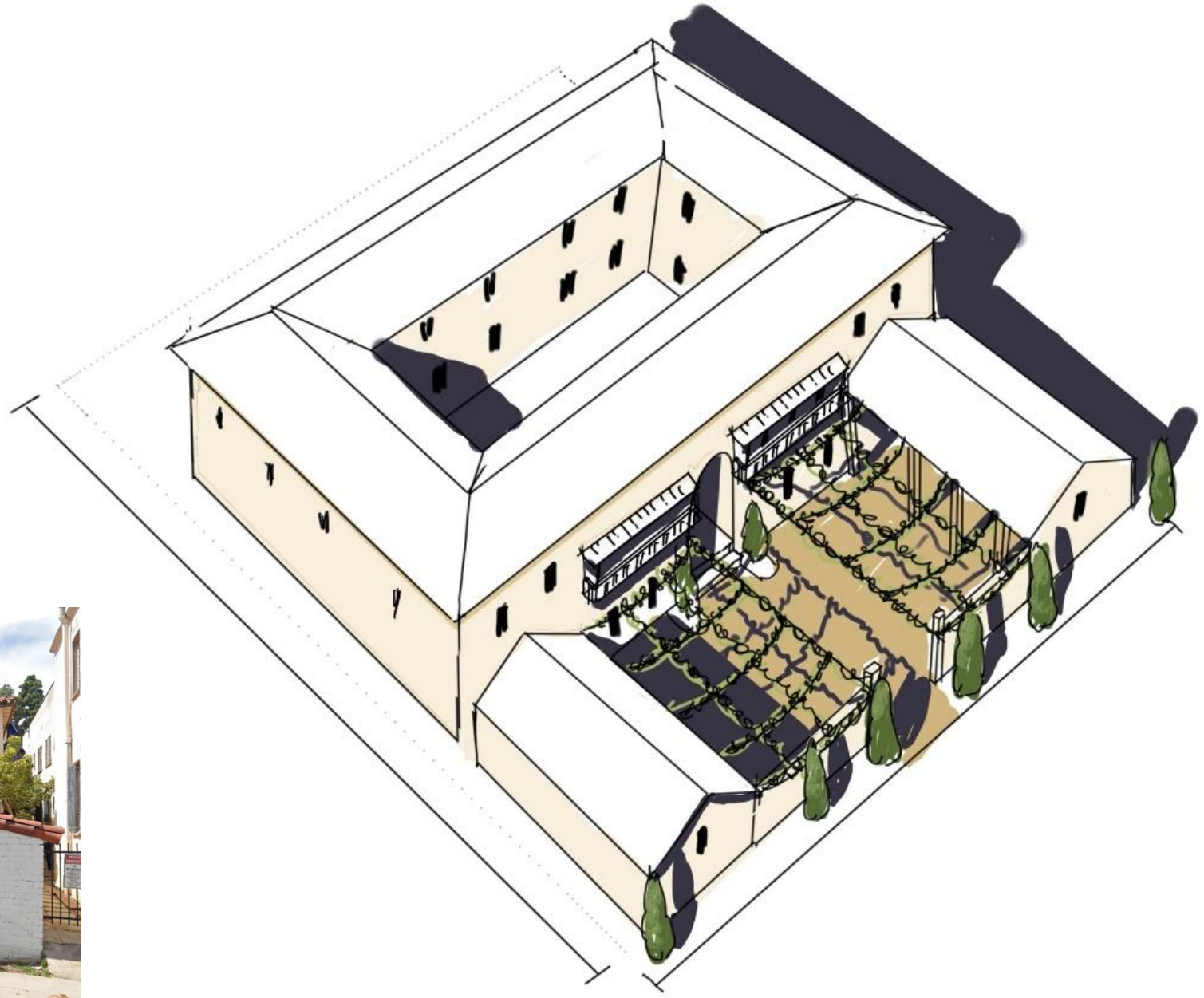
Tustin
178’X 136’
20 Units
35 DU/AC

Urban 2 Typology

12 Units

41 DU/AC

8 Garage Spaces

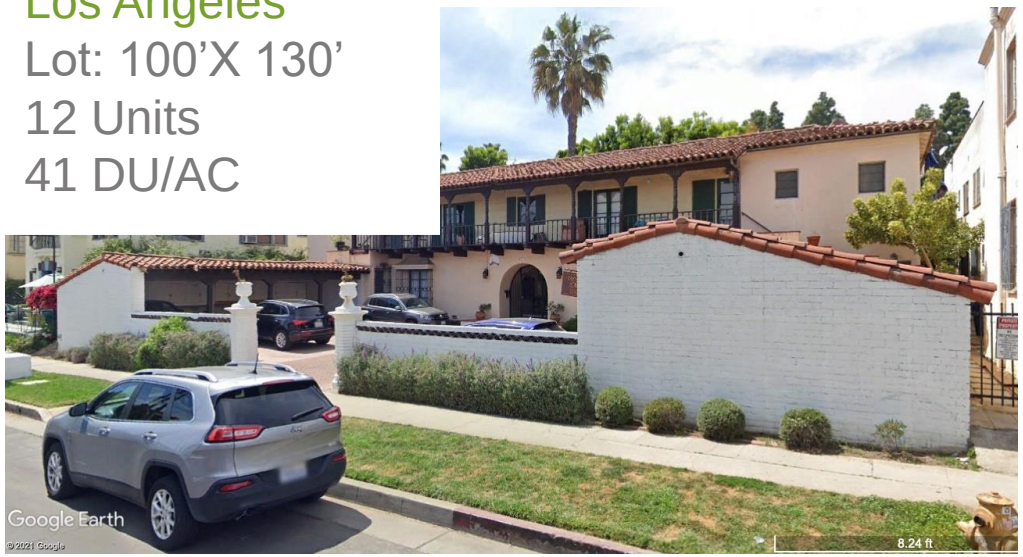


Los Angeles

Lot: 100’X 130’

