

An illustration of a wildfire scene. In the background, there are brown mountains under a grey sky filled with white smoke. Several birds are flying in the sky. In the foreground, there are dark brown trees and bushes, some of which are engulfed in bright orange and yellow flames. The overall color palette is muted, with greys, browns, and oranges.

Overcoming Challenges for California Wildfire Victims: Insights from the CZU Lightning Complex Fire

Santa Cruz County, CA

Oct 2024

Speakers

Fox Onsite Solutions



Ryan Fox

REHS



Sterling Scott

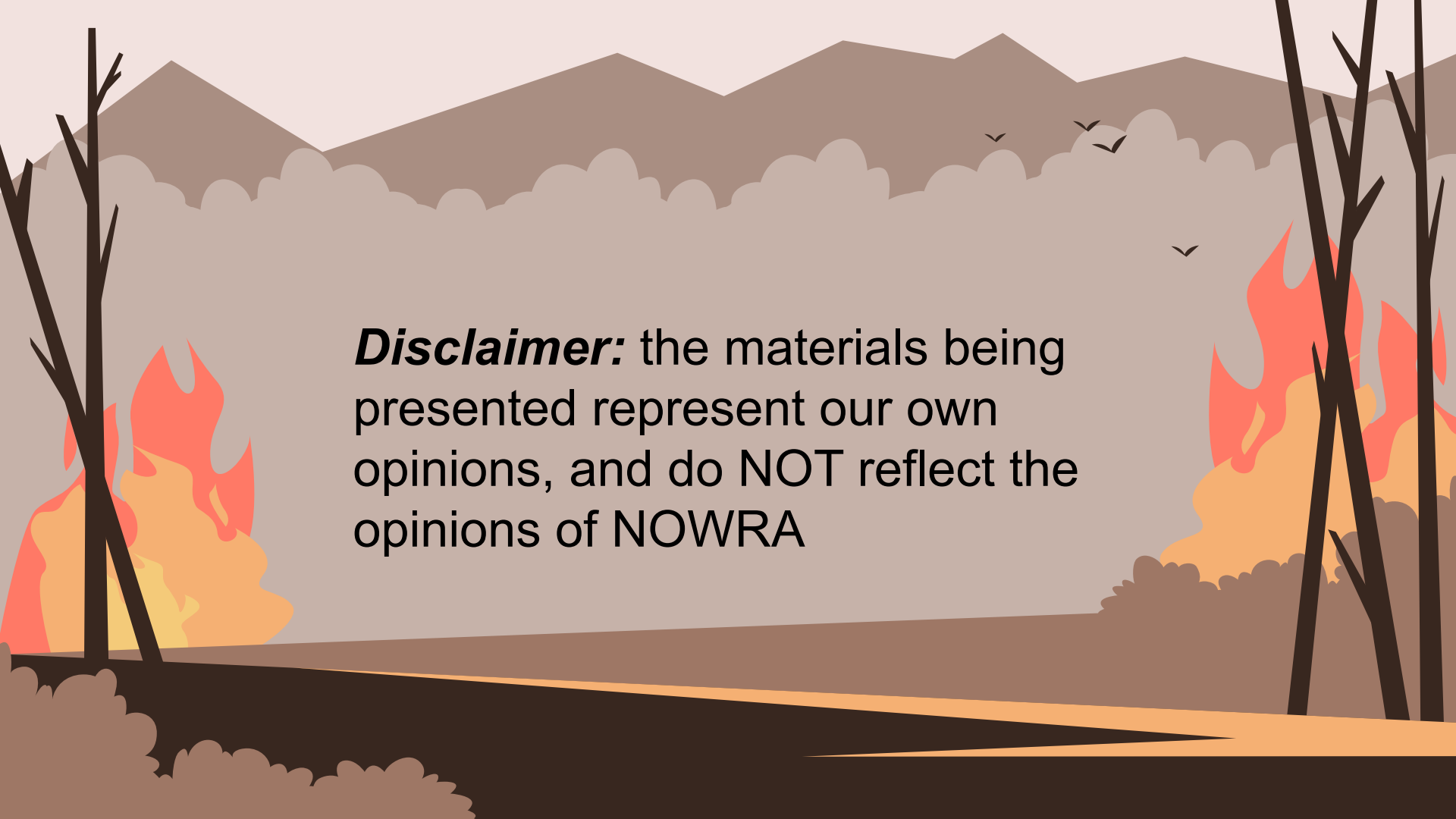
REHS

Goal of this presentation

The background features a stylized illustration of a forest fire. On the left, a tall, dark tree trunk stands next to a cluster of three evergreen trees. At the bottom left, there are bright orange and yellow flames. On the right, another tall, dark tree trunk is shown, with a large, bright orange and yellow flame at its base. Several small, dark bird silhouettes are scattered in the sky, flying from left to right. The overall color palette is dominated by dark browns, oranges, and yellows, set against a light beige background.

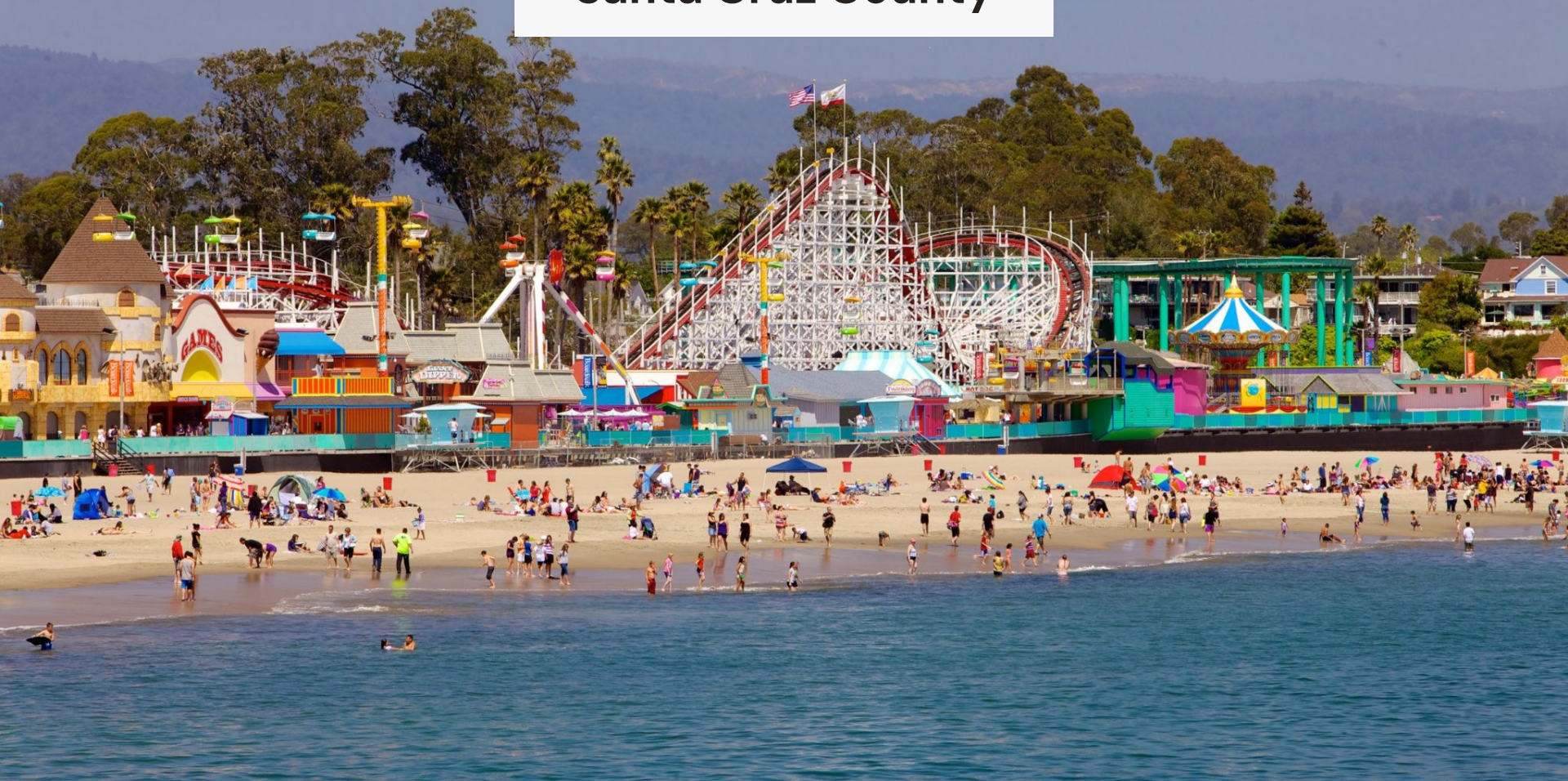
Offer a comprehensive exploration of the lessons learned from the Santa Cruz county CZU wildfire recovery efforts. Providing valuable insights for policymakers, environmental regulators, consultants, and disaster response professionals.

