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College: An Avenue for Change

Berkeley, CA

a Fall 2024 transportation planning studio project

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Executive Summary

College Ave is an important north-south corridor in the City of Berkeley, extending from the southeast edge of the UC Berkeley campus down into Oakland. It is home to a mix of residential and commercial buildings and is well known for its quaint community character, especially within the Elmwood District. This makes it not only an important link in the street network, but also a bustling destination for many. Vehicles, buses, bikes, and pedestrians share the narrow corridor, which can lead to conflicts between users. The corridor has been identified as one of three "Priority Development Areas" in the City to be upzoned, which would entail changing parcel-level zoning codes to incentivize denser development. Though the City currently has no plans to improve the right-of-way along with the parcel-level zoning codes, this will be vital to ensuring a functioning and thriving College Ave as density increases in the years to come.

Our report identifies existing conditions for College Ave and uses this information, along with guidance from City staff and other stakeholders, to provide recommendations for right-of-way and other transportation improvements. Our recommendations focus primarily on the portion of College Ave from Bancroft Way to Ashby Ave, though some recommendations are applicable to the entire street within Berkeley borders. Based on our observations and meetings with stakeholders, we chose to use safety and community vitality as the guiding principles for our report.

We took a number of steps to establish the existing conditions along College Ave. We started with an in depth literature review to identify all relevant plans and policies related to the corridor, as well as others that would potentially provide useful implementation recommendations. To get a better picture of the user experience along College we met with organizations representing the residential and business interests, conducted pedestrian intercept surveys, and coordinated a wheelchair audit. We also collected our own data related to active users and analyzed collision records to get a more quantitative understanding of safety issues along the corridor.

Our research presented a number of different findings, primarily related to safety and community vitality along the corridor. With high pedestrian and vehicle traffic along the corridor, vehicle-pedestrian collisions occur at twice the rate along College as they do across the entire City. Many stakeholders feel that these collisions could be avoided with low-cost, quick-build fixes that would improve visibility for both pedestrians and drivers in the short term, and that more comprehensive improvements will be needed down the road. In terms of community vitality, stakeholders primarily focused on concerns related to parking and transit service, and tended to have varying opinions. Transit service is crucial to College Ave, which hosts two AC Transit lines, including the system's second-highest ridership route. Many people also shared their love for the street as a lively and enjoyable community space.

We group our recommendations into five key areas: intersection improvements, general safety, wayfinding, parking, and placemaking. Our intersection improvements focus on four key intersections along College Ave in Berkeley: Durant Ave, Derby St, Russell St, And Ashby Ave, which also functions as a State highway. By addressing the pressing safety concerns and enhancing community vitality, these targeted improvements will ensure College Ave remains a thriving, inclusive corridor that supports Berkeley's growth while preserving its cherished character for generations to come.

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1 | Introduction

This report analyzes transportation challenges on College Avenue in Berkeley, CA, and makes recommendations for infrastructural improvements and planning processes to address those challenges.

1.1 | Background and Rationale

College Avenue spans just over two miles from Bancroft Way on the southern side of the UC Berkeley campus, to Broadway in the Rockridge neighborhood of Oakland. It is a transit-rich corridor, hosting nine AC Transit bus routes as well as the Rockridge BART station. College Avenue intersects with several high-volume east-west arterials, including Dwight Way, Ashby Avenue, Alcatraz Avenue (the border between Berkeley and Oakland), and Claremont Avenue. It additionally intersects with key bike routes at Channing, Russell, Woolsey, Alcatraz, and Chabot. College Avenue is narrow compared to other parallel corridors like Telegraph, Shattuck, MLK, and Sacramento. It accommodates just two travel lanes, on-street parking, and the occasional turning lane. Space is scarce in comparison to other corridors' typical four lanes. Despite this constraint, College Avenue currently serves as a key conduit for transit, vehicular, and bicycle traffic between UC Berkeley and North Oakland, while simultaneously hosting pockets of mixed-density residential life and vibrant commercial activity in the Elmwood and Rockridge neighborhoods.

Figure 1.1: Map of project area



In 2021, the City of Oakland repaved College Avenue south of Alcatraz, painting high-visibility crosswalks and class II bike lanes between Claremont Avenue and Miles Avenue to extend the bicycle connection to the Rockridge BART station. Most of College Avenue in Berkeley was last repaved in 2000, and the City did not include it in the current street repair plan, which runs through 2028. While the city flagged some of the

Berkeley-end corridor for complete streets improvements in the 2016 Berkeley Strategic Transportation (BeST) Plan, no subsequent projects occurred.

In 2024, the City of Berkeley started pursuing plans to amend zoning along transit- and commercial-rich corridors, including College Avenue, to increase opportunities for housing density. The City plans to adopt these zoning updates in 2026. Although this change will not immediately result in higher density, a proactive approach to transportation challenges and opportunities will ensure that this well-loved corridor continues to effectively serve today's users and a growing population in the long run.

1.2 | Guiding Principles: Safety and Community Vitality

We took a number of steps to better understand the existing conditions of College Ave. In addition to a comprehensive plan and document overview, we spoke with various community groups, public officials, and people actively using the corridor. We planned and implemented site visits to gain more understanding of user perceptions, safety concerns, and the urban form that exists along College. For a holistic description of our outreach approach, see the Methodology and Existing Conditions section.

We heard many diverse concerns from people we spoke to about transportation on College Avenue. People alerted our attention to the uneven sidewalks, rough roadway, dangerous pedestrian crossings, absence of a bike lane, dearth of benches and street lights, slow-moving traffic, harsh parking enforcement, and pesky traffic diverters. But we also heard a lot of love for this street. Pedestrians used words like 'beautiful' and 'inviting' to describe it. Business owners in Elmwood expressed appreciation for the customers who have patronized them for years, as well as for first-time visitors who discover the shopping district while passing through. And there was universal positivity for AC Transit service, in particular the 51B. Overall, College Avenue faces significant transportation challenges, but it also works well in a number of ways.

Based on our observations and learning from this outreach, we centered our work for this project on two organizing principles: **safety and community vitality**. This framing allowed us to prioritize challenges and opportunities that would be impactful in those terms.

2 | Plan Review

Below is a summary of the most City of Berkeley relevant transportation and infrastructure plans and policies affecting the College corridor in Berkeley. References to College Ave, or lack thereof, are noted. We also include two relevant plans from AC Transit. Our general takeaway from analyzing these plans as a whole is that while Berkeley has extensive plans and a demonstrated commitment to make transportation improvements throughout the city, College Avenue is a noticeable omission from these proposals.

