



INFORMATION ITEM MEMORANDUM

To: Mayor and Members of Council

From: Nuria Rivera-Vandermyde, City Manager
Mark Woulf, Assistant City Manager
Brad Mueller, Planning & Development Services Director
Kristofer Johnson, P&DS Comprehensive Planning Senior Manager
Sarah Horn, P&DS Senior City Planner

Date: Thursday, April 18, 2024

**Subject: Information Item: Area III-Planning Reserve Urban Services Study (USS)
Update**

EXECUTIVE SUMMARY

The Area III-Planning Reserve (Planning Reserve) is approximately 500 acres in size and was identified through the 1993 Area III Planning Project as the portion of Area III where the city maintains the option of Service Area expansion for future urban development in response to priority community needs that cannot be met within the existing Service Area (Areas I and II).

A process for Service Area expansion (i.e., conversion of the Planning Reserve to Area II which allows for annexation) was subsequently set in place and is defined in the Boulder Valley Comprehensive Plan (BVCP) to ensure a methodical approach to the Planning Reserve. The Urban Service Study (USS) is the first of three steps in exploring the potential feasibility of extending urban services and possible Service Area expansion into the Planning Reserve. The USS will provide an objective technical analysis of the feasibility, phasing, and potential costs of extending urban services into the Planning Reserve (Step 1). The outcomes of the study will help inform whether Planning Board and City Council wish to proceed with an evaluation of unmet community needs as part of an update to the Comprehensive Plan (Step 2). They will then have the opportunity to initiate a Service Area expansion planning process (Step 3).

The USS is being led by the Planning & Development Services Comprehensive Planning team in collaboration with a consultant and various city departments directly related to the provision of

urban services. The completed study will be reviewed by Planning Board and accepted by City Council. The study is expected to be finished by Q4 of 2024, in advance of the next major update to the BVCP. The study will provide an analysis of baseline data to help the Boulder community and decision makers understand the potential scope, extent and feasibility of expanding city services to the area. The BVCP states that “adequate urban facilities and services” are a prerequisite for new urban development. Urban services as defined by the BVCP specifically include:

- Public water
- Public sewer
- Stormwater and flood mitigation
- Urban fire protection and emergency medical care
- Urban police protection
- Multimodal transportation
- Developed urban parks

More details on the goals, outcomes, and scope of work for the USS can be found in the [Information Packet provided to City Council on October 19, 2023.](#)

This Information Packet provides an update to City Council on the initial existing conditions assessment performed as part of the USS (i.e., Step 1). The consultant team visited Boulder, toured the Planning Reserve, and held several one-on-one meetings with key city department staff to gather information on existing infrastructure and urban services available in the immediate vicinity of the area. Key takeaways and initial considerations for potential improvements based on their research and analysis are summarized below. More detailed analysis of possible necessary improvements under three demand scenarios will be included in the next task of this study.

FISCAL IMPACT

The study is budgeted under 2023 and 2024 budget allocations to the Planning & Development Services, Public Works – Utilities, and Transportation & Mobility departments. There is no additional fiscal impact related to the study anticipated at this time. The results of the study will inform the range of potential capital improvements needed if future Service Area expansion is approved.

COMMUNITY SUSTAINABILITY ASSESSMENTS AND IMPACTS

Staff will complete an objective analysis of the feasibility of providing urban services to the Planning Reserve. This study will not present additional economic, environmental or social impacts to the city. If, after acceptance of this study, council directs staff to continue the process to consider priority needs that cannot be met within the current Service Area (i.e., Step 2), community sustainability assessments and impacts will be evaluated in more detail.

BACKGROUND

The Area III-Planning Reserve

The Area I, II, III framework continues to define the BVCP and the city's approach to the urban service area as seen in **Figure 1**. Area I is defined as the area within the City of Boulder that has adequate urban facilities and services and is expected to continue to accommodate urban development, Area II is the area under county jurisdiction where annexation to the city can be considered, and Area III is the remaining area in the Boulder Valley, generally under county jurisdiction, and maintained for rural preservation. The Area III-Planning Reserve includes approximately 500 acres of land located outside the current city service area boundary, on the north and east side of US-36 between Broadway and Jay Road. This location was selected as a result of the 1993 Area III Planning Process led by city and county staff. The Planning Reserve was established for potential urban service expansion and annexation to the city because of its contiguity to the existing service area and its perceived lack of hazard areas, significant agricultural lands, and sensitive environmental areas.

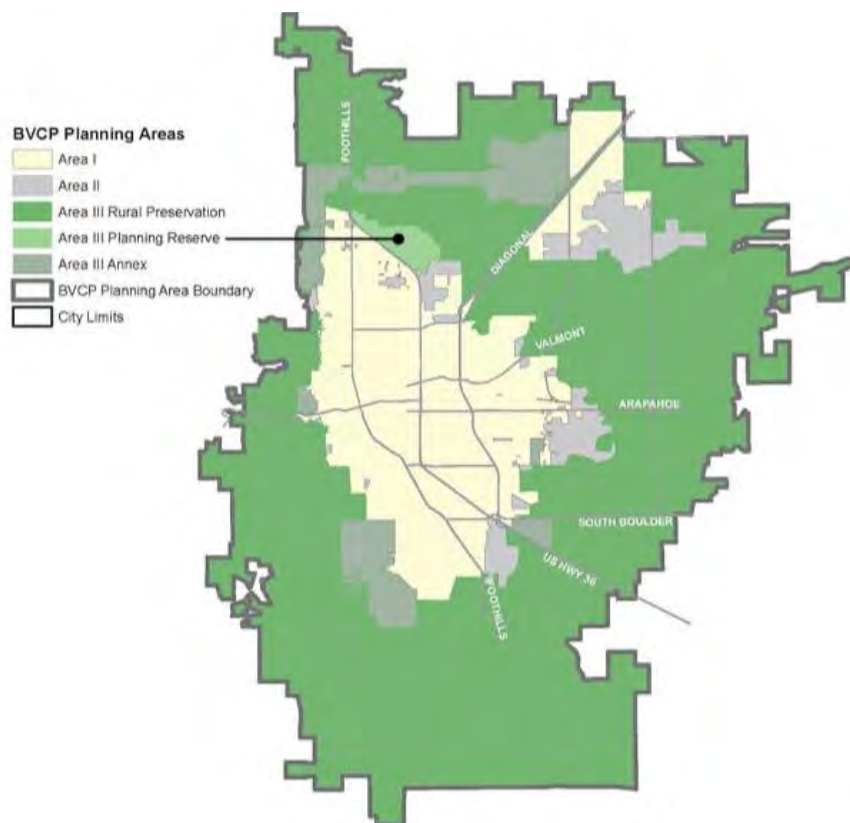


Figure 1: Planning Areas Map (BVCP)

City-owned Property in the Planning Reserve

The city owns approximately 219 acres of the Planning Reserve, with the remainder held primarily by private property owners. About 30 acres of the city-owned property is managed by

the Housing & Human Services department as an opportunity for future affordable housing. The remaining 189 acres of city land was purchased with a 0.25 Cent Sales Tax created through a ballot measure to establish a dedicated and specific fund for Parks and Recreation to acquire and develop necessary park land to meet the levels of service in the community. The land managed by Boulder Parks and Recreation (BPR) currently satisfies the future needs and growth of the community for park and recreation land and facilities. If the city wanted to utilize this land for purposes other than park and recreation uses, it would need to follow the procedures in the city charter related to the disposal of park land and reimburse the Parks and Recreation fund.

Service Area Expansion Process

A process for converting Area III-Planning Reserve land to Area II (i.e., eligible for annexation) is defined in the Boulder Valley Comprehensive Plan to ensure comprehensive planning of the Planning Reserve, as opposed to incremental changes. There are three sequential steps to consider an expansion and the process may be paused by City Council at each point if the criteria for future steps are unmet at that time. The steps are as follows:

Step 1: Urban Services Study (approx. 12 months to be completed Q4 2024)

Urban service standards set the benchmark for providing a full range of urban services in the Boulder Valley. A basic premise of the BVCP is that “adequate urban facilities and services” are a prerequisite for new urban development. These standards are intended to be minimum requirements or thresholds for facilities and services that must be delivered to existing urban development, new development and redevelopment to be considered adequate. The purpose of the Urban Services Study is to learn more about the feasibility of and requirements to provide urban services to the area. This study provides a foundation of information necessary prior to undertaking the following two steps summarized below. The Urban Services Study can be completed any time (i.e., it need not be done in conjunction with a BVCP update) and it can be completed for the entire Planning Reserve or a portion. The study includes, but is not limited to, analysis and inventory of existing infrastructure and service capacity such as:

- Needed upgrades to the water, wastewater, and stormwater facilities and distribution system
- Additional fire stations or vehicles
- Police protection needs
- Transportation network connections
- Capacity of existing schools
- Urban parks
- Inventory of existing uses in the Area III-Planning Reserve
- Identification of logical Service Area expansions (areas and/or phasing)

Step 2: Identify Community Needs (approx. 6-12 months and could be included as part of BVCP update)

The Planning Board and City Council can hold public hearings prior to or during the early stages of a Mid-term or Major BVCP update to determine whether there is interest in considering a

Service Area expansion as part of that update. Staff would then conduct a planning effort to solicit and identify priority community needs as part of the update process. The findings of the community needs study would be referred to Boulder County prior to the Planning Board and City Council holding another round of public hearings to decide whether the community needs are of sufficient priority to proceed with Service Area expansion based on three eligibility criteria:

- **Community Value:** Expansion will address a long-term community value described in the BVCP
- **Capacity:** The existing Service Area does not include suitable existing or potential land/service capacity for the needs of the community
- **Benefit:** Expansion will benefit existing community members in the Boulder Valley and will provide lasting benefits for future generations

Step 3: Service Area Expansion Plan (approx. 18-24 months)

If Planning Board and City Council decide there is sufficient priority community need identified in Step 2 for a Service Area expansion, the final step may be implemented. The expansion plan is anticipated to be similar in scope to an Area Plan and will be developed by city staff in coordination with the county. The plan will include:

- Location and amount of land area needed.
- Other uses that are desired or needed based on identified community needs.
- Conceptual land use and infrastructure plans, to ensure adequate facilities and services can be provided.
- General annexation requirements to further comprehensive plan goals and policies
- Requirements and conditions for the city and private sector for development, including on-site and off-site mitigation of impacts.
- Anticipated development phasing

Approval of the Service Area expansion plan and subsequent changes from Area III-Planning Reserve to Area II would be decided by both the city and county. This approval must consider:

- Minimum size of approximately 40 acres or greater
- Minimum contiguity with the existing Service Area of 1/6 of the total perimeter of the expansion area
- Provision of a community need that cannot be met within the existing service area
- Logical extension of the service area that is an efficient increment, a desirable community edge, and a contribution to compact urban form
- Compatibility with the surrounding area and policies of the Comprehensive Plan
- No major negative impacts where the community benefits outweigh development costs and adverse impacts
- Appropriate timing for annexation and development of the expansion area after it is changed to Area II

The diagram below illustrates the decision-making process starting with the Baseline Urban Services Study. At any point in the process, City Council can decide to continue with service area expansion consideration or decide to not move forward with consideration.

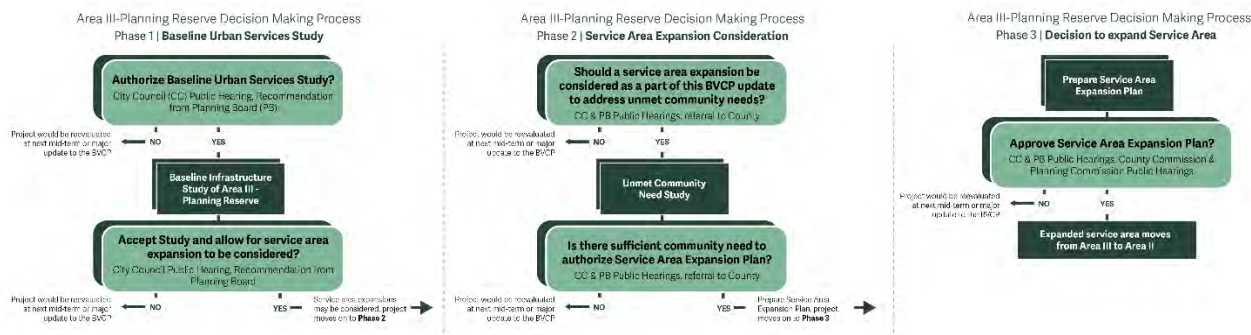


Figure 2: Area III-Planning Reserve Service Area Expansion Decision Making Process

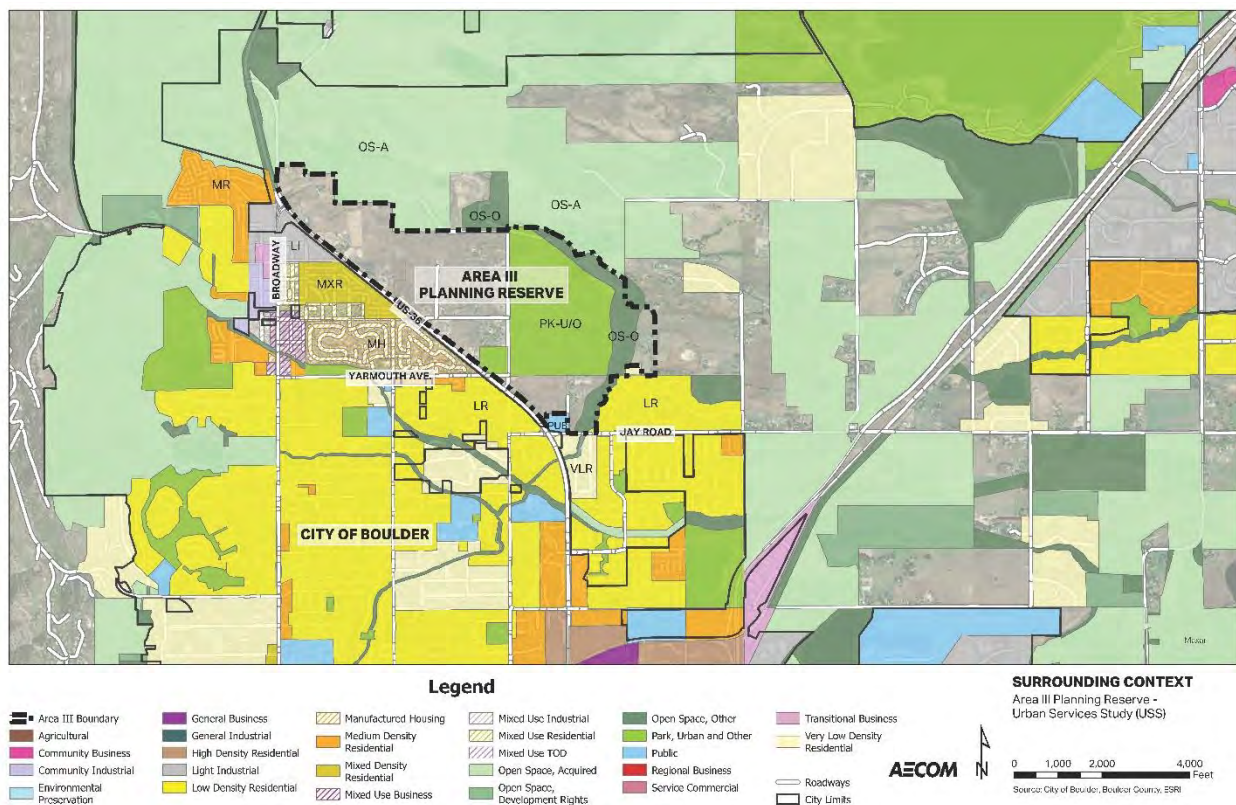
ANALYSIS

Below is a brief summary of the existing conditions in and around the Planning Reserve. Please refer to the full Existing Conditions Report (**Attachment A**) for additional details.