By sharing our experiences and best practices, we aim to contribute to the ongoing dialogue surrounding disaster recovery and resilience in the face of future environmental challenges.



Disclaimer: the materials being presented represent our own opinions, and do NOT reflect the opinions of NOWRA

Santa Cruz County



Santa Cruz County





Where?

Spokane

Santa Cruz
County

South Bay Area ~75
mins from San
Francisco



What Happened?





CZU Lightning Complex fire

Aug 2020 Lighting strikes over the
Monterey Bay
Sparking CZU Lightning Complex fire

The CZU Lightning Complex Fire burns near Cascade Ranch State Park in Pescadero.

What Does CZU abbreviation Mean?

The abbreviation "CZU" refers to the Cal Fire designation for its San Mateo–Santa Cruz Unit, the administrative division for San Mateo, Santa Cruz and San Francisco counties



Map of Multiple fires in Area occurring at the same time

CZU / SCU Lightning Complex
Burn Zones, Hot Spots Aug. 27 • 3:30 pm

What Does “Complex” Mean ?
"complex" refers to multiple fires that are located in the same general area and are managed by a single incident commander or unified command.

CZU Lightning Complex

SCU Lightning Complex

SCU Abbreviation?

SCU refers to the areas that are administratively part of the SCU unit (Santa Clara, Alameda, Contra Costa, San Joaquin and Stanislaus Counties).

911 Homes

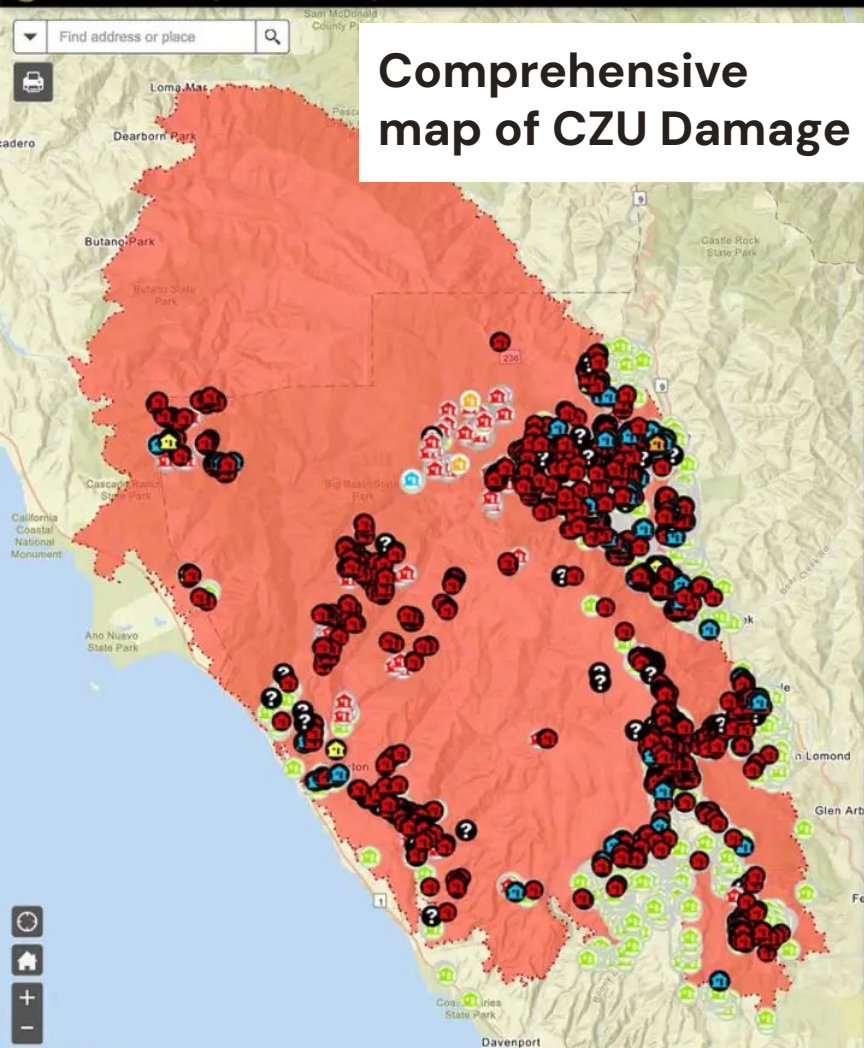
~ 1500 Structures

805 Parcels

86,509 Acres

Contained Sept 22, 2020





Comprehensive map of CZU Damage

legend

CAL FIRE Preliminary Damage Assessments

- Affected (1-9%)
- Minor (10-25%)
- Major (26-50%)
- Destroyed (>50%)
- Inaccessible

CAL FIRE Preliminary Damage Assessments APN and Address Verification Still Required

- Affected (1-9%)
- Minor (10-25%)
- Major (26-50%)
- Destroyed (>50%)
- Inaccessible

CAL FIRE Preliminary Damage Assessments - No Damage

- No Damage

CZU Fire Perimeter

- This map of the CZU Lightning Complex Fire shows the level of damage sustained by properties in the area.
- At least 911 homes were destroyed and 86 damaged in Santa Cruz County,
- Estimated Cost of around \$340 million.





The CZU Lightning Complex Fire of August 2020 devastated Santa Cruz County, CA leaving over 900 homes destroyed and thousands displaced.

A stylized illustration of a landscape. In the center, a bear silhouette walks from left to right. To the left, a tree with dark foliage stands against a background of grey smoke. To the right, a large fire with orange and red flames consumes a tree. The sky is white with a few black birds in flight. The text 'How do we rebuild?' is centered in the sky area.

