

Rapid City and Wildland Urban Fire



Sustaining Ecosystems and Communities

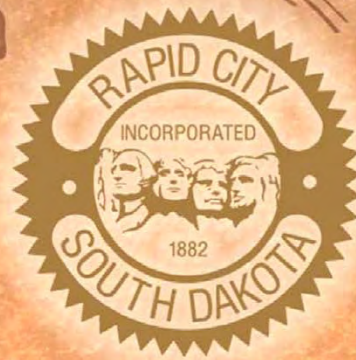


Compatible communities require ignition resistant homes.

Sustaining both requires community compatibility with the *natural* process of fire.

The challenge for residents in wildland urban communities is to take action before a wildfire starts.

Education and a change in mind set is key to a homeowners success in making their property *survivable* in a wildfire.



Rapid City Survivable Space Initiative



SEVERE FIRE
CONDITIONS

WILDLAND FIRE

- Rapid fire spread – high intensity

URBAN FIRE

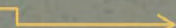
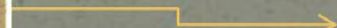
- Multiple simultaneous ignitions

OVERWHELMED
FIRE SUPPRESSION

REDUCED FIRE
PROTECTION

- Lack of resources leads to reduced effectiveness

MANY HOMES
TOTALLY
DESTROYED



Realities of Wildfires

- Wildfire is the easiest natural peril to mitigate
- There are not enough fire fighting resources to protect every house during a wildfire.
- Fire behaves according to the laws that guide the combustion process
- Controlling the amount and continuity of fuel in a given area can reduce the fires intensity.
- Homeowners can control how a fire will effect their home and/or property

Focus on Structure Ignitability

- Stop the transition from wildland fire to *urban* fire.
- All heat sources in the Home Ignition Zone must be evaluated, even other homes.
- Wildland Urban fire is where the fuel being consumed *changes* from wildland fuel to urban fuel.
- It's not where the home is located that determines ignition risk – it's how ignitable the home is as determined by the home ignition zone.



Factors Dominating The Potential For Structure Ignition

- ① Vulnerability of roofs to firebrands – up to 1 mile away.
- ② The importance of keeping high intensity fire at a distance of at least 30 ft on level or gentle slope.
 - ✓ Experiments show no ignition/charring beyond 66 ft.



Set of Conditions








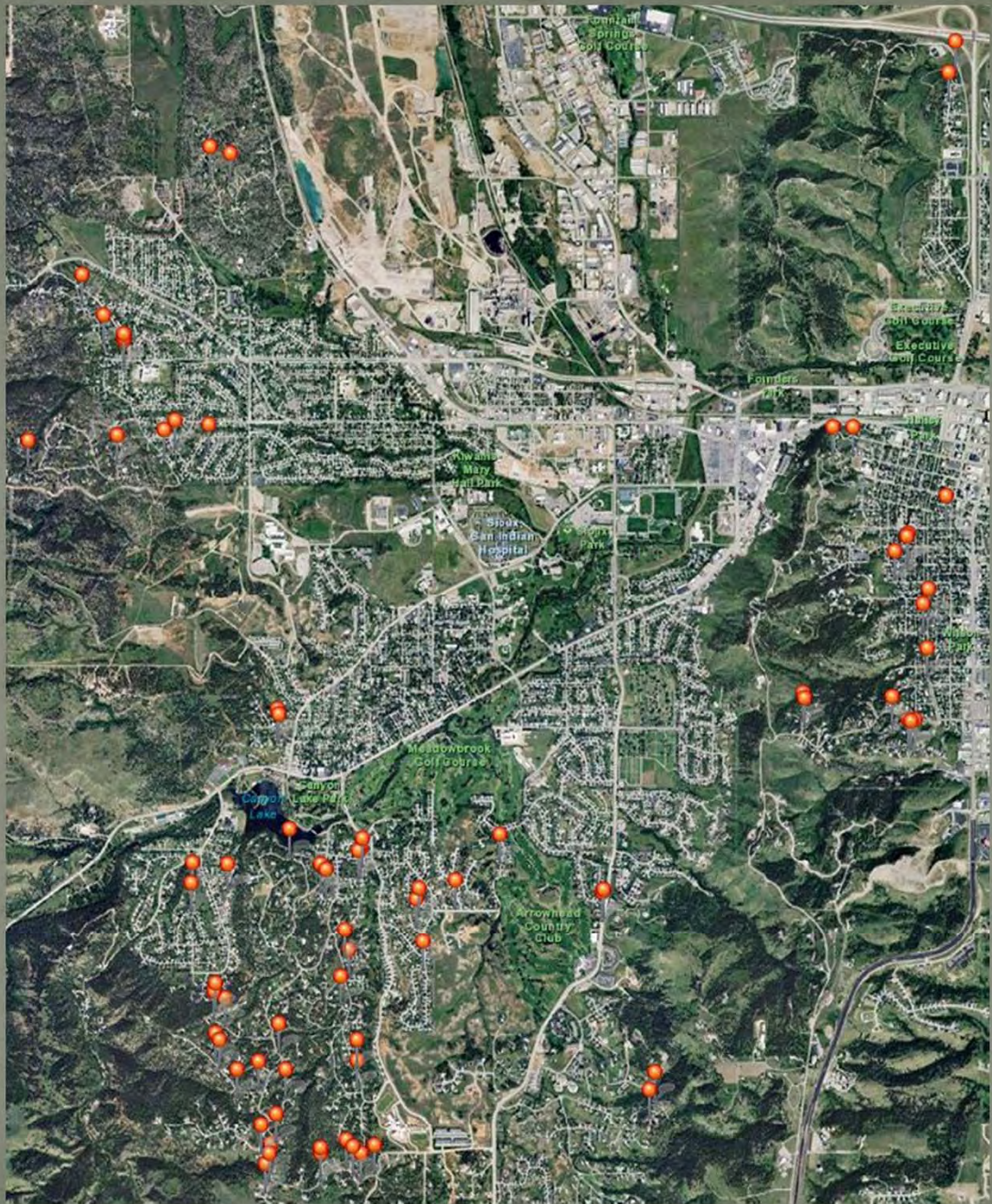
Fire/ignition
resistant building
techniques

