WALDO CANYON FIRE, 2012 COLORADO SPRINGS – THIS COULD BE THE SOUTH HILLS OF HELENA!

The entire Helena area is considered a WUI or Wildland/Urban Interface. In other words, Helena is not just a *city* with a lot of trees, most of the area consists of *houses* in a *forest*.

WILDFIRE RISK AND PREPARATION FOR THE HELENA AREA

The following is a simulation based on actual weather recorded at the Helena Regional Airport on a recent hot, windy day in August.

Many of the pictures were taken at the Waldo Canyon fire that burned into the City of Colorado Springs in June of 2012.

Two lives were lost and 345 structures burned in that fire with similar fuels, weather, and topography as right here in Helena.

2006 WEATHER: FORECAST VS. ACTUAL

Forecasted weather for AUGUST 8, 2006

High Temperature = 88° - 97°
Minimum Humidity: 15 – 23%
WIND:
Lower elevations S 5 – 15mph
Ridge Top: SW 10 -15 mph

Actual weather for AUGUST 8, 2006

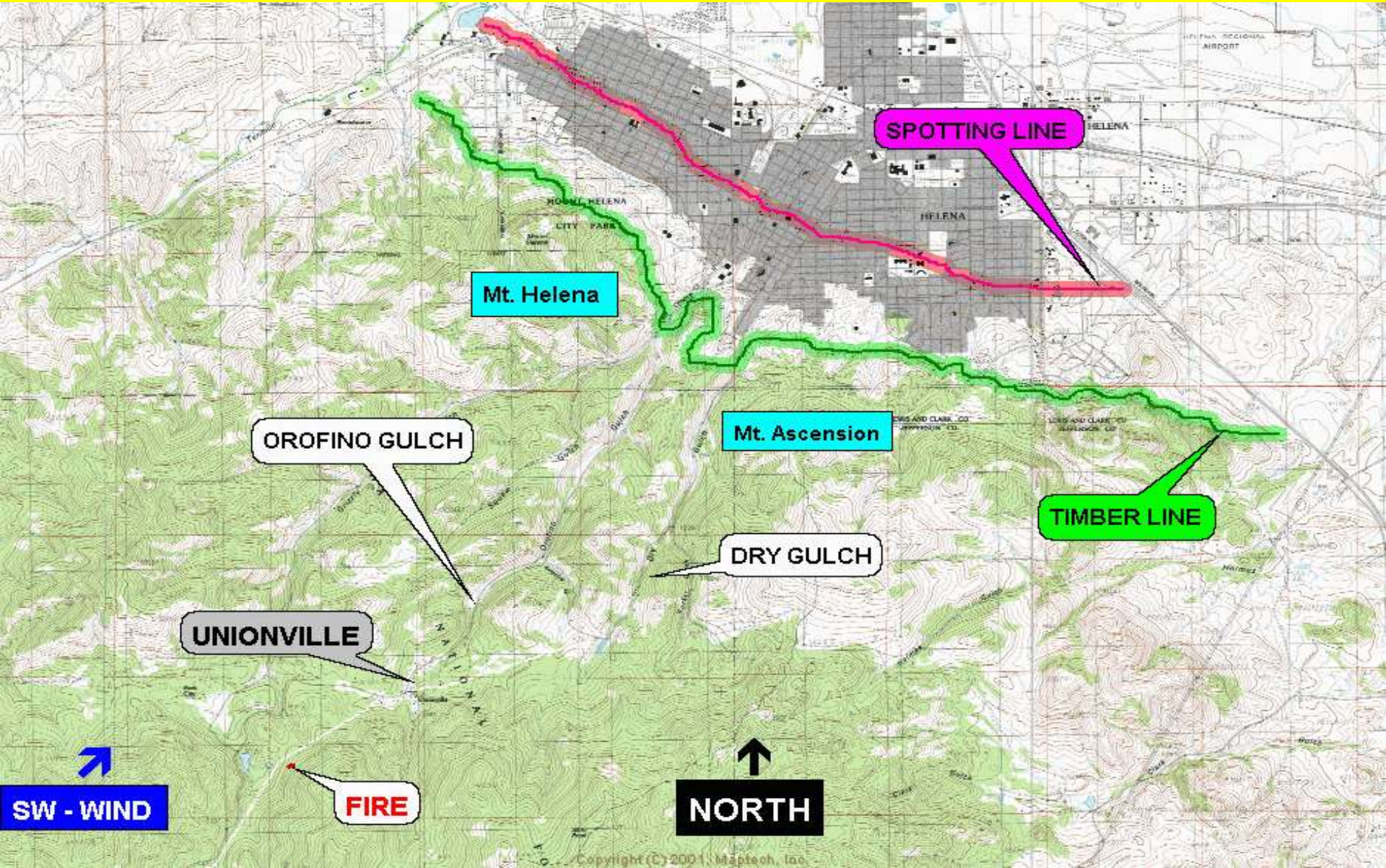
High Temperature = 91°
Minimum Humidity = 9%
WIND:10-28 mph from 2pm to 6pm
Gusts to 49 mph

RED FLAG WARNING

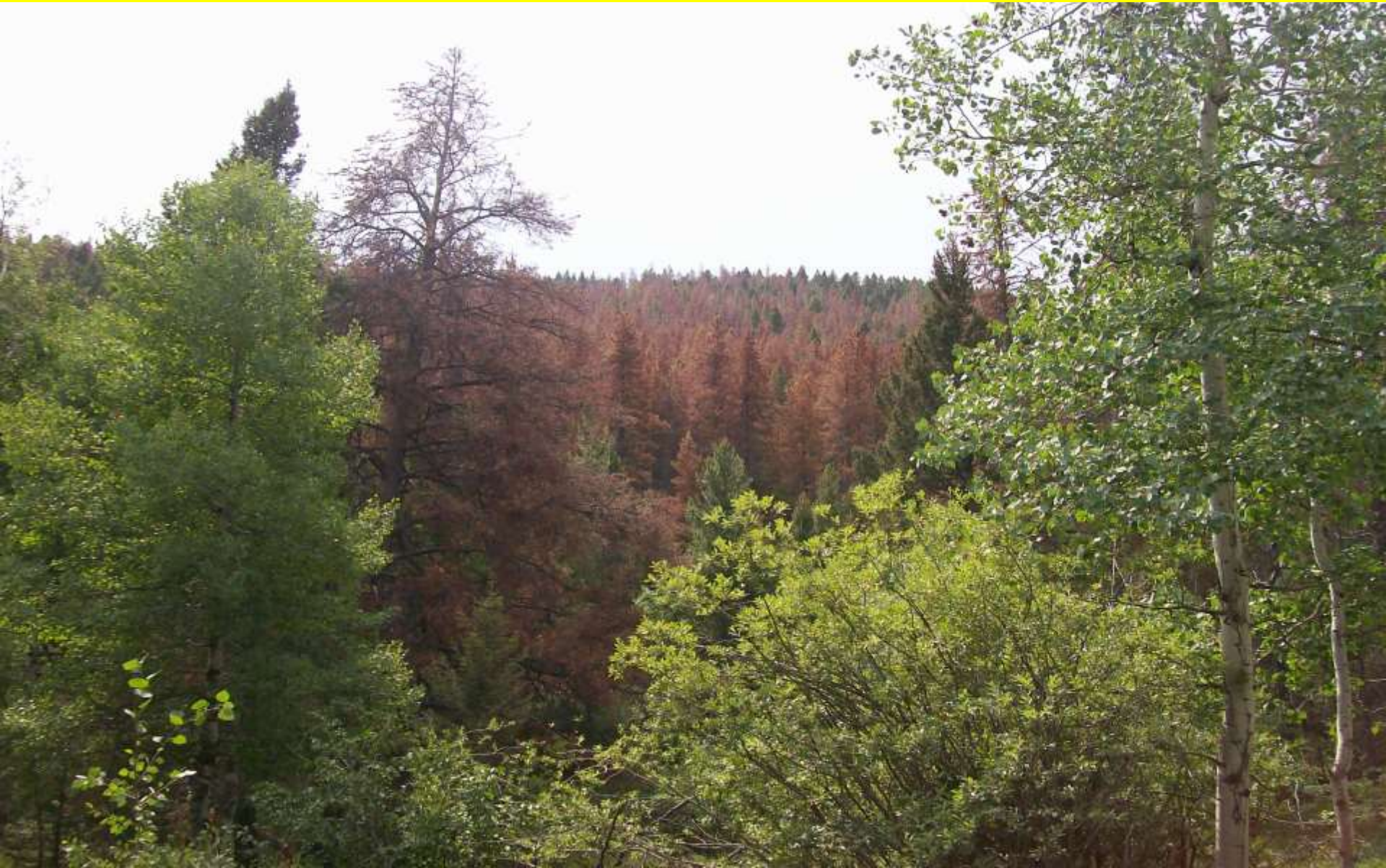
DRY T-STORMS WITH GUSTY SW WINDS SHIFTING MORE NORTHERLY, DUE TO APPROACHING COLD FRONT.