Anticipated Upzoning on College Ave

The City of Berkeley released an [RFP](#)¹ in January 2024 for the College Ave, Solano Ave, and North Shattuck corridors to engage a consultant in helping the city to understand existing land uses in these areas, establish objective design standards, and plan for increasing combined density by 2,000 units. These priority commercial and transit corridors were identified in the City's 6th Housing Element for more intensive housing development. The project scope does not mention studying relevant transportation improvement to accommodate this new density.

Berkeley Strategic Transportation (BeST) Plan + Update

[The Berkeley Strategic Transportation Plan](#)² (BeST) is a vision for mobility improvements aligned with the city's [Complete Streets Policy](#)³ that aims to improve safety and accessibility of the road network for all users. Adopted in 2016, BeST used a combination of local funding as well as Alameda County Transit Commission (ACTC) and Metropolitan Transportation Commission (MTC) grants to advance multimodal transportation improvements across the city. Projects could be one-offs or part of greater plans such as Vision Zero and the Berkeley Bike Plan. College Ave. was flagged for Complete Streets improvements in the plan, but no projects were undertaken since BeST's adoption. BeST was updated in 2024 via the city's [2025-2029 Capital Improvement Plan](#)⁴ with a new emphasis on engagement in historically underserved areas and a new set of projects. The incomplete projects from the 2016 plan, including on College Ave, are not present in the new Capital Improvement Plan. It is not clear if the city intends to revisit these cancelled projects. Approximately \$533,000 has been programmed for the planning phase of the BeST update and projects will align with the [Adeline Corridor Specific Plan](#),⁵ Vision Zero pedestrian safety initiatives, and the Berkeley Bike and Pedestrian Plans (see below).

Berkeley Bicycle Plan

The 2017 [Berkeley Bicycle Plan](#)⁶ proposes a series of improvements and expansions of the bike network that aims to add 66 miles of bike infrastructure at a cost of \$34 million. Projects will be undertaken in 2017 until 2035. College Ave. was not included for new bike infrastructure or as a prioritized corridor in the Bike Plan.

¹ City of Berkeley, "North Shattuck, College, and Solano Avenue Corridors Zoning Update."

² City of Berkeley, "Berkeley Strategic Transportation (BeST) Plan."

³ City of Berkeley, "Complete Streets Policy."

⁴ City of Berkeley, "Proposed Capital Improvement Program, 2025-2029."

⁵ City of Berkeley, "Adeline Corridor Specific Plan."

⁶ City of Berkeley, "Berkeley Bicycle Plan."

Pedestrian Plan

The City of Berkeley's 2021 [Pedestrian Plan](#)⁷ sets goals for improving pedestrian infrastructure, including identifying 10 priority streets as well as new city-wide policies and programs. Because College Ave is not in a historically underserved area of Berkeley (Figure ES-2) and does not rank highly enough on the scale of recent fatal pedestrian collisions or severe injuries (Figure ES-4), it is not prioritized for improvements. Even so, College Ave has the 11th highest pedestrian collision count (48) of any street in the city from 2008 - 2017.

Southside Plan

The 2011 [Berkeley Southside Plan](#)⁸ established a vision for comprehensive land use, housing, transportation, economic development, and public safety improvements for the city's Southside neighborhood which spans the length of the UC campus and extends roughly 0.25 miles south. It functions as a general plan for this section of Berkeley which has a dense population, commercial corridors, and close proximity to the UC Berkeley campus. In 2024, major changes to the streetscapes of Bancroft, Dana, and Fulton streets were completed to dedicate additional road space to separated bike lanes. While College and Bancroft was marked as a high hazard intersection in the plan, College Ave has no projects included in the Southside Plan other than at the intersection with Bancroft.

Resurfacing Plan

College Ave is not on the City's [Resurfacing Plan](#)⁹ for street repair, which runs through FY2028. The [2023 Pavement Management Program update](#)¹⁰ lists four segments of College Ave in city limits. The three south of Dwight were last treated in 2000 and each have a pavement condition index (PCI) of "Poor", between 35-40. The authors estimate it would cost \$2,230,000 for adequate rehabilitation of these three segments. In creating such plans, the City faces the dilemma of choosing to allocate funds for reparable segments that only require cost-efficient light rehab, or for segments like the three on College Ave that have deteriorated to a point of requiring intensive treatments.

Passage of City Parcel Tax, Measure FF of 2024

In November 2024, Berkeley voters approved [Measure FF](#)¹¹ with 60.9% of the vote, a city-wide square footage parcel tax that will raise \$15 million annually for street maintenance through 2039. It levies 17 cents per residential square foot and 25 cents per commercial square foot. Importantly, the measure includes an explicit focus on traffic and sidewalk safety, including for bicyclists and pedestrians. Projects will be funded based on their order in existing transportation plans, of which College Ave is not listed as a high priority as detailed in this section.

San Pablo Avenue Specific Plan

[The San Pablo Avenue Specific Plan](#)¹² is a vision for development and transportation improvements along the 2.35-mile stretch in Berkeley from the northern border with Albany

⁷ City of Berkeley, "Pedestrian Plan."

⁸ City of Berkeley, "Southside Plan."

⁹ City of Berkeley, "Street Repair."

¹⁰ City of Berkeley, "2022 PMP Update P-TAP Round 23 Final Report."

¹¹ County of Alameda, "Measure FF."

¹² City of Berkeley, "San Pablo Avenue Specific Plan."

to the southern border with Oakland. The planning phase is spanning from 2023 to 2025 and aims to improve economic vibrancy, make public realm improvements, increase housing (especially affordable) supply, and enhance local connectivity. Transportation improvements include Complete Streets projects and additional transit service. We include this plan in our analysis due to San Pablo's similarities to College as a mixed-use, popular commercial destination with a relatively dense population, but given that San Pablo is twice as wide as College, some of the projects will not be replicable on College not apply to this report. This plan is still in its community engagement and planning phase, but the results of the planning coming next year will shed light on issues that matter most to residents and project prioritization will be a reflection of the city's streetscape priorities.

