

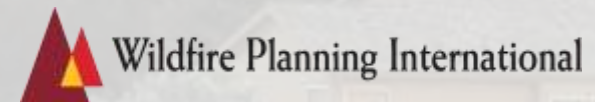
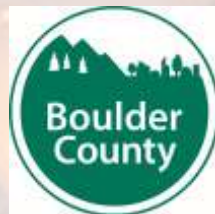
WILDFIRE: EQUIPPING PLANNERS WITH 21ST CENTURY TOOLS FOR SUCCESS

Molly Mowery — President, Wildfire Planning International

Kimiko Barrett — PhD/Research Analyst, Headwaters Economics

Gary Goodell — Chief Building Official, Boulder County Land Use
Department

Jim Webster — Wildfire Partners Coordinator, Boulder County Land
Use Department



Problem

Wildfires are increasing in size, severity, and frequency as a result of climate change.

- 🔥 Increasing average annual temperatures implies a *longer* fire season,
- 🔥 More fuels in the forests,
- 🔥 Unpredictable snowpack and precipitation trends.

More homes are being built within the wildland-urban interface (WUI).

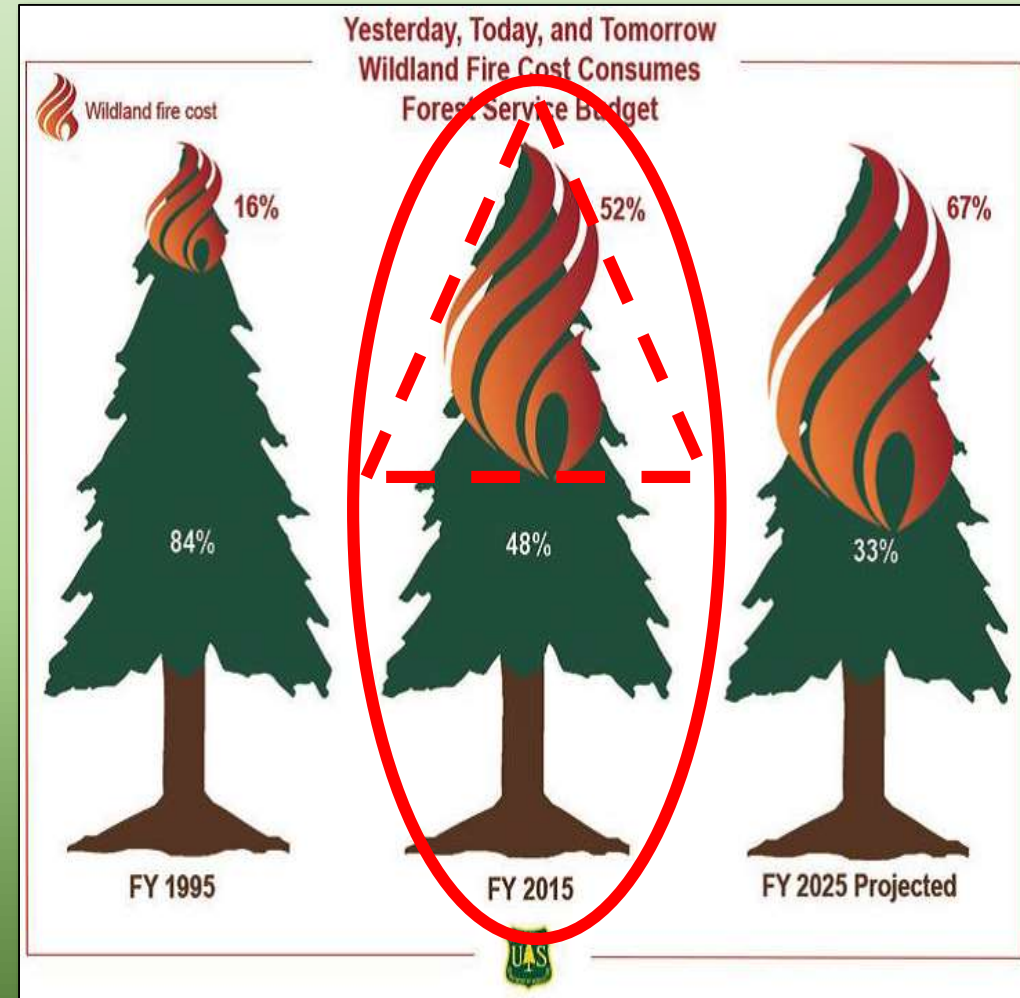
- 🔥 Since 1990, 60% of new homes in the U.S. have been built within the WUI.
- 🔥 Eighty-four percent of the WUI remains undeveloped, suggesting the potential for continued development.

As a Result...

10 million+ acres of forest burned in 2015 (largest on record).

The US Forest Service spent more money in 2015 fighting fires than any time before—diverting valuable resources and budget from other programs.

- 🔥 Overall U.S. Forest Service budget = \$5.1 billion in 2015
- 🔥 Wildfire-related budget consumed \$2.6 billion or 48% of total budget.
- 🔥 Suppression costs have increased 365% since 1985 (from \$160 million in 1985, to \$367 million in 1995, to \$1.7 billion in 2015.)

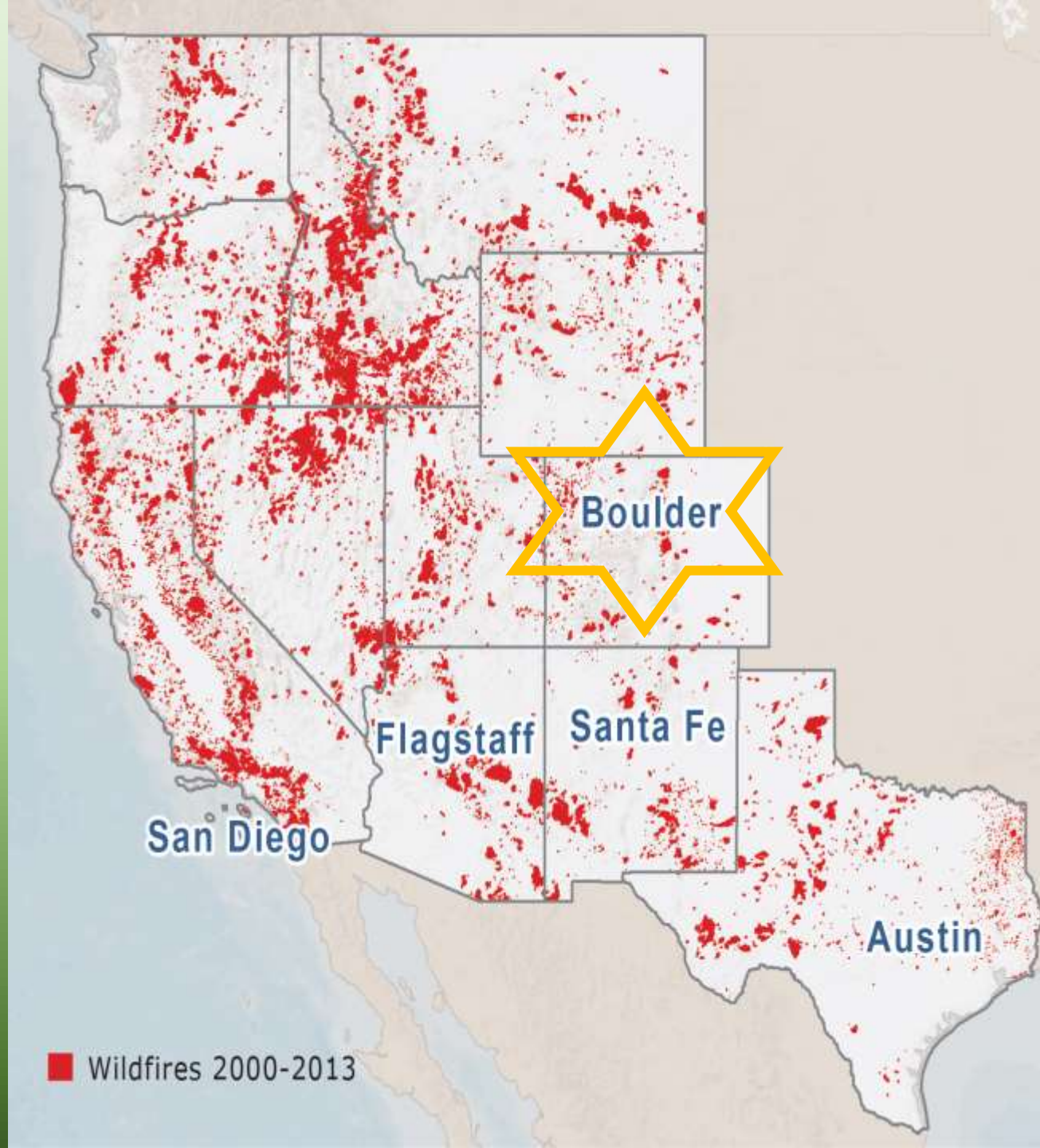


What Can Be Done?

Solution... Innovative land use planning to address wildfire risk within the WUI.

Headwaters Economics recently profiled how five urban areas in the West are taking progressive steps to proactively address wildfire risk at the local level:

- Defensible space standards,
- Collaborative public-private partnerships,
- Overlay districts and other land use standards, etc.





THANK YOU
Firefighters
AND CREW!

Planning Information

Building Information

Wildfire Mitig
Forest Health In
Informati





Planners and Building Team Members are Heroes Too!



