



Defensible Space Maps for Wildfire Risk Mitigation

09/20/22





Vegetation management establishing defensible space is the single most important wildfire defense tool available to landowners.

Wildfires are intrinsically and fundamentally connected to fuel accumulation and vegetation composition.

90% of the Covenant's forest is on Private Property, we need a Community wide effort to reduce fire risk in Rancho Santa Fe.

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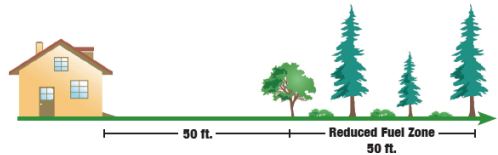
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100' DEFENSIBLE SPACE

MAKE YOUR HOME FIRE SAFE

A Defensible Space of 100 feet around your home is required by law. It protects your home while providing a safe area for firefighters.



50/50 Reduced Fuel Zone applies to residents within the unincorporated areas of San Diego County



1 "Lean, Clean and Green Zone"

Lawn, weeds and other landscaping in the first 50 feet around your home should be mowed and properly maintained.

Thinning and pruning the brush and trees in the first 50 feet around your home is critical.

Clean all needles and leaves from your roof and gutters.

Trim tree limbs at least 10 feet from chimneys, and remove dead branches hanging over your home or garage.

The law requires a screen over your chimney outlet of not more than ½ inch mesh.

2 "Reduced Fuel Zone"

Create horizontal and vertical spacing between plants to improve your chance of stopping a wildfire before it destroys your home.

Remove lower tree limbs to reduce the risk of a vertical fire ladder.

"Additional Tips"

Use care when operating equipment such as lawn-mowers. One small spark may start a fire; a string trimmer is much safer.

Check with your local fire department for additional requirements.

Visit www.ReadySanDiego.org

Defensible Space, It's the Law

- Proper clearance to 100 feet dramatically increases the chances of your house surviving a wildfire.
- Defensible space provides access and safety for firefighters protecting homes during a wildfire.
- Creating defensible space may also increase the insurability of your property.

Defensible Space Guidelines have Been Established by these Fire Agencies



Create Defensible Space:

“Immediate Zone” 0-5 feet

- Science says this is the most important and vulnerable zone to embers (NFPA*).
- Everything should be non-combustible, including gates and fences.
- Decks need to be non-combustible with metal flashing and ember protection.
- Remove mulch.
- Have low-growing fire-resistant vegetation.

Create Defensible Space: “Intermediate Zone” 5-50 feet

- Remove dead leaves and pine needles from your yard, roof, and rain gutters.
- Keep tree branches at least 10 feet away from your roof, chimney, and other trees.
- Create space between vegetation and your house, deck, patio, or garage.
- Remove vegetative fuels, annual weeds and grasses, and thin native vegetation.
- Plant drought-tolerant, fire resistant plants.
- Irrigate!

Create Defensible Space: “Extended Zone” 50-100 feet

- Cut or mow grass and weeds to a maximum height of four inches.
- Avoid ladder fuels!
- Create horizontal spacing between shrubs and trees.
- Create vertical spacing between grass, shrubs, trees.
- Remove any vegetative fuels and thin out native vegetation 50%.



Ladder fuels allow fire to “climb” nearby trees. Limb branches of live trees up to 10 feet.
Diagram from: Oregon State University Land Steward Program

What are Vegetative Fuels?

- Wildfires are intrinsically and fundamentally connected to **fuel** accumulation and **vegetation** composition.
- Some plants are more prone to combustion, are highly flammable, and can ignite quickly.
- Examples of highly flammable plants include Eucalyptus, Juniper, Cypress, Rosemary, Acacia, and all Palms.
- During a severe firestorm, all vegetation will burn.

Dead and dying vegetation is an extremely flammable vegetative fuel. Dead and dying vegetation must be removed in order to reduce the fuel available for a wildfire.



Chaparral is extremely flammable native vegetation that has adapted to wildfires. Chaparral has high oil content and releases tremendous energy during a firestorm.



Eucalyptus trees are a flammable vegetative fuel source with volatile resin and oily leaves. Burning Eucalyptus embers can be blown over a mile in the wind.



During a firestorm, dead palm fronds become like flaming arrows carried by winds, spreading fire to nearby and distant structures.



Defensible Space Along Property Lines

Community Wildfire Resilience is a Neighborhood Effort

Defensible Space Zones may extend outside property lines

County of SD Ordinance 2019-02 Section 7:

Property Owners shall abate any accumulation of combustible vegetation, dead, dying or diseased trees, green waste, waste matter, or other flammable combustible materials within 50 feet of the property line when such an accumulation endangers or encroaches on the required defensible on adjacent properties.

Contact FD if your defensible space encroaches onto a neighboring property.



