



**Osher Lifelong Learning Institute  
University of Denver  
October 2022**

**Planning to Thrive: Sustainable,  
Resilient and Equitable  
Communities for the 21<sup>st</sup> Century**

**Rocky Piro, PhD, FAICP**

# PLANNING TO THRIVE

Sustainable, Resilient and Equitable for the 21<sup>st</sup> Century



## Today's Presentation

- What do *sustainable, resilient & equitable* mean?
- 21<sup>st</sup> century challenges for US communities – with focus on Colorado
- using comprehensive planning to address challenges
- new paradigm for 21<sup>st</sup> century:  
from incrementalism to integrated approaches
- next steps



# PLANNING TO THRIVE

foundation: *sustainable, resilient, equitable*

## distinct but interrelated concepts

**SUSTAINABLE:** “*manage human, natural, & financial capital to meet current needs, while ensuring adequate resources available for future generations.*”

(Institute for Sustainable Communities)

**RESILIENCE:** “*capacity of communities, & systems to adapt, survive, & grow in face of stresses & shocks, & transform when conditions require it.*” (100 Resilient Cities Initiative)

**EQUITABLE:** “*just & fair inclusion into society in which all can participate, prosper, & reach their full potential.*”

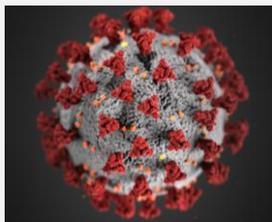
(American Planning Association)

# PLANNING TO THRIVE

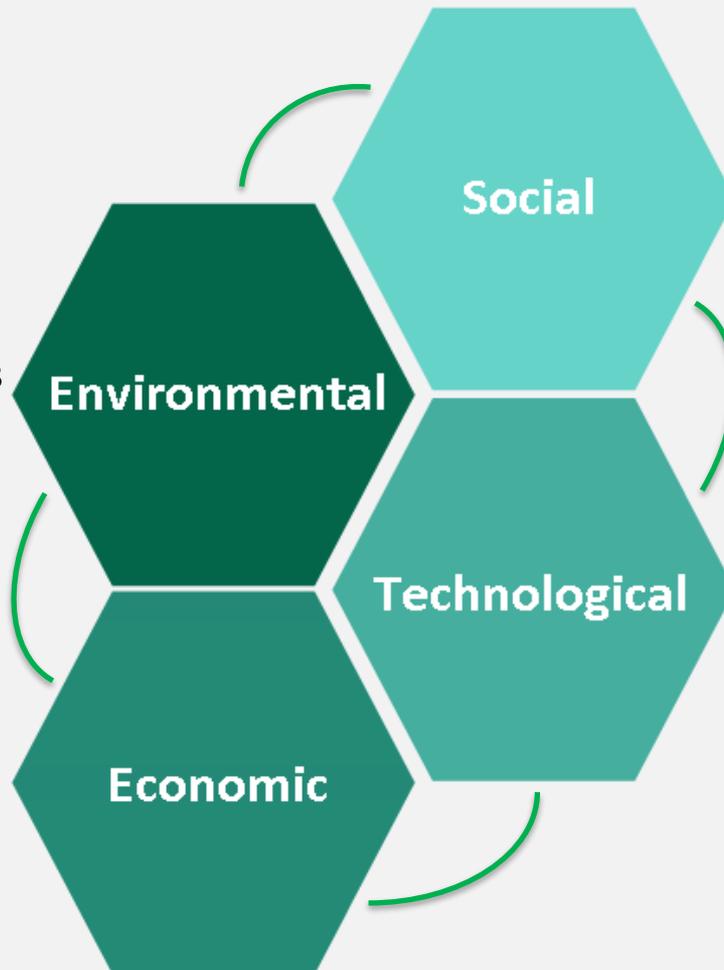
contemporary challenges are intertwined



**Climate change**  
**Energy**  
**Pathogens & invasive species**  
**Resource depletion**



**Automation**  
**E-commerce**  
**Remote work**  
**Resource-efficient economy**



**Aging population**  
**Equity, diversity & inclusion**  
**Immigration**  
**Social determinants of health**

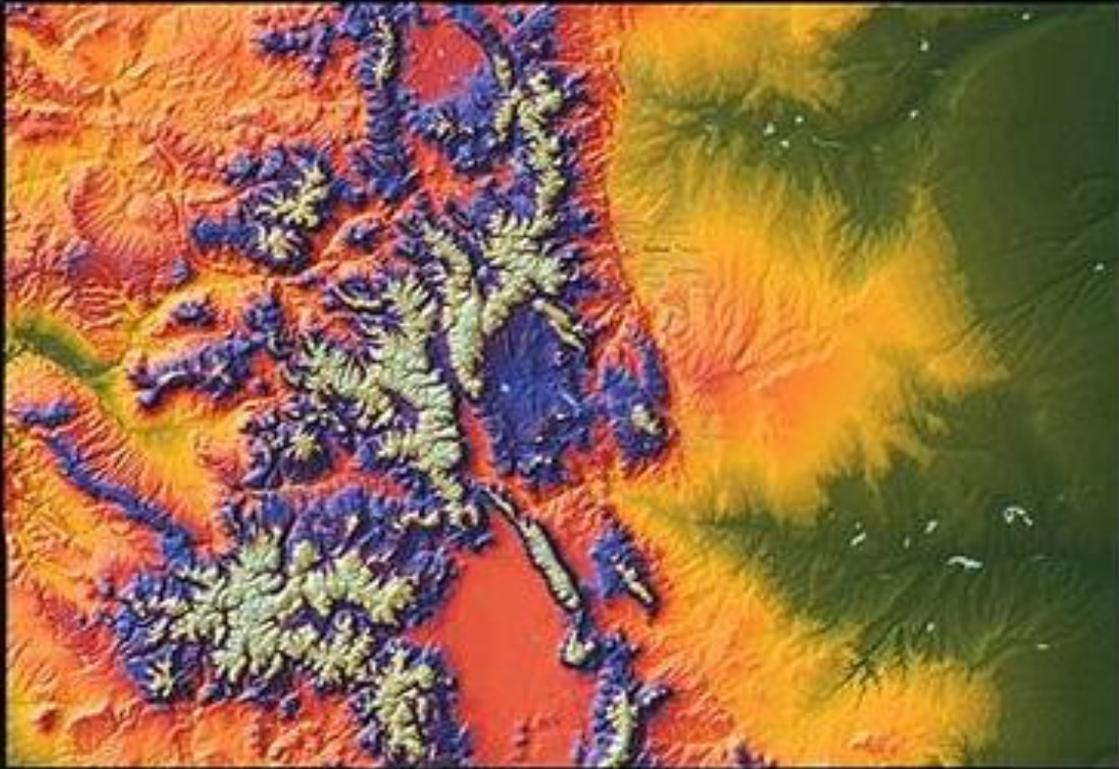


**Artificial intelligence**  
**Autonomous mobility**  
**New mobility**  
**Smart cities**



# PLANNING TO THRIVE

## 21<sup>st</sup> century challenges facing Colorado



- ❖ air pollution & climate
- ❖ contaminated water & soil
- ❖ inequity & inequality
- ❖ sprawl & inefficient development
- ❖ inadequate services
- ❖ homelessness
- ❖ housing imbalance

# Air Quality in Colorado

- CO 7<sup>th</sup> worst air among 50 states
- Boulder, Colorado Springs, Denver metro among top 10 worst cities for air quality. Fort Collins is 17<sup>th</sup> worst.

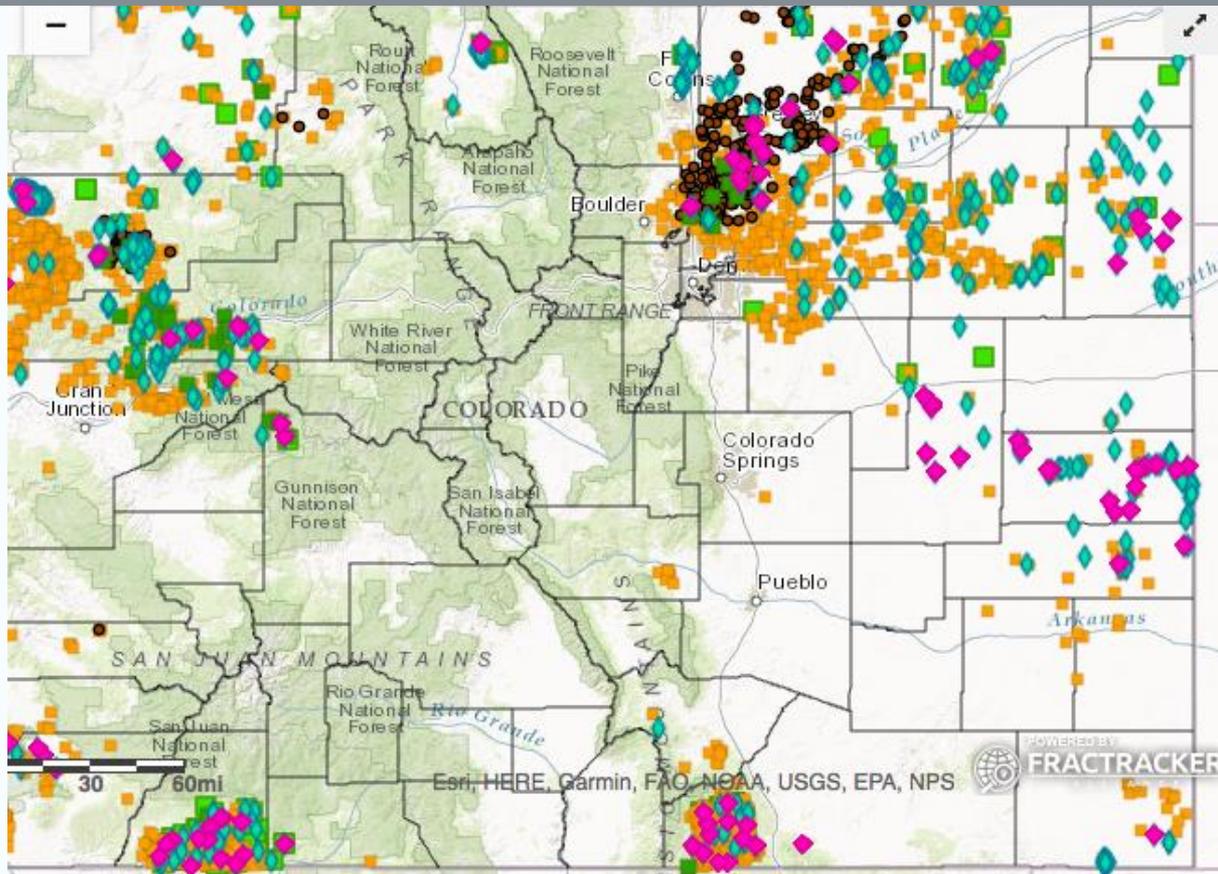


## Climate

- Snow pack already decreasing – “spring” melt now 15-30 days earlier & summer last longer than in 1990
- by 2100 snowpack to drop by 50%
- transportation-related activities are now largest sector of greenhouse gas emissions in CO (approximately 1/3 of total)

