

Facilities and Asset Management (FAM) Master Plan Update

September 23, 2014



Valmont Butte



Wildland Fire Station

Questions for Council

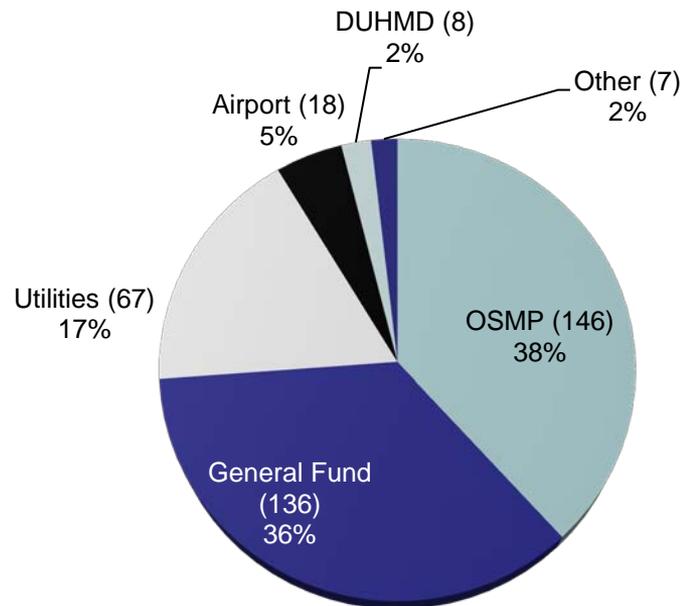
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3. Does council support staff scheduling for council consideration the proposed annexation of the Valmont Butte property (as Area III of the Boulder Valley Comprehensive Plan), with the intent to landmark the historic mill buildings, preserve previously undisturbed areas in their natural state, and make the remaining areas of the property available for low-impact municipal uses such as material stockpiling, storage and renewable energy generation?
4. Does council have any other questions involving the management of the city's facilities?

Facilities and Asset Management

Total FTEs	14.84
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Services

- 135 of 382 buildings and structures
- Capital Improvement Program (CIP)
- Facility database
- Policies, standards and best practices
- Equipment Replacement Program
- Energy usage and sustainability



Total Buildings & Structures--382

FAM Master Plan

- 1996: 13 buildings
- 1998: Parks & Recreation facilities
- 2005: City business plan; goals, objectives and performance measures
- 2015: Sustainability Framework, Climate Commitment, and other master plans

2005 FAM Master Plan



Energy Management – Energy Performance Contract

Item	Total (Annual)
Electricity Reduction	7,883,532 kWh
Gas Reduction	180,680 therms
Water Reduction	2,796 kgals
Carbon Dioxide (CO2) Reduction	8,216 mtons (24.4%)



Energy Performance Contract Financials

Item	Total
Total Project Value	\$16,232,960
- City Capital	(\$2,385,058)
- Electric and Gas Utility Rebates	(\$2,042,957)
- Energy Efficiency and Conservation Block Grant	(\$360,000)
Financed Amount	\$11,139,262



Annual Average Energy Payments	\$3 million
EPC Utility Cost Savings	\$667,614
Maintenance Cost Savings	\$52,615 (3-years only)
Equipment Replacements	\$3,354,460 (one-time)
Ongoing Incentives:	
- Photovoltaic REC payments	\$97,062
- Colorado Carbon Fund REC payments	\$50,000 total (one-time)

Energy Awareness and Engagement

powerED

peoplepowerplanet



- Employee engagement program for city facility occupants
- Goal is 10% energy use reduction

Focus

- People - Engage **occupants**, increase awareness and change behavior
- Process - Engage **operators** and optimize building systems
- Performance – **Track and report** energy savings progress