GUSTS CAN EXCEED 20 mph NEAR T-STORMS.

SIMULATION: A fire is detected at about noon west of Unionville, about 4 miles from Helena City Limits…



… THE FIRE IS PREDICTED TO START IN BEETLE-KILLED TREES



FIRE BEHAVIOR 12:00pm – 2:00pm

- The fire would crown and move rapidly upslope with the wind at about 1 mph
- Spot fires would be detected about ½ mile ahead of the main fire
- Fires would burn through dense pine forest with heavy ladder fuels exhibiting extreme fire behavior* by 2:00pm

*Long flames, high heat, fast moving, prolific crowning

FIRE BEHAVIOR 12:00pm – 2:00pm

- Probability of ignition from spotting in receptive fuel is **85 – 98%**

- Fire suppression crews could be easily overwhelmed under these conditions

AUG 14 2006

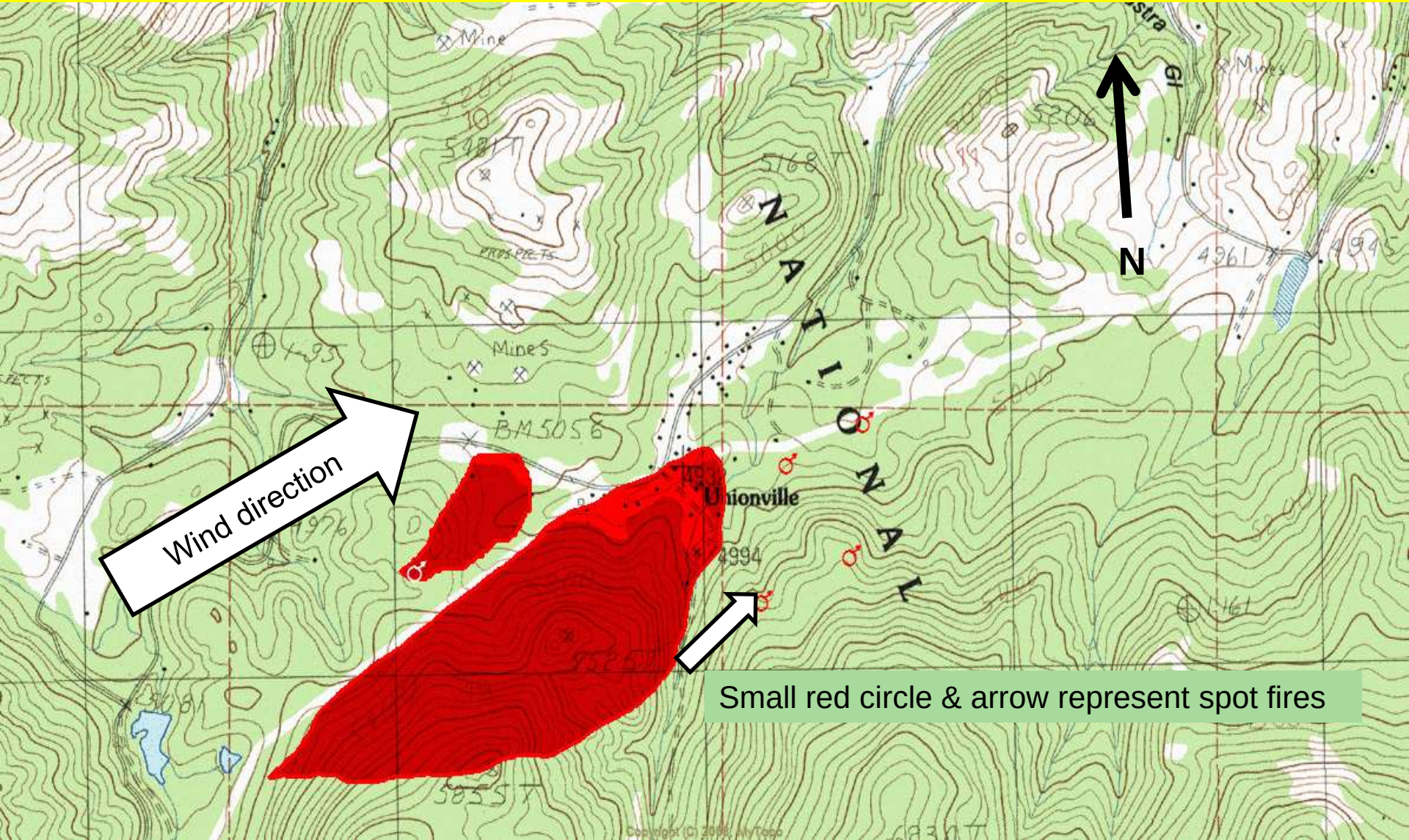
UNDER THESE CONDITIONS

- Crown fires can be extremely dangerous and unpredictable
- The safety of ***firefighters and civilians*** in the vicinity of a crown fire will be compromised
- Most fire suppression activity in the event of a crown fire involves *evacuation* with very little effective *fire suppression*
- **When houses become fuel…**