Assembly Bill 38 – Seller Responsibility

Public Resources Code 4123.7

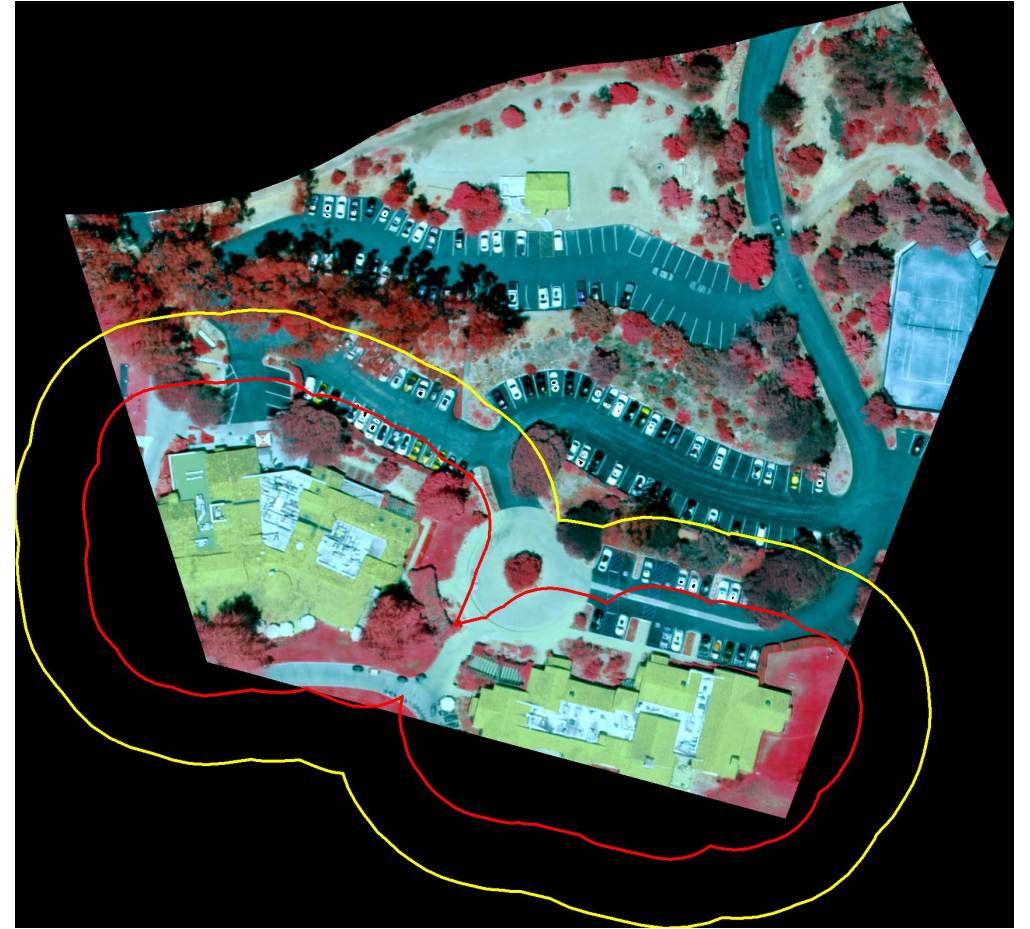
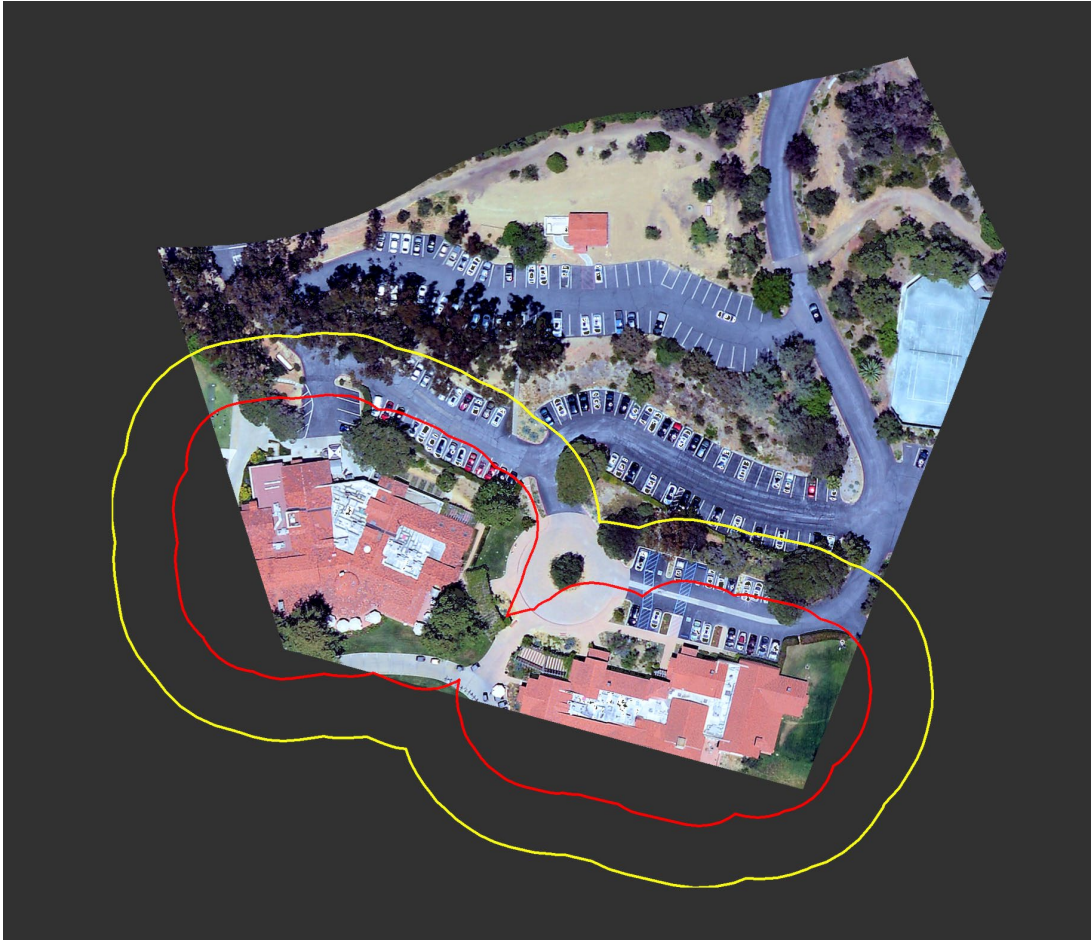
Requires delivery of a statutory disclosure regarding home hardening for homes in designated high fire areas built before 2010, and that seller list specified retrofits.

Requires seller of property located in designated high fire areas to provide buyer with documentation stating that the property is in compliance with local law pertaining to defensible spaces or local vegetation management laws. If there is no such local law, the seller shall provide documentation of compliance with state law, assuming the seller obtained such documentation within six months prior to entering into the transaction. But if neither of the above, the seller and the buyer must enter into a written agreement in which the buyer agrees to obtain documentation of compliance with defensible space or a local vegetation management ordinance after close.

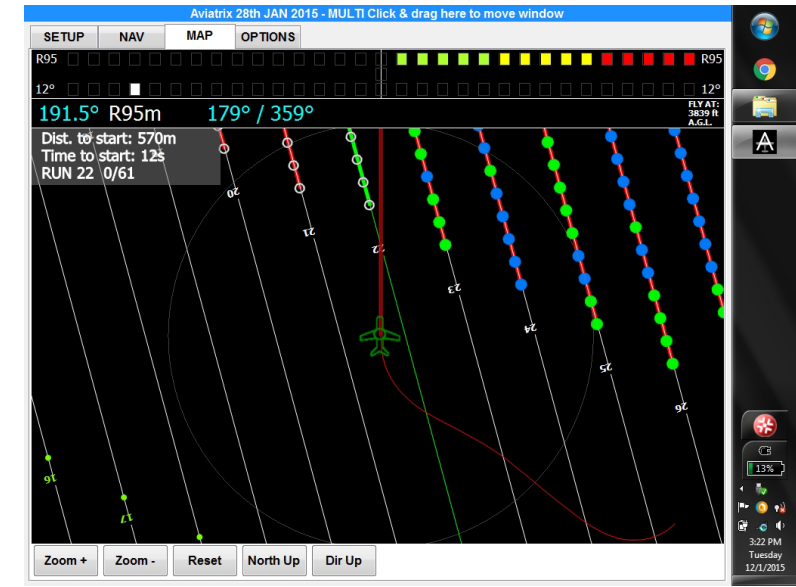
Rancho Santa Fe Association Partnered with FireWatch to Help with this Effort

- FireWatch creates annual aerial maps of all the vegetation in Rancho Santa Fe to help identify areas of high wildfire risks.
- Defensible space maps will be sent to all homeowners so they can understand and communicate their wildfire risks with the Association and the RSF Fire Protection District (RSFFPD).
- The annual maps will help monitor changes to the vegetative fuels over time.
- Maps are confidential and only provided to homeowner and RSFFPD unless you opt-out.