Transit-First Policy Implementation Plan

The city's 2023 [Transit-First Policy Implementation Plan](#)¹³ is intended to create policies and design guidelines to implement the city's Transit-First Policy, which prioritizes transportation improvements for alternative road users (transit, active users) over single occupancy vehicles on key transit routes, such as College. This includes improving transit reliability, prioritized funding, and increasing ridership. However, College Ave is listed minimally in the document, only stating that AC Transit is considering replacing current local bus service on College Ave with rapid service by 2040. Unlike most of the other identified corridors, there is no date for a transit corridor study on College Ave's study.

AC Transit Transit Network Redesign; The Realign Plan

AC transit will be implementing a transit network redesign in late 2025. [The Realign plan](#),¹⁴ approved in October 2024, will bring significant changes in bus service provision due to changing post-pandemic travel patterns and a focus on social equity. Major adjustments include route changes on some existing lines, new schedules, new lines, and the elimination of certain lines. The College Avenue corridor in Berkeley is currently served by the 51B and 7 AC Transit lines. Under the new plan, the 7 will be rerouted to no longer serve College. A new line, the 27, would fill the gap from the rerouted 7, serving College between Bancroft and Ashby on its route between El Cerrito and Emeryville with the same 30 minute headways as the current 7 line. 51B service, which covers College from Bancroft to Rockridge BART, will remain unchanged with 12-15 minute headways.

AC Transit Major Corridors Study

The [Major Corridors Study](#),¹⁵ finalized in 2016, identifies short- and long-term investment strategy recommendations for the 12 highest-ridership corridors. College Ave is listed third, in tandem with Broadway and University Ave. Short term improvements identified for these routes include enhanced bus service, while long-term plans are to replace local bus service with rapid. The Major Corridors Study is to be updated in 2025, and while the original study was not developed in the context of the Realign Plan, it is likely that the upcoming Study will take the Realign Plan into account in its prioritization of routes.

¹³ City of Berkeley, "Berkeley Transit-First Policy Implementation Plan."

¹⁴ Alameda-Contra Costa Transit District, "Realign Draft Final Plan."

¹⁵ Alameda-Contra Costa Transit District, "Major Corridors Study."

3 | Methodology and Existing Conditions

We collected and analyzed a range of qualitative and quantitative data to understand the existing conditions along College Avenue, including transportation patterns and sentiments from various stakeholders. **Table 3.1** provides a summary of our data collection efforts.

Table 3.1: Summary of Data Collection Schedule, Fall 2024

Week of	Data Collection
September 23rd	Saturday: Initial team site visit
September 30th	Wednesday: Meeting with Elmwood Business Association members Sunday: Meeting and College Avenue walk with Willard Neighborhood Association members
October 7th	Monday: Pedestrian intercept survey 1 (2:00-4:00pm)
October 14th	Monday: Wheelchair roll and walk audit
October 21st	Monday: Active user counts and observations at select intersections (2:30-4:00pm) Tuesday: Discussion with the Elmwood Business Association Board as a meeting agenda item Sunday: Pedestrian intercept survey 2 (12:00-2:00pm)
November 18th	Thursday: Meeting with AC Transit

3.1 | Stakeholder Sentiments and Priorities

We met with the Elmwood Business Association, the Willard Neighborhood Association, and conducted pedestrian intercept surveys to gain an understanding of how various users and other stakeholders view transportation on the corridor.

Table 3.2: Summary of Key Concerns from Stakeholder Sentiments and Priorities

Elmwood Business Association	Willard Neighborhood Association	Pedestrian Intercept Surveys
Parking to support business success	Pedestrian safety at Derby	Hazardous sidewalk and poor lighting
Pedestrian scramble at Ashby for safety	Pedestrian scramble and right-turn lane at Ashby	More frequent/consistent bus service
Maintenance or removal of bus shelter at Russell	Bicyclists unaware of bike boulevard	Parking rules are confusing
	More parking enforcement	Public space/seating is lacking

Elmwood Business Association

The Elmwood Business Association (EBA) encompasses the more than 80 businesses in the Elmwood Commercial District of College Avenue, which spans roughly from Russell to Webster. The EBA is in turn supported by the Elmwood Business Improvement District (BID), which directs revenues to programs, maintenance, and public space improvements in the commercial district. Over the course of a meeting with representatives of the EBA and a BID meeting, we learned that the EBA views parking as essential to business operations and success. Merchants described several victories for improving access to parking, including the addition of the parking lot on Russell; the removal of ladder striping to designate spaces, which allowed more cars to fit along the curb on College Avenue; and the agreement reached with local residents to allow preferential parking permits for employees to be able to park on neighboring streets without moving their cars every two hours. They expressed that several businesses are unique “destination stores” that attract customers by car from all over the Bay Area or even the state. For example, Your Basic Bird is a bird and pet supply store, and The 14 Karats is a jeweler; these businesses are not sustained alone by locals who walk, bike, or take transit. Some merchants also expressed that parking enforcement can sometimes deter customers from returning to Elmwood after they receive a parking ticket. They posited that signage for parking regulations and pay stations may be insufficient and confusing for visitors to understand.

With regards to pedestrian access, EBA merchants were supportive of intersection improvements to boost pedestrian safety. In this vein, they proposed a pedestrian scramble

at College and Ashby. They noted that this kind of signal timing, which creates an interval during which pedestrians can cross in all directions while vehicular traffic is prevented from entering the intersection, would alleviate the conflicts between pedestrians and turning vehicles that arise frequently with the current signal timing. Merchants were also supportive of transit service, stating that AC Transit bus service is “critical” to business operations. However, they expressed discontent with the northbound bus shelter at College and Russell, saying that it was often unmaintained and attracted unhoused people.

Lastly, EBA merchants did not express that commercial loading, ride hail, or food delivery services were issues of concern. Most businesses and restaurants take their commercial deliveries early in the morning, which is a relatively smooth process. Some businesses open later in the day and can only take deliveries then, which sometimes conflicts with vehicle traffic. Overall, merchants felt that commercial loading is not a major challenge in Elmwood.

Willard Neighborhood Association

The Willard Neighborhood Association (WNA) is an organization of residents who live near Willard Park, two blocks west of College and roughly halfway between the UC campus and the Elmwood District. We met with three representatives of the WNA and walked along College Avenue together. This meeting informed our decision to include the Derby and Ashby intersections in our intersection analysis and proposals. WNA representatives characterized the Derby intersection as confusing for drivers and unsafe for pedestrians. They were particularly concerned about safety at this intersection because of the Berkeley Playhouse, which hosts youth afterschool programs. The Ashby intersection was similarly characterized as unsafe for pedestrians, and WNA representatives echoed the EBA’s call for a pedestrian scramble to reduce conflicts between drivers and pedestrians. They also advocated for painting a right-turn lane on the southbound approach of College at Ashby.