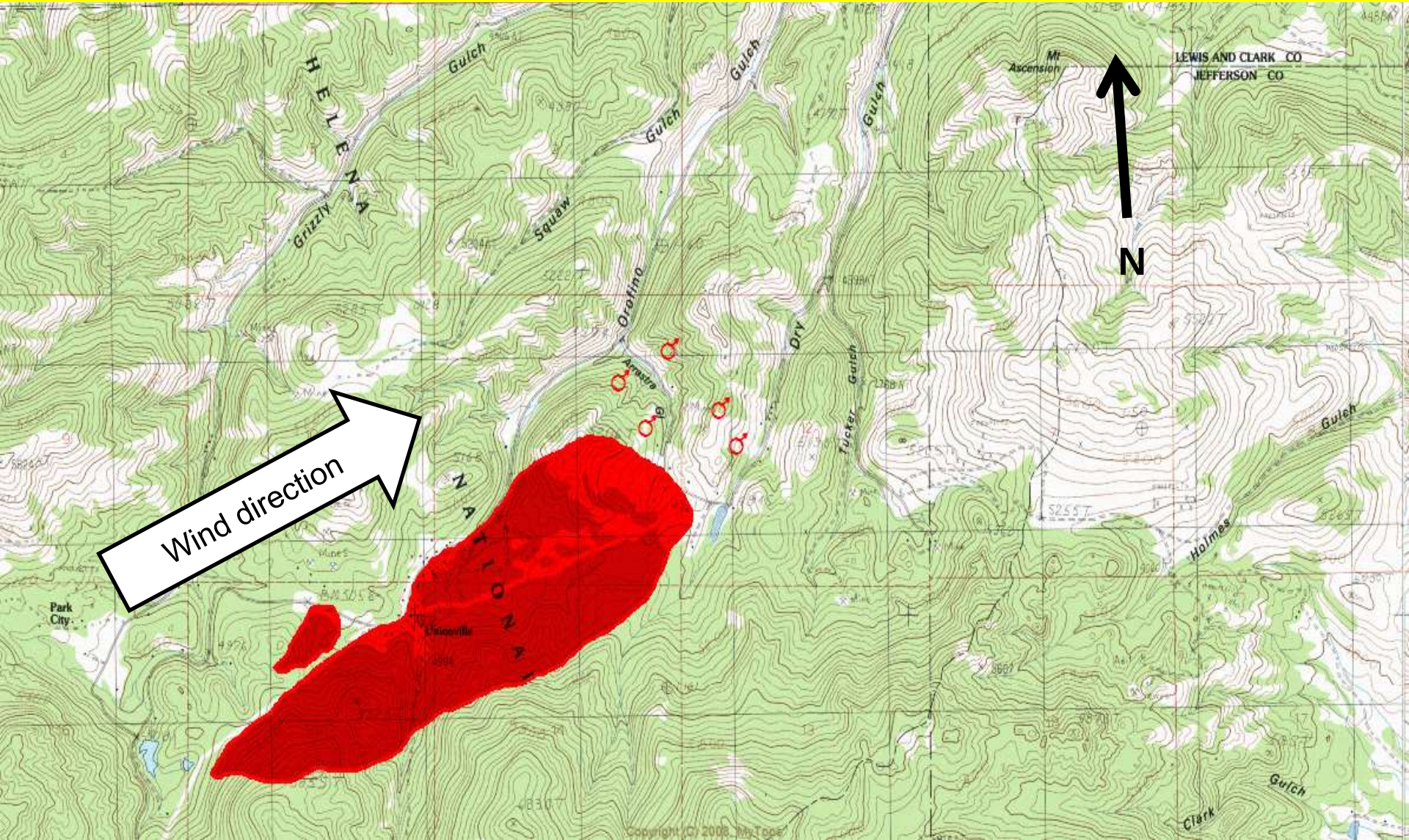
FIRE BEHAVIOR 12:00pm – 2:00pm

- Fire would make a rapid crowning run up the steep slope from it's origin
- Catching the full force of the wind at the ridge top would drive the fire rapidly to the northeast and into the small community of Unionville

FIRST 60 MINUTES:12:00pm - 1:00pm
+/- 180 acres



SECOND HOUR: 1:00pm - 2:00pm
+/- 570 acres



FIRE BEHAVIOR PREDICTED:

The fire would move to the northeast, advancing the fire front and spotting at least ½ mile in front of the fire

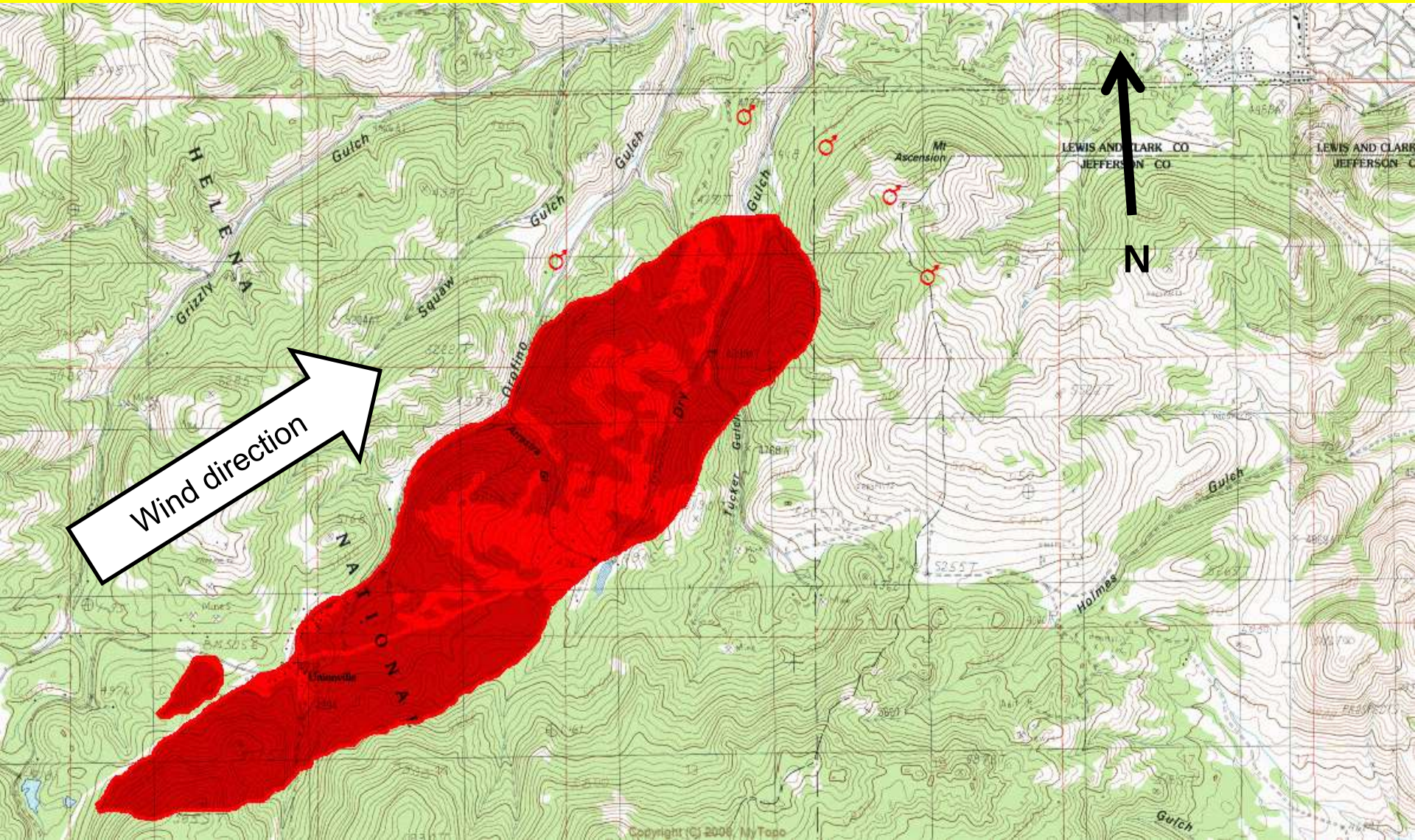
FIRE BEHAVIOR 2:00pm - 5:00pm

All conditions: weather, topography, and fuels, are in alignment for a strong push to the northeast with the wind and fire funneling down the narrow drainages and along the ridges toward the capital city of Helena.

Over 400 homes are now either immediately threatened, or already overrun by the fire.