Area III-Planning Reserve Existing Conditions

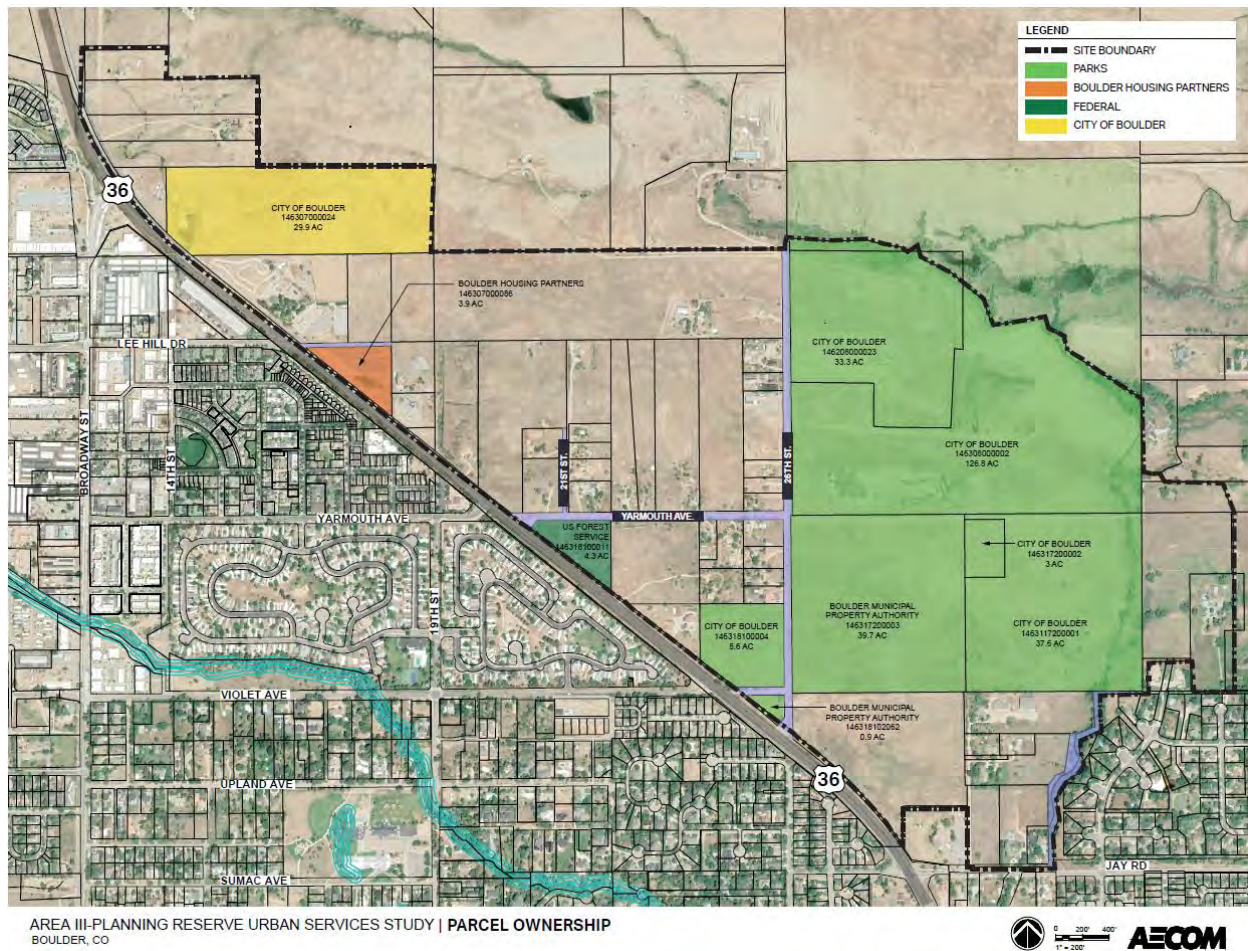
Surrounding Context

The Planning Reserve is located roughly northeast of US-36 between Broadway Street and Jay Road. The area is approximately 493 acres in total and includes a large eastern portion currently identified in the BVCP land use map as future park land (approximately 189 acres). Some industrial and commercial uses and several residential neighborhoods are located to the west and south of the site, south of US-36, within the City of Boulder. Land owned and managed by City of Boulder Open Space & Mountain Parks is located to the north of the Planning Reserve, while large lot residential is located to the east.



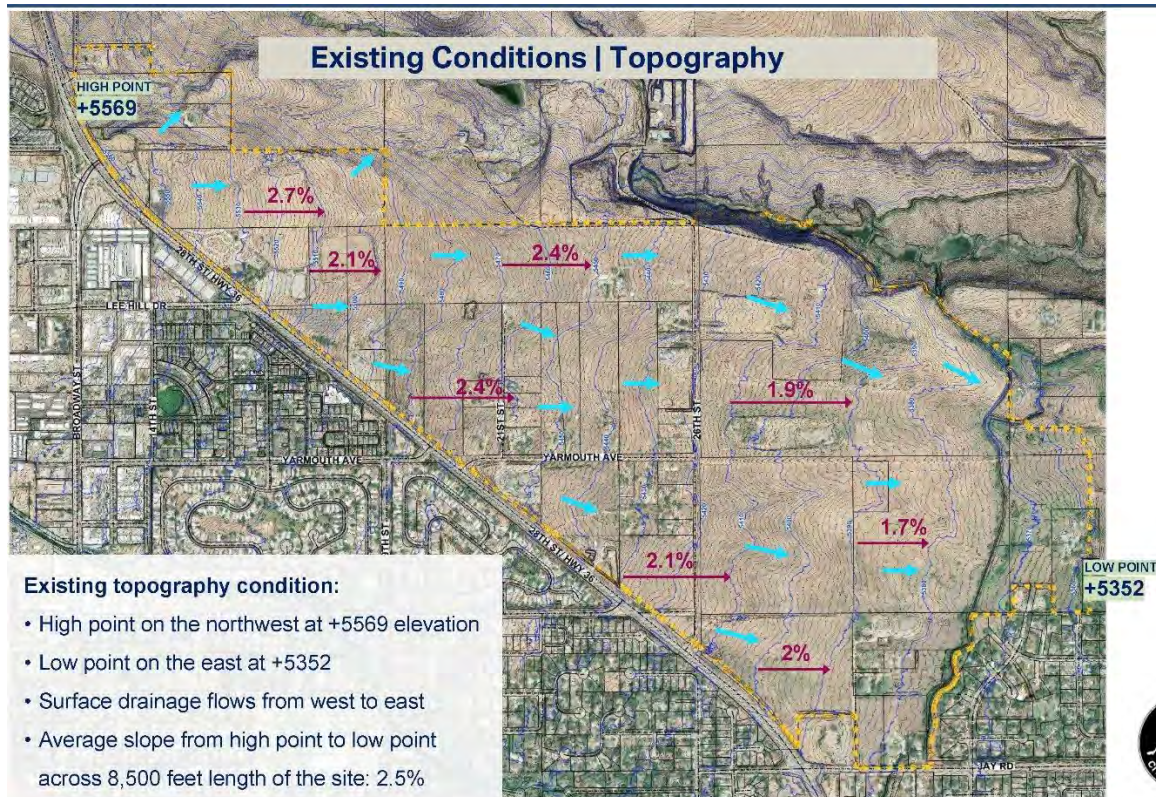
Parcel Ownership

The City of Boulder owns approximately 219 acres within the Planning Reserve (Figure 2), with the remainder held by other public agencies and private property owners. Most of the city-owned land (approximately 189 acres) was purchased with Parks and Recreation acquisition funds for a future regional park. The City of Boulder's Housing and Human Services department also manages a 30-acre parcel identified as an opportunity for future affordable housing in the northwest portion of the Planning Reserve.



Topography

The Planning Reserve's topography is sloped at an approximately 1.5 to 2.5 percent slope to the east/southeast. The high point of the site is at the northwest corner and the low point, approximately 217 feet lower, is located in the southeast corner of the site. The topography is gently sloping and suitable for a range of potential land uses. The northern edge of the Planning Reserve is bordered by steep slopes and a major drainageway.



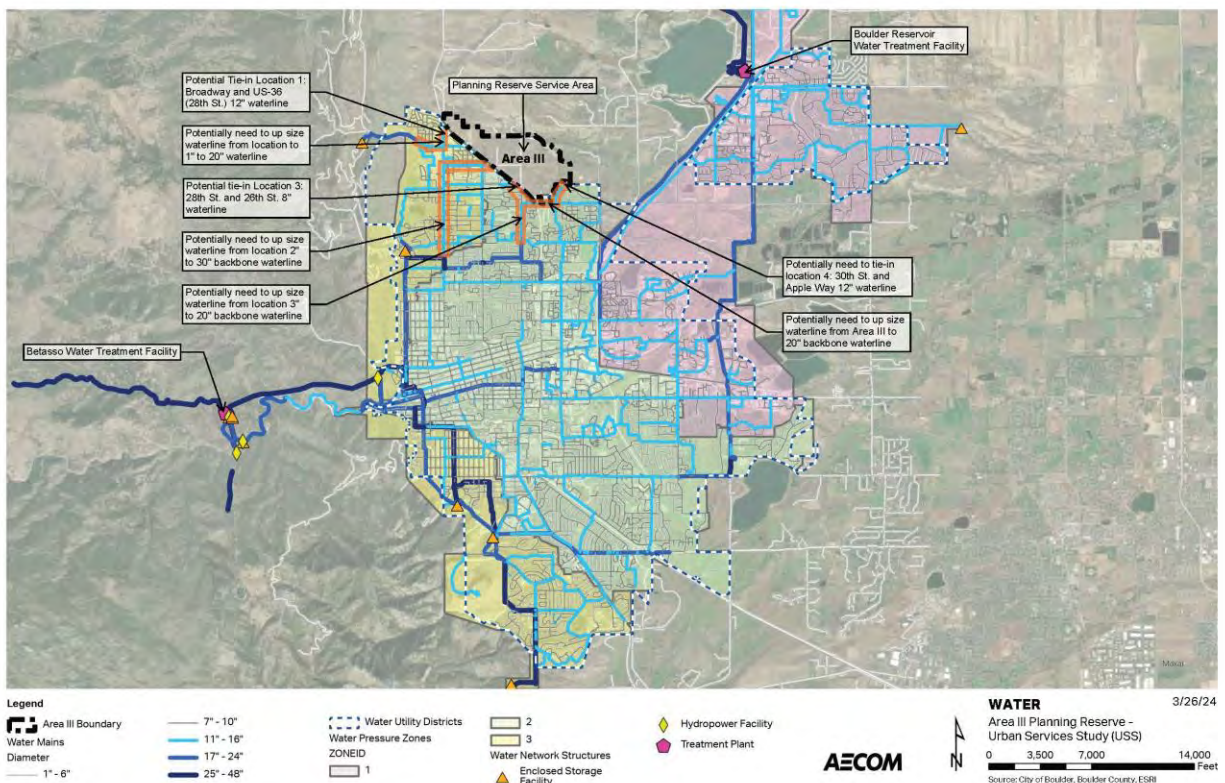
Urban Services

Water System

The city's water system is comprised of East Slope and West Slope source water, two water treatment facilities, and a transmission and distribution system. Improvements planned at both facilities will result in a maximum capacity of 40 million gallons per day (MGD). The capacity of 40 MGD does not include anticipated development in the Planning Reserve. There is a potential that the Planning Reserve demands may trigger additional improvements at one or both treatment facilities.