Customized Property Maps for Each Landowner in the Rancho Santa Fe Covenant



FireWatch uses an aircraft to collect aerial images of the vegetation. GPS waypoints along a flight line trigger sensors for repeat station imaging.



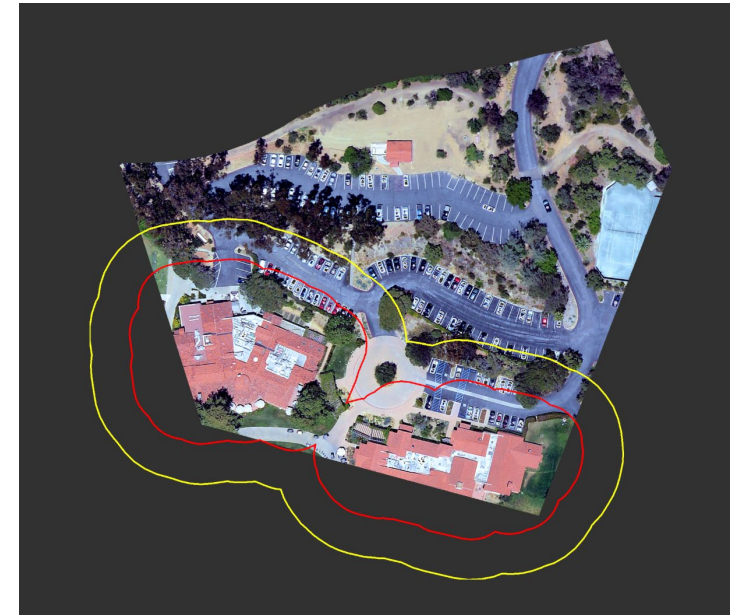
Defensible Space Maps

Over the following weeks, two Maps will be sent to Landowners:

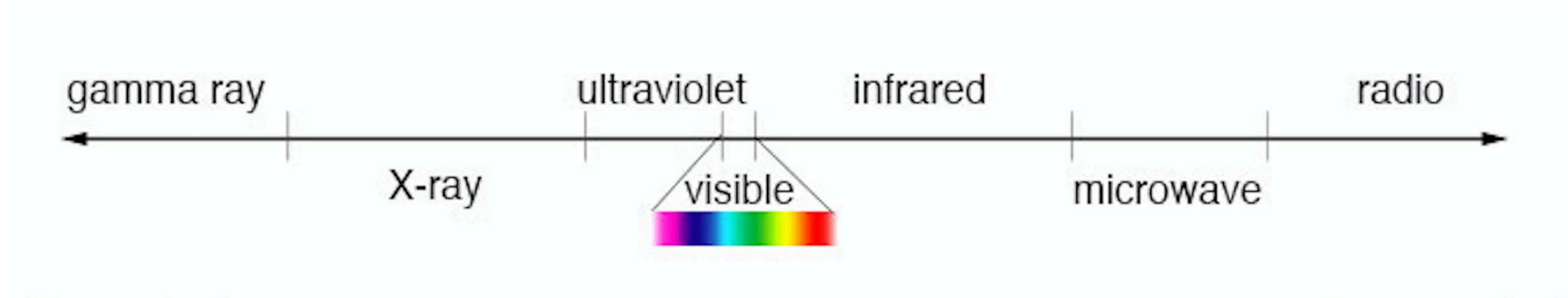
- **RGB** – Red, Green and Blue (Color)
- **CIR** – Color Infrared

50' and 100' buffer lines are added to the maps for visual reference of defensible space.

We also provide additional maps NDVI & NGVe maps, digital surface models, high resolution GeoTiffs, and change detection maps can be sent upon request.



FireWatch uses Multispectral Imaging



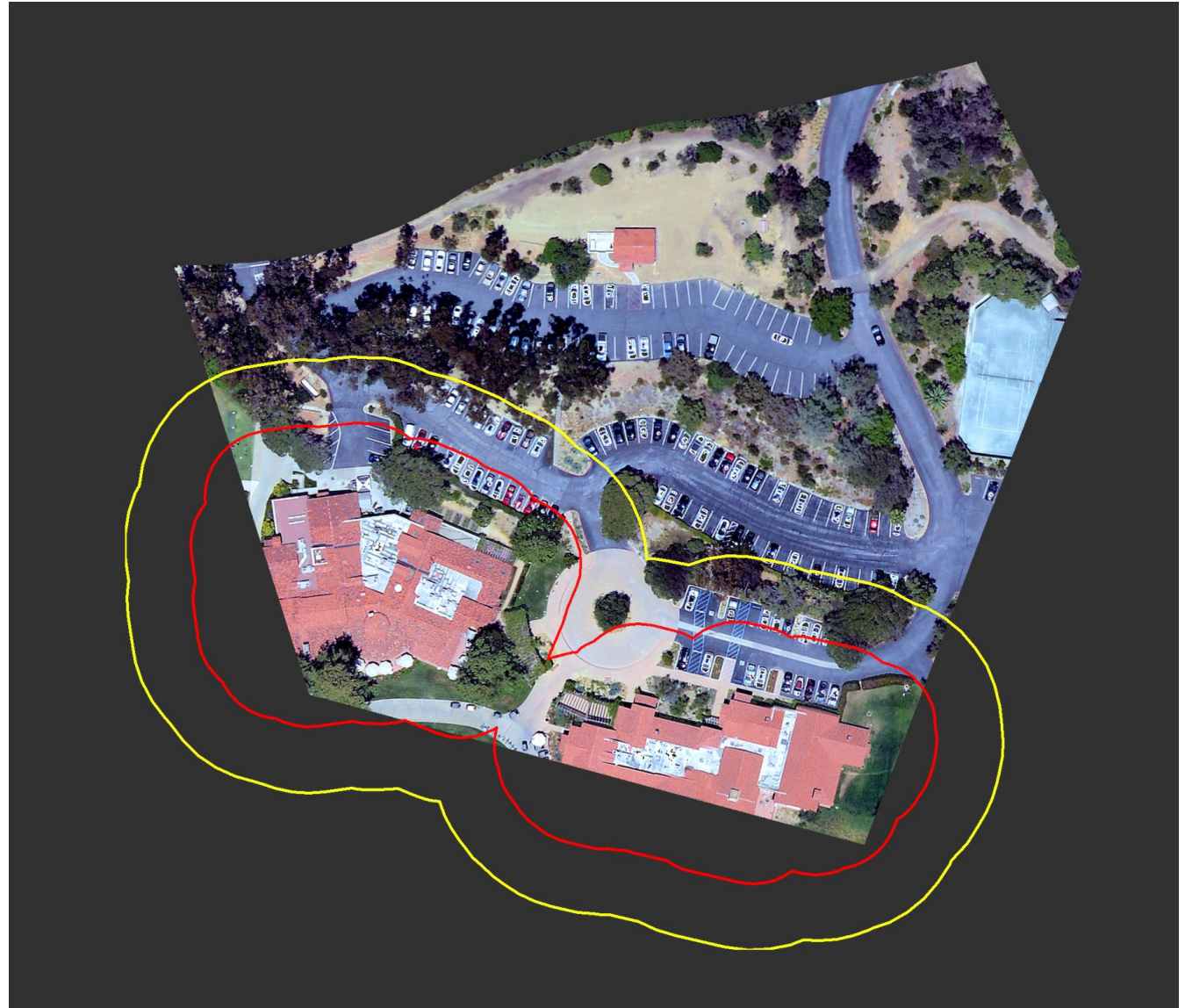
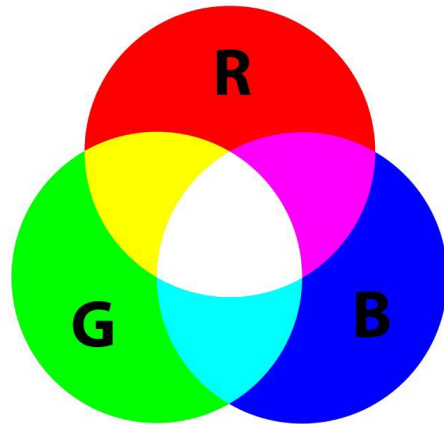
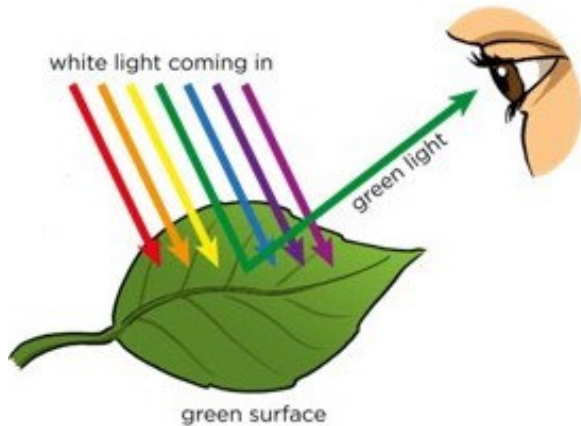
Multispectral imaging captures light from specific wavelengths of the spectrum.