12 Units

41 DU/AC

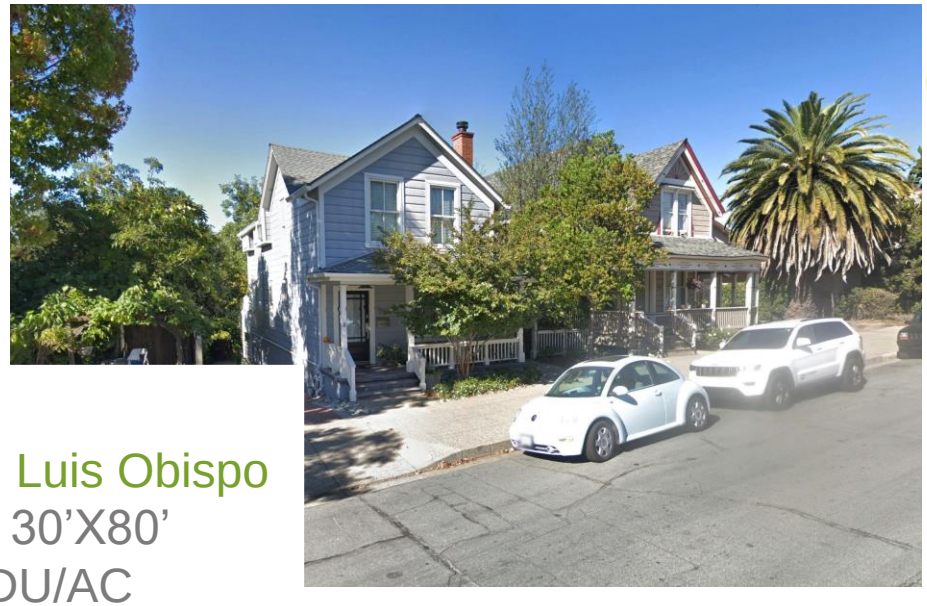


Hamlet Typology

1 Units

10 DU/AC

1 Garage Spaces

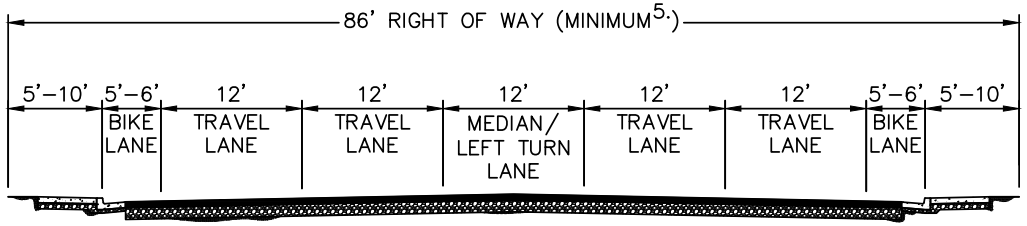


San Luis Obispo
Lot: 30’X80’
18 DU/AC

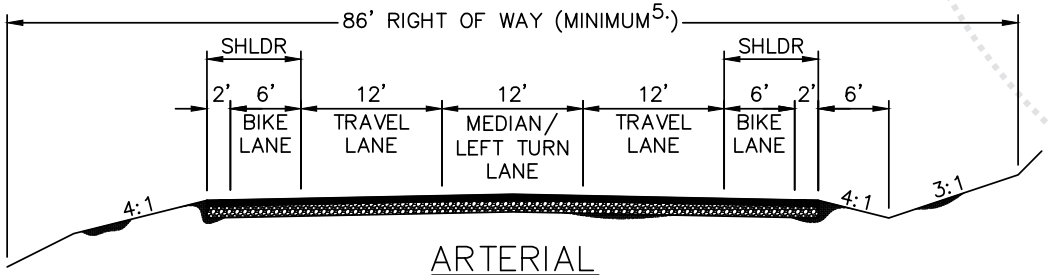
We heard you need new strategies for Climate Resilience

- Minimize heat island effect
- Reduce dark colors
- Add street trees

Typical Rural and Urban Street Sections



ARTERIAL



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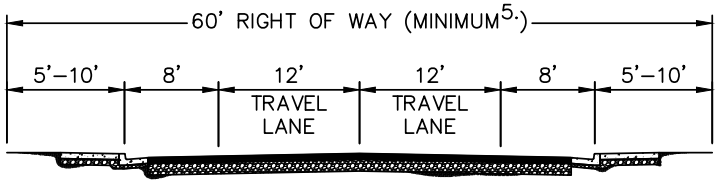
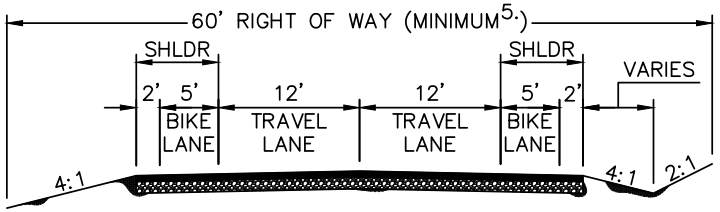


COLLECTOR



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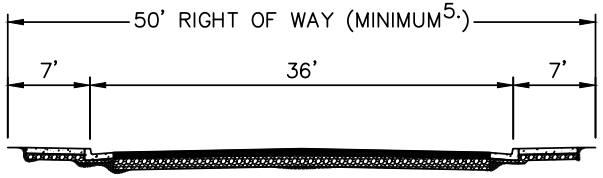
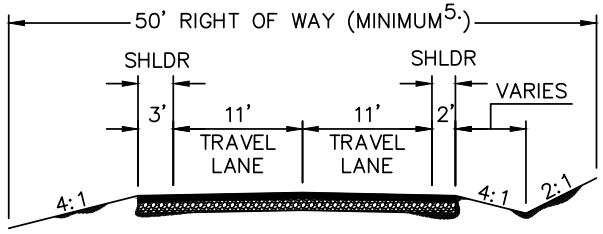


LOCAL



LOCAL

COUNTY OF SONOMA DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS		
RURAL TYPICAL ROAD CROSS–SECTIONS		
DATE: JUNE 2020	REVISED:	
APPROVED BY: JH	SCALE: NONE	DRAWING NO. 900A

Existing Condition

Urban Land Institute

Long Term - Urban Strategies for Climate Resilience

Minimize asphalt

Decrease heat island effect

Urban Land Institute

Long Term - Urban Strategies for Climate Resilience

Use mature trees

Replace asphalt with rain gardens

Urban Land Institute

Urban Strategies for Climate Resilience

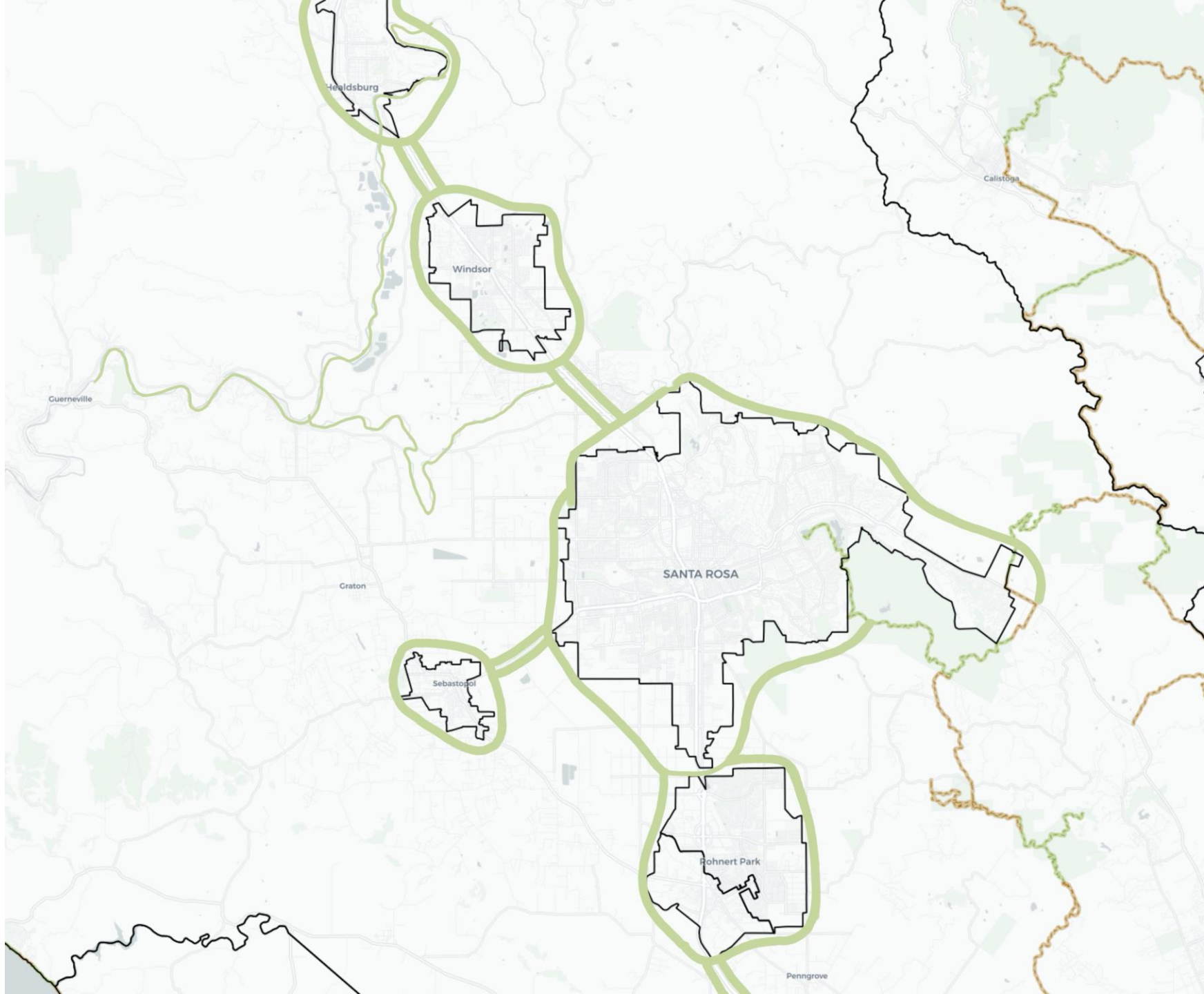
Allow white roofs to reflect heat

Urban Land Institute

We heard there is a need to . . .