Boulder does not have any waterlines within the Planning Reserve. The Planning Reserve is along Pressure Zones 2 and 3 and would likely be served by these zones. The waterlines along the Planning Reserve boundary are smaller diameter pipelines (8-inch and 12-inch). To serve the Planning Reserve, large diameter waterlines with sufficient capacity will be needed along with sufficient treatment and storage capacity. Additionally, approximately 1.5 miles south and 0.7 miles west of the Planning Reserve's southern boundary, there are backbone waterlines that could potentially have capacity to serve the Planning Reserve. The Planning Reserve water infrastructure could also potentially tie into a few smaller diameter waterlines along the southern edge of the Planning Reserve. The smaller diameter pipelines would likely need to be replaced with larger diameter waterlines to accommodate any additional capacity. There are four potential

tie-in locations that could potentially serve the Planning Reserve (Broadway & US-36, Yarmouth & US-36, 26th Street & US-36, and 30th Street & Apple Way).



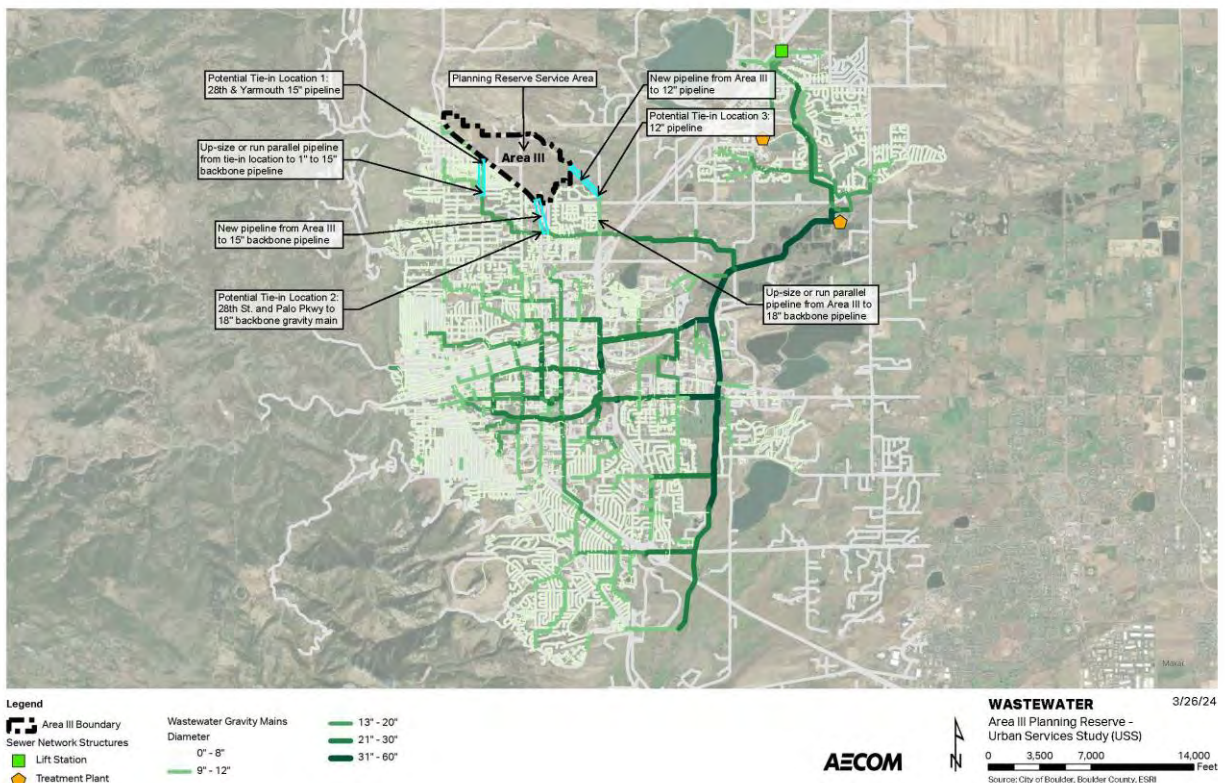
Wastewater System

Boulder's wastewater infrastructure is comprised of the city's wastewater collection system and the 75th Street Water Resource Recovery Facility (WRRF). Boulder's Wastewater Utility Service Area (WUSA) is approximately 17,200 acres (27 square miles) and includes the Boulder Valley Comprehensive Plan (BVCP) Area I (within City of Boulder limits) and Area II (areas adjacent to the city limits that may be subject to future annexation). Areas outside of the WUSA (including the Planning Reserve) are served by septic systems or other utility districts. Boulder does not have wastewater infrastructure within the Planning Reserve.

Areas outside of the city's WUSA – including the Planning Reserve – are served by septic systems or other utility districts. Boulder does not have wastewater infrastructure within the Planning Reserve. Additional sewer loadings from the Planning Reserve would likely trigger a need to increase capacity at the WRRF.

The wastewater collection system just south of the Planning Reserve is a gravity system within the Fourmile sewer basin that flows east to the WRRF. The topography of the Planning Reserve slopes west to east, so wastewater in a gravity collection system will flow east.

Approximately 0.5 miles south of the Planning Reserve's southern boundary, there is a gravity backbone pipeline that could potentially have capacity to convey wastewater sewer loadings from the Planning Reserve to the WRRF. The Planning Reserve wastewater infrastructure could potentially tie into a few smaller diameter wastewater lines along its southern edge. The smaller diameter pipelines may have to be replaced with larger diameter pipes or parallel lines may have to be constructed. The additional sewer loadings from the Planning Reserve will likely trigger a need to increase capacity at the WRRF.



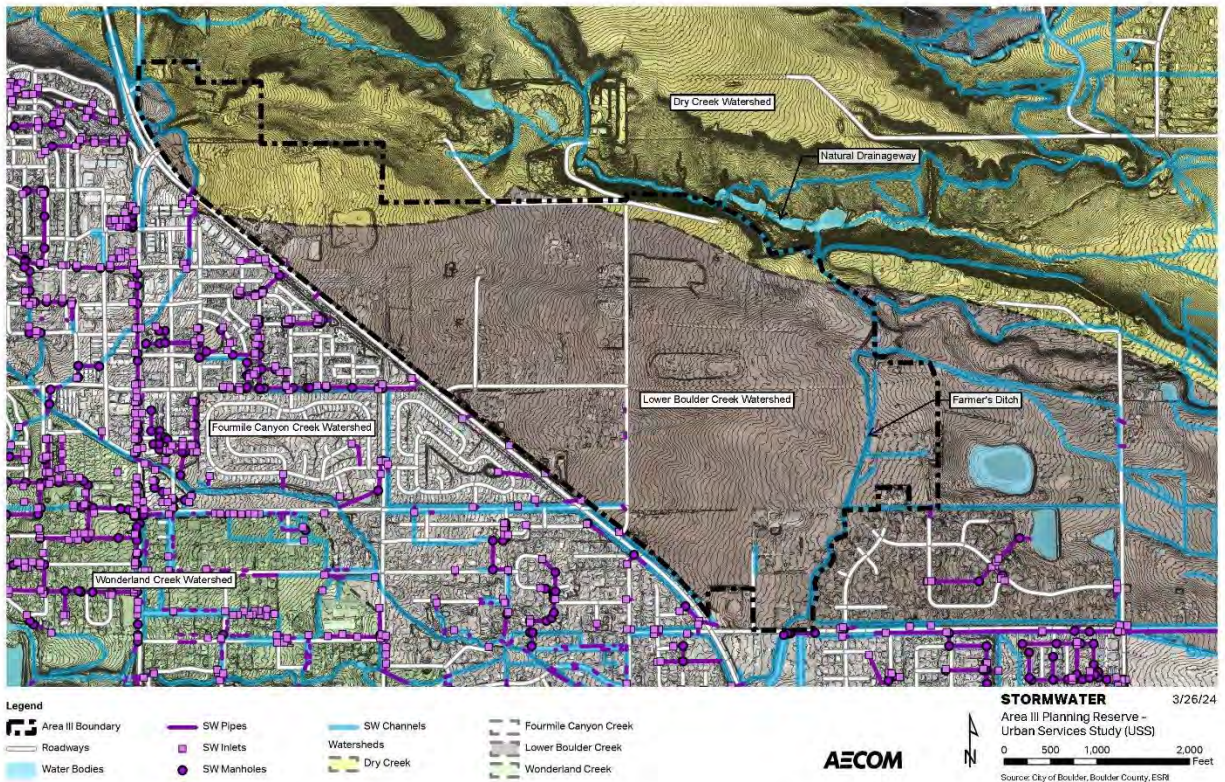
Stormwater

Most of the Planning Reserve is in the upper portion of the Lower Boulder Creek watershed, with the northern portion of the area draining into the Dry Creek watershed as identified in the City of Boulder's Stormwater Sub-Catchment GIS data.

The area is bound by US-36 on the south side with an existing roadside ditch and some cross culverts to continue flow in a southeasterly direction. On the north side of the Planning Reserve is an existing natural drainageway with steep slopes from the area down to drainageway. This drainageway also flows in a southeasterly direction. The east side of the area is bordered by Farmers Ditch. In general, the entire site flows from northwest to southeast and is captured by Farmers Ditch on the east side of the site.

Key considerations for the site from a stormwater perspective include:

- There is no existing Stormwater Master Plan for this area and Floodplains are not mapped.
- The stormwater infrastructure that does exist south of US-36 and east of Farmers ditch is old and undersized.
- This area would not be able to discharge into the existing storm infrastructure located on the south side of the project due to its existing capacity issues.
- No direct discharge into Farmers Ditch or any other irrigation facility with new storm infrastructure is allowed currently.
- To minimize changes to historic flow paths and drainage basins that would potentially impact surrounding drainageways and cause downstream flooding, the city may need to consider ponds and other large stormwater infrastructure to treat and detain flows from future urban development prior to discharge.



Access & Transportation

Arterial & Roadway Connections

The major arterial serving the study area is The Planning Reserve has primary access from US-36, which is also the major arterial serving the northern part of the city. US-36 is a two-lane roadway, running in a northwest/southeast direction, with left and right turn lanes at intersections.

Generally, roadway connections across US-36 that provide access to the Planning Reserve are limited and often end in private property. Major intersections on the west side of US-36, such as Broadway, Lee Hill Drive, and Yarmouth Avenue, could provide future cross access if improvements were made at the intersections. The Violet Avenue intersection is offset and 26th Street does not intersect on the north side of US-36. Existing roads within the site are largely unimproved dirt roads and include Yarmouth Avenue and 26th Street. An existing signalized intersection at Jay Road and US-36, provides access to the southern portion of the site via local roads.

The aggregate Average Daily Traffic (ADT) along US-36 between Broadway and Jay Road (the west and east end of the Planning Reserve respectively) is 16,809 vehicles per day. Any future traffic generated due to additional development along this stretch would likely create delays under current conditions that include only one vehicle travel lane in each direction.

Bicycle & Pedestrian Infrastructure

This stretch of US-36 has one-way bikeable shoulders on each side of the road and additional bicycle and pedestrian infrastructure may be necessary. While bicycle and pedestrian improvements are being made along US-36 at some of the key intersections (e.g. US-36 and Broadway), many locations adjacent to the Planning Reserve are more auto-centric and there are areas without sidewalks (e.g., Jay Road).

Transit

Currently, there are no transit services operating along US-36 at the boundary of the Planning Reserve. At the west end of the Planning Reserve, transit service loops around the Broadway/Lee Hill Drive/Front Range block. There are two additional locations with transit stops relatively close to US-36. Transit stops are located near the mid-point of the Planning Reserve, on the west side of US-36 along Yarmouth Avenue and stops located at the south end of the Planning Reserve, on the east side of US-36 along Jay Road.

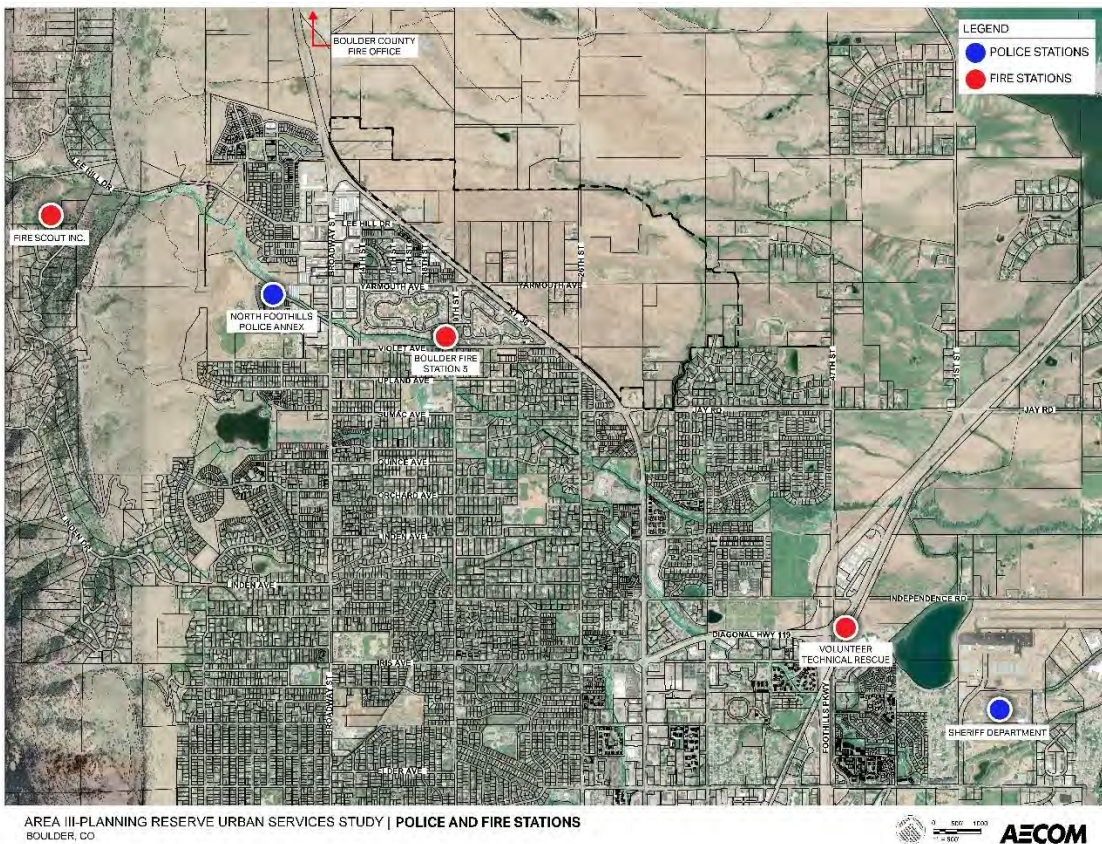


Public Safety Services

Public safety services within the city are provided by the Boulder Fire-Rescue Department and the Boulder Police Department. The Boulder Fire-Rescue Department provides a full range of emergency response services carried out by personnel stationed at seven strategically located stations throughout the City of Boulder. The closest fire station to the Planning Reserve is Boulder Fire Station 5 at the corner of 19th Street and Violet Avenue. Providing service to North Boulder, Station 5 houses a three-person engine company and responds to approximately 1,100 emergency calls a year.