Traffic on College Avenue was a major concern for the WNA. A long-time resident asserted that traffic had been heavy on the corridor during rush hour since the 80s. They also noted that heavy traffic on College encourages cut-through traffic on the nearby Benvenue. Residents had varying opinions on the traffic diverters; some appreciated that they dissuade cut-through traffic, while others felt that they make it hard to access their own neighborhood by car.

Traffic diverters were also cited as an example of how they perceive the City to have become less collaborative with residents over time; they assert that the WNA was not consulted on the installation of a ‘pilot’ traffic diverter that was subsequently left in place without the City analyzing its performance or following up with residents. Bringing concerns around traffic into conversation with concerns about safety for all users, WNA representatives were sympathetic to the tradeoff between safety and speed on the corridor, and on the whole advocated for balance.

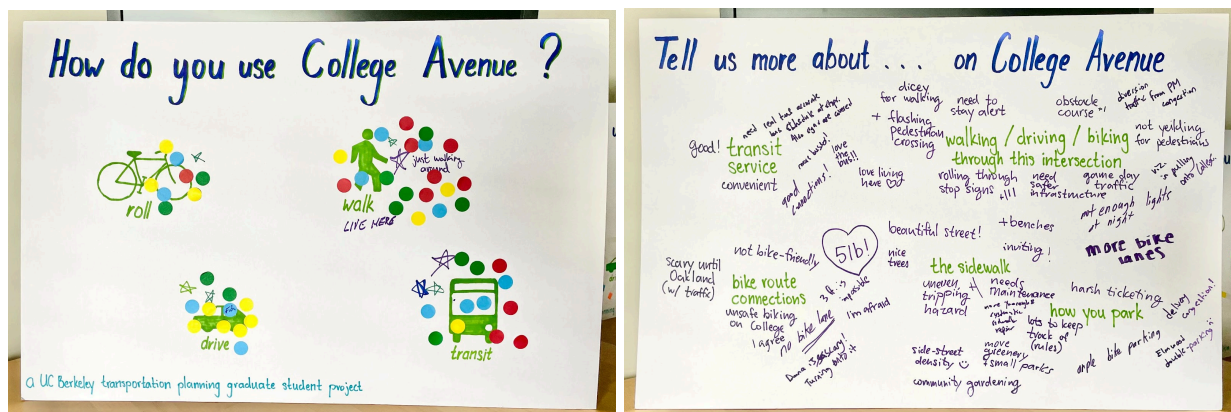
Another safety concern that the WNA brought up was the shared use of College Avenue by people bicycling and driving. WNA representatives said that they felt it was unsafe for both cyclists and drivers to occupy the narrow street, particularly if cyclists are inattentive or not wearing helmets. This sentiment informed our wayfinding recommendations to direct bicycle traffic coming from campus onto the Bowditch/Hillegass bicycle boulevard.

With regards to parking, WNA representatives expressed that while they want the Elmwood District to thrive and recognize that some amount of parking is important, they do not want neighboring residential streets to be overrun with parking spillover from the limited spaces on College. They stated that parking enforcement was currently insufficient to keep people from parking beyond the legal two-hour time limit on residential streets, but were generally supportive of the employee preferential parking program. Lastly, WNA representatives felt positively about transit service, in particular the 51B bus line. Some used the bus occasionally, and they generally agreed that it was a major asset of the corridor because it provides a convenient alternative transportation option.

Pedestrian Intercept Surveys

Our team conducted intercept surveys, or impromptu qualitative surveys with passers by on the sidewalk, at two different locations, near the Derby Ave intersection and in the Elmwood District, in October 2024. We conducted our first survey on a Monday from 2:00-4:00pm and our second on a Sunday from 12:00-2:00pm, and altogether spoke with about sixty people. To engage pedestrians we used interactive boards, where passers by could indicate their concerns and preferences by writing, drawing, or marking the boards (see **Figure 3.1**). The boards had symbols and prompts about topics of interest.

Figure 3.1: The poster boards used for pedestrian intercept surveys



For our first round of intercept surveys, we prompted passers by with a board asking, "How do you use College Avenue?" Respondents marked their transportation modes on the boards while we asked more in-depth questions about their experiences and opinions of the corridor. Major themes from this first round of engagement were transit service, safety for users of various modes at intersections, bike route connections, sidewalk condition, and

parking, so our second round of intercept surveys asked passers by to tell us more about those themes.

Participants cited safety concerns for people walking and bicycling, whether because of unsafe driver behavior, poor intersection design, or insufficient lighting at night. Some people echoed the WNA's concerns for pedestrian safety at Derby with the Berkeley Playhouse nearby, and the common concern raised by the WNA and the EBA about close calls between pedestrians and left-turning vehicles at Ashby. One participant mentioned a recent traffic incident that had occurred at Russell, which informed our decision to include that intersection in our selection. People of all ages and apparent abilities noted that the sidewalk quality was so poor in some places as to be a tripping hazard. Notably, many people who spoke to us about bike safety concerns were not aware of the bicycle boulevard nearby on Bowditch/Hillegass; this informed our wayfinding recommendations.

As with the EBA and the WNA, pedestrians we spoke with were almost universally appreciative of 51B bus service for the convenience and accessibility it provides to College Avenue and surrounding destinations. However, some people mentioned that more frequent bus service during peak periods would be helpful to reduce crowding on buses, and hoped the bus stops could be improved with digital signs to show when the next buses will arrive in real time. Additionally, one participant said that sometimes bus service was so slow because of traffic congestion that they preferred to get off at Derby and walk the rest of the way to Ashby before getting back on.

Another major theme was parking. Some nearby residents felt that parking enforcement was confusing and strict, especially on UC Berkeley football game days. One person who worked at the nearby Alta Bates Summit Medical Center, which is not included in the employee preferential parking program for Elmwood, said that they arrive an hour early every day so they can be sure to find a parking spot. While their workplace had tried to provide alternatives to driving for its employees with shuttle service and transit connections, these were not suitable to all employees and commutes. Finally, contrary to EBA representatives' view, a few participants expressed that trucks and cars making deliveries and pickups in Elmwood caused traffic congestion.