- Learn to live with nature
- Use nature to manage fire
- Create new small enterprises that support sustainable fire prevention practice

Increase trail network around urban growth areas



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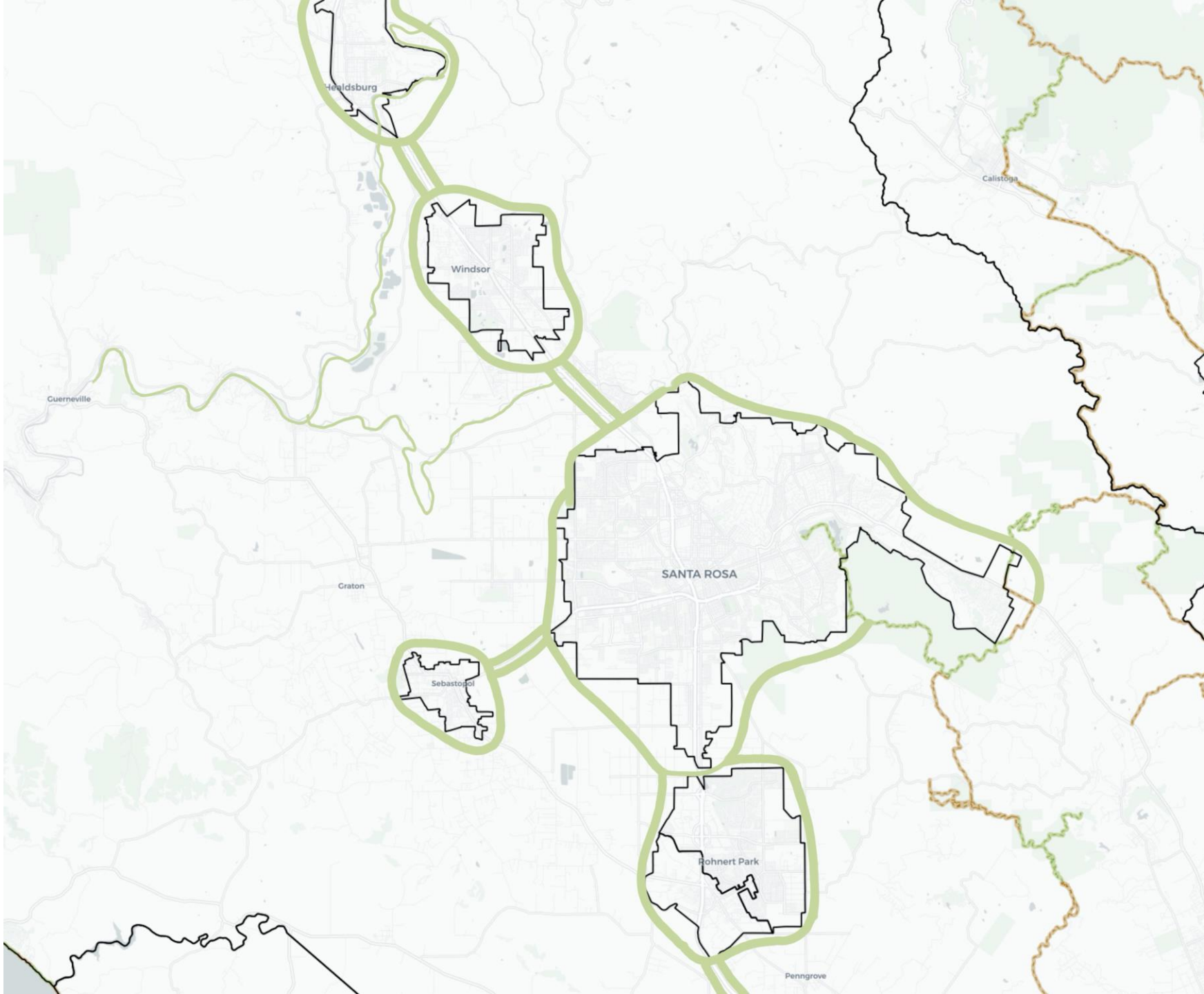
HOW ???