Additionally, Boulder Fire-Rescue's Wildland Division provides initial fire attack for wildland fires on city-owned and managed land throughout Boulder County, including Open Space, Public Works, and Parks locations. Boulder Fire-Rescue also works closely in coordination of wildfire response with neighboring fire districts as well as with Boulder County. The Boulder County Fire Office is located to north of the Planning Reserve near the intersection of US-36 and Longhorn Road.

The Boulder Police Department provides Traffic and Administration, Patrol, Investigations, and Animal Protection and Code Enforcement services. The closet police station is the North Foothills Police Annex, which is located west of the Planning Reserve in the Foothills Community and provides service to North Boulder.



Regional Park Land

When compared to national benchmark communities, National Recreation and Park Association (NRPA) Agency Performance Review data, and the Trust for Public Land (TPL) overall ParkScore® median, Boulder is keeping pace in parkland per capita, and in some cases provides above average amounts of urban parkland. If BPR develops all its existing parkland (specifically undeveloped acreage), and 2040 population projections are on target, the City will maintain current level of service (LOS) by 2040, providing the same amount of parkland per 1,000 community members.

With the high price of land in Boulder and the City's growth boundary limiting development, and limited funding sources, adding new park land is currently not feasible. Given the projected population growth and limitations around adding park land, each developed park will need to handle an increased number of users, requiring more amenities and higher levels of maintenance. It is projected that at least 140 acres in the Planning Reserve will be needed to support a future regional park for the Boulder community, though the exact acreage required will need further analysis and evaluation. Additionally, smaller neighborhood parks that would support 15-minute walkable neighborhoods in this area would be needed if urban development is enabled through a future Service Area expansion.

NEXT STEPS

The consultant team conducted a Service Demand Scenario workshop on March 19 with city staff to develop initial assumptions for three scenarios with varying levels of service demand. These scenarios will be analyzed to determine the potential financial impacts and infrastructure needs that would be required to support each level of development.

The project team is scheduled to meet with Planning Board on June 19, and City Council on June 27 to review the preliminary service demand scenario assessments and discuss the feasibility and potential costs necessary to provide urban services under each scenario.

ATTACHMENTS

Attachment A: AECOM Area III-Planning Reserve Urban Services Study: Existing Conditions Memo

DRAFT

Area III-Planning Reserve Urban Services Study

Task 1 Existing Conditions Memo

City of Boulder

April 8, 2024

Quality information

Prepared by	Checked by	Verified by	Approved by
Sarah Murphy	Mary Kato	Jeff McKelvey	
AECOM			

Revision History

Revision	Revision date	Details	Authorized	Name	Position

Distribution List

# Hard Copies	PDF Required	Association / Company Name

Prepared for:

City of Boulder
City of Boulder Planning & Development Services
1101 Arapahoe Avenue
Boulder, CO 80302

Prepared by:

AECOM

AECOM
7595 Technology Way
Denver, CO 80237
aecom.com

Copyright © 2024 by AECOM

All rights reserved. No part of this copyrighted work may be reproduced, distributed, or transmitted in any form or by any means without the prior written permission of AECOM.

Table of Contents

Introduction	1
Key Insights.....	1
Existing Conditions.....	2
Planning Framework	2
Wastewater System	12
Stormwater	14
Transportation	16
Transportation - Existing Capacity	18
Public Safety Services	20

Figures

Figure 1 Area III-Planning Reserve Surrounding Context.....	2
Figure 2 Existing Parcel Ownership Map.....	3
Figure 3 Existing Topography Map.....	5
Figure 4 Existing Access Points and Roads/Trails Map.....	6
Figure 5 Opportunities and Constraints	7
Figure 6 Current Water Distribution System	11
Figure 7 Current Wastewater System and Potential Tie-in Locations	13
Figure 8 Existing Stormwater Capacity.....	15
Figure 9 Current Transportation Infrastructure / Multi Use Pathways.....	18
Figure 10 Police and Fire Stations	20

Tables

Table 1 Summary Breakdown of Parcel Ownership	4
---	---

Appendix

Appendix A – General Limiting Conditions

Introduction

The City of Boulder (City) has engaged AECOM Technical Services, Inc. (AECOM) to support the Area III-Planning Reserve Urban Services Study (USS). This study is a preliminary step to help the community and decision-makers understand the conceptual scope and cost of providing city services to this area, and to weigh the potential costs and benefits of expanding municipal services into the area. The roughly 500-acre Area III Planning Reserve is situated the north side of Boulder. The City of Boulder maintains the option to expand future urban development in the planning reserve in response to priority community needs that cannot be met within the existing Service Area (Areas I and II).

The USS will provide an understanding of how existing infrastructure and city services could extend into the Area III-Planning Reserve, describe the type and extent of city services needed in the Area III-Planning Reserve under three service demand scenarios (low, medium, high), develop an initial understanding of potential impacts, costs, phasing and funding of providing city services under each scenario, and give decision-makers information to help them determine if the City should continue to explore expanding into the Area III-Planning Reserve. Urban services that are defined in the Boulder Valley Comprehensive Plan and will be analyzed through the USS include public water, public sewer, stormwater and flood management, urban fire protection and emergency medical care, urban police protection, multimodal transportation and developed urban parks.

This technical memo presents an initial assessment of existing urban services and infrastructure for the Area III-Planning Reserve (Planning Reserve).

Key Insights

- The Area III-Planning Reserve encompasses approximately 493 acres located roughly northeast of United States Route 36 (US-36) between Broadway and Jay Road.
- The parcels owned by the City of Boulder total approximately 218.6 acres. The majority of the City-owned land (approximately 180.1 acres) was purchased with Parks and Recreation acquisition funds for a future regional park.
- Privately owned parcels total approximately 254.7 acres. Privately owned parcels present a potential opportunity for future development, but also represent a potential constraint since they are not owned by the City.
- The gently sloping topography is generally supportive of urban development, recreation, and multi-modal transportation networks.
- There is limited transit service in the study area compared with other parts of Boulder.
- Roadway connections are limited across US-36 and often end in private property.
- Boulder does not have any waterlines within the Planning Reserve. To serve the Planning Reserve, large diameter waterlines with sufficient capacity will be needed along with sufficient treatment and storage capacity.
- Additional sewer loadings from the Planning Reserve will likely trigger a need to increase capacity at the Boulder Water Resources Recovery Facility (WRRF).
- There is no existing Stormwater Master Plan for the Area III-Planning Reserve, and floodplains are not mapped. This area would not be able to discharge into the existing storm infrastructure due to existing capacity issues.

Existing Conditions

Planning Framework

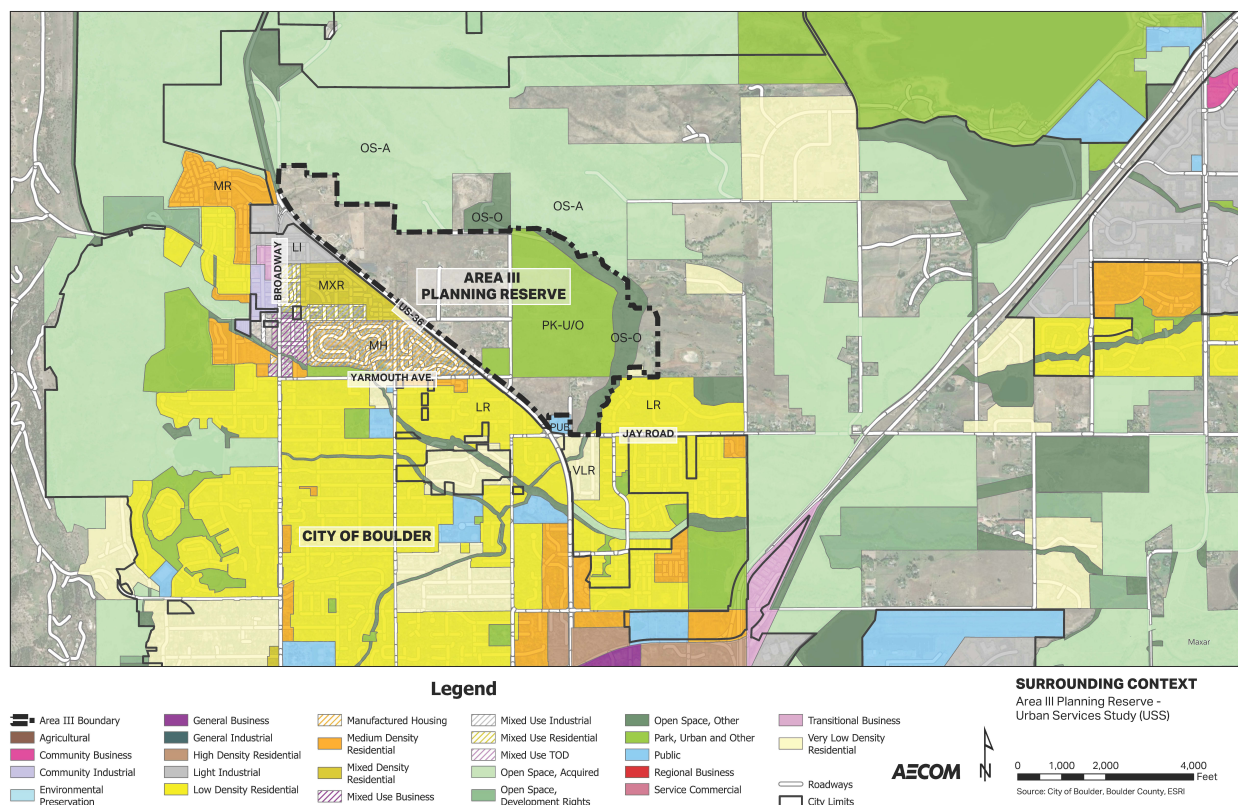
The planning framework existing conditions analysis for the Planning Reserve includes the following:

- A. Surrounding Context
- B. Parcel Ownership
- C. Topography
- D. Access Points and Existing Roads/Trails
- E. Summary of Opportunities and Constraints
- F. Site Photos

A. Surrounding Context

The Area III-Planning Reserve encompasses approximately 493 acres and is located roughly northeast of US-36 between Broadway Street and Jay Road as seen below (Figure 1). The surrounding context of the Planning Reserve is predominately open space to the north, lower density residential/rural to the east, and higher density residential/mixed-use/urban development to the south and west within the city limits of Boulder.

Figure 1 Area III-Planning Reserve Surrounding Context



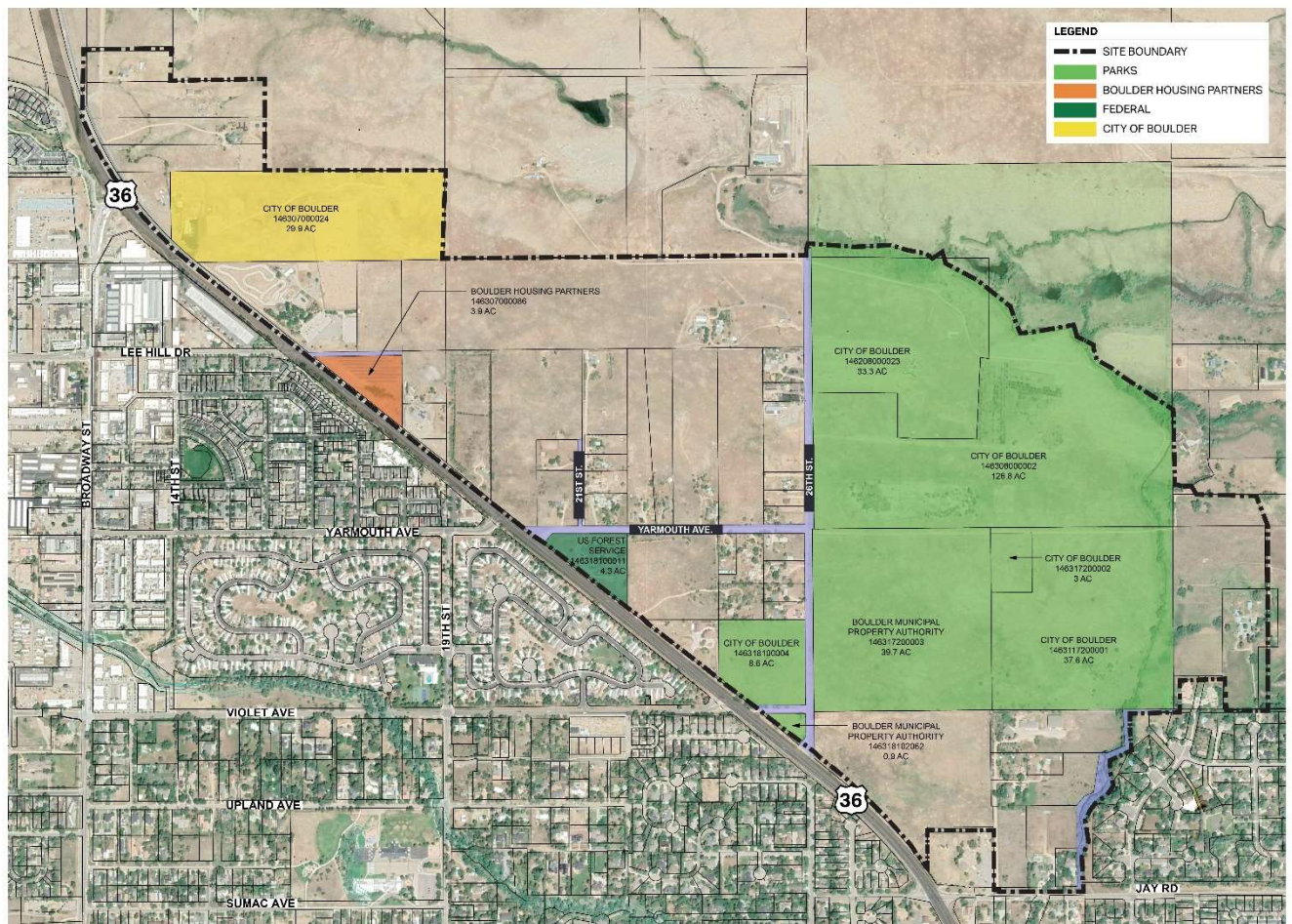
B. Parcel Ownership

The City of Boulder owns approximately 218.6 acres within the Planning Reserve (Figure 2), with the remainder held by other agencies and private property owners.