**How do we
rebuild?**

Recovery Plan Implementation

November 17, 2020 Board of Supervisors approves a 31- month contract with 4leaf Inc. at a cost not to exceed \$6,260,000. The Recovery Permit Center (RPC) is established at the Santa Cruz County building.

1. One stop shop for fire victims to aid in rebuild and get information
2. Ease load on County
3. Aid in expedited permitting process

Rebuild Challenges



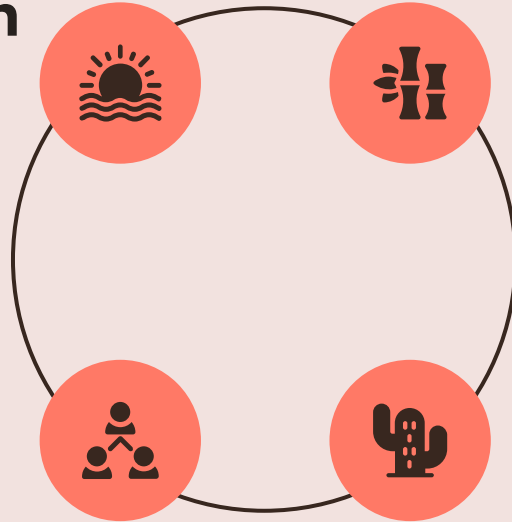
Financial Challenges for Fire Victims

COVID Shutdown

<6 months prior to fire. Shelter in place
March 2020

Inflation + mortgage rates

Higher prices + 3% prompts housing boom. Lack of professionals



High Cost living

Santa Cruz county ranked 2 years in a row least affordable county in nation

Underinsured + Low Income

Houses little to no insurance + low income to begin with

Logistical Challenges



**Previous
Unpermitted
Work**

**Unbuildable
lots**

Logistical Challenges

**Limited Funds/
Insurance**

**Limited
regulations
understanding**



Logistical Challenges

Trying to Rebuild, CZU Fire Victims Face Red Tape, Costly Permits and Repair Mishaps

By Aiyana Moya | March 15, 2022



**Limited
Professionals**

**Owners
wanting to
rebuild bigger**

Why is Onsite Wastewater so important to this equation?


1. **Regulations in Flux during fire outbreak.**
2. **A lot of systems damaged**
3. **Restricted regulations in place in 2020:** Tier 1: Most Restrictive code set in California.
4. **Regulations approved 2021:** Oct. 14, 2021, the Santa Cruz County Board of Supervisors approved new regulations

percolation

Santa Cruz County Local Agency Management Program
Approved by the Central Coast Regional Water Quality Board October 14, 2021, Board of Supervisors August 23, 2022

County of Santa Cruz Health Services Agency
Environmental Health Division

**Onsite Wastewater
Treatment Systems**
Local Agency Management Program



Approved by Central Coast Regional Water Quality Control Board,
October 14, 2021

Approved by Santa Cruz County Board of Supervisors with Minor Updates,
August 23, 2022



Environmental Restrictions and Regulatory Challenges.

Why is this so Important?