OVERVIEW

SAVINGS SUMMARY

SAVINGS DETAIL

BILL DATA

ABOUT

City of Boulder

63rd Water Treatment Facility

75th Wastewater Treatment Facility

Atrium

Betasso Water Treatment Facility

East Boulder Community Center

FAM Maintenance Building

Fire Station 1

Fire Station 2

Fire Station 3

Fire Station 4

Fire Station 5

Fire Station 6

Fire Station 7

Fleet Services Center

Iris Center

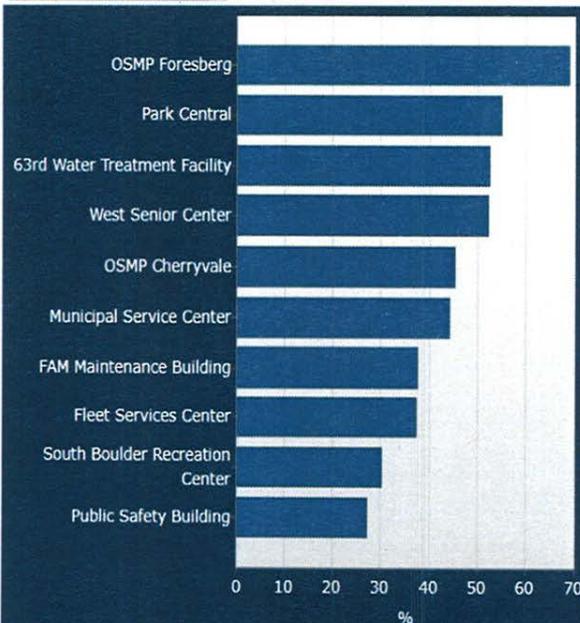
Main Library

Meadows Library

Top 10 Facility Ranking

% Total Savings

Click here to view all results:



Right-click graph to export or print data

City of Boulder:

27 %

City of Boulder

SAVINGS PROGRAM TO DATE	% TOTAL SAVINGS 27 % 	COST AVOIDANCE \$1,208,545
	HOMES POWERED 2,263 	CARS OFF THE ROAD 3,558
BENCHMARKS	ENERGY STAR N/A 	ENERGY USE INDEX 108
		ENERGY COST INDEX \$1.78

What's Next with Energy?

Fleet electrification with renewable energy and battery storage systems

New Climate Commitment goals

Renewable Energy Study → Phase 4 EPC?

City innovation teams



Solar Trees



Building Battery Storage

19 kW battery storage system tied to a 22 kW solar photovoltaic (PV) system and integrated into the building automation system



City of Boulder Demonstration Study



INSTITUTE
OF
CLIMATE & CIVIL SYSTEMS

Focus Study

Analysis Scale

- North and south Boulder climate zones
- 2015 to 2100

Two City Facilities

- East Boulder Community Center
- Wildland Fire Station

Climate Change Projections

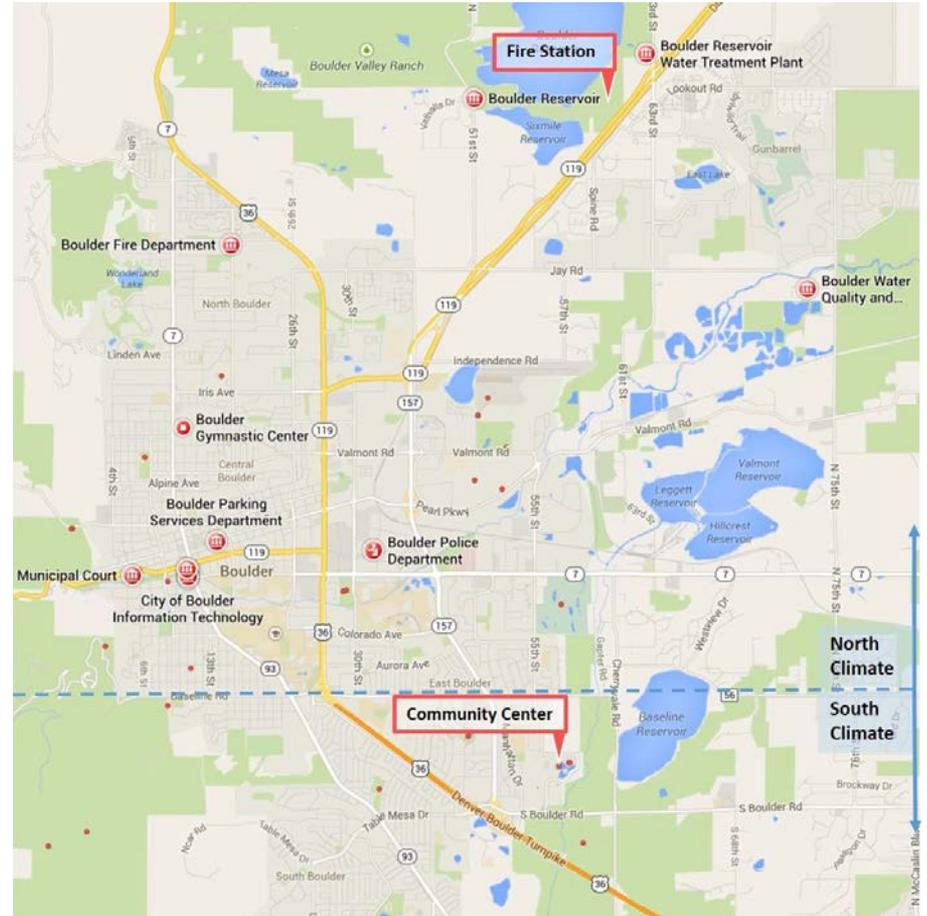
- 54 scenarios for precipitation, humidity and temperature