Most of the City-owned land (approximately 188.7 acres) was purchased with Parks and Recreation acquisition funds for a future regional park. The City of Boulder's Housing and Human Services also owns a 29.9-acre parcel earmarked for potential future affordable housing in the northwest portion of the Planning Reserve. Table 1 provides additional details regarding parcel ownership.

The privately owned parcels present a potential opportunity for future development, but also represent a potential constraint since they are not owned by the city.

Figure 2 Existing Parcel Ownership Map



AREA III - BASELINE URBAN SERVICES STUDY | **PARCEL OWNERSHIP**
BOULDER, CO



Table 1 Summary Breakdown of Parcel Ownership

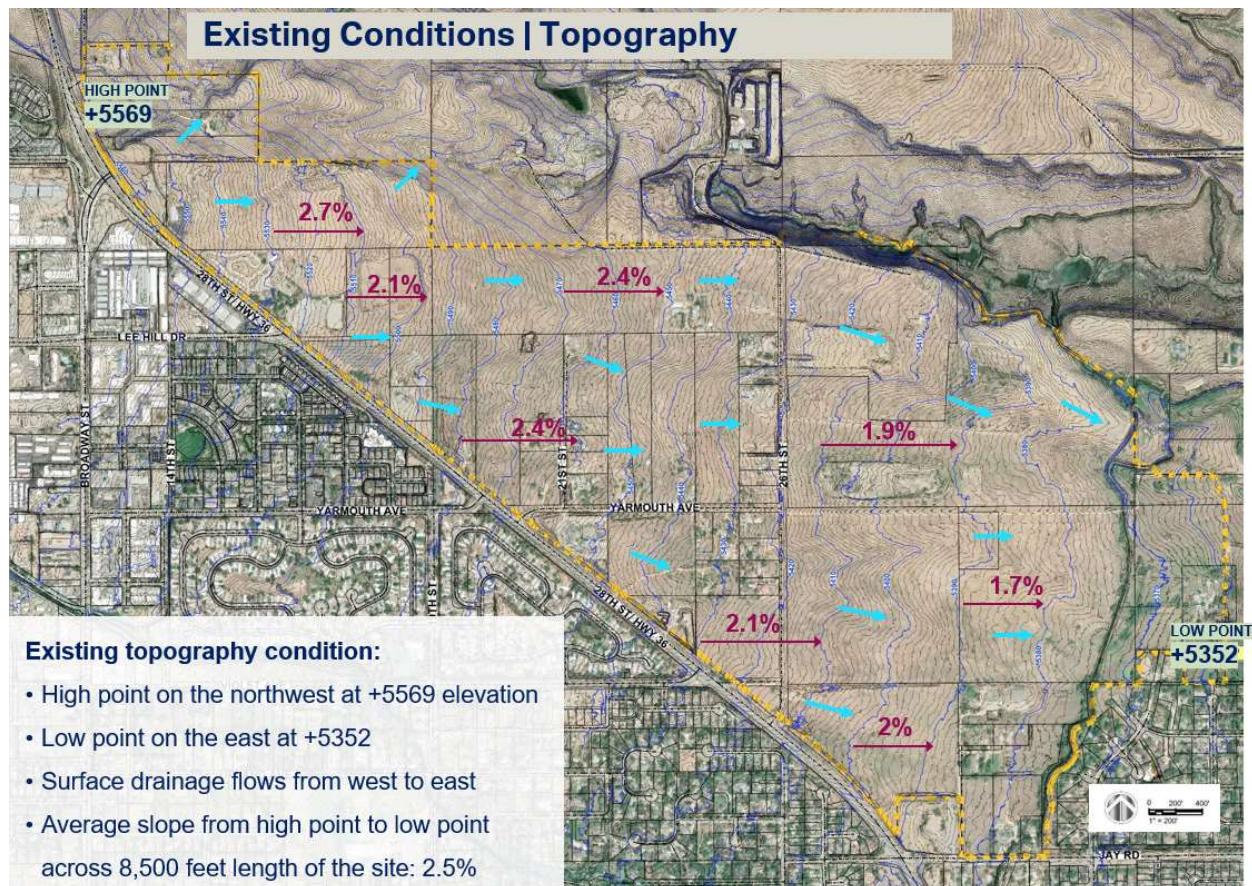
	No	Parcel ID	Owner Name	Acreage	
				Within Area III PR	Outside Area III PR
	1	City of Boulder			
	1.1	146208000023	City of Boulder	32.4 AC	0.9 AC
	1.2	146308000002	City of Boulder	66.5 AC	60.3 AC
	1.3	146317200001	City of Boulder	37.6 AC	
	1.4	146317200002	City of Boulder	3.0 AC	
	1.5	146318100004	City of Boulder	8.6 AC	
	1.6	146317200003	Boulder Municipal Property Authority Boulder	39.7 AC	
	1.7	146318102062	Municipal Property Authority	0.9 AC	
			Subtotal	188.7 AC	
	1.8	146307000024	City of Boulder	29.9 AC	
			Subtotal	29.9 AC	
	2	Boulder Housing Partners			
	2.1	146307000086	Boulder Housing Partners	3.9 AC	
			Subtotal	3.9 AC	
	3	US Forest Service			
	3.1	146307000086	United States of America	4.3 AC	
			Subtotal	4.3 AC	
	4	Existing Public ROW and Easement			
	4.1	Public ROW (Yarmouth Ave., 21 st St., 26 th St., Violet Ave., Lee Hill Dr.)		9.3 AC	
	4.2	Easement		2.2 AC	
			Subtotal	11.5 AC	
	5	Private Parcels			
			Subtotal	254.7 AC	
		TOTAL		493 AC	

ROW = right-of-way

C. Topography

The Planning Reserve's topography is sloped at an approximately 1.5 to 2.5 percent slope to the east/southeast. The high point of the site is at the northwest corner and the low point, approximately 217 feet lower, is located in the southeast corner of the site (Figure 3). The topography is gently sloping and suitable for a range of potential land uses. The northern edge of the Planning Reserve is bordered by steep slopes and a major drainageway.

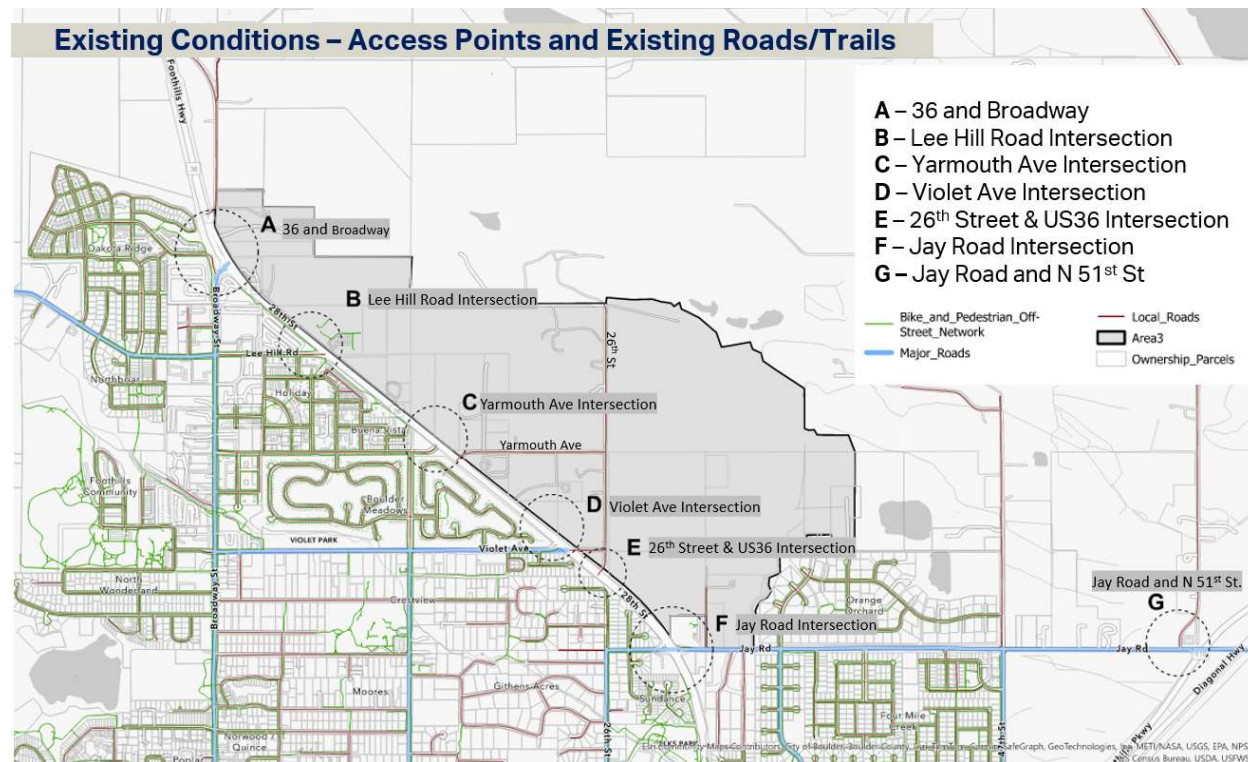
Figure 3 Existing Topography Map



D. Access Points and Existing Roads/Trails

The Planning Reserve has primary access from US-36. Major intersections on the west side of US-36 to consider for expansion or access to the site are identified in the diagram below. Existing roads within the site are largely unimproved dirt roads and include Yarmouth Avenue and 26th Street. Bike and pedestrian trails can be seen in the diagram below (Figure 4). For additional information, please see the Transportation section of this memo.

Figure 4 Existing Access Points and Roads/Trails Map



E. Planning Reserve Summary of Opportunities and Constraints

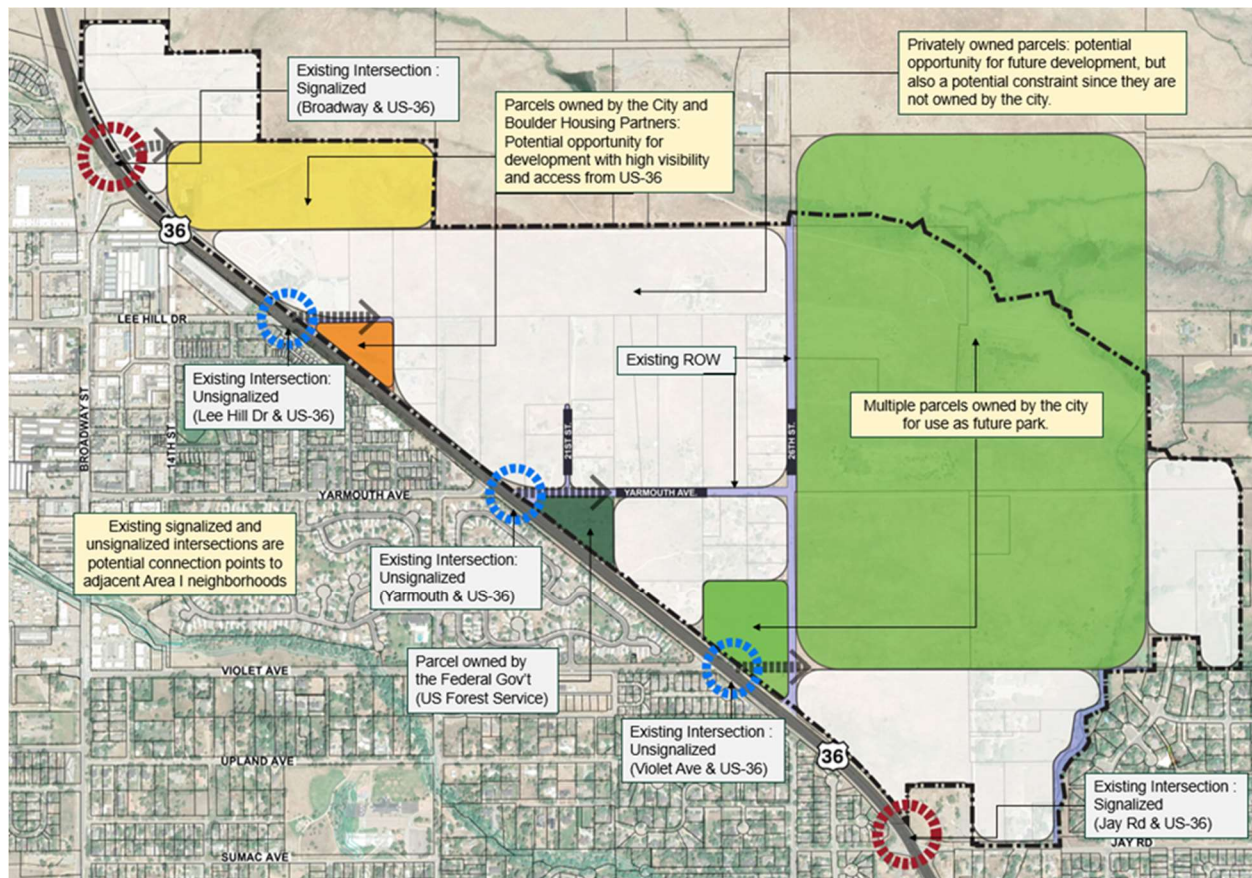
Following is a summary of opportunities and constraints within the Planning Reserve (as seen in Figure 5, below):

- The City-owned parcels total approximately 218.6 acres (including 180.1 acres of park land) and private parcels total approximately 254.7 acres.
- An existing signalized intersection at Broadway and US-36 could potentially serve as a primary access point.
- The City's 29.9-acre parcel at the northern end of the Planning Reserve is relatively flat with minimal physical restrictions on potential future urban development.
- The existing street network west of US-36 may be connected to the east to the Planning Reserve by extending Broadway, Lee Hill Drive, Yarmouth Avenue, Violet Avenue, 26th Street, and/or local roads near Jay Road (also an existing signalized intersection).
- An existing signalized intersection at Jay Road and US-36 could provide access to the southern portion of the site via local roads.
- The site's gently sloping topography (approximately 1.5-2.5 percent) provides drainage to the east and is generally supportive of urban development, recreation, and multi-modal transportation networks.
- Roughly 180-acres of park land was purchased and is currently designated to provide a regional park that will serve the entire Boulder community.

