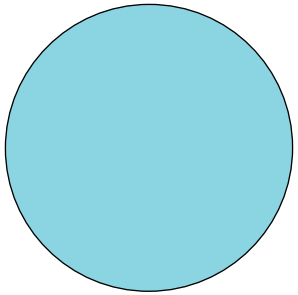
CONNECT THE DOTS

MAPPING THE HIGHWATER HAZARDS AND HISTORY OF BOULDER CREEK

Mary Miss
2007
Boulder Museum of Contemporary Art,
'Weather Report: Art and Climate Change'

The process of focusing on an ephemeral event outside memory or experience produces an alternative kind of map of the city. Rather than claiming property or territory, it uses the infrastructure of the city–its bridges, stairs, streets and buildings–to create a three dimensional map which makes apparent the ever changing presence of water. Instead of an abstraction, it is a mapping that makes apparent the constancy of change.

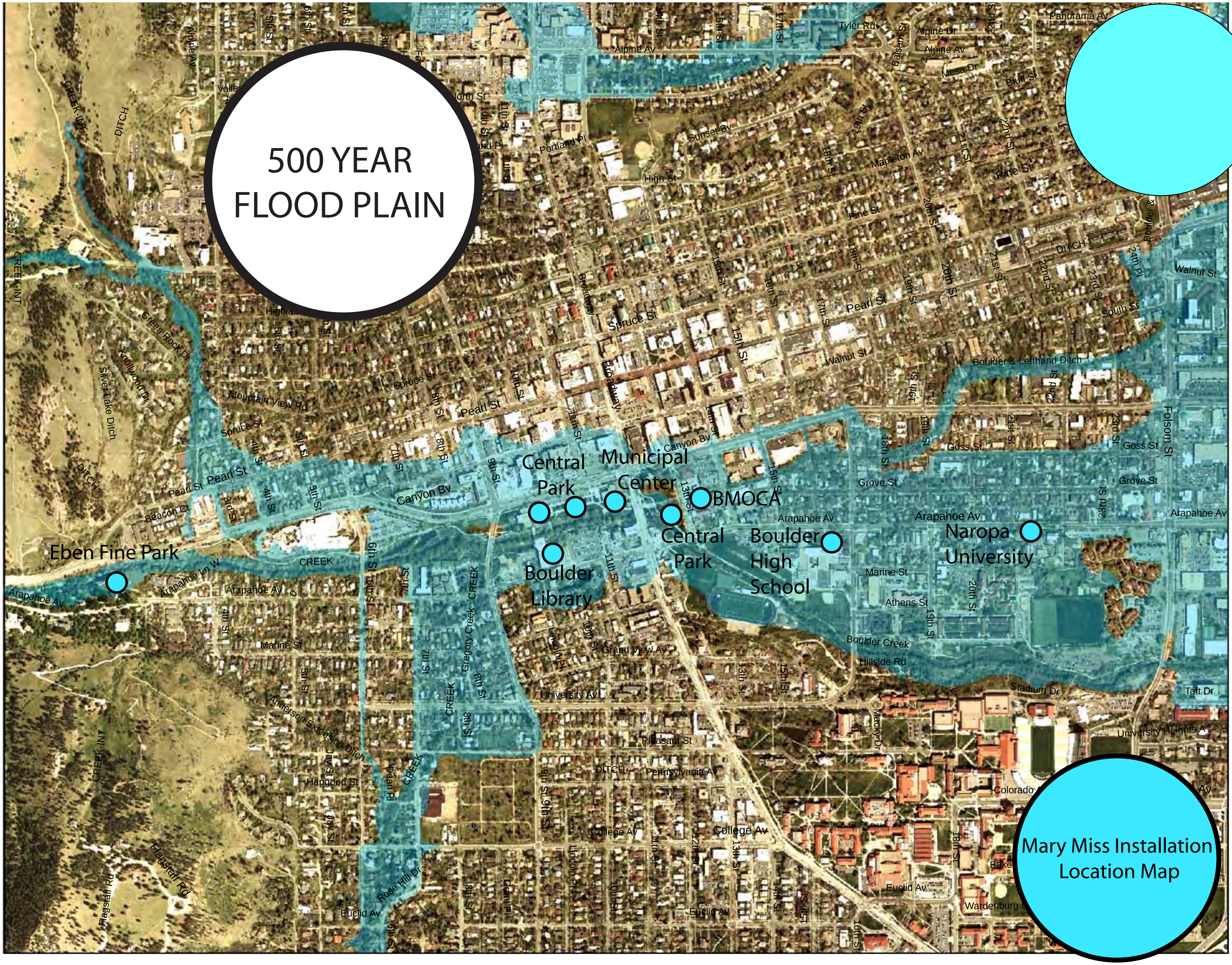
This project is intended to bring attention to the possible flooding of Boulder Creek. It suggests some of the issues to be considered and how this information might be revealed. A fully implemented project would deal with these points and others in detail; it would be an ongoing collection of information involving experts in the field as well as the observations of the residents of Boulder

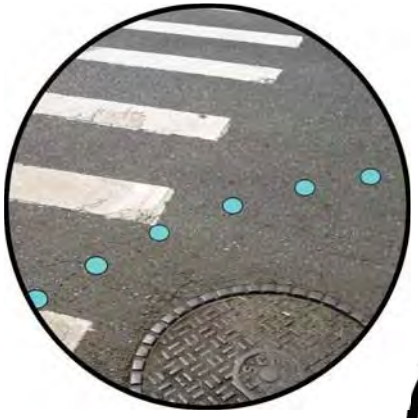


In the spring of 1894, a 100 year flood event occurred in downtown Boulder. Flash floods in Boulder Creek caused widespread damage as the city was inundated. Smaller floods have occurred in 1914, 1919, 1921, 1938 and 1969.

The 100 year flood is used by FEMA to regulate flood plain management. **Many experts believe it would be prudent for communities to be prepared for a 500 year flood event.** A 100 year flood has 1% chance of occurring in any given year, a 500 year flood has a .2% chance of occurring. It is possible for two or more such events to occur in a single year. New weather patterns make the forecasting of such events less predictable: Hurricane Katrina had a .25% chance of occurring.

The city of Boulder is located at the mouth of Boulder Canyon. Because of its location, the nature of the steep slopes and long approach upstream the city is highly susceptible to flooding. The city is considered to be a high hazard zone where the question is not if there will be a flood but when will it happen.


500 YEAR
FLOOD PLAIN
Mary Miss Installation
Location Map
Eben Fine Park
Central
Park
Municipal
Center
BMOCA
Central
Park
Boulder
Library
Boulder
High
School
Naropa
University



THE PROJECT

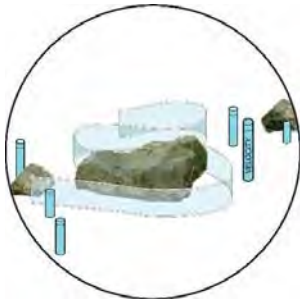
How can the imagination be provoked to envision an event outside our daily experience? How can the predicted flooding of Boulder Creek be made tangible to the residents of this city?

Downtown Boulder, from Eben G. Fine Park to Folsom Street, is the focus of this project. A series of modest scale elements will be integrated into the fabric of the city to help residents better understand the nature of floods. As residents go about their daily lives, they will come across fragments of information which, over time, will give them a clearer sense of their relationship to this aspect of their immediate environment.

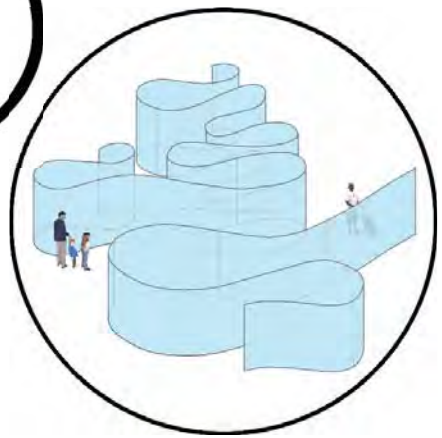
A three-dimensional mapping of the 500 year floodwaters' predicted depth and extent is marked with circular blue discs:

- Along Boulder Creek, blue circular markers are attached to trees and fences to show the height of the water during a 500-year flood.
- Various buildings in the floodplain such as the Library, Boulder High School and Municipal Building also have highwater marks.
- Large boulders that were moved by pre-historic floods are marked with blue dots.
- Blue dots marking the 500 year floodplain limit are painted on the side walks and streets at key intersections.
- GIS (Geographic Information Systems) is used to reveal detailed information about the watershed, Boulder Creek, its potential floods and its history. Data could be updated as needed.

Looking from one point to the next, connecting the dots, the level and extent of a flood is no longer abstract.



These are studies which have not been implemented



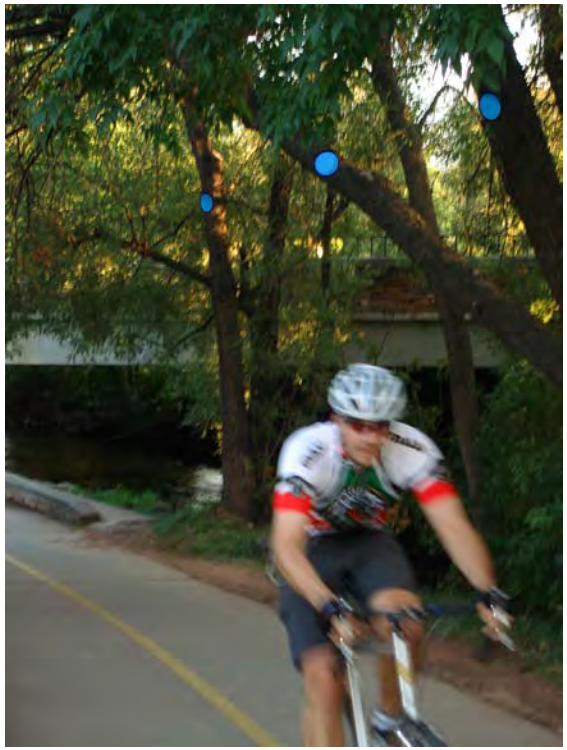
STUDY PROJECT

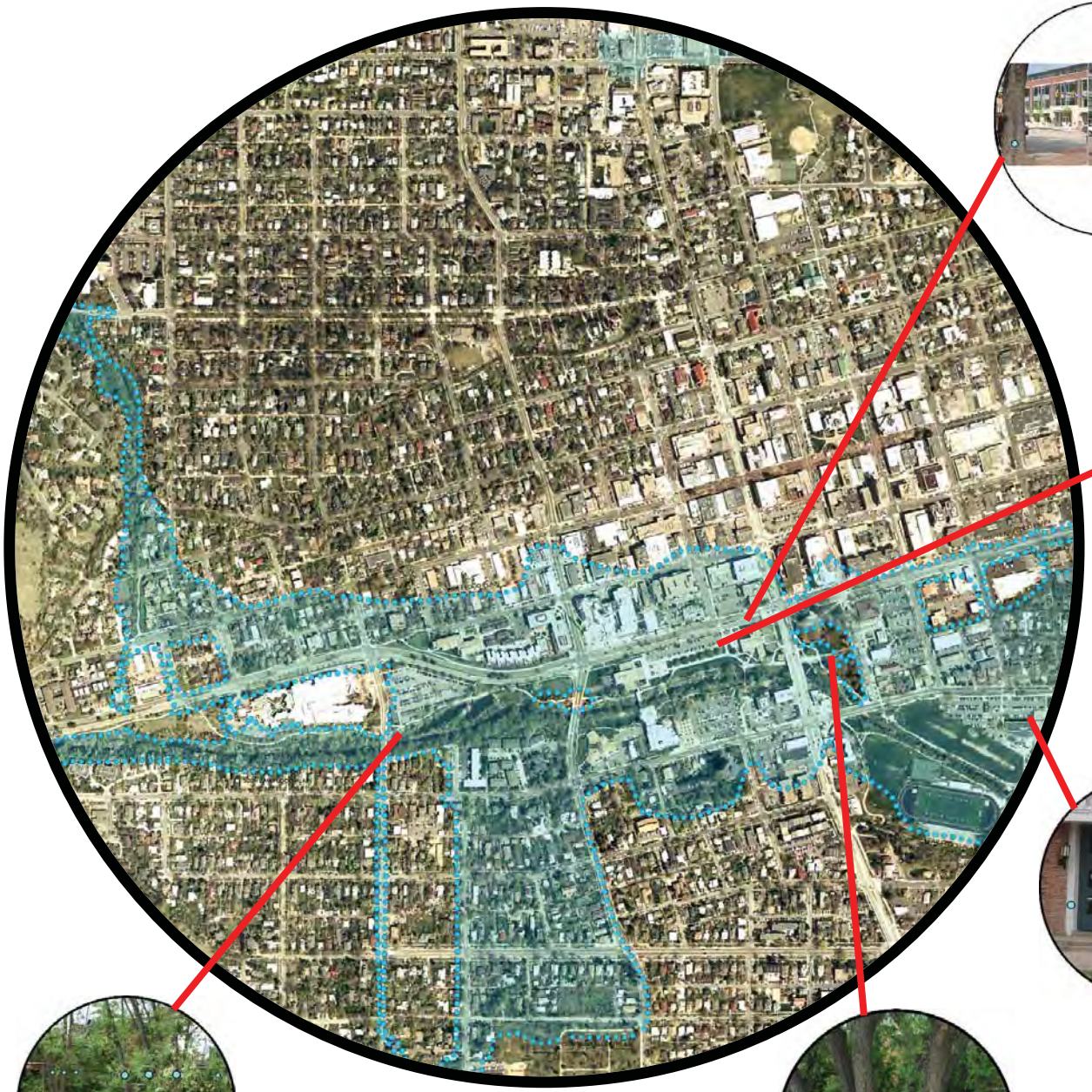
To more fully reveal the nature, characteristics, and history of Boulder Creek's floods, an additional series of elements are proposed:

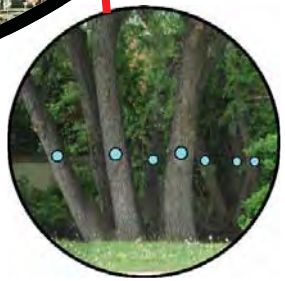
- A series of seating areas are created adjacent to the creek, each focusing on a single aspect of the creek. Highwater alert signal lights are located at each seating area.
- Water gauges are placed on an abutment of each bridge to show historic flood levels and predicted flood water depths for each location.
- Steps and stairs along the creek are marked to show seasonal changes in the water level.
- GIS might be made accessible to the public at a dedicated computer station in the Boulder Library. Residents, having been made aware of the different aspects of highwater, could come here for more information. Videos of previous floods, photographs, written descriptions, audio recordings about Boulder Creek by a politician, a poet or hydrologist could be made available here.
- Wall of water: a nine foot high undulating wire mesh fence gives a suggestion of the condition created by a "flash flood".