Despite the challenges listed above, the most notable sentiment we took away from the pedestrian intercept surveys was appreciation for the quaint, inviting, neighborly experience that College Avenue provides for pedestrians. For example, people added phrases to the boards like "beautiful street," "nice trees," and "love living here." Simply put, visitors and residents alike feel that College Avenue is a lovely place to be. Some participants had ideas for how to augment the character of the street, whether by adding more greenery, a community garden, benches, or lighting. This feedback informed our placemaking recommendations.

3.2 | Active User and Safety Snapshot

Wheelchair Audit

To better understand how users with disabilities experience College Ave, our team conducted a wheelchair audit, where we navigated the sidewalks using wheelchairs ourselves. We found the sidewalk quality to be poor, and challenging to navigate in many areas. The sidewalk in Elmwood was particularly challenging, as outdoor dining and merchandise displays crowded the narrow, high-traffic sidewalk. Low visibility at crosswalks is a major safety concern for users of all types, especially wheelchair users, and we often had to wheel several feet into the crosswalk before we could see oncoming traffic around parked cars. This indicates the need for better daylighting, which refers to the practice of keeping areas near intersections or crosswalks clear of obstructions to improve sightlines for pedestrians and drivers.¹⁶ More details on the wheelchair audit can be found in **Appendix 1**.

Road User Counts

Our team also observed and documented active user counts at the four intersections that we focused our analysis and recommendations on: Durant Ave, Derby St, Russell St, and Ashby Ave. For our counts, we documented the number of pedestrians at each intersection crossing (North, South, East, West) as well as the number of bicyclists and “other users” (scooters, skateboards, people with mobility devices, etc) that either crossed or rode along College Ave. We chose these four intersections as they provide relatively different challenges, with varying geometries, traffic controls, amounts of traffic, and user types. In this way, they also present diverse opportunities for possible solutions. We also heard from many during our initial pedestrian intercept survey that these were intersections of concern. We also documented any near misses that we saw between vehicles and active users. For signalized intersections, we also documented the signal timing (Durant and Ashby Ave). We collected data for 1.5 hours, from 2:30 to 4:00pm on a Monday afternoon, and used a counter app (Counter Tally Count) to document each active user.

Figure 3.2: The research team conducting a wheelchair audit



¹⁶ Per AB 413, daylighting within 20 feet of marked and unmarked crosswalks will be required starting in 2025.

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Among the four intersections studied, Durant Ave had the most bike and pedestrian traffic, likely due to its close proximity to UC Berkeley campus. At all four intersections we observed potentially dangerous conditions for drivers, bikers, and pedestrians. By observing user dynamics we identified short- and long-term solutions to adjust traffic controls and make improvements to the right of way. More detailed findings for each intersection from our active user counts are described in the report's Intersection Recommendations portion.

Transportation Injury Mapping System (TIMS) Data

To supplement our self-collected data and provide a more comprehensive safety snapshot, we analyzed Transportation Injury Mapping System (TIMS) data along the corridor from 2015 to mid-2024. TIMS is a system developed by UC Berkeley's SafeTREC to geocode and provide open source access to California crash data, collected by California Highway Patrol officers. We chose this timeframe to get a snapshot of collisions over approximately ten years. We used this geocoded data to map all the records in Berkeley, and used data for the entirety of Berkeley as a baseline reference for the records along College Ave. We then cleaned the data for our corridor of interest by selecting only records that included “College” in the street location description attributes, and by manually checking the spatial data to see if there were any other unselected records along our geography of interest. For records where the street location description did not match the coordinates given, we manually adjusted these to reflect the street location.

Descriptive statistics can be seen for the 152 incident records identified along College Ave for this time period. This represents 3% of all records in the City of Berkeley (N = 5579). Given the relatively small number of records along the corridor, we choose to focus on a comprehensive analysis of the corridor as a whole rather than a more specific spatial analysis of collision points. On the positive side, during this time period there were no fatal collisions along College Ave. In terms of who is coming into conflict, pedestrians are involved in collisions with vehicles at twice the rate along College Ave when compared to

the city. We can also see a slightly higher proportion of collisions occurring at intersections (+5.7%) and during the weekends (+3.1%).

Table 3.3: Descriptive statistics for collisions along College Ave and in Berkeley

	College Ave (N=152)	Berkeley (N=5579)
Collision Severity (%)		
Fatal Injury	0	1
Serious Injury	7	8
Minor Injury	56	47
No Injury	38	44
Conflict With (%)		
Pedestrian	31	17
Bike	19	15
Vehicle	48	58
Other	2	10
At Intersection (%)	63	58
On Weekend (%)	26	23

Notes: Percentages for collision severity along College Ave do not add to 100% due to rounding. Source is TIMS data for Berkeley from January 2015 to June 2024.

The challenge with using TIMS data to understand safety along College Ave (and elsewhere) is that many traffic collisions go unreported, particularly if the parties involved only sustained minor injuries or property damage. Given the narrow width and frequent pedestrian crossings along College Ave, vehicles are already moving slower and therefore collisions may be less severe and go unreported. This hypothesis is supported by the higher percentage of minor injuries along College Ave, relative to Berkeley as a whole. This would be less so the case along a corridor such as Telegraph Ave or San Pablo Ave, where speeds are higher and crashes are more likely to be severe, necessitating an emergency response & subsequent documentation of the collision. However, just because collisions along College Ave may be generally less severe does not mean that planners should pay no mind to this issue.

3.3 | Transit Performance and Challenges

Despite not being the focus of our team's recommendations, providing a snapshot of transit service is essential to our understanding of existing conditions along College. As previously mentioned, College is a transit-rich corridor currently serviced by the AC Transit 51B and 7 lines, soon to be serviced by the 51B and 27 lines once the AC Transit Realign Plan goes into effect. Transit service is heavily utilized by residents, visitors, and students, and as of [October 2024 data](#)¹⁷ the 51B line has the second highest ridership of all AC Transit bus routes (behind the 1T).

We met with AC Transit staff to better understand service logistics and stakeholder collaboration along College Ave. Staff highlighted the "challenge of working with the existing [road] geometry," as College only has one narrow lane in either direction with on-street parking along a majority of the curbs. They stated that the main source of delays for buses along the corridor was vehicular traffic caused by double parked cars, cars attempting to park, or attempting to make unprotected left turns. While these challenges pose problems for transit service efficiency, they also highlighted College as a very successful transit corridor and noted that the 51 series (lines 51A and 51B) were some of the only lines that had returned to pre-COVID ridership levels. In fact, ridership was so high that buses on the 51B line frequently hit capacity and as a result have to skip stops. Hypothetical solutions discussed included using higher capacity buses, but with the narrow street and low overhanging trees, this would require further discussion with the City and other stakeholders.