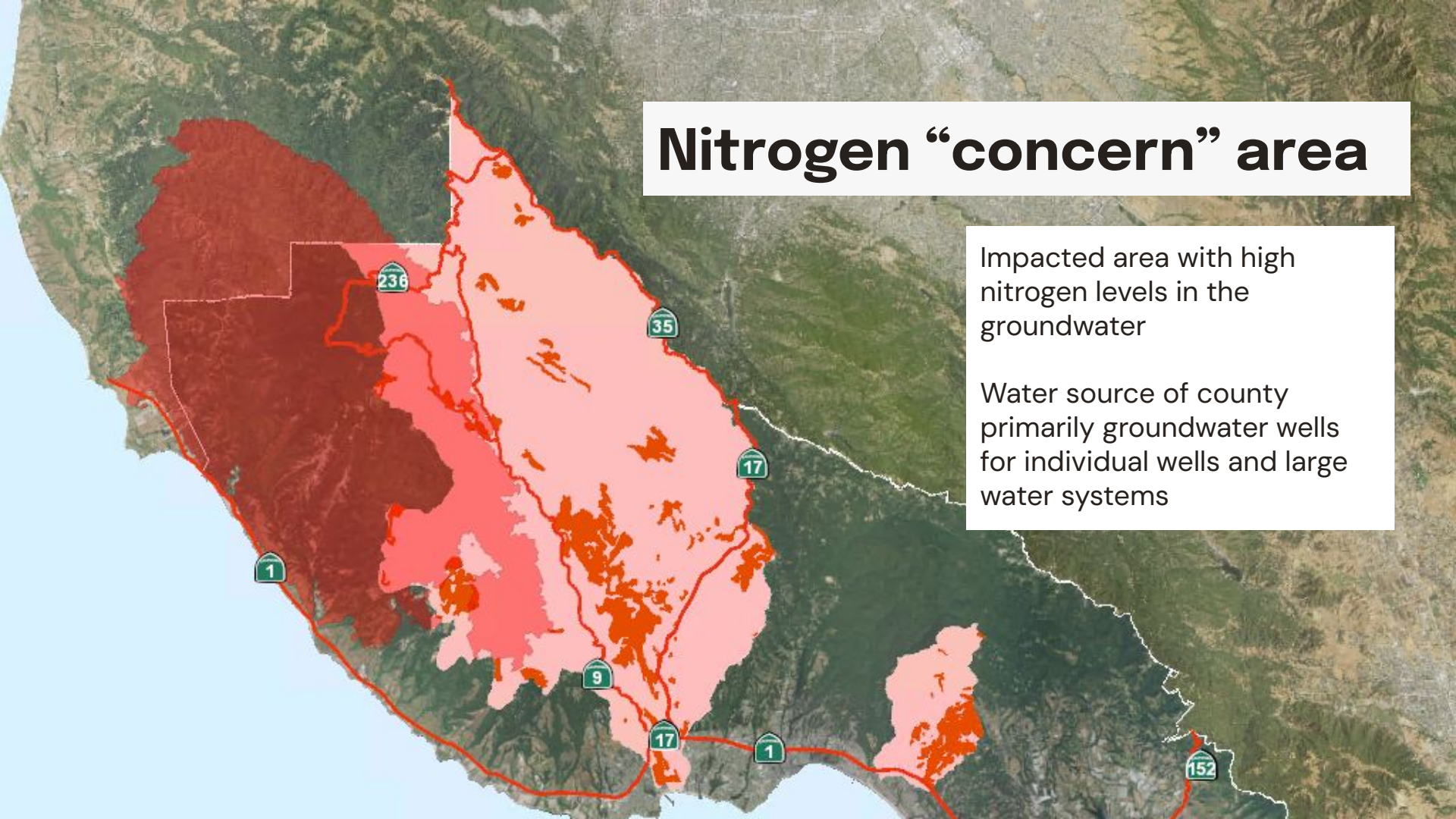
Fire Zone Shaded Red



Nitrogen “concern” area

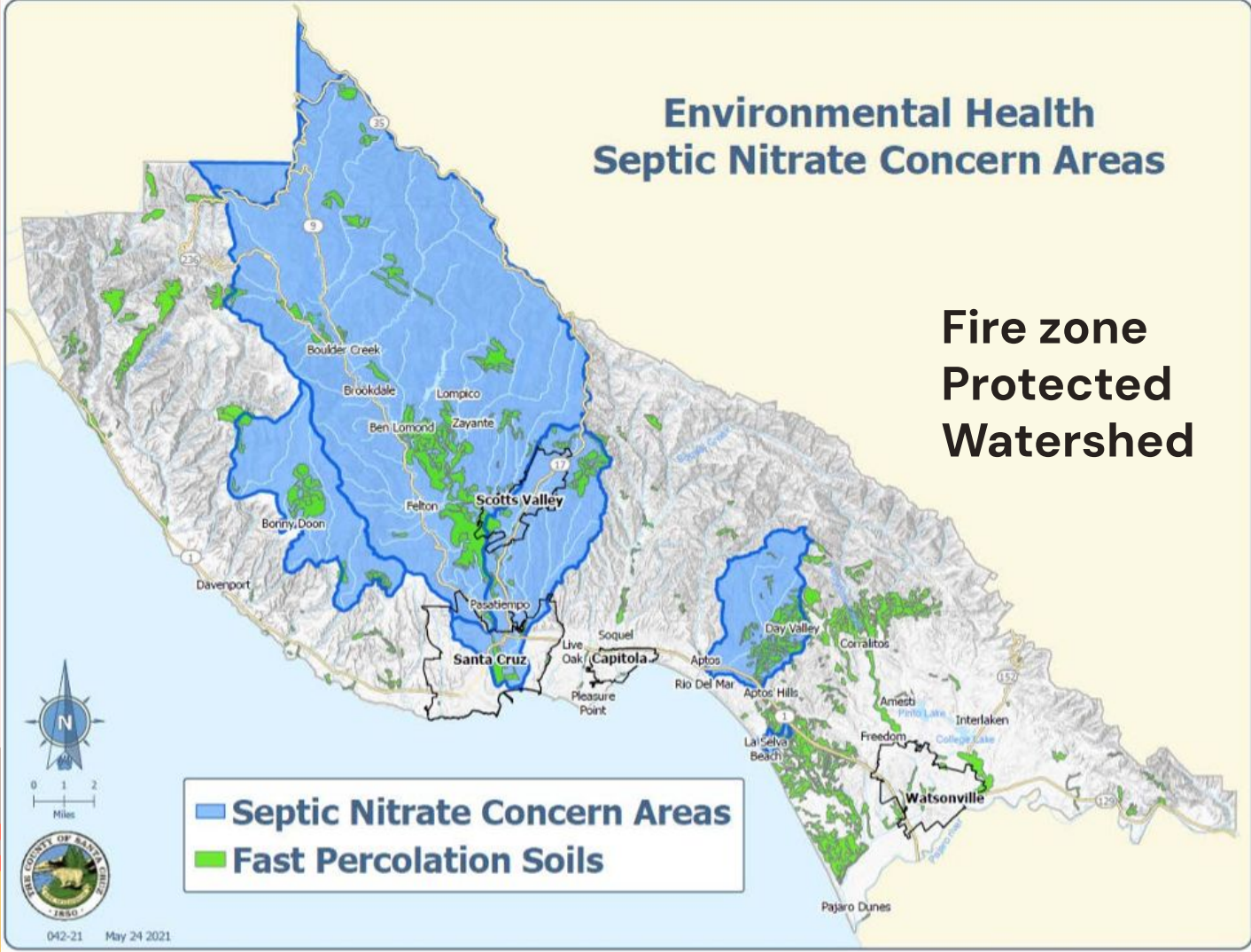
Impacted area with high nitrogen levels in the groundwater

Water source of county primarily groundwater wells for individual wells and large water systems



Environmental Health Septic Nitrates Concern Areas

Fire zone
Protected
Watershed



■ Septic Nitrates Concern Areas
■ Fast Percolation Soils



0 1 2
Miles



High Groundwater (blue)



Other Site Challenges



Fast Percolating Soils

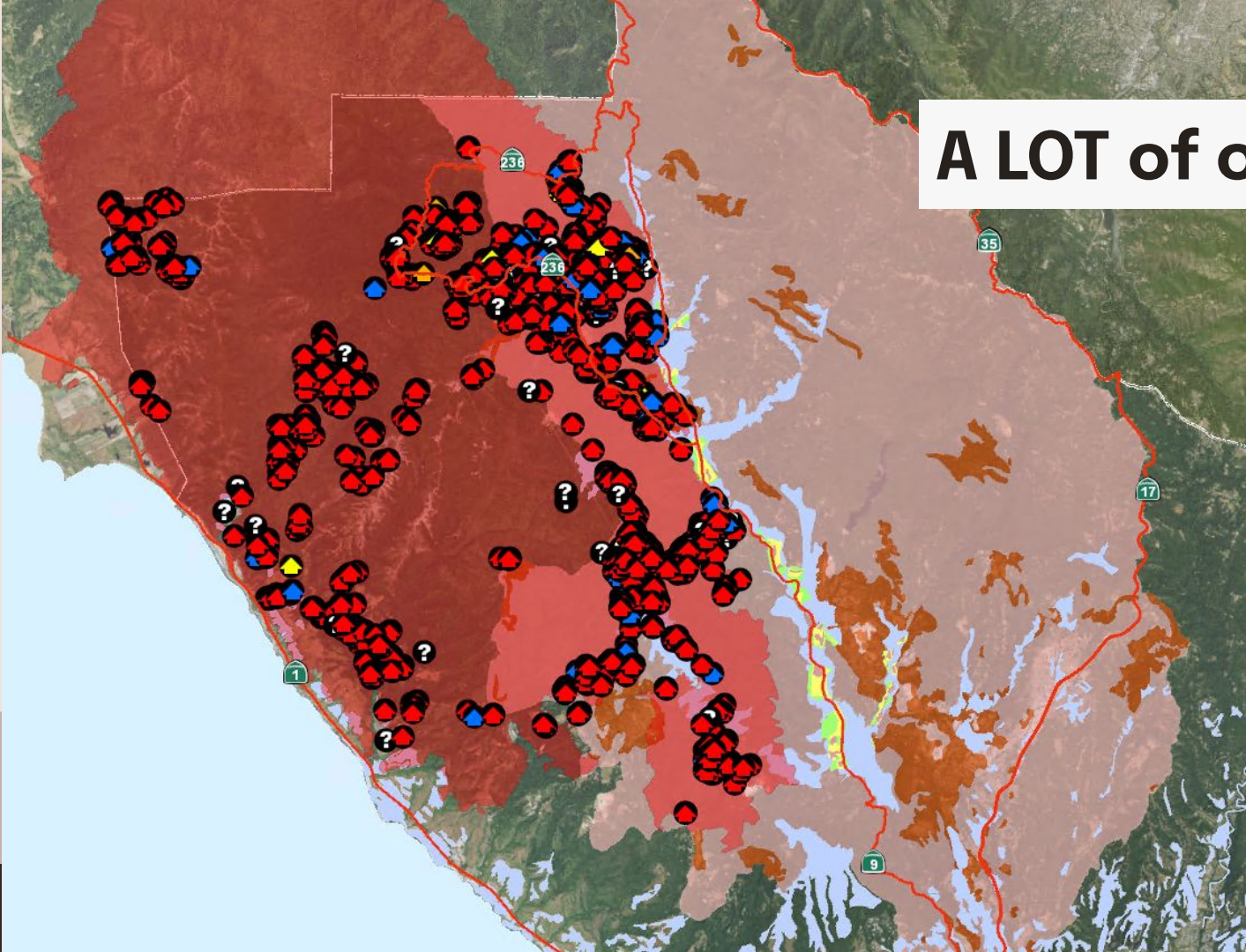
Sand 1-5 MPI Requires Enhanced treatments



Steep Slopes

Very mountainous with 30% or more slopes

A LOT of overlap



The background is a stylized illustration. At the top, there are brown, jagged mountain peaks. Below them are grey, billowing clouds. In the center, the text is displayed in a bold, black, sans-serif font. To the left and right of the text are stylized trees with black trunks and branches. On the left, a fire with orange and yellow flames is visible. On the right, a larger fire with more intense orange and red flames is shown. In the foreground, a dark brown ground is visible, with a silhouette of a kangaroo jumping from left to right. The overall color palette is muted, with greys, browns, and blacks, contrasted with the bright colors of the fire.