HIGH SCHOOL
1604


1000
CANYON GALLERY

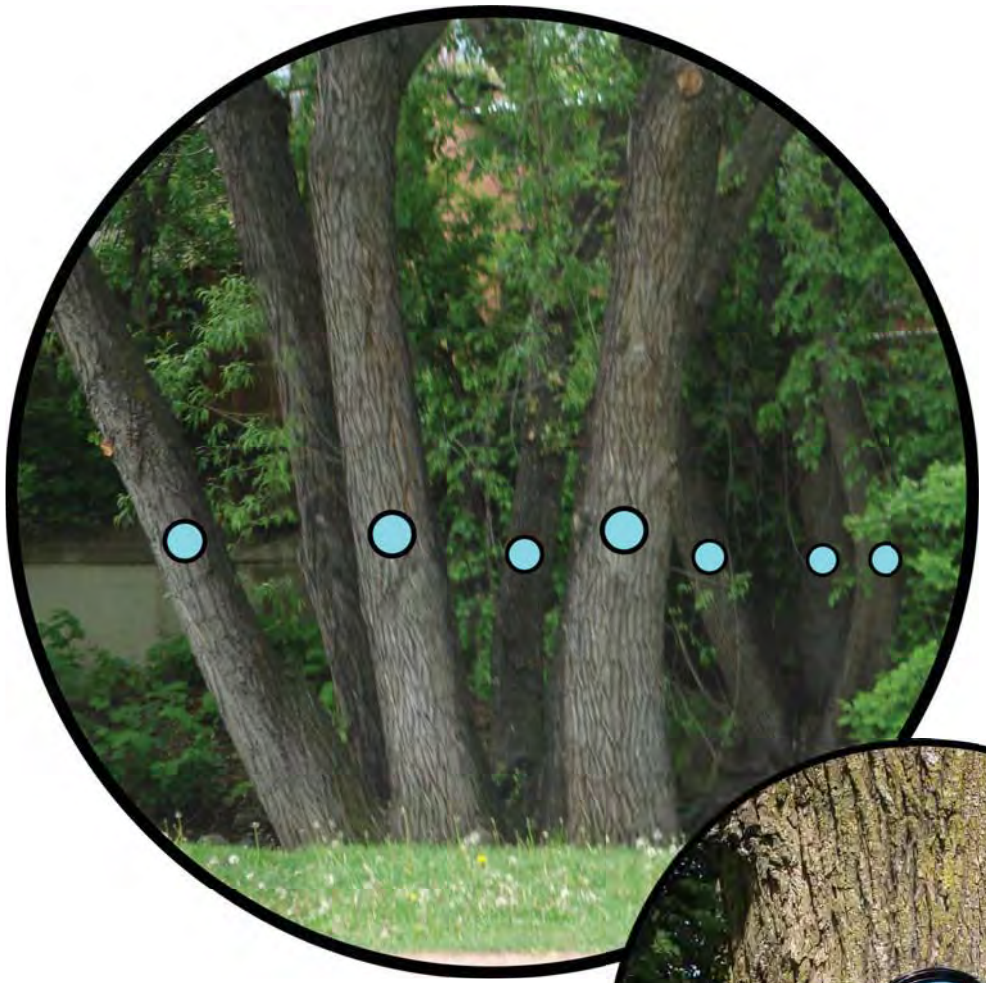






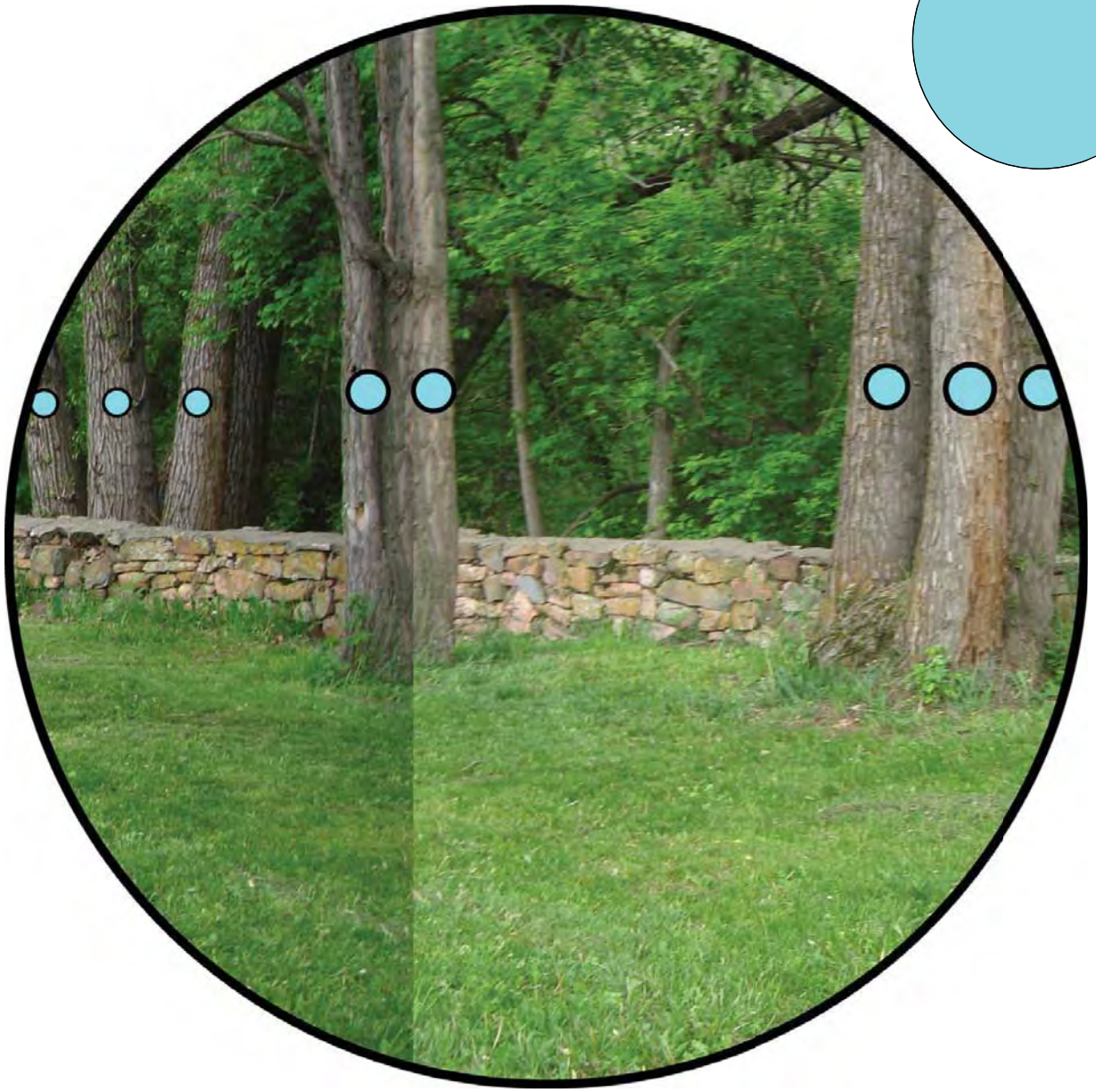
Following are a series of collaged images showing the estimated height and extent of the 500 year flood. Only a few of these have been completed for the exhibition

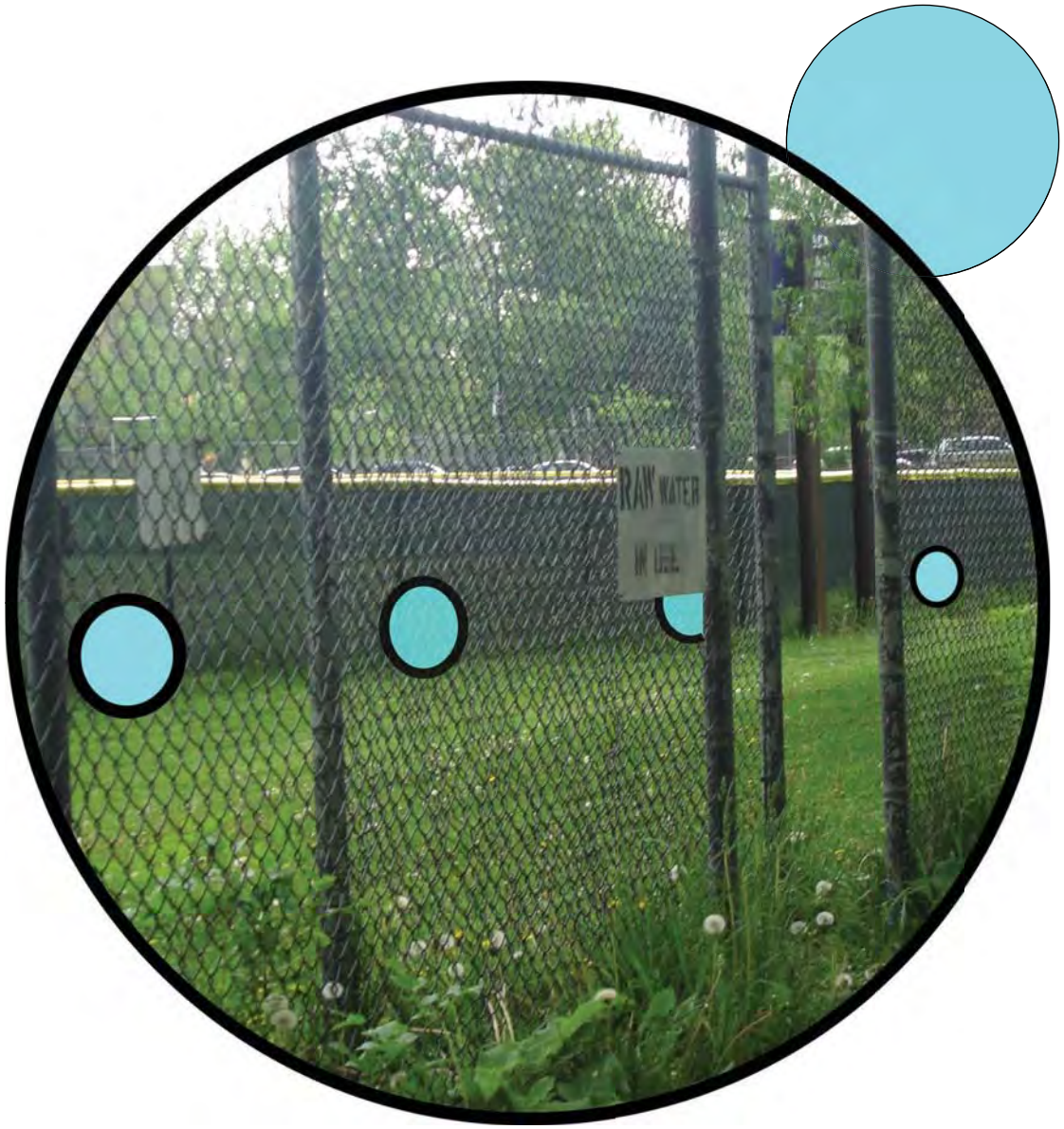
THE PROJECT



TREES, FENCES, PARKING LOTS MARKED TO SHOW HIGH WATER LEVEL

The positions of the dots are approximate and are based on our best interpretation of flood maps and flood plain profiles provided by FEMA and the city of Boulder