Analysis System

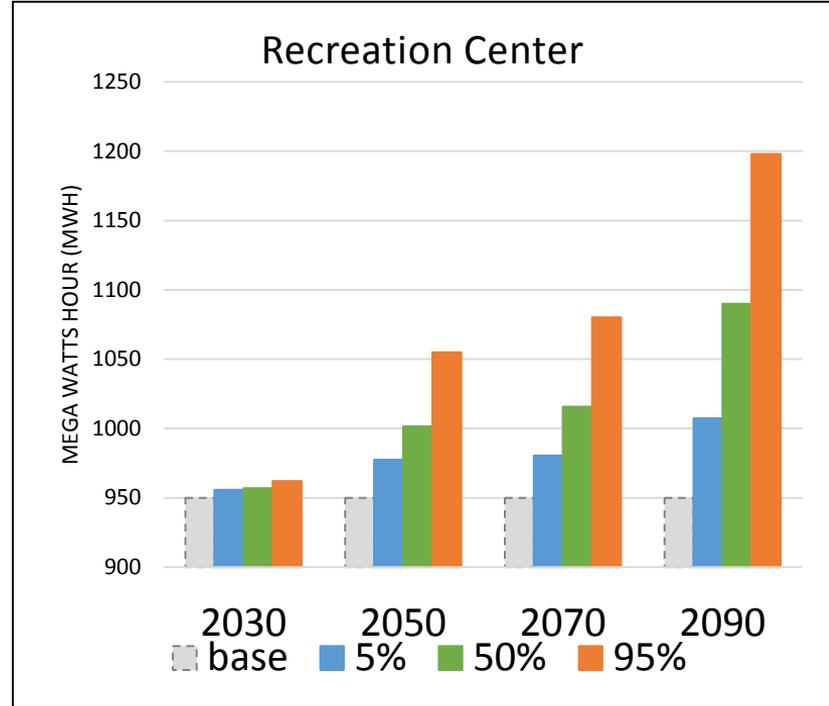
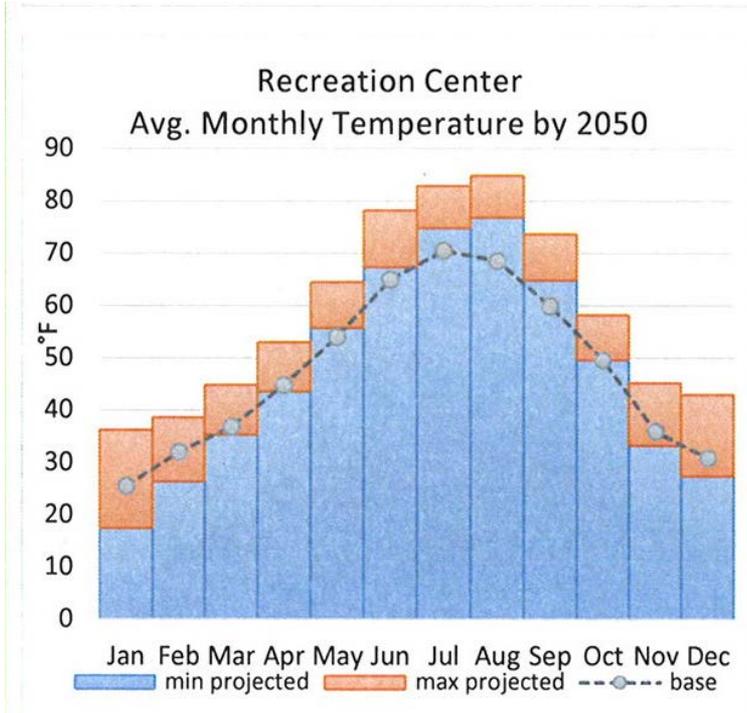
- Infrastructure Planning Support System