**What Was Our
Role?
Consultants
turned Regulators**

How did Fox Onsite Solutions Help?

-2 years into the fire recovery there was a large public backlash about the handling of the CZU Fire Rebuild. Public demanded a change.

The biggest sticking point for them as they work with the county to acquire their permits is getting their septic cleared.

In the past two years, McKenzie and her husband have sunk around \$10,000 on the permitting process, but you wouldn't have guessed that from looking at their land; they haven't been able to start the building process at all, as they apply and reapply to get their septic clearance.



Credit: Via Daniel DeLong

OPINION FROM COMMUNITY VOICES

*Only 24 of 911 lost CZU houses rebuilt.
Can we please cut the red tape so my
neighbors can come home?*

Pre-Clearances

Rebuild Activity

- 14% of affected parcels (101 total) have denied pre-clearances.
- Septic: 89% outstanding
- Geologic Hazards: 44% outstanding
- Challenges
 - State-governed codes remain in effect
 - Consultant workloads
- Suggested improvements
 - Plain language guidance
 - Pre-clearance determination dispute path



How did Fox Onsite Solutions Help?

- Fox Onsite Solutions was hired as a subcontractor to aid Fire recovery rebuild as the regulators.
- Fox Onsite Staff were both previous Santa Cruz County Inspectors and had area local knowledge and knew county systems that others did not.
- Fox Onsite Solutions faced the task of reviewing and implementing septic and wells/water systems for fire-affected individuals for the regulatory review.
 - Review “pre-clearances” to ensure proposed applications meet current regulation
 - Expedite review processes for applications
 - Perform Inspections and Process permits



Credit: Via Daniel DeLong

OPINION FROM COMMUNITY VOICES

*Only 24 of 911 lost CZU houses rebuilt.
Can we please cut the red tape so my
neighbors can come home?*

Fox Onsite Fixes

- 1) Create a clear standard
- 2) Refine purpose “Build back”
- 3) Improve communication
- 4) Creation of “IN KIND” standard

*Was able to reduce complaints and catch up large backlog.

CZU Fire rebuild process honed by Santa Cruz County leaders

By [Stephen Baxter](#) | March 14, 2023 | Tags: [CZU Lightning Complex Fire](#), [housing](#), [Santa Cruz County Board of Supervisors](#), [Stephen Baxter](#)



Smoke billows from the CZU Lightning Complex Fire near Año Nuevo State Park on Aug. 19, 2020. (Jan Null – Contributed)

SANTA CRUZ >> In light of a slow rebuild process for hundreds of CZU Lightning Complex Fire victims since 2020, county supervisors on Tuesday unanimously agreed to revamp a permit dispute process and make decisions and requirements more transparent.

What is the “In-Kind” Definition. Why was this so Important?

To meet “In kind” definition replace structure needed to be:

1. Same Permitted (legal) Bedroom Count
2. <500 sqft added
3. Existing Septic System Functioning (pumper report w/ flow test)
4. No high groundwater (<2ft CA prohibition) or Env. Red Flags

Why Was this Key?

- Stayed with Ethos of “Build Back” what they had.
- Allowed expedited permit process. With 1:1 replacement. As if House never burned down.
- Parcels building “beyond” what they previously had, treated as if they were adding an addition. (ex A Lot of ADUs triggered Septic upgrades)
- Rewarded individually who legally built. Did not allow unpermitted “In kind.”
- Pre-permits dwelling count be grandfathered in (~1955 in Santa Cruz County)
- Removed major roadblock for properties and cut through red tape.




Headlines in the media

Two-thirds of homes burned in CZU Fire never rebuilt 4 years later



Updated: 5:38 PM PDT Jun 21, 2024

Infinite Scroll Enabled

 **Ricardo Tovar**  
Digital Content Manager



SANTA CRUZ COUNTY, Calif. — Many of the homeowners in the 2020 CZU Lightning Complex fires chose to walk away. That's the findings from a grand jury report in Santa Cruz released on Friday.

Recovery permit center extended twice to help victims

Top Stories 7 Followers

Board of Supervisors unanimously approves extension of recovery services for families affected by CZU Fire



11:32 / 2:12 KOREA'S LONGTIME PROPAGANDA CHIEF KIM KI NAM DIES AT 94

Annual Recovery Permit Center Application Activity

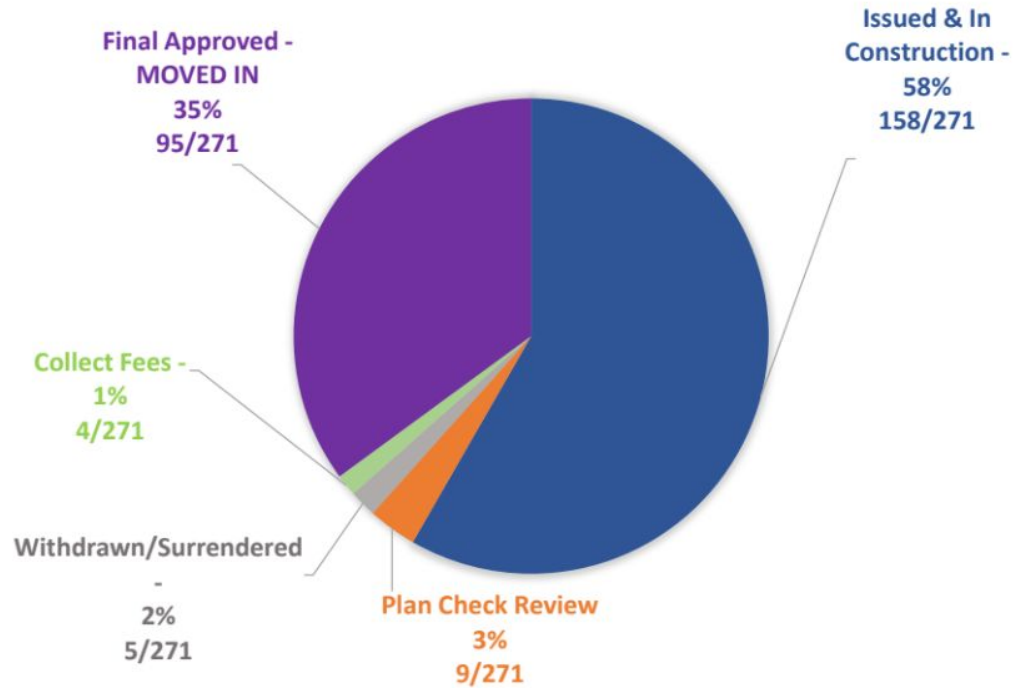
In Kind allowed for projects to move forward`