RAIN WATER

MARRIED STUDENT HOUSING

BROADWAY AND CANYON INTERSECTION

Naropa University

The dots shown here are schematic and indicate approx-imate locations

KEY BUILDINGS MARKED TO SHOW 500 YR FLOOD PLAIN

Boulder Museum of Contemporary Art

Boulder High School

Boulder Public Library

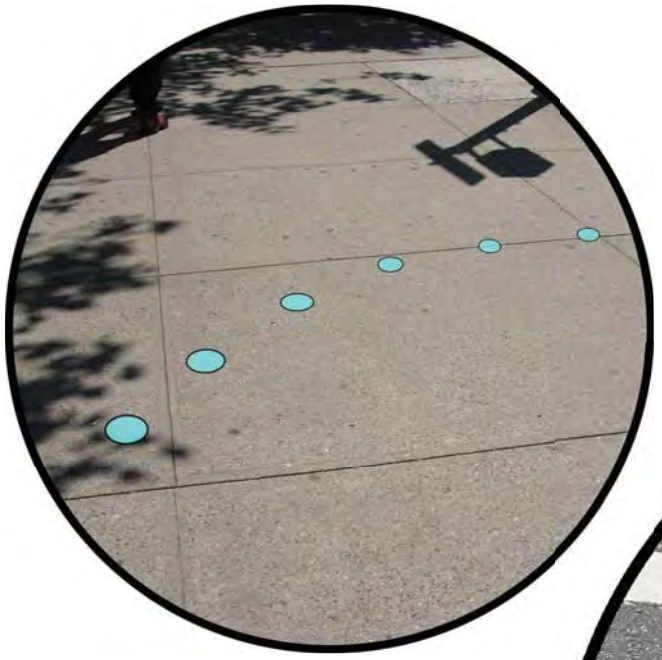
Historic Highland Building

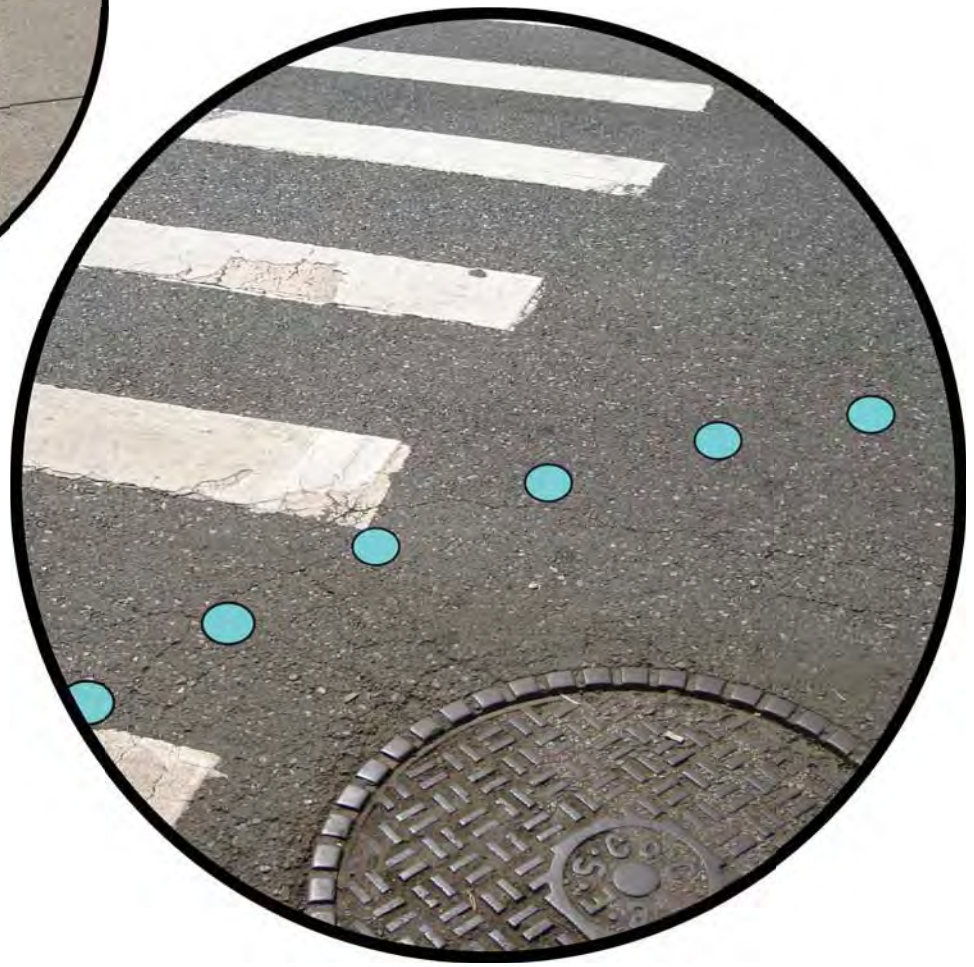
One Boulder Plaza

Boulder County Municipal Building

Boulder Municipal Center

STREETS AND SIDEWALKS MARKED TO SHOW 500 YR FLOOD PLAIN



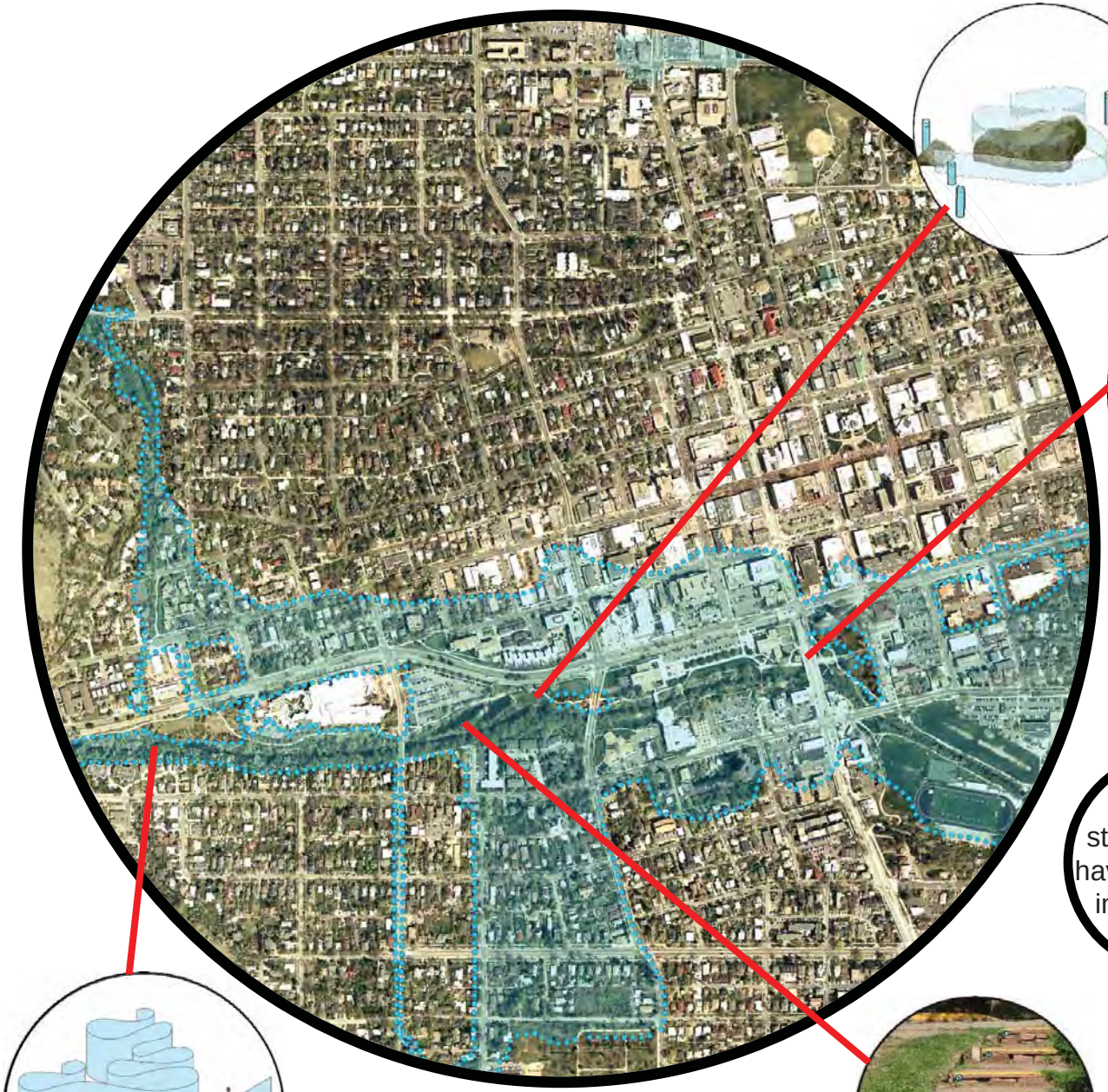


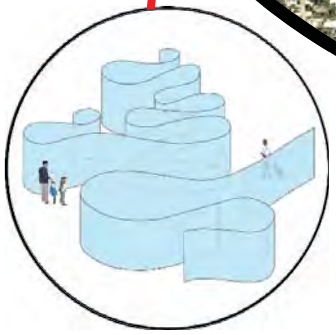
Boulders over 6ft across near the Justice Center were used to calculate the floods necessary to move them. University of Coloradogeology professor Bill Bradley(ret.) and former graduate student Art Mears calculated that they were moved by discharges and velocities within the estimated range of the 500-year flood

BOULDERS MOVED BY PRE-HISTORIC FLOODWATERS MARKED

GIS mapping is used to reveal detailed information about the Boulder Creek watershed, its potential to flood, and its history

A preliminary version will be available during the exhibit on the website www.marymiss.com (news)





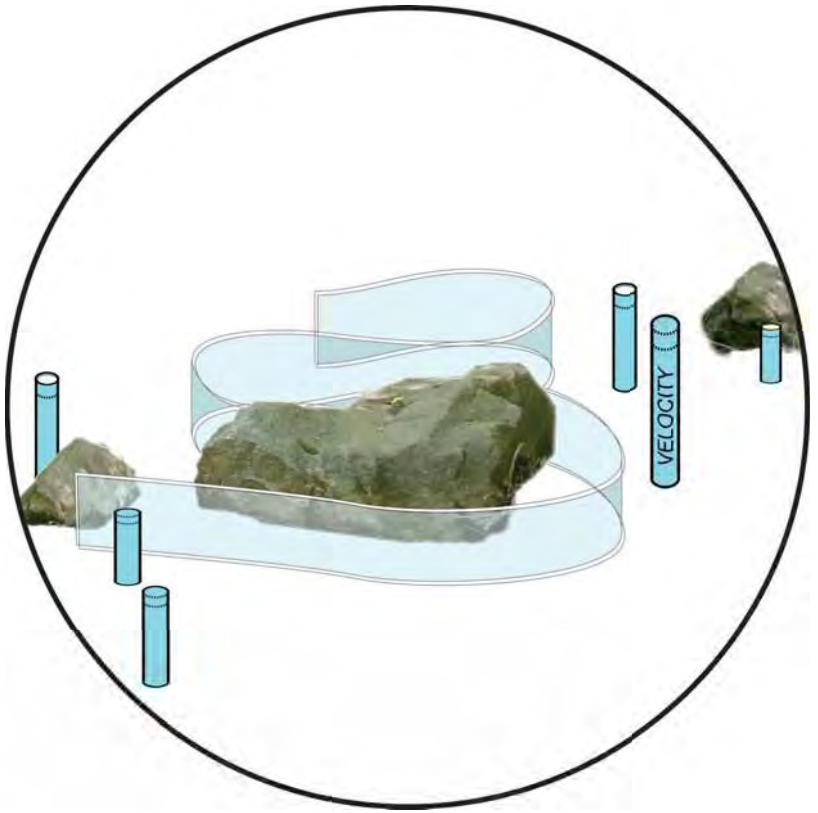
To more fully reveal the nature, characteristics and history of Boulder Creek floods ideas for an additional series of elements are proposed.

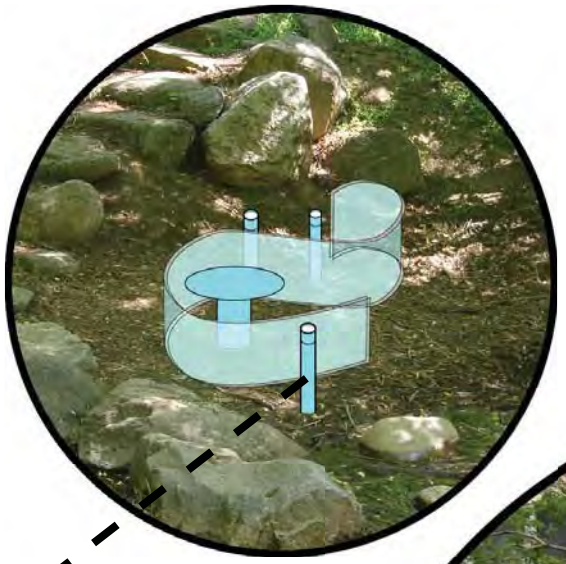
These are studies which have not been implemented

STUDY PROJECTS

A SERIES OF SEATING AREAS ADJACENT TO CREEK, EACH FOCUSING ON A SINGLE ASPECT OF FLOODING

TIME, VELOCITY, VOLUME, DISCHARGE, SPACE (WIDE & NARROW), SURFACE PERMEABILITY (HIGH & LOW), GLOBAL WARMING, TRIBUTARIES, WATERSHEDS



