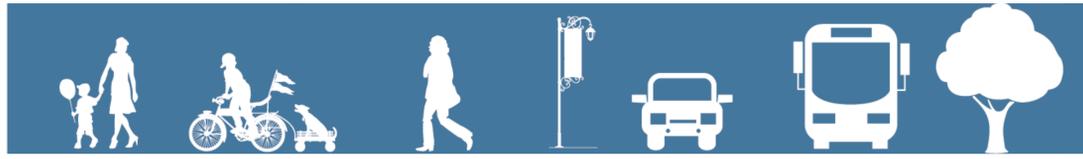


Canyon Boulevard

Complete Streets



Canyon Blvd Complete Street Study

OPEN HOUSE

5:00-7:00p.m.

WELCOME

Vision, Goals, and Objectives



PURPOSE

Canyon Boulevard will become a more safe, accessible, and inviting travel experience for pedestrians, bicyclists, transit riders, and vehicle drivers traveling across and along the corridor.

VISION

Canyon Boulevard serves as a vital connection, a linkage between the natural landscape of Boulder Canyon and Civic Area and the urban activities of the City. It will continue to serve as a transportation nexus for Boulder, moving people to and through the area, serving as both an important destination and a connector. Canyon Boulevard will combine the location's history and natural elements with the contemporary need for equity and mobility, providing increasing transportation options into the future.

GOAL: COMPLETE STREET

Provide and/or enhance facilities for walking, bicycling, transit riding and driving, connecting people to destinations safely and conveniently

OBJECTIVES

- Increase safety for people traveling in the corridor
- Maintain Canyon Boulevard's function as a cross-connector for vehicular through-traffic
- Improve the walking and bicycling experience along the corridor and at crossings
- Integrate walking and bicycling with transit at the Downtown Boulder Station and throughout the corridor
- Accommodate existing and future plans for transit service on the corridor and operations at the Downtown Boulder Station

GOAL: DESIGN EXCELLENCE

Enhance visual interest, legibility, and wayfinding for visitors

OBJECTIVES

- Increase quality of streetscaping and incorporate art and culture
- Increase directional information provided to travelers
- Identify locations/space for flood and historic interpretation
- Reduce Canyon Boulevard as a barrier through urban design

GOAL: PRESERVE HERITAGE

Foster a greater understanding of the historic significance of the corridor and the surrounding area

OBJECTIVES

- Protect and enhance historic resources through careful treatment of designated sites, ensuring work is consistent with the Historic Preservation ordinance
- Make a careful consideration of changes near landmark buildings
- Increase understanding of historic significance of area through interpretation

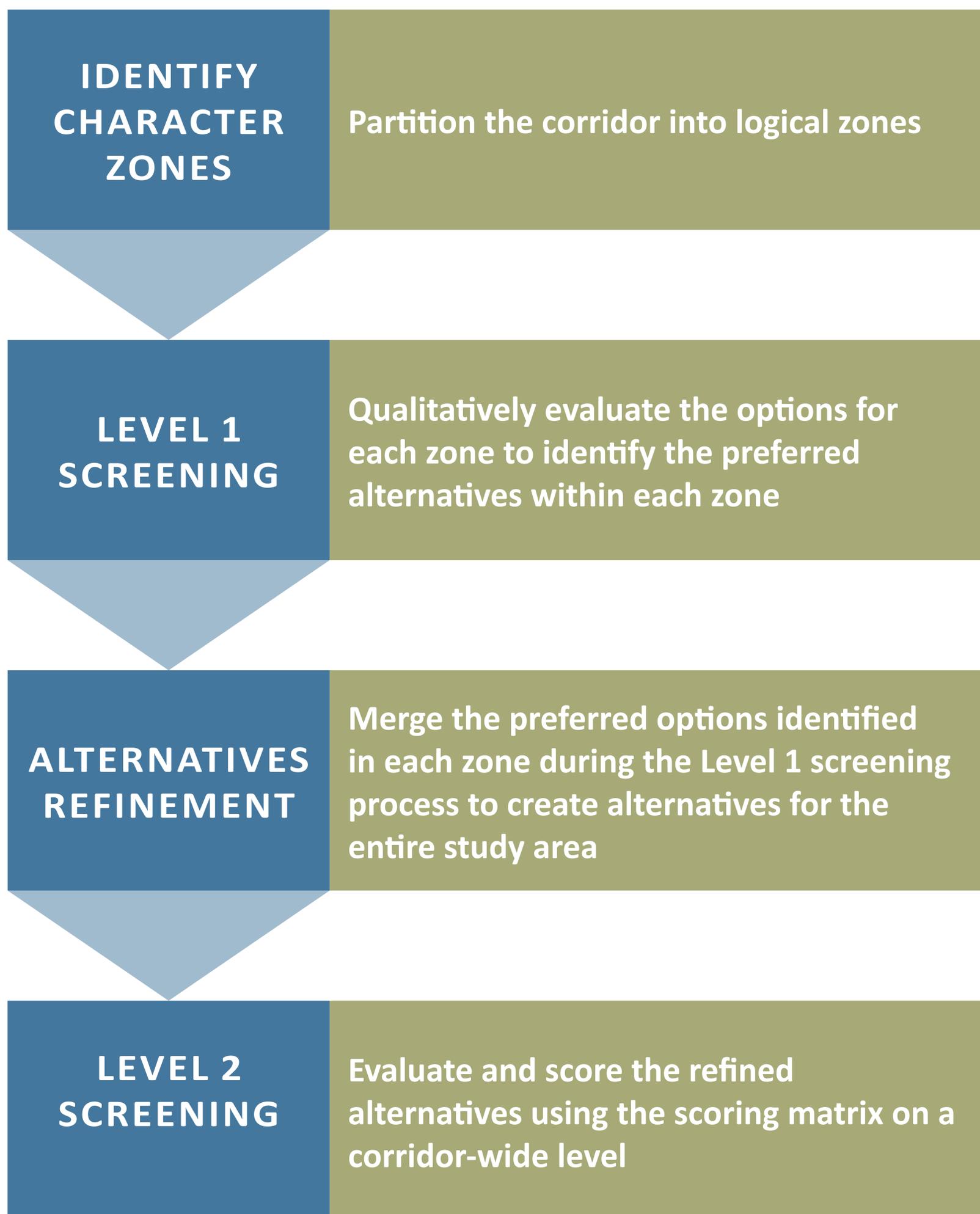
GOAL: WITH NATURE

Minimize negative impacts to natural systems and consider ways in which the infrastructure of the corridor can be designed to better interact with these systems