- As seen on the site visit, a significant portion of the Planning Reserve (perhaps as much as 50 percent) has prairie dog habitat. Future, more detailed analysis would need to occur to fully evaluate the wildlife and vegetation resources across the area.
- Vegetation on the site is primarily grass land with sparse tree areas.

The Planning Reserve provides suitable land for development from a planning framework perspective based on road access, topography, and vegetation. Additional information regarding transportation and utilities can be found in the Water and Wastewater section of this memo.

Figure 5 Opportunities and Constraints



F. Planning Reserve Regional Parkland

When compared to national benchmark communities, National Recreation and Park Association (NRPA) Agency Performance Review data, and the Trust for Public Land (TPL) overall ParkScore® median, Boulder is keeping pace in parkland per capita, and in some cases provides above average amounts of urban parkland. If Boulder Parks and Recreation (BPR) develops all its existing parkland (specifically undeveloped acreage), and 2040 population projections are on target, the City will maintain current level of service (LOS) by 2040, providing the same amount of parkland per 1,000 community members.

With the high price of land in Boulder and the City's growth boundary limiting development, and limited funding sources, adding new parkland is currently not feasible. Given the projected population growth and limitations around adding parkland, each developed park will need to handle an increased number of users, requiring more amenities and higher levels of maintenance. It is projected the 140 acres in Area III will be needed to support a future regional park for the Boulder community, though the exact acreage required will need further analysis and evaluation; along with the smaller neighborhood parks that would support 15-minute walkable neighborhoods in this area.

G. Planning Reserve Site Photos

Site photos in the northern portion of the site (Area 1), middle portion of the site (Area 2) and southern portion of the site (Area 3) follow.

Images 1 Site Photos Northern Portion (Area 1)

Existing Conditions | Site Photos – Area 1



Images 2 Site Photos Middle Portion (Area 2)

Existing Conditions | Site Photos – Area 2



Images 3 Site Photos Southern Portion (Area 3)

Existing Conditions | Site Photos –Area 3

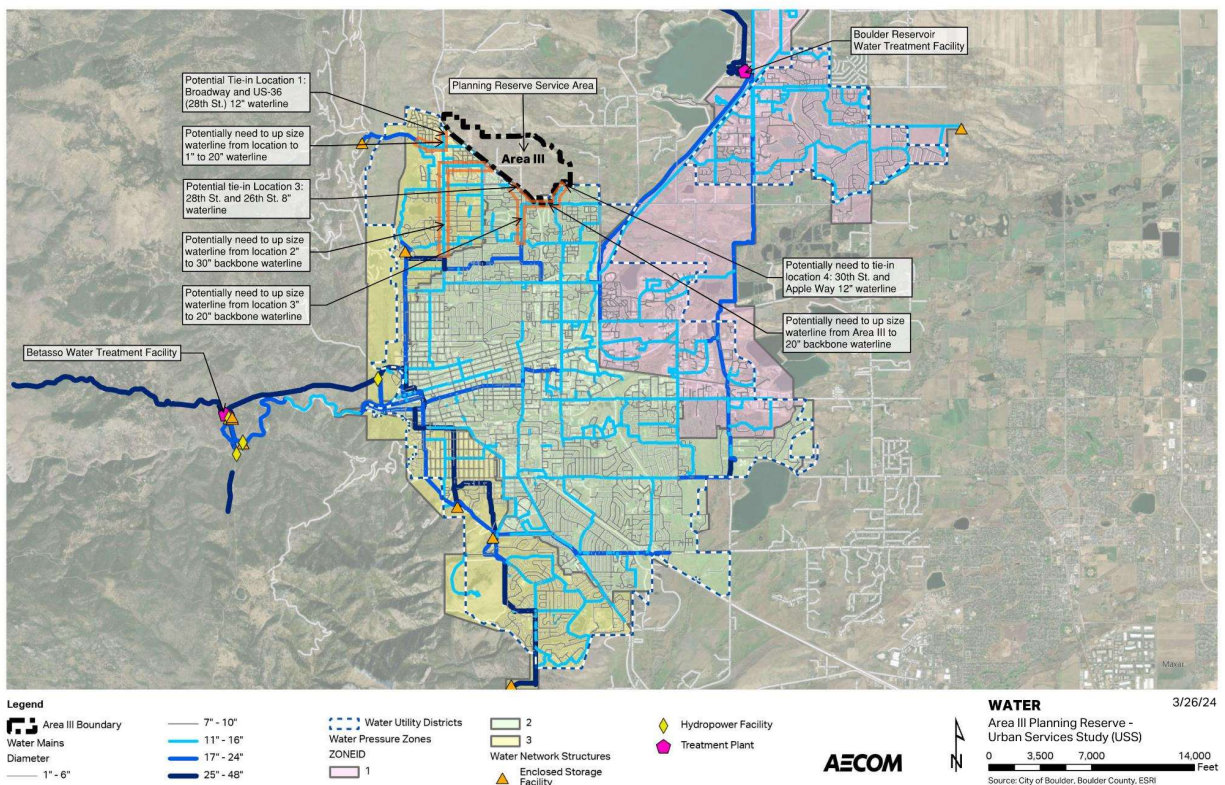


Water System

- Boulder's Water System is composed of East Slope and West Slope source water, two water treatment plants (WTPs), and a transmission and distribution (T&D) system. Boulder gets its East Slope water supply from the Boulder Creek Basin, which is treated at the Betasso Water Treatment Plant (BWTP) located west of Boulder. BWTP will undergo improvements to bifurcate the plant and will have a capacity of approximately 40 million gallons per day (MGD). Boulder's West Slope water supply comes from the Colorado-Big Thompson Project and Windy Gap Project, which are both operated by the Northern Colorado Water Conservancy District. The West Slope water is delivered primarily via the Carter Lake Pipeline, or the Boulder Feeder Canal, as well as to Boulder Reservoir and treated at the 63rd Street Water Treatment Plant (63WTP) located in the northeast part of Boulder. 63WTP will also be upgraded and will have a capacity of approximately 20 MGD.
- The upgrades at both WTPs will result in a peak day treatment capacity of 40 MGD. The bifurcation of BWTP will allow one treatment train to be out of service while the other treatment train is running, which will provide a 20 MGD treatment redundancy. The planned water treatment plant capacity of 40 MGD peak day does not include the Planning Reserve demands. There is a potential that Planning Reserve demands may trigger additional WTP improvements at one or both plants. As the project progresses, the treatment capacities above should be compared with the current Colorado Department of Public Health and Environment (CDPHE) permitted capacities.
- Boulder conducted a water supply climate change assessment in 2019, in which build out water supply and demand projections were modeled for baseline climate conditions as well as seven climate change scenarios in the years 2050 and 2070. The climate change assessment indicates that as long as current supply and drought management strategies continue, Boulder will have enough water supply to reliably meet 2050 and 2070 demand projections in the baseline and more favorable climate scenarios; however, demands cannot be reliably met under some of the hotter and drier scenarios — all but the two most extreme modeled climate scenarios. The ability to meet future demands does not include the Planning Reserve study area. To determine if the existing water supply is sufficient to meet the near-term and future needs of the existing water service area and Planning Reserve, water demands will be estimated at a later phase in this effort.
- Per the 2019 Water Transmission Study (officially completed in 2022), Boulder's T&D system includes six storage tanks, six pump stations, four hydropower facilities, 70 miles of large diameter transmission mains, and 400 miles of smaller diameter pipelines. Boulder has three different pressure zones: Zone 1 serves elevations 5,123 to 5,420 feet; Zone 2 serves elevations 5,221 to 5,520 feet; and Zone 3 serves elevations 5,797 to 5,423 feet.
- Figure 6 below displays Boulder's current water distribution system and the relative location of the Planning Reserve. Boulder does not have any waterlines within the Planning Reserve. The Planning Reserve is along pressure Zones 3 and 2 and would likely be served by the same pressure zones. The waterlines along the Planning Reserve boundary are smaller diameter pipelines (8-inch and 12-inch). To serve the Planning Reserve, large diameter waterlines with sufficient capacity will be needed along with sufficient treatment and storage capacity. Approximately 1.5 miles south and 0.7 miles west of the Planning Reserve's southern boundary are backbone waterlines that could potentially have capacity to serve the Planning Reserve. Planning Reserve water infrastructure could potentially tie into a few smaller diameter waterlines along the southern edge of the Planning Reserve. The smaller diameter pipelines would likely need to be replaced with larger diameter waterlines. The following are potential options where a future Planning Reserve water system could tie into Boulder's current water distribution system.
 - **Potential Tie-in Location 1:** A potential Zone 3 tie-in is a 12-inch waterline near Broadway and US-36. This pipeline could be upsized if needed, until it reaches the 20-inch backbone waterline along Lee Hill Drive, approximately 0.7 miles away. The 20-inch pipeline in Zone 3 conveys flows from the Boonton Reservoir that could potentially be utilized to meet Zone 3 demands.

- **Potential Tie-in Location 2:** A second Zone 3 waterline that could be utilized to serve the Planning Reserve is near US-36 and Yarmouth Avenue. This 12-inch waterline would potentially need to be upsized from US-36 and Yarmouth Avenue to the 30-inch Zone 3 pipeline at the intersection of Broadway and Linden, which is approximately 1.8 miles from the Planning Reserve. This 30-inch pipeline is downstream from the Maxwell Pump Station.
- **Potential Tie-in Location 3:** A potential Zone 2 waterline that could be connected to serve the Planning Reserve is an 8-inch waterline at the intersection of US-36 and 26th Street. This pipeline would likely need to be upsized until it reaches the 20-inch Zone 2 backbone waterline near the intersection of 26th Street and Keller Farm Drive, approximately 0.7 miles away.
- **Potential Tie-in Location 4:** A second potential Zone 2 tie-in is a 12-inch waterline near the intersection of 30th Street and Apple Way, which is near the eastern edge of the Planning Reserve. This waterline would likely need to be upsized from this location to the 20-inch backbone waterline near the intersection of 26th Street and Keller Farm Drive, which is approximately 1.8 miles away. To identify if the T&D system has capacity (including treatment, storage, and conveyance) to serve the Planning Reserve, potential water demands will be developed and modeled with Boulder's water hydraulic model in a future phase of this Project.

