

Baker Station

Feasibility Study

URPL 6900 Planning Capstone



Master of Urban
and Regional Planning
COLLEGE OF ARCHITECTURE AND PLANNING
UNIVERSITY OF COLORADO **DENVER**



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Executive Summary

The Problem

The northern portion of the Baker Neighborhood, located just south of Downtown Denver, is not well-served by light rail despite being along the city's first light rail line. The 10th and Osage and Alameda light-rail stations are located 1.75 miles apart, which leaves a significant portion of Baker outside of walking distance to a station — typically defined as about 0.5 miles.

Transit is a key component of Denver's urban planning vision and is included in the documents: *Blueprint Denver*, *Denver Moves*, *the Parks & Recreation Game Plan*, and *the Denver Comprehensive Plan 2040* (City and County of Denver, 2021).

Denver Moves: Transit, Denver's guiding plan for future investments in mass transit sets a goal to increase the percentage of households within a 10 minute walk of high-capacity transit from 25% today to 75% of all households by 2040. The plan also sets a goal to double the number of all trips in Denver that occur on transit — from 5% today to 10% in 2040.

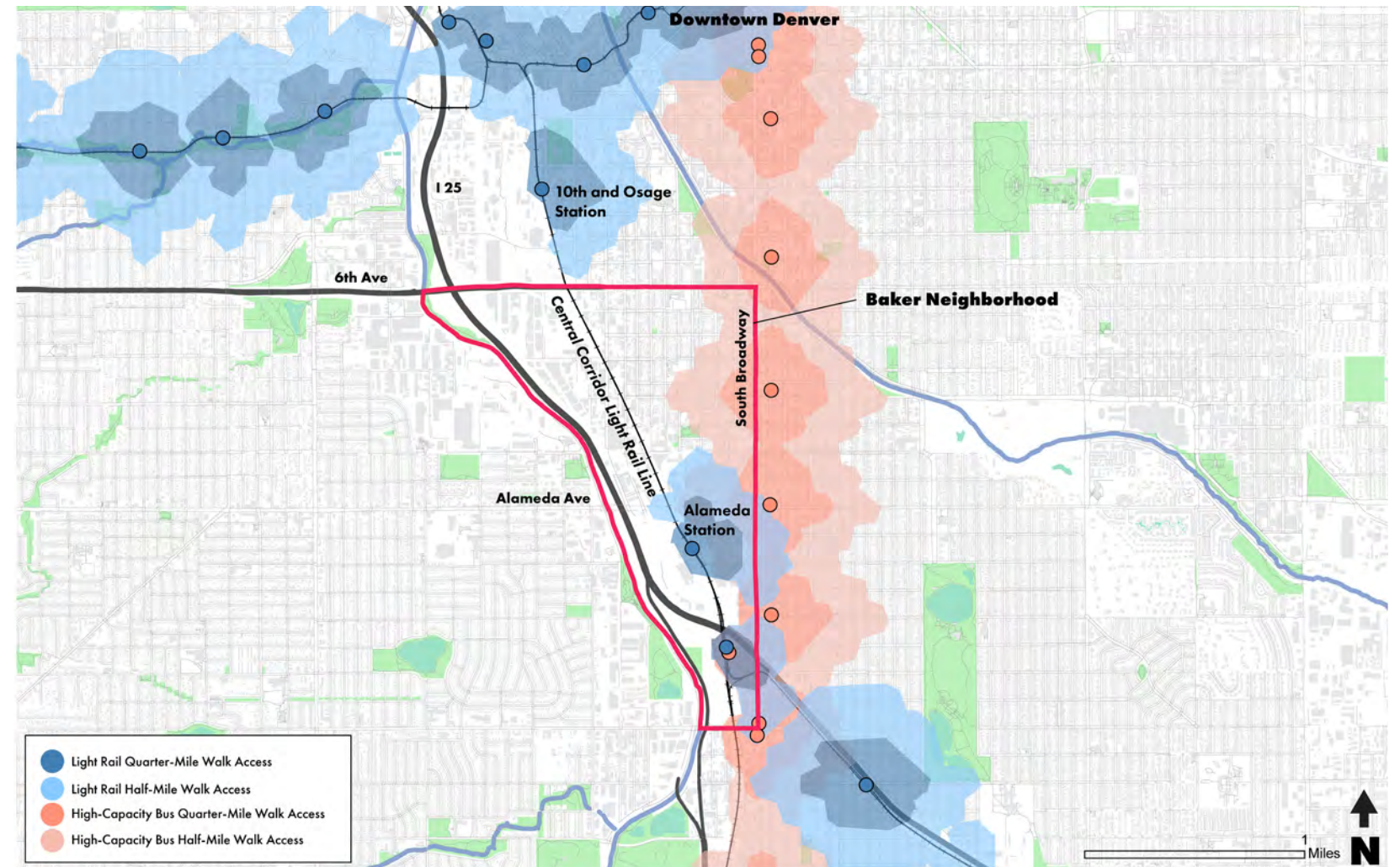
If this geographic gap could be patched, Baker — a walkable, mixed use, and dense neighborhood — could become among the first areas outside of downtown where most of the daily needs of residents could be accomplished without using a car.