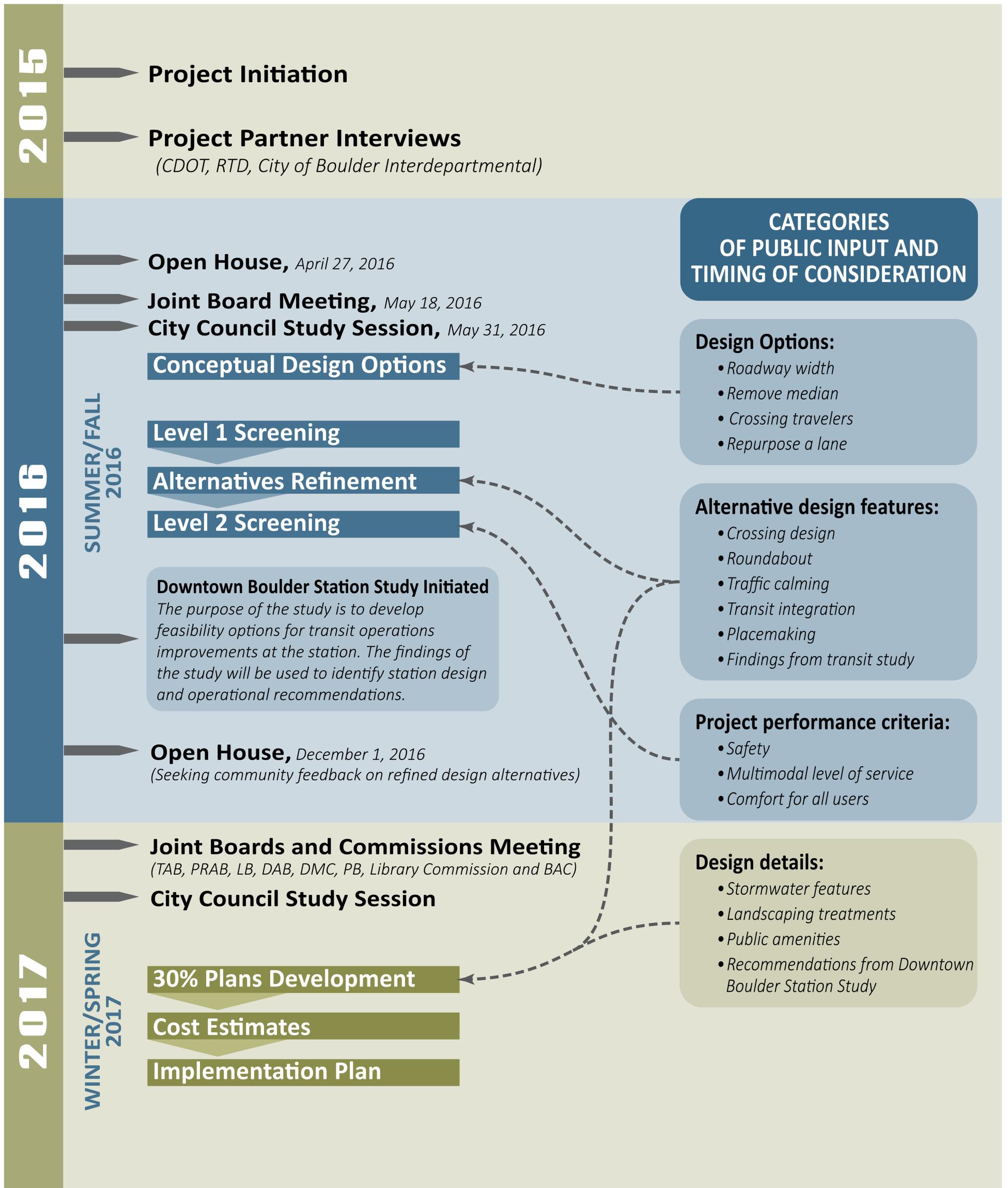
OBJECTIVES

- Meet or exceed existing flood standards and include information about flood safety
- Use landscaping and street trees to help define the edges to Civic Area park, reduce effects of vehicular street noise to pedestrians, bicyclists and park users
- Investigate opportunities for stormwater management and water quality features
- Promote the shifting of travel preference from single occupancy vehicles to reduce greenhouse gas emissions

Alternatives Analysis Screening Process



Study Process and Community Feedback Considerations



Alternative Analysis Screening (Summer/Fall 2016)

Level 1 Screening Results



Ten conceptual design options were compared to existing conditions as well as to the other design options in order to identify a smaller set of design alternatives that best met the Goals and Objectives.

The Level 1 screening process identified three design alternatives to be carried forward for further design development.

SUMMARY OF LEVEL 1 SCREENING ASSESSMENT BY GOAL AREA:

	No Action	Option 1: Planted center median, multi-use path on the south, sidewalk on north, and tree rows	Option 2: Multi-use path on north and south, amenity zone, tree rows, and intermittent planted median	Option 3: North side 2-way protected bike lane and sidewalks on both sides of street, tree rows, and intermittent center median	Option 4: South side 2-way protected bike lane, sidewalks on both sides of street, tree rows, and intermittent center median	Option 5: On-street bike lanes on both sides of street, sidewalks, amenity zone, tree rows, continuous planted median	Option 6: Single direction protected bike lanes on both sides of street with planted separation, north and south amenity zone, sidewalks, tree rows, planted center median	Option 6.5: Single direction protected bike lanes with vehicle mixing zones on both sides of street with planted separation, north and south amenity zone, sidewalks, tree rows, planted center median	Option 7: Buffered bike lane on both sides of street, north and south amenity zone, sidewalks, tree rows, planted center median	Option 8: Lane repurposed for Transit Only Lane	Option 8.5: Center Running Transit Lanes
Complete Street	○	○	●	○	○	○	○	●	●	○	○
Design Excellence	○	●	●	●	○	●	●	●	●	●	○
Preserve Heritage	○	●	●	●	●	○	●	●	●	●	○
With Nature	○	●	○	○	○	●	●	●	○	●	○
Plan Accordingly	●	●	●	●	●	●	●	●	●	●	●
	Carried Forward ▼	Screened Out ✗	Carried Forward ▼	Screened Out ✗	Screened Out ✗	Screened Out ✗	Screened Out ✗	Carried Forward ▼	Carried Forward ▼	Screened Out ✗	Screened Out ✗
Decision/Primary Reasoning	Will be used for comparative analysis in Level 2 Screening.	Less flexible than other multimodal options. Lack of bike connectivity to Downtown Boulder Station.	Provides ample space for pedestrians and cyclists. May be viewed as less flexible because of multiuse path designation.	Safety considerations at intersections. Bicycle signal causes delays for vehicles (including transit vehicles). Less flexible space in landscaped areas. Difficult to transition with existing facilities.	Safety considerations at intersections. Bicycle signal causes delays (including for transit vehicles). Less flexible space in landscaped areas. Difficult to transition with existing facilities.	Minimal space dedicated to bike facilities results in reduced comfort for cyclists compared with other options. Impacts historic properties.	Safety considerations at intersections. Bicycle signal causes delays for vehicles (including transit vehicles). Less flexible space in landscaped areas.	Ample space for pedestrians. Protected bike facilities without the impacts to vehicle travel. Options for integrating with on-street transit	Ample space for pedestrians. Bike lane is separated from traffic, and more easily transitioned at the ends of the corridor. Options for integrating with on-street transit.	Repurposing lane significantly increases vehicle delays. Minimal benefit for transit operations due to turning vehicles.	Minimal benefit for transit operations due to turning vehicles. Limited space available for walking and biking. Requires full 130-foot planning envelope – impacts historic properties.

○ = Unfavorable ● = Favorable

Level 2 Screening



		No Action	Multi-use path on north and south, amenity zone, tree rows, and intermittent planted median (OPTION 2)	Single direction protected bike lanes with vehicle mixing zones on both sides of street with planted separation, north and south amenity zone, sidewalks, tree rows, planted center median (Option 6)	Buffered bike lane on both sides of street, north and south amenity zone, sidewalks, tree rows, planted center median (OPTION 7)
COMPLETE STREET	Safety	■ □ □ □ □	■ ■ ■ ■ □	■ ■ ■ ■ ■	■ ■ ■ ■ □
	Walking	■ ■ □ □ □	■ ■ ■ ■ □	■ ■ ■ ■ □	■ ■ ■ ■ ■
	Biking	■ □ □ □ □	■ ■ ■ □ □	■ ■ ■ ■ ■	■ ■ ■ ■ □
	Riding transit	■ ■ ■ ■ □	■ ■ ■ ■ □	■ ■ ■ ■ □	■ ■ ■ ■ ■
	Driving	■ ■ ■ ■ ■	■ ■ ■ ■ □	■ ■ ■ □ □	■ ■ ■ ■ □
DESIGN EXCELLENCE	Placemaking opportunities	□ □ □ □ □	■ ■ ■ ■ ■	■ ■ ■ ■ □	■ ■ ■ ■ ■
	Flexibility	■ ■ □ □ □	■ ■ ■ □ □	■ ■ □ □ □	■ ■ ■ ■ ■
	Legibility	■ □ □ □ □	■ ■ ■ ■ □	■ ■ ■ □ □	■ ■ ■ ■ □
PRESERVE HERITAGE	Historic landmark impacts	■ ■ ■ ■ ■	■ ■ ■ ■ □	■ ■ ■ □ □	■ ■ ■ ■ □
	Opportunities for historic interpretation	□ □ □ □ □	ACCOMPLISHED THROUGH 30 PERCENT DESIGN DETAILS		□ □ □ □ □
WITH NATURE	Impacts to flood conveyance function	■ ■ ■ ■ ■	ANALYSIS WILL BE COMPLETED DURING 30 PERCENT DESIGN DETAILS		□ □
	Space for landscaping	■ □ □ □ □	■ ■ ■ □ □	■ ■ ■ ■ ■	■ ■ ■ ■ □
PLAN ACCORDINGLY	Civic Area Master Plan	■ ■ ■ ■ ■	■ ■ ■ ■ □	■ ■ ■ ■ □	■ ■ ■ ■ ■
	Transportation Master Plan	□ □ □ □ □	■ ■ ■ ■ □	■ ■ ■ ■ ■	■ ■ ■ ■ □
	Transit studies(NAMS, FLO, East Arapahoe)	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■

Level 2 Screening Methodology

Complete Street: These criteria were qualitatively and quantitatively scored based on an option's potential for user conflicts, pedestrian performance measures, bicycling level of traffic stress, vehicle delay, and vehicle travel times.

Design Excellence: These criteria were qualitatively scored based on an option's uniqueness, both in its physical layout as well as its potential to incorporate creative design/artistic elements, ability to easily accommodate different uses (special events), and ease for users to navigate to and along the corridor with minimal wayfinding.

Preserve Heritage: Scored for potential impacts to historic properties and structures. Opportunities for historic interpretation will be addressed during 30 percent design of the corridor.

With Nature: Level 2 screening is based on the option's space dedicated to natural materials. Other criteria related to flooding will be assessed during 30 percent design of the corridor.

Plan Accordingly: Options were evaluated on their ability to achieve the goals and objectives laid out within each of the associated planning documents.