DRY GULCH DR
1885 1889
1900 19_8
203_ _2047
PRIVATE ROAD
FOOT AND BICYCLE TRAFFIC WELCOME
RESIDENT VEHICLES ONLY

THIRD HOUR: 2:00pm - 3:00pm
+/- 1,280 acres



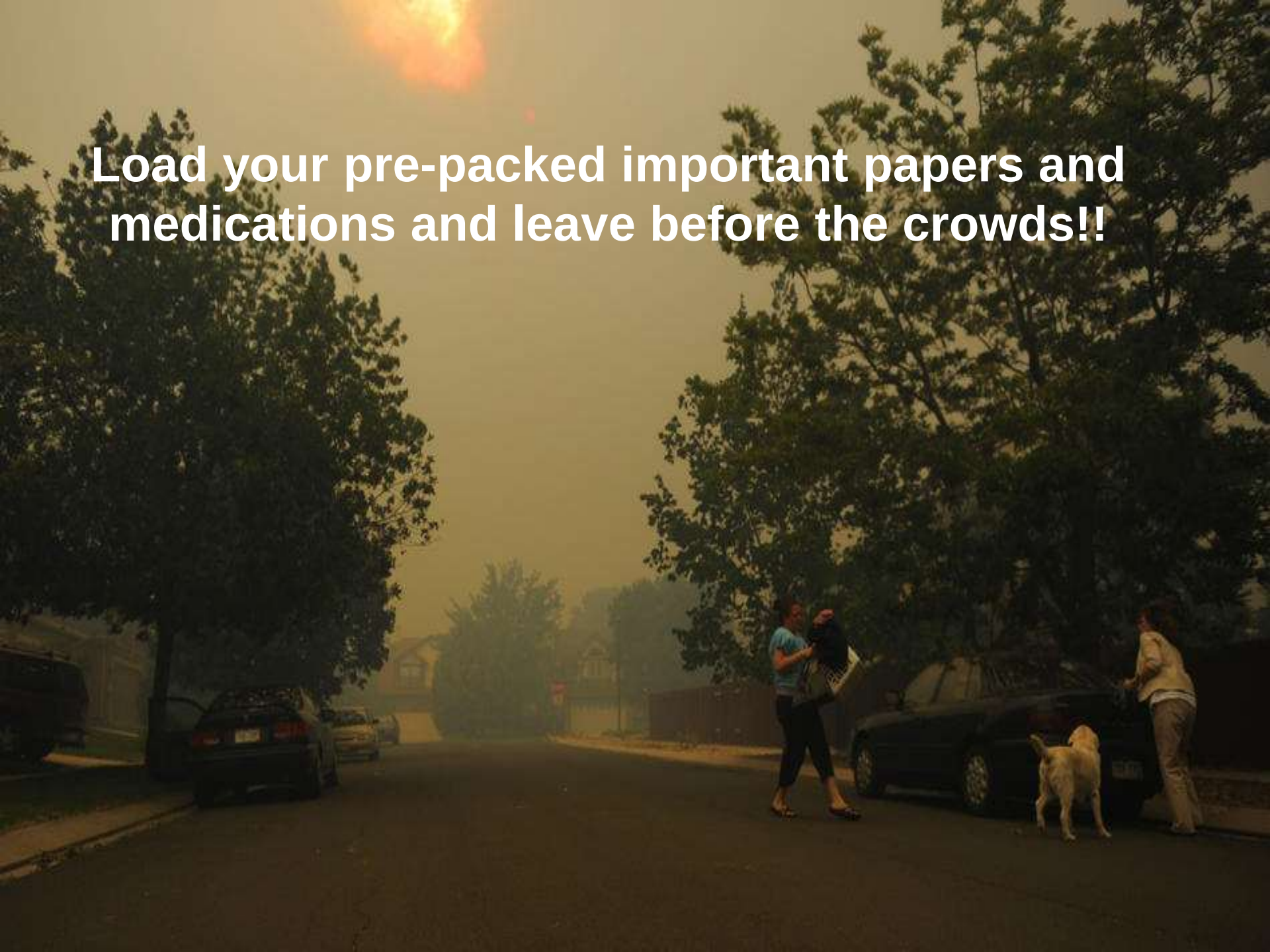
FIRE BEHAVIOR PREDICTED

During this period of the most critical fire weather, the fire would exhibit “blow-up” conditions with continuing extreme fire behavior.

Law enforcement agencies and fire crews would be totally involved with evacuations.

Very little, if any, successful fire suppression could be accomplished.

Home and human survival would depend entirely upon *Firewise* home construction, defensible/ survivable space, fuel breaks, escape routes, safety zones AND EVACUATING THE FIRE AREA EARLY.


Load your pre-packed important papers and medications and leave before the crowds!!

If you are here, you are preventing emergency personnel from being where they need to be!

ROAD
CLOSED

Plan ahead to take care of your latch key kids, pets, and livestock**!!**

08/25/2011 14:17

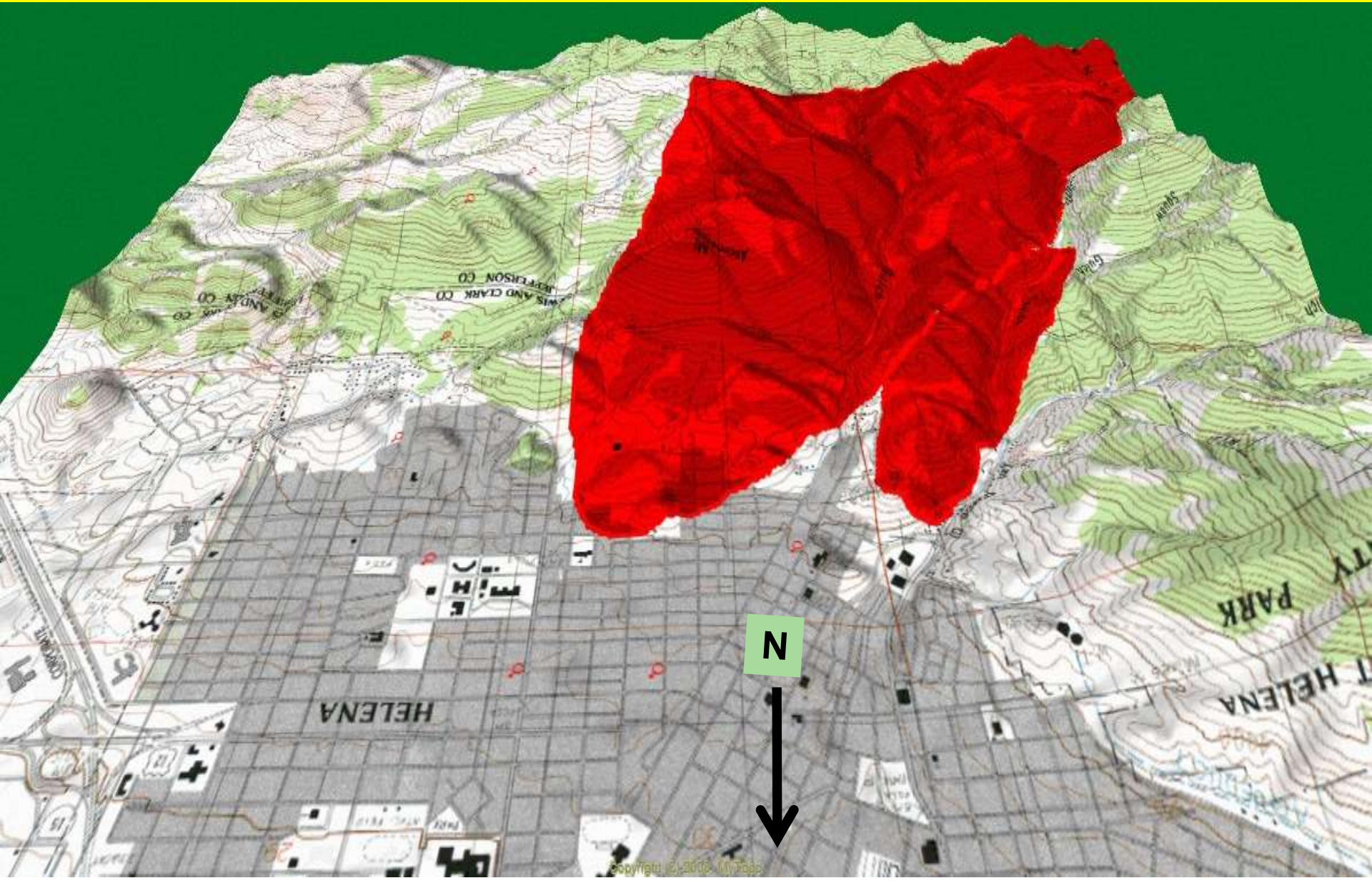
FOURTH HOUR: 3:00pm - 4:00pm
Fire enters Helena City Limits