Some of these wavelengths (color infrared) are invisible to the human eye.

Multispectral images are a very effective tool for analyzing plant health.

RGB Parcel Maps

Color (RGB) images show each parcel as we would see them in visible light. They help us determine the types of vegetation present and degree of defensible space.

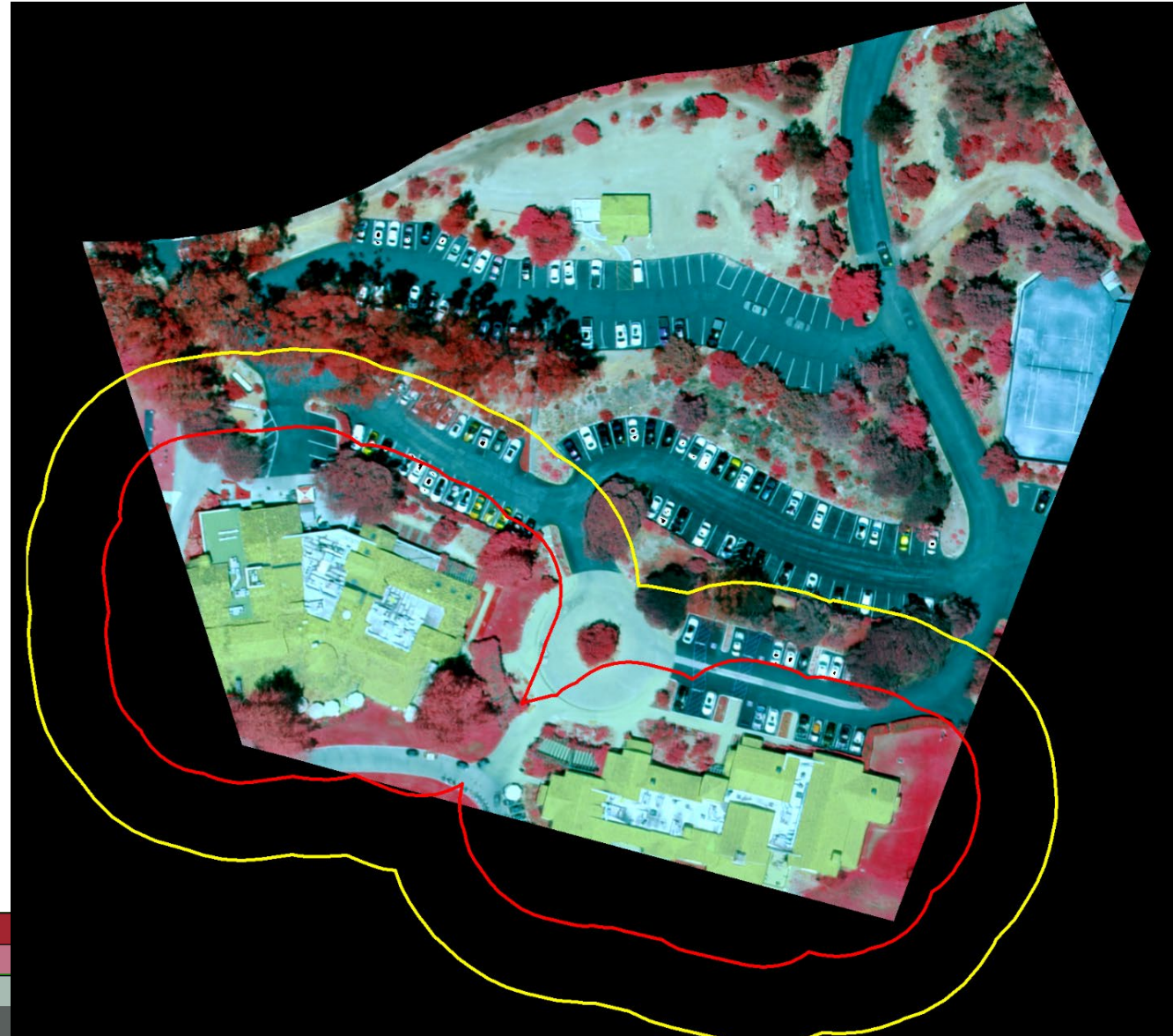


CIR Maps

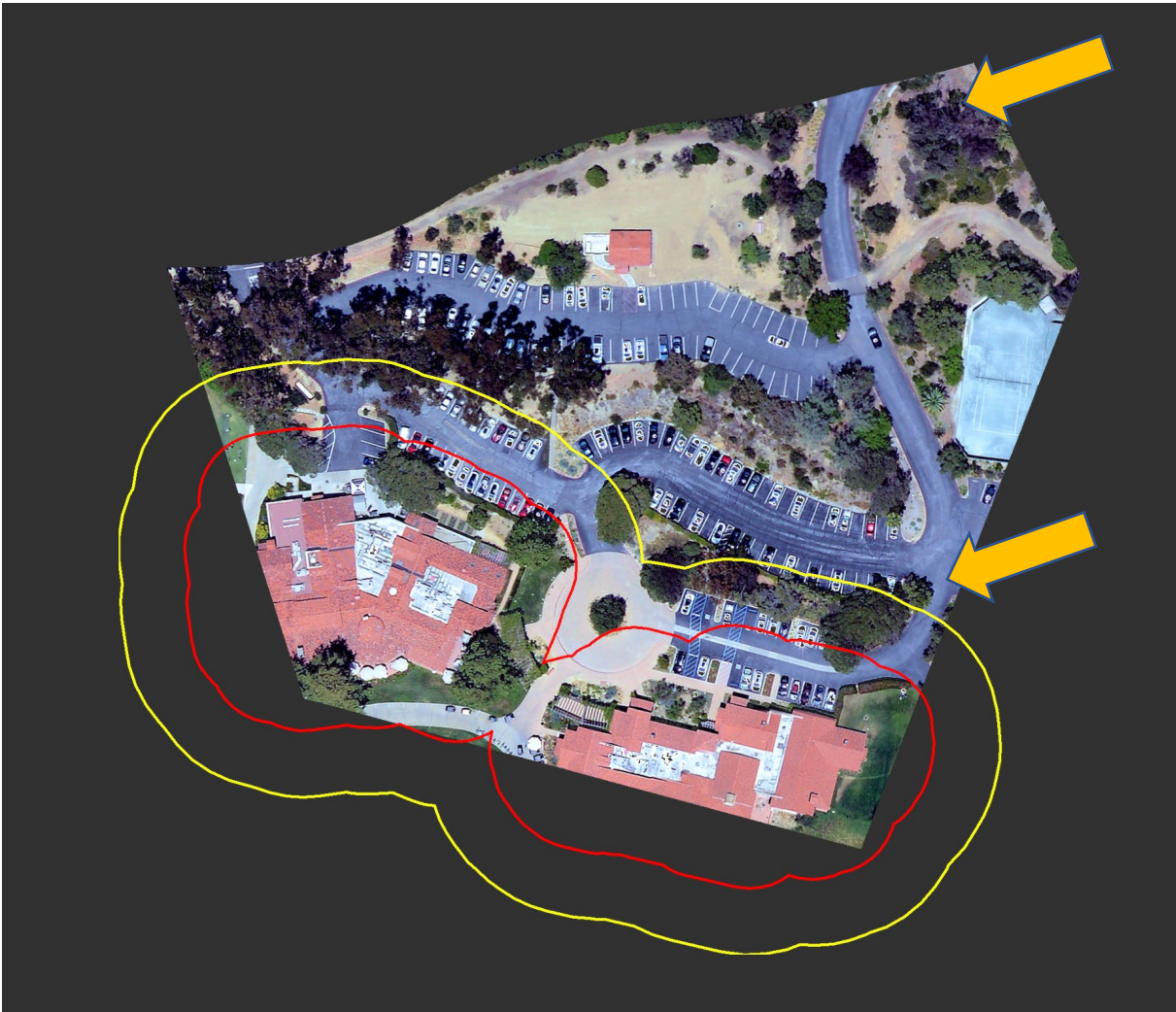