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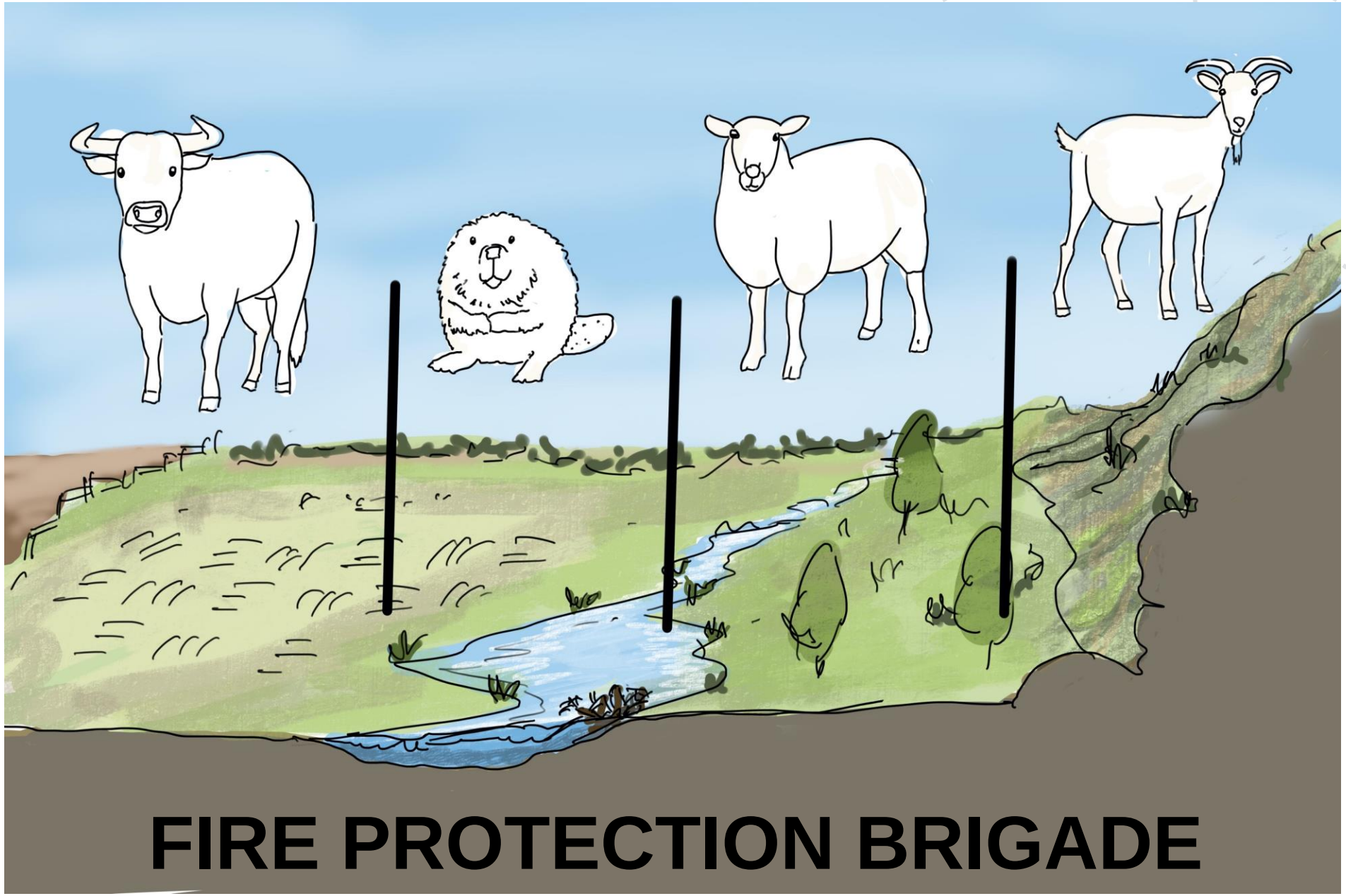
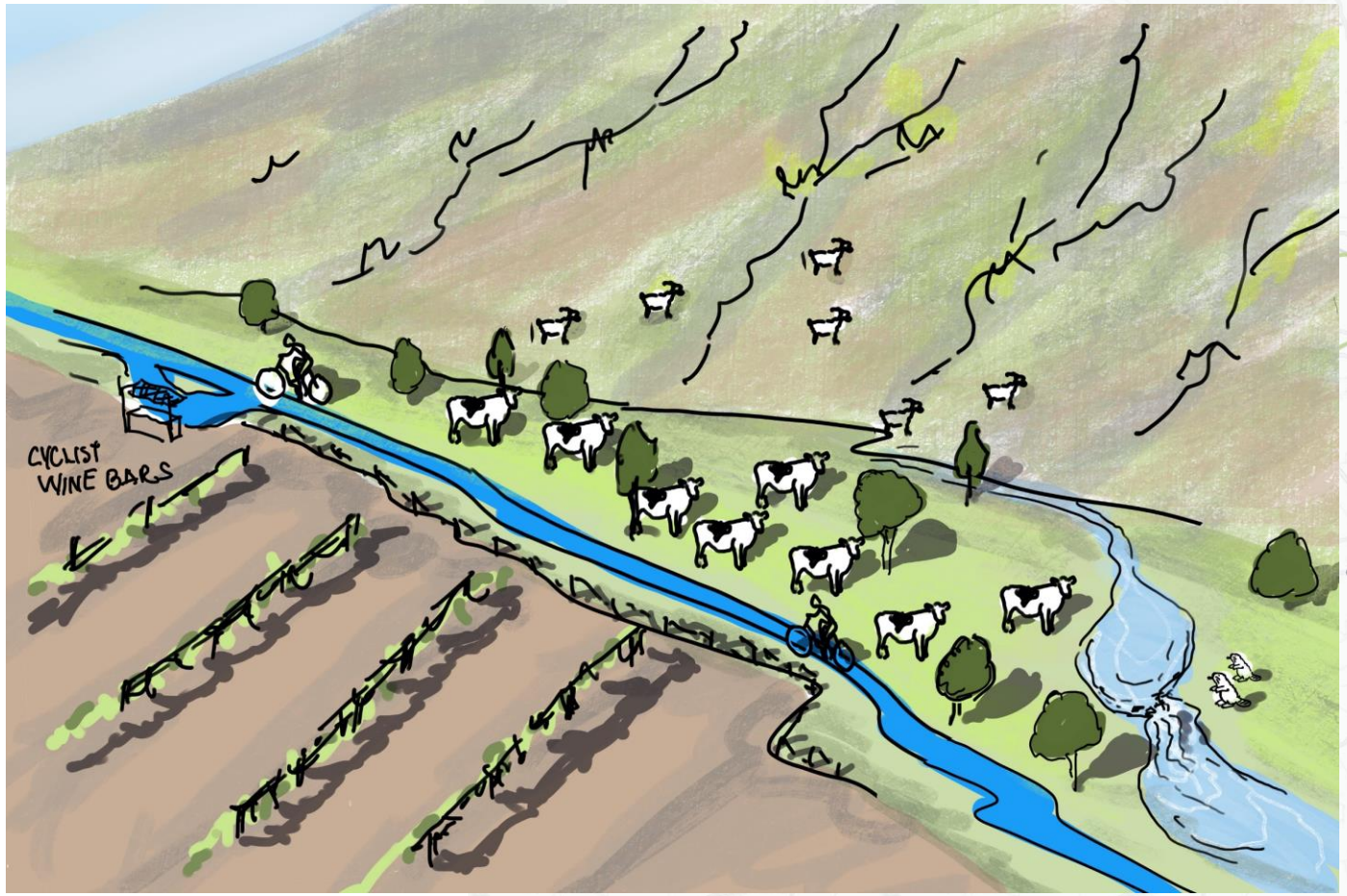

FIRE PROTECTION BRIGADE

Animals can maintain trail / buffer



Urban Land Institute
Advisory Services Program

What about the money. We set out to do a financial analysis of "business as usual" compared to "Investing in Resilience"

As you have just heard, the County has many shared objectives and there are numerous possible ways to accomplish them. They include the following items. We attempted to illustrate them in the financial model:

What do we care about?

- Peace of mind: Public mental health
- Peace of mind: Public health air quality, water quality, communicable disease

Open space

- Multi industry economy
- Jobs
- Clean energy
- Water. Both quality and usage: agriculture, households, greenscape and rivers, energy, commercial
- Housing (High income) (Demand <> Supply)
- Housing (Mid Income) (Demand <> Supply)
- Housing (Low Income) (Demand <> Supply)
- Municipal revenues from taxes (prop, sales, income) and fees (permits, tariffs)

What are the perils related to possible climate volatility?

- Wildfire - Drought – River Flooding

What is the impact of these perils if the activity is mostly disjointed and mostly about response?

- *All of the perils have negative impact on all of the careabouts*

What can be done up front to invest to avoid the perils…and what are the returns on that investment?

- ***Can we quantify avoided future costs?***
- ***Who pays the costs and who captures the benefits?***

Let's look at the financial outcomes along two future paths:

1. Loosely organized and atomized "business as usual," as compared to
2. A (possibly idealized) coherent **federation working with a plan** toward shared objectives, sourcing funds and investing them in a benefit/cost ranked project pipeline.

What might be the different **rates of growth**?

Directionally these seem about right based on history…what do we think they might be with **targeted new investment**?

(Naturally they need to be fine tuned).

Rates of Growth	Minimal Resilience	Excellent Resilience
Jobs	-1.0%	1.9%
Multi industry economy (GRP)	1.0%	2.0%
Municipal revenues	0.5%	3.0%
Housing high income - unit growth rate	1.0%	2.0%
Housing mid income - unit growth rate	1.3%	2.4%
Housing low income - unit growth rate	0.8%	4.0%
Home price appreciation	5.0%	12.0%
Open space	-5.0%	0.5%
Disaster Response and Recovery	5.0%	-1.0%
Rebuild costs (all sources)	5.0%	-10.0%
Collective investment in resil/prevent	0.0%	2.0%
Annual fire insurance premium (if avail)	5.0%	0.0%
Baseline Resil/Prevent spend (annual) (mm)	(25.0)	(100.0)
Using starting figures that approximate conditions today, how do these two paths compare?		

Here is what the projection looks like. It can be run for "minimal resilience" and for "excellent resilience." We will share this. The main learnings follow this slide.