Source: American Lung Association

# Contaminated Sites in Colorado



24 superfund sites  
21,000 sites with per-  
&/or polyfluoroalkyl (PFA)  
contaminants; nationally  
there are 120,000 sites.  
Rosenthal, C. (18 October 2121)  
Public Employees for  
Environmental Responsibility  
(PEER)]

## Groundwater Threats

Source: Save EPA

# Water Quantity & Water Quality

**Water Quantity – by 2050, Colorado will have an annual water shortage of half million acre feet – comparable to water for 2.5 million families.**

Conservation Colorado (26 July 2017)  
“Colorado, We Have a Problem.”

**Water Quality – Fecal matter pollution in South Platte River in Denver at 137 times above federal safety limit.**

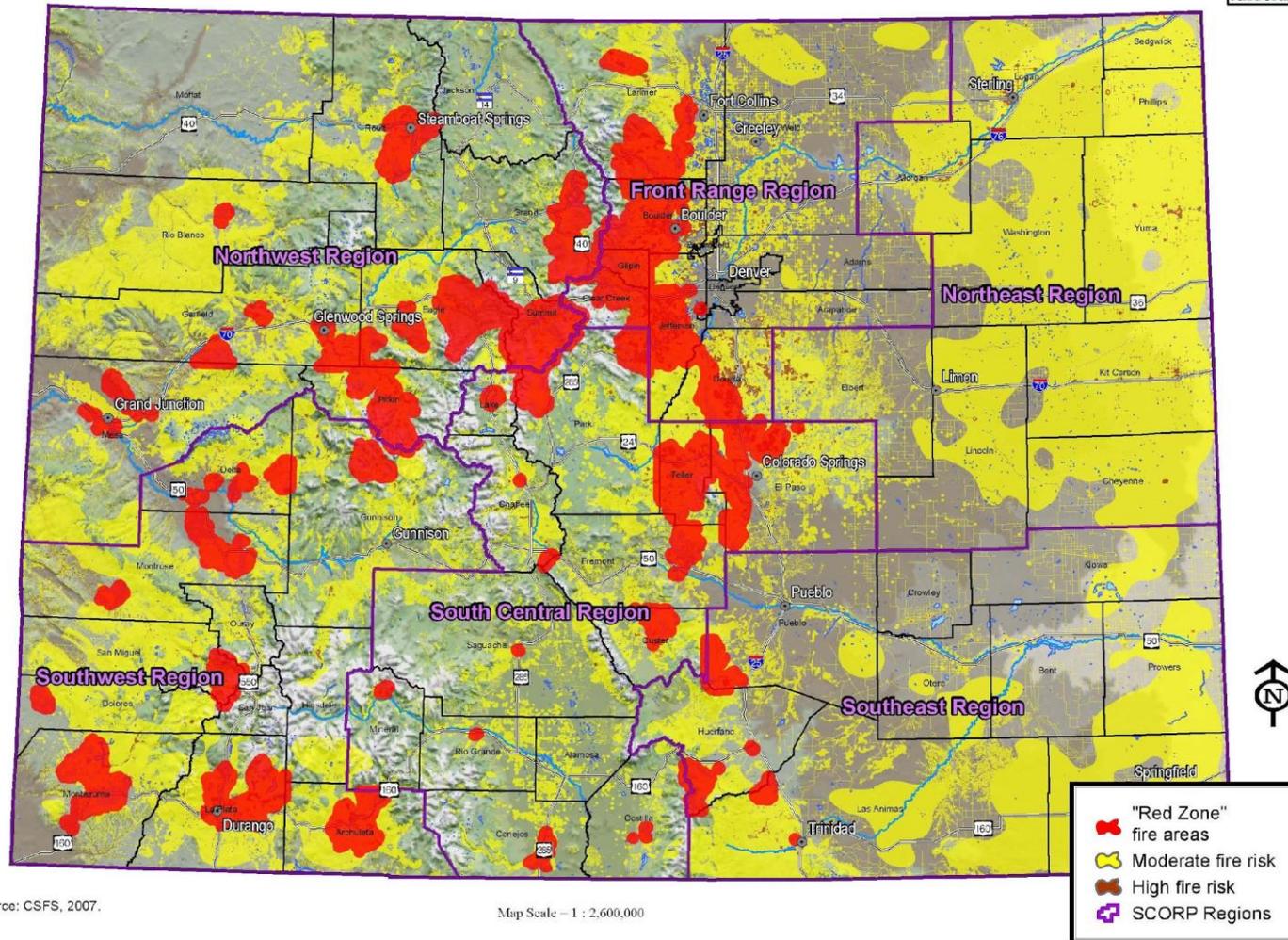
Finley, B. (4 March 2021). *Denver Post*