Option 2 Features	Option 6 Features	Option 7 Features
<ul style="list-style-type: none"> Mixed environment for people traveling along and across the corridor and coming to activities on Canyon Boulevard. Good separation from traffic for bicyclists and pedestrians Promotes flexibility in the streetscaping and design through wide, plaza-like spaces on both sides of the street Could be phased as development occurs along the corridor related to the Civic Area Master Plan The shared-use pedestrian and bicycle facilities introduce a chance for conflicts between bicyclists and pedestrians moving quickly along the path Space is less intuitive for bicyclists traveling along the corridor Type of bicycle facility is redundant to the nearby Boulder Creek multi-use path Slight increase in pedestrian crossing distance compared to existing conditions Not anticipated to impact historic or potentially historic buildings Potential changes to historic properties Not anticipated to adversely impact flood conveyances 	<ul style="list-style-type: none"> Efficient and comfortable through-connection for bicyclists of most ages and abilities traveling along the corridor Sidewalks are widened from existing conditions in most locations and separated from vehicular and bicycle traffic Greatest curb-to-curb distance increases pedestrian crossing time from existing conditions Bicycle lane protection can vary between three and eight feet and can be flexible in design Landscaped protection uses space that could otherwise be programmed for more active uses Bicycle lane protection may be used as floating bus islands Additional wayfinding and signage may be necessary in high activity areas (e.g. at the Band Shell and Downtown Boulder Station) Transitioning protected bike lanes to the existing condition is more difficult during phased implementation and at the ends of the corridor Not anticipated to impact historic or potentially historic buildings Potential changes to historic properties Not anticipated to adversely impact flood conveyances 	<ul style="list-style-type: none"> Separated bicycle lanes provide an efficient and comfortable through-connection for many bicycling ages and abilities, but is not as inclusive as protected bicycle lanes or multi-use paths. Sidewalks are widened beyond existing conditions with pedestrian separation from vehicular and bicycle traffic Allows for entire curb area to be flexible during special events on Canyon Boulevard Bicycling facility is more consistent with existing facilities in the city, and the use of the lane may be more intuitive than other bicycle facility types, thus reducing the need for extensive wayfinding Extra width in the bike lane allows for the development of floating bus islands Increased curb-to-curb distance, as compared to existing conditions, increases pedestrian crossing time Not anticipated to impact historic or potentially historic buildings Potential changes to historic properties Not anticipated to adversely impact flood conveyances

Renderings of the Design Alternatives at Three Locations



Multi-use path on north and south, amenity zone, tree rows, and intermittent planted median
 (OPTION 2)

Single direction protected bike lanes with vehicle mixing zones on both sides of street with planted separation, north and south amenity zone, sidewalks, tree rows, planted center median
 (OPTION 6)

Buffered bike lane on both sides of street, north and south amenity zone, sidewalks, tree rows, planted center median
 (OPTION 7)