Figure 6 Current Water Distribution System



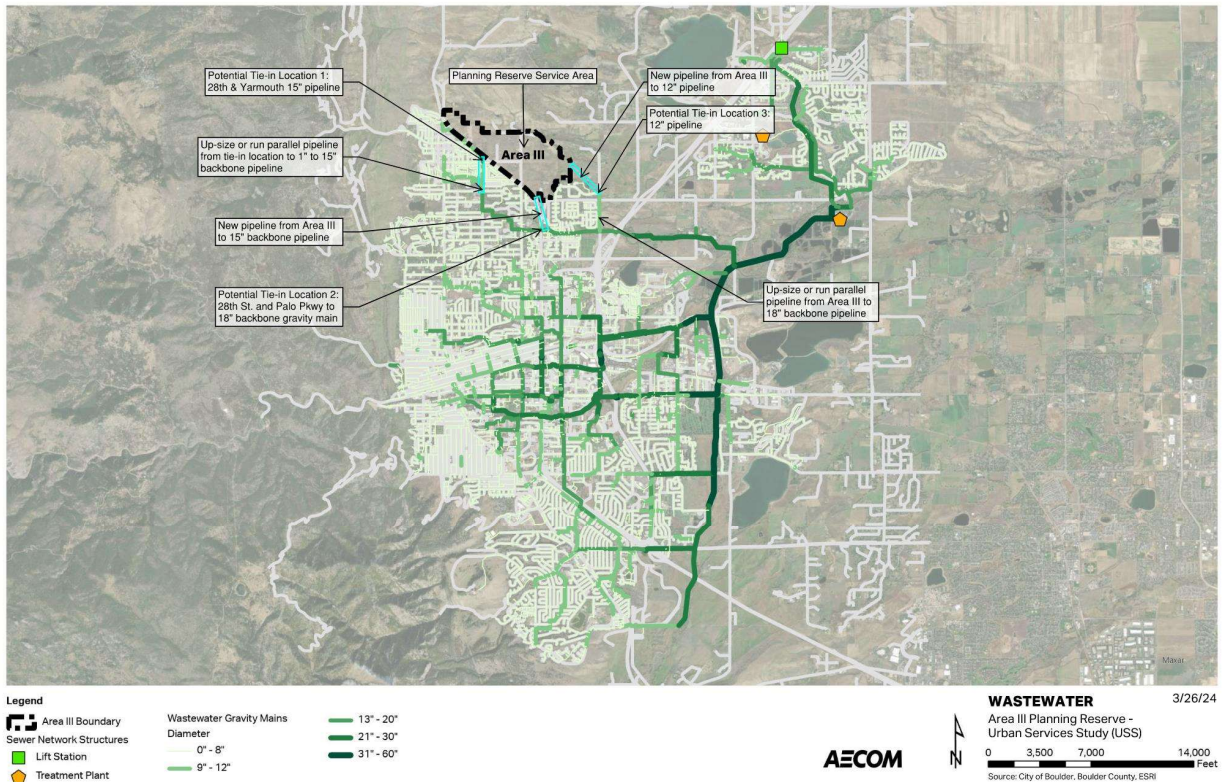
Wastewater System

- Boulder's wastewater infrastructure is comprised of Boulder's wastewater collection system and the WRRF, located on 75th Street.
- Boulder's Wastewater Utility Service Area (WUSA) is approximately 17,200 acres (27 square miles) and includes the Boulder Valley Comprehensive Plan (BVCP) Area I (within City of Boulder limits) and Area II (areas adjacent to the city limits that may be subject to future annexation). Areas outside of the WUSA (including the Planning Reserve) are served by septic systems or other utility districts. Boulder does not have wastewater infrastructure within the Planning Reserve.
- The wastewater collection system just south of the Planning Reserve is a gravity system within the Fourmile sewer basin that flows east to the WRRF. Figure 7 below displays Boulder's current wastewater collection system near the Planning Reserve. The topography of the Planning Reserve slopes west to east, so wastewater in a gravity collection system will flow east.
- Approximately 0.5 miles south of the Planning Reserve's southern boundary is a gravity backbone pipeline that could potentially have capacity to convey wastewater sewer loadings from the Planning Reserve to the WRRF. Area III wastewater infrastructure could potentially tie into a few smaller diameter wastewater lines along the southern edge of the Planning Reserve. The smaller diameter pipelines may have to be replaced with larger diameter pipes or parallel lines may have to be constructed. The following are potential options for where the Planning Reserve could tie into to Boulder's current wastewater collection system:
 - **Potential Tie-in Location 1:** As depicted in Figure 7 below, the Planning Reserve could tie into a pipeline near US-36 Street and Yarmouth Avenue. The pipeline could be upsized, or a parallel pipeline could be extended from the Planning Reserve along 19th Street to Upland Avenue to tie into the 15-inch backbone pipeline.
 - **Potential Tie-in Location 2:** Since the wastewater will flow west to east and Tie-In Location 1 is not on the eastern end of the Planning Reserve, another connection to the backbone pipeline will be needed. A potential tie-in location could be near US-36 and Palo Parkway. A new pipeline could be extended from this location to the Planning Reserve near US-36 and Jay Road. This location is shown in Figure 7 below and would connect the Planning Reserve to a more eastern location on the 15-inch backbone pipeline.
 - **Potential Tie-in Location 3:** A tie-in location east of the Planning Reserve could potentially capture and convey all Planning Reserve flows to the existing Boulder wastewater system. The Planning Reserve could potentially tie into a 12-inch pipeline near 47th Street and Jay Road that conveys flows south to the 18-inch backbone pipeline. A new pipeline would need to be constructed from the Planning Reserve to 47th Street and Jay Road and 12-inch pipeline could be upsized or a parallel line could be constructed.
- Per the 2016 Wastewater Collection System Master Plan (2016 WWCSMP), the collection system's LOS is defined by the level of wet weather (rainfall) event that the system can sustain without causing sanitary sewer overflows or backups into buildings. The collection system's LOS is therefore directly related to the excess capacity in the collection system which is available to convey rainfall dependent inflow and infiltration (RDII) flows. Boulder is currently in the middle of an inflow and infiltration (I&I) reduction program, which includes lining the primarily clay collection pipes in the city. The program is scheduled to be completed by 2035. This project should increase the available capacity in the WRRF and collection system.
- To better understand the potential capacity in the Fourmile sewer basin collection system, the Planning Reserve sewer loadings will be developed and modeled in Boulder's wastewater hydraulic model at a future phase of this project. If the backbone pipelines do not have sufficient capacity, either the pipelines would need to be upsized or new parallel pipelines would need to be constructed from the Planning Reserve to the WRRF.

The WRRF's maximum monthly capacity is 25 MGD and 60,000 pounds (lbs) Biological Oxygen Demand (BOD). The WRRF currently has limitations in peak hour hydraulic capacity and maximum monthly capacity based on the collection system LOS goals in the 2016 WWCSMP. The historic maximum

monthly data over the last 8 years has ranged from 14 to 19 MGD and 27,000 to 36,000 lbs BOD/day. Boulder is striving to provide a higher level of service for the existing wastewater collection system within the WUSA. As the project progresses, the existing WRRF capacity should be compared with the permitted capacity filed with CDPHE. The additional sewer loadings from the Planning Reserve will likely trigger a need to increase capacity at the WRRF.

Figure 7 Current Wastewater System and Potential Tie-in Locations



Stormwater

The majority of the Planning Reserve is located in the upper portion of the Lower Boulder Creek watershed, with the northern portion of the site draining into the Dry Creek watershed as identified in the City of Boulder's Stormwater Sub-Catchment GIS data. Figure 8 below maps existing stormwater infrastructure. The site is bounded by US-36 on the south side with an existing roadside ditch and some cross culverts to continue flow in a southeasterly direction. On the north side of the site is an existing natural drainageway with steep slopes from site down to drainageway. This drainageway also flows in a southeasterly direction. The east side of the project is bordered by Farmers Ditch. In general, the entire site flows from northwest to southeast and is captured by Farmers Ditch on the east side of the site. Historically the City of Boulder has managed stormwater by providing conveyance within the streets and allowing streets to flood during higher storm events. Key considerations for the site from a stormwater perspective include the following:

- There is no existing Stormwater Master Plan for this area and floodplains are not mapped.
- The stormwater infrastructure that does exist south of US-36 and east of Farmers ditch is old and undersized.
- This area would not be able to discharge into the existing storm infrastructure located on the south side of the project due to its existing capacity issues.
- No direct discharge into Farmers Ditch or any other irrigation facility with new storm infrastructure is allowed at this time.

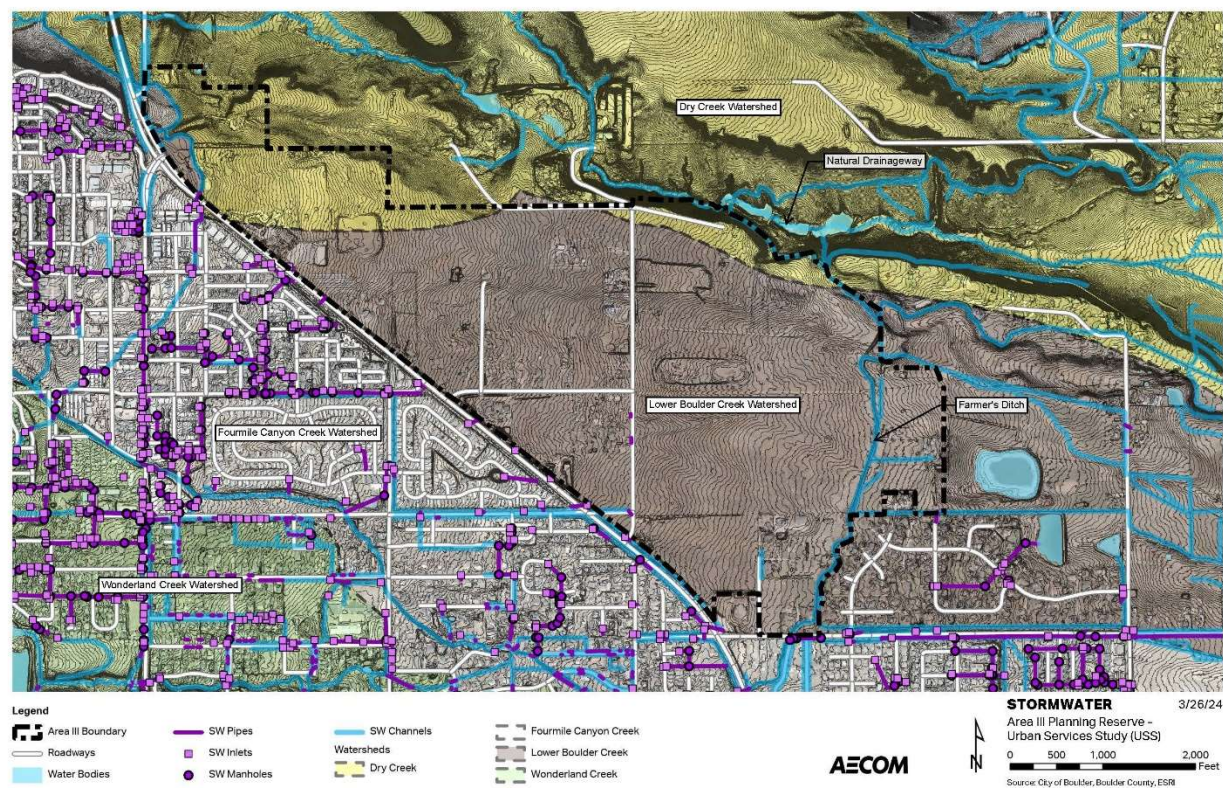
This project offers an opportunity to update the stormwater policies to minimize flooding downstream and provide water quality for newly developed areas. There are various options to provide both treatment and flood management through detention, either locally or regionally. For the Planning Reserve, the City could consider a regional pond that will treat all proposed development and detain flows to maintain historic flows in the natural drainageway on the north side of the project. This drainageway is likely the best option for an outfall location of the developed Area III due to undersized existing infrastructure on the south end, and at this time no direct discharge is allowed in Farmer's Ditch.

Due to these restrictions, the most viable outfall is on the north side of the Planning Reserve, in the existing natural drainageway. However, by discharging into the natural drainageway on the north, this will change historic flow paths and drainage basins. A concern with changing historic flow paths without detention or consideration of the overall flows is this could potentially cause problems including flooding downstream of this area because this would shift drainage from the existing Lower Boulder Creek watershed to the Dry Creek watershed. While considering the possibility of extending urban services, the City should also consider updating the policy and procedure for all future developments to include:

- Water quality treatment prior to discharge into natural drainageway; and
- Detention prior to discharge into natural drainageway to preserve historic flows and minimize potential downstream flooding.

The City of Boulder may need to consider planning for ponds to treat and detain flows prior to discharge into the surrounding drainages if future development occurs in the Planning Reserve. This is a potential opportunity to start the shift in how the city manages flooding for newly developed sites.

Figure 8 Existing Stormwater Capacity



Transportation

A field and desktop analysis of the existing transportation infrastructure at key intersections near the Planning Reserve was conducted. Key considerations for the site from a transportation perspective include the following:

- There is limited transit service in the study area compared with other parts of Boulder.
- Roadway connections are limited across US 36 and often end in private property.

Figure 9 below identifies current transportation infrastructure and maps existing bus routes and pedestrian and multi-use pathways. The following summary details the existing conditions. (Unless otherwise stated, all intersections are with US-36.)

A. Broadway Intersection

1. Roadway Connections and Intersection Treatments

- Roadway connections across US-36 are limited and often end in private property.

2. Bicycle and Pedestrian Infrastructure

- Multiuse path ends at the Colorado Department of Transportation (CDOT) yard on US-36 and Broadway
- Bicycle facilities start/end at the US-36 intersections, good candidates to continue into the Planning Reserve.
- Recent pedestrian and bicycle infrastructure improvements have occurred at the US-36 and Broadway intersection.

3. Transit

- Transit service (RTD Route 204) loops around Broadway/Lee Hill Drive/Front Range Drive block.

B. Lee Hill Drive Intersection

1. Roadway Connections and Intersection Treatments

- Roadway connections across US-36 are limited and often end in private property.

2. Bicycle and Pedestrian Infrastructure

- On-street bike facility with no buffer on US-36 and use of shoulder mixed with striped improvements at intersections is inconsistent.
- Pedestrian crossings occur at an awkward skew to Lee Hill Drive and cross two free right turns with no speed tables. Free right turn from Lee Hill Drive eastbound to US-36 southbound is a large radius which encourages high vehicle speeds that conflict with pedestrian movements.

C. Yarmouth Avenue Intersection

1. Roadway Connections and Intersection Treatments

- The required street width could push outside of existing ROW.

- Overhead utilities within roadway clear zone indicate the need for careful consideration in the planning and implementation of any infrastructure changes.
- The existing intersection has no marked pedestrian crossing and no sidewalks to connect to and from the southeast corner.
- Existing Yarmouth intersection is offset across US-36.

D. Violet Avenue Intersection

1. Roadway Connections and Intersection Treatments

- Portion of Violet Avenue north of US-36 is located within ROW and could be a potential connection point to the Planning Reserve.
- Existing Violet Avenue intersection is offset across US-36. Portion south of US-36 approaches at 90-degree angle while a portion north approaches at a skewed angle.
- Extending Violet Avenue into the Planning Reserve via the existing ROW would create an awkward skew with the US-36 intersection.

2. Bicycle and Pedestrian Infrastructure

- There is good pedestrian treatment on the eastern side of Violet Avenue, similar to what Yarmouth Avenue and other intersections could be upgraded to (speed table on free right).
- The western side of Violet Avenue lacks a receiving pedestrian ramp.

E. 26th Street Intersection

1. Roadway Connections and Intersection Treatments

- 26th Street currently does not intersect on the north side of US-36 but does intersect south of Violet Avenue.
- It appears that adequate ROW exists on both sides of US-36 for 26th Street to be constructed as a full intersection. ROW extends to the north of the Planning Reserve.