Staff highlighted a strong working relationship with the City of Berkeley and identified many City efforts to facilitate quality transit service. This includes taking actions such as establishing the City's Transit First Policy and fostering collaboration with City and transit stakeholders. As AC Transit updates its Major Corridors Plan in 2025, maintaining this strong partnership will be key to developing collaborative transit solutions for College Ave.

¹⁷ AC Transit, "Monthly Ridership Summary."

4 | Recommendations

4.1 | Intersections Analysis and Recommendations

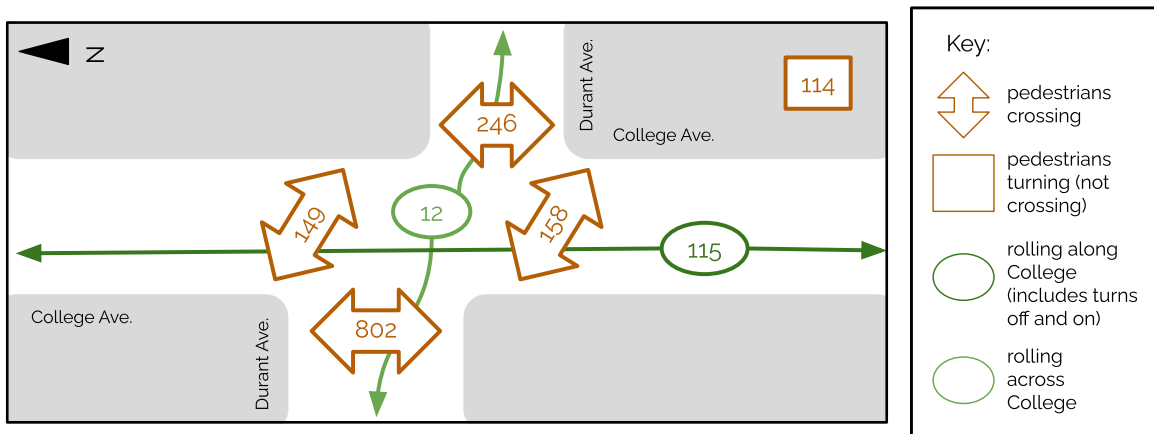
We selected four intersections for closer analysis. The intersections of College and Durant, Derby, Russell, and Ashby were selected after our initial field analysis and community engagement. We heard from community stakeholders and pedestrian intercept surveys that each of these locations is especially concerning in terms of safety and congestion. Our own observations confirmed these concerns in our time spent walking along the corridor and spending time observing transportation conflict zones and close calls. We provide characteristics, challenges, and recommendations for each intersection below, presented from north to south. We aimed to suggest physical improvements that are low cost and relatively simple to implement. Emphasizing short-term, "low hanging fruit" projects is meant to highlight that a comprehensive revamp of the corridor is not necessary to make meaningful improvements to safety and community vitality.

Durant Avenue

Characteristics

The Durant and College crossing is a 4-way signalized intersection with a slight offset on Durant in the east-west right of way. Crossing College requires a minor diagonal change of direction. The Southwest corner has an AC Transit bus stop that serves the 51B, 7, 79, and 36 lines making it a high-volume destination for boardings and disembarkings. A bulbout was completed in December 2024 that expanded the bus stop area and shortened the crossing distance across Durant. A new shelter was also added to the stop. This intersection is one block from the edge of the UC Berkeley campus, and is flanked with housing including two apartment buildings, one dorm, and one fraternity house. This location is defined by its proximity to campus (1 block away) with consistently high volumes of pedestrians, bikes, and cars making their way to and from the university.

Figure 4.1: Active user counts at the Durant intersection



Challenges

The primary challenge at this intersection is insufficient infrastructure to handle the extremely high volume of pedestrians, bikes and cars that are traveling North and South along College's three key ways. The first is that the signal timing does not grant sufficient time for the College Ave. North/South right of way. During peak hours, consistently large groups of pedestrians wait to cross Durant and car congestion along College becomes severe. The East/West right of way on Durant, on the other hand, has far less traffic and congestion is non-existent. In short, the distribution of signal time does not reflect the distribution of road users. The second challenge is dangerous right turns for vehicles turning South on College from Durant, especially buses. Because the vehicle green light and the pedestrian walk sign are in sync and the high volume of pedestrians crossing College in the East/West directions, vehicles get held up and pedestrians, especially those with mobility challenges, are put in a dangerous position trying to cross the street as cars and buses attempt to squeeze through in time to make the light. This is especially true of buses which must take a much wider turn on the tight 90 degree change of direction. The third challenge is that there is no bike infrastructure despite the highest volume of bike and micromobility

trips among the four intersections that we counted. There is not a viable alternate route for bikes heading South from campus and the stretch of College from Bancroft until sharrows appear past the intersection at Ashby. This creates dangerous conditions for bikers and other light personal vehicle users who are forced to make assertive maneuvers around vehicles that have no visual cues that they are sharing the road with bikes. It also channels scooter and bike riders onto sidewalks which creates additional conflicts for pedestrians.