Baker residents have long recognized this gap in transit and placed a new station on a "wish list" in their 2003 neighborhood plan, calling for a new station to be researched should new opportunities arise (*Baker Neighborhood Plan*, 2003).

The Opportunity

The Colorado Department of Transportation (CDOT) is currently planning for the future of railroad infrastructure in this area as a part of planning for improvements to I-25. CDOT would like to relocate heavy rail facilities in the area and add two new light rail tracks alongside the two existing tracks.

Because this segment of light rail is elevated above street level, making installation of a station much more complicated, CDOT's plans represent a once-in-a-generation opportunity to deliver on a new station for Baker.



Walking access to high-capacity transit near Baker neighborhood, Denver

Study Objectives and Metrics

01

Encourage solutions that work toward the city's stated modal goals

- Estimated Ridership
- Improved Pedestrian Connections
- Improved Bicycle Connections

02

Increase Access to Transit

- Access to Residents
- Access to Nearby Jobs
- Access to Community Facilities (Schools, Parks, and Gathering Places)
- Potential for Transit Oriented Development

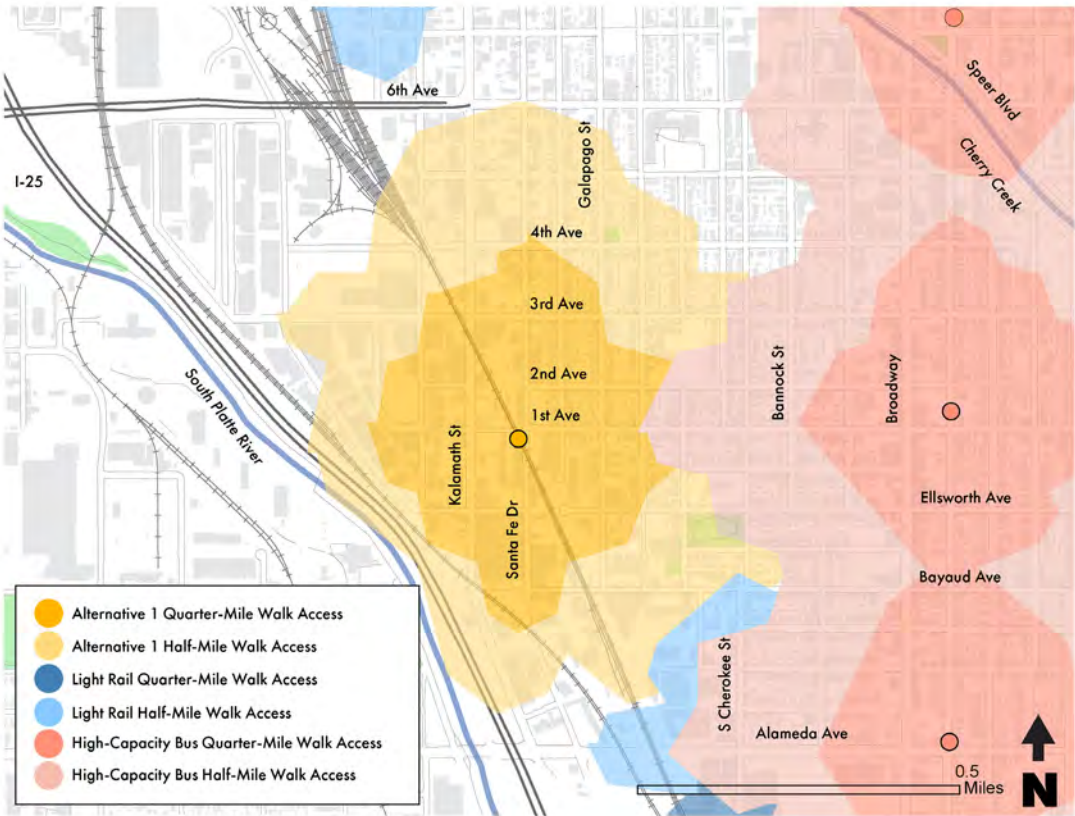
03

Identify alternatives that are technically and financially feasible

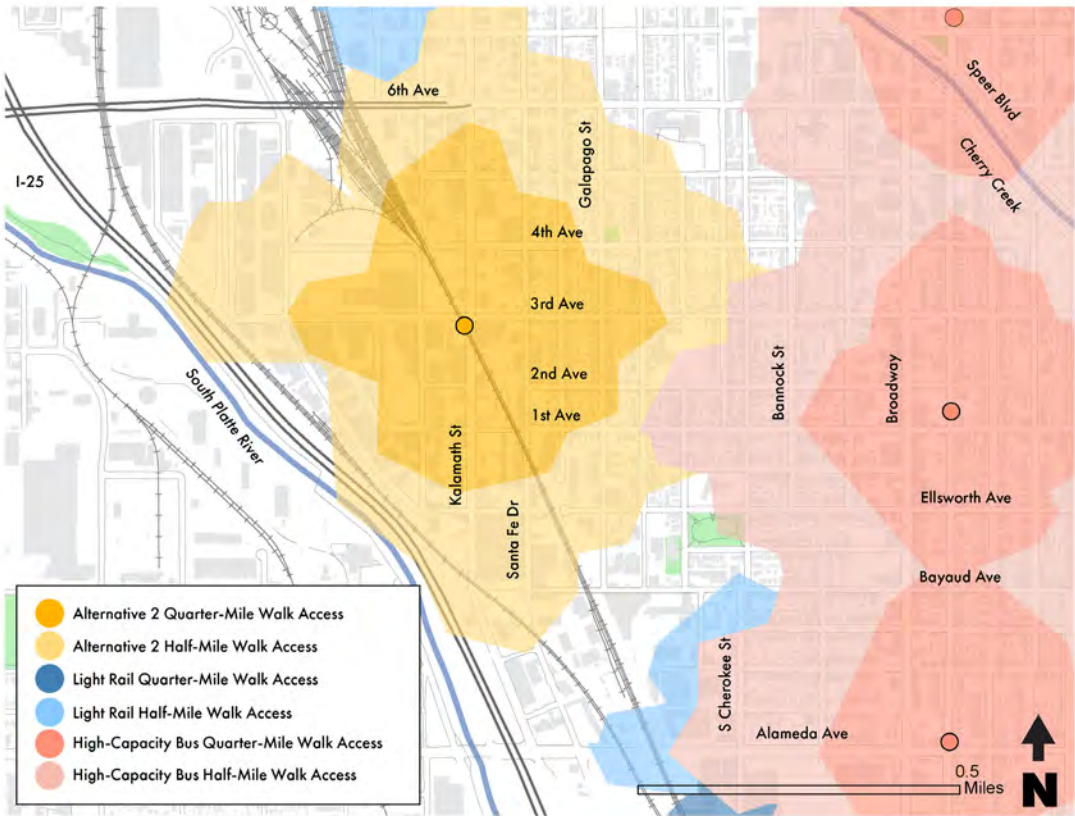
- Station Sites are Feasible to Build and Maintain
- Preliminary Cost Implications