Goal

- Produce a risk and adaptation report



Critical Findings – East Boulder Community Center

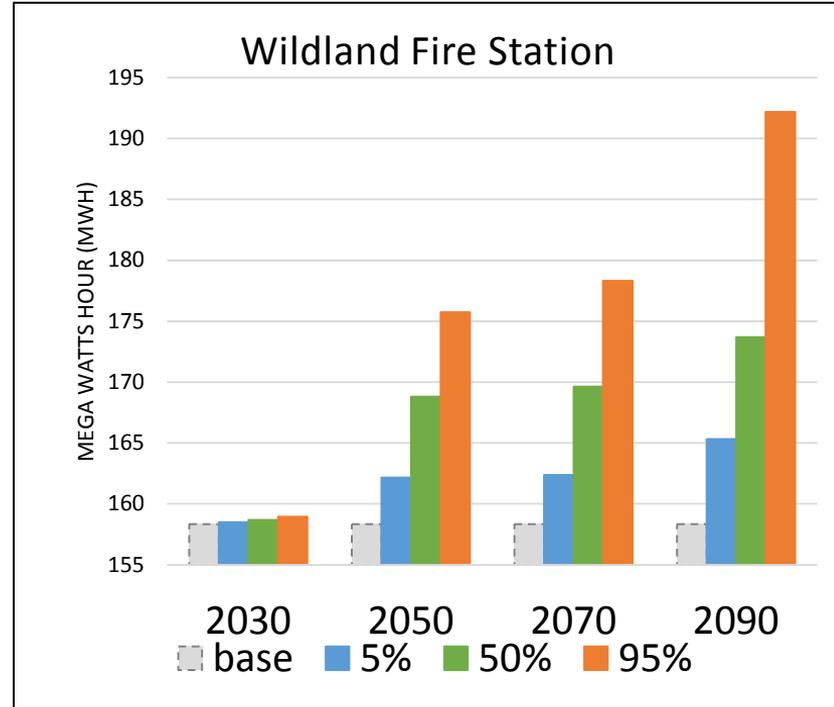
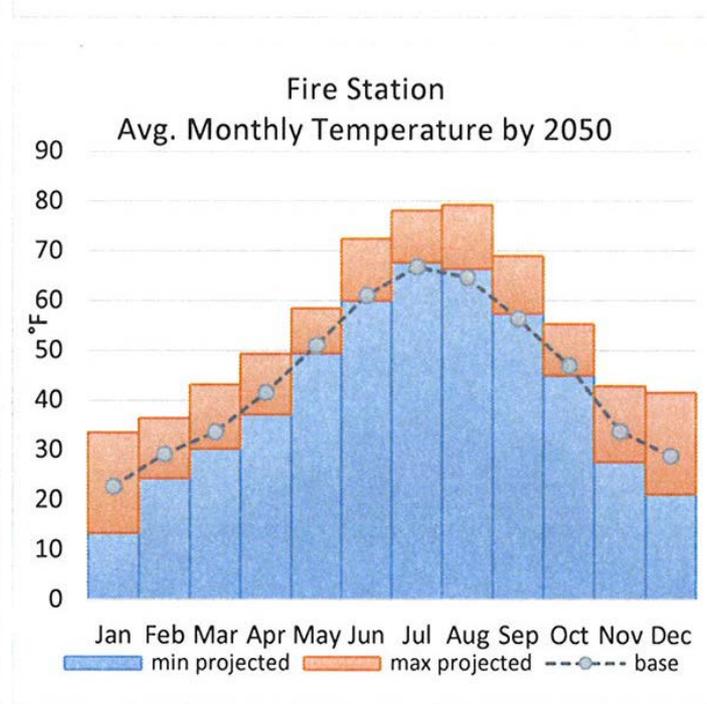