F. Jay Road Intersection

1. Bicycle and Pedestrian Infrastructure

- Sidewalk is missing on the north side of Jay Road and incomplete on the south side of Jay Road.
- Transit stop on the north side of Jay Road does not have a sidewalk connection to the east. Sidewalk connection to the west is in poor condition and narrow.
- The on-street bicycle lane on Jay Road may be too narrow and there may be insufficient buffer between it and the street.
- The only pedestrian crossing east-west on US-36 and north-south on Jay Road occurs at the northeast free right and at the intersection itself. There are no other free rights that have pedestrian crossing.

2. Transit

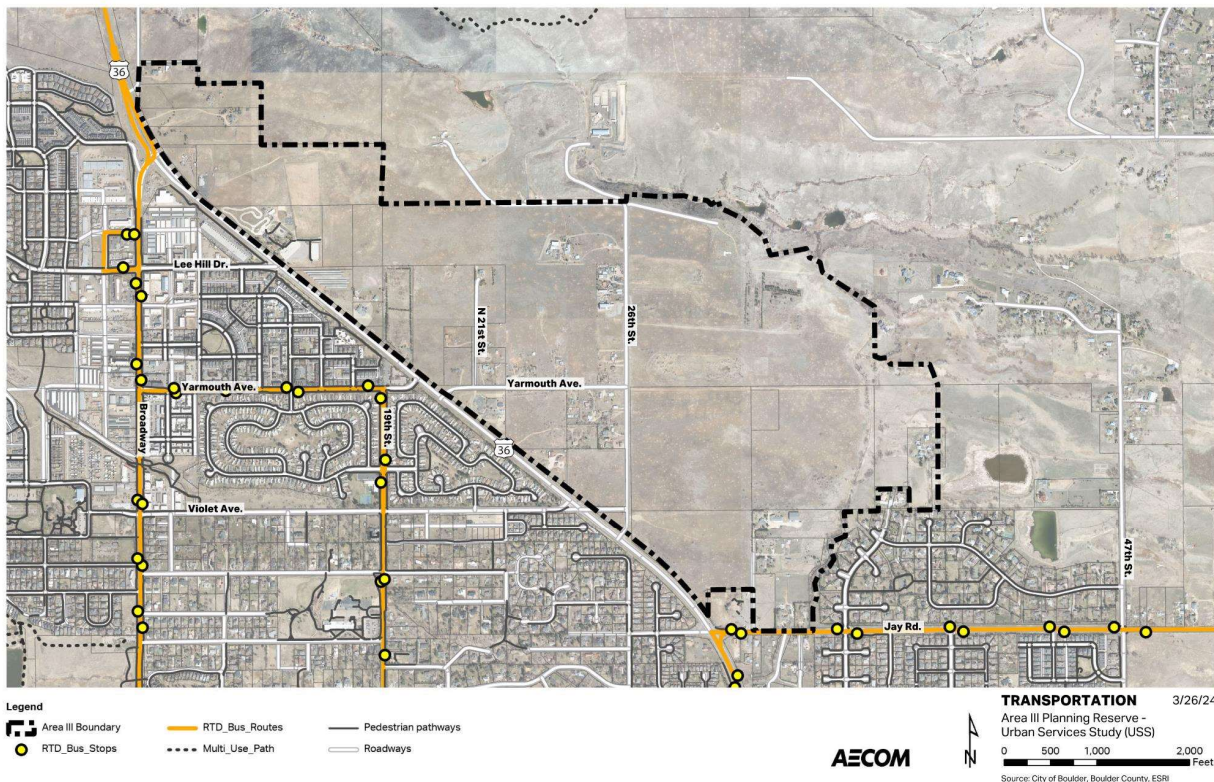
- The transit stop on the south side of Jay Road does not have a landing pad.
- The on-street bicycle lane on Jay Road may be too narrow and there may be insufficient buffer between it and the street.

G. Jay Road & N 51st Street

1. Bicycle and Pedestrian Infrastructure

- Sidewalks do not appear to be continuous between US-36 and Colorado Highway 119 (CO 119).
- There is non-standard signing and striping that may cause user confusion.

Figure 9 Current Transportation Infrastructure / Multi Use Pathways



Transportation - Existing Capacity

The major arterial serving the study area is US-36, which runs in the north/south direction. It is a two-lane roadway with left and right turn lanes at intersections. The major signalized and unsignalized intersections along the arterial are:

Signalized:

1. Broadway and US-36
2. Jay Road and US-36

Unsignalized:

1. Lee Hill Drive and US-36
2. Yarmouth Avenue and US-36
3. Violet Avenue and US-36
4. Jay Road and 30th Street
5. Jay Road and 51st Street

Based on the 2022 CDOT-OTIS Annual Average Daily Traffic (AADT) data counts at three locations and day of week adjustment factors, the aggregate Average Daily Traffic (ADT) along US-36 between Broadway and Jay Road is 16,809 vehicles per day. Using the Volume-to-Capacity (v/c) LOS threshold from the Highway Capacity Manual (HCM) Special Report 209 for interrupted flow facilities, the v/c ratio for US-36 between Broadway and Jay Road is 0.92 or LOS E. Therefore, any future traffic generated due to additional development along this stretch will create additional delays with only one-lane in each

direction. The heavy through movement on US-36 creates fewer gaps for northbound left-turning vehicles at the unsignalized intersections. This could potentially lead to queueing and spillback from the left-turn pockets.

For the signalized intersections at Broadway and US-36, turning movement counts were obtained from the City of Boulder website for 2019. It was found that during the peak hour, the eastbound left-turn movement was the most critical approach with 588 vehicles per hour. The left-turn approach currently exceeds the minimum threshold of 240 vehicles per hour required for a protected left turn.

For the signalized intersections at Jay Road and US-36, turning movement counts were obtained from the City of Boulder website for 2022. It was found that during the peak hour, the northbound through movement was the most critical approach with 841 vehicles per hour, which is within the threshold for maximum saturation flow rate for a one-lane approach.

Additionally, the concerned stretch of US-36 also has one-way bikeable shoulders on each side. There are no transit services currently operating on this arterial.

Public Safety Services

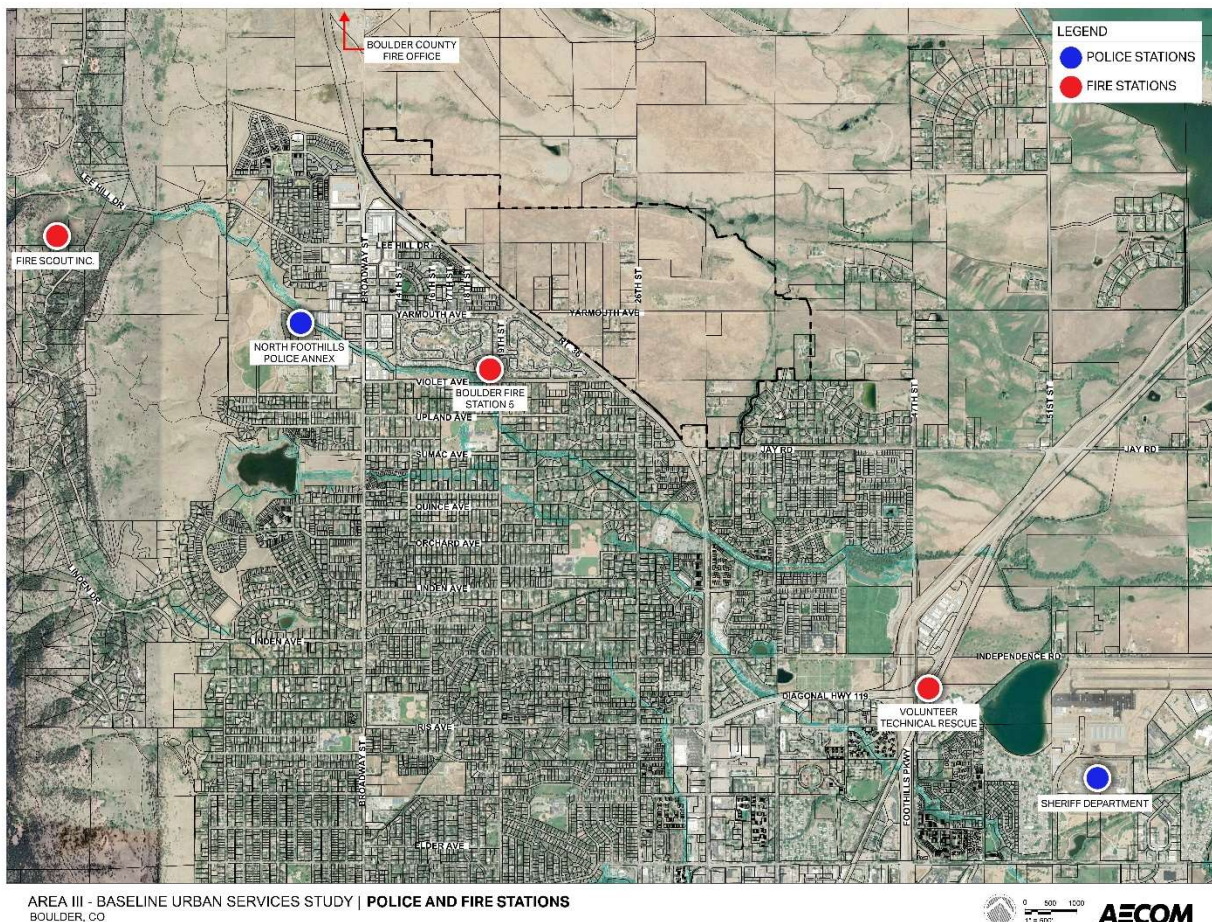
Public safety services within the city are provided by the Boulder Fire-Rescue Department and the Boulder Police Department.

The Boulder Fire-Rescue Department provides a full range of emergency response services carried out by personnel stationed at seven strategically located stations throughout the City of Boulder. The closest fire station to the Area III Planning Reserve is Boulder Fire Station 5 at the corner of 19th Street and Violet Avenue. Providing service to North Boulder, Station 5 houses a three-person engine company and responds to approximately 1,100 emergency calls a year.

Additionally, Boulder Fire-Rescue's Wildland Division provides initial fire attack for wildland fires on city-owned and managed land throughout Boulder County, including Open Space, Public Works, and Parks locations. Boulder Fire-Rescue also works closely in coordination of wildfire response with neighboring fire districts as well as with Boulder County. The Boulder County Fire Office is located to north of the Area III Planning Reserve near the intersection of US-36 and Longhorn Road.

The Boulder Police Department provides Traffic and Administration, Patrol, Investigations, and Animal Protection and Code Enforcement services. The closet police station is the North Foothills Police Annex, which is located west of the Area III Planning Reserve in the Foothills Community and provides service to North Boulder.

Figure 10 Police and Fire Stations



Appendix A - General Limiting Conditions

Deliverables and portions thereof shall be subject to the following General Limiting Conditions: AECOM devoted the level of effort consistent with (i) the level of diligence ordinarily exercised by competent professionals practicing in the area under the same or similar circumstances, and (ii) consistent with the time and budget available for the Services to develop the Deliverables. The Deliverables are based on estimates, assumptions, information developed by AECOM from its independent research effort, general knowledge of the industry, and information provided by and consultations with Client and Client's representatives. No responsibility is assumed for inaccuracies in data provided by the Client, the Client's representatives, or any third-party data source used in preparing or presenting the Deliverables. AECOM assumes no duty to update the information contained in the Deliverables unless such additional services are separately retained pursuant to a written agreement signed by AECOM and Client.

AECOM's findings represent its professional judgment. Neither AECOM nor its parent corporations, nor their respective affiliates or subsidiaries ("AECOM Entities") make any warranty or guarantee, expressed or implied, with respect to any information or methods contained in or used to produce the Deliverables. The Deliverables shall not to be used in conjunction with any public or private offering of securities, debt, equity, or other similar purpose where it may be relied upon to any degree by any person other than the Client. The Deliverables shall not be used for purposes other than those for which they were prepared or for which prior written consent has been obtained from AECOM.

Possession of the Deliverables does not carry with it any right of publication or the right to use the name of "AECOM" in any manner without the prior express written consent of AECOM. No party may reference AECOM with regard to any abstract, excerpt or summarization of the Deliverables without the prior written consent of AECOM. AECOM has served solely in the capacity of consultant and has not rendered any expert opinions in connection with the subject matter hereof. Any changes made to the Deliverables, or any use of the Deliverables not specifically identified in the Agreement between the Client and AECOM or otherwise expressly approved in writing by AECOM, shall be at the sole risk of the party making such changes or use.

The Deliverables were prepared solely for the use by the Client. No third party may rely on the Deliverables unless expressly authorized by AECOM in writing (including, without limitation, in the form of a formal reliance letter). Any third party expressly authorized by AECOM in writing to rely on the Deliverables may do so only on the Deliverable in its entirety and not on any abstract, excerpt or summary. Entitlement to rely upon the Deliverables is conditioned upon the entitled party accepting full responsibility for such use, strict compliance with this Agreement and not holding AECOM liable in any way for any impacts on the forecasts or the earnings resulting from changes in "external" factors such as changes in government policy, in the pricing of commodities and materials, changes in market conditions, price levels generally, competitive alternatives to the project, the behavior of consumers or competitors and changes in the Client's policies affecting the operation of their projects.

The Deliverables may include "forward-looking statements." These statements relate to AECOM's expectations, beliefs, intentions or strategies regarding the future. These statements may be identified by the use of words like "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "project," "will," "should," "seek," and similar expressions. The forward-looking statements reflect AECOM's views and assumptions with respect to future events as of the date of the Deliverables and are subject to future economic conditions, and other risks and uncertainties. Actual and future results and trends could differ materially from those set forth in such statements due to various factors, including, without limitation, those discussed in the Deliverables. These factors are beyond AECOM's ability to control or predict. Accordingly, AECOM makes no warranty or representation that any of the projected values or results contained in the Deliverables will actually occur or be achieved. The Deliverables are qualified in their entirety by, and should be considered in light of, these limitations, conditions and considerations.