# Hazard Lands & Critical Areas in Colorado

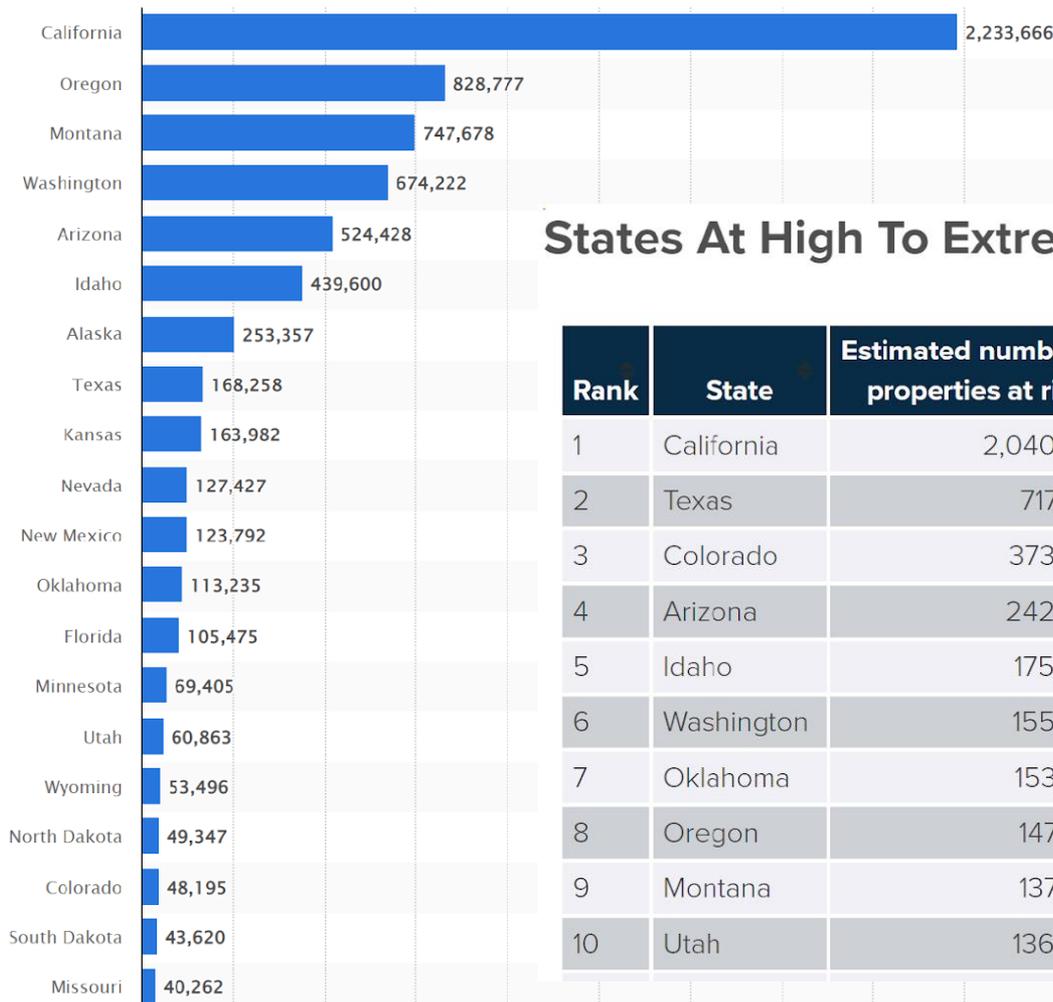


## Colorado Fire Risk & "Red Zones"



# Hazard Lands & Critical Areas in Colorado

Acres burned by wildfires in the United States in 2021,



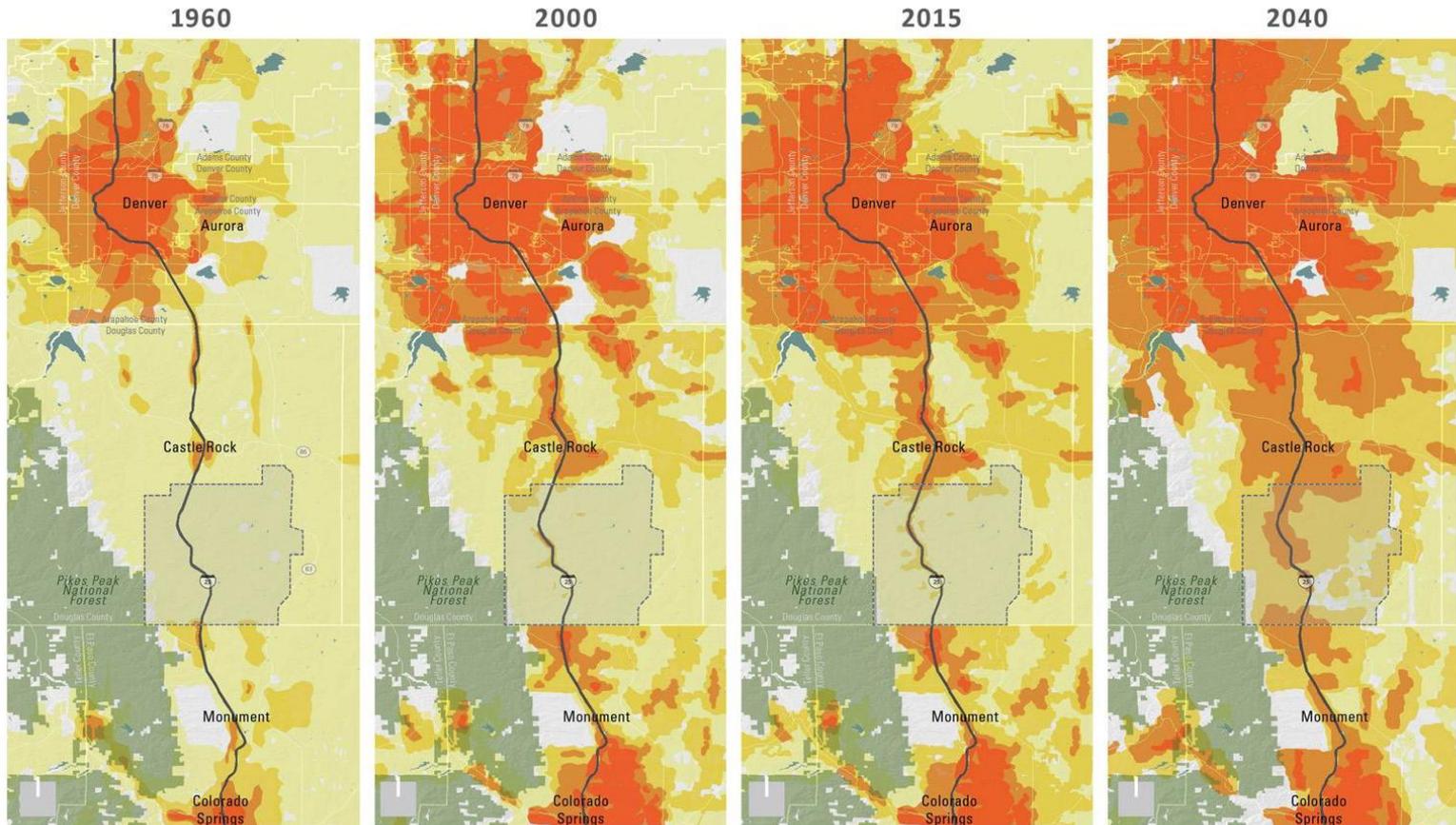
## States At High To Extreme Wildfire Risk, 2021 (1)

Rank	State	Estimated number of properties at risk	Rank	State	Percent of properties at risk
1	California	2,040,600	1	Montana	29%
2	Texas	717,800	2	Idaho	26
3	Colorado	373,900	3	Colorado	17
4	Arizona	242,200	4	California	15
5	Idaho	175,000	5	New Mexico	15
6	Washington	155,500	6	Utah	14
7	Oklahoma	153,400	7	Wyoming	14
8	Oregon	147,500	8	Arizona	9
9	Montana	137,800	9	Oklahoma	9
10	Utah	136,000	10	Oregon	9

**Colorado ranks 18<sup>th</sup> in # of acres lost each year, but 3<sup>rd</sup> in # of structures lost**

<https://www.iii.org/fact-statistic/facts-statistics-wildfires>

# Land Converted to Sprawl in Colorado (i.e., low density development)



\*Projected development without conservation actions

Source: *I-25 Corridor Conservation Master Plan (2018)* American Society of Landscape Architects

# Land Converted to Sprawl in Colorado

- Development in Colorado transforming natural landscapes at rate of two football fields per minute
- First two decades of 21<sup>st</sup> century, natural land converted to sprawl in Colorado increased by ~ 675,000 acres — to about 10% of state, an area larger than Rocky Mountain National Park
- This rate of land conversion faster than deforestation of Amazon region of Brazil, where development in recent years devours about two football fields every three minutes
- Raises concerns about survival of species — and potentially accelerates climate change

