

PIKES PEAK COLORADO REGION URBAN MOUNTAIN INTERFACE

GEODESIGN PROJECT BRIEF

OBJECTIVE

Bringing together academic and community stakeholders, the goal of this workshop is to develop a collective understanding and strategy for the following trends in the Pikes Peak region:

- Increasing population in need of housing and services
- Populations of youth, young professionals and retirees who desire ready access to parks, amenities, and affordable high-density housing
- Equitable access to housing, services and amenities for an increasingly diverse population; resiliency measures
- Effects of climate change, including more frequent intense weather events, aridification / ambient temperature increase, changing forest and shrubland ecology, and increased fire frequency—which may disproportionately affect poor communities of color and/or low income populations.
- At risk populations who lack shelter, access to medical care and education opportunities
- Water supply and water quality issues; stormwater management plans
- Renewable energy and energy efficiency for existing/new buildings
- Maintenance of healthy watersheds: Recreation spaces with equitable access, and public education opportunities within City parks, open spaces, and waterways.
- Increasing urbanization of Colorado Springs, the wildland-urban interface (WUI), and high plains.

BACKGROUND

Current regional planning documents for the Pikes Peak region and Colorado Springs metropolitan area (master plans, strategic plans), were used to identify the trends and challenges (above) to be explored by participants in the May 2019 Geodesign Workshop at Colorado College.

Geodesign is an **iterative and collaborative** approach to city planning and urban environmentalism restoration that employs social, geographic, and scientific information using geospatial and digital tools. It offers a powerful way for community members with diverse viewpoints and incentives to evaluate future trends and find common ground for planning and decision making. It offers much to sprawling cities of the Western USA that are addressing challenges of climate change, water resource limitations, and population growth. El Paso County has consulted a geodesign firm for guidance on planning decisions, and Manitou Springs has employed risk/resilience consultants to aid the town's recovery from fire/flood disasters.

The development of many western cities has been achieved at the expense of natural habitats and biodiversity, with effects upon environment and water quality, and reduced resilience to natural disasters. Colorado Springs is on a trend of increasing population, economic growth, and urban expansion, even as the effects of climate change accrue. Aridification and ecological shifts affect the Front Range, increasing the likelihood of forest fire, even as we experience more frequent extreme precipitation events that lead to flood damage.

For Colorado Springs, land use changes (increased need for housing) and the diminished function of watersheds are of particular concern because impaired waterways may focus the effects of weather extremes, and fire / flood hazards. They present immediate opportunities for geodesign because, if restored and well maintained, the waterways can provide green space and parks that promote human health and wellbeing, while aiding efforts to improve surface water quality.

SYSTEMS

This project has the following systems that pertain to the urban setting and workshop objectives:

1. **Green Infrastructure (GI)**
2. **Blue Infrastructure (BI)**
3. **Energy Infrastructure (EI)**
4. **Low Density Housing (LDH)**
5. **Medium/High Density Housing (MHH)**
6. **Affordable Housing (AH)**
7. **Elderly Housing (EH)**
8. **Transport (TRAN)**
9. **Active Transport (ATRS)**
10. **Mixed Use [commercial/residential] (MIX)**

STUDY AREA

Colorado Springs is situated at the Rocky Mountain front, spanning the boundary between High Plains and mountain ecosystems. It is situated at the confluence of Monument Creek, with headwaters in the Rampart Range (upon U.S. Air Force Academy property), and Fountain Creek, with headwaters on the north side of Pikes Peak. The region's urban development has impacted mountain and plains environments, regional watersheds, local agriculture, and biodiversity. Colorado Springs is on a trend of increasing population, economic growth, and urban expansion, even aridification and ecological shifts occur. Fire risk is exacerbated by climate warming trends and increasing water demands of the human population.

CONSTRAINTS

The current projections for rapid population growth, including millennials and the elderly, will require the allocation of at least 1200 acres of new housing development by 2035, with associated need for infrastructure and recreational open

space. The land and resource allocations are constrained by the large tracts of federal land, including military bases, that exist around the periphery of Colorado Springs. City parks and open spaces are distributed throughout the City and are heavily utilized. Urban heat island effect is in evidence and increasing in Colorado Springs, with the southwestern sector disproportionately affected. The city's water system is already strained, necessitating the construction of the Southern Water Delivery System, and is vulnerable to the effects of climate change. Colorado Springs is committed to stormwater management improvements, in accordance with obligations to downstream users, under the 2016 Clean Water Act MS4 permit.

DESIGN TARGETS

Targets for change, to be addressed in the collaborative design process, are:

- Undeveloped/underutilized spaces that may provide affordable high-density housing adjacent to public open spaces and trails
- Impermeable surfaces that contribute to urban island heat effect, speed stormwater runoff, and impair water quality
- Underutilized buildings that may serve at-risk populations who lack shelter, access to medical care and education opportunities
- Re-zoning to allow development in areas which are underutilized or have seen shifts in their primary use or function
- Restoration of watershed riparian zones that may aid in improvements to surface water quality and fulfillment of stormwater management obligations
- Increase in public transportation options, to serve sites of new high density housing for young professionals and elderly. Greater availability of public transportation to reduce congestion and improve air quality
- Renewable energy: Solar and wind power installations to serve areas of new housing. Energy efficiency for existing/new buildings.
- Restoration and maintenance of healthy watersheds, which equate to recreation spaces with equitable access.
- Public education opportunities within City parks, open spaces, and waterways
- Inclusion and access for marginalized groups such as people with disabilities and non-English speakers

CODE OF CONDUCT

All participants and contributors are subject to a [CODE OF CONDUCT](#) which is enforced by your project administrators.

ON-LINE RESOURCES RELATING TO PIKES PEAK REGION URBAN DEVELOPMENT

Highlighted terms are hyperlinked.

City of Colorado Springs [2016-2020 Strategic Plan](#).

City of Colorado Springs Parks, Recreation, and Cultural Services [2016 Master Plan](#)

Colorado Springs Water Resources Engineering Division [2016 Annual Report](#). (the most recent that is available)

City of Colorado Springs Water Resources Engineering [homepage](#).

Colorado Springs [MS4 permit](#). (Municipal Storm Water Sewer permit)

City of Colorado Springs [OpenDataCOS](#).

[ManitouSprings Master Plan](#) and [planning guides](#).

Peak Region Vision Plan: [Looking to our Future -- Pikes Peak Region 2030](#), by Peak Alliance for a Sustainable Future

[Upper Monument Creek Landscape Restoration Initiative](#).

[Colorado College Master Plan](#)

Colorado College [State of Sustainability Report](#)

Colorado College [Robson Arena Schematic Design Narrative](#) (4/15/2019)

Denver area: [Land Use and Water Planning StoryMap](#).