BUS STOP



BAND SHELL



1500 BLOCK OF CANYON BLVD (SOUTH SIDE)

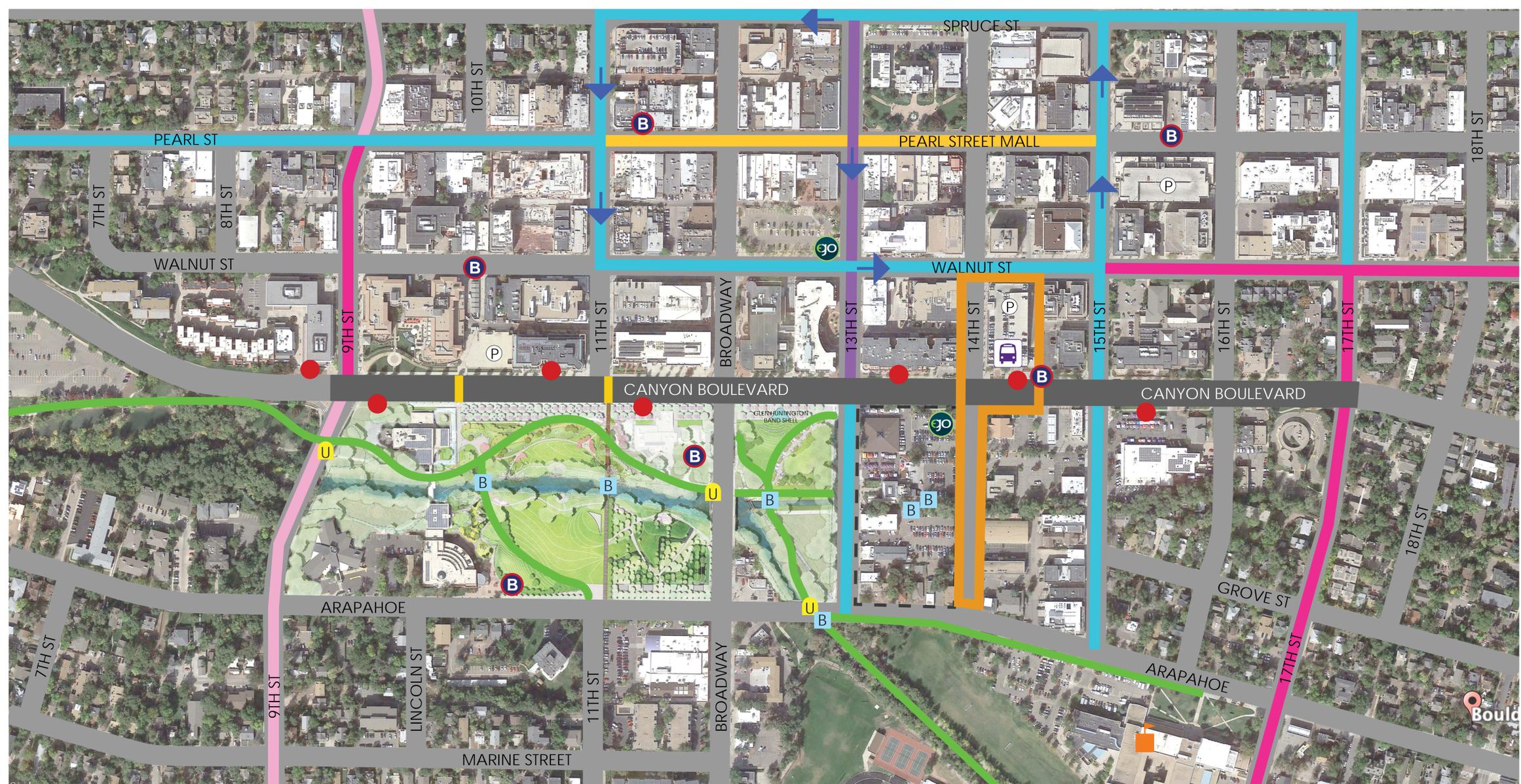


RENDERINGS ARE FOR DIAGRAMATIC PURPOSES AND DO NOT PRESENT THE FINAL DESIGN

GOOGLE EARTH 3D VIEW
LOOKING NORTH



- LEGEND**
- BUS STOP
 - DOWNTOWN BOULDER STATION
 - PARKING GARAGE
 - BRIDGE
 - B-CYCLE STATION
 - UNDERPASS
 - EGO CAR SHARE
 - SCHOOL
 - DOWNTOWN BOULDER STATION STUDY
 - CLIMBING LANE
 - ON-STREET BIKE LANE
 - DESIGNATED BIKE ROUTE
 - CONTRA FLOW BIKE LANE
 - MULTI-USE PATH
 - STREET
 - STUDY CORRIDOR
 - MIDBLOCK CROSSING



GOOGLE EARTH 3D VIEW
LOOKING SOUTH



1 ARTS/CULTURE PROMENADE (north)
Sculpture pedestals, outdoor classes, sculpture garden, 9th Street gateway, seating, wide open space, exhibit spillover to new parking structure

3 COMMERCIAL PROMENADE (north)
Variety of spaces, linear wall with openings, lineal wall lighting, special corner treatment at Broadway intersection and 11th Street pedestrian spine, wall frames the street, clear pedestrian pathway

6 TRANSIT PROMENADE (north)
Information and wayfinding signage, lineal wall with openings, bollards, bicycle parking, historical exhibits, intense lighting, overhead "train depot" canopy, special corner treatment at 13th Street

9 GARDEN PROMENADE (north)
Lineal wall treatment with openings, intimate scale landscape treatment, gateway element at 17th and Canyon



2 ARTS/CULTURE PROMENADE (south)
Sculpture pedestals, outdoor classes, sculpture garden, 9th Street gateway, seating, sun rooms for art display and 10x10 vendor tents

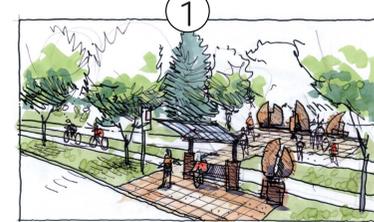
4 PARK PROMENADE (south)
Formal tree layout, sun rooms with active uses, blend of hardscape and softscape, abundant seating, special corner treatment at Broadway intersection and 11th Street pedestrian spine, responds to Civic Area

5 PERFORMANCE PROMENADE (south)
Formal tree layout, sun rooms with active uses, blend of hardscape and softscape, abundant seating, special corner treatment at Broadway and 13th Street, responds to Civic Area

7 MARKET PROMENADE (south)
Hardscape throughout, food trucks and vendor carts, bollards, potted plants, wide open spaces, bright lighting, added power for vendors, inside-outside design, flexible uses, durable and easily cleaned

8 INNOVATION PROMENADE (south)
Sun rooms with variety of active uses, gateway element at 17th and Canyon intersection, related closely to the finishes at Market Promenade

1" = 40'-0"



Sculpture Garden and Bus Stop



Gateway Element at 9th and Canyon



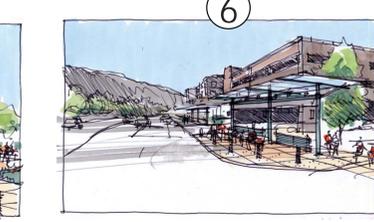
Lineal Wall Treatment at Broadway and Canyon



Landscaped Edge at Boulder Civic Area



Performance Space at Boulder Band Shell



Lineal Canopy at Downtown Boulder Station



Market Hall at 13th and Canyon



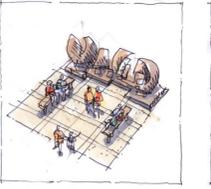
Illustration of potential future redevelopment at 15th and Canyon



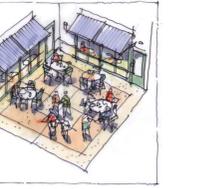
Lineal Wall along Canyon at First Presbyterian Church