Treatment - changes fire
behavior the most and best
at the area of treatment
(around homes and
property)

Reducing
ignition
hazards
around
wildland
urban homes

FEMA Pre-disaster Mitigation Combustible Roof Replacement Grant

-  Multiple neighborhood communities in three WUI areas of the city
-  78 structures included in grant
-  Over \$15 million in property values addressed
-  Many times that in potential losses(structure-to-structure ignition)
-  Multiple simultaneous structure ignitions in ember zone



From The Foundation Out-Zones 1-3

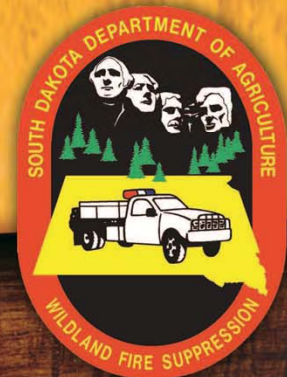


CREATING SURVIVABLE SPACE








**WILDLAND FIRE
HAZARD REDUCTION
PROJECT**



3 9 4 - 5 2 3 3



Fuel Reduction Grant Program

-  50/50 cost share with homeowners
-  Reduce fuel loading on property in Wildland Urban areas of Rapid City
-  85 properties assessed and in various stages of completion since August of 2011
-  35 projects completed since August of 2011
-  \$ Millions in property values at lower risk
-  Education for homeowners and HOA's
-  Formation of Firewise Communities