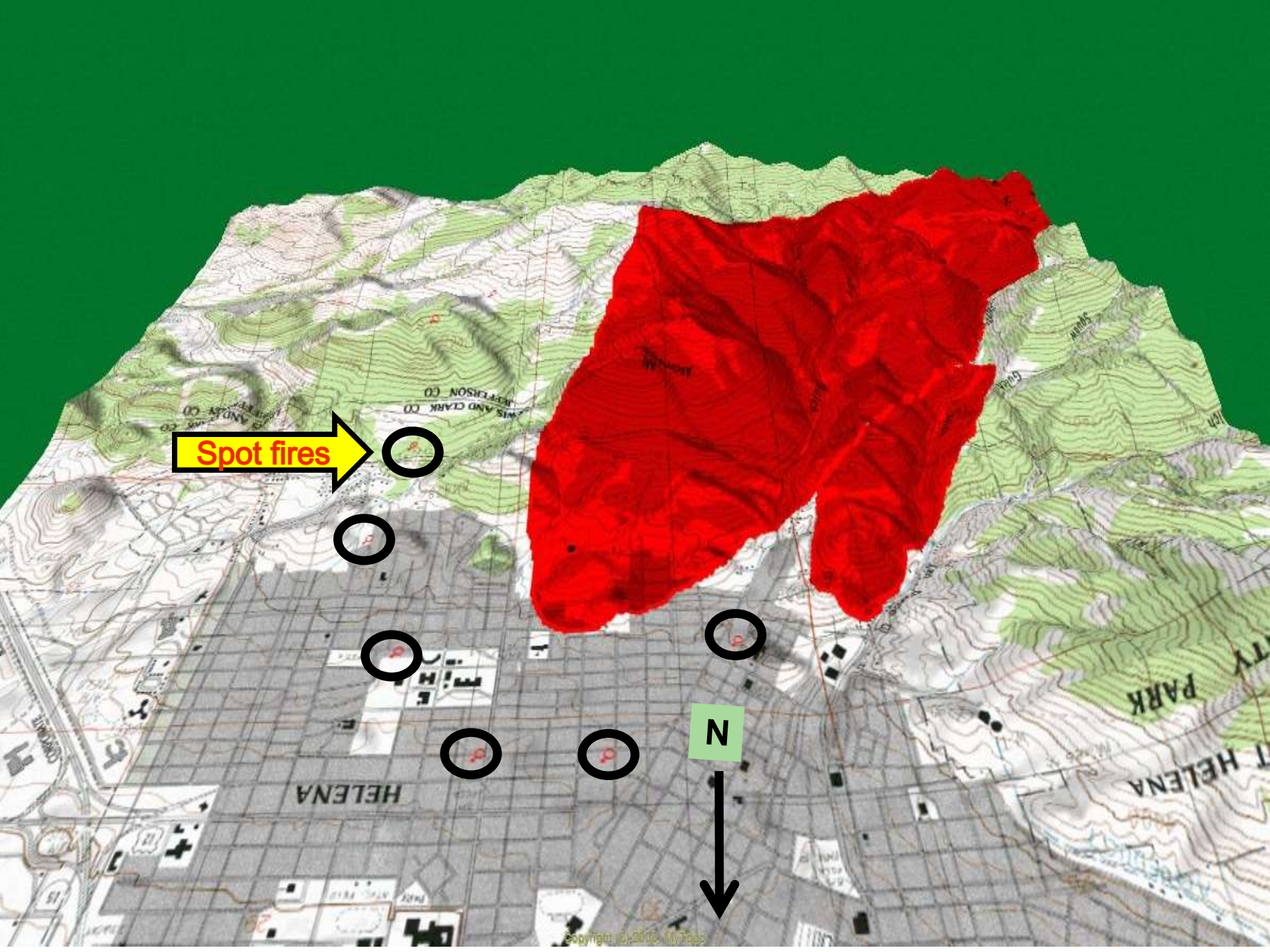
FIFTH HOUR: 4:00pm
FIRE SIZE IS NOW +/- 3,190 acres*

Hot embers would be raining down onto homes up to 1/2 mile ahead of the fire front.

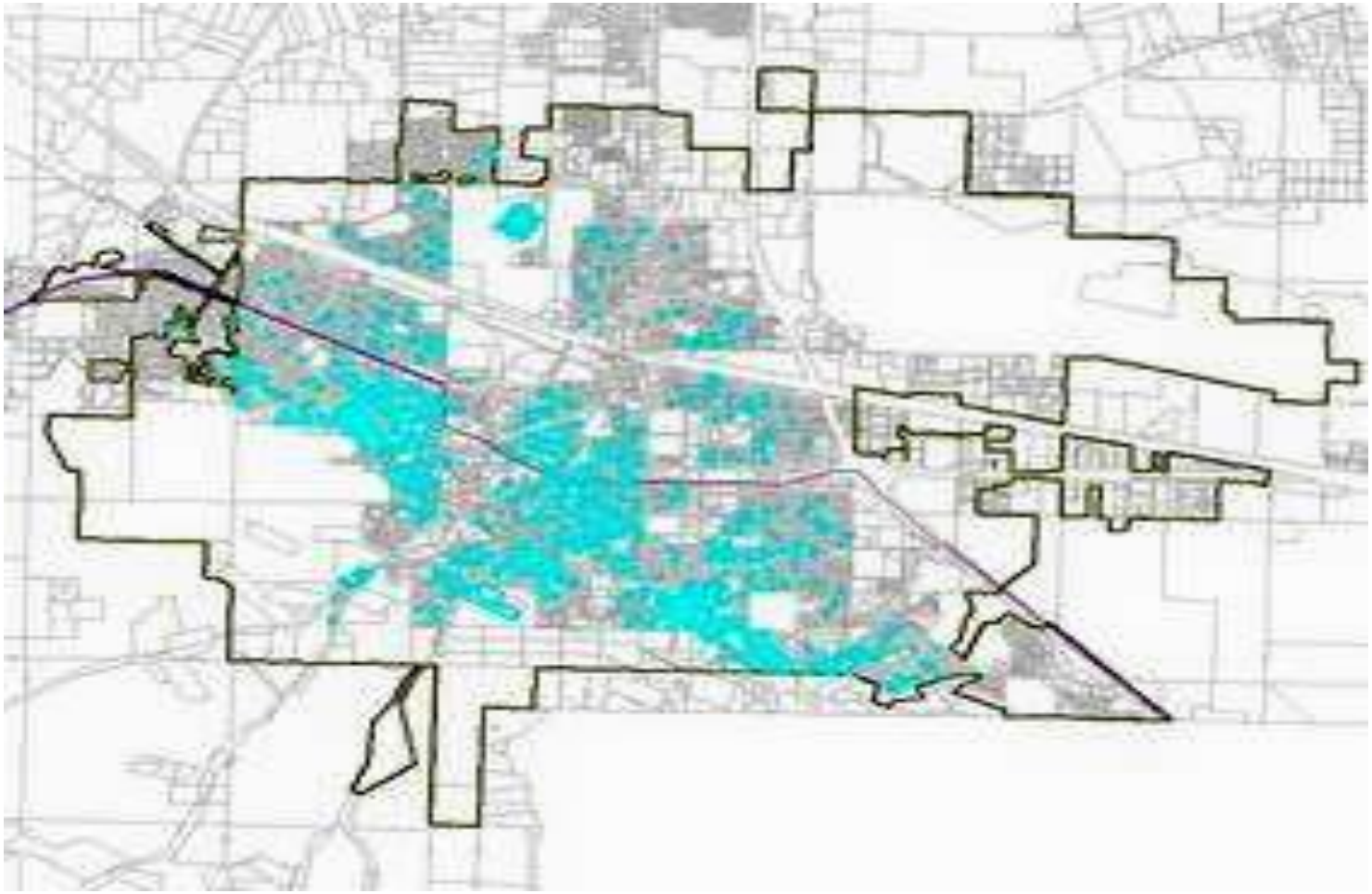
***AVERAGE ANNUAL ACREAGE BURNED IN THE TRI-COUNTY AREA IS 20,000 ACRES.**

Can you see the spot fires, ½ mile in front of the advancing fire?