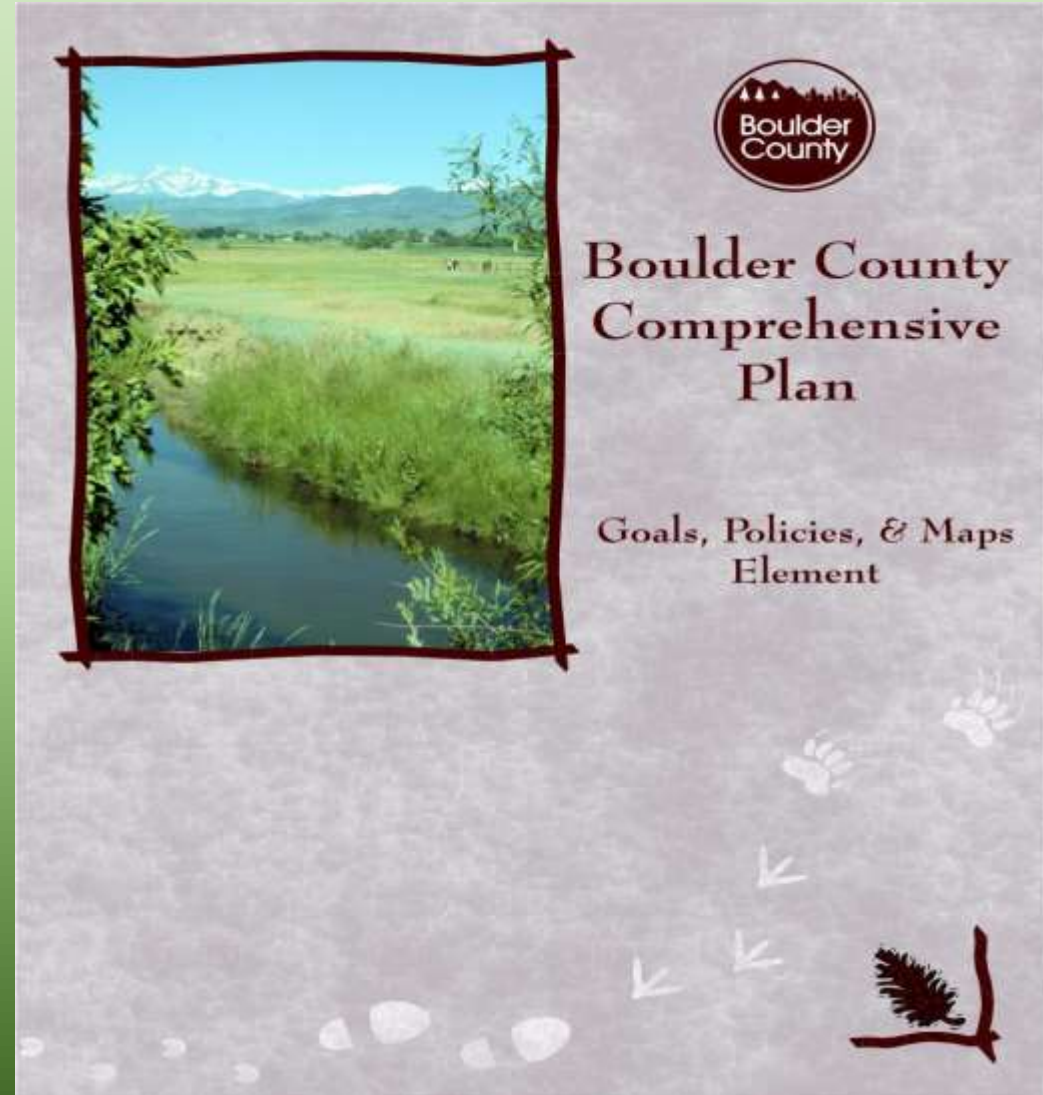
Planning Strategies for Saving Homes in Boulder County

1. Limiting new development
2. Regulating new construction
3. Mitigating existing homes



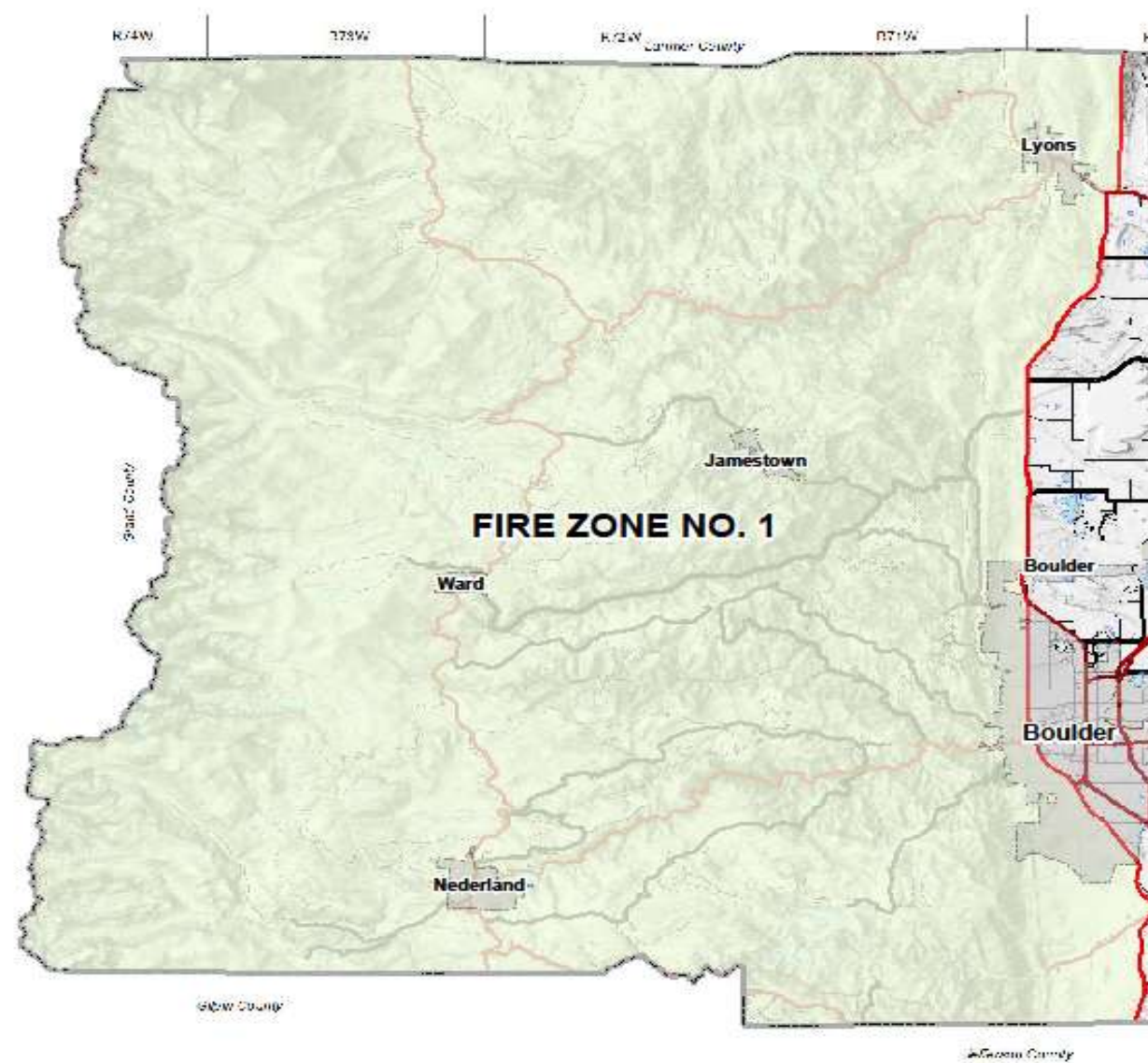
1978 Boulder County Comprehensive Plan

The plan has been successful in its goal to locate urban development within or adjacent to existing communities.