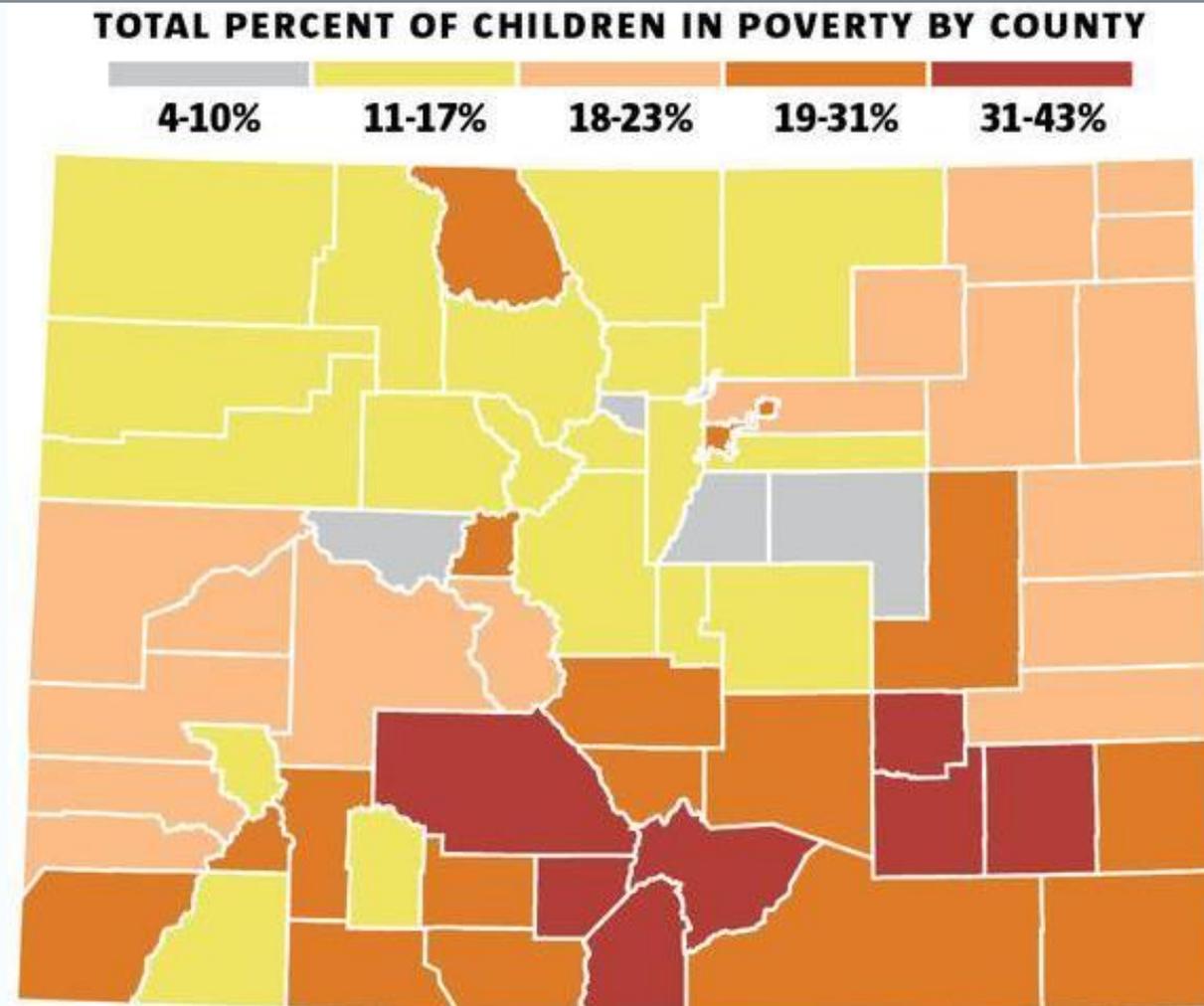


Castle Rock

Source: Bruce Finley (August 2019) The Denver Post

# Inequity in Colorado

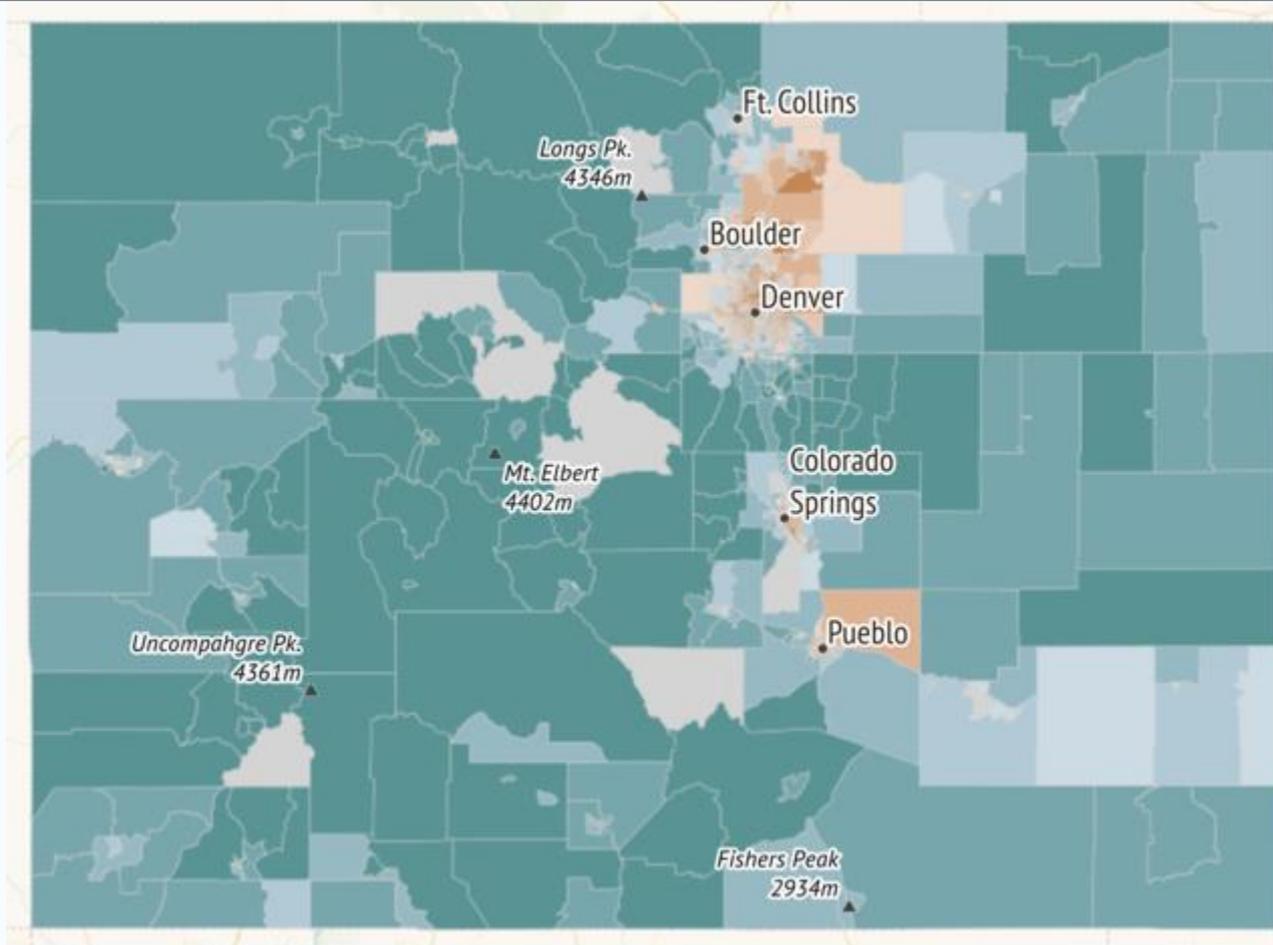
## Child Poverty



Source: Kids Count Report. The Denver Post.

# Inequity in Colorado

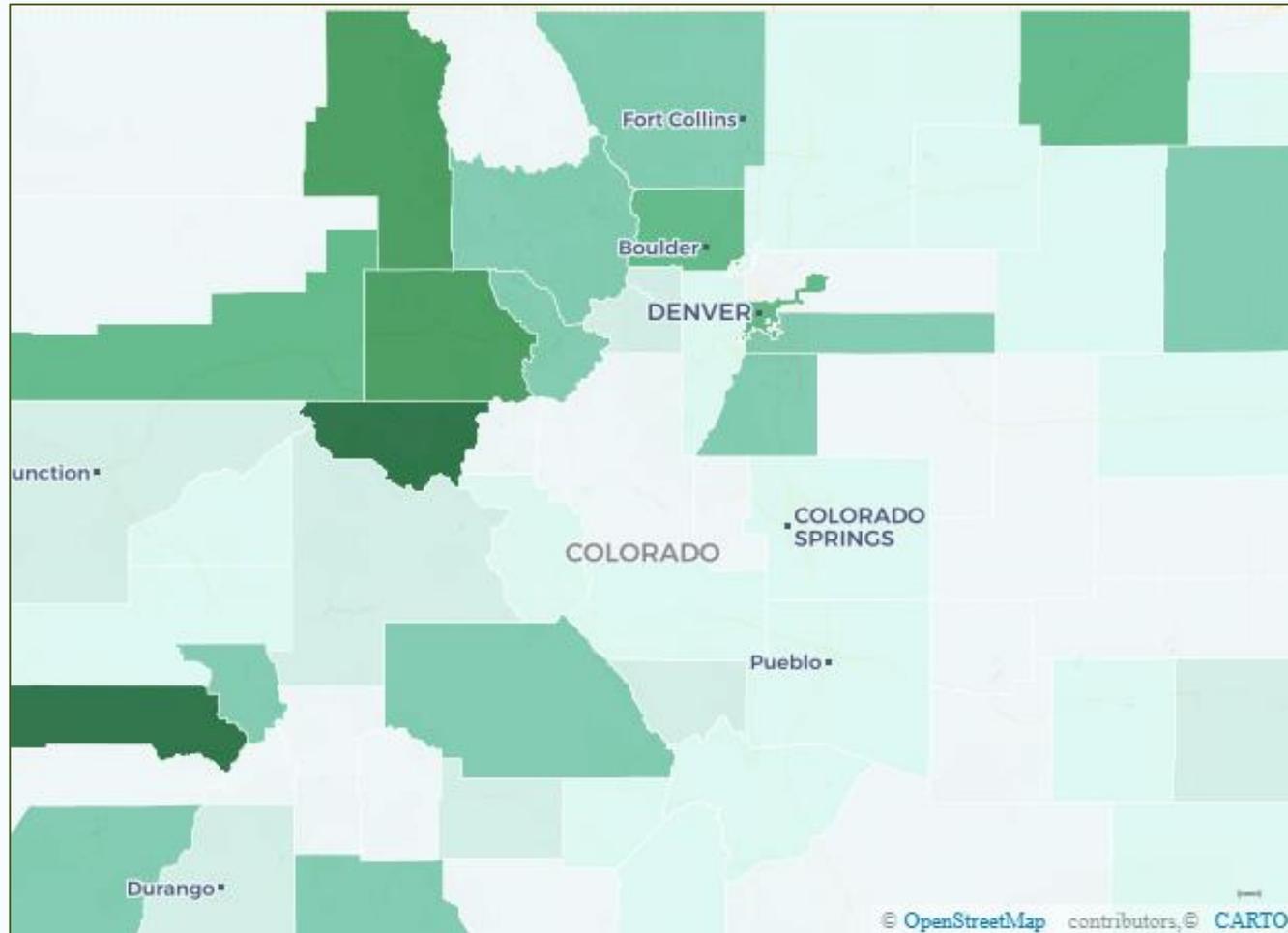
Findings: low-income, non-white communities disproportionately exposed to pollution



Source: H. Metzger (January 2021). Denver Gazette

# Inequity in Colorado

income inequality most extreme near resort communities



Source: H. Sanchez (July 2018). Colorado Public Radio

# Homelessness in Colorado

Any given day ~**10,000** experience homelessness of that total, ~**700** were family households, ~**1,000** were Veterans, ~**600** were unaccompanied young adults (aged 18-24), ~**3000** were individuals experiencing chronic homelessness.

Source: Continuums of Care to the U.S. Department of Housing and Urban Development (HUD)

Over the course of the school year ~ **22,560** public school students experienced homelessness of that total, ~ **1,000** students were unsheltered, ~**2,500** were in shelters, ~ **2,200** were in hotels/motels, ~**16,000** were doubled up.

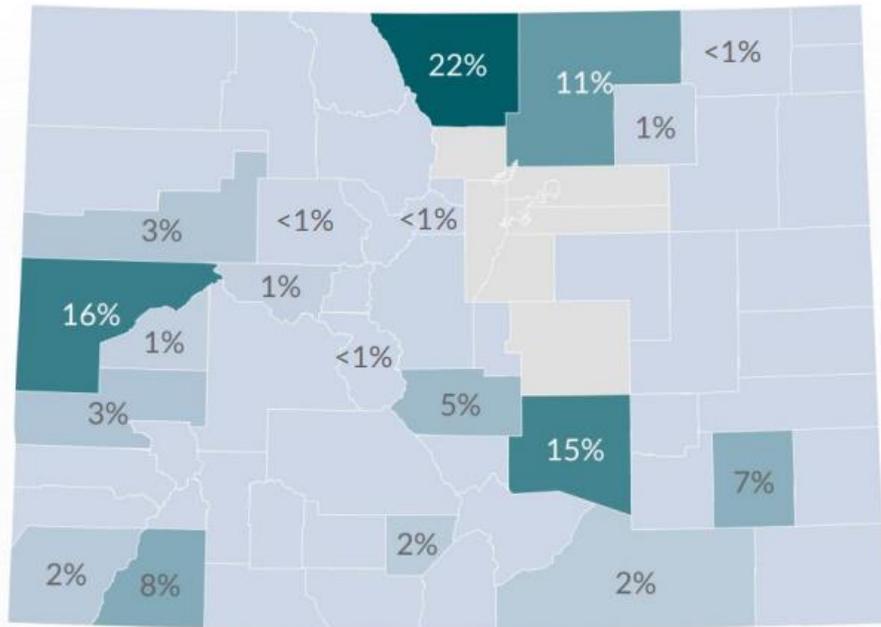
Source: U.S. Department of Education



Colorado Springs

# Homelessness in Colorado

This map shows where in CO people experiencing homeless were living during 2019 *point-in-time* count. Counties with largest shares were Larimer (22%), Mesa (16%), & Pueblo (15%).