Spot fires
N
HELENA

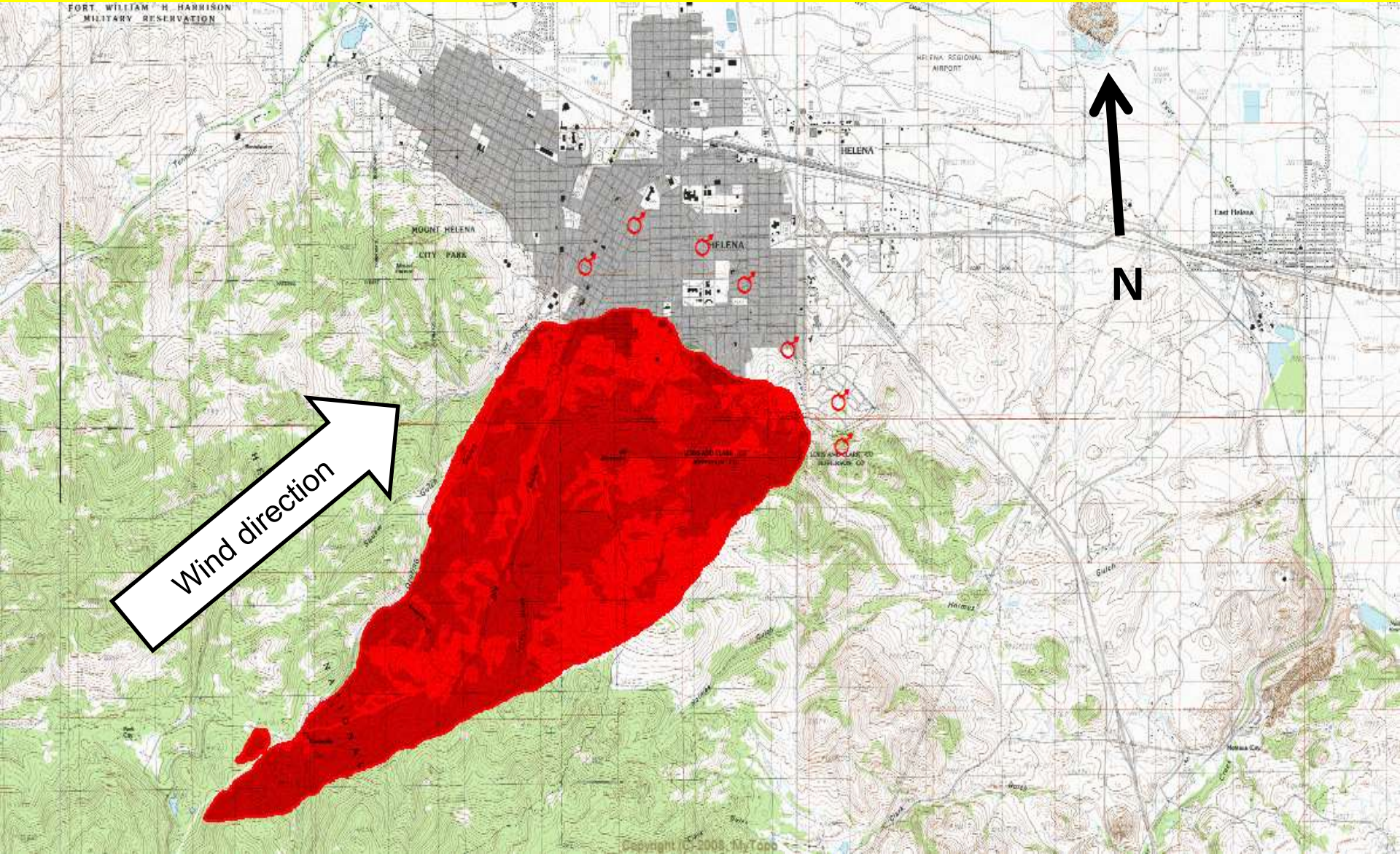
This is a map of shake shingle roofs in the City of Helena



If you are just now thinking about evacuation, you have waited too long!

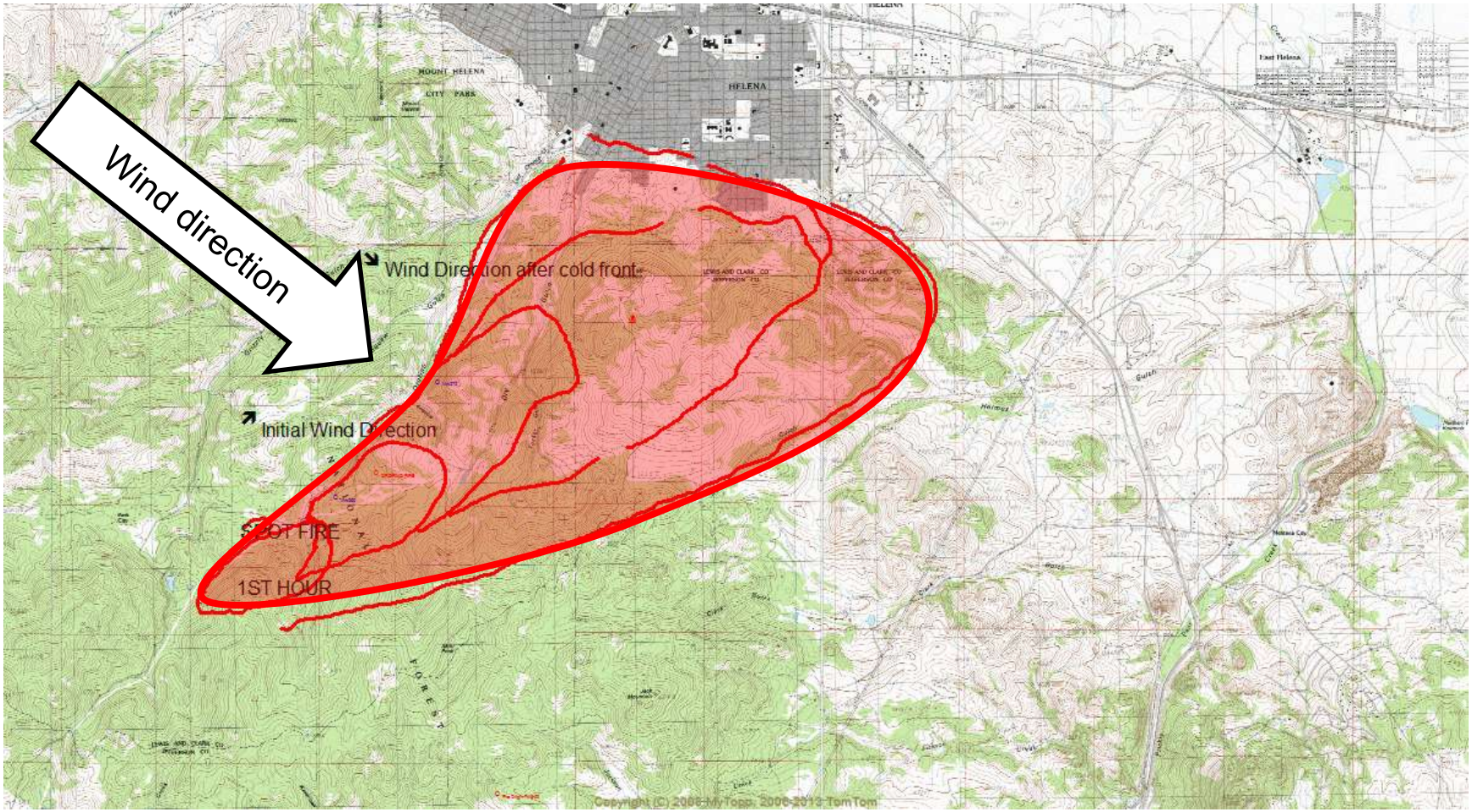
Fatalities occur when residents wait too long to leave then try to leave in a state of panic when the smoke reduces visibility to zero.