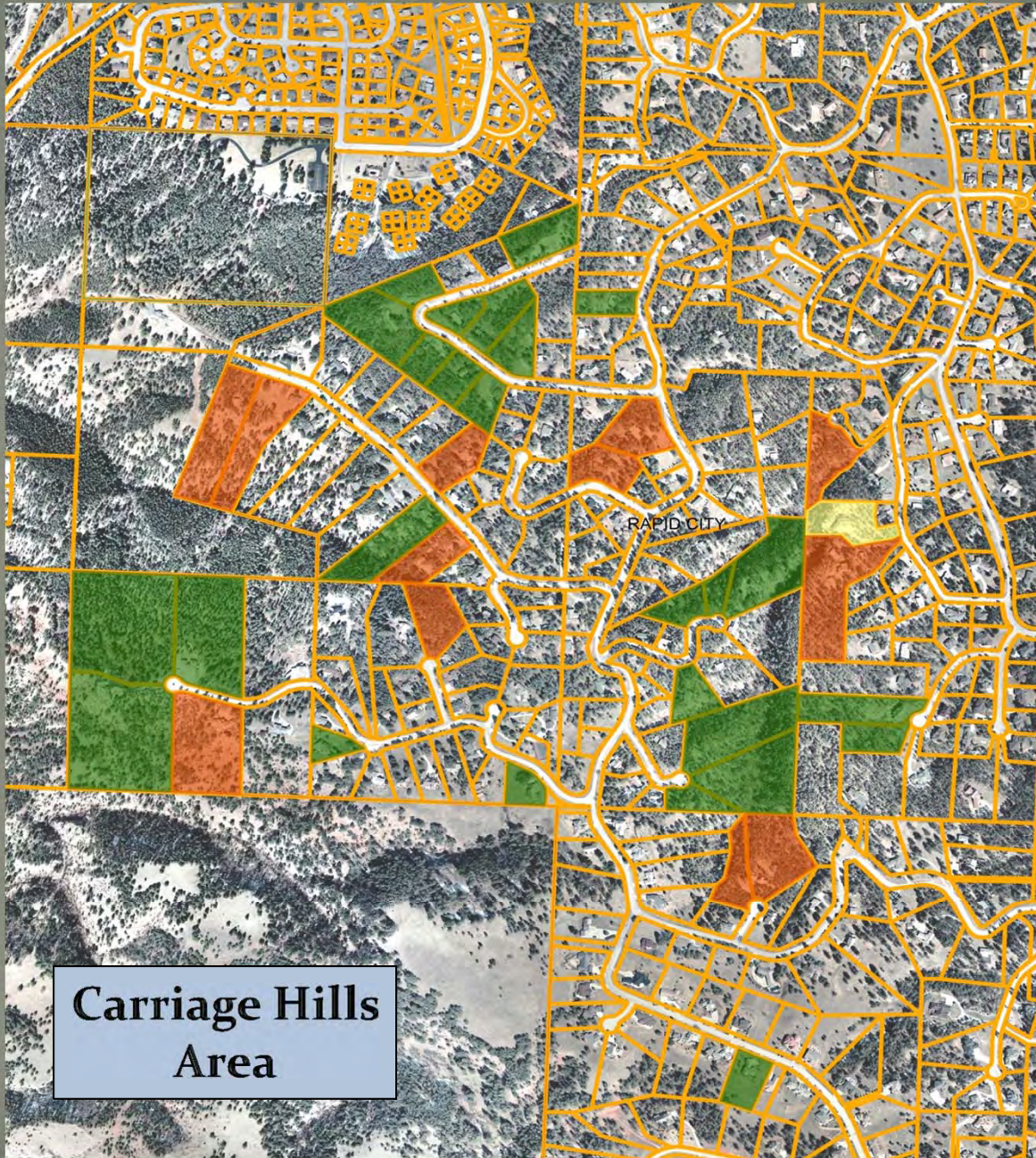






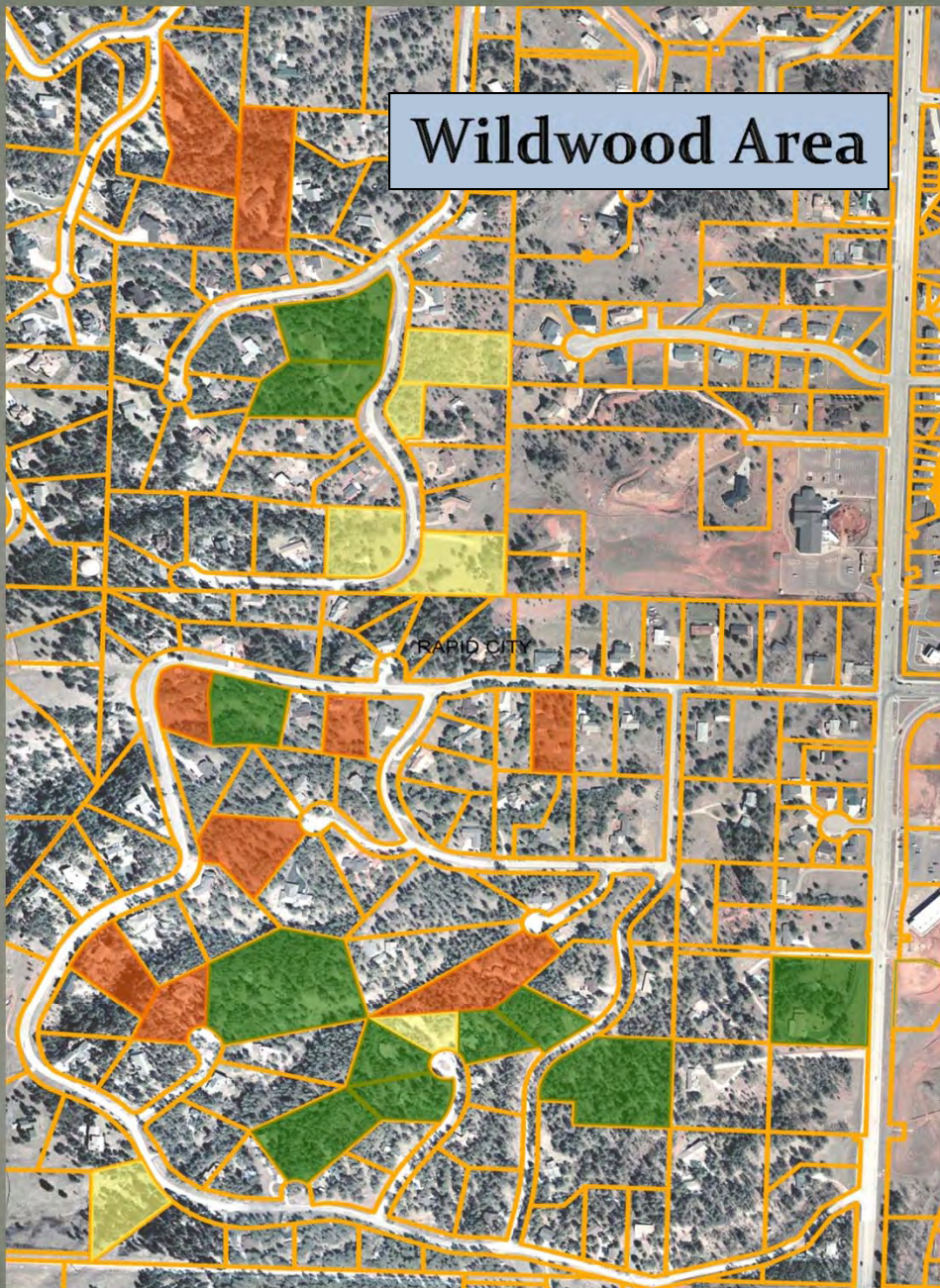