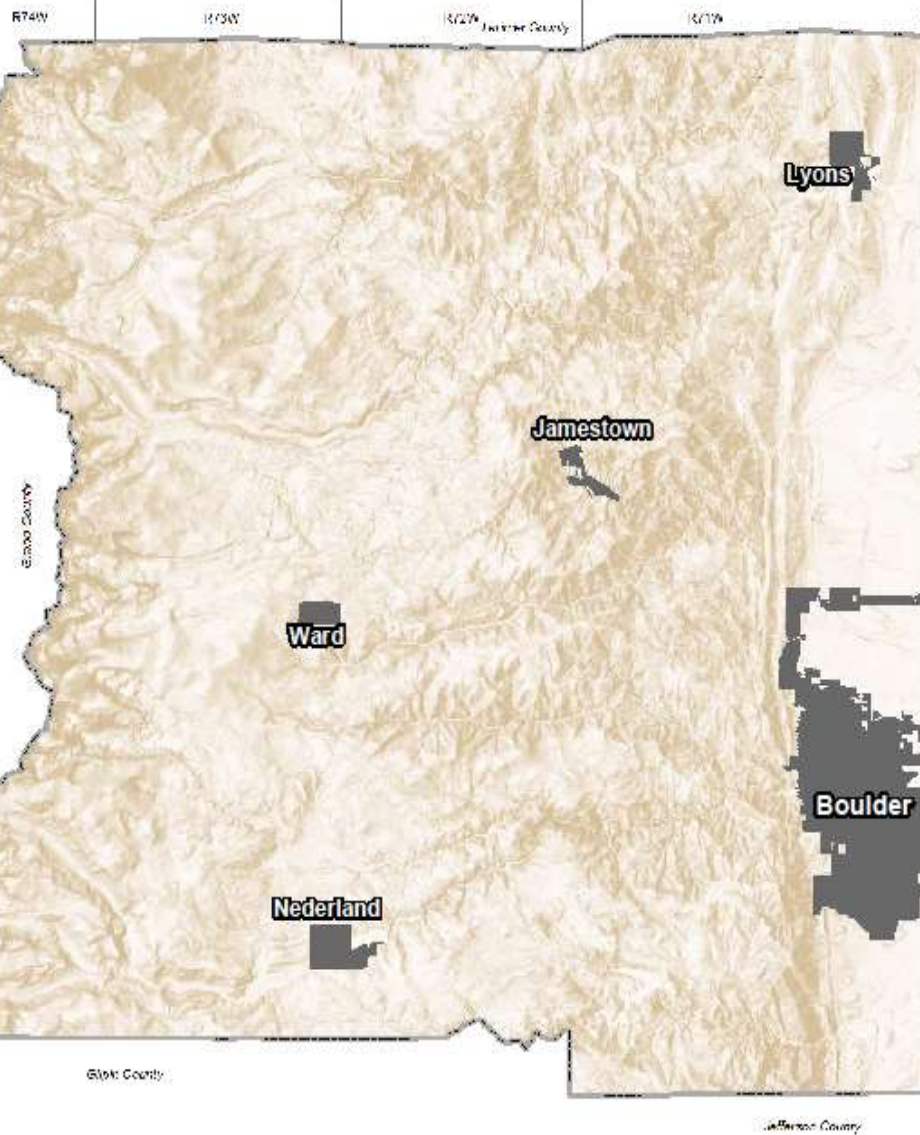


Wildfire Zone 1

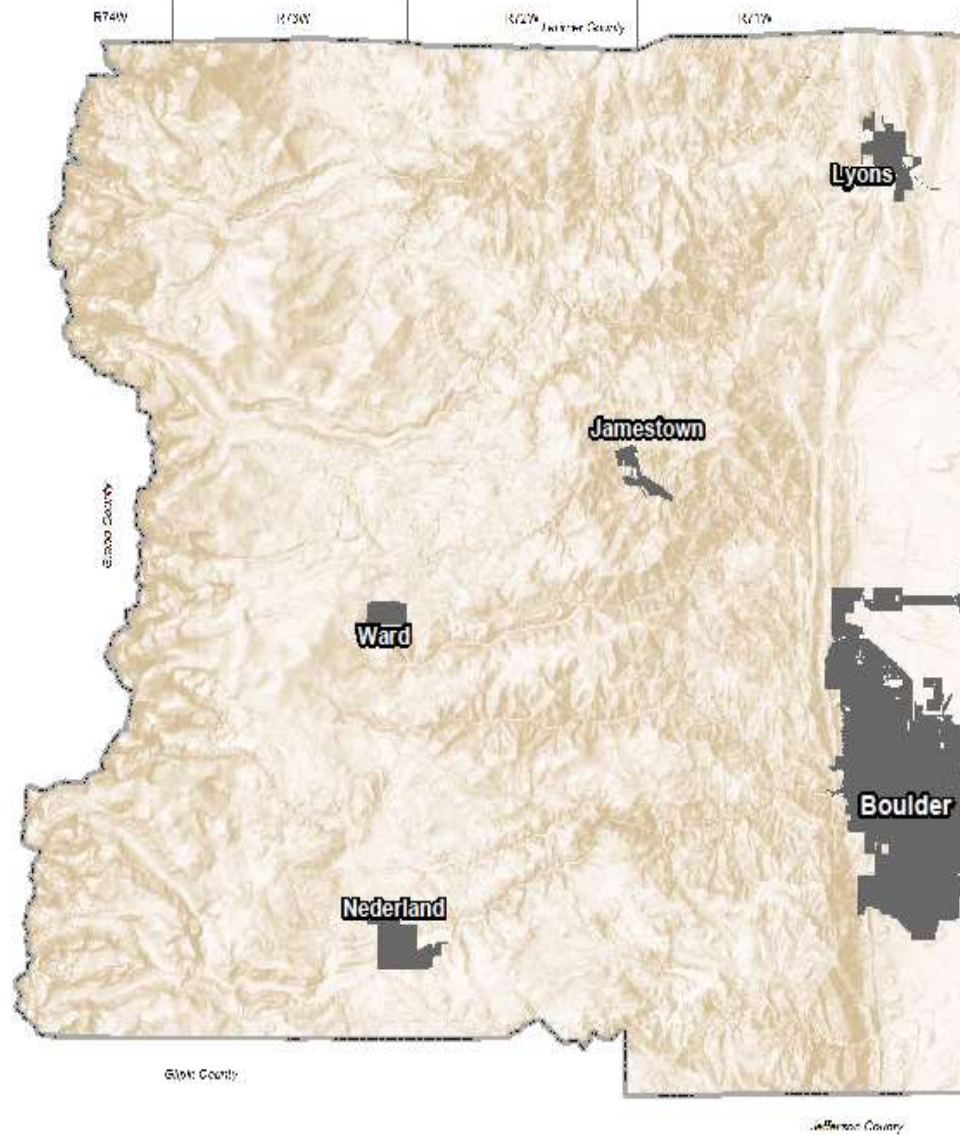




MUNICIPALITIES 1980

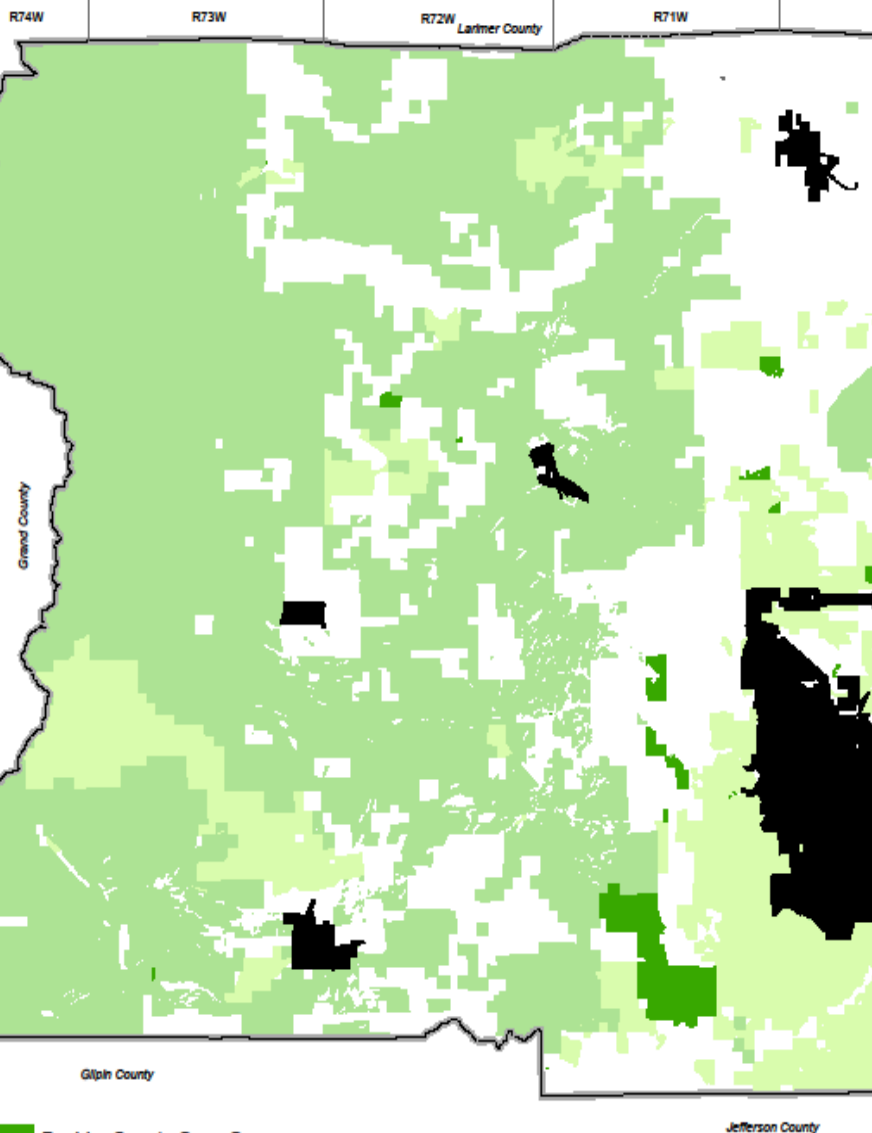


MUNICIPALITIES 2010





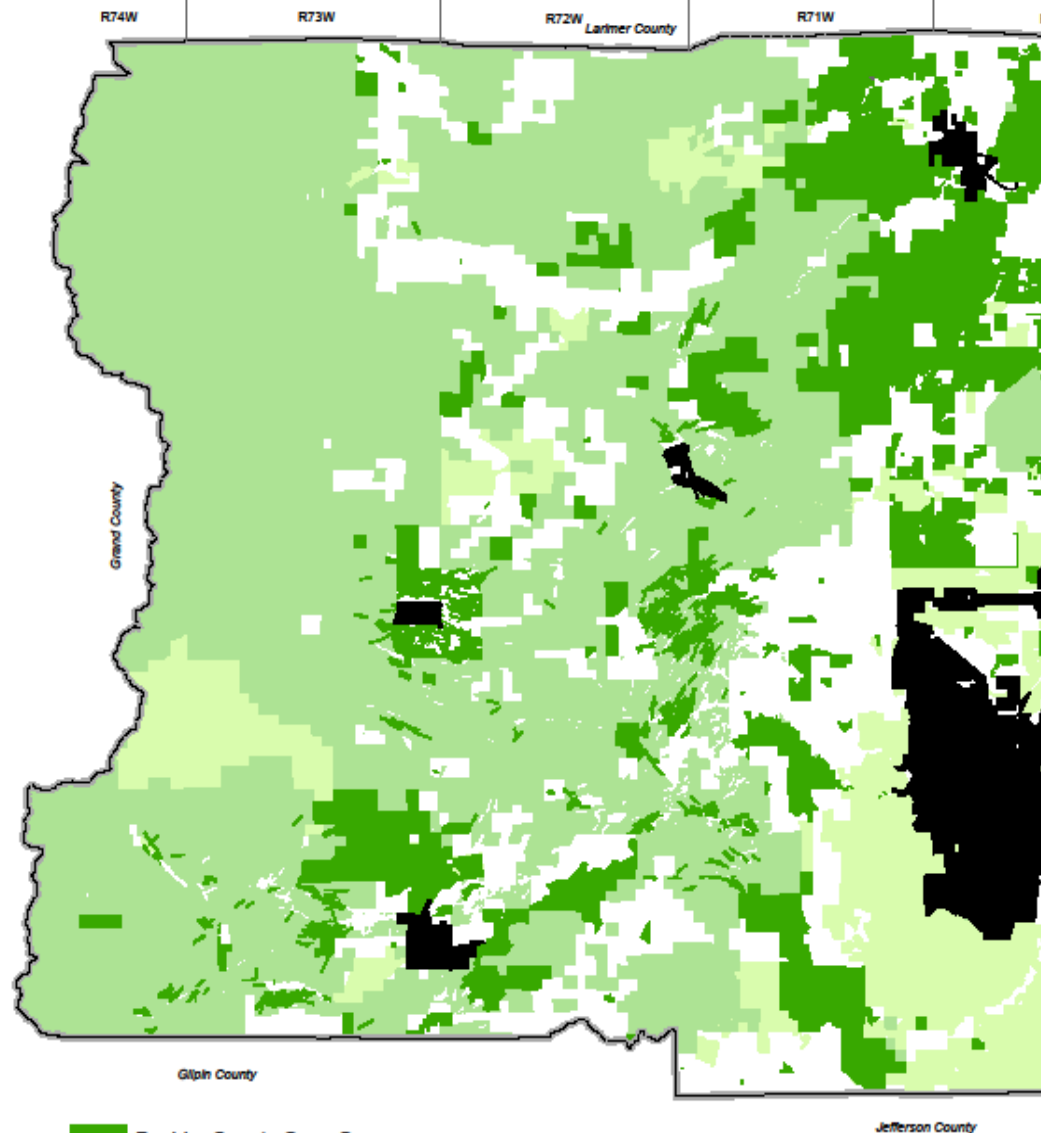
OPEN SPACE AND PUBLIC LANDS 1980



- Boulder County Open Space
- Federal Land
- City + Private Open Space



OPEN SPACE AND PUBLIC LANDS 2010



- Boulder County Open Space
- Federal Land
- City + Private Open Space



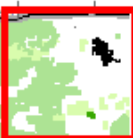


OPEN SPACE AND PUBLIC LANDS Lyons Vicinity 1980

- Boulder County Open Space
- Federal Land
- City + Private Open Space



Area of Detail



Lyons

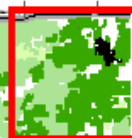


OPEN SPACE AND PUBLIC LANDS Lyons Vicinity 2010

- Boulder County Open Space
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Area of Detail