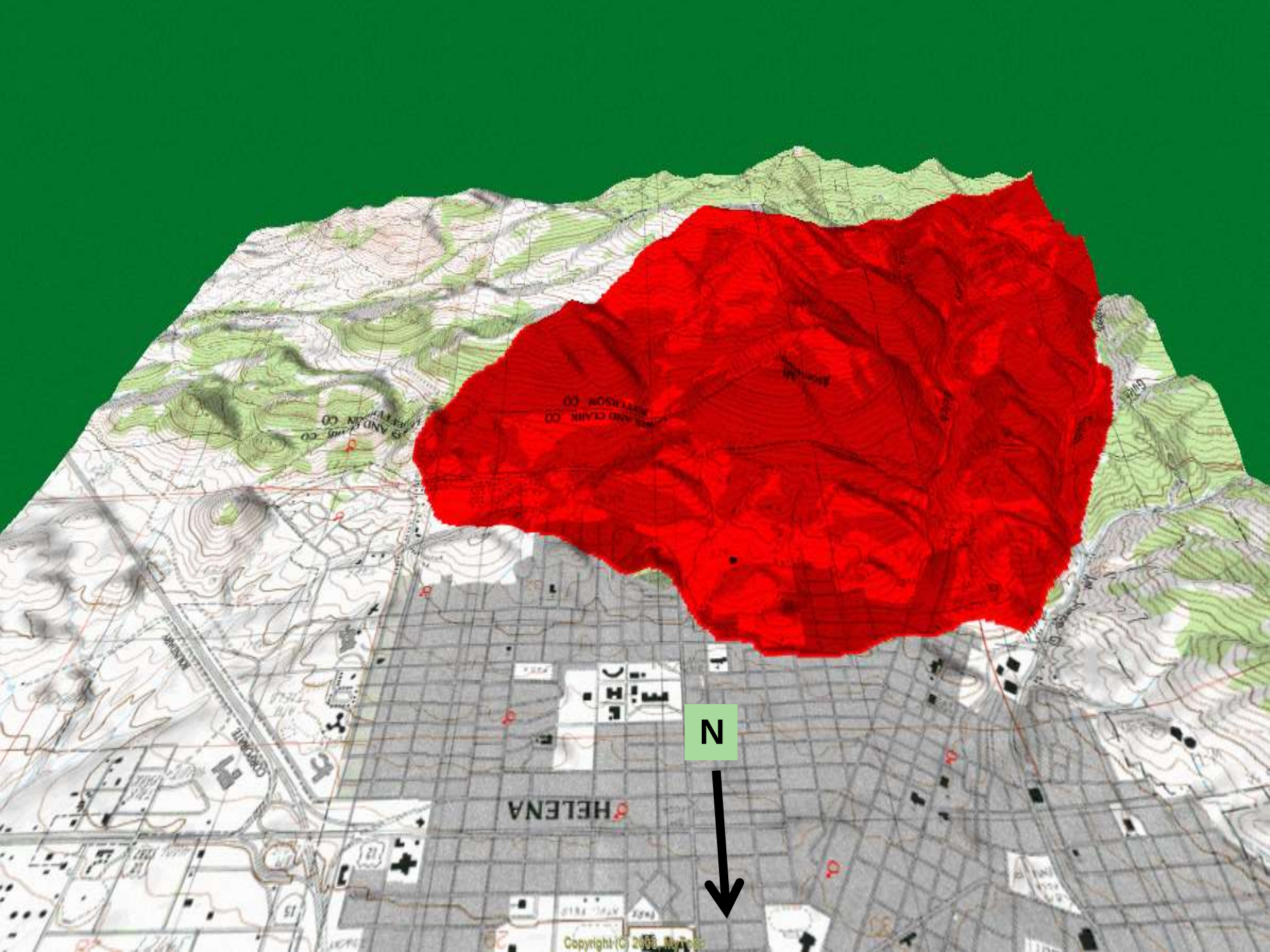
FIFTH HOUR: 4:00pm – 5:00pm
+/- 4,220 acres