Color Infrared maps show the relative health of vegetation and canopy structure.

Shades of red and pink show healthy vegetation, while light to medium grey and brown shows Chaparral. Dark grey and dark brown show dead/dying plants.

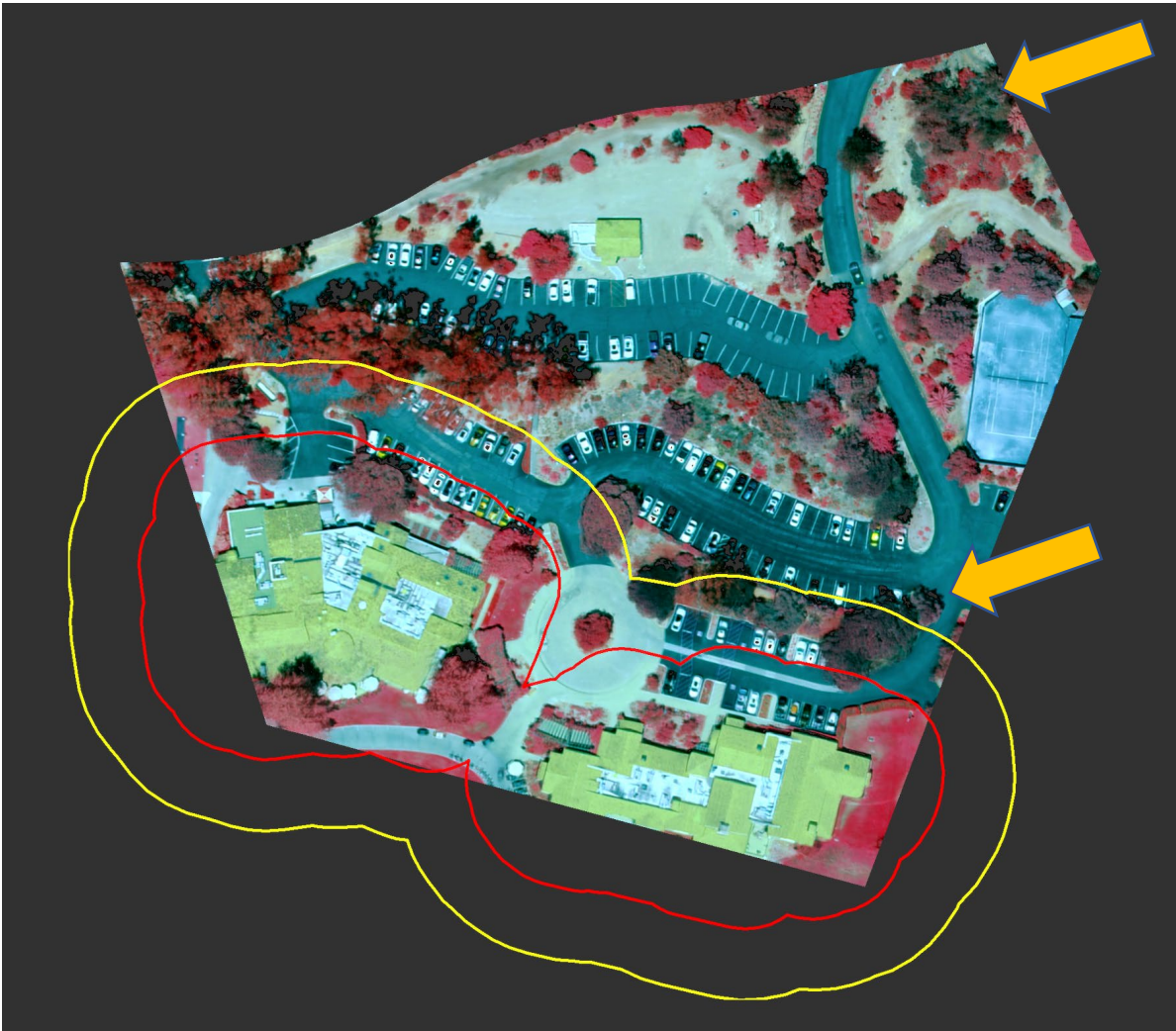
Healthy Vegetation	
Healthy Dense Vegetation	
Chaparral or Native Vegetation	
Dead or Dying Vegetation	



Color (RGB) images show each parcel as we would see them in visible light.