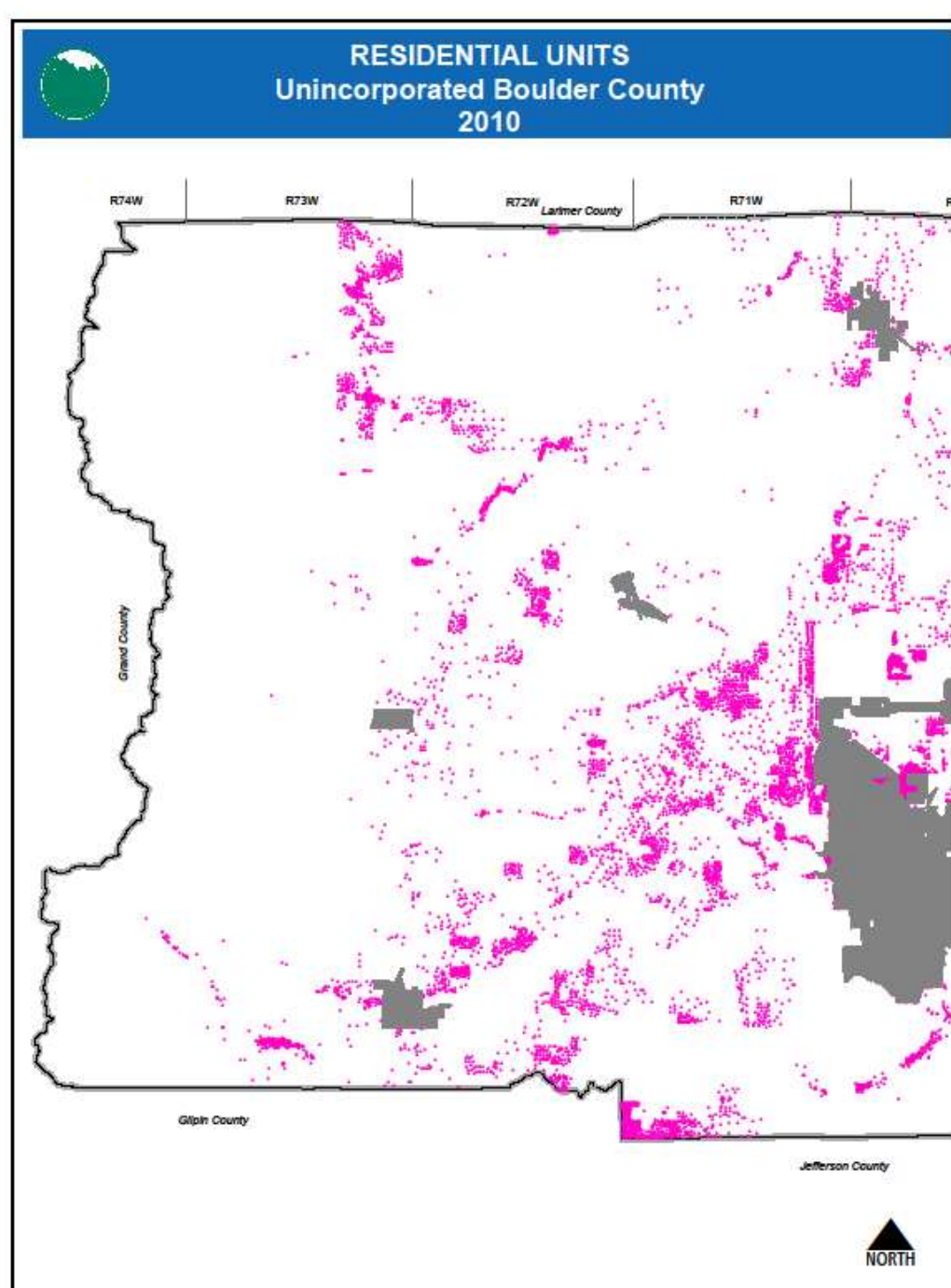
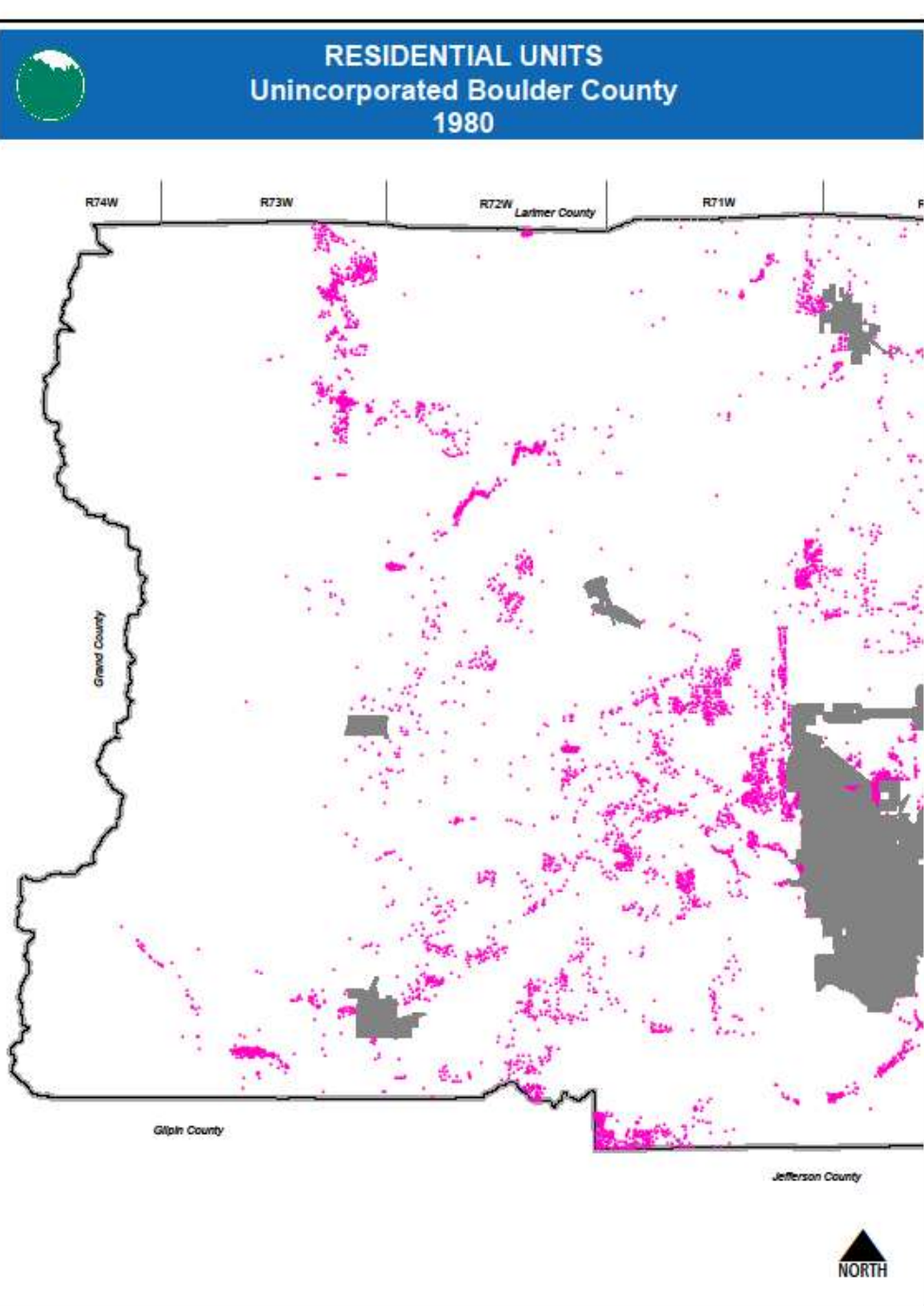


Lyons

Growth of Boulder County Towns and Open Space (Acres): 1980-2010

Town	1980 (acres)	2010 (acres)	Annual Growth Rate (%)
Ward	342	342	None
Jamestown	367	367	None
Lyons	627	839	1.13%
Nederland	847	979	0.52%

Boulder County	1980 (acres)	2010 (acres)	Annual Growth Rate (%)
County Open Space	3,385	44,867	40.85%
Lyons Area County Open Space	111	22,278	665.68%



Population Growth in Boulder County WUI Towns vs. Colorado WUI County: 1980-2014

Population	1980	2014	Annual Growth Rate (%)
Ward	129	154	0.57%
Jamestown	223	260	0.49%
Lyons	1,137	1,946	2.09%
Nederland	1,212	1,498	0.69%
Colorado WUI County	8,034	23,394	5.62%

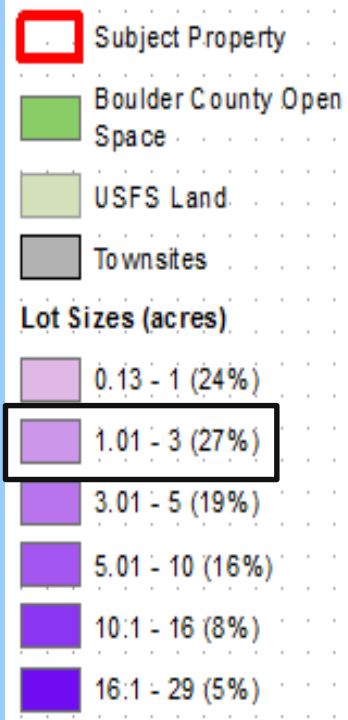
Boulder County Unincorporated Area	1980	2010	Annual Growth Rate (%)
Residential Units	5,655	8,715	1.80%

Historically...