Key Findings

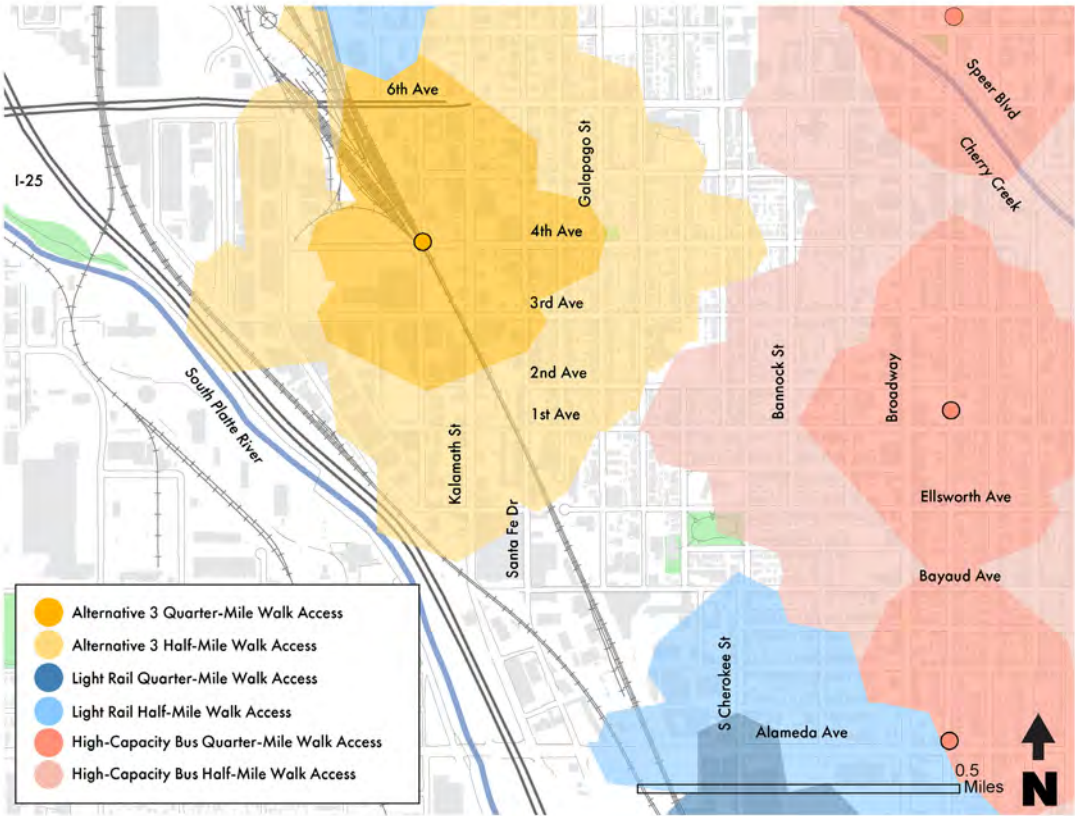
- Baker is a strong location to expand transit options. A station here could attract approximately 1,000 new weekday riders, more than at about half of all RTD stations.
- The cost per new rider could make this a very worthwhile project, but it will be important to refine cost estimates and look for savings.
- It *is feasible* to install a station platform at any of the three station sites assessed. This means that station platforms can fit physically in these locations while meeting all of the required technical specifications and can provide adequate access to pedestrians, bicycles, and bus and rideshare transfers.
- A station at any of the three locations could fill nearly the entire gap in access to high-capacity transit in this part of Denver and serve up to 4,000 Denver residents upon opening.
- All three sites have the potential for Transit Oriented Development.
- Improving First and Last Mile Connections to Existing Transit holds the potential to increase the use of transit, but cannot fix the geographic access gap at the core of the problem.
- The case for including a transit element in a highway project is well supported by plans and professional practice. Expanding mass transit in a neighborhood like Baker as a component of CDOT’s Central I-25 project could qualify the project for additional federal grand funding.