SIXTH HOUR: 5:00pm – 6:00pm

FIRE MOVEMENT AFTER FRONTAL PASSAGE, WIND SHIFTS

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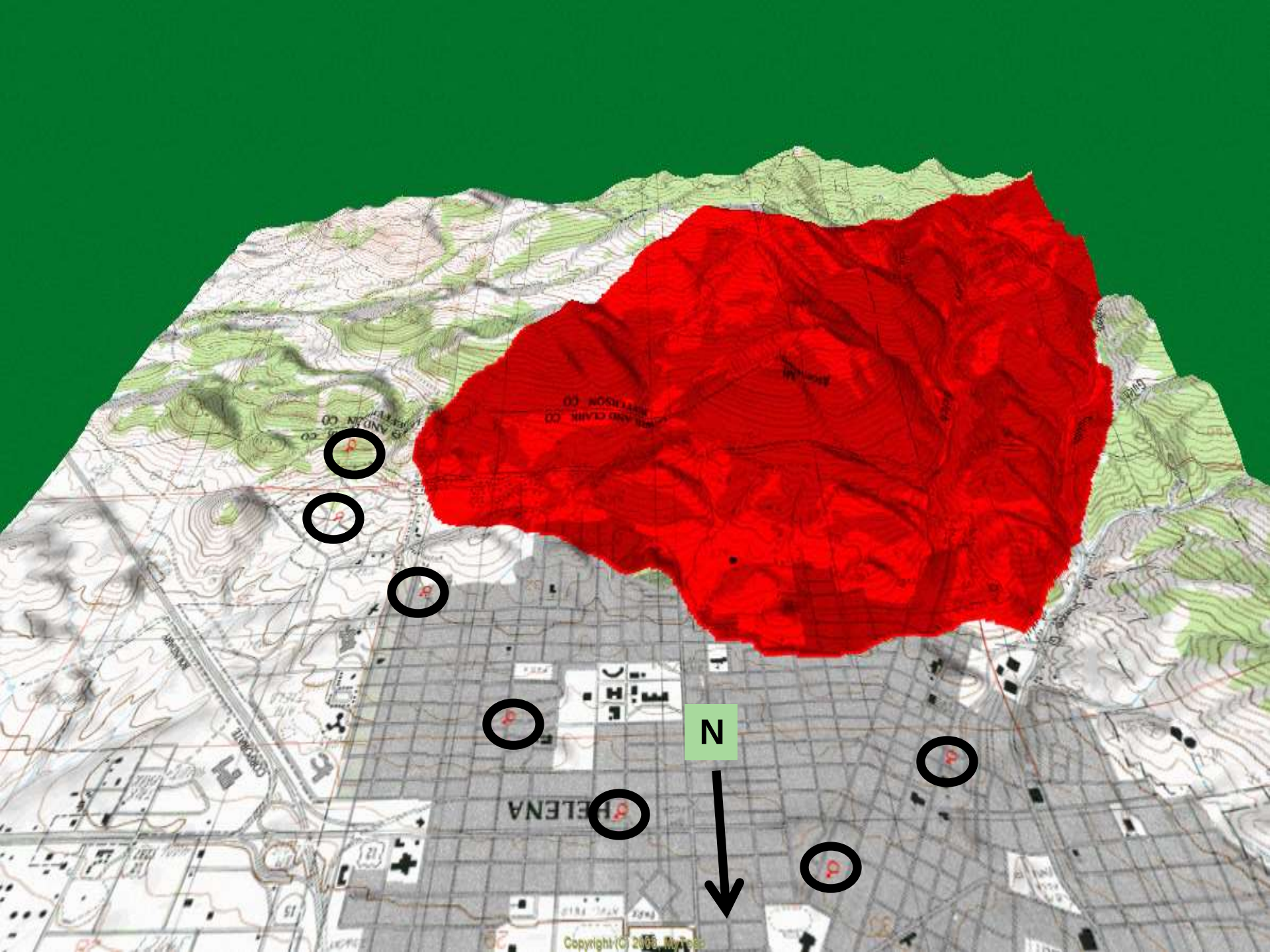
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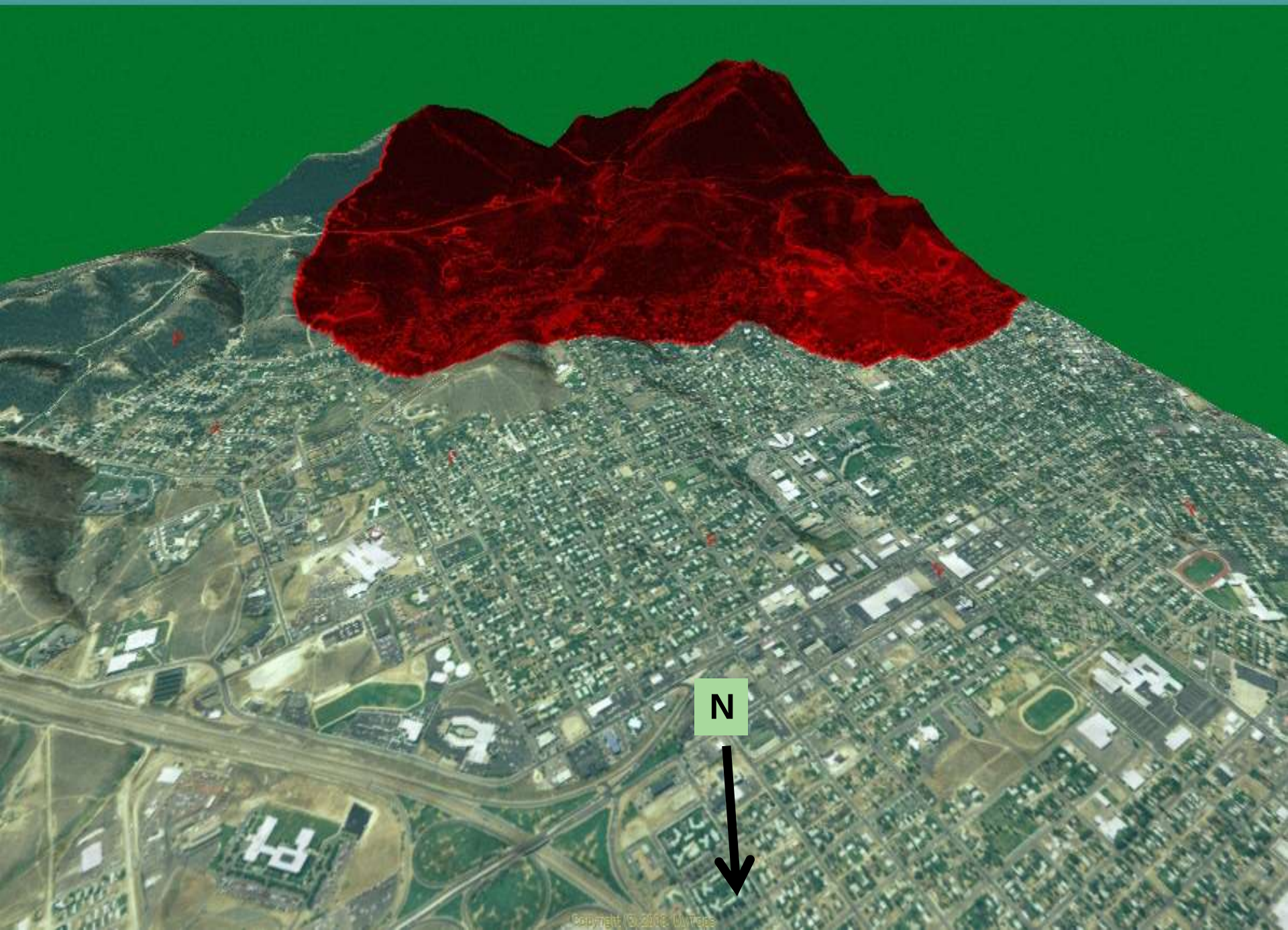
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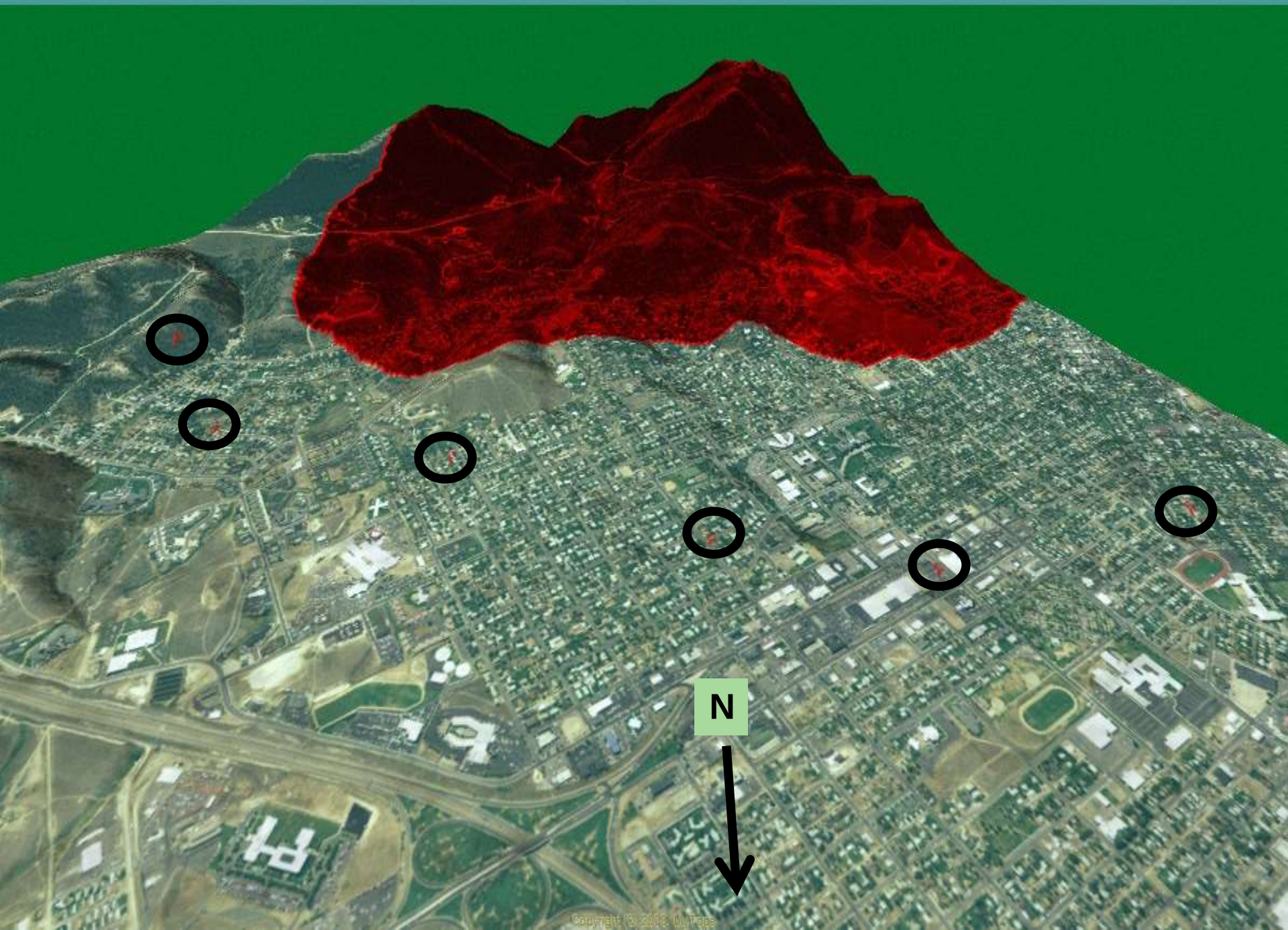
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POLICE

Don’t Wait – Evacuate!

If you wait too long to get your pets, and other important things from your house, you may not be able to get back to your home for many hours - or even days.

Photography courtesy of:

Bureau of Land Management
Dept. of Natural Resources and Conservation
Pat McKelvey: Lewis and Clark County Fire Mitigation Officer
Everett M. “Sonny” Stiger: Fuels & Fire Manag. Consultant

Computer Programs Utilized:

MAPTECH Terrain Navigator Pro

BEHAVE Fire Behavior Prediction and Fuel Modeling System, USDA Forest Service

Other Useful Links:

Fire Adapted Communities: http://fireadapted.org/

Case Study by Fire Adapted Communities, Waldo Canyon Fire: http://www.youtube.com/watch?v=4p9VYKoq3qE&feature=player_embedded

FireSafe Montana: http://firesafemt.org/