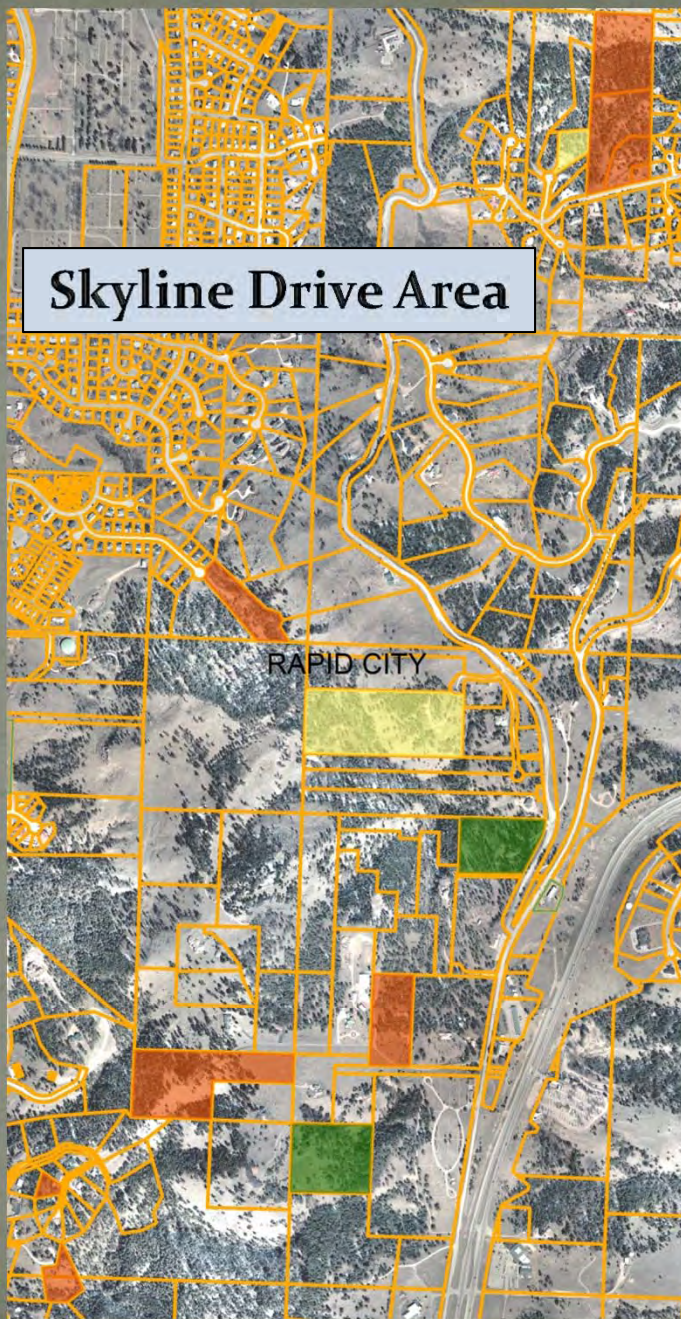


**Carriage Hills
Area**

Wildwood Area



Skyline Drive Area



RAPID CITY

Questions?