By 2050, energy costs will increase between 3 and 18%

By 2070, energy costs will increase between 6 and 26%

Increased humidity -- HVAC update in 2040

Critical Findings – Wildland Fire Station



By 2050, energy costs will increase between 2 and 16%

By 2075, energy costs will increase between 3 and 20%

Increased humidity -- HVAC update in 2025

Climate Change Projections

Next Steps

- Impacts to Current Funding Goals
 - O&M and energy costs at 2.5 percent of current replacement value (CRV)
 - Replacement and Renovation at 2 percent of CRV
- Identify risk-based changes for other facilities

City Operations and Work Space

Agency	City & County Total Square Feet Per Person
International Facility Managers Association	434
Local Area Governments - Denver Webb Building (2002 construction) - Aurora Municipal Center (2003 construction) - Lakewood Municipal Center (2000 construction)	360 (average) 349 356 471 (Use 360 square feet per person for planning)
City of Boulder Downtown (January 2013) With Leased 31,000 Square Feet (October 2014)	238 299

Work Space -- Current

Location / Department	Square Feet
Downtown Campus / Various	30,000 shortfall
- <i>Park Central and New Britain</i>	35,000 existing
33 rd Street / Police Department	25,000 shortfall
Various / Fire-Rescue Department	TBD



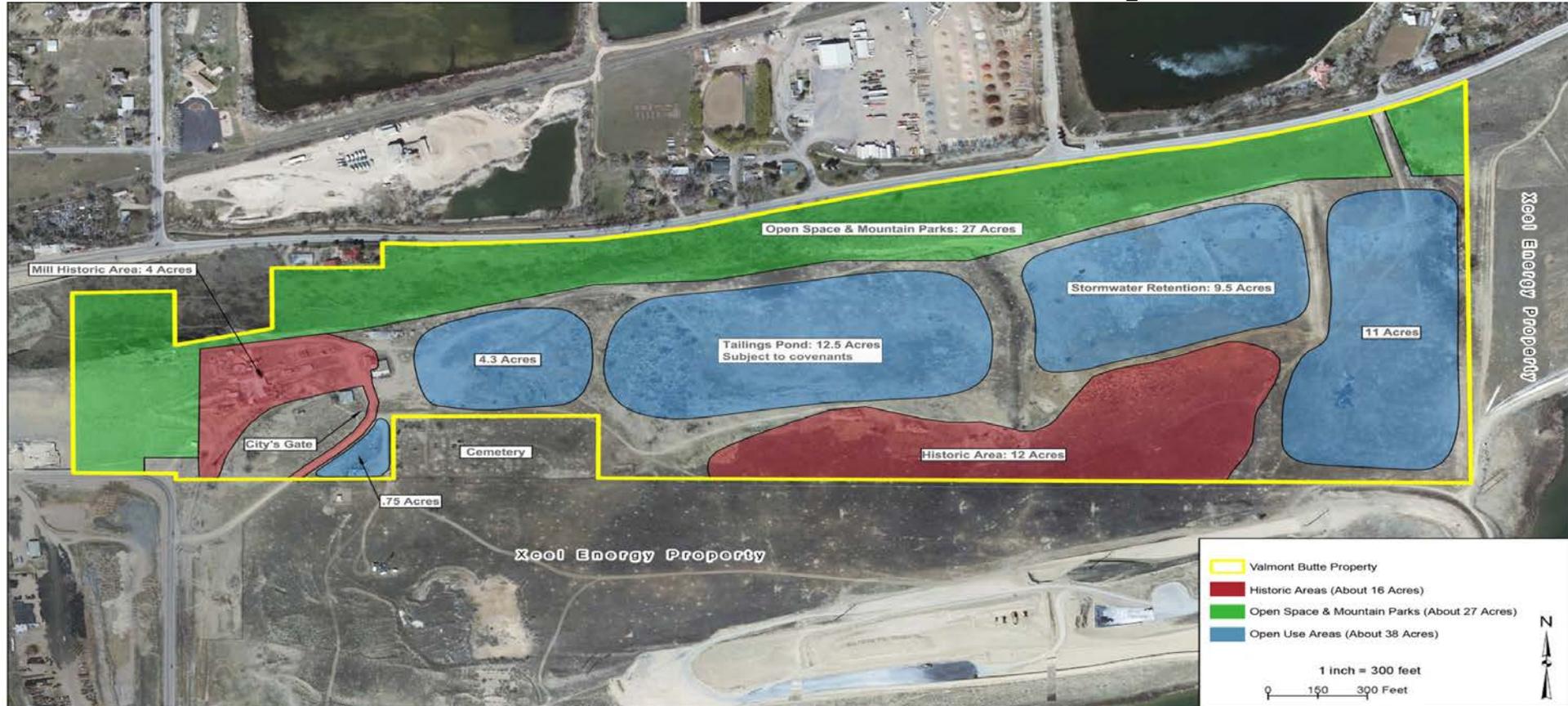
Valmont Butte Voluntary Clean-Up Program (VCUP)