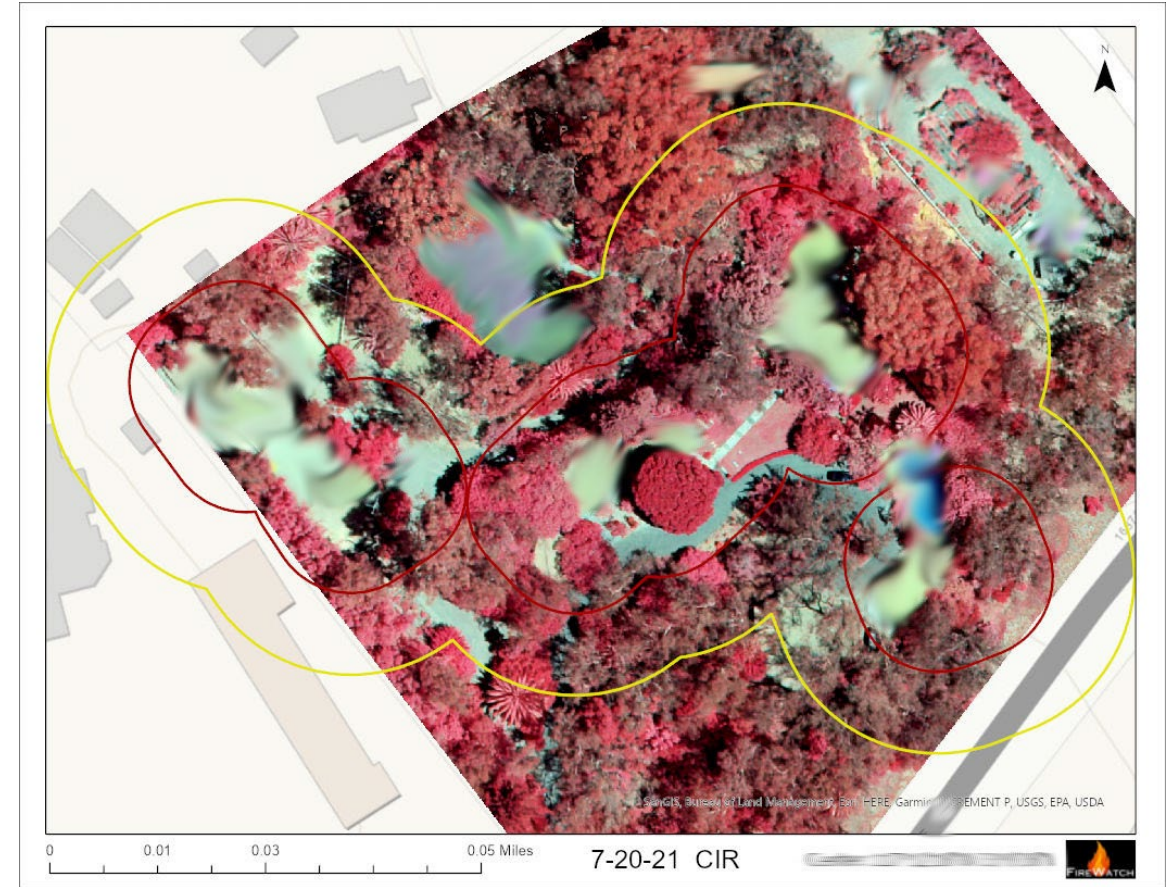
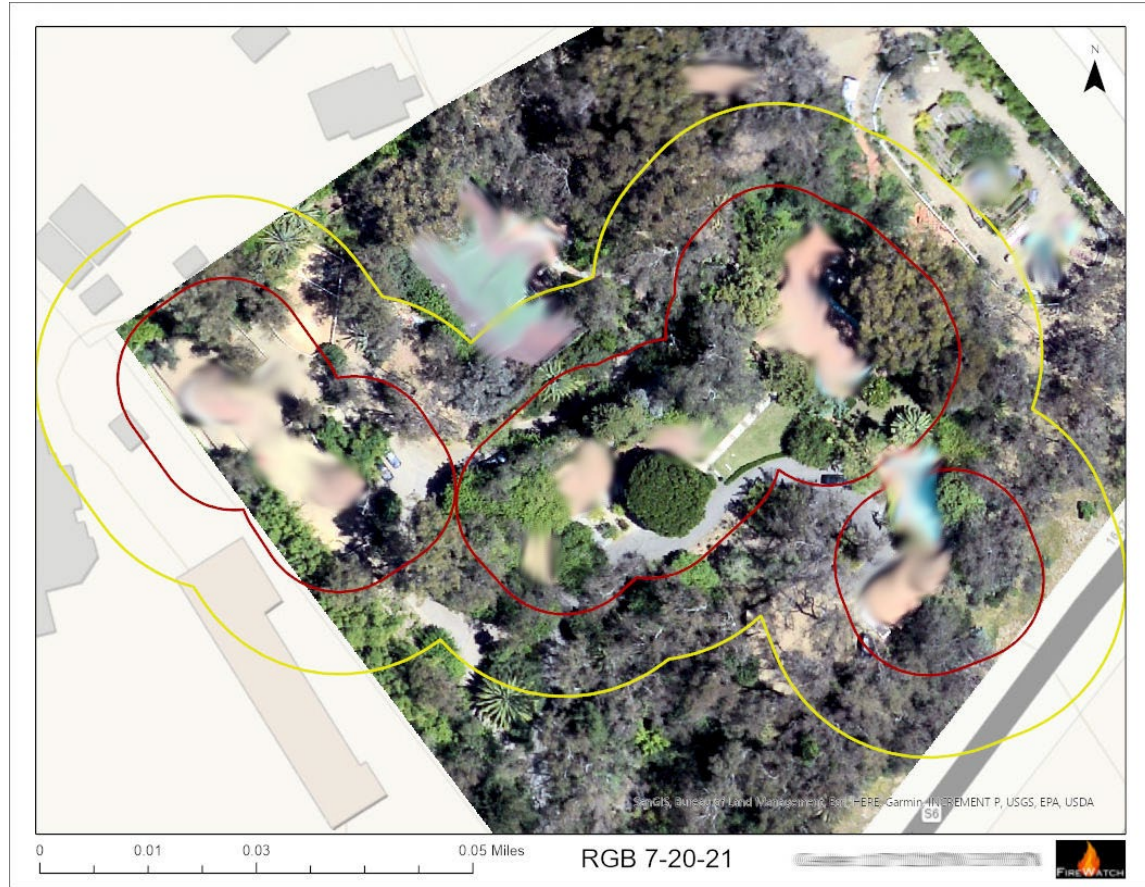


Color Infrared (CIR) maps show the relative health of vegetation and canopy structure.