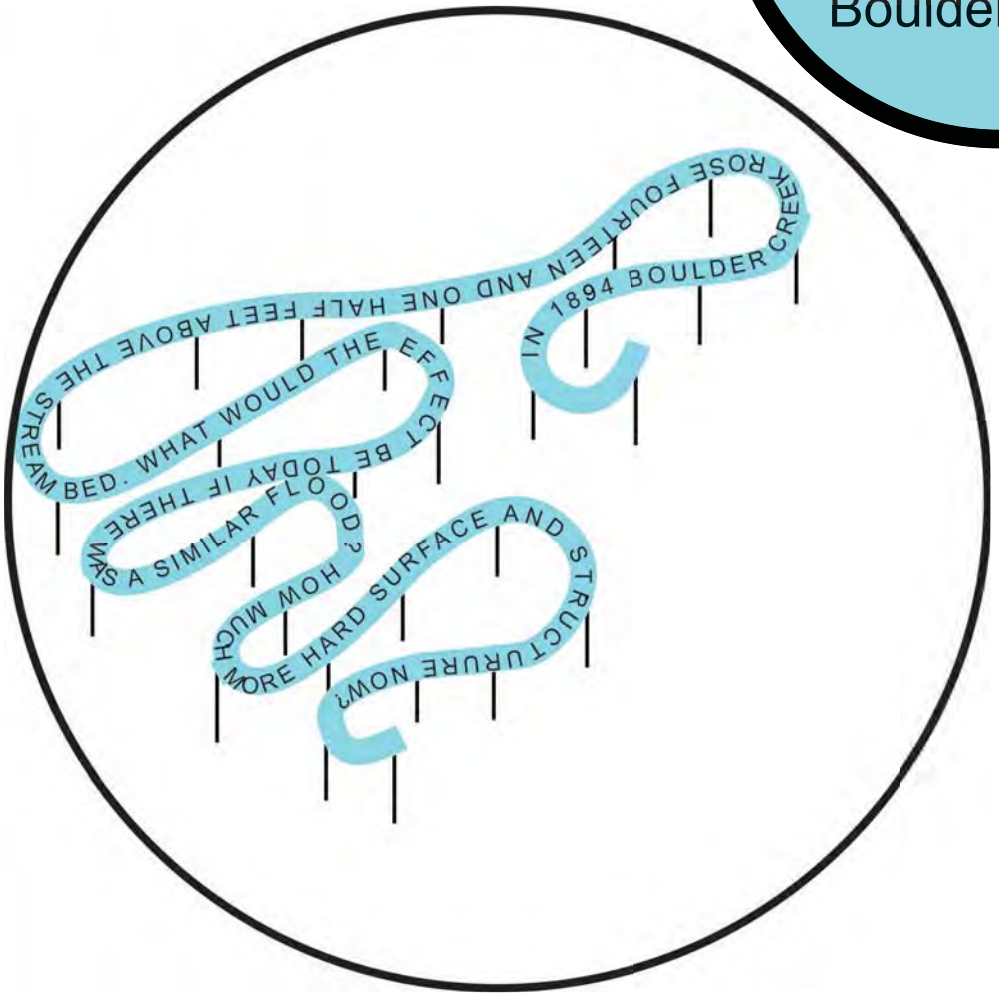


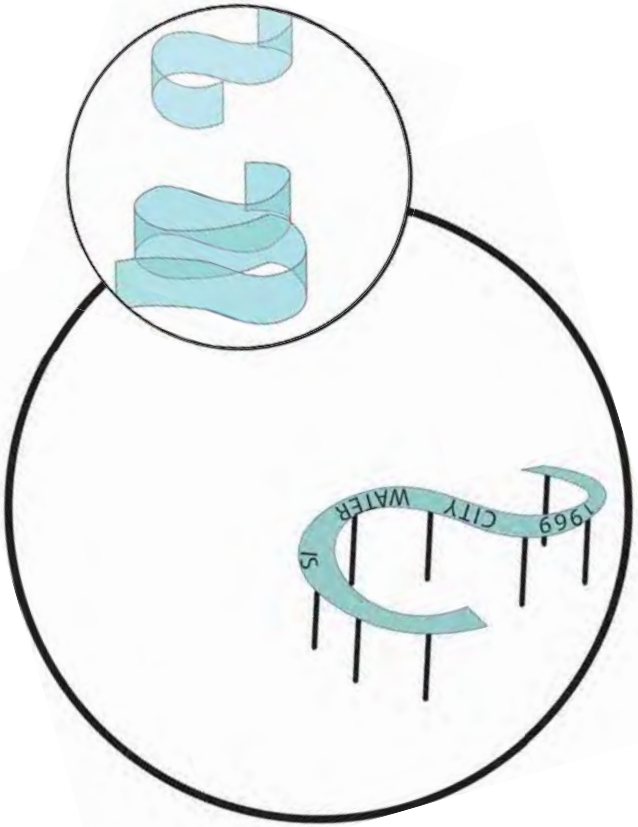
Audio descriptions of Boulder Creek

HIGH WATER ALERT SIGNAL LIGHTS AT SEATING AREA ALONG CREEK

Maps and Photographs

Seating areas of curving 12” bands of steel give information about Boulder Creek

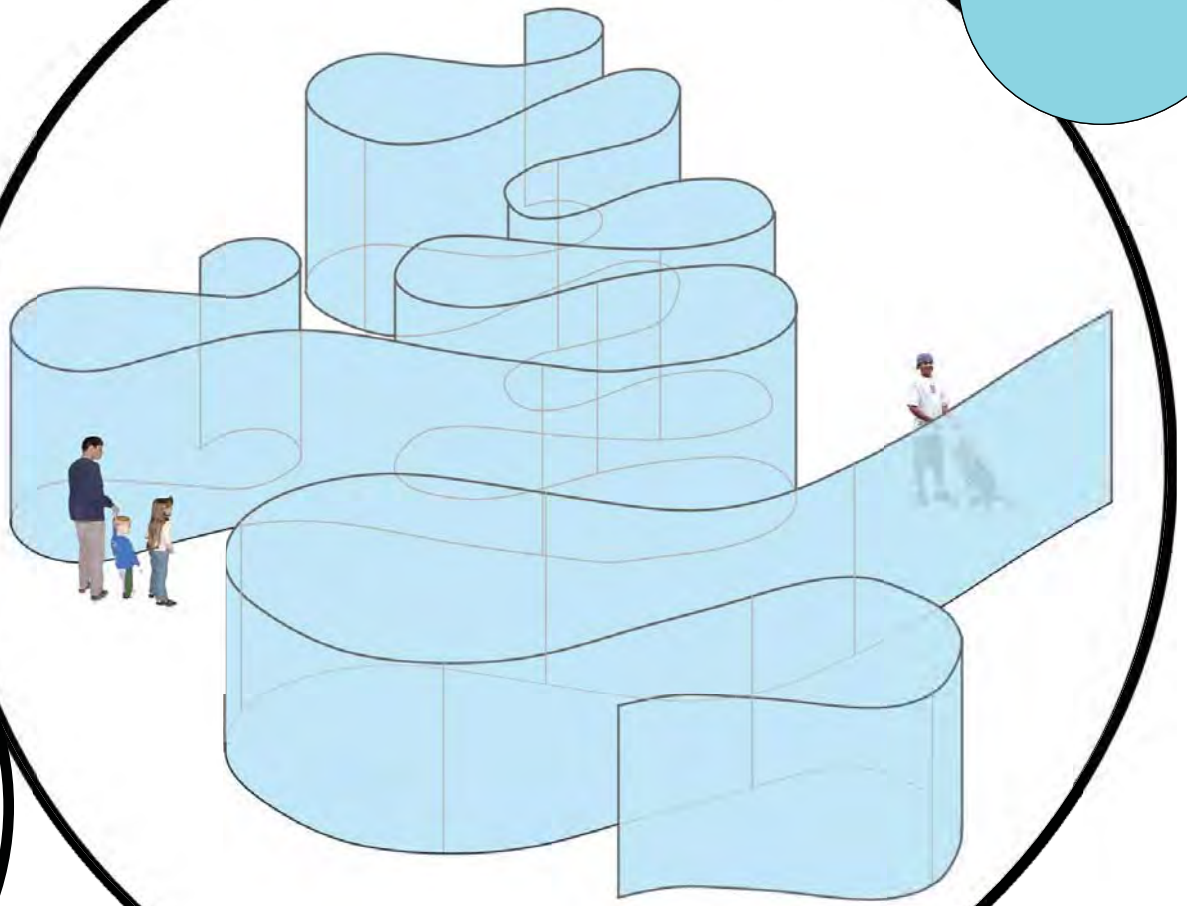




Paved surfaces prevent rain and snow melt form percolating into the ground, causing large volumes of water to enter streams rapidly

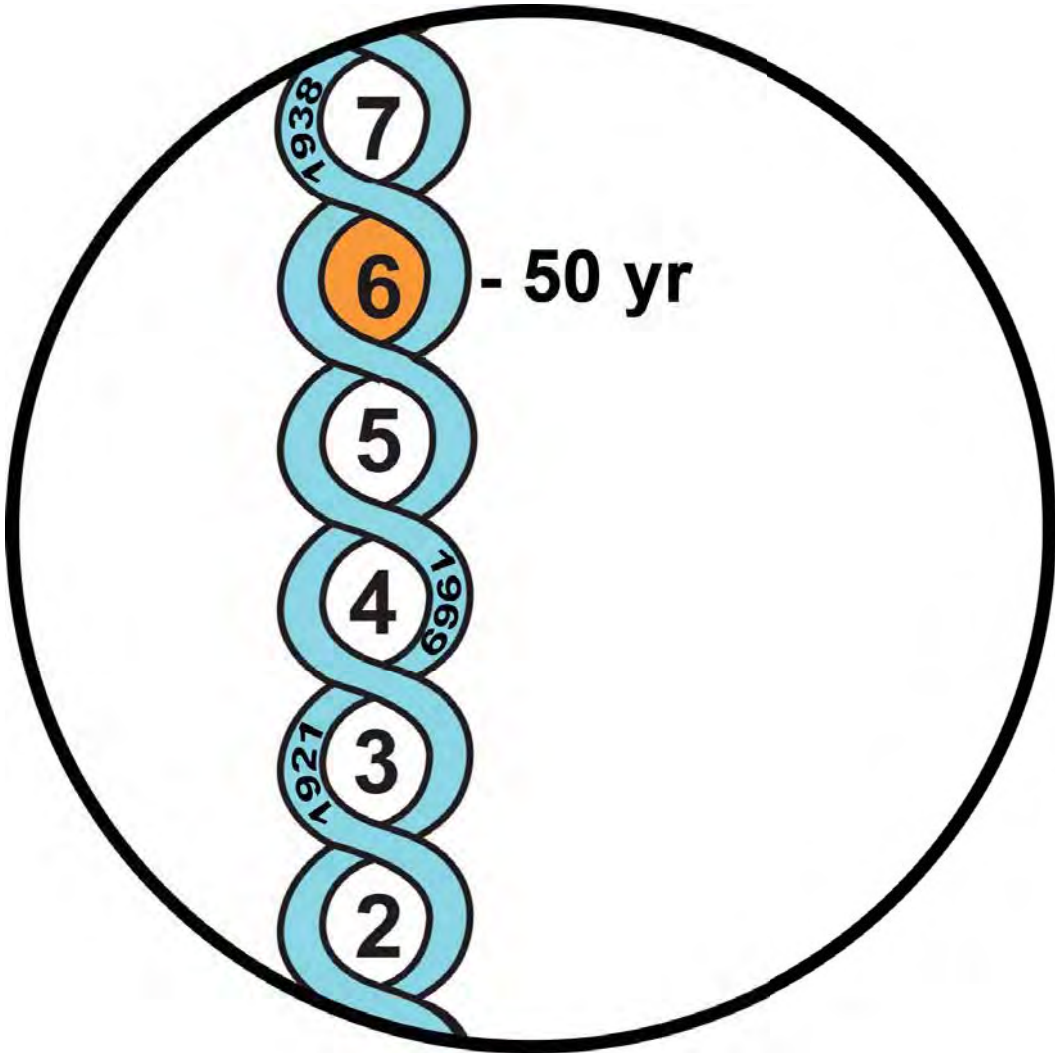
Heavy thunderstorms can saturate the soils and cause intense runoff. This will sometimes result in a large volume of water accumulating in a short period of time, creating a wall of water that could range from a few feet high to ten feet or higher.

A nine foot high undulating steel mesh fence gives the viewer a sense of the proportion of such an event.