% of PIT Data  
0% 22%

**8%** were families with children



**56%** had at least one disabling condition



**30%** were chronically homeless



**14%** were fleeing domestic violence



**11%** were veterans



**7%** were unaccompanied youth



Source: Point-in-Time Study (2019). Colorado Coalition for the Homeless

# Mobility Imbalance in Colorado

- **CO mobility networks are out-of-balance, with over-reliance on highways, & inadequate investment in high-capacity, multimodal mobility facilities**
- **Nearly 1/3<sup>rd</sup> of population does not drive cars. With 6-million in statewide population, that translates to 2 million people**
- **An individual earning CO's recently raised minimum wage spends approximately 1/3 of their income on transportation.**
- **60% of the transportation-related greenhouse gas pollution comes from “light-duty vehicles, i.e., cars & trucks**

sources: Bureau of Transportation Statistics; American Progress



# Infrastructure Inadequacy in Colorado

**U.S. Environmental Protection Agency estimates that over 20-year period, Colorado's wastewater systems will require \$4.69 billion to upgrade & maintain systems in state of good repair.**



[Costly] Dangers of  
**Deferred  
Maintenance**  
In Facilities

**impact is exponential**

- **cost of repair of infrastructure**
- **cost of fixing property damage**
- **cost of lost wages, business closure . . .**



# Infrastructure Inadequacy in Colorado

## Colorado Infrastructure Grades

 AVIATION	 B	 BRIDGES	 C+	 DAMS	 C+
 DRINKING WATER	 C-	 ENERGY	 C+	 HAZARDOUS WASTE	 C-
 LEVEES	 D+	 PARKS	 C	 RAIL	 B-
 ROADS	 C-	 SCHOOLS	 D+	 SOLID WASTE	 C-
 TRANSIT	 C-	 WASTEWATER	 C-		

2021

REPORT CARD

AMERICAN SOCIETY OF CIVIL ENGINEERS

COLORADO'S CUMULATIVE  
INFRASTRUCTURE GRADE

C-/D+

<https://infrastructurereportcard.org/state-item/colorado-infrastructure/>

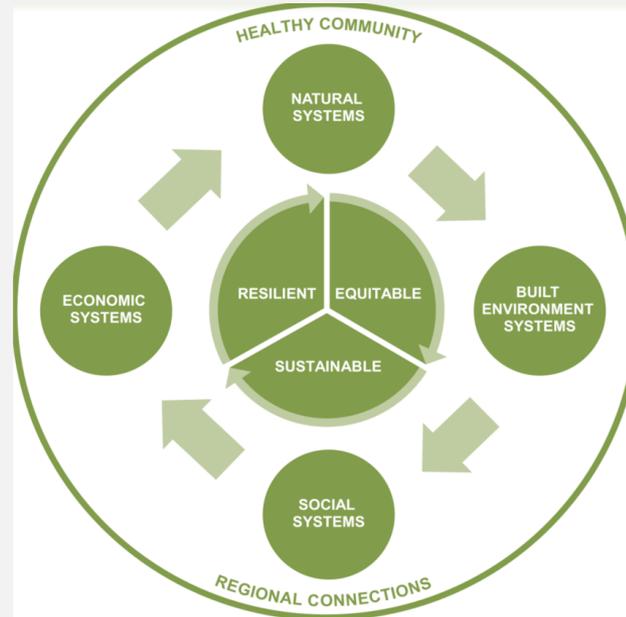
# PLANNING TO THRIVE

Sustainable, Resilient and Equitable for the 21<sup>st</sup> Century



## The Role of the Comprehensive Plan

- grounded in authentic engagement & equity
- based on systems thinking
- integrated & holistic – cross-cutting
- applies lenses for equity, climate, & health



# The Role of the Comprehensive Plan

## Systems Thinking

*The comprehensive plan should embed systems thinking in the planning process, the substance of the plan, and plan implementation.*

- ❖ evolve away from siloed elements (20<sup>th</sup> century model) to integrated systems approach
- ❖ recognize complex interrelationships between different systems & subsystems of the community
- ❖ incorporate realistic implementation of plan throughout planning process



# The Role of the Comprehensive Plan

## Equity & Engagement

*The comprehensive plan should advance the principle of interwoven equity by giving voice to and providing for the needs of all community members.*

- ❖ authentic & genuine engagement
- ❖ engage all segments of community – especially those previously excluded – throughout process & implementation
- ❖ monitor who benefits & whose needs are met



# The Role of the Comprehensive Plan

## Climate Change: Mitigation & Adaptation

*The comprehensive should set the direction for communities to address climate change, the existential environmental threat of the 21<sup>st</sup> century.*

- ❖ apply climate lens to all goals, strategies, policies, actions – along with equity lens & health lens
- ❖ shift to *climate-positive* planning of land use & development patterns, buildings, mobility & infrastructure systems
- ❖ promote *climate-resiliency* as guiding principle for planning & design



# Comprehensive planning been around since 1920s<sup>25</sup> ... and continues to evolve

1920s

- Standard Zoning Enabling Act
- Standard Planning Enabling Act

1960s & 70s

- 20<sup>th</sup> century model
- Growth Management introduced in some states & localities – new guidance for comp plans

1980s & 90s

- Growth Management expands into some more states & localities
- Smart Growth programs

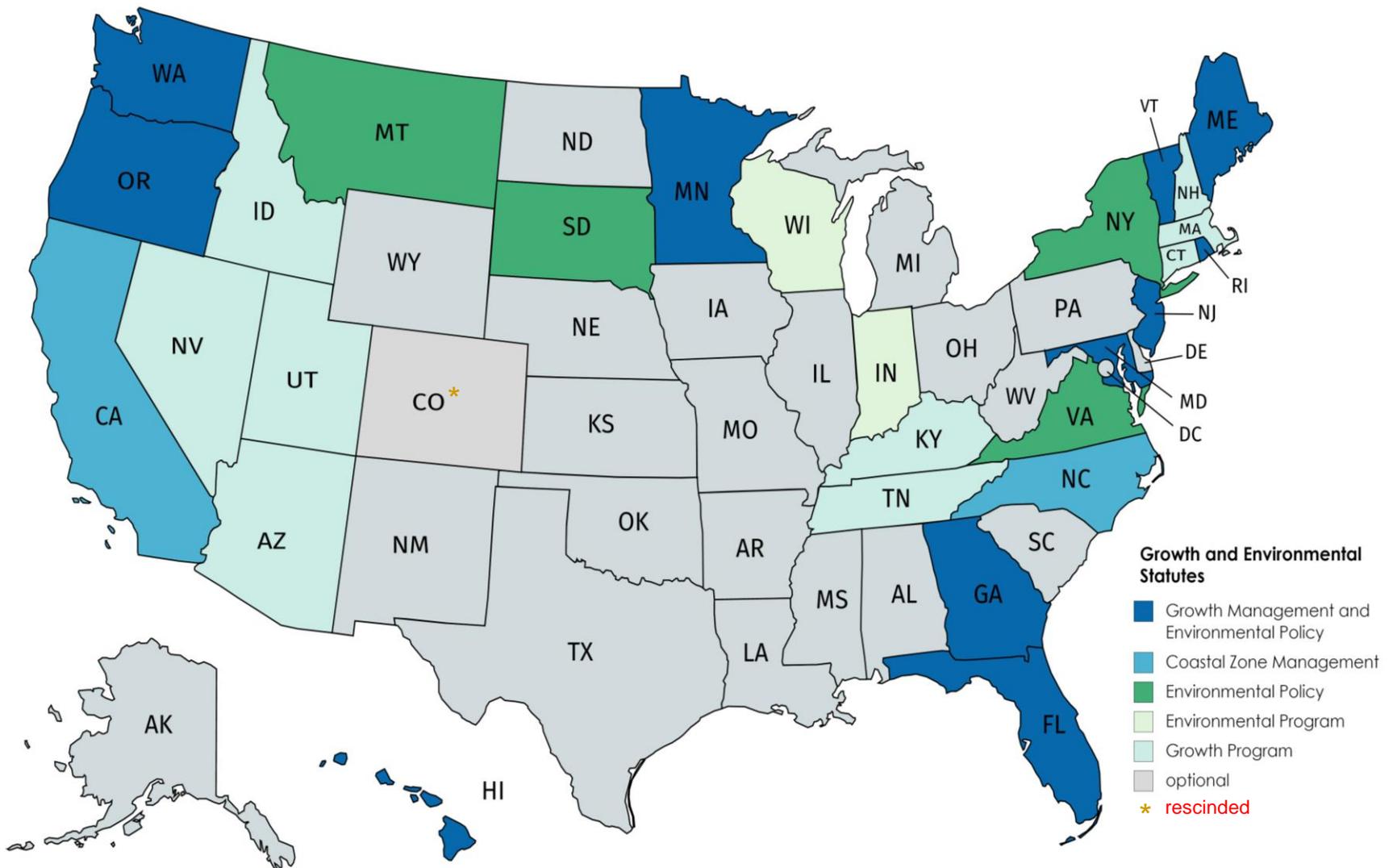
2010s

- 21<sup>st</sup> century model
- Sustaining Places
- Best Practices for Comp Plans

*from incremental to integrated*

# From Incrementalism to Integrated Planning

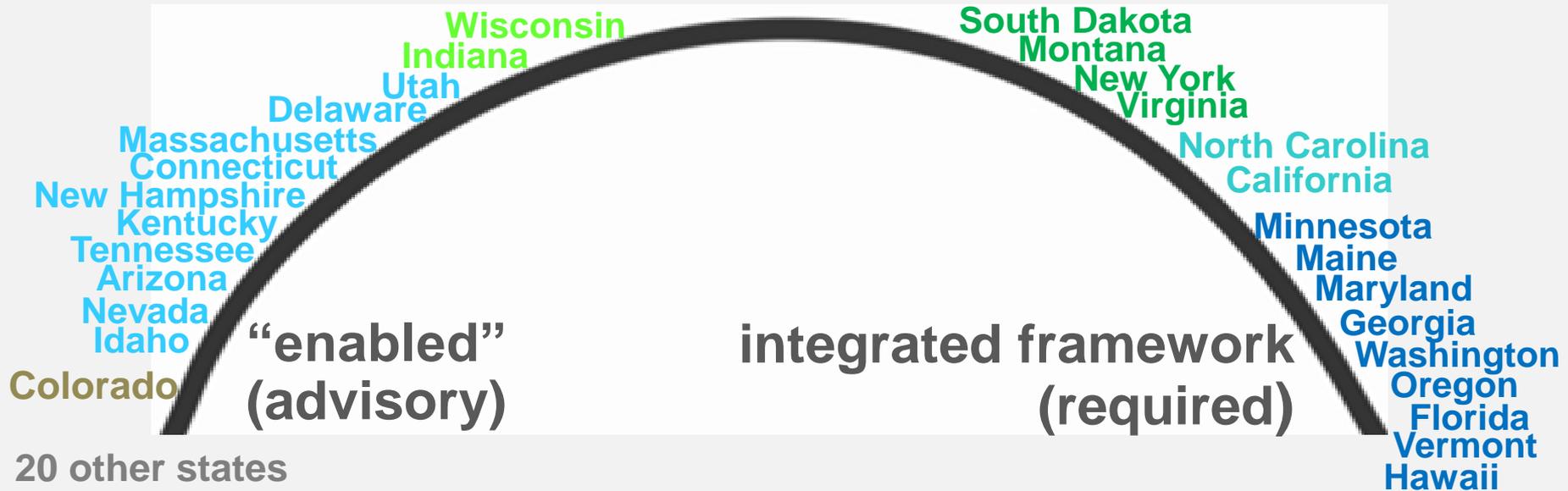
states with revised planning statutes or programs updated for growth & environment