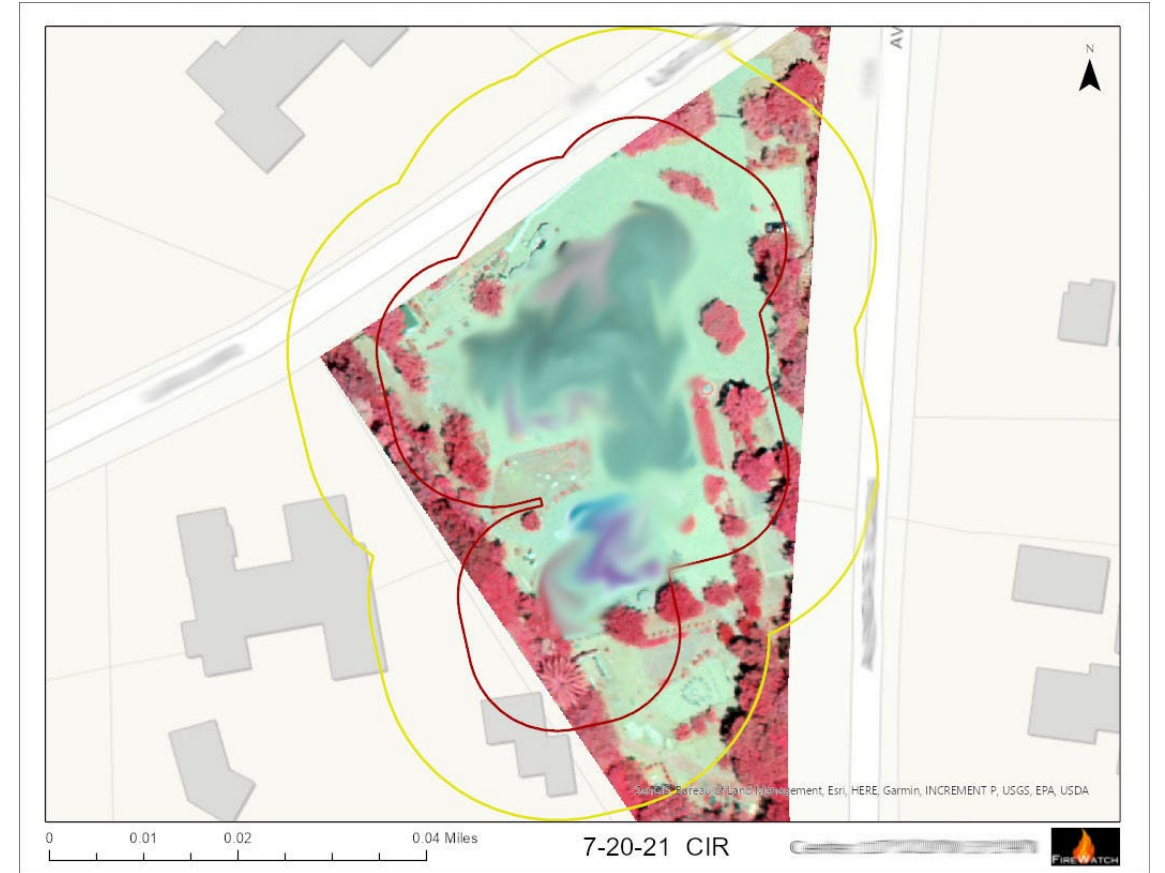


Healthy Vegetation	
Healthy Dense Vegetation	
Chaparral or Native Vegetation	
Dead or Dying Vegetation	

Heavy Vegetative Fuel Load



Low Vegetative Fuel



Defensible Space Map Data Sharing: Why to Opt In

Sharing your maps with RSF Fire Protection District (RSFFPD) provides valuable information during an emergency situation. The maps were created in order for firefighters to identify wildfire risks, communicate the risk to homeowners, and plan for emergency response.

In addition, this information helps Fire Department plan and strategize during an emergency. High- and low-risk zones will be identified for efficiency and strategic planning. Data on water sources, fuel load and type, and safe staging areas can also be identified. Sharing your maps could help save your home!





Vegetation management is the single most important wildfire defense tool available to homeowners.

Airborne analysis of the vegetative fuel can provide the data for mitigating the risk of wildfires.

90% of the forest is on private property, it will take a Community effort to make RSF Fire Safe.

What's next?