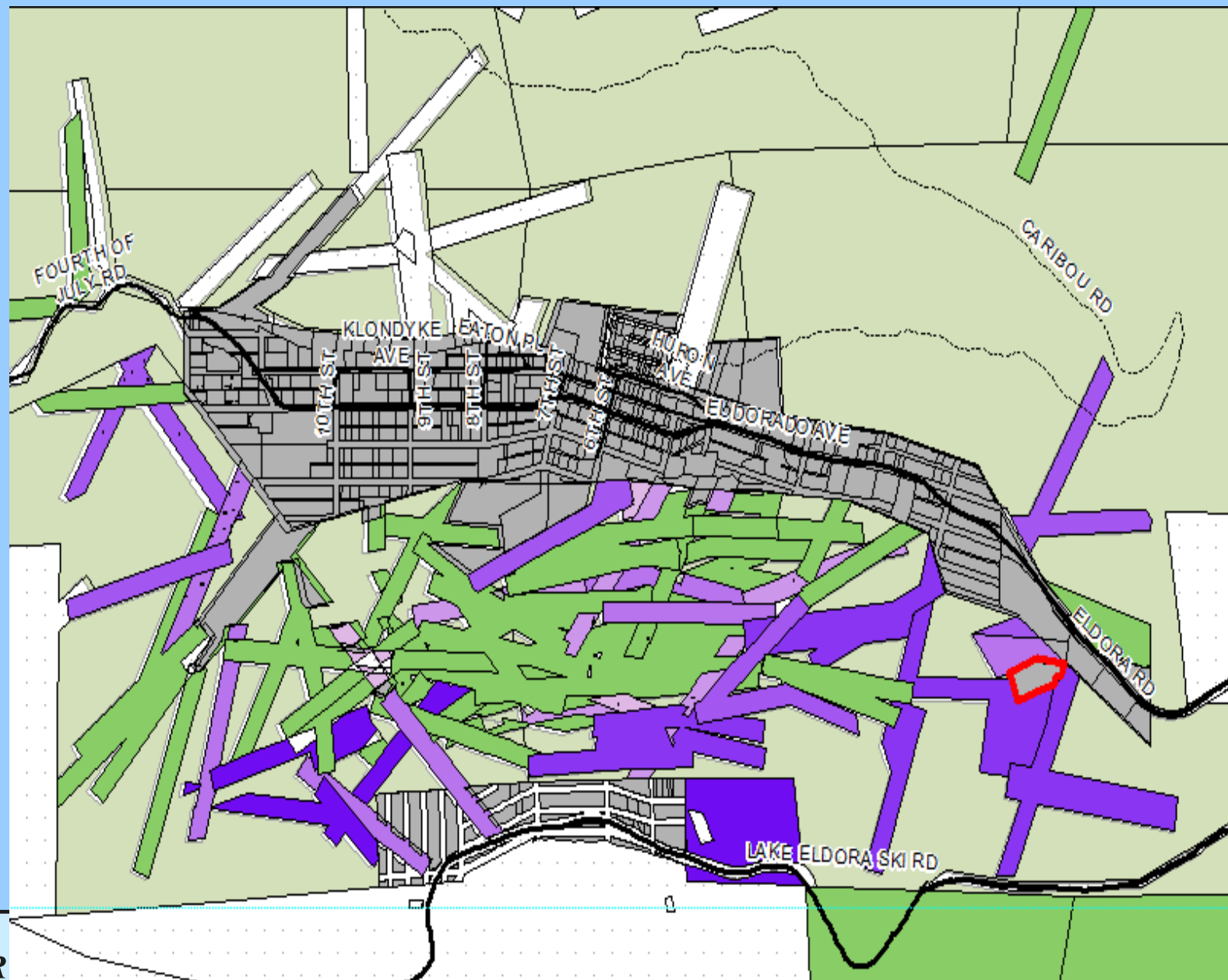
- Late 1800s:
 - Mining
 - Patented Mining Claims
 - Mining Towns and Platted Townsites



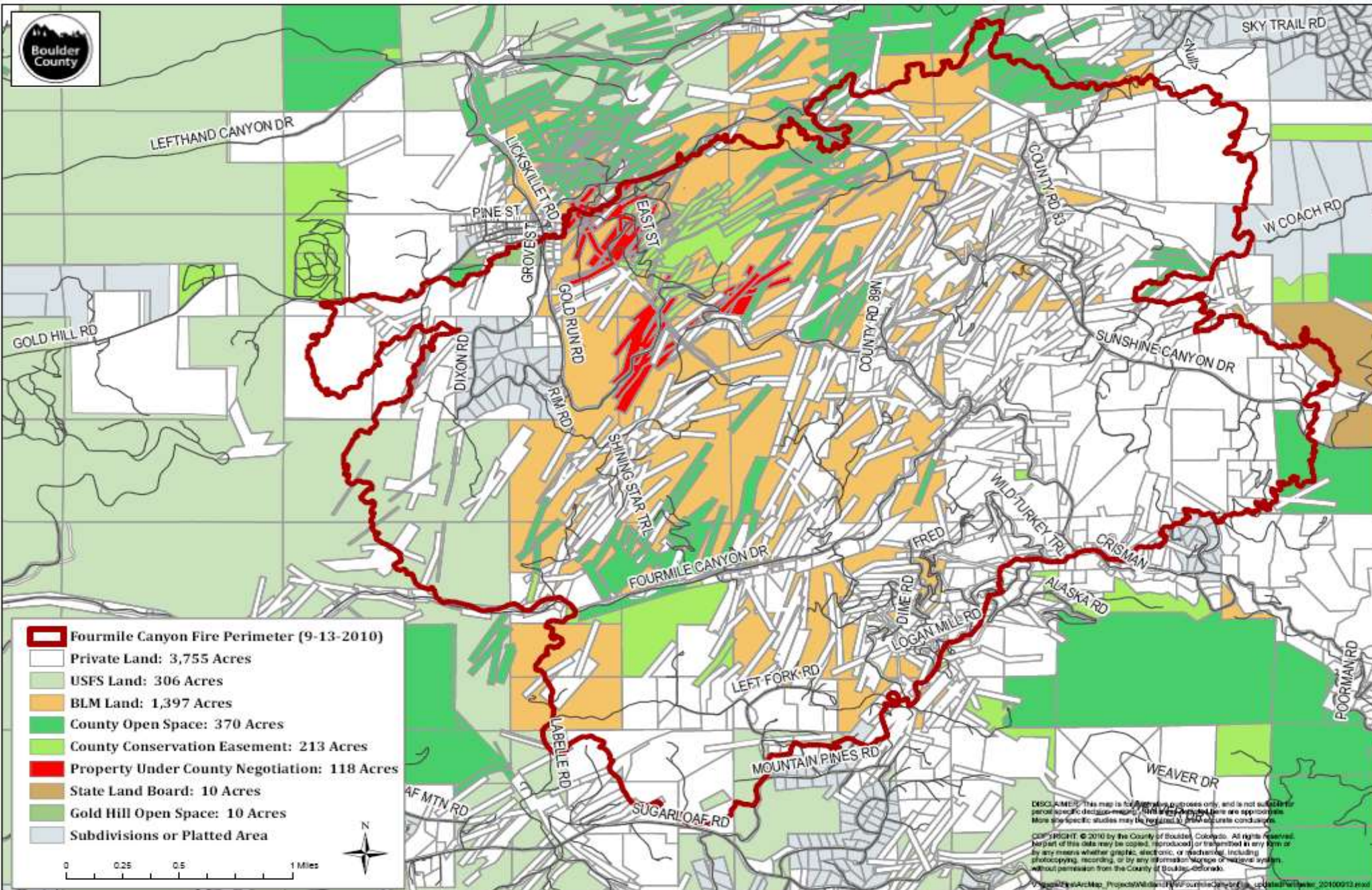
NEIGHBORHOOD CHARACTER



Subject Parcel is
1.99 acres

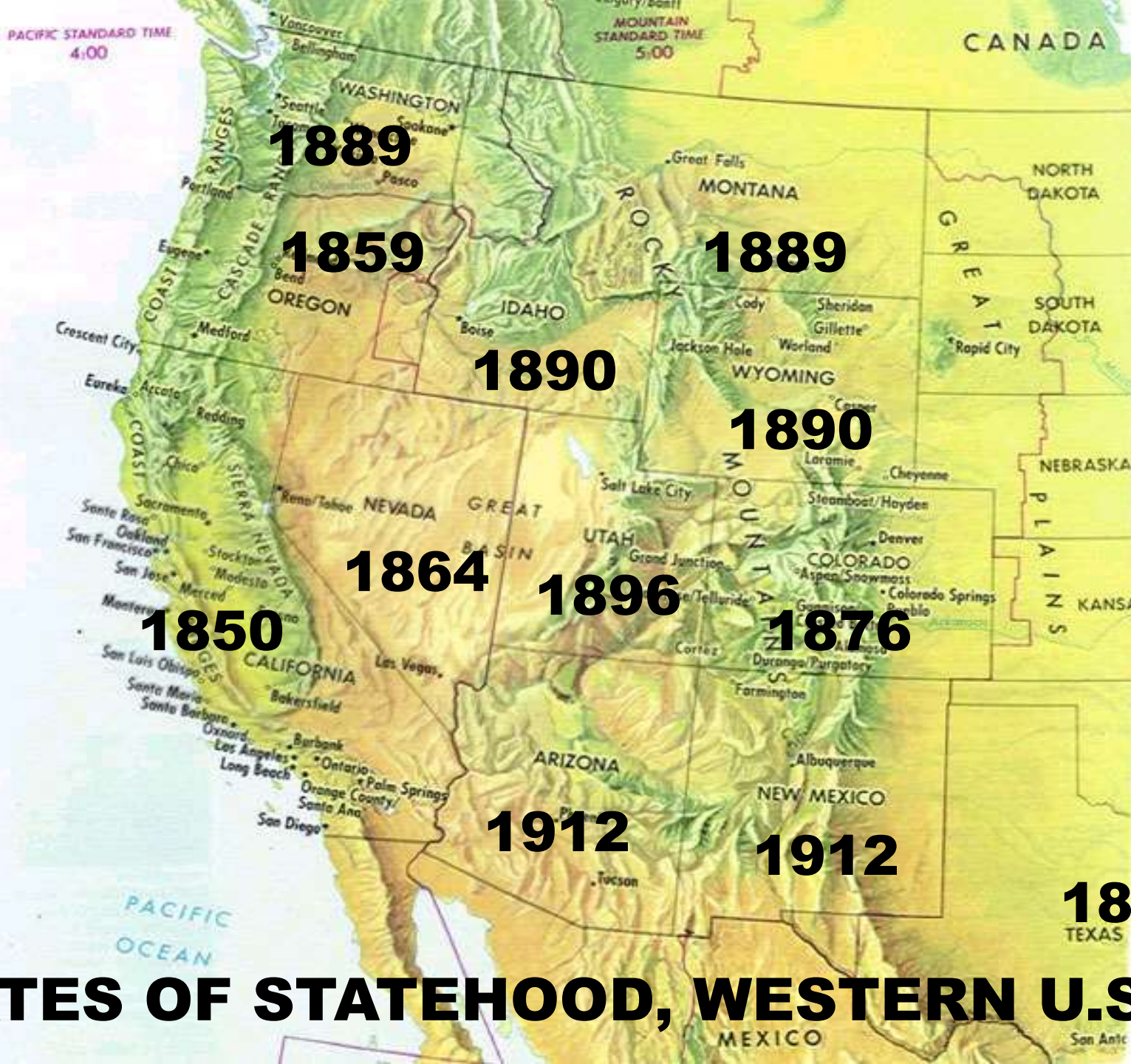


Public and Private Lands Affected by the Fourmile Canyon Fire



Question: Is there any correlation between dates of statehood (and accompanying development, suppression of fires, etc.) and the incidence of severe wildland fires?