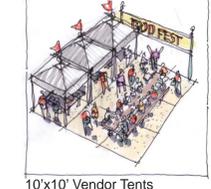
Water Feature and Benches



Sculpture Garden



Outdoor Cafe Seating



10'x10' Vendor Tents

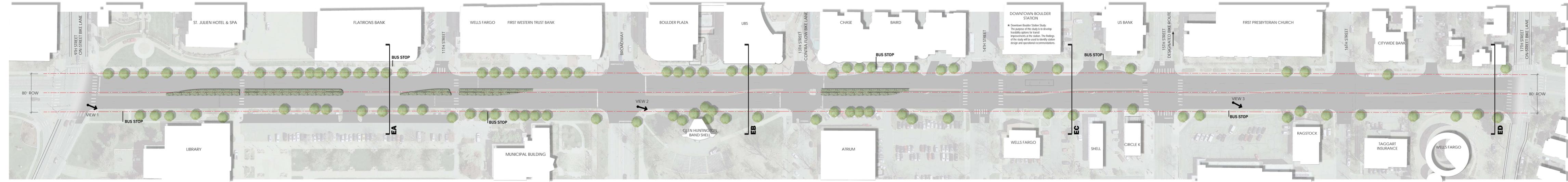


Small Performance Stage

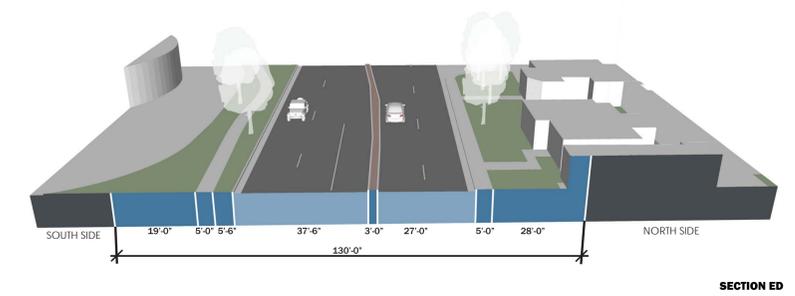
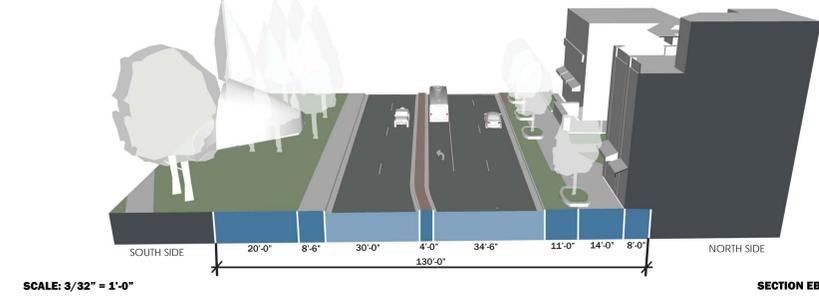
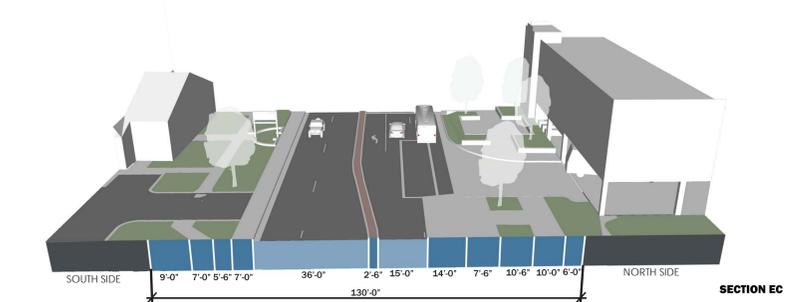
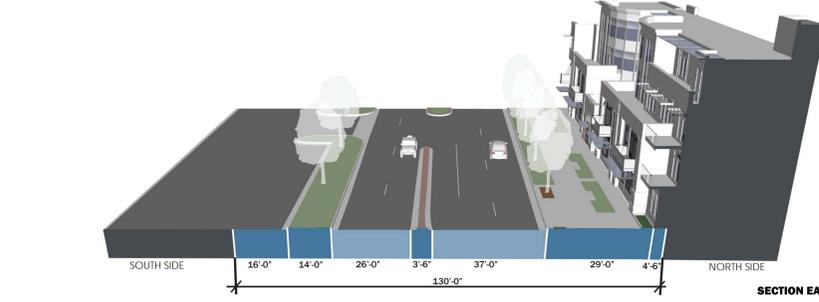


Informal Flower Garden

SUN ROOM VARIATIONS



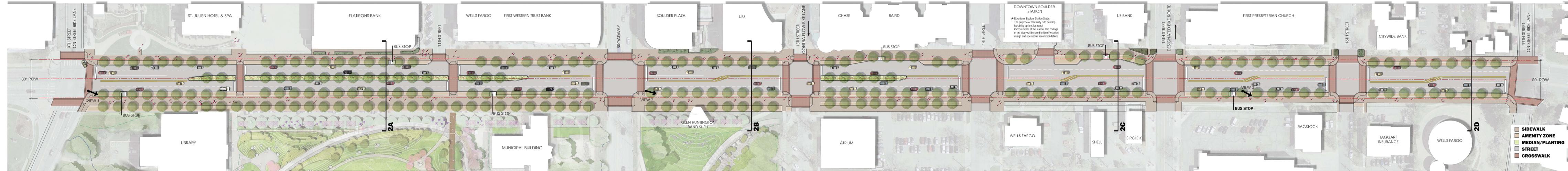
FOR DIAGRAMATIC PURPOSES **1" = 40'-0"**



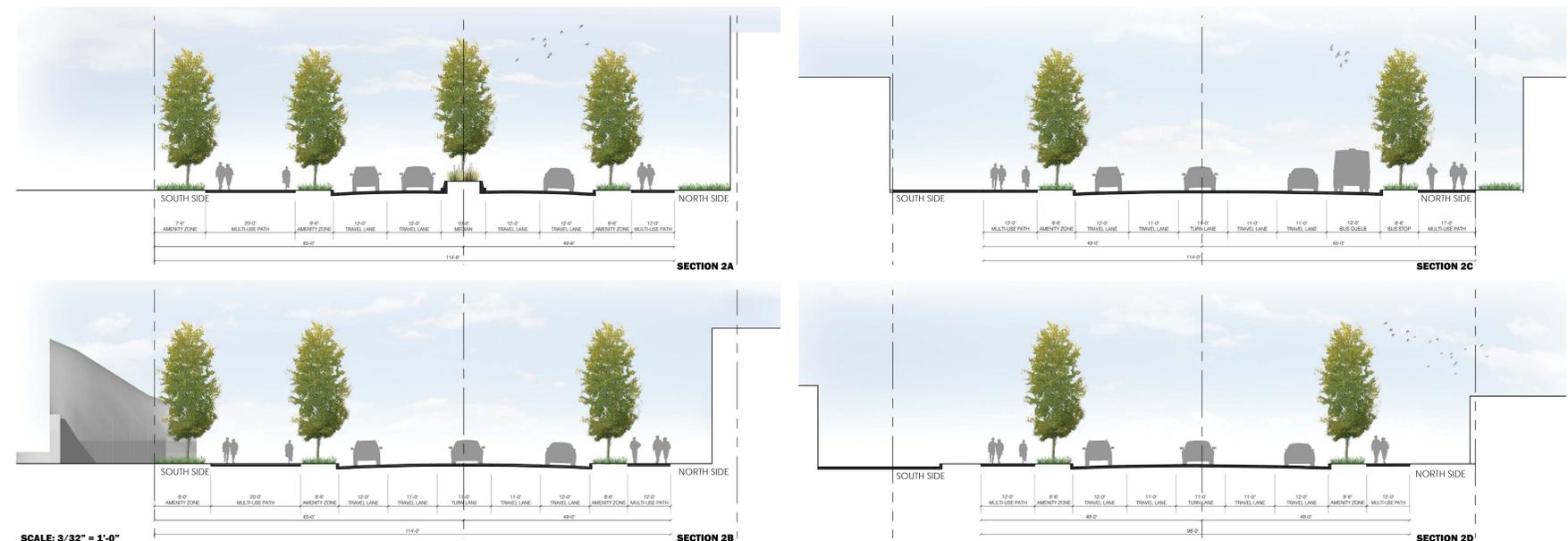
SCALE: 3/32" = 1'-0"