# Planning in the US Today

uneven approaches: from incremental to integrated

## spectrum of planning frameworks



*for some states, statutes simply enable (i.e., allow) local governments to plan for others, statutes directed by legislation, with specific requirements of what must be included in plan, how frequently to update*

*16 states have comprehensive growth management &/or environmental statutes for state &/or local planning. 12 states have state growth &/or environmental programs.*

# STATUTES FOR PLANNING

## growth planning statutory frameworks

### Oregon



citizen involvement

land use

resource lands: ag & forest  
 natural resources, scenic &  
 historic areas, open space  
 air, water & land quality  
 natural disasters & hazards  
 recreational needs  
 economic development  
 housing  
 public facilities & services  
 mobility/transportation  
 energy conservation  
 greenways  
 shorelines

### Florida



land use

capital improvement  
 services & facilities  
 mobility/transportation  
 conservation/resources  
 recreation/open space  
 housing  
 shorelines  
 intergovernmental coordination  
 community design  
 safety  
 historic/scenic preservation  
 economic development

# STATUTES FOR PLANNING

## guidance for planning – planning “*enabled*”

### COLORADO



- recreation and tourism (*required by state statute*)
- natural & cultural resources
- environment
- land use
- economic development
- affordable housing
- transportation
- parks and open space
- hazards
- capital improvements
- water supply & conservation (*water – 2020*)
- efficiency in government
- energy
- sustainability
- urban design

*guidance only - not required*

*Source: Colorado Department of Local Affairs*

# Planning to Thrive: applying an integrated holistic framework

*from 20<sup>th</sup> century incrementalism  
to 21<sup>st</sup> century integrated approach*

**21<sup>st</sup> century approach = integrated  
systems approach  
interconnected framework**

from this



to this

- recreation & tourism
- natural & cultural resources
- environment
- land use
- economic development
- affordable housing
- transportation
- parks & open space
- hazards
- capital improvements
- water supply & conservation
- efficiency in government
- energy
- sustainability
- urban design
- water

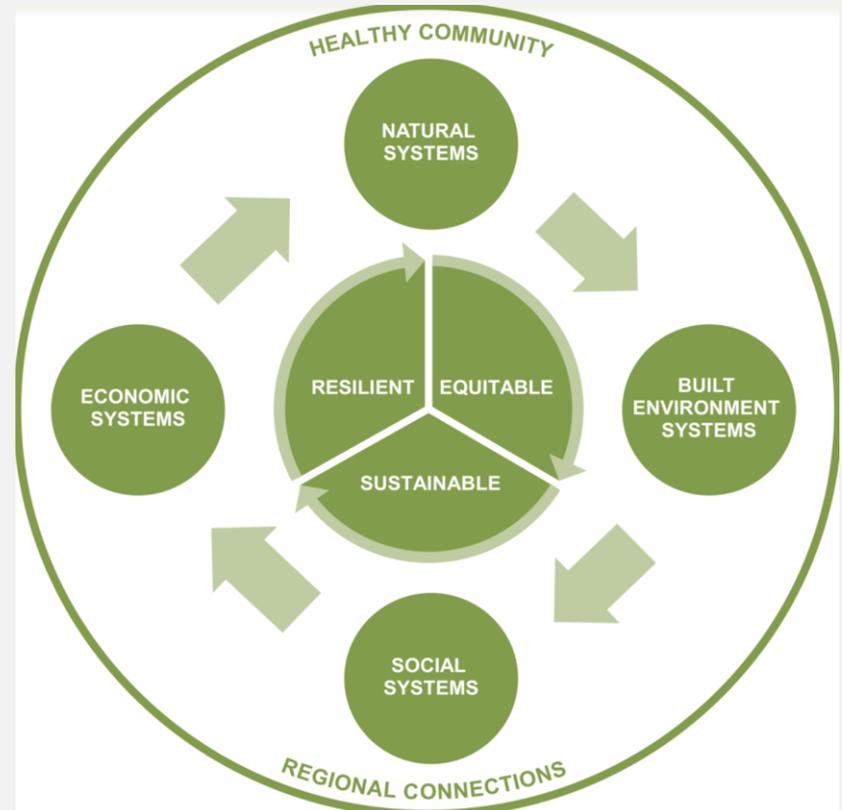


# The Comprehensive Plan

*Sustainable, Resilient & Equitable Communities for the 21<sup>st</sup> Century* (Routledge Press: 2022)

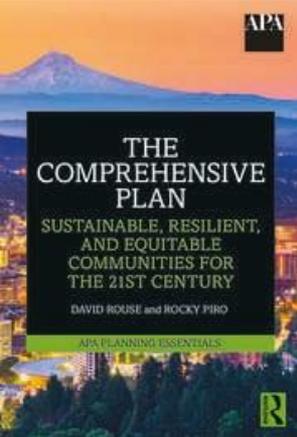
guidance – process (I), substance (II), implementation (III)  
framework – create sustainable, resilient, equitable places

- sustainability, resilience, & equity foundational
- systems thinking: plan as “system of systems”
- authentic participation
- implementation focus
- examples from communities across US



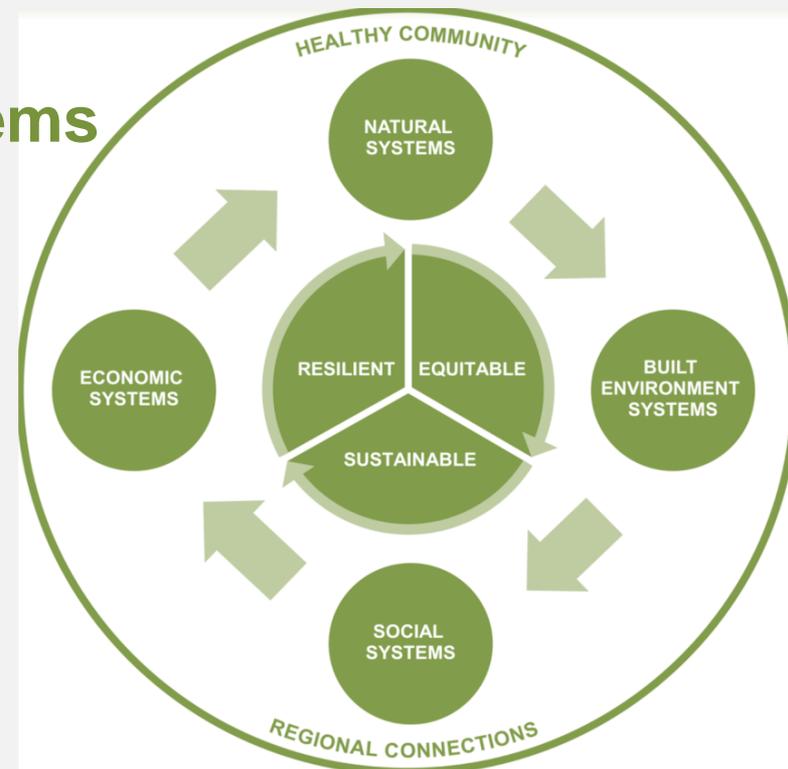
# Foundation of the 21<sup>st</sup> Century Plan

integrated, sustainable, equitable



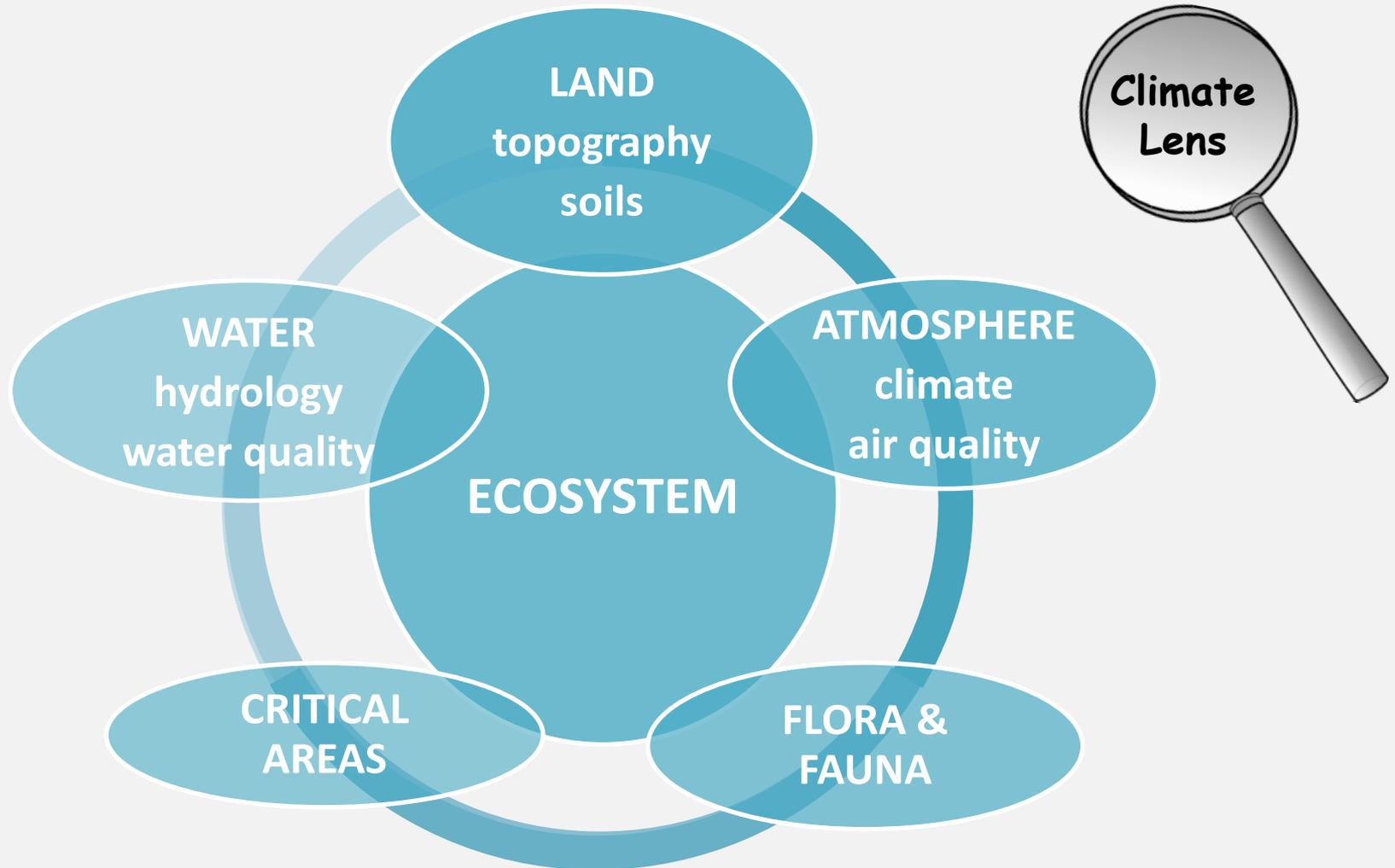
## The Community as a “system” with its “subsystems”