Maps via email in 2-4 weeks

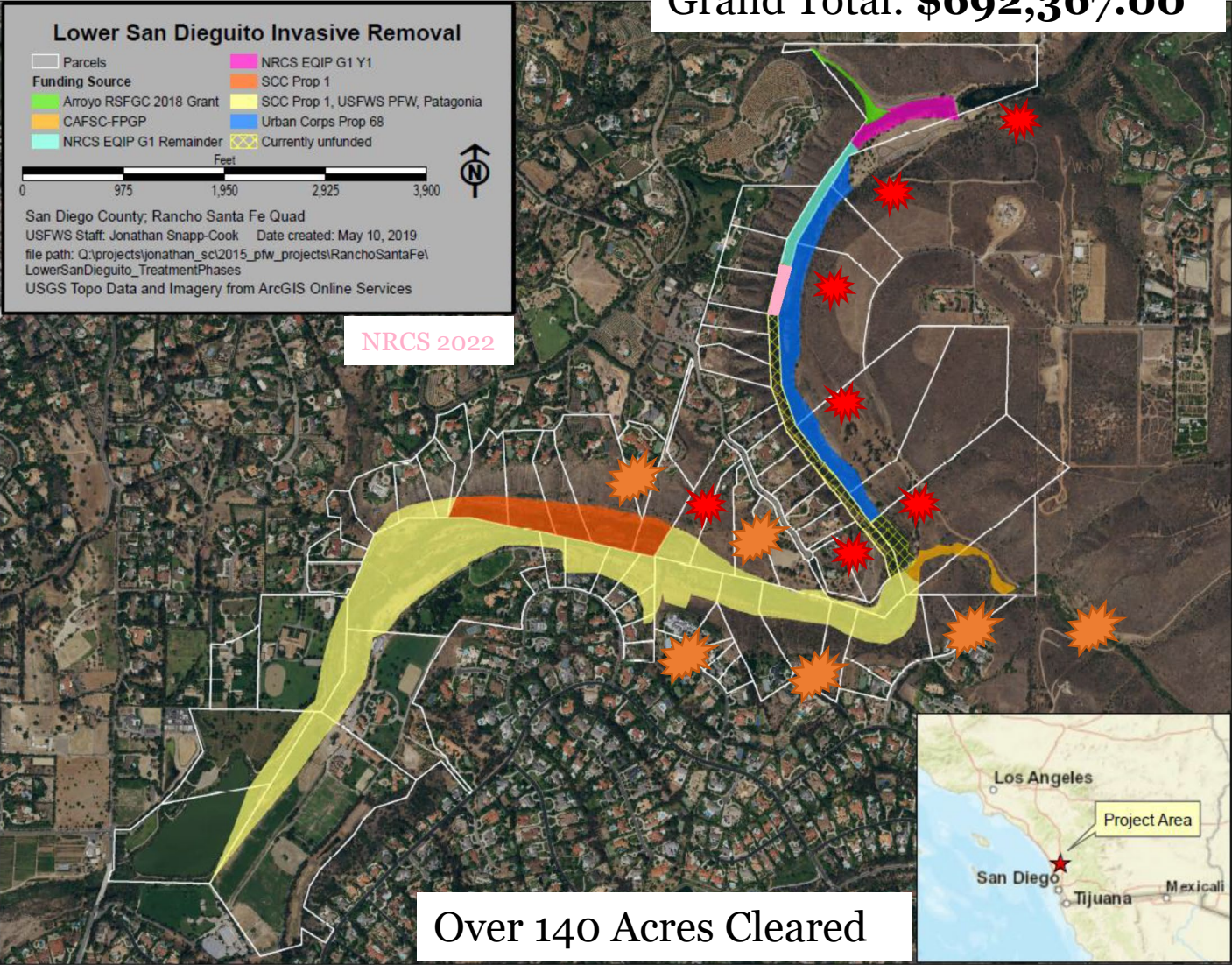
Fire & Insurance Town Hall Event

**Tuesday October 25th
4-6pm and the Golf Club**

Questions firewatch@rsfassociation.org

For more information and access to instructional aids, videos, and other resources please visit the RSF Association Website at Member home page, under FireWatch.

Association Managed Fire Mitigation Projects



Rancho Santa Fe Association Owned Property

2007	Witch Creek Fire 
2017	RSF Garden Club \$7,300
2018	RSF Garden Club \$7,300
2019	RSF Garden Club \$10,000
2018	USDA NRCS \$83,303
2019	SD Urban Corps \$53,500
2019	Urban Corps/Tree SD \$275,000
2022	NEW! USDA NRCS \$25,000

Rancho Santa Fe Covenant
(Private Landowners, entry rights)

2019 State Coastal Conservancy Prop 1 \$71,000

RSF Total: \$532,403

Lusardi Creek County Preserve

2014 Bernardo Fire 

2018 CA Firesafe Council \$18,664
2018 Fairbanks Private Fundraiser \$25,000

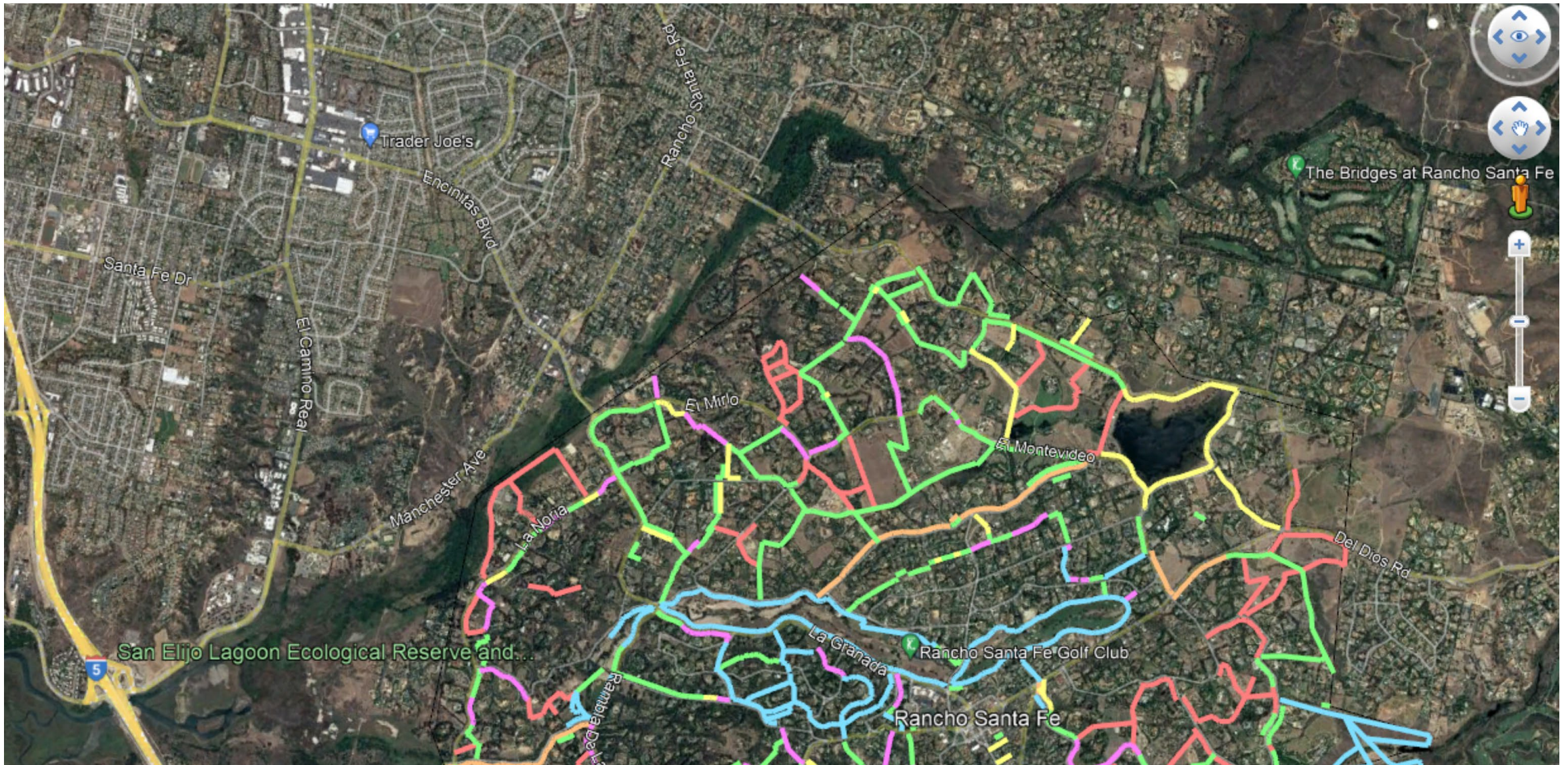
Total: \$43,664

Fairbanks Ranch
(Private Landowners, entry rights)

2015 U.S. Fish & Wildlife \$55,300
2015 CA Wetlands Recovery Project \$23,000
2018 Private Contributions \$38,000

Total: \$116,300

Escondido Creek, \$3 million awarded to the Nature Conservancy for Vegetative Fuel Reduction



Wildfire Prevention is a Team Effort!



THANK YOU!

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