Recommendations

Figure 4.2: Recommended changes to the Durant intersection

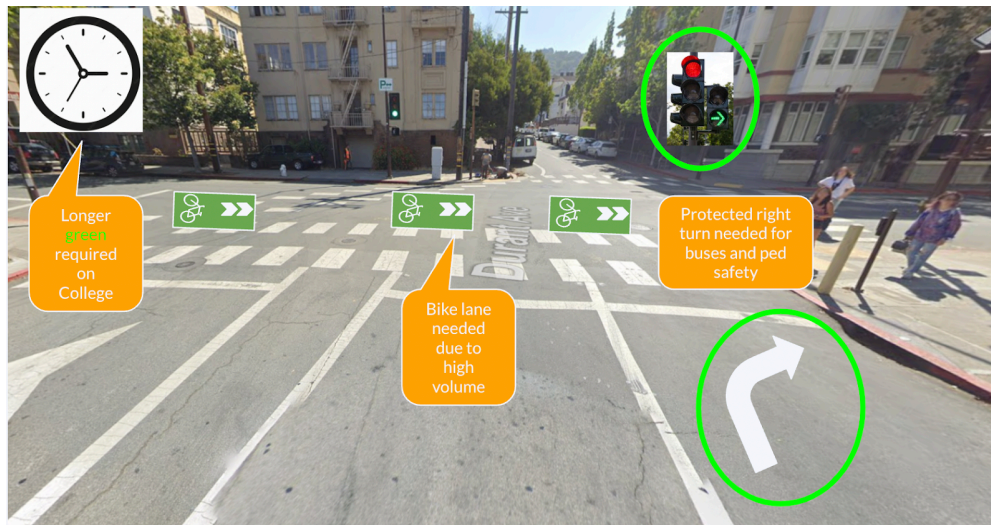


Table 4.1: Recommended changes to the Durant intersection

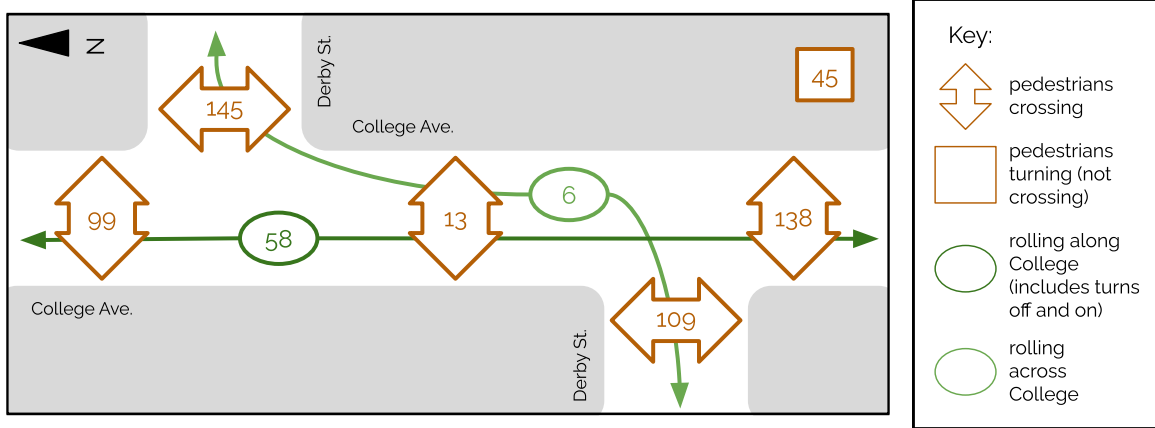
Recommendation	Challenges Addressed	Implementation
Protected Right Turn from Durant onto College	Conflict point between vehicles (especially buses) and pedestrians	Coordinate with Public Works to identify timeline relative to other street projects. Work with AC Transit to include Transit Signal Priority as component of signal improvement
Increase signal time for College Ave. right of way	Vehicle congestion on College Insufficient pedestrian crossing time	Coordinate with Public Works on timeline Coordinate with AC Transit on incorporating TSP into plan
Add green painted bike insignia on the road that directs bikes toward the bike network at Channing and signals to drivers that there are bikes present.	Dangerous conditions for bikes on College Lack of wayfinding to the bike lane/boulevard network	Can be included in projects that are part of Measure FF improvements \$750 estimated cost, so very low cost and construction barrier to completion

Derby Street

Characteristics

Derby Street intersects College Avenue on an offset, with the eastern side intersecting College Avenue 112 feet north of the western side. In between, there is a food mart, a laundromat, a salon, a café, and a bus stop on each side. The Berkeley Playhouse also sits on the northwest corner of the intersection. With a mixture of single-family and multi-family housing in the immediate vicinity, this intersection is a vibrant mixed-use pocket of neighborhood life.

Figure 4.3: Active user counts at the Derby intersection



Challenges

The main challenge with the Derby Street intersection is simply that it's an offset intersection. People driving through it have to take in a long visual field from the stop on one end to the crosswalk on the other, and the striping on the roadway is severely faded. Some residents in our intercept surveys expressed that drivers do not realize they have to watch for pedestrians in the opposite crosswalk. Indeed, we observed several instances where a car came abruptly to a stop in front of crossing pedestrians.

Figure 4.4: Challenges at the Derby intersection



This issue is exacerbated when traffic backs up in the intersection, blocking visibility of crossing pedestrians to oncoming cars, who have more than 100 feet to accelerate (**Figure 4.5**). Traffic tended to back up when a bus was stopped, and especially when a bus was stopped on each side of the street. This would only leave enough room in between the buses for one direction of traffic to pass through.

We also noted a fair amount of pedestrians crossing in the middle of the intersection. Based on our personal experience walking through the intersection, it feels natural to cross there, because both bus stops and the businesses are located there. However, further study may find that this kind of pedestrian movement is a safety concern. Lastly, several people we spoke to in our intercept surveys noted the absence of placemaking in the area, such as greenery, art, and benches.