- Natural Systems
- Built Environment Systems
- Social Systems
- Economic Systems
- ❖ Healthy Community
- ❖ Regional Connections



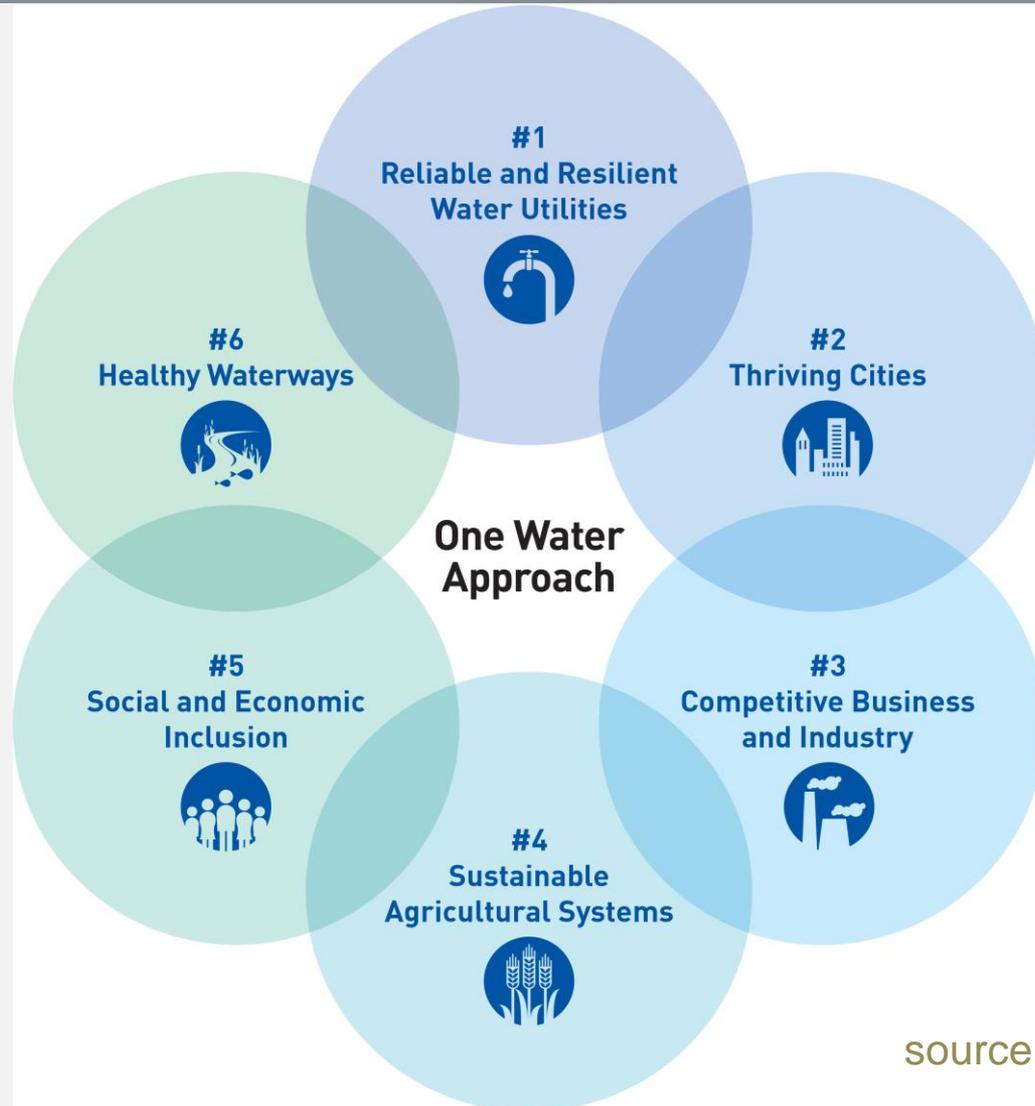
# The Substance of the Plan

## Natural Systems: Ecosystem approach



# The Substance of the Plan

## Natural Systems: One Water Approach



source: US Water Alliance

# The Substance of the Plan

## Built Environment Systems: Complete Communities

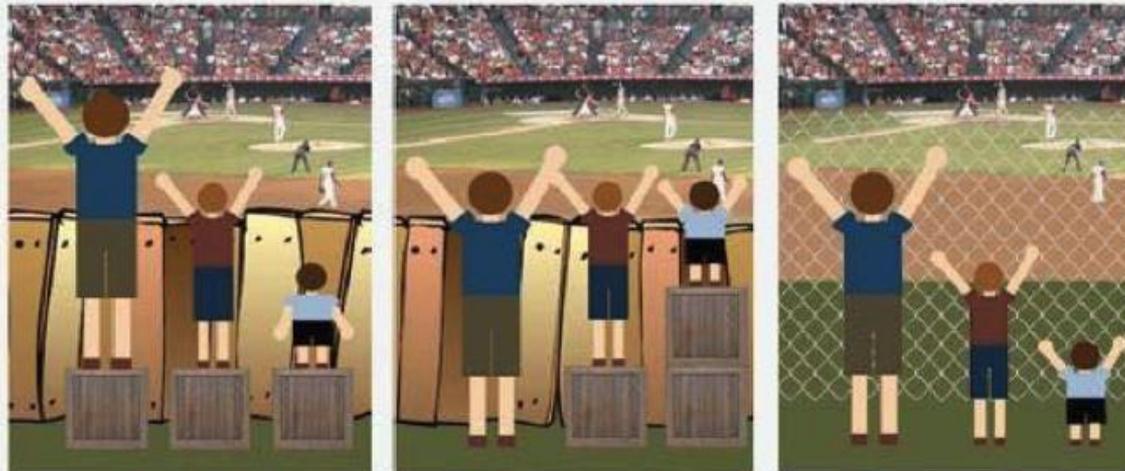
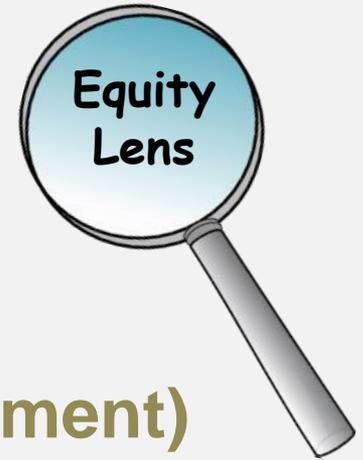


*make every community all it can be*

# The Substance of the Plan

## Social Systems

- Planning with an equity lens
- Equity – diversity – inclusivity
- Environmental justice
- Social infrastructure
- Housing for all (gentrification & displacement)



from “equality” to “equity”

# The Substance of the Plan

## Economic Systems

### Resiliency – Opportunity – Fairness

- ❖ *Deal with both positive & negative changes in economic conditions*
- ❖ *Foster green business & build reliance on local assets (**green, circular, shared economies**)*
- ❖ *Initiate sustainable & equitable development & redevelopment*