Which scenario? PICK	Excellent Resilience											
			2022	2023	2024	2025	2026	2027	2028	2029	2030	2050	As % 2022
Projection		2020 Baseline											
Jobs		250,000	254,750	259,590	264,522	269,548	274,670	279,889	285,206	290,625	296,147	431,510	173%
Year on Year Growth, Jobs			4,750	4,840	4,932	5,026	5,121	5,219	5,318	5,419	5,522	8,046	
Housing - High income units in place		40,000	40,800	41,616	42,448	43,297	44,163	45,046	45,947	46,866	47,804	71,034	178%
Housing Mid - income units in place		150,000	153,525	157,133	160,825	164,605	168,473	172,432	176,484	180,632	184,877	294,197	196%
Housing Low -income units in place		25,000	26,000	26,520	27,050	27,591	28,143	28,706	29,280	29,866	30,463	45,267	181%
Total		215,000	220,325	225,269	230,324	235,494	240,780	246,185	251,712	257,364	263,143	410,498	191%
Year on Year Growth, Housing Units			5,325	4,944	5,055	5,169	5,286	5,405	5,527	5,652	5,779	9,035	
Resdential fire ins per $100,000 in value		$ 3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	$ 3,000	100%
Open space (acres, all uses)		122,000	122,610	123,223	123,839	124,458	125,081	125,706	126,335	126,966	127,601	140,986	116%
Home price & assessmt appreciation		$ 535,000	599,200	671,104	751,636	841,833	942,853	1,055,995	1,182,715	1,324,640	1,483,597	14,311,213	2675%
Money in millions, per annum:													
Disaster Response and Recovery		($100)	($99)	($98)	($97)	($96)	($95)	($94)	($93)	($92)	($91)	($75)	75%
Rebuild costs (all sources)(5 yr avg)		($1,000)	($900)	($810)	($729)	($656)	($590)	($531)	($478)	($430)	($387)	($47)	5%
Collective investment in Resil and Prev		($100)	($102)	($104)	($106)	($108)	($110)	($113)	($115)	($117)	($120)	($178)	178%
Total (million)		($1,200)	($1,101)	($1,012)	($932)	($860)	($796)	($738)	($686)	($640)	($598)	($299)	25%
Multi industry economy (GRP)		$27,000	$27,540	$28,091	$28,653	$29,226	$29,810	$30,406	$31,015	$31,635	$32,267	$47,948	178%
Municipal revenues		$1,900	$1,957	$2,016	$2,076	$2,138	$2,203	$2,269	$2,337	$2,407	$2,479	$4,477	236%
Total (mm)		$28,900	$29,497	$30,107	$30,729	$31,364	$32,013	$32,675	$33,351	$34,042	$34,747	$52,425	
Present Value (mm)	5%		$563,772										
Present val of DRR costs (mm	5%	discount rate	($1,350)										
Present val of Rebuild costs (mm)	5%		($5,931)										
Present val of Resil and Prev (mm)	5%		($1,933)										
			($9,215)										

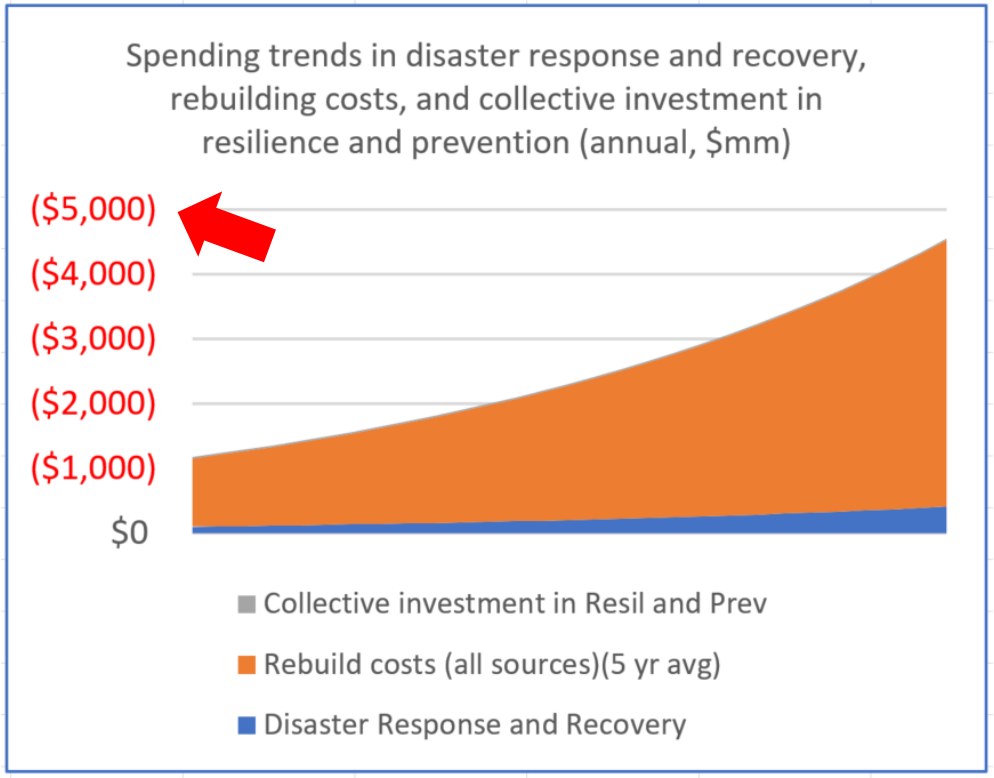
(This is a discounted cash flow projection running out to year 2050)

(NPV using a discount rate of 5%)

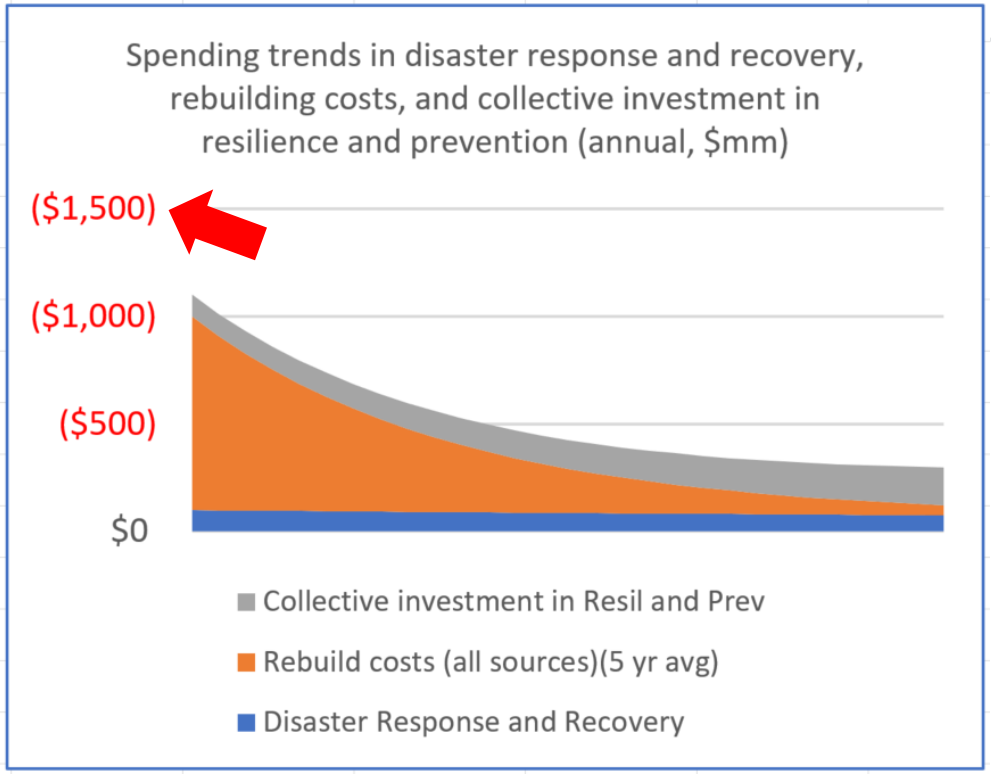
What did we learn?

-- Without substantial up front investment in resilience and prevention, costs of recovery and rebuilding *will continue to escalate*.

- With investment, they can be contained.