WALL OF WATER

BRIDGE WATER GAUGES INDICATE POSSIBLE WATER DEPTH AND SHOW HISTORIC FLOOD LEVELS

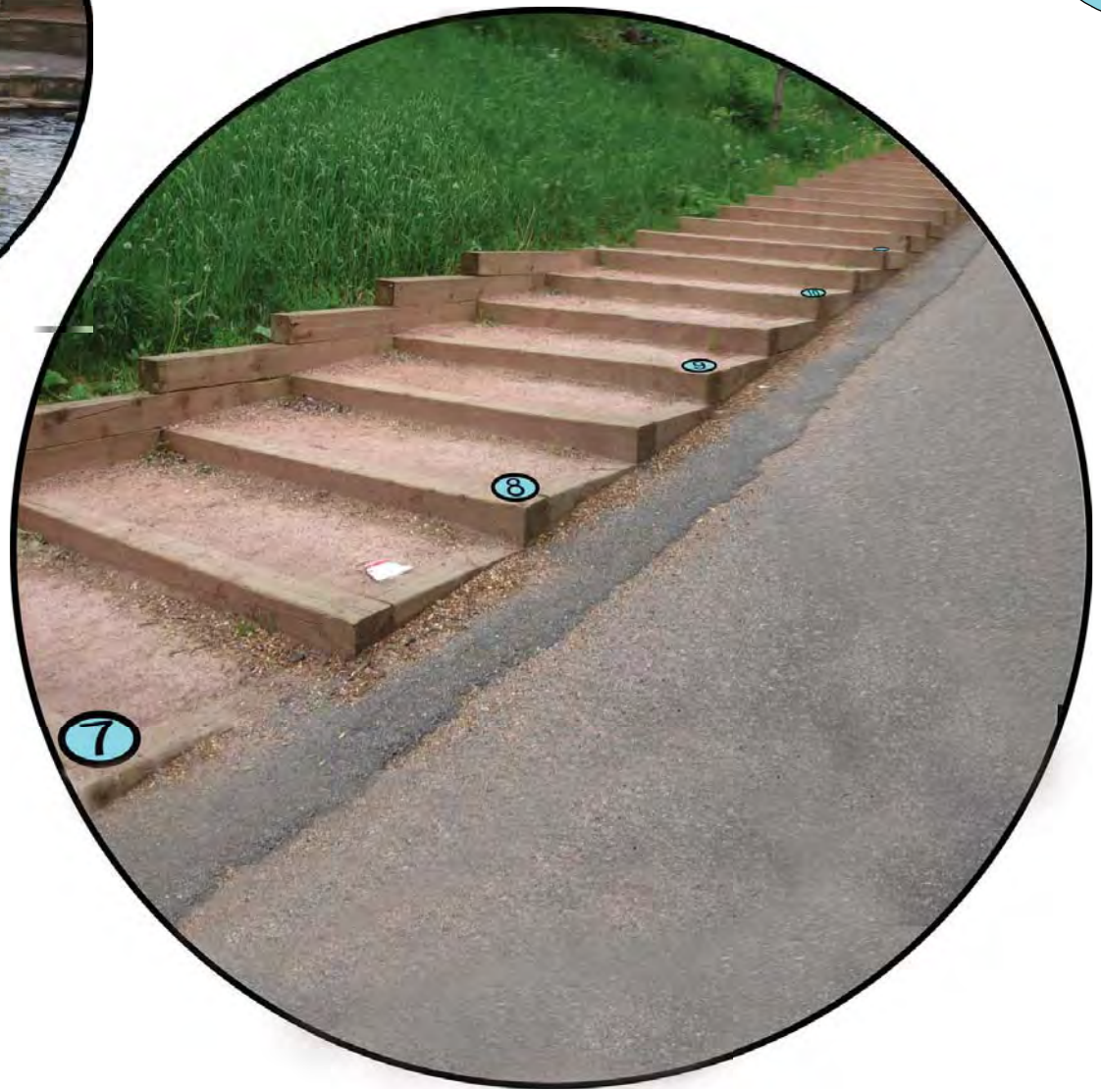


F L O O D WATERS WILL BE AT DIFFERENT LEVELS AT EACH BRIDGE AS THE FLOODWATER SPREADS OUT AS IT MOVES DOWNSTREAM

STEPS AND STAIRS

STEPS ALONG CREEK MARKED TO SHOW RISING STREAM LEVEL


6
4
3

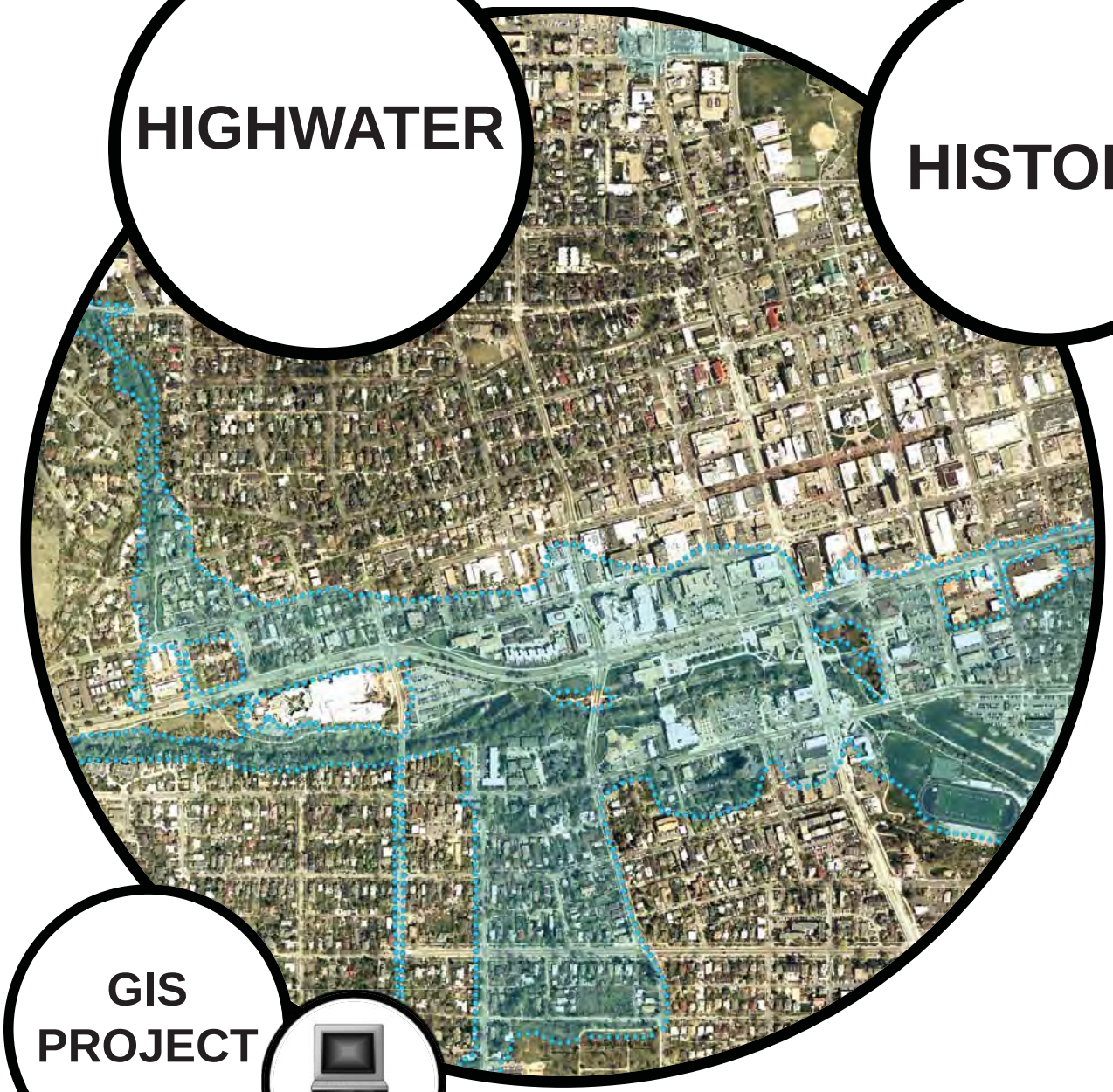

5
8
7


6
5
4
3
2
4
3
2
1

HIGHWATER

HISTORY

HAZARDS



GIS PROJECT

The multiple aspects of Boulder Creek and its flood waters could be made accessible through the mapping capabilities of GIS

ADDITIONAL STORIES, IMAGES AND DESCRIPTIONS ARE ADDED OVER TIME

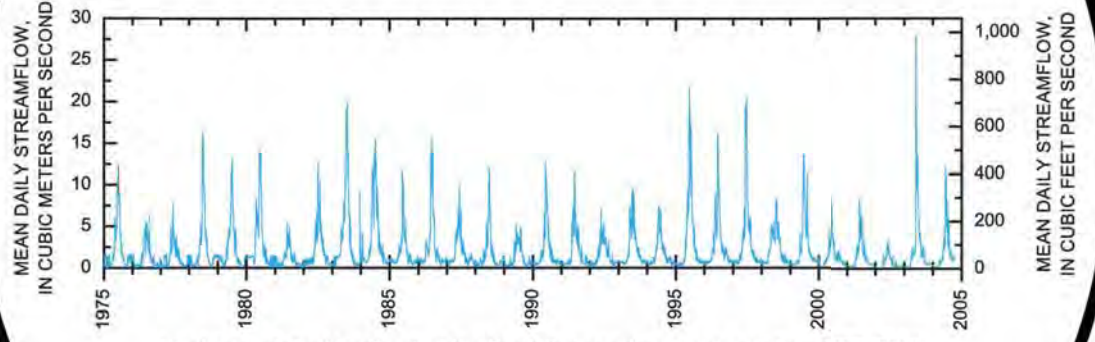
AUDIO TAPES
VOICES DESCRIBING DIFFERENT ASPECTS OF BOULDER CREEK:

SCIENTISTS
POET
POLITICIAN
RESIDENT

WRITTEN DESCRIPTIONS OF PREVIOUS FLOODS

VIDEO OF 1969 FLOOD

DETAILED INFORMATION IN THE FORM OF ARTICLES, SCIENTIFIC STUDIES, AND GRAPHS REVEAL ASPECTS OF THE CREEK IN DETAIL.



Discharge of Boulder Creek at the Orodell streamflow-gaging station, 1975–2004 (data from USGS, 2004, and Colorado Division of Water Resources, 2005).

BOULDER HAS 13 CREEKS FLOWING WEST TO EAST, NORTH / SOUTH TRAVEL BECOMES DANGEROUS IN FLOODS

FOREST FIRE DAMAGE CAN CHANGE WATER-SHED CHARACTERISTICS; LESS ABSORPTION, QUICKER RUNOFF

TIME, VELOCITY, VOLUME, DISCHARGE, SPACE (WIDE & NARROW), SURFACE PERMEABILITY (HIGH & LOW), GLOBAL WARMING, TRIBUTARIES, WATERSHEDS

HISTORIC FLOODS

1894 -12,000 CFS
1914 - 5,000 CFS
1919
1921 - 3,000 CFS
1938 - 4,410 CFS
1969 - 3,000 CFS

SMALLER FLOODS

1876, 1885, 1887, 1897, 1904, 1909, 1941, 1950, 1951, 1955, 1972, 1989, 1990, 1992, 1996

Flood Heights Above Streambed

FEMA 1990

		RECCURENCE INTERVAL			
		10 years	50 years	100 years	500 year
47th Street	Bridges	4.5'	6'	6.5'	8'
30th Street underpass		4'	10'	12'	14'
28th Street		3'	7'	8'	12'
Millenium Footbridge		7'	10	10	13'
Staduim		6	11	12'	13
19th Street Bridge	Underpasses	6'	10'	12	16
17th Street		7'	17'	17'	19'
13th Street		6.5'	12.5'	14'	15.5'
Broadway		6'	8'	10'	12'
9th Street		5'	10'	11'	15'
6th Street		6'	12'	16'	20'
Eben Fine		6'	11'	13'	16'

100 YEAR FLOOD - USED BY FEDERAL EMERGENCY MANAGEMENT AGENCY TO REGULATE FLOODPLAIN MANAGEMENT

MEANS 1% CHANCE OF FLOOD BEING EQUALED OR EXCEEDED IN ANY GIVEN YEAR

COULD COME FROM A STORM PRODUCING AS LITTLE AS 2.5-3" OF RAIN IN 1 TO 2 HOURS OR FROM A LONG DURATION STORM OVER SEVERAL DAYS. THESE STORMS HAPPEN 150 TIMES A YEAR IN COLORADO

BECAUSE OF WARMING THERE MAY BE AN INCREASE IN FREQUENCY OF THESE EVENTS

FLOW RATE

CFS - CUBIC FEET PER SECOND OF WATER FLOW

AVERAGE FLOW RATES

DECEMBER - 28 CFS

JUNE - 317 CFS

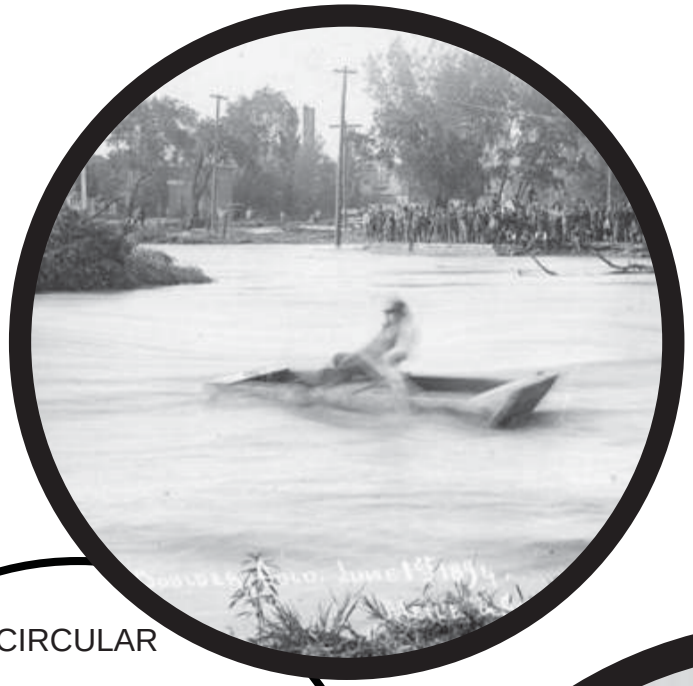
PEAK RAINFALL - 700 CFS (OVER 500 CFS DANGEROUS TO TUBERS)

100 YEAR FLOOD - 12,000 CFS AT MOUTH OF CANYON

BURST UPSTREAM DAM - 703,000 CFS AT MOUTH OF CANYON

	FEMA 100 YR	FEMA 500 YR
NUMBER OF PROPERTIES	3,582	5,295
ASSESSED VALUE (1990)	$988,696,800	$1,414,277,100

PHOTOS OF 1894 FLOOD



CIRCULAR

ENAMELED

HISTORICAL FLOOD PHOTO-

GRAPHS LOCATED AT THE SITE

EACH WAS TAKEN

1894 PHOTOS COURTESY OF THE

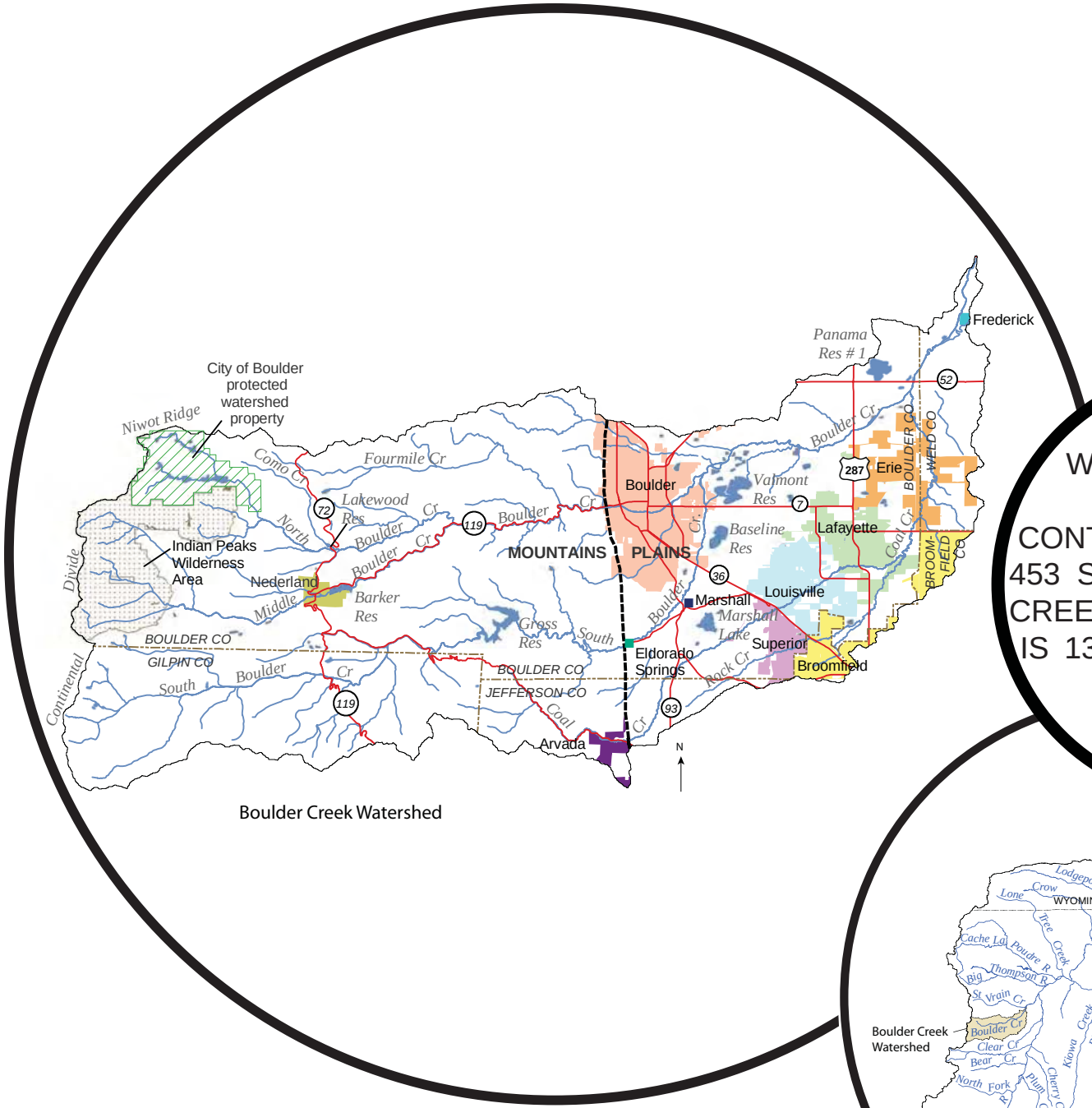
CARNEGIE BRANCH LIBRARY FOR

LOCAL HISTORY

BOULDER CREEK IS IN THE SOUTH PLATTE RIVER WATERSHED AT THE HEADWATERS OF THE VAST MISSISSIPPI DRAINAGE SYSTEM

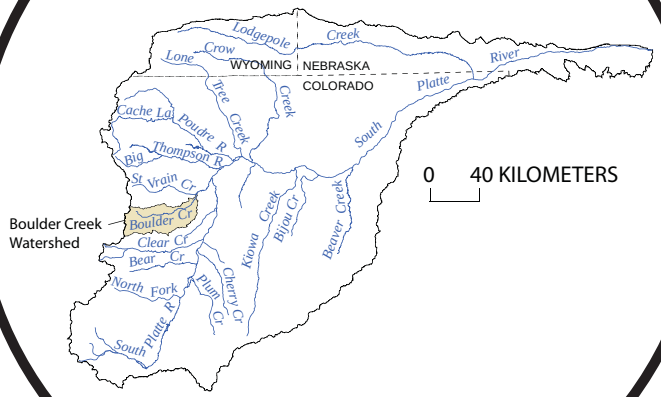
Mississippi River Watershed

A SERIES OF MAPS REVEAL INFORMATION ABOUT THE WATERSHED



Boulder Creek Watershed

WATERSHED - STARTING AT CONTINENTAL DIVIDE IS 453 SQ. MILES. BOULDER CREEK DRAINAGE BASIN IS 132 SQ MILES ABOVE THE CITY OF BOULDER