- California?
- Colorado?
- Arizona?
- Others?



DATES OF STATEHOOD, WESTERN U.S.A.

Historically... (Continued)

- 1944: First Boulder County Zoning (much of the county “Unclassified”)
- 1957, and probably earlier: Building permits required and issued.
- 1965: Comprehensive Zoning Resolution, including “Forestry” zone with 25-ft. side yard setbacks & 5-acre minimum lot size.
- 1960s & early ‘70s: Many mountain subdivisions platted.



Road Map 2013



Boulder County Functional Class

	Permit	Gravel
Principal Arterial		
Minor Arterial		
Collector		
Residential Collector		
Local		
Local Secondary		
Jump		
Municipal		

State and Federal Highways

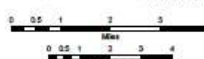
	State and Federal Highways
--	----------------------------

Lands

	Subdivisions / Platted Areas
	County and City Open Space
	State
	Federal
	Rocky Mountain National Park
	Indian Peaks Wilderness Area

	RTD Park-&Ride
	RTD Boulder Transit Center
	Cell Boxes

	Boulder County Boundary
	In Service Railroads
	Abandoned or Out of Service Railroads



Official Map Adopted December 10, 1993.
Revisions approved by the Board of County Commissioners
by resolution number 2013-15,
August 27, 2013

District 1: Elise Jones
District 2: Deb Gardner
District 3: Cindy Domenici

*For further information concerning roads, consult the Boulder County Road Directory as well as the Street, Drainage, Baseline Rd and Chatterbox Rd. N 28th St and Jay Rd and South Boulder Rd and N 28th St road maps on the back.
This map is for illustrative purposes only and the features depicted on it are approximate. More site specific studies may be required to obtain accurate conclusions. Boulder County makes no warranties regarding the accuracy, completeness, reliability, or suitability of this map. Boulder County disclaims any liability associated with the use or misuse of this map. In assessing another map on this map, the user fully assumes any and all risk associated with the information contained therein.
Boulder County Transportation

Historically... (Continued)

- 1972 – “ Senate Bill 35” – state subdivision law.
- 1975 – Building permits required on all unincorporated parcels for all types of buildings.
- 1976 – Comforter Mountain Fire
- 1978 – Boulder County Comprehensive Plan (BCCP) adopted. “New urban development” to be directed into the cities and towns and not to occur in the unincorporated county.
- Subsequent downzoning of the county, 35-acre minimum size for newly created parcels.

The Fires Begin...

- 1988 – Beaver Lake Fire/Lefthand Fire (no homes lost).
- 1989 – Black Tiger Fire – 44 homes and other structures lost
- 1989 – Amend building code to add Fire Zones and require Class A roofs in mountains (Fire Zone No. 1).
- 1990 – (1st) Olde Stage Fire – 10 homes lost



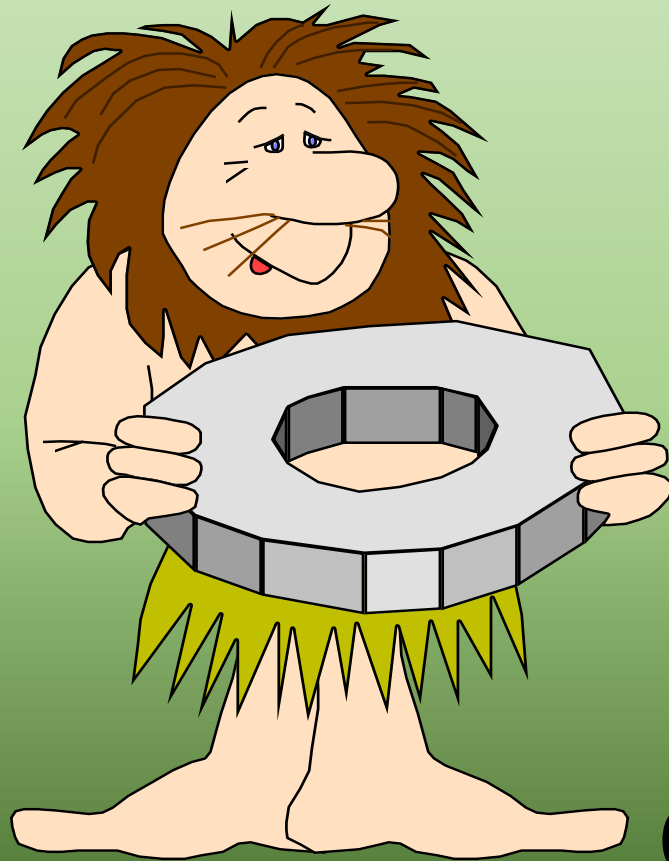
The Chronology... (Continued)

- 1990 - Boulder County Wildfire Mitigation Group Formed (but hardly any of us had wildfire mitigation as our “real job”)
 - Inclusiveness
 - Collaboration
 - Utilize all available resources
 - Seek out other resources

INTER-AGENCY COOPERATION

- **Citizens**
- **USDA Forest Service**
- **National Park Service**
- **State OEM**
- **State Forest Service**
- **Homeowners Assns.**
- **Building Officials**
- **Waste Management**
- **Fire Departments**
- **GIS Departments**
- **Human Resources**
- **Insurance Companies**
- **BLM**
- **Community Groups**
- **Sheriff/Police**
- **Consultants/Vendors**
- **Universities**
- **Politicians**
- **FEMA**
- **Planners**
- **Attorneys**
- **Budget**
- **Other Agencies**
- **Park Service**

Being IN-clusive instead of EX-clusive



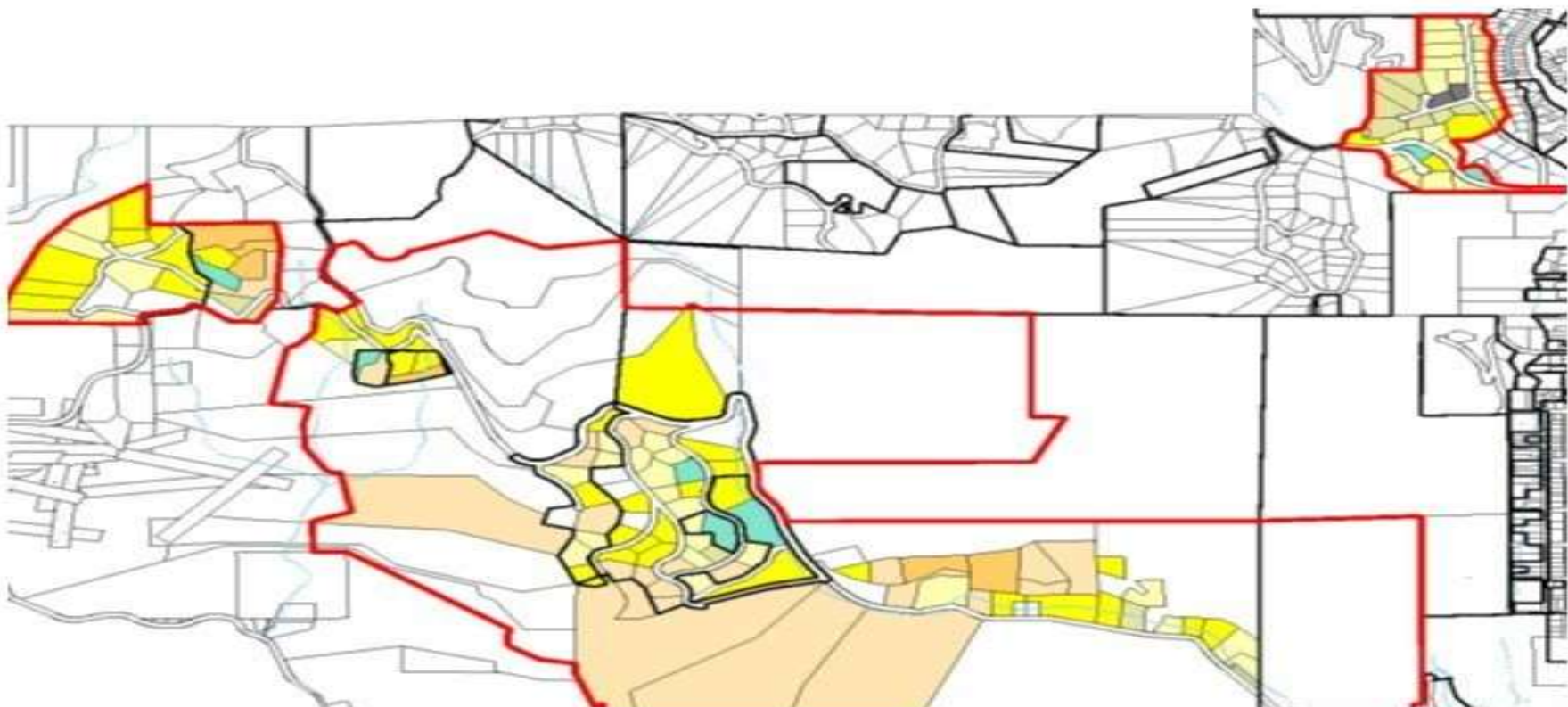
COLLABORATION



What are YOU doing here?

Methods and Tools...

- **Inter-Agency Coordinating Group**
 - Regular Meetings
 - Budgeting, Grants, Etc.
 - Chipping and Slash Disposal
 - “Cookbooks” for homeowners
 - Community Wildfire Symposiums
- **WHIMS** (Wildfire Hazard Identification & Mitigation System)
 - GIS
 - The Road Show
 - Train the Trainers
 - The Survey
 - Data entry
 - Mapping



The Chronology... (Continued)

- Creation of new Wildfire Mitigation Coordinator position, approval of funding and hiring of first Wildfire Mitigation Coordinator
- 1994 – Site Plan Review (“SPR”) process created.

Don't look a gift horse in the mouth...



...Administrative Site Plan Review

The Chronology... (Continued)

- 1995 – Automatic fire sprinkler systems required for homes over 3,600 sq. ft. and additions resulting in 4,800 sq. ft. or larger. Continued to add wildfire mitigation amendments, like noncombustible window screens, protected eaves and vents, defensible space, etc.
- 2000 – Walker Ranch (open space) Fire – no homes lost.
- 2003 – Overland Fire – 12 homes destroyed.
- 2009 – (2nd) Olde Stage Fire – one (1) home lost.