Year	Pre-Clearance Applications Submitted	Single-Family Residence Permit Applications Submitted	Single-Family Residence Permits Issued <u>Approved for Construction</u>	Single-Family Residence Permits in Plan Check Review ¹	Single-Family Residence Permits in Collect Fees	Single-Family Residence Permits Withdrawn or Surrendered
2021	275	96	69	1	1	1
2022	109	122	121	2 ¹	2	2
2023	44	48	53	4 ¹	1	2
2024	26	5	10	2	0	0
TOTALS	454	271	253	9	4	5

Source: Infor Permit Tracking, County of Santa Cruz
 1: 2 Permits Waiting for Addressing from Santa Cruz County Planning Department

Rebuild Progress to Date

Status of 271 SUBMITTED building permits SINGLE FAMILY RESIDENCE PERMITS SUBMITTED 271



Current Rebuild Status

Figure 4 below shows the status of CZU fire victims' permits issued and homes rebuilt as of April, 2024. These numbers are the most current but are subject to change.

Category	Total	Notes
Number of homes/residences destroyed	697	Approximate count
Single-family residence permits issued by RPC, approved for construction	253	Permitted and occupied or under construction
Parcels with Single-family Residence permits currently in construction	158	Source: County of Santa Cruz, Community Development, and Infrastructure & FEMA
Parcels with approved final, moved in	95	Homes occupied
Homes/residences not rebuilt	444	Approximate count (This number is an approximation of the number of homes burned less those either rebuilt or under construction.)
Parcels since transferred or sold	193	Source: Local Hazard Mitigation Plan 2021-2026. County of Santa Cruz.

Figure 4: Counts of CZU Fire Recovery Permits and Rebuilds as of April 10, 2024 provided by the Planning Department^{[95] [96] [97]}

TAKE AWAY FROM NUMBERS:

- 1) the majority of these homes never rebuilt. (Whether it was insurance, finances,, emotional trama, the process, Etc.)
- 2) Many properties sold (193)
- 3) Process taking a long time. Less than ⅓ not done 4 years in.

Case Studies

A stylized illustration of a landscape. In the foreground, a dark brown silhouette of a kangaroo is leaping across a light brown ground. To the left and right, there are large, bright orange and yellow flames. In the background, there are dark brown mountains and a grey sky with several small black birds flying. The overall style is flat and graphic.

Case Study #1: Camp Krem



- Camp Krem was founded in 1957 on 95 acres of land near Boulder Creek. Since then, Camp Krem has welcomed in an estimated 14,000 children and adults with various special needs.
- Before the fire, it offered a wide array of programs, including a Sleepaway Summer Camp and Weekend Respite program.
- In 2019, Camp Krem served more than 600 families and 1,250 campers.

Camp Krem



Camp Krem
post Fire Photo



Site Challenges

1. Entirety of site built over or either graded or fill
2. Wanted to build back what they had and more
3. On top of rocky mountain outcropping (not much soil)
4. Scabbed together ~5 systems with “semi” functionality
5. >2500 GPD commercial sizing require ET

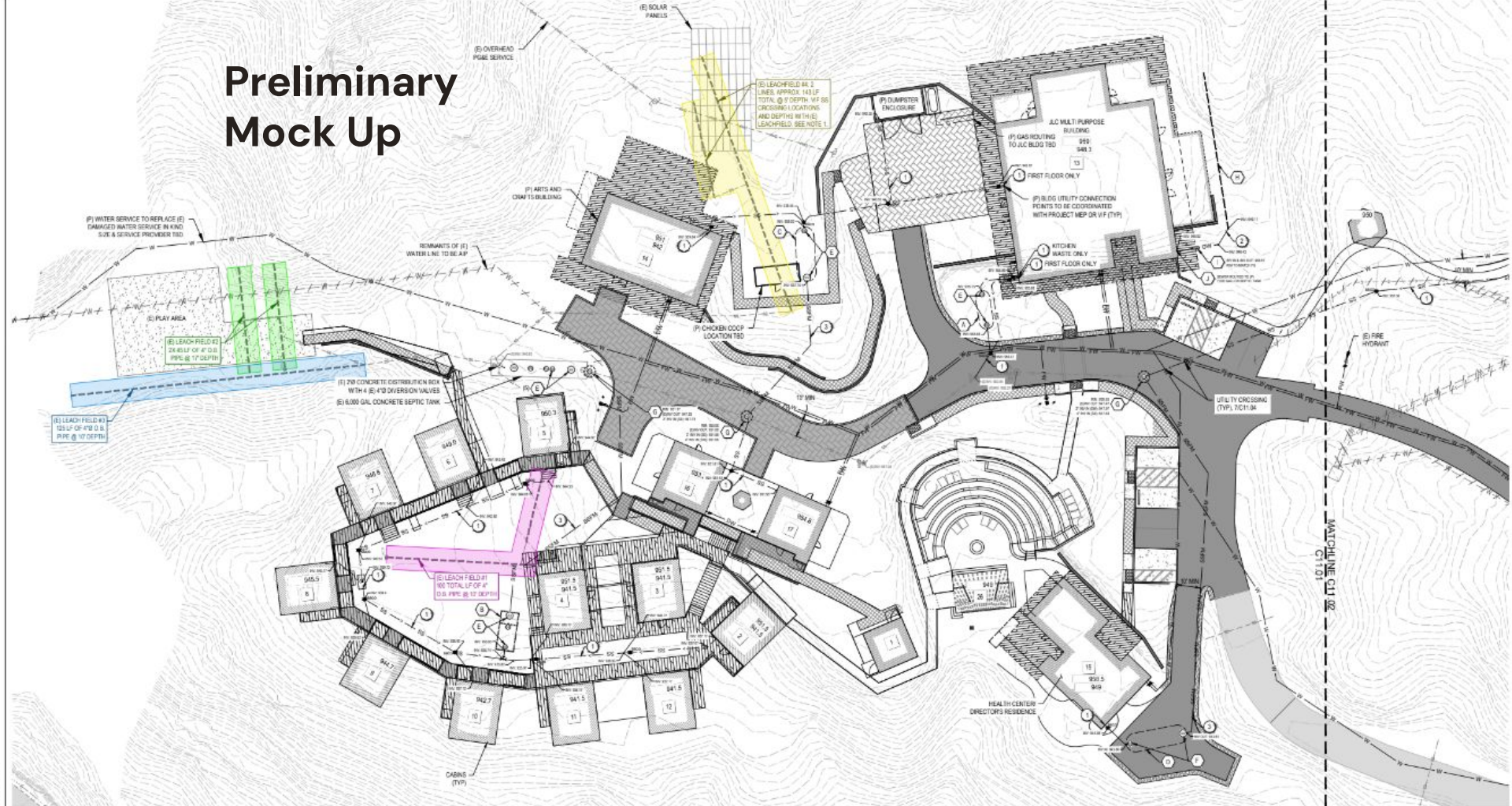


Camp Krem Resolution

- 1) Split systems to stay under <2500 gpd per system
- 2) Must be "in Kind"
- 3) Replace all broken system components.
- 4) 100 ft from onsite well
- 5) No building or grading over any septic components