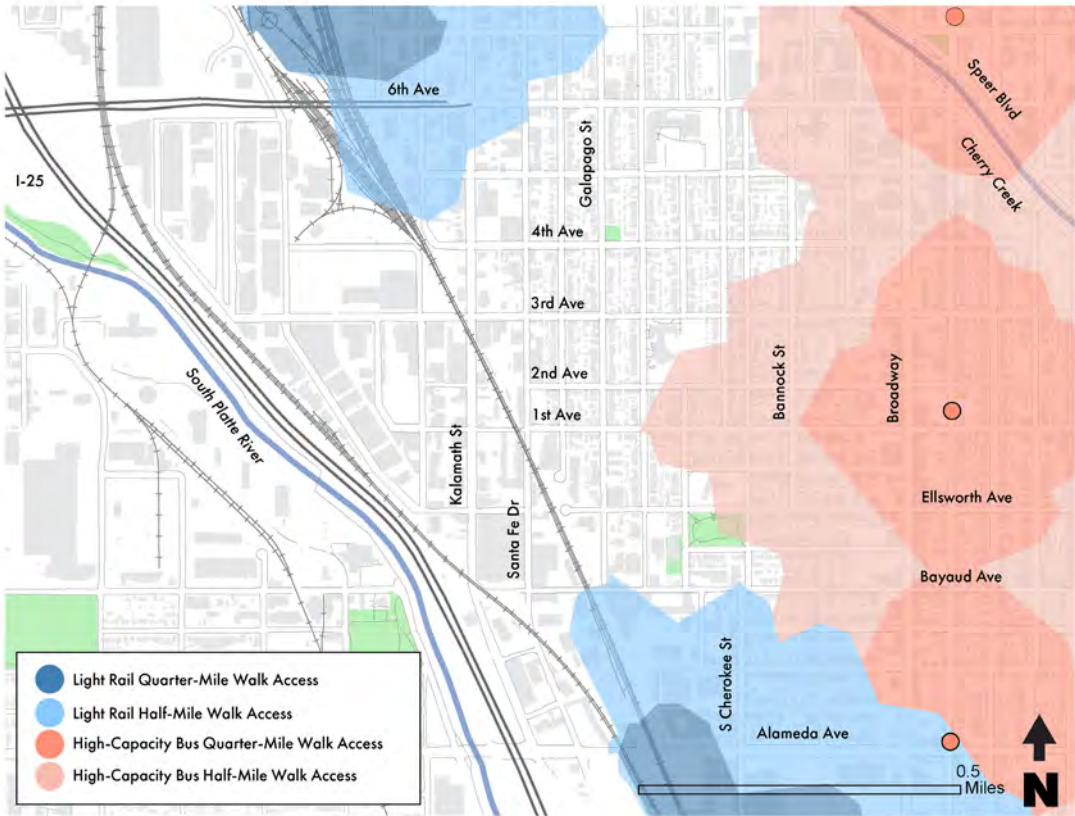
Walk-Access Map for Station at 1st and Santa Fe



Walk-Access Map for Station at 3rd and Kalamath



Walk-Access Map for Station at 4th and Lipan



Walk-Access Map for Improved Sidewalks to Existing Stations

Site Selection Criteria

Must be 0.6 Miles or More from 10th and Osage and Alameda Stations

- North of Ellsworth Ave and south of 5th Ave

Must be Level and Straight

- Cannot be on tilted segment of embankment structure
- Embankment may require modifications to make level and remove curve - bridges are better locations

Platform must be at least 400 feet long

- A requirement for any light rail station
- All bridges and other locations are long enough to accommodate requirement

Maximize Pedestrian Access

- Look for locations that provide pedestrian access in the most directions

Activate Urban Space

- Train stations are a community gathering place
- Look for opportunities to activate dead space left underneath railroad bridges

Station Concept Designs
Appear on the Following Pages

Existing Light Rail and Spur Track in Baker



Elevated Platform - Lakewood, CO



Elevated Station Entrance - Lakewood, CO



Recommendations and Next Steps

01

The City and County of Denver should advocate for the advancement of a station for further evaluation

- Bring this opportunity to the attention of local planning, political, and community leaders to find a champion
- Encourage CDOT to integrate a station into a future alternative for Central I-25 and establish more detailed cost estimates and engineering details
- Consider how light rail could fit with planning for Front Range Passenger Rail

