

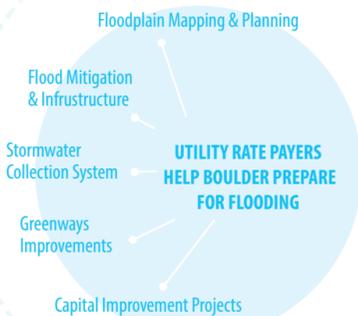
# PLANNING

Boulder is **#1** the number one flash flood risk in Colorado.

**IN 1973** The city created a utility specific to stormwater and flood management.

**COMMUNITY RATING SYSTEM (CRS)**  
The federal CRS provides flood insurance discounts to communities that exceed the minimum requirements to prevent and reduce flood damage to insurable property. The city's efforts have earned discounted flood insurance rates for Boulder property owners.

Since 1997, the City of Boulder has spent more than \$44.8 million on flood mitigation projects.



**UP TO 25% OFF FLOOD INSURANCE**

**FLOODPLAIN REGULATIONS**  
The city regulates development in flood-prone areas to protect community safety, prevent property damage, and maintain essential services.

**THE FATHER OF FLOODPLAIN MANAGEMENT**  
Gilbert F. White lived in Boulder, was a Geography Professor at CU, and helped guide the city's flood mitigation efforts.

During the flood, public infrastructure (like underpasses) effectively transported floodwaters through Boulder.

**PUBLIC SAFETY & PREPAREDNESS**  
The Boulder Office of Emergency Management and the Urban Drainage and Flood Control District helped Boulder install flood sirens to alert the public of major emergencies.

**COMMUNITY EDUCATION HELPS TEACH PEOPLE TO**

- PLAN AHEAD
- STAY INFORMED
- BE PREPARED

Hundreds of people signed up for emergency alerts before Sept. 11, 2013.

**DRAINAGEWAYS INFRASTRUCTURE**  
• Natural and man-made features guide floodwaters through 15 major drainageways.  
• Drop structures moderate elevation changes to reduce water velocity.

**STORM DRAINS**  
About 150 miles of storm drain pipe and 4,800 catch basins collect surface water and deliver it to creeks.

**STREETS & PATHS**  
Streets, paths and underpasses convey water flows through Boulder and away from properties and critical facilities.

**GREENWAYS PROGRAM**  
In 1984 The city created the Greenways Program that combines recreational paths with flood mitigation and storm drainage improvements along Boulder's 15 major drainageways.

# RESPONSE

Unprecedented rainfall caused significant flooding and extensive damage to private property and public infrastructure.

**SEPTEMBER 2012 TOTAL RAINFALL** 3"

**SEPTEMBER 2013 TOTAL RAINFALL** 17"

**AVERAGE RAINFALL 1894-2012** 19"

The city's Wastewater Treatment Facility maintained operations through the flood and treated record volumes, despite being temporarily cut-off by floodwaters.



**Emergency Operations Center**

The Emergency Operations Center was staffed 24/7 during active response.



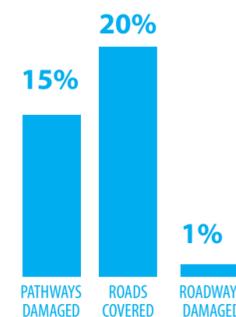
The Boulder Municipal Airport served as a hub for rescue operations, including the aerial evacuation of more than 1,200 Boulder County residents (the most people airlifted since Hurricane Katrina).

**12** MILLION GALLONS OF WASTEWATER ARE TREATED ON AN AVERAGE DAY.

**50** MILLION GALLONS OF WASTEWATER, FLOODWATER AND GROUNDWATER WERE TREATED DURING THE PEAK OF THE FLOOD.

**8 DAYS OF RAIN**  
1 YEAR'S WORTH OF WATER

All 15 major creeks and 23 irrigation ditches flooded and overwhelmed city storm drainage and sanitary sewer systems.



**8,000** PHONE NUMBERS RECEIVED ORDERS TO EVACUATE TO HIGHER GROUND.

**34%** OF CITY PARKS SIGNIFICANTLY DAMAGED

**100%** OF OPEN SPACE TRAILS DAMAGED

# RECOVERY

**RESTORE CORE SERVICES & INFRASTRUCTURE**

Though work continues today, by the spring of 2014 the following had been achieved:



**Disaster Assistance Center** Open for just over a month and served: **2,773 individuals** and **1,194 households**

**DAMAGE TO BUILDINGS**  
**335 City Projects** Flood-related projects planned, underway or completed.

**\$27.3 million** Estimated total cost for City of Boulder flood recovery.

**\$14.4 million** Potential reimbursement from state and federal agencies.

**\$300 MILLION** PRIVATE PROPERTY DAMAGES

**\$27 MILLION** MUNICIPAL PROPERTY DAMAGES

**14%** or 6,000 Boulder households were damaged by flooding.

**1,700** Volunteers Worked  
**7,100** Hours

**Groundwater/Water Table**  
Groundwater levels throughout Boulder remain elevated even a year after the flood.

**46,000 CUBIC YARDS OF SEDIMENT REMOVED FROM CREEKS**

**11,893 TONS OF TRASH COLLECTED**

**85 CREEK STRUCTURES REPAIRED**

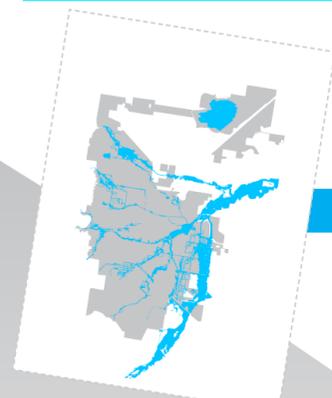


**HELP PEOPLE GET ASSISTANCE**

Provide customer services and resources to support residents and businesses with flood recovery.

- City to help meet affected residents' basic needs.
- Host informational public meetings and open houses.
- Provide dedicated phone, email and online resources.
- Waive fees for flood-repair permits through March 1, 2015.
- Neighborhood "meeting-in-a-box" kits for recovery and preparedness.
- Assist with permits for repair and restoration of flood-damaged properties.
- Identify and permit flood protection measures for private properties.

**"Build back better"** - City Manager Jane Brautigam



# RESILIENCE

**Learn Together & Plan for the Future**



Resilience isn't just about flood protection, it's about being prepared for natural or man-made disaster our community could face, such as floods, wildfires, drought, economic downturns or aging infrastructure. Boulder must be able to maintain essential functions and recover quickly and effectively.

**June 2012** The Flagstaff Fire burned 300 acres and forced mandatory evacuations, but the blaze was contained before Boulder properties were damaged.

**Sept. 2013** The unprecedented flooding left Boulder damaged but not destroyed, and the community quickly bounced back from this disaster.

**100 Resilient Cities Initiative, a special project of Rockefeller**

- 1 Diagnose risks and opportunities.
- 2 Identify and work with partner organizations and neighborhoods.
- 3 Identify projects and initiatives.
- 4 Implement resilience road maps, including redesign options.
- 5 Continually assess to improve resilience and strengthen community connections.

Supporting a sustainable energy future is one way the city is becoming more resilient.