Preliminary Mock Up





Case Study #2: Braemoor Community

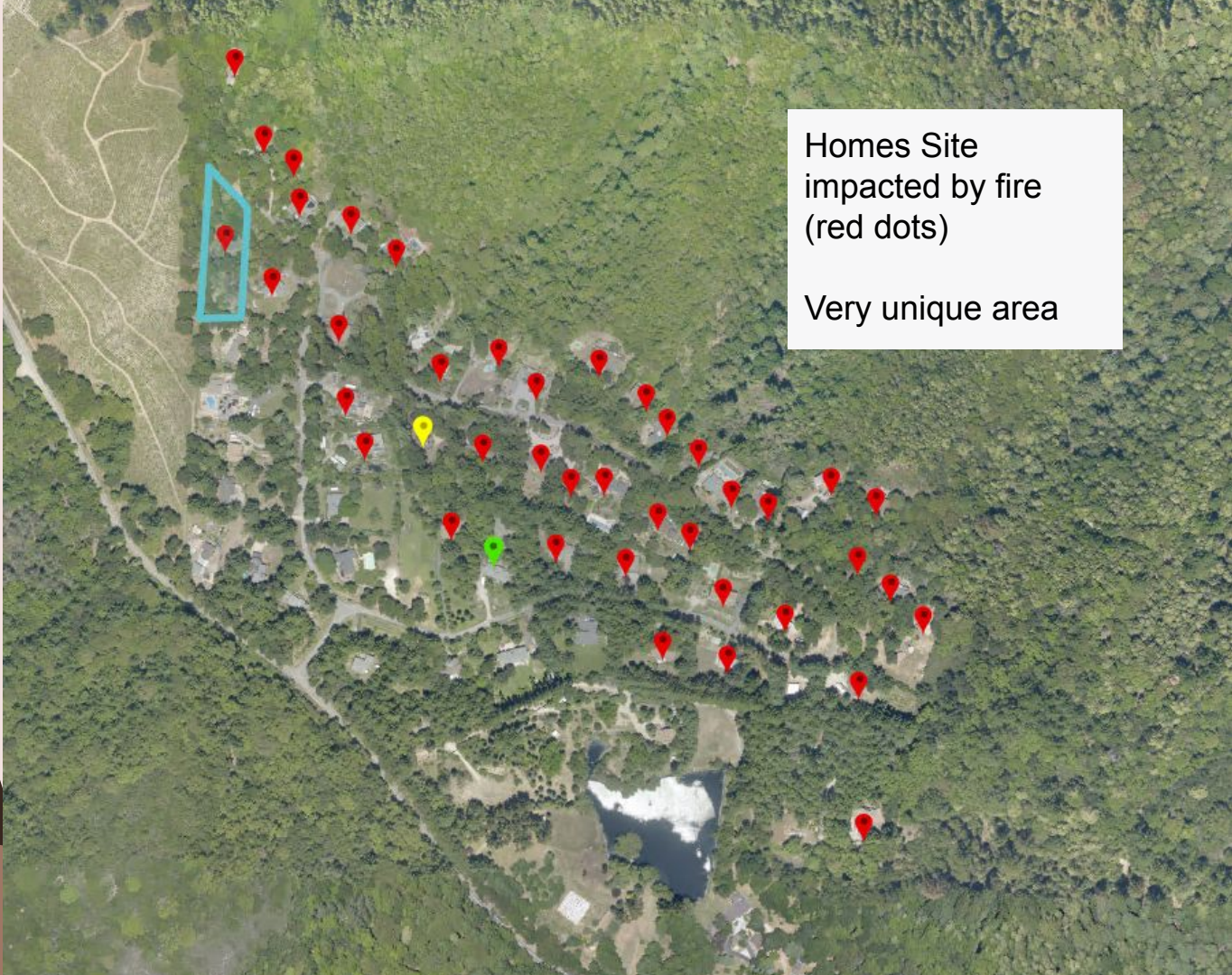
Small Community of ~50
homes impacted by fire.

Braemoor
Community Aerial
Photo



Braemoor Community
Photo 2023





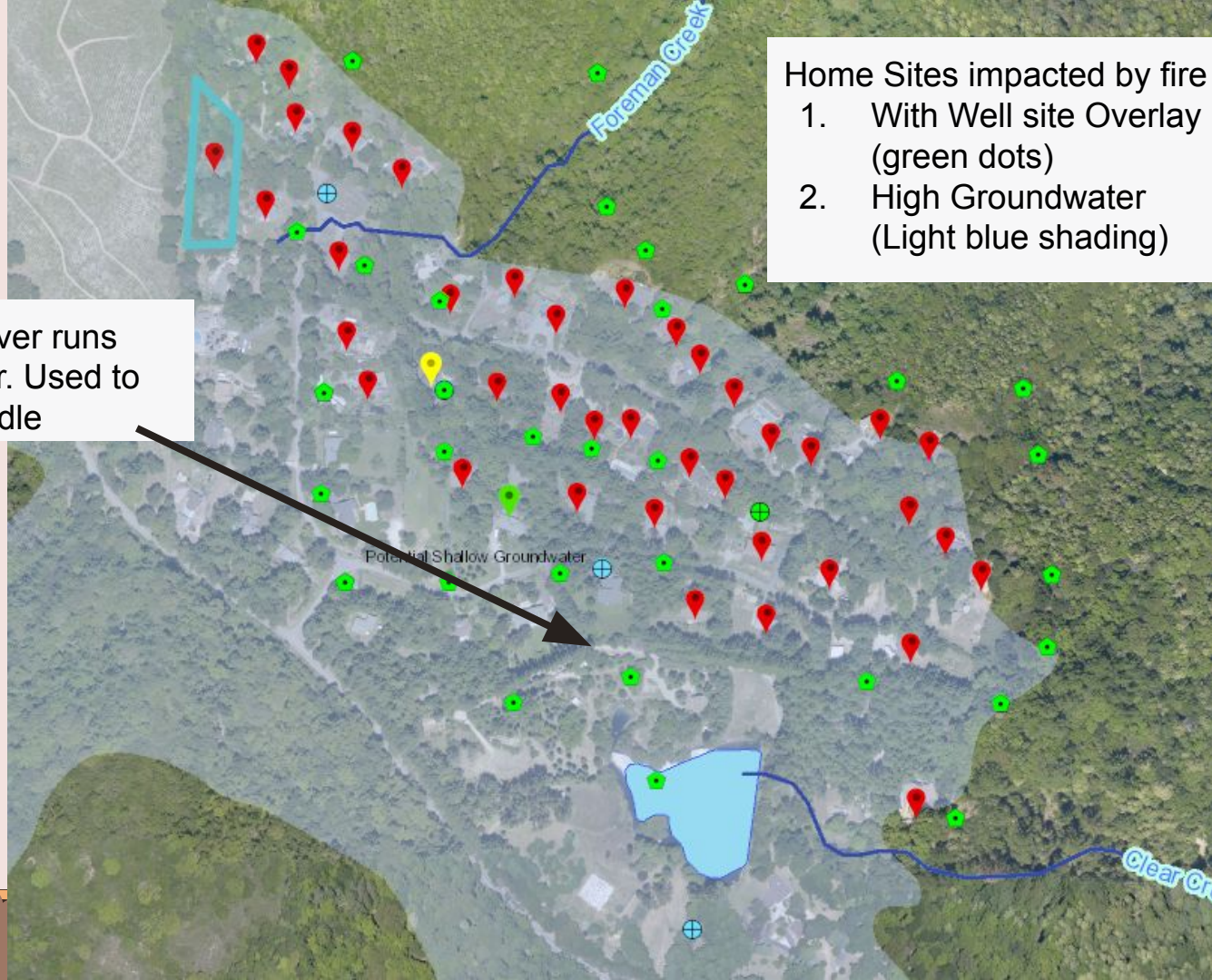
Homes Site
impacted by fire
(red dots)