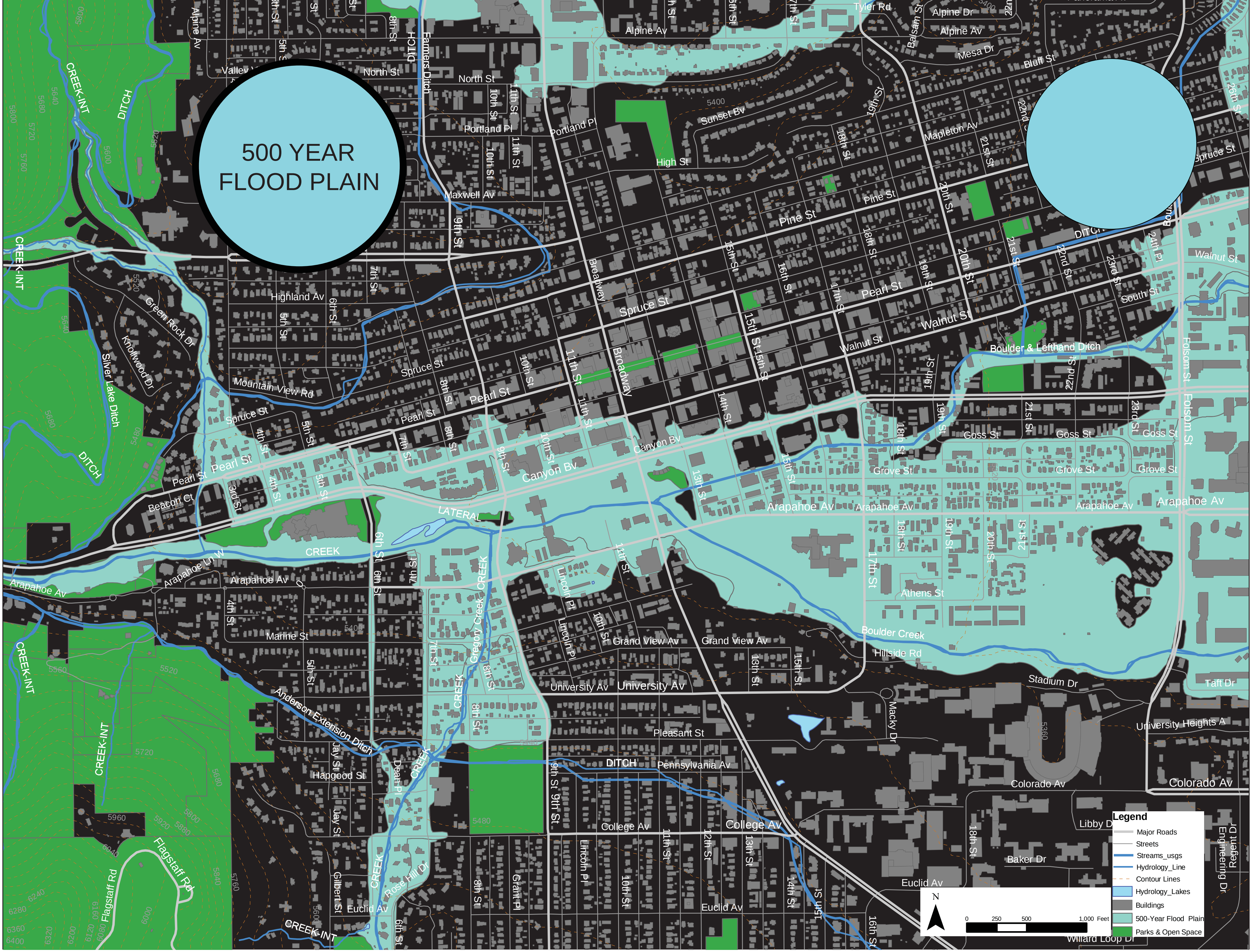
South Platte River Watershed

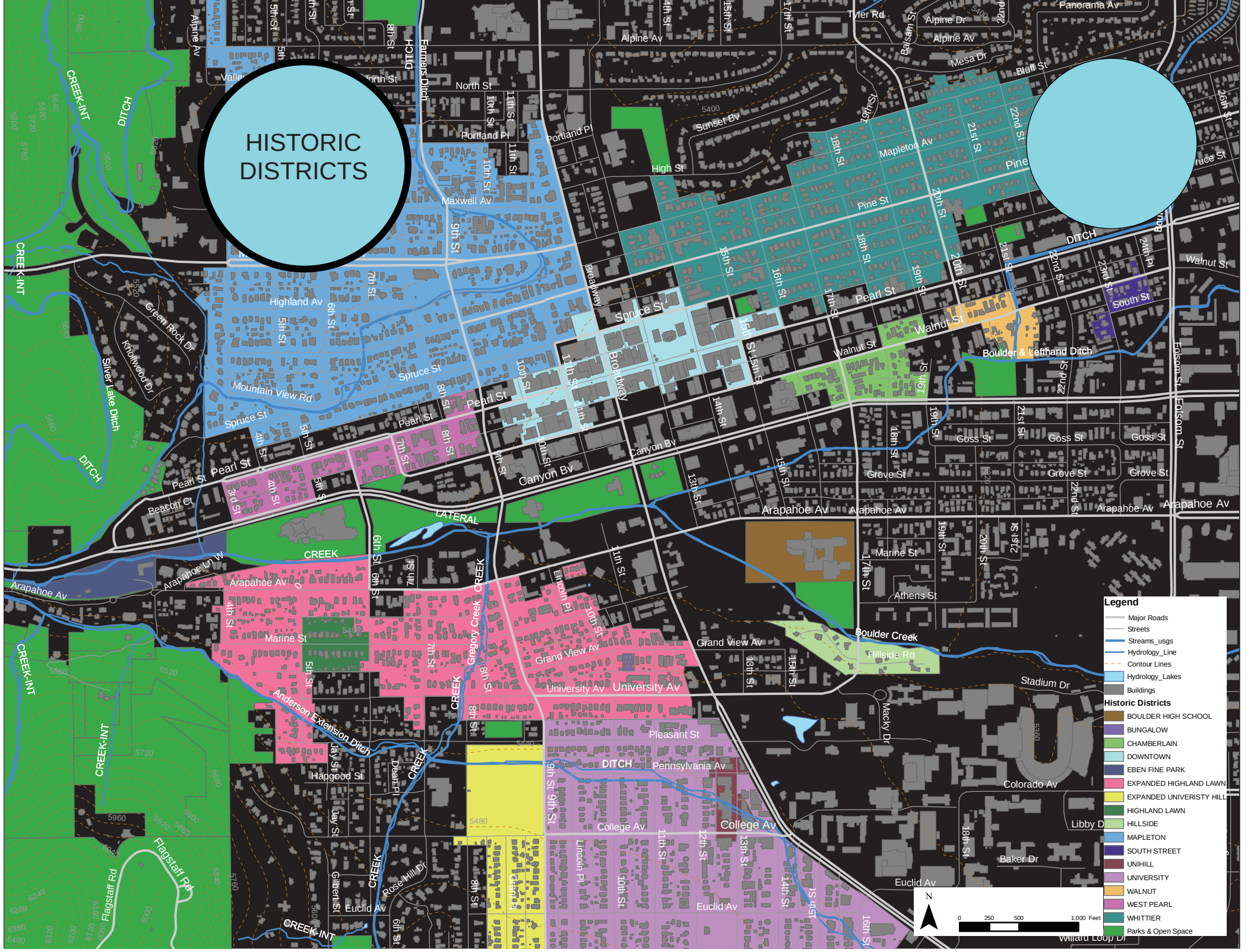
GIS mapping is used to reveal detailed information about the Boulder Creek watershed, its potential to flood, and its history

GIS MAP LIST:

500 year flood zone
Historic Districts
Parks and Open Space
Neighborhoods
Foot and Vehicular Bridge
Project Locations
Historic Photo Locations
Geologic Hazard Zones and Natural Landmarks
Streams
Hydrology

A preliminary version will be available during the exhibit on the website
www.marymiss.com
(news)

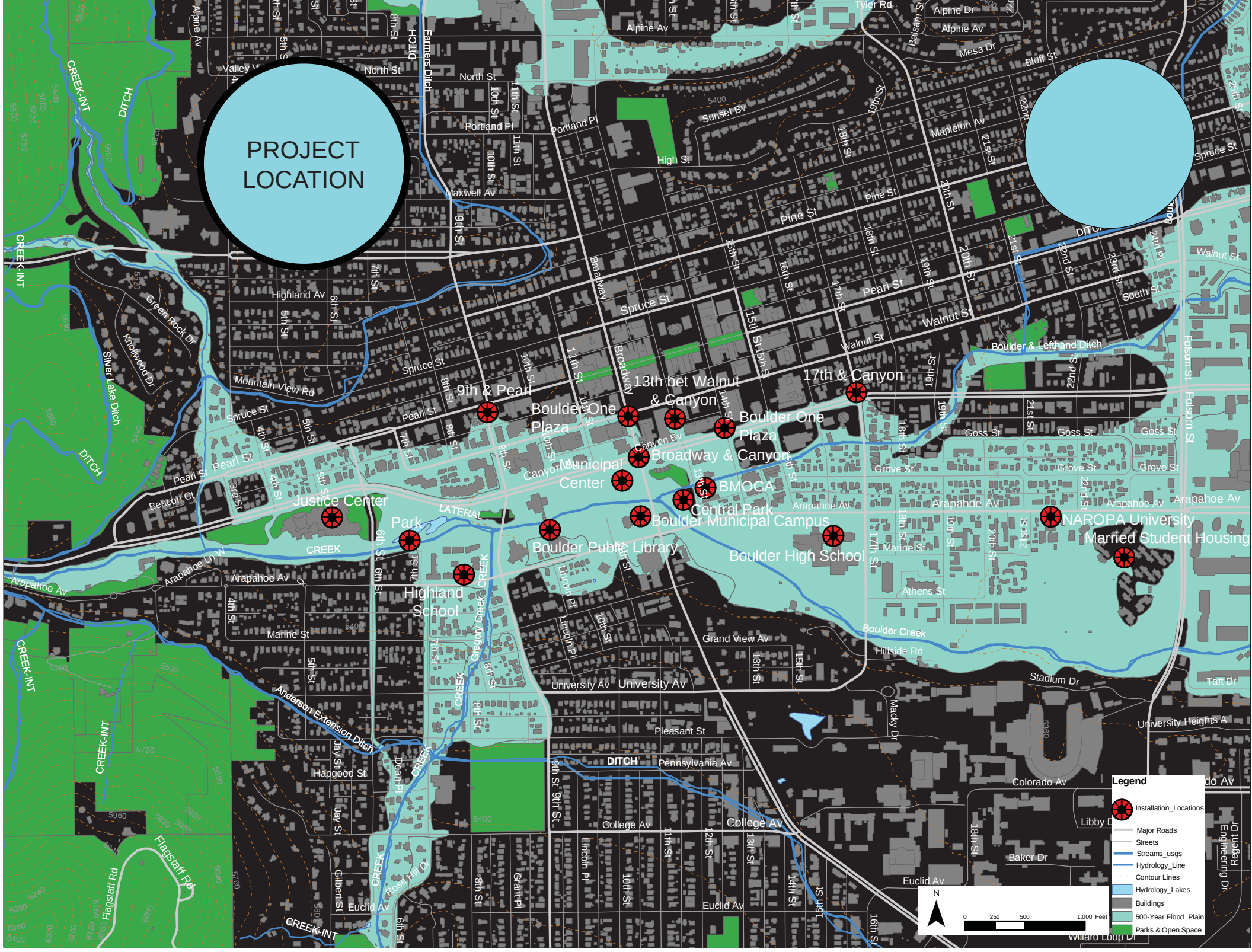

500 YEAR
FLOOD PLAIN
Legend
Major Roads
Streets
Streams_usgs
Hydrology_Line
Contour Lines
Hydrology_Lakes
Buildings
500-Year Flood Plain
Parks & Open Space
N
0 250 500 1,000 Feet