02

Integrate first and last mile solutions into all other transportation planning

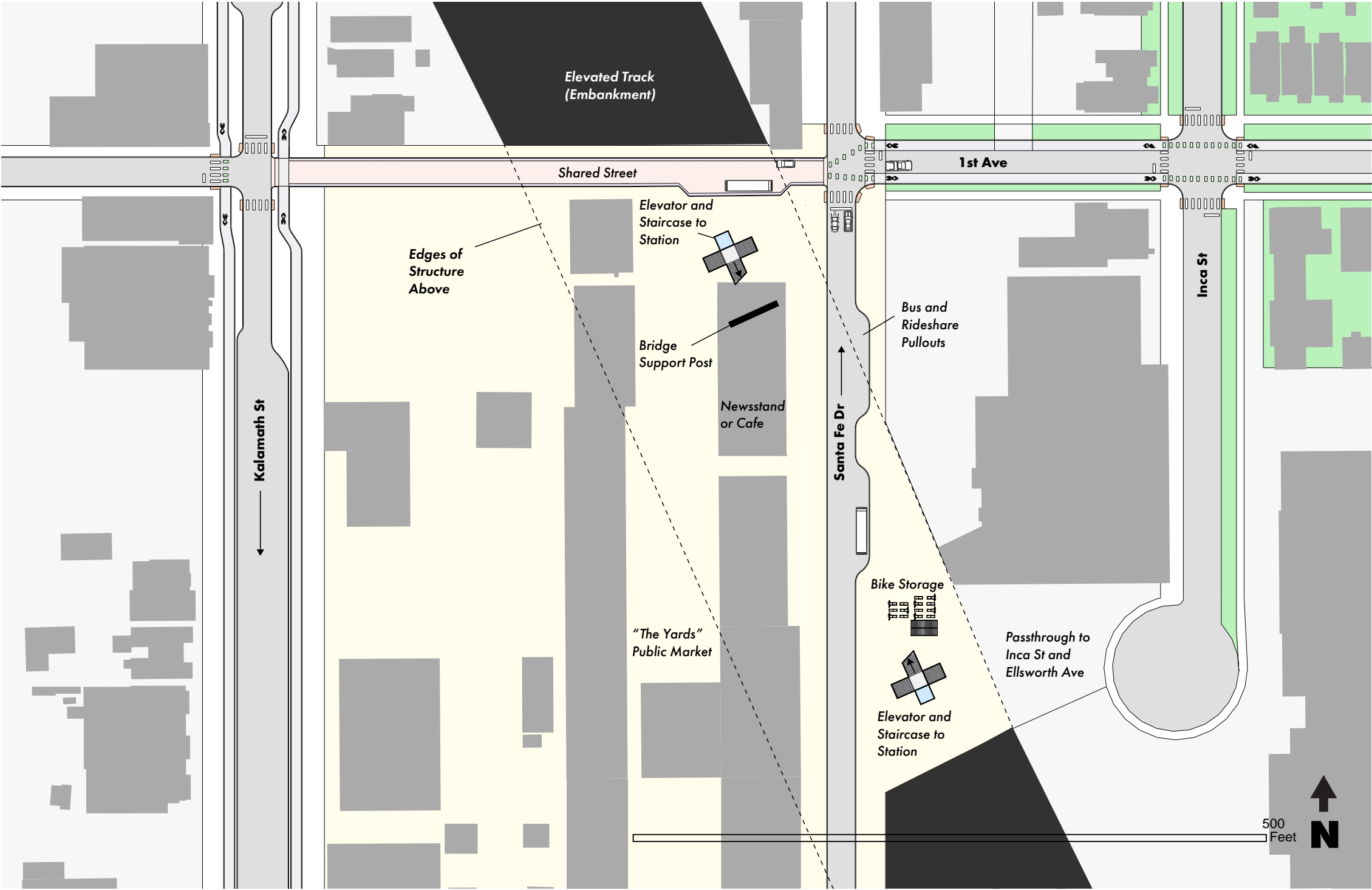
- Continue to find resources for new sidewalks and bicycle facilities
- Station-area construction could help implement new sidewalks
- Investigate new ways to fund transit pass programs for both residents and employees
- Consider branded wayfinding between new and existing stations to business districts like Santa Fe and South Broadway

03

Begin planning for social equity early in the planning process

- Explore the potential for **Value Capture** prior to the start of construction
- Conduct a series of meetings with the local community to understand their desires and concerns
- Consider how additional financial resources acquired through Value Capture could help mitigate these concerns