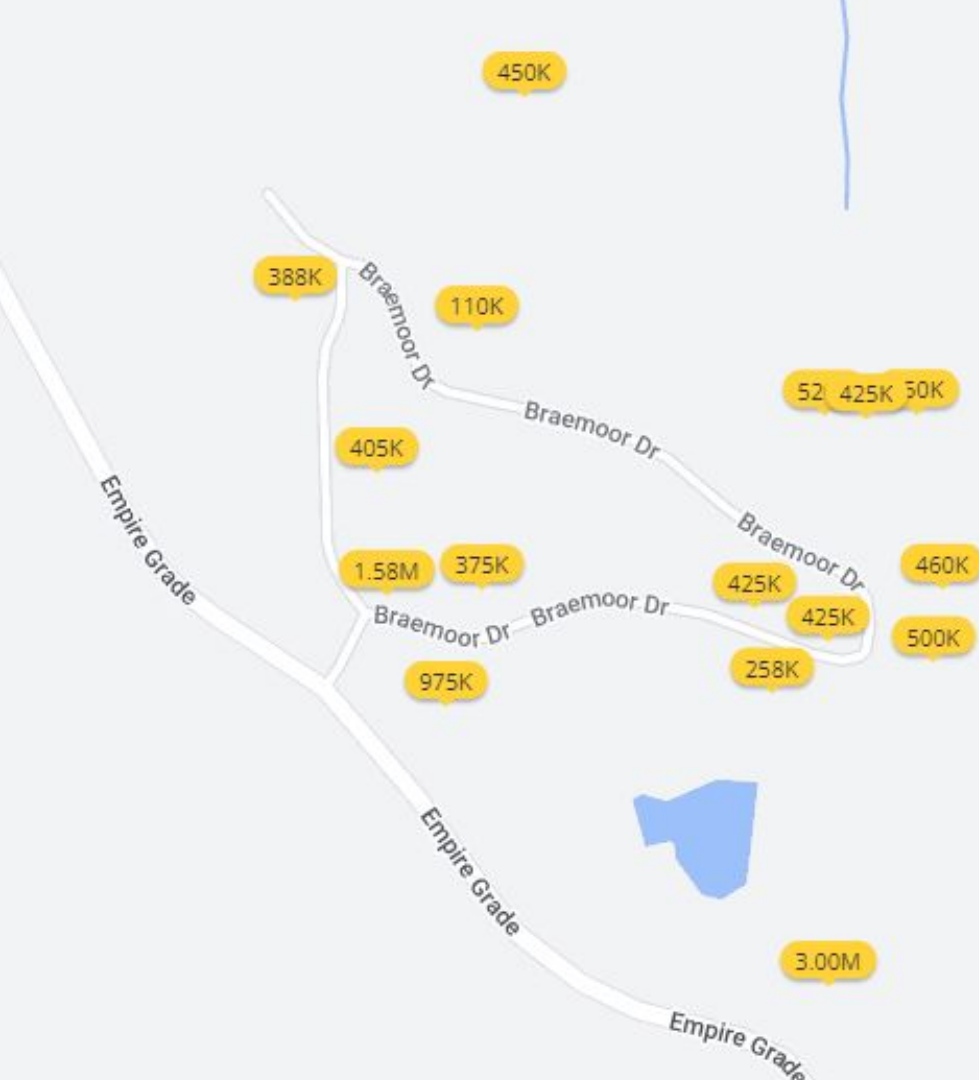
Very unique area



During Rain river runs through center. Used to be lake in middle

- Home Sites impacted by fire
1. With Well site Overlay (green dots)
 2. High Groundwater (Light blue shading)





Sold properties
Another 10+ for sale currently

200 of overall parcels sold

Braemoor Resolutions

1. Accept early miscatorgization/mis regulations issues occured. Do not compound.
2. Signs of Groundwater need to show >2 ft setback
3. Any replacement system to meet current code standards (sales)



A stylized illustration of a landscape. On the left, a tree with dark, rounded foliage stands against a light background. In the center, a bear silhouette walks across a dark ground. On the right, a large fire with orange and red flames consumes a tree. The sky is light with a few birds flying. The text is centered in the upper half of the image.

CZU Fire Recovery Learning Lessons and Takeaways

Not Just Fire, Any Disaster Faces Similar Situation.

All parcels in High disaster risk areas can face a similar situation.

Whether that be:

- 1) Flood zones
- 2) Fire
- 3) Hurricanes
- 4) Earthquakes
- 5) Etc.

-All tend to be likely low income and be facing difficulties in their rebuild.
-With parcels that would not be built on with today's stricter regulations



CZU Fire Overall Learning Lessons

- 1) Be Clear and Concise
- 2) Expect emotion to be attached
- 3) Set Expectations Early
- 4) Accept some will never rebuild
- 5) Bend Rules at own Peril, a slippery slope



SANTA CRUZ COUNTY
Civil Grand Jury

701 Ocean Street, Room 318-I
Santa Cruz, CA 95060
(831) 454-2099
grandjury@scgrandjury.org

Victims of the CZU Wildfire – Four Years Later

The Flame Still Burns

"And the flame still burns

From a glimmer back then it lights up again in my life" Mick Jones

Summary

For most of our community at large, the CAL FIRE designated CZU Lightning Complex Fire of August, 2020 may be no more than a distant memory, recollected only faintly as part of our collective communal experience. It may also be that such memories we have are clouded by the intervening pandemic that touched every corner of our community. Or we may simply be thankful that this disaster did not touch our homes and families. But for many who lived through that conflagration and lost homes, it is not a distant memory but rather a continuing and ever-present reality.

It may surprise you to know that a substantial number of those who lost their homes simply walked away without rebuilding. Many found themselves under-insured to the degree that they simply could not bear the cost to rebuild. Others were unable to rekindle their dreams because they found themselves unable to navigate a lengthy and often bewildering permitting process. And others chose not to rebuild their homes because they were unaware or uninformed that restorative resources and support were available. Almost four years later, only about one third of the homes that were destroyed are being rebuilt.

The Findings and Recommendations contained in this report highlight the need for improved disaster preparedness. That means more readily accessible disaster recovery information, improved support from county government agencies and the need for ongoing outreach to our community to prepare us for the next disaster event. We will be challenged again by natural disasters, be they borne of earth, wind, fire, or flood.

We can do better and we can meet that challenge together.

Future Improvements and Ongoing Dialogue

1. Draw lessons learned from other disasters to not make the same mistakes.
2. Work with you community (Contractors, Regulators, and Homeowners)
3. Don't reinvent the wheel. (Share information and templates when able)
4. Communication and Transparency is key

Questions?

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