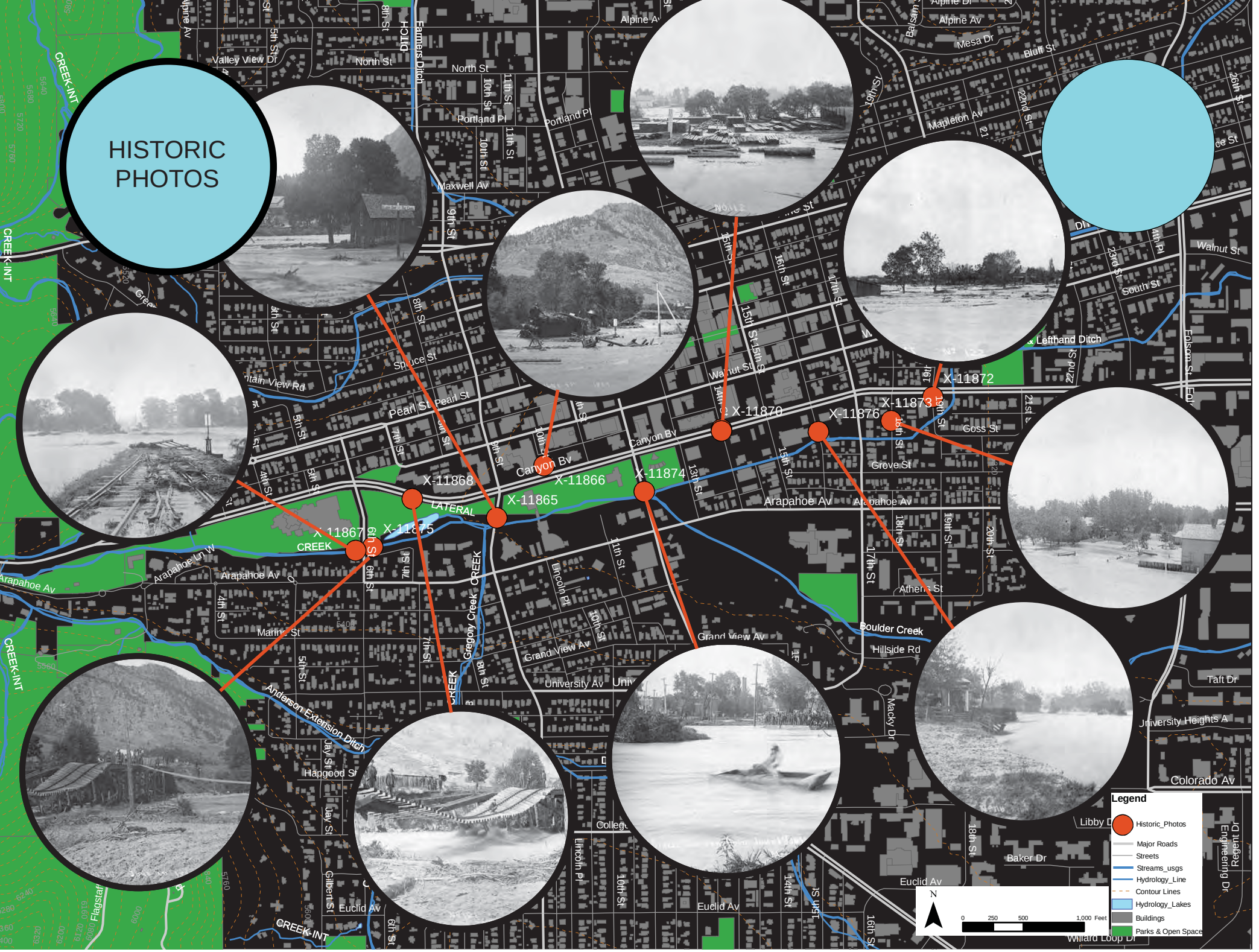

HISTORIC DISTRICTS
Legend
Major Roads
Streets
Streams_usgs
Hydrology_Line
Contour Lines
Hydrology_Lakes
Buildings
Historic Districts
BOULDER HIGH SCHOOL
BUNGALOW
CHAMBERLAIN
DOWNTOWN
EBEN FINE PARK
EXPANDED HIGHLAND LAWN
EXPANDED UNIVERISTY HILL
HIGHLAND LAWN
HILLSIDE
MAPLETON
SOUTH STREET
UNIHILL
UNIVERSITY
WALNUT
WEST PEARL
WHITTIER
Parks & Open Space
N
0 250 500 1,000 Feet
Arapahoe Av
Pearl St
Canyon Bv
Spruce St
Walnut St
University Av
College Av
Euclid Av
Broadway
Boulder Creek
CREEK-INT
DITCH
CREEK
LATERAL


PARKS AND OPENSPACE
Legend
Major Roads
Streets
Streams_usgs
Hydrology_Line
Contour Lines
Lakes_usgs
Hydrology_Lakes
Buildings
Parks & Open Space
Boulder Conservation Easement
Boulder Restricted
Boulder Open Space
Boulder Parks and Recreation
Other Open Lands
N
0 250 500 1,000 Feet


NEIGHBORHOODS
Legend
Streets
Streams_usgs
Hydrology_Line
Contour Lines
Lakes_usgs
Hydrology_Lakes
Buildings
500-Year Flood Plain
Parks & Open Space
Neighborhoods
Central Boulder
Colorado University
Crossroads
N
0
250
500
1,000 Feet
Boulder Creek
Boulder & Lefthand Ditch
Anderson Extension Ditch
Silver Lake Ditch
Farmers Ditch
Canyon Bv
Broadway
Arapahoe Av
Pearl St
Spruce St
Walnut St
Pine St
Mapleton Av
Alpine Av
Euclid Av
College Av
Pleasant St
University Av
Colorado Av
Stadium Dr
Folsom St


FOOT AND VEHICULAR BRIDGES
Boulder Public Library
City Hall Footbridge
Sixth Street Bridge
9th Street Bridge
High School Footbridge
17th Street Bridge
19th Street Footbridge
24th Street (Folsum
Stadium Footbridge
Legend
Vehicular_Bridges
FootBridge-Location
Major Roads
Streets
Streams_usgs
Hydrology_Line
Contour Lines
Hydrology_Lakes
Buildings
500-Year Flood Plain
Parks & Open Space
0 250 500 1,000 Feet
N


PROJECT LOCATION
9th & Pearl
Boulder One Plaza
13th bet Walnut & Canyon
Boulder One Plaza
17th & Canyon
Broadway & Canyon
Municipal Center
BMOCA
Central Park
Justice Center
Park
Boulder Municipal Campus
NAROPA University
Married Student Housing
Boulder Public Library
Boulder High School
Highland School
Boulder & Lefthand Ditch
Legend
Installation_Locations
Major Roads
Streets
Streams_usgs
Hydrology_Line
Contour Lines
Hydrology_Lakes
Buildings
500-Year Flood Plain
Parks & Open Space
N
0 250 500 1,000 Feet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X-11873
X-11872
Canyon Bv
Pearl St
Arapahoe Av
LATERAL
CREEK
Anderson Extension Ditch
Gregory Creek
Boulder Creek
Grand View Av
University Av
Euclid Av
Maxwell Av
Portland Pl
Farmers Ditch
Lefthand Ditch
Walnut St
Spruce St
Goss St
Grove St
Hillside Rd
Baker Dr
Colorado Av
Legend
Historic_Photos
Major Roads
Streets
Streams_usgs
Hydrology_Line
Contour Lines
Hydrology_Lakes
Buildings
Parks & Open Space
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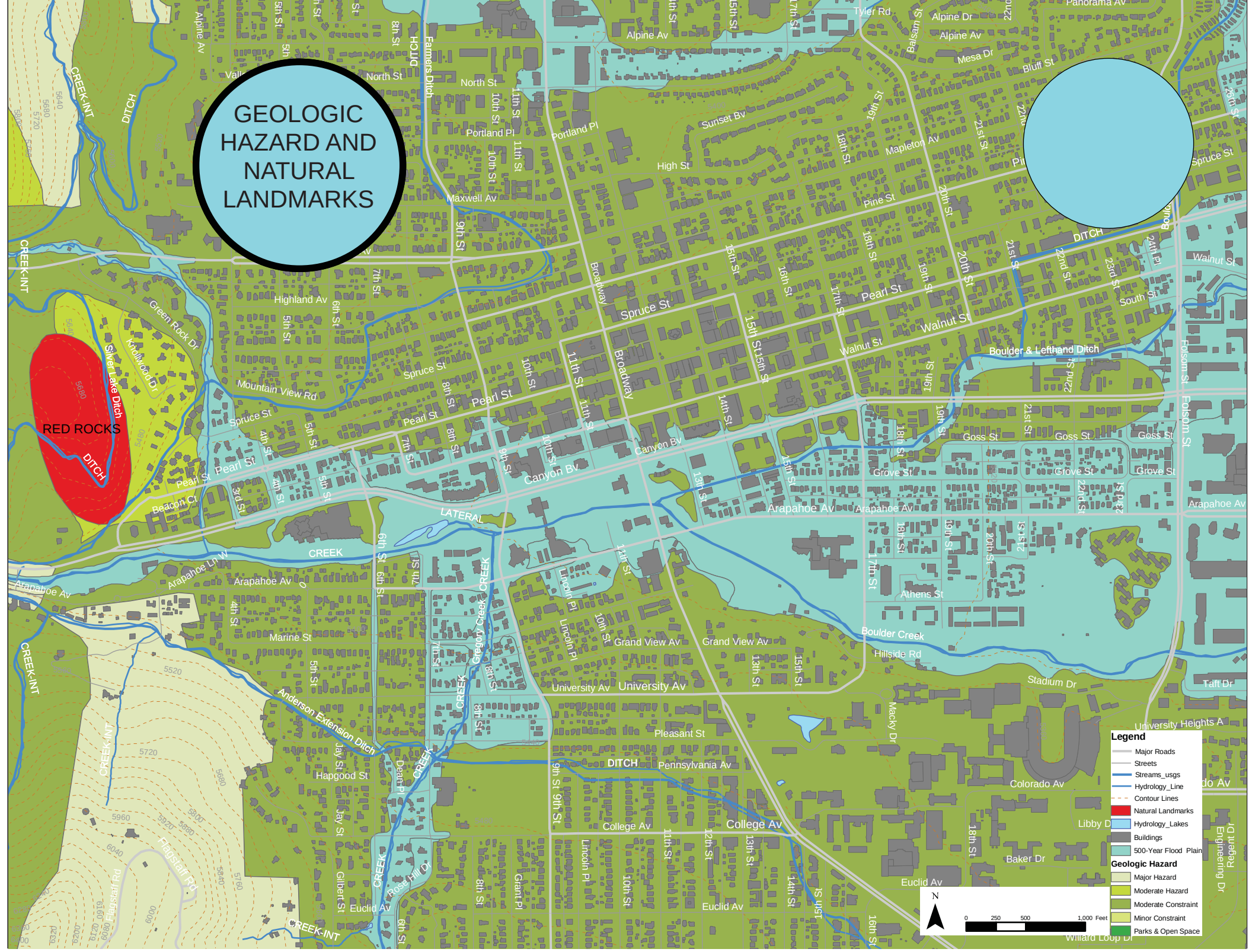
GEOLOGIC HAZARD AND NATURAL LANDMARKS
RED ROCKS
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Major Roads
Streets
Streams_usgs
Hydrology_Line
Contour Lines
Natural Landmarks
Hydrology_Lakes
Buildings
500-Year Flood Plain
Geologic Hazard
Major Hazard
Moderate Hazard
Moderate Constraint
Minor Constraint
Parks & Open Space
N
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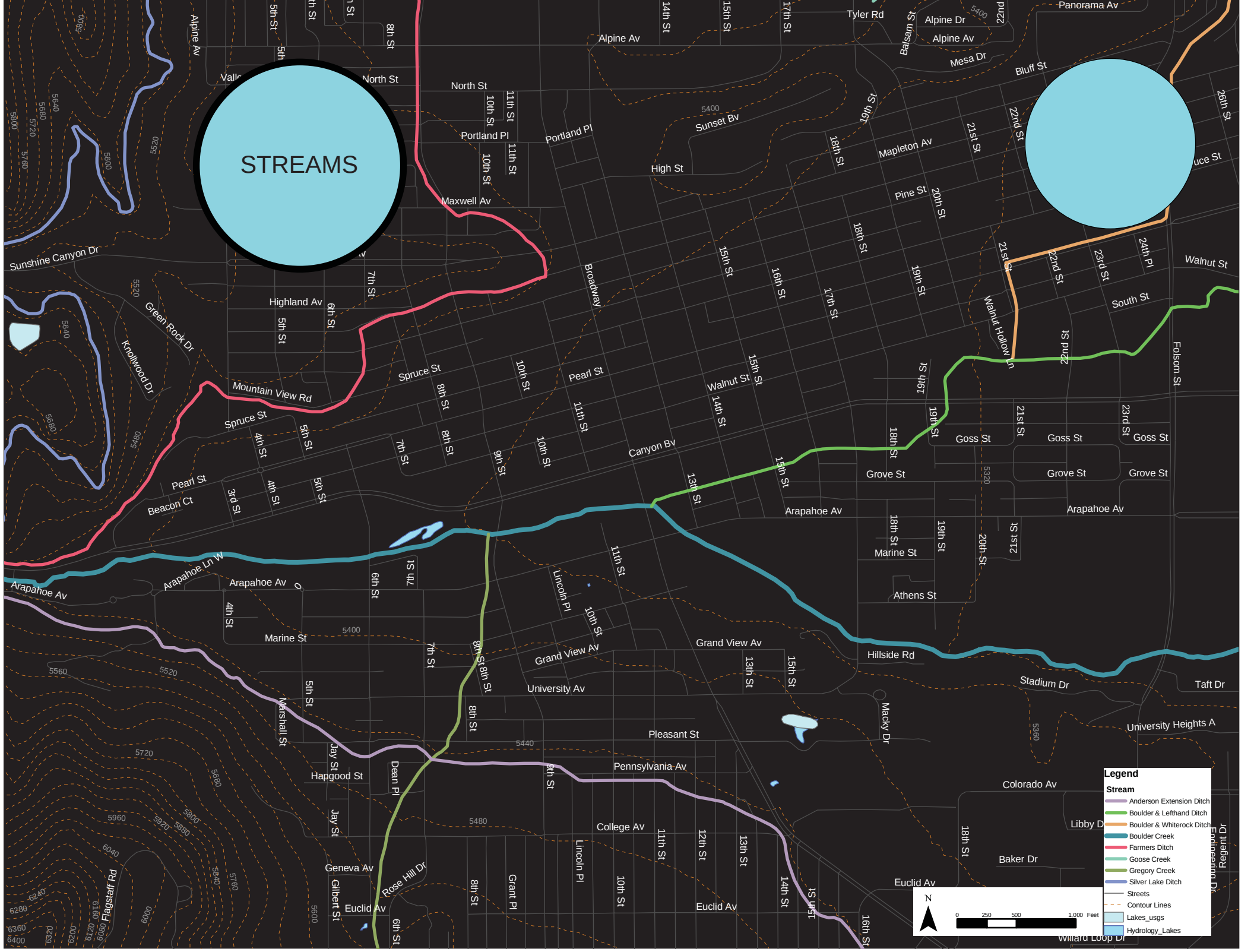
STREAMS
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Stream
Anderson Extension Ditch
Boulder & Lefthand Ditch
Boulder & Whiterock Ditch
Boulder Creek
Farmers Ditch
Goose Creek
Gregory Creek
Silver Lake Ditch
Streets
Contour Lines
Lakes_usgs
Hydrology_Lakes
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Alpine Av
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Panorama Av
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Balsam St
Mesa Dr
Bluff St
North St
Portland Pl
Sunset Bv
High St
Mapleton Av
Pine St
Maxwell Av
Sunshine Canyon Dr
Green Rock Dr
Knollwood Dr
Highland Av
Broadway
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South St
Walnut Hollow Ln
Folsom St
Mountain View Rd
Spruce St
Pearl St
Beacon Ct
Canyon Bv
Goss St
Grove St
Arapahoe Av
Arapahoe Ln W
Marine St
Athens St
Lincoln Pl
Grand View Av
University Av
Hillside Rd
Stadium Dr
Taft Dr
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Marshall St
Jay St
Hapgood St
Dean Pl
Pleasant St
Pennsylvania Av
Colorado Av
Libby Dr
Baker Dr
College Av
Geneva Av
Rose Hill Dr
Gilbert St
Euclid Av
Willard Loop Dr
Regent Dr
Flagstaff Rd
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24th Pl
26th St


HYDROLOGY
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Knollwood Dr
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Walnut Hollow Ln
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Mountain View Rd
Pearl St
Canyon Bv
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Beacon Ct
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24th Pl
26th St

HAZARDS

Information about each of the following floodwater hazards to be revealed in detail through GIS

EVENTS THAT CAUSE FLOODS

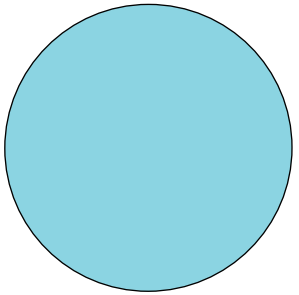
- HIGH RAINFALL OVER A SHORT PERIOD OF TIME
- FOREST FIRES CHANGE WATER ABSORPTION CHARACTERISTICS IN WATERSHED
- BARKER DAM FAILURE
- COMBINED EVENTS (SPRING FLOW PLUS THUNDERSTORMS)

BIG THOMPSON FLOOD
20 INCHES OF RAIN FELL IN ONE NIGHT IN THE SUMMER OF 1976 IN THE BIG THOMPSON RIVER CANYON NORTH OF BOULDER. MAXIMUM DEPTH OF THE FLOODWATERS WAS 20 FEET AND DISCHARGE WAS ABOUT 39,000 CFS. 139 PEOPLE DIED DURING THIS FLOOD.