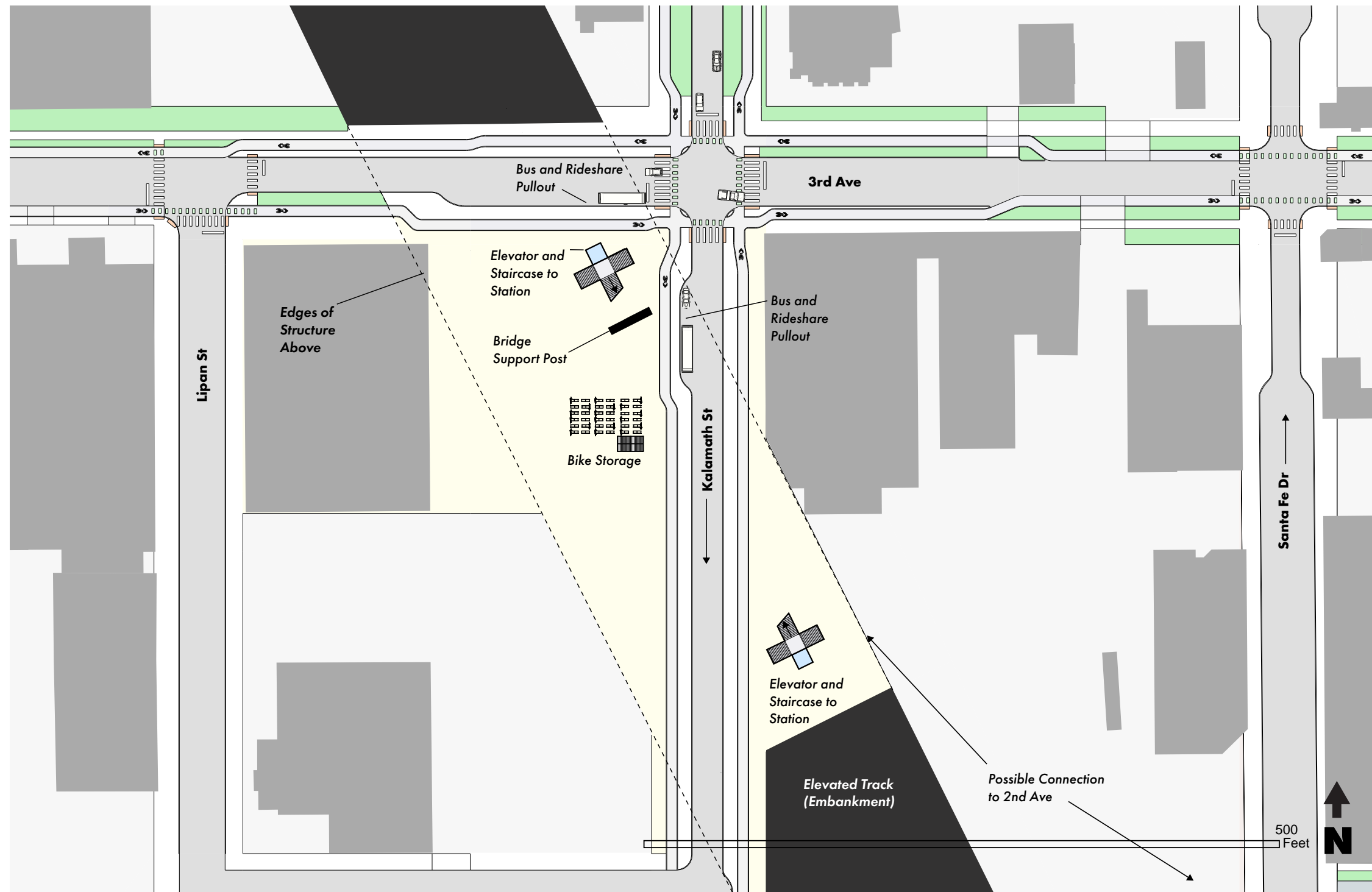
1st Avenue and Santa Fe Drive Site Plan

Features

- Station Platform
- Platforms elevated above roadway on bridge
 - Staircase and elevator access on both sides of Santa Fe
- Roadways
- 1st treated as shared street between Kalamath and Santa Fe
 - Santa Fe reduced to two lanes
- Bus and Rideshare
- Pullouts face northbound on Santa Fe and eastbound on 1st
- Bicycle
- The city recommendation for 1st east of Galapago is on-street bike lanes
 - Design continues these bike lanes to Santa Fe and ties them in to a shared street alongside station
- Other
- Integrated public market



Bird's Eye View - 1st and Santa Fe Looking Southwest



Alternative 2: Station at 3rd and Kalamath

Features

Station Platform

- Platforms elevated above roadway on bridge
- Staircase and elevator access on both sides of Kalamath

Roadways

- 3rd is a two-way Collector street providing access west to Osage
- Kalamath reduced to two lanes, mirroring changes to Santa Fe