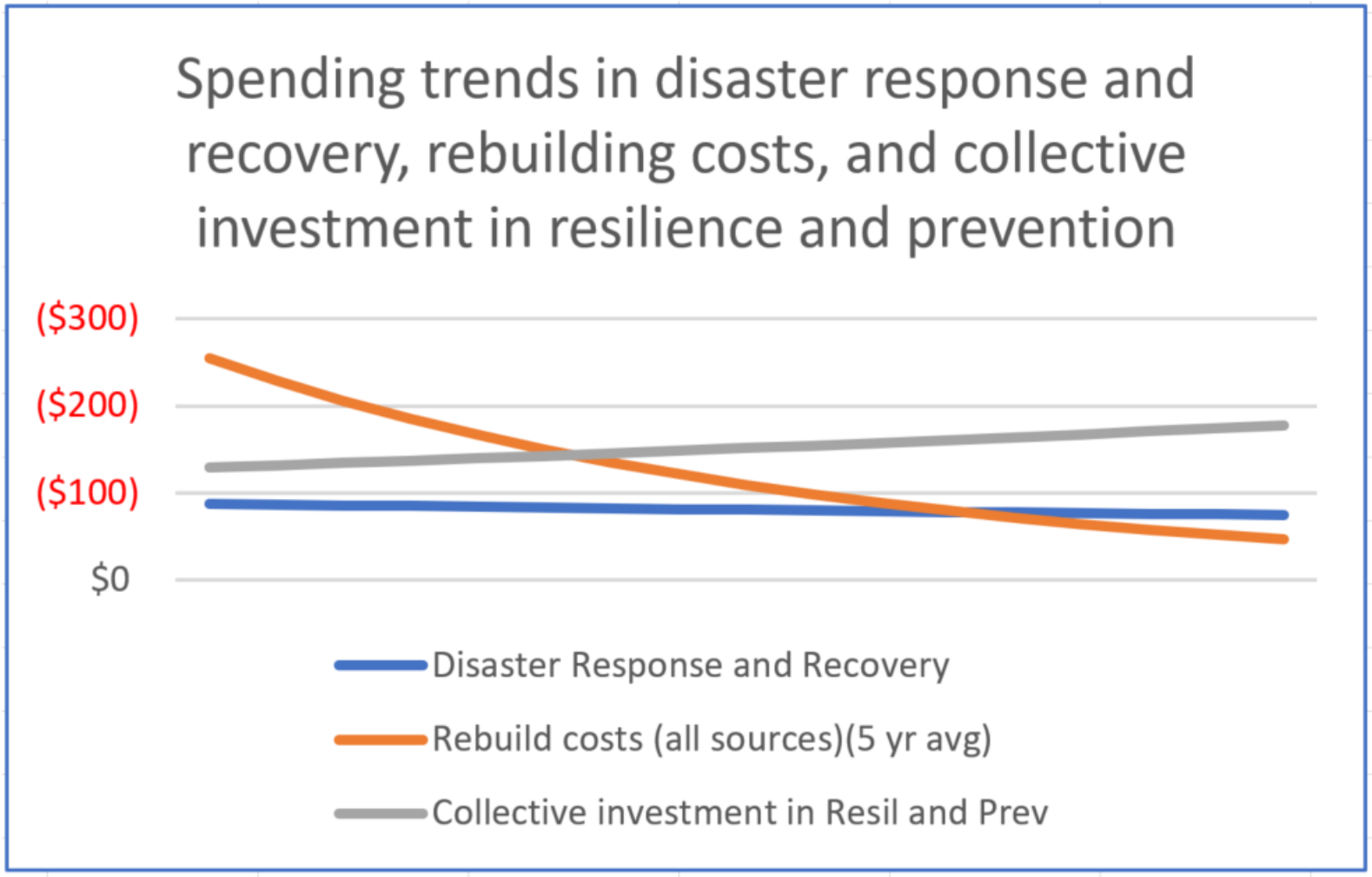


Minimal Investment in Resilience and Prevention



Excellent Investment in Resilience and Prevention

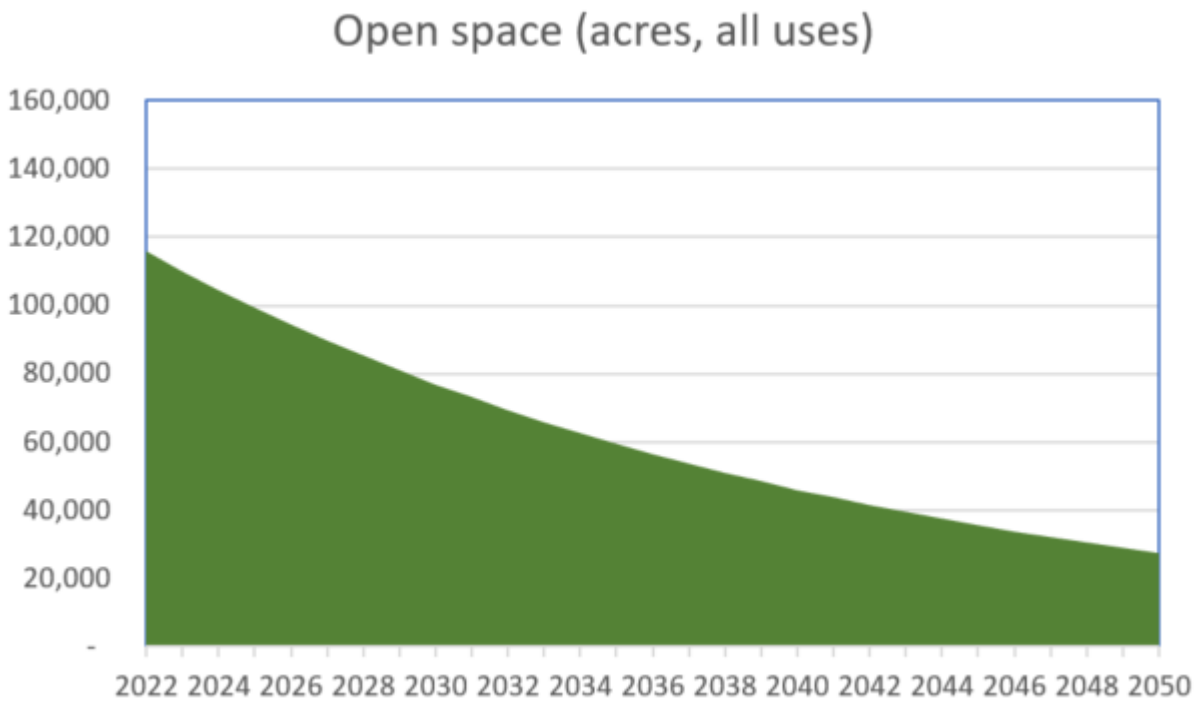
In the “Excellent Resilience” scenario, soon the coalition is investing more in advance to protect than it is spending after the fact to rebuild. And both amounts are a lot smaller than the “no resilience” outlay.