# The Substance of the Plan

## Linear Economy versus Circular Economy

### LINEAR ECONOMY



### CIRCULAR ECONOMY

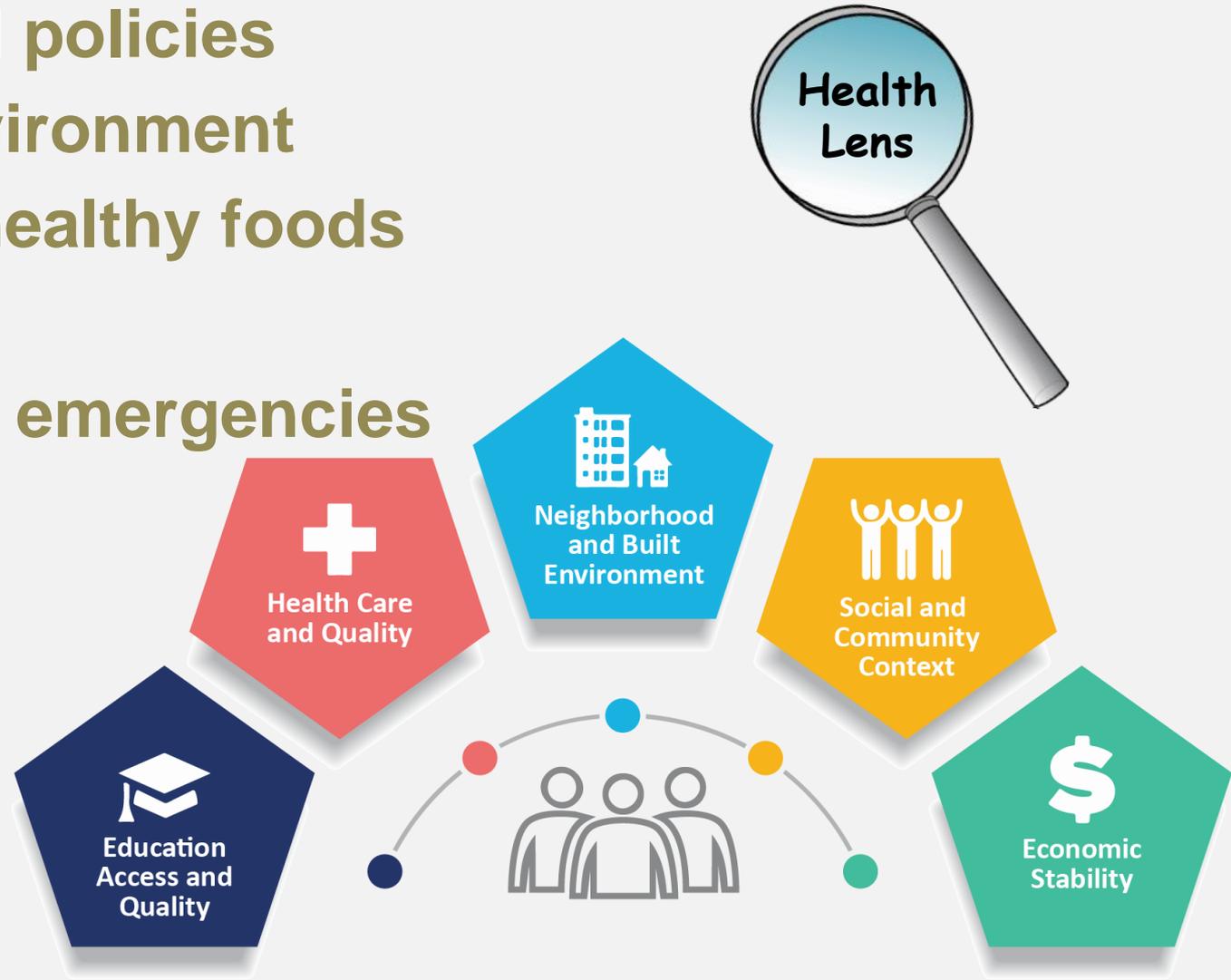


source: Metro Vancouver, BC

# The Substance of the Plan

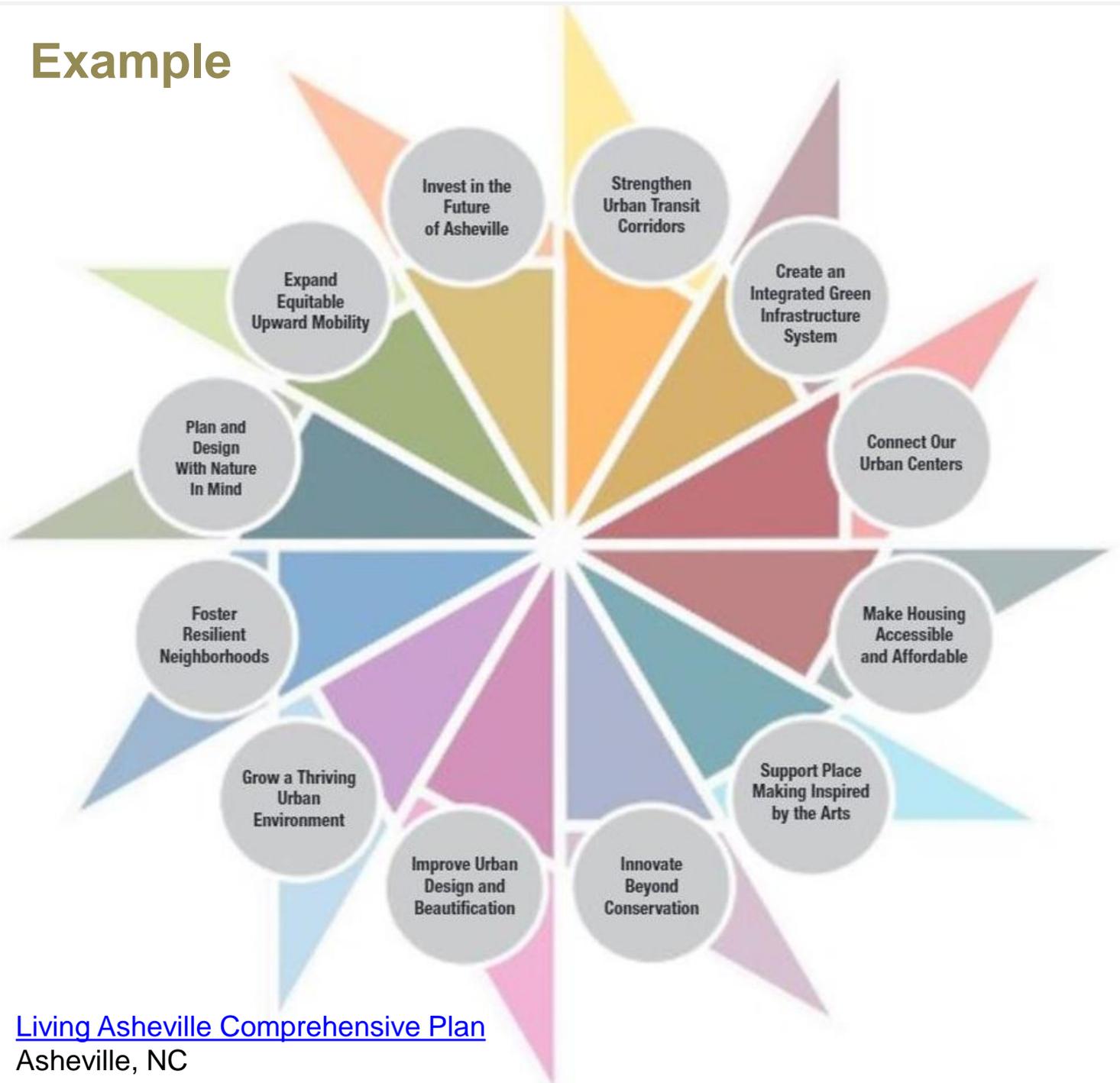
## Healthy Community

- Health in all policies
- Healthy environment
- Access to healthy foods
- Safety
- Disasters & emergencies



# Integrated Systems Planning Living Asheville Guiding Principles

## Example



[Living Asheville Comprehensive Plan](#)  
Asheville, NC

# Integrated Systems Planning Aurora Places Comprehensive Plan

## Example



# Already, Not Yet

## Colorado's Unique Planning Story



### **1970s – Colorado leads, and then retreats**

- 1970 *Land Use Act* (CRS §§ 24-65.101) – passed
- 1974 *Land Use Act* (HB-74 – 1074) – passed  
measure further defines authority of state &  
local governments in making planning decisions  
for matters of “statewide interest”
- 1977 measure to abolish State Land Use Commission  
– failed
- ~1978 *Land Use Act* - repealed  
[reference: §§ 24-65-101 to 24-65-106 (repealed)]

# Already, Not Yet

## Colorado's Unique Planning Story

### 1990s – “voluntary” smart growth

#### Colorado's Smart Growth and Development Initiative

*created by Governor Roy Romer*

*“I don't think we have a choice. We will grow. It's the quality of growth that we have to control.” R. Romer (1994), Pueblo Chieftain*



*The Colorado initiative has “limited power and funding.” R. Steuteville (1998) Public Forum, Congress of New Urbanism*

# Already, Not Yet

## Colorado's Unique Planning Story

### 2000s – efforts to try again

2000 **Colorado Responsible Growth Act** (SB99-211) (Colorado Responsible Growth Initiative Amendment 24 - formerly known as Ballot Initiative 256) – postponed indefinitely

*Definition: Proposed amendment to Colorado Constitution that would restrict growth to dedicated & preplanned growth areas. New growth areas or developments outside of dedicated areas would require vote of the people each November.*

Note: one element did become required for comprehensive plan: *recreation and tourism element*

2006 measure to revise Master Plan legislation – failed (source: APA CO)

2007 measure to change Master Plan statutes to allow counties to treat their comprehensive plans as regulatory – if they so desired – passed (source: APA CO)

# Already, Not Yet

## Colorado's Unique Planning Story

### 2010s – measures to address water in plans

- 2016 measure to change Master Plan Statutes to require a water element – failed (source: APA CO)
- 2017 measure to change Master Plan Statutes to require a water element – failed (source: APA CO)
- 2020 measure to enable linking local Master Plans to Colorado Water Plan – passed

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2022 current status

Colorado Revised Statutes | §§ 30-28-106 & §§ 31-23-206  
Comprehensive Plan

one required element: recreation & tourism



# Planning to Thrive

from incremental to integrated approaches

How to move Colorado forward?  
*incremental & advisory guidance falls short for 21<sup>st</sup> century challenges*

## The “Planning to Thrive” Initiative





# The Planning to Thrive Initiative

- launched in June 2022 – with 9 primary sponsors
- more than 20 groups & organizations participated in a 1-day symposium – sold out
- next steps – evolving into a collaborative partnership
- 2022-2023 focus – updating legislation on “*housing for all*” | lead partner: Conservation Colorado
- 2023-2024 – work on draft bill: *An Act for Equitable, Sustainable, and Resilient Growth*

<https://www.planningtothrivencolorado.com/>





# The Planning to Thrive Initiative

## *An Act for Equitable, Sustainable, and Resilient Growth*

### **draft working content**

- transition existing enabling legislation to become legally binding - for development patterns, mobility, infrastructure facilities & services, recreation & tourism, economic opportunity
- further incorporate environmental restoration, housing for all, climate, water, equity & environmental justice, healthy places
- organizing framework: sustainability, resiliency, equity
- tailored for different subregions of the state - i.e., more provisions for high population, high growth areas; fewer provisions for less populated areas of the state



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