The Chronology... (Continued)

- 2010 – Fourmile Canyon Fire – 169 homes lost.
 - Increased survival rate for homes that went through SPR.
 - Case manager approach toward recovery, with multi-departmental staffing of a fire recovery center.
 - Although rebuilds could be completed at the same size and location as homes previously existed, they still needed to meet current building codes, including fire sprinklers, ignition-resistant construction, defensible space and “BuildSmart” energy code requirements.

Evolving Regulations...

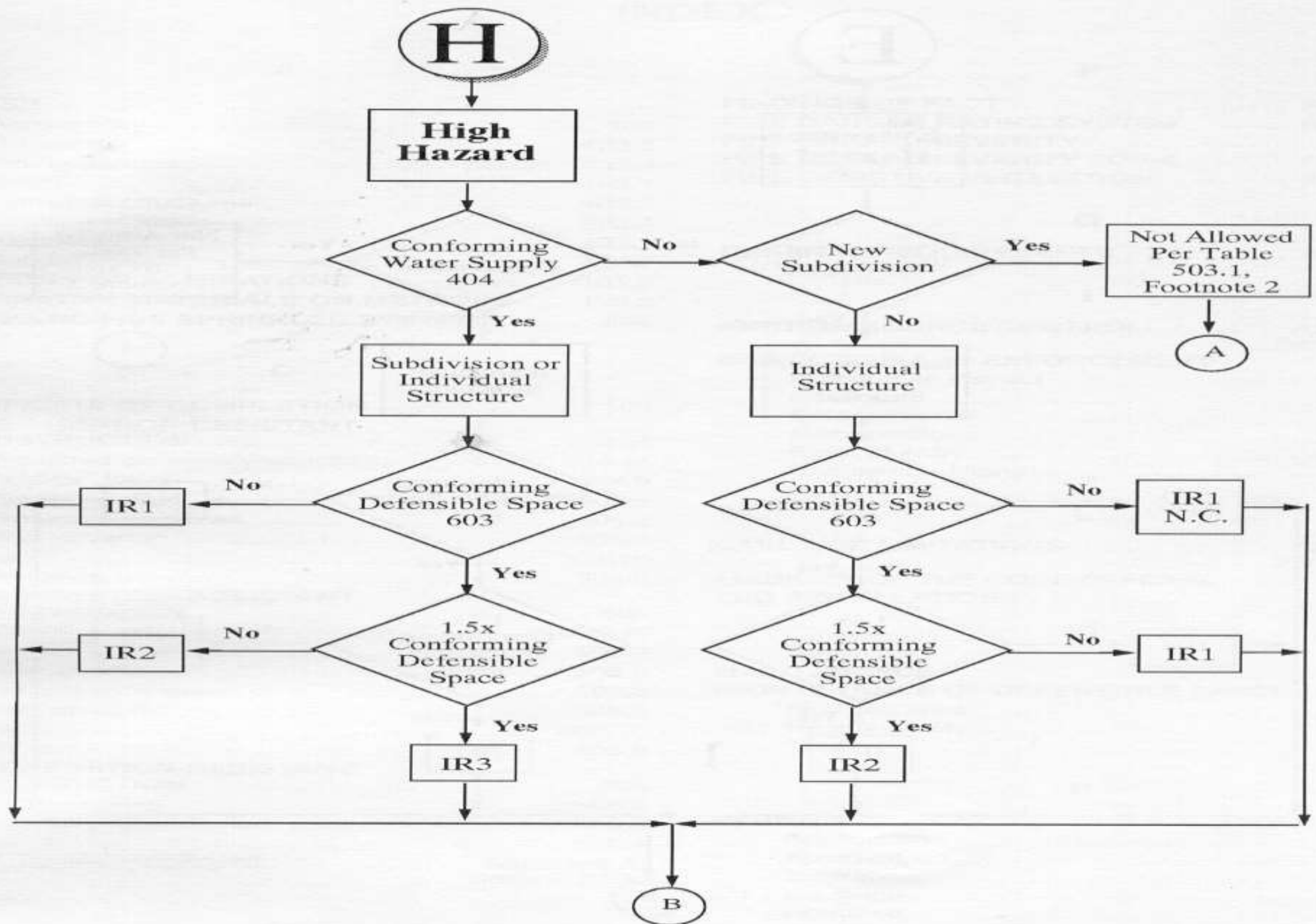
- Building code amendments used portions of the International Wildland-Urban Interface Code (“IWUIC”), mostly in the area of ignition-resistant building construction, without actually adopting the IWUIC, for various reasons.
- Review and approval of wildfire mitigation plans and inspection of defensible space by the wildfire mitigation coordinator became part of the day to day plan review and inspection routine.

IWUIC “THE SYSTEM”

- Much like the IBC, and the UBC before it, & a system to determine allowable area and height, only Ign-Res Construction has its own system...



- **MANDATORY:**
 - Fire Hazard Severity (M, H or E)
 - Access
- **“GIVE & TAKE” ELEMENTS:**
 - Water Supply
 - Ignition-Resistant Construction
 - Defensible Space



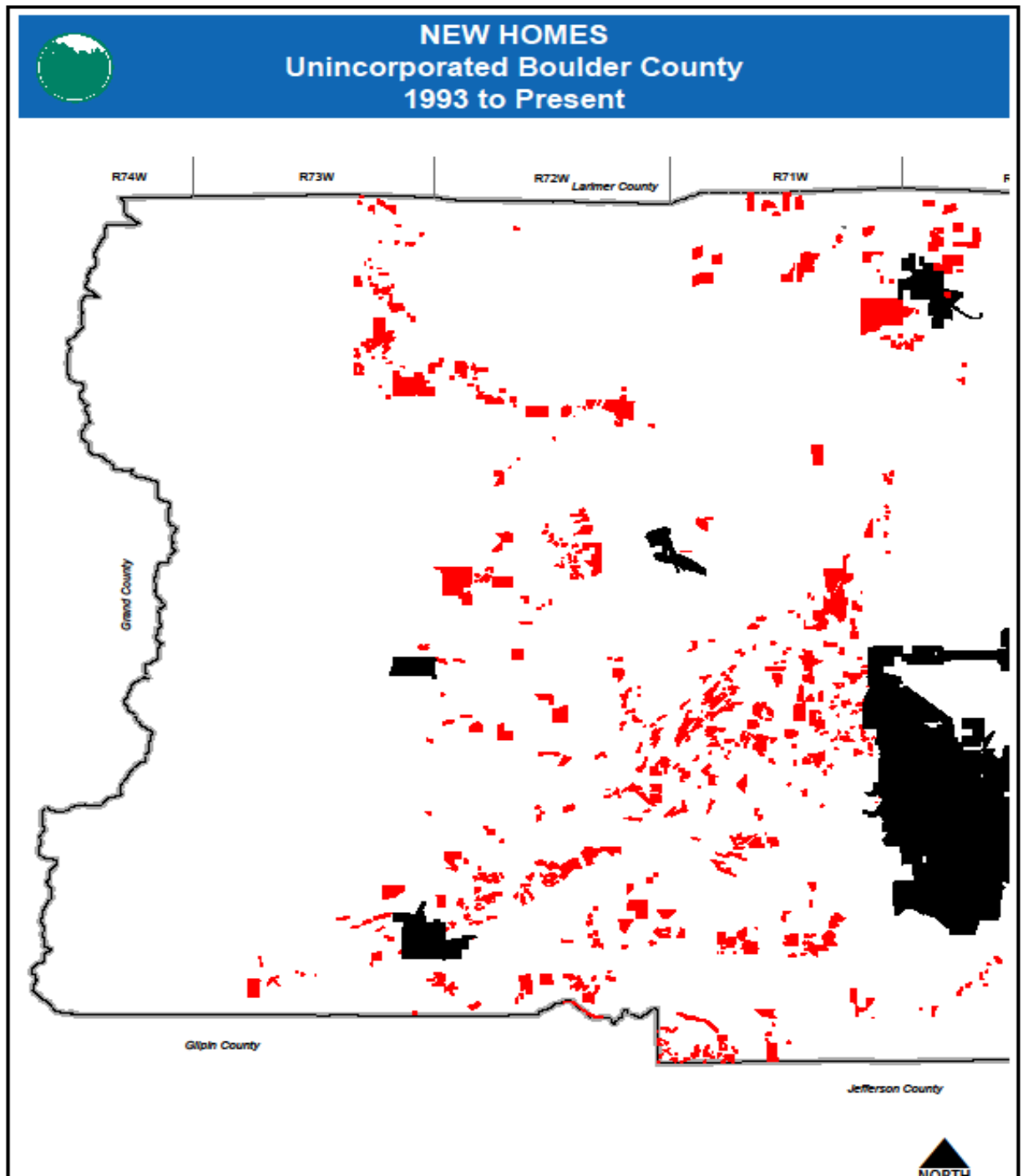
Evolving Regulations... (Continued)

- 2013 - Automatic fire sprinkler systems required for all new homes (and still for additions $\geq 4,800$ sq. ft.). Ignition-resistant construction requirements for exterior walls are revised to be the same, regardless of wildfire hazard rating (Moderate, High or Extreme).
- 2014-Wildfire Partners program begins as a grant-funded voluntary program for existing homes.

Current Codes, January 1, 2016...

- Revise ignition-resistant construction (wildfire mitigation) requirements to eliminate the 3 existing hazard zones and have a single set of construction requirements largely based upon the existing high hazard zone requirements.
- Define the latest Colorado State Forest Service (CSFS) guidelines as the “defensible space standard” and allow obtaining a certificate from the Wildfire Partners program as an option for meeting defensible space requirements.