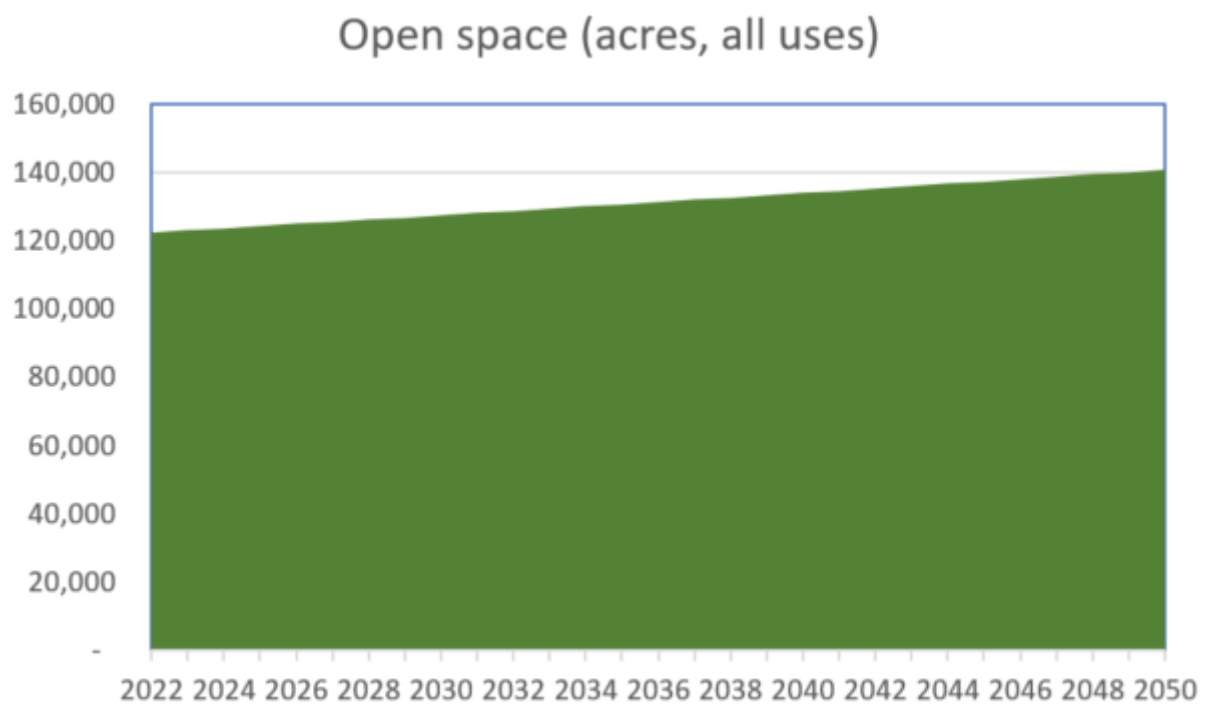
WITHOUT coordinated investment in projects with cumulative benefit, green space will decline precipitously.

WITH coordinated investment, green space can grow, fires can be averted, and scarce resources like water, energy, housing, and free flowing roads can be conserved.

This is good for EVERYBODY.

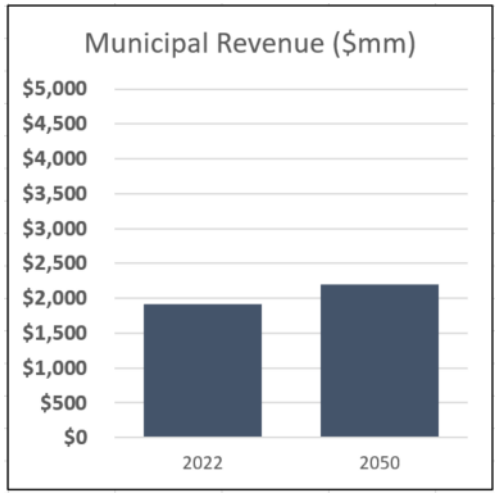


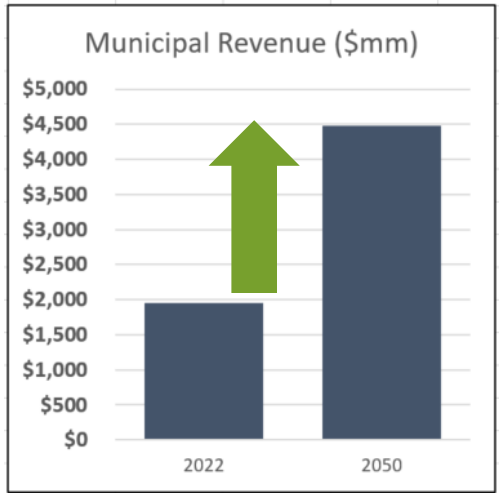
Minimal Investment in Resilience and Prevention

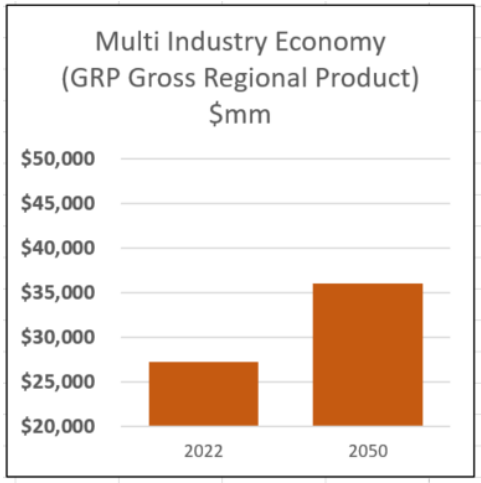


Excellent Investment in Resilience and Prevention

Provision of housing, encouraging job growth, avoiding catastrophe, and improving peace of mind leads to a virtuous cycle INCLUDING tax and fee receipts.

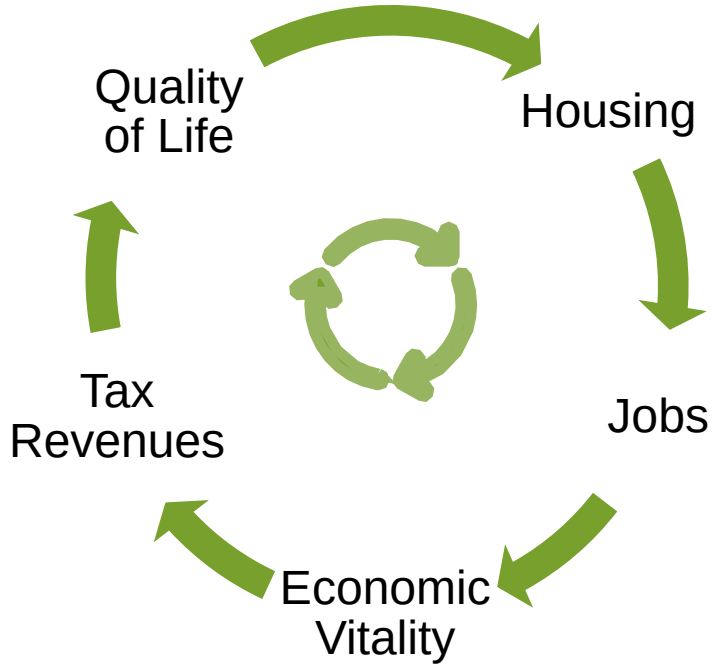






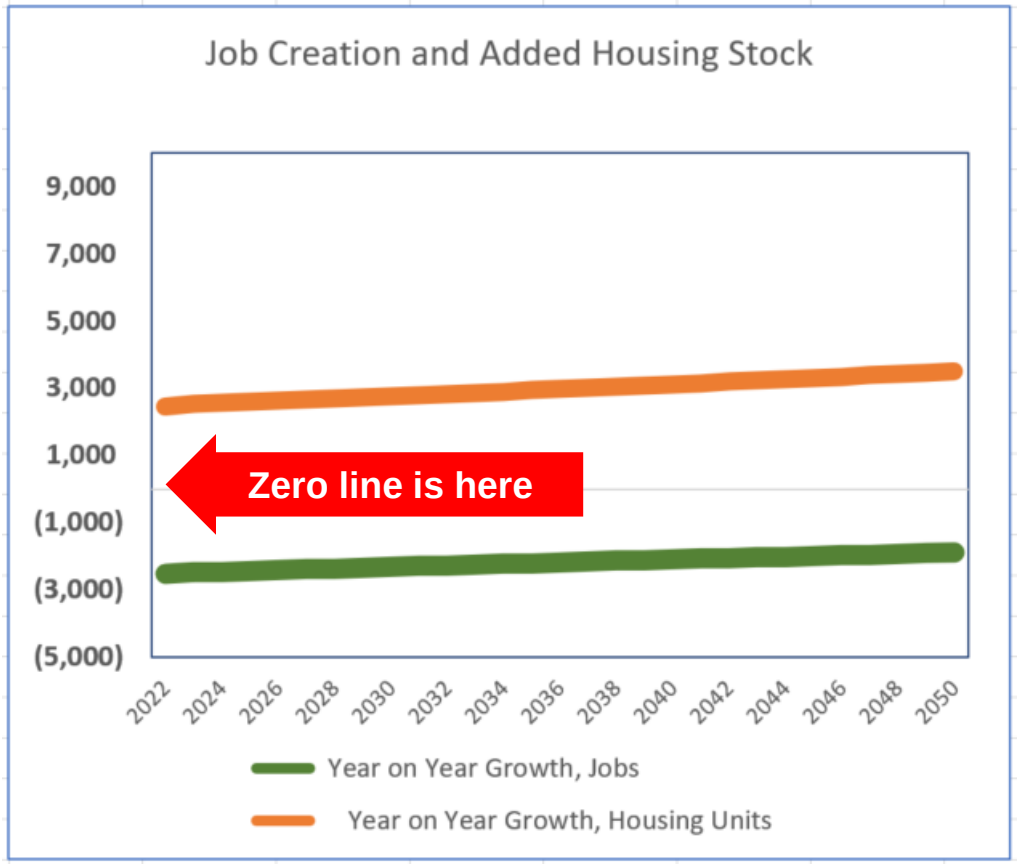
Minimal Investment in Resilience and Prevention