Bus and Rideshare

- Pullouts face southbound on Kalamath and eastbound on 3rd

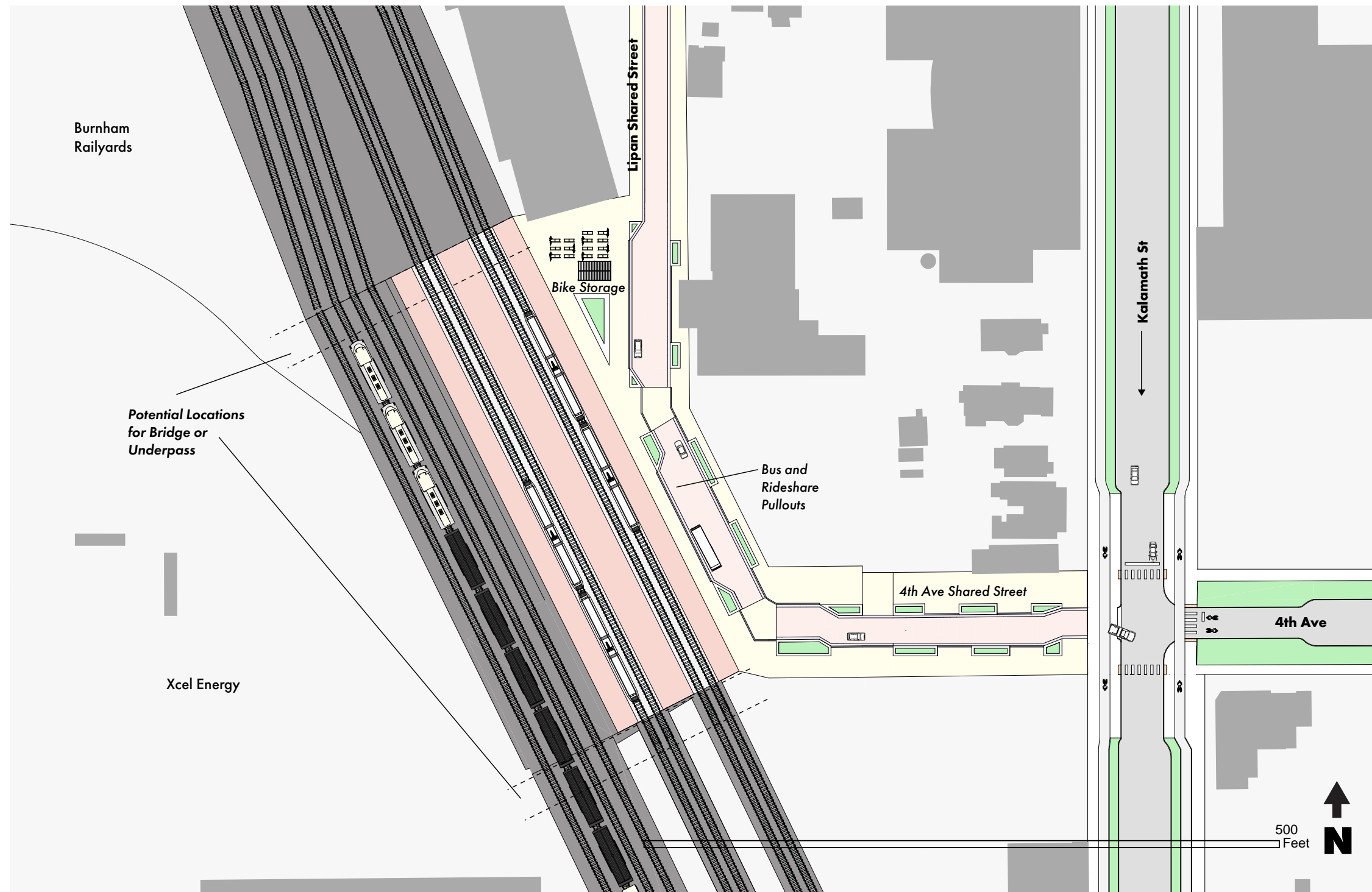
Bicycle

- Scenario tests two-way protected bike lanes on Kalamath
- The city recommendation for 3rd in this area is on-street bike lanes
- Design protects all bike lanes through the intersection of 3rd and Kalamath

3rd Avenue and Kalamath Street Site Plan



Bird's Eye View - 3rd and Kalamath Looking Southwest



4th Avenue and Lipan Street Site Plan

Alternative 3: Station at 4th and Lipan

Features

Station Platform

- Platforms located at-grade west of where 4th becomes Lipan
- Entire site would need re-grading

Roadways

- 4th reconstructed as a shared street west of Kalamath
- Kalamath given the same treatment as previous alternatives

Bus and Rideshare

- Multiple pullouts on 4th shared street alongside station platforms

Bicycle

- Neighborhood residents are promoting 4th as a slow-speed neighborhood "garden street"
- Shared Street configuration extends this slow-speed, mixed traffic condition west to station
- North-South bicycle connection could occur on either Lipan or Kalamath



Bird's Eye View - 4th and Lipan Looking Northwest