SIGNS AROUND THE COUNTY READ: “CLIMB TO SAFETY IN CASE OF A FLASH FLOOD.” THESE WERE INSTALLED AFTER THE BIG THOMPSON FLOOD BECAUSE MANY PEOPLE WERE KILLED DRIVING THEIR CARS TRYING TO DRIVE OUT AHEAD OF THE FLOODWATERS

LIVING IN OR NEAR THE FOOTHILLS OF THE ROCKY MOUNTAINS MAKES FLASH FLOODS AN EXTREMELY SERIOUS CONCERN. IT IS NOT A MATTER OF "IF" A MAJOR FLOOD WILL HAPPEN, BUT RATHER WHEN

THE TERMS "10 YEAR", "50 YEAR", "100 YEAR", AND "500 YEAR" FLOODS ARE USED TO DESCRIBE THE ESTIMATED PROBABILITY OF A FLOOD HAPPENING IN ANY GIVEN YEAR. THEIR PRIMARY USE IS FOR DETERMINING FLOOD INSURANCE RATES IN FLOOD HAZARD AREAS. USING HISTORIC WEATHER AND HYDROGRAPHIC DATA, EXPERTS DERIVE THE ESTIMATED RATE OF FLOW OR DISCHARGE OF A RIVER OR CREEK. A "10 YEAR" FLOOD HAS A 10% PROBABILITY OF OCCURING IN ANY GIVEN YEAR, A "50 YEAR" EVENT A 2% PROBABILITY, A "100 YEAR" EVENT A 1% PROBABILITY, AND A "500 YEAR" EVENT A .2% PROBABILITY. WHILE UNLIKELY, IT IS POSSIBLE TO HAVE TWO OR 100 OR EVEN 500 YEAR FLOODS WITHIN YEARS OF EACH OTHER



COLLAPSING ROADS, RIVERBANKS, BRIDGES

ELECTROCUTION

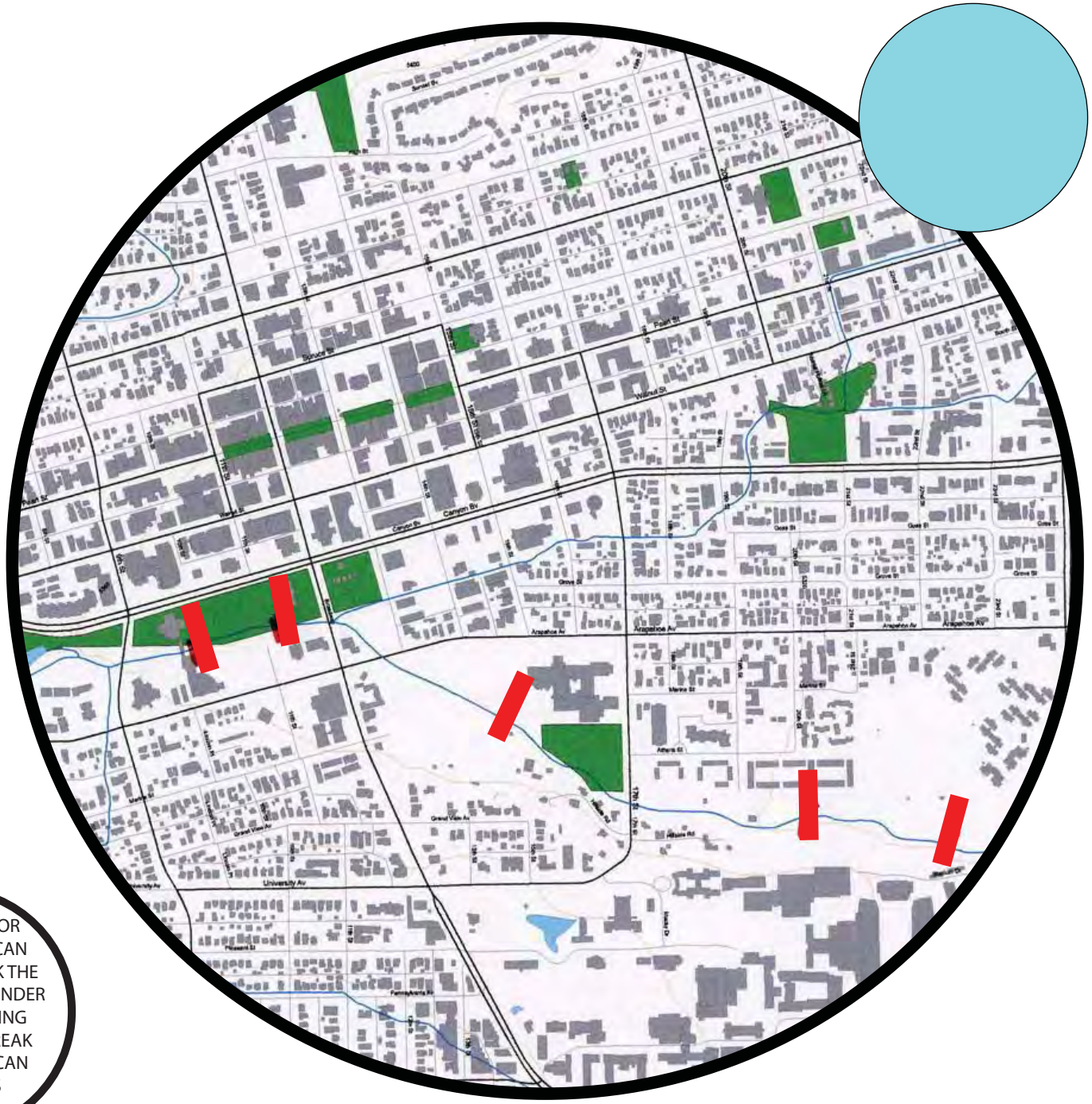
HYPOTHERMIA

EROSION / LANDSLIDES

WHY IS BOULDER PRONE TO FLOODS? THE CITY IS AT THE MOUTH OF A NARROW CANYON. IT IS SUSCEPTIBLE TO FLASH FLOODS BECAUSE OF THUNDERSTORMS, STEEP SLOPES AND RELATIVELY IMPERMEABLE SOILS

IN A 100 YEAR FLOOD WATER WOULD BE 1/2 MILE WIDE EAST OF BROADWAY

FOOT BRIDGES BREAK AWAY IN HIGH WATER CONDITIONS

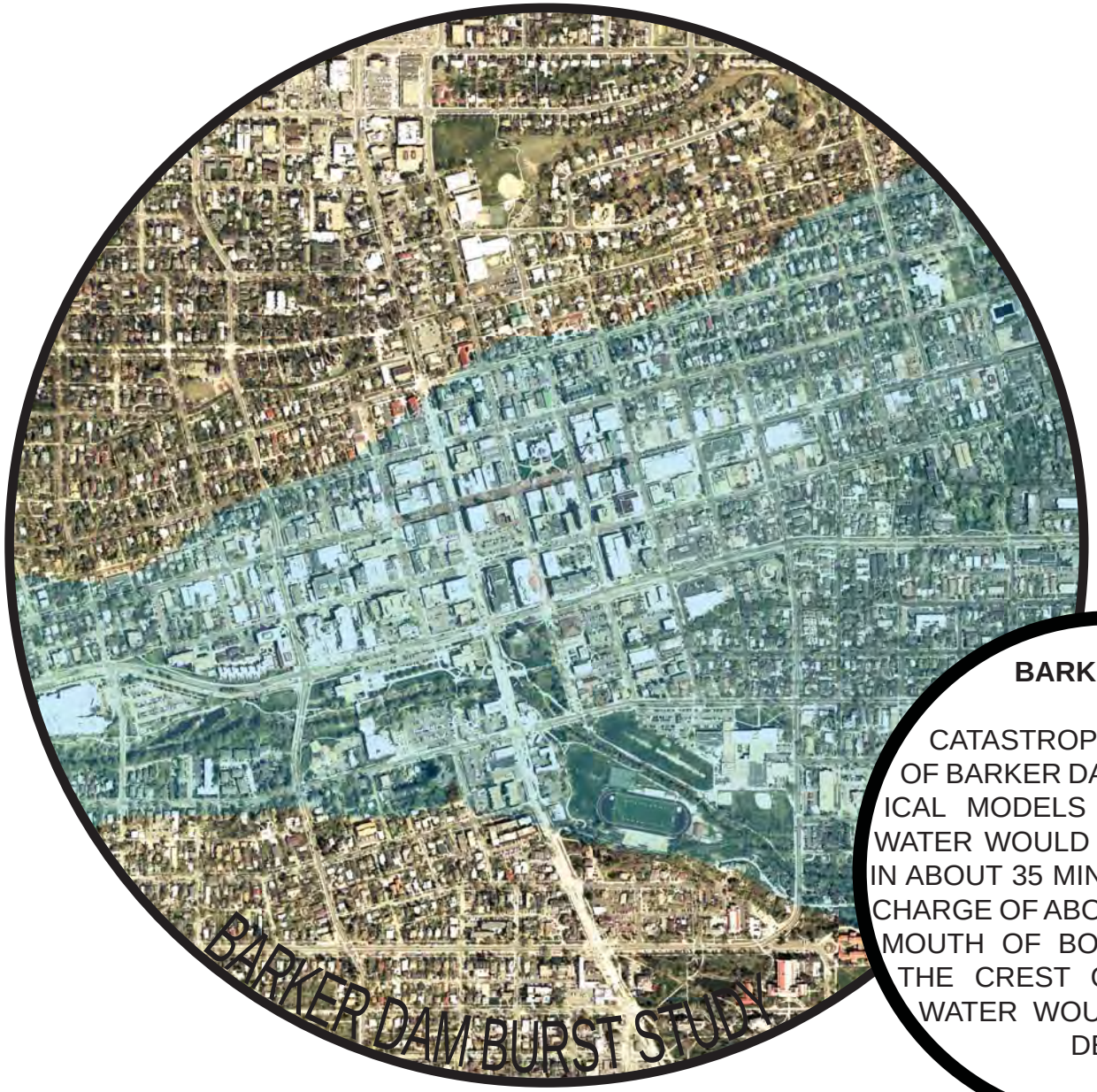


DURING A MAJOR FLOOD DEBRIS CAN PARTIALLY BLOCK THE FLOW OF WATER UNDER BRIDGES, CREATING SMALL DAMS. BREAK AWAY BRIDGES CAN REDUCE THIS HAZARD

IN A 100 YEAR FLOOD, WATER WOULD BE 1/2 MILE WIDE EAST OF BROADWAY

4 - 5 INCHES OF RAINFALL IN A THUNDERSTORM CAN CAUSE WATER TO RISE RAPIDLY TO A 14 FT DEPTH, REFERRED TO AS A "WALL OF WATER". THIS COULD REACH THE CITY OF BOULDER IN 45 MINUTES. THE DEPTH OF WATER DECREASEES AS IT LEAVES THE MOUTH OF THE CANYON AND SPREADS OUT

A CAR FLOATS IN 18 INCHES OF WATER



BARKER DAM

CATASTROPHIC COLLAPSE OF BARKER DAM. HYDROLOGICAL MODELS ESTIMATE THAT WATER WOULD REACH BOULDER IN ABOUT 35 MINUTES WITH A DISCHARGE OF ABOUT 703,000 CFS AT MOUTH OF BOULDER CANYON. THE CREST OF THE FLOOD WATER WOULD BE 100 FT DEEP.

CONNECT THE DOTS:
MAPPING THE HIGH WATER, HAZARDS AND HISTORY OF BOULDER CREEK
was done with the collaboration of geologist Peter W. Birkeland, University of Colorado at Boulder and hydrologist Sheila Murphy, US Geological Survey, assisted by Charles Cross and Phanat Sonemangkhala. The temporary installation for the exhibition was organized by Jonathan Fierer, and helped by volunteers.

The artist would like to recognize the following sources: Boulder Area Sustainability Information Network; Boulder Creek Flood Notebook; Boulder County Government; Boulder Magazine; Daily Camera; Carnegie Branch of the Boulder Public Library; City of Boulder; Denver Public Library; Denver Regional Council of Governments; Dr. Spenser Havlick; ESRI – Ester Worker, Director of Education Programs; Gilbert F. White Papers on Boulder Creek Floodplain History; South Boulder Creek Mapping Study; University of Colorado at Boulder; and the US Geological Survey.

We would like to thank the following individuals for their assistance: Marda Kirn; Kirsten Gerdes and Joan Markowitz, Boulder Museum of Contemporary Art; Alice Guthrie and Lisa Green, Boulder Parks and Recreation; Cristina Martinez, Boulder Department of City Planning, Jacob Morgan (GIS), Greg Tucker, University of Colorado (surveying)

This project was done for an exhibition curated by Lucy Lippard “Weather Report: Art and Climate Change” at the Boulder Museum of Contemporary Art in collaboration with EcoArts, Boulder, Colorado, 2007.

This project
can be found on
www.marymiss.com
(news)