Excellent Investment in Resilience and Prevention

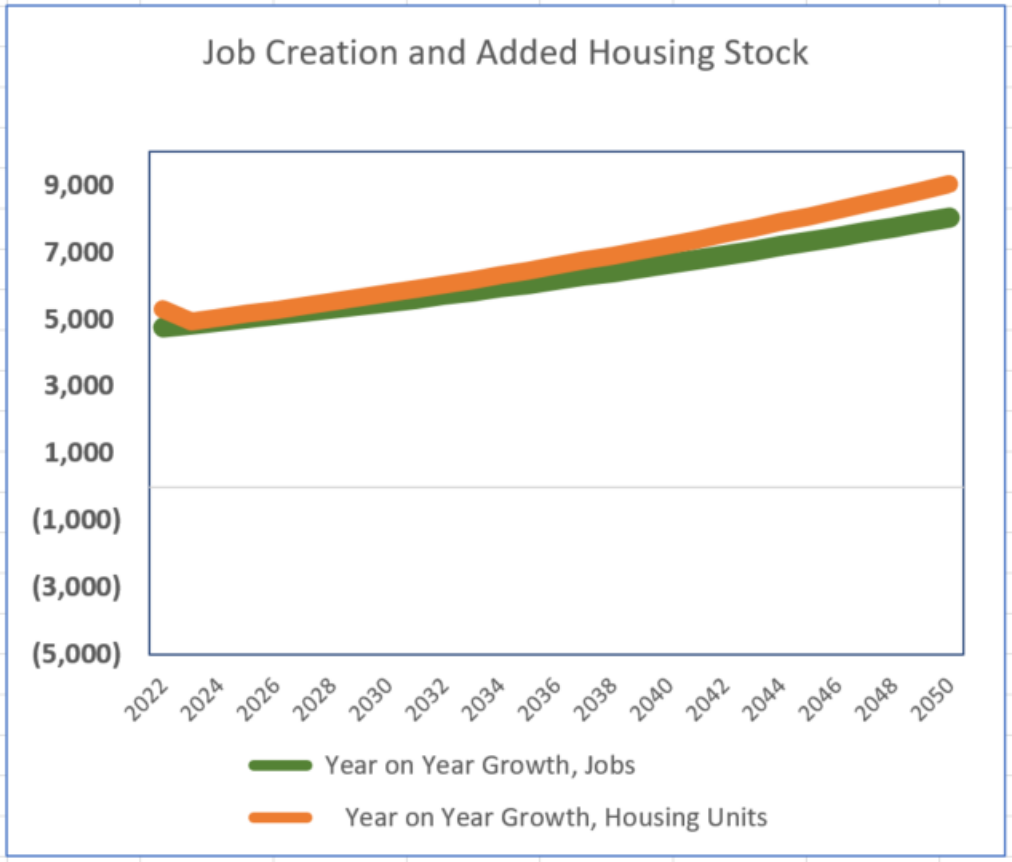


The County can elect a self reinforcing positive loop… Or default to a negative and downward spiral of decline.

Housing, Jobs, Resilience, Fire Prevention, and a Vibrant Multi Industry Economy are Related



Minimal Investment in Resilience and Prevention



Excellent Investment in Resilience and Prevention

Uses of funds should recognize the unique needs of different cities and geographies, while also pursuing *cumulative benefit* from projects that build on each other.

Illustrative Intervention you have just head:	Santa Rosa	Settled Towns	Rural Residential	Industrial	Agricultural and Open
House hardening	X	X	X		
Vegetation mgmt. & clearing	X	X	X		X
Asset Mgmt: power line refreshing			X		X
Land buyout, TDR		X	X		
First responders – equip and train	X	X	X	X	
Housing funding, RED, other CDFIs	X				
Remove generators			X		
Public transit	X				
Parks & Rec	X	X	X		
Water treat & cons	X	X	X	X	X
Turgid Areas, Ember suppression	X	X			X
Increase local energy independence Microgrids & Hydrogen Innovation and Manufacturing Green Jobs	X	X		X	

Action

Next Week:

- Start to build the blended SOURCES OF FUNDS target and how to chase the money
- Start to build the blended USES OF FUNDS benefit/cost based project plan
- Prove out the baseline numbers and the growth rates
- Tune the spread sheet
- Designate the person to lead the above
- *Follow the Money: One Sonoma!*

- **We are all in this together and we broadly want the same long-term outcomes in the County.**
- **If we are an organized coalition, we can effectively raise funding from a lot of sources and then use the money well against a list of projects that benefit everyone.**

Recommendations & Next Steps

What actions can the county, city, RCPA and others advance over the long-term and before the next wildfire season?

Land use & development for wildfire resilience

- Share data regionally, especially for General Plan. Hire one firm to do regional analysis, with community drill downs
- Expand support for new development through promotion of minimum county-wide standards for housing
- Support existing development through increased investment in home hardening program
- Promote WUI education/trainings for industry professionals and residents
- Establish a coordinated, singular map for better public understanding of wildfire risk
- Increase turgid areas for agriculture & infiltration
- Establish wildfire buffer zones and protective corridors
- Explore opportunities for complementary small-scale enterprises that can double as recreational enhancements

Recommendations & Next Steps

What actions can the county, city, RCPA and others advance over the long-term and before the next wildfire season?

Energy resilience

- Commit to transitioning infrastructure, rather than replacing in-kind
- Evaluate emerging technologies for energy independence and wildfire resilience
- Seek out opportunities at the property level including for new construction & retrofits
- Incorporate, communicate and expand existing energy and resilience programs regionally – example: PACE-R and SGIP
- Establish a Regional Partnership Structure Agency, Community Groups, and PG&E - to communicate regularly and provide early lead time
- Align behind a "One Sonoma County" Regional Resilient Energy Strategy
- Identify Equitable Regional Wildfire Prioritization Metrics

Recommendations & Next Steps

What actions can the county, city, RCPA and others advance over the long-term and before the next wildfire season?

Housing Access

- Prioritize infill development
- Explore context-sensitive infill typologies – 5 over 1s, duplexes, fourplexes, bungalows, cottages
- Reduce parking requirements
- Explore a housing bond to increase housing access, potentially support home hardening
- Assess street sections for opportunities to improve walkability, health, reduce heat island
- Consider opportunities for TDR, land buy-outs within “whole resilience” approach

Governance & Partnerships

- Prioritize cooperation – “you know what you need to do!”
- Establish mutual aid and interlocal agreement, including pre-positioning contracts
- Fund regional groups
- Prioritize transparency, alignment in identifying new funding sources
- Apply for funding regionally to become more competitive
- Take a “whole resilience” approach to assessing the costs/benefits of investing in resilience
- Build out coordinated plan for blended source of and use of funds – “One Sonoma!”

Thank you!

Please write your questions in the Q&A box at the bottom of your Zoom screen

Urban Land Institute