1,054 homes
have
implemented
wildfire
mitigation
regulations
since 1993





Boulder County Land Use Department

2045 13th Street, Boulder, CO 80302 303-441-3930 www.bouldercounty.org/lu

WILDFIRE PARTNERS All Participating Properties

Legend

- Home Assessment Only (451)
- Community Chipping Only (253)
- Sort Yard Users Only (727)
- Wildfire Mitigation Plans Only (45)
- Properties Participating in Multiple Efforts (298)

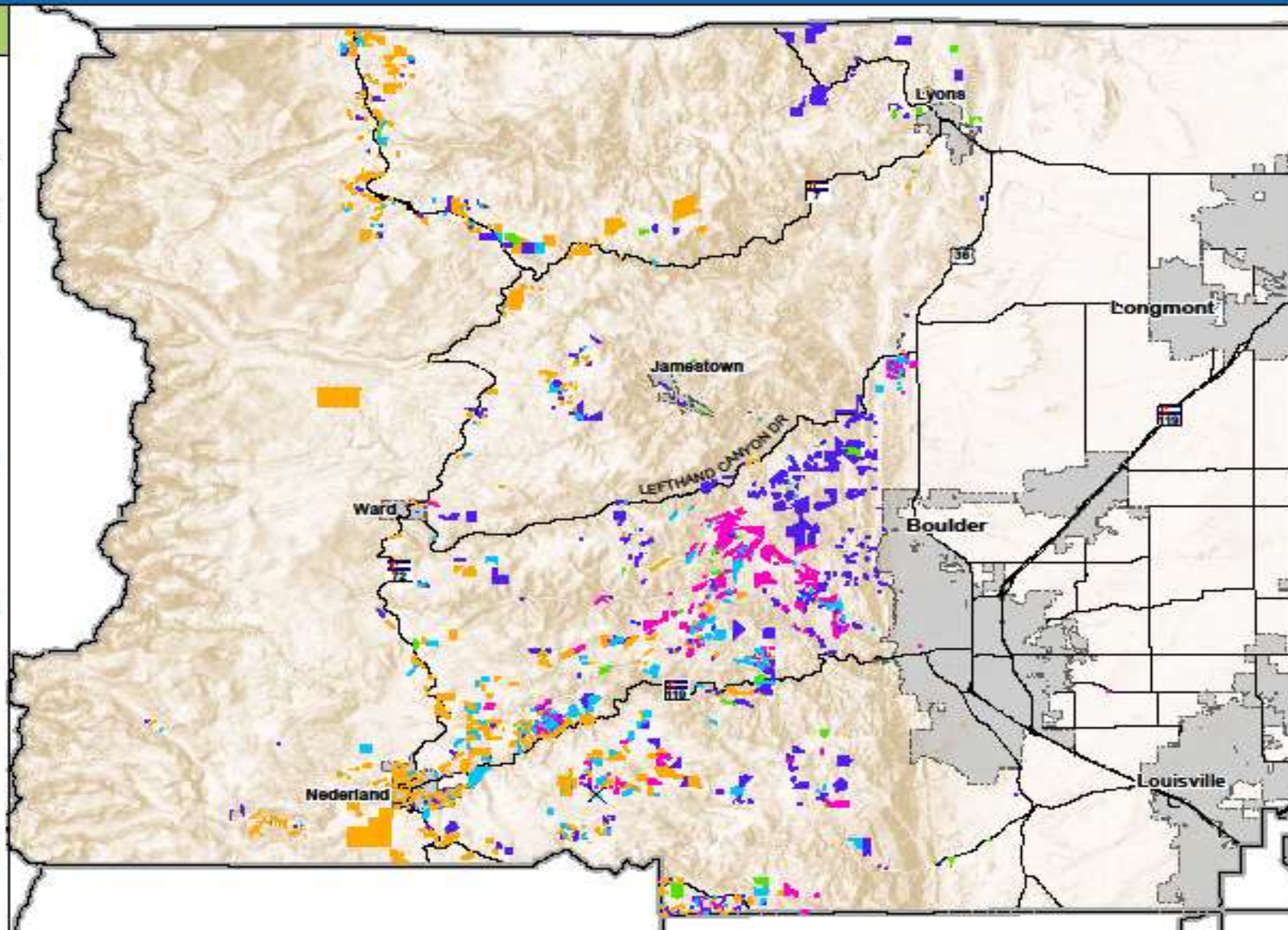
Total Participating Properties
1,774

0 1.5 3 Miles

Area of Detail Date: 2/8/2016



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Wildfire Partners is a unique program



Wildfire Partners is a public-private partnership





Lessons from the Fourmile Canyon Fire Findings

1. We have the opportunity to significantly reduce the potential for WUI fire disasters
2. This opportunity requires a change in approach
3. The responsibility for reducing vulnerability to wildfire rests with the homeowner
4. WUI fire disasters cannot be prevented without homeowners actively creating and maintaining HIZs with low home ignition potential

- \$2.6 million in grant funding
- 35 partners
- 7 mitigation specialists
- Phone advisors
- 12 contractors
- 28 advisory committee members
- Support from many county staff

Wildfire Defensible Space



**WILDFIRE
PARTNERS**

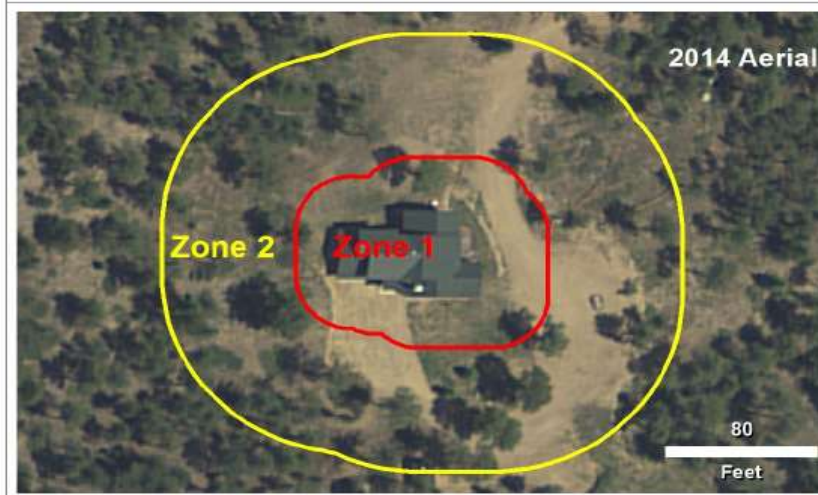
COLORADO



DEPARTMENT OF
**NATURAL
RESOURCES**



www.WildfirePartners.org
303-446-7877



The aerial photos pictured above, both taken in July, are educational tools to help you examine your defensible space and encourage you to take action.

Are you interested in preparing your home and property for future wildfires? If you are, consider Wildfire Partners, a voluntary program that provides significant technical and financial assistance to participating homeowners

Apply today at www.WildfirePartners.org to receive a comprehensive, up-to-date, wildfire assessment and help create a more resilient community. Space and funding are limited.

If you are already a Wildfire Partner, thank you for all your hard work and leadership!



The Benefits to Homeowners

- Comprehensive home assessment
- Customized report & “To Do List”
- Phone Advising
- Financial Assistance
- Certificate & Recognition





Strong Partnership with Insurance Companies

- Insurance Institute for Business and Home Safety
- Rocky Mountain Insurance Information Association
- Property and Casualty Insurance Association of America
- Allstate
- State Farm
- Farmers
- USAA



WILDFIRE PARTNERS TOUR OF HOMES

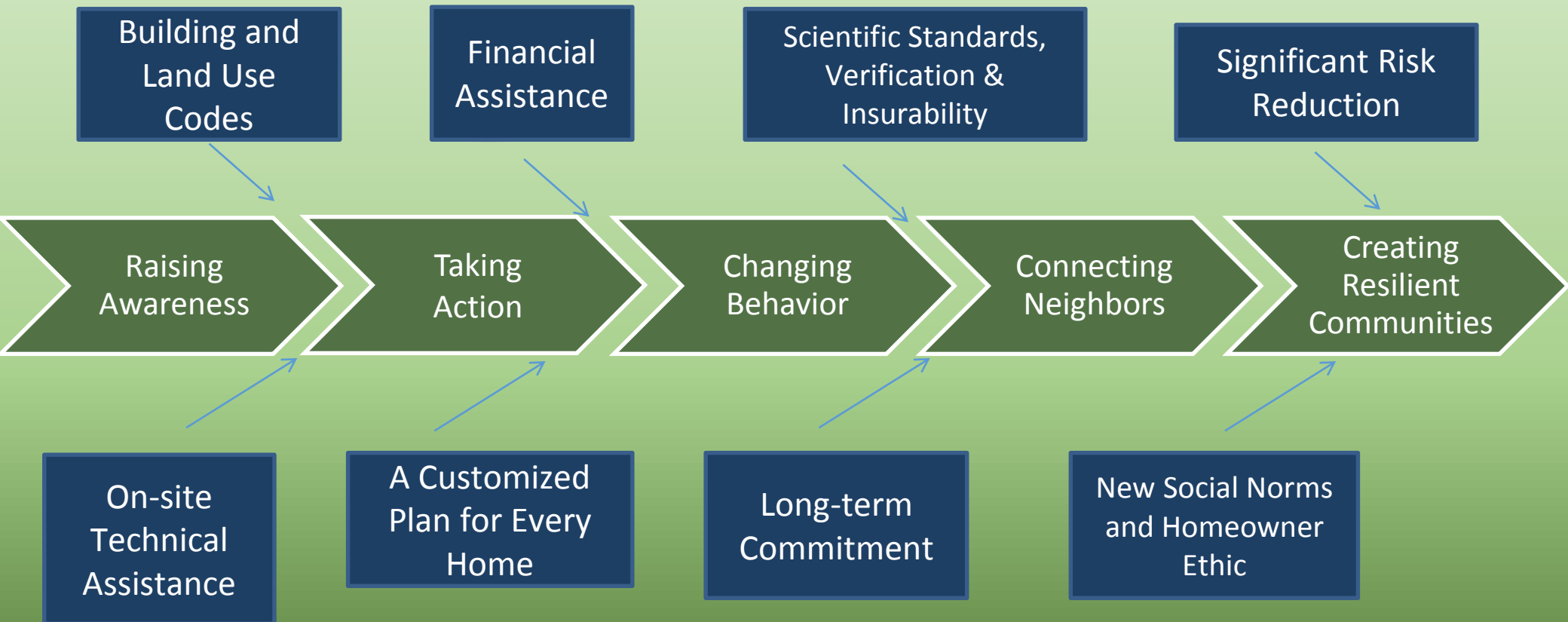


WILDFIRE PARTNERS

www.WildfirePartners.org

Participating homeowners are the best ambassadors

- 91% of participants said it was likely or very likely they would refer Wildfire Partners to a friend or neighbor



Wildfire Partners is a comprehensive approach to mitigation and community empowerment.

RESOURCES:

Boulder County:

- **Boulder County Land Use:**
<http://www.bouldercounty.org/dept/landuse/pages/default.aspx>
- **Boulder County Building Safety & Inspection Services:**
<http://www.bouldercounty.org/property/build/pages/buildingdivmain.aspx>
- **Boulder County Wildfire Partners:** <http://www.wildfirepartners.org/>

Colorado State Forest Service (CSFS):

<https://csfs.colostate.edu/wildfire-mitigation>

Insurance Institute for Business & Home Safety:

<https://disastersafety.org/wildfire>