Valmont Butte VCUP – Rock Cap

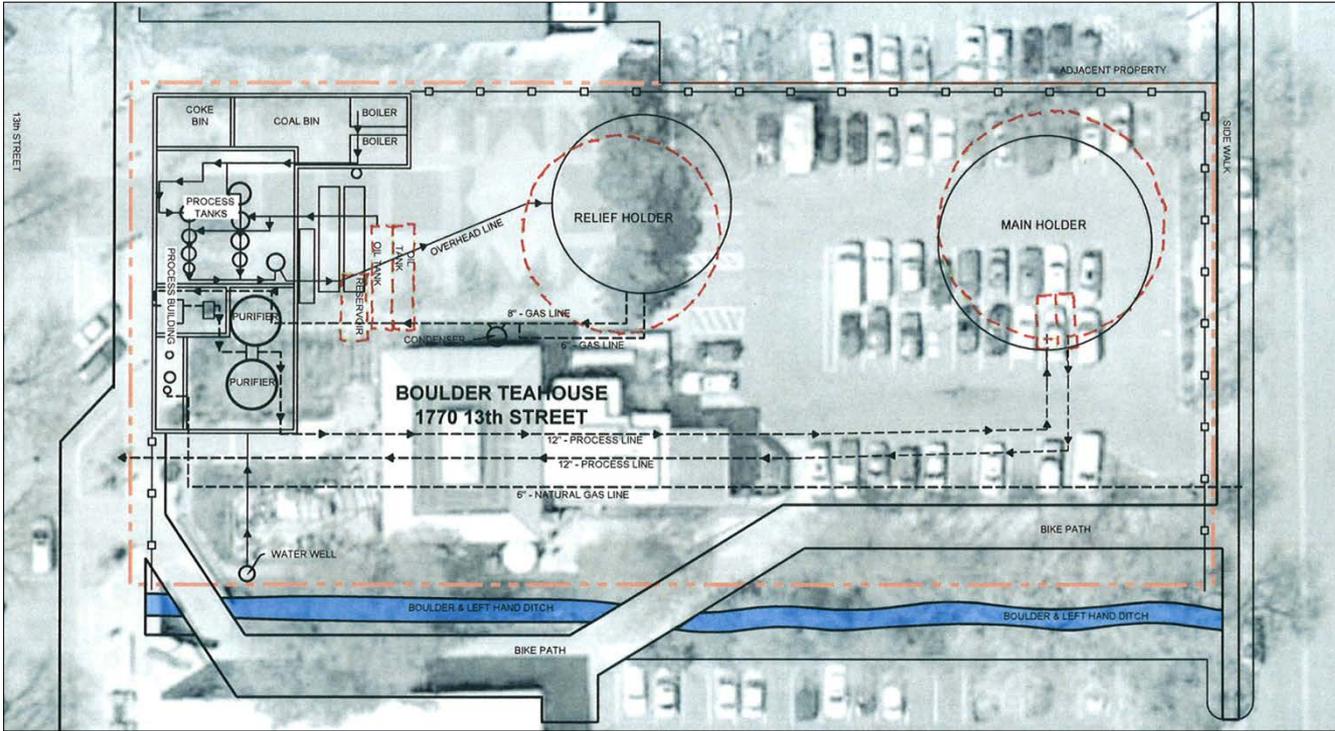


Valmont Butte Area Map



13th Street Plaza

Voluntary Clean-Up Program (VCUP)



Next Steps

- **Fourth Quarter 2014** - Boards and commissions: Parks and Recreation Advisory Board, Library Commission, Arts Commission, and Environmental Advisory Board
- **Second Quarter 2015** - Planning Board consideration
- **Second Quarter 2015** - City Council consideration

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