- 65-foot-wide curb to curb roadway width with 12-foot to 14-foot travel lanes
- Annual daily traffic on Canyon Boulevard is 11,000 to 25,000 vehicles
- 2-foot center median (for access control)
- Intermittent tree row on north side
- No continuous sidewalk on the south side; sidewalk width varies on the north side (5 feet to 14 feet)
- No existing bike lanes
- Speed limit 35 miles per hour



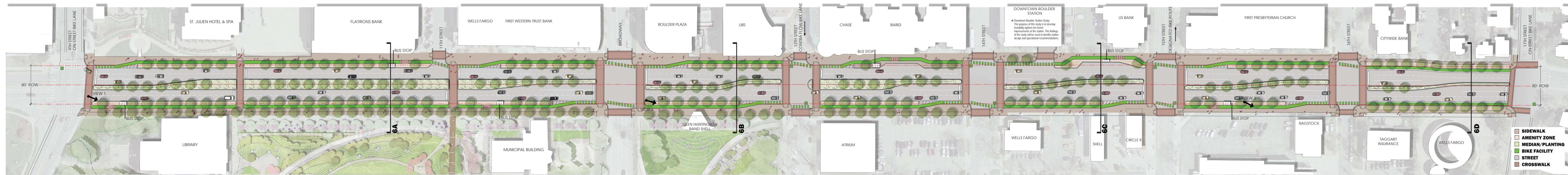
PLAN IS FOR DIAGRAMATIC PURPOSES AND DOES NOT REPRESENT FINAL DESIGN 1" = 40'-0"



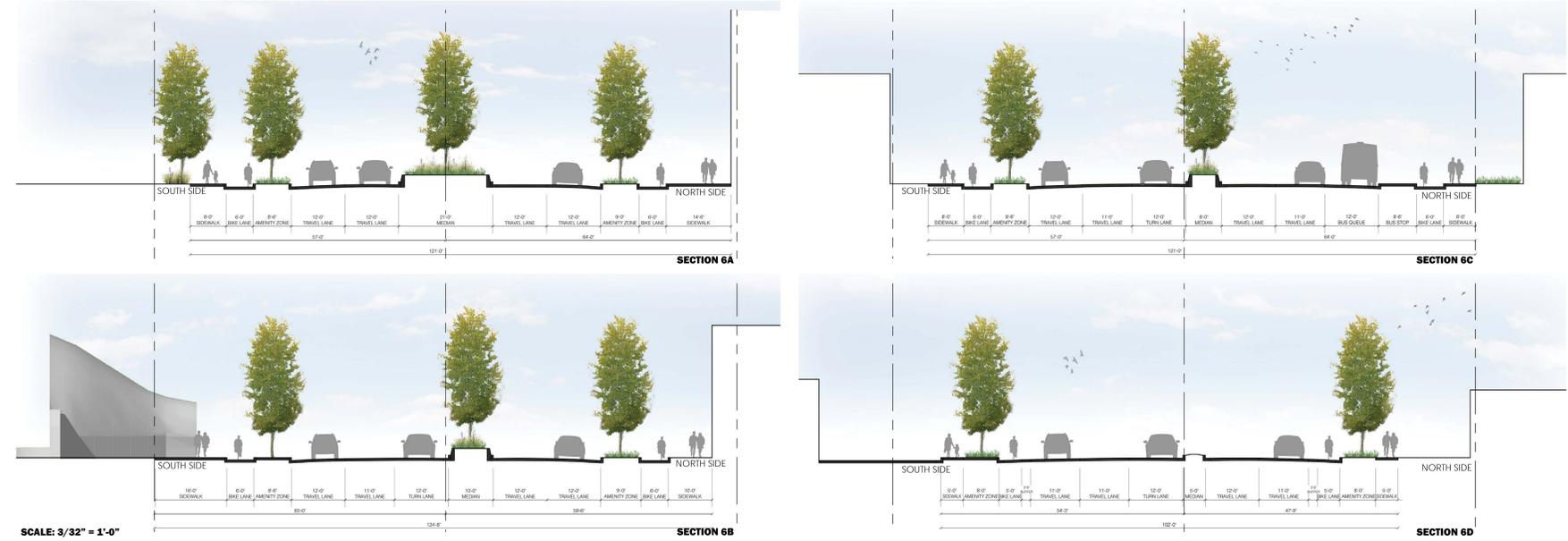
RENDERINGS ARE FOR DIAGRAMATIC PURPOSES AND DO NOT REPRESENT FINAL DESIGN

- Mixed environment for people traveling along and across the corridor and coming to activities on the street
- Good separation from traffic for bicyclists and pedestrians
- Promotes flexibility in the streetscaping and design through wide, plaza-like spaces on both sides of the street
- Simple to phase as development occurs along the corridor related to the Civic Area Master Plan
- The shared-use pedestrian and bicycle facilities introduces a chance for conflicts between bicyclists and pedestrians moving quickly along the path
- Space is less intrusive for bicyclists traveling along the corridor
- Type of bicycle facility is redundant to the nearby Boulder Creek multi-use path
- Slight increase in pedestrian crossing distance beyond existing conditions
- Not anticipated to impact historic or potentially historic properties
- Not anticipated to adversely impact flood conveyances

OPTION 6: SINGLE DIRECTED PROTECTED BIKE LANES ON BOTH SIDES OF STREET WITH PLANTED SEPARATION, NORTH AND SOUTH AMENITY ZONES, SIDEWALKS, TREE ROWS, PLANTED CENTER MEDIAN



PLAN IS FOR DIAGRAMATIC PURPOSES AND DOES NOT REPRESENT FINAL DESIGN **1" = 40'-0"**



SCALE: 3/32" = 1'-0"



RENDERINGS ARE FOR DIAGRAMATIC PURPOSES AND DO NOT REPRESENT FINAL DESIGN

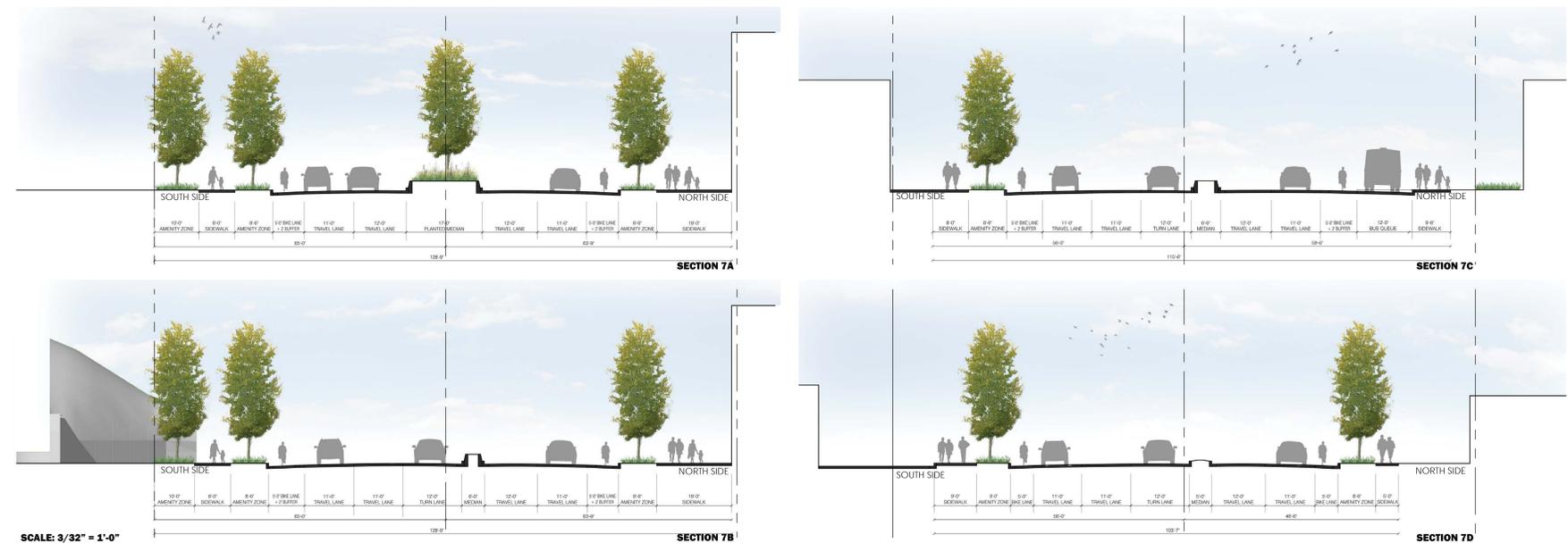
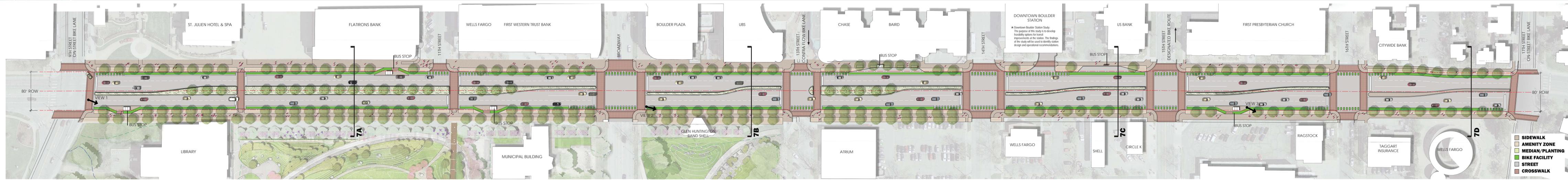


VIEW 2



VIEW 3

- Efficient and comfortable through-connection for bicyclists of most ages and abilities traveling along the corridor
- Sidewalks are widened from existing conditions in most locations and separated from vehicular and bicycle traffic
- Greatest curb-to-curb distance increases pedestrian crossing time from existing conditions
- Bicycle lane protection can vary between three and eight feet and can be flexible in design treatments
- Landscape protection uses space that could otherwise be programmed for more active uses
- Bicycle lane protection may be used as a floating bus island
- Additional wayfinding signage may be necessary in high activities areas (e.g. at the Band Shell and Downtown Boulder Station)
- Transitioning protected bike lanes to the existing condition is more difficult during phased implementation and at the ends of the corridor
- Not anticipated to impact historic or potentially historic properties
- Not anticipated to adversely impact flood conveyances



- Separated bicycle lanes provide a comfortable through-connection for many bicycling ages and abilities, but are not as inclusive as protected bicycle lanes or multi-use paths
- Sidewalks are widened beyond existing conditions with pedestrian separation from vehicular and bicycle traffic
- Allows for entire curb area to be flexible during special events
- Bicycle facility is more consistent with existing facilities in the city, and the use of the lane may be more intuitive than other bicycle facility types, thus reducing the need for extensive wayfinding
- Extra width in the bike lane allows for the development of floating bus islands
- Increased curb-to-curb distance, as compared to existing conditions, increases pedestrian crossing time and exposure to traffic
- Not anticipated to impact historic or potentially historic properties
- Not anticipated to adversely impact flood conveyances