Recommendations

Figure 4.5: Recommended changes to the Derby intersection

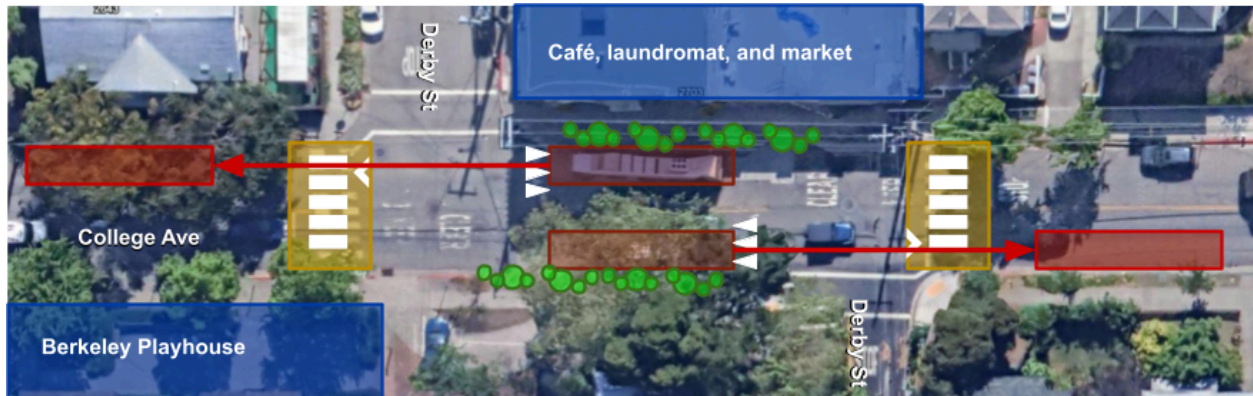


Table 4.2: Recommended changes to the Derby intersection

Recommendation	Challenges addressed	Implementation
Work with the Berkeley Playhouse to assess pedestrian safety experiences of youth	Dangerous crosswalks for youth at Berkeley Playhouse afterschool programs	Consider applying the Y-PLAN youth engagement framework (Youth - Plan, Learn, Act Now) to have kids themselves assess safety concerns and propose solutions.
Restore roadway striping, including crosswalks, yield lines, and keep clear.	Faded striping leads to driver confusion and frustration Crosswalk visibility Yield failure	Work with Public Works to identify opportunities to implement this in advance of College Avenue's potential inclusion in the next street repair plan. Costs are estimated at \$6,000.

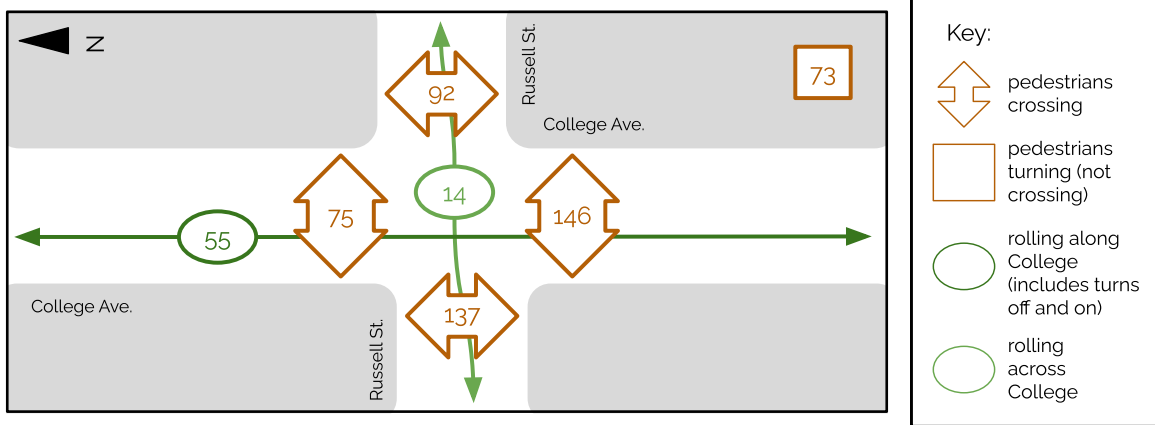
<p>Raise the north and south crosswalks.</p>	<p>Offset intersection creates an opportunity for dangerous acceleration</p> <p>Crosswalk visibility</p> <p>Intersection clarity</p>	<p>Work with AC Transit to design a raised crossing that is passable by transit vehicles, such as at Bancroft and Telegraph. Costs are estimated at \$21,600. Engage with local businesses.</p>
<p>Reposition the bus stops past the north and south crosswalks, bringing them up to AC transit bus stop best practices.¹⁸ When buses are stopped in this position, they produce an added safety benefit of impeding drivers from speeding straight through the crosswalk.</p>	<p>Current positioning next to each other is a pinch point for traffic when there's a bus stopped in each direction</p> <p>Crosswalk visibility</p>	<p>Incorporate bus stop relocation with AC Transit Realign implementation. Costs are estimated at \$22,200.</p>
<p>Add raised landscaping features along the curb between Derby Street on each side.</p>	<p>Pedestrians crossing mid-intersection – further study is needed to determine the severity of this challenge.</p> <p>Unmet placemaking potential</p>	<p>Co-design with the Willard Neighborhood Association and enable community stewardship.</p>

¹⁸ Alameda-Contra Costa Transit District, "AC Transit Board Policy 501 Draft JUNE 2024."

Russell Street

Characteristics

Figure 4.6: Active user counts at the Russell intersection

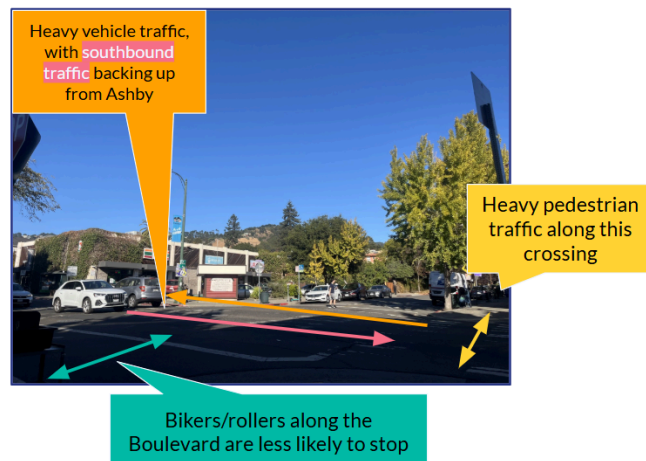


Russell Street intersects College Avenue at the north end of the Elmwood Business District. The intersection is an all-way stop with pedestrian crossings on all four sides. As seen in **Figure 4.8** below, the northeast corner of the intersection has a small strip mall with a convenience store, laundry, and 13 parking spots for customers of these businesses. The southwest corner is home to a coffee shop, as well as a bikeshare dock, and the other two corners house retail stores. On the north end of the intersection are two bus stops opposite one another. Just east of the intersection is the local fire station, and just west is a public off-street parking lot. The west side of Russell Street has been converted into a dead end to discourage through traffic from diverting onto residential streets, especially as Russell Street itself is part of the larger network of Berkeley Bicycle Boulevards. This intersection is a hub for a variety of purposes, making it a lively hot spot in the Elmwood community.

Challenges

The main challenge with the Russell Street intersection is the high volume of multiple modes of traffic with very little traffic control. Between heavy north/southbound vehicular traffic, pedestrian traffic, and bicycle traffic along the Boulevard, users are often left confused about who should be granted the right of way. In particular, vehicles traveling along College Avenue frequently fail to see pedestrians crossing at the heavily trafficked southern intersection crossing, creating

Figure 4.7: Challenges at the Russell intersection



a significant safety concern. Additionally, the Russell Street intersection is just north of the Ashby Avenue intersection (discussed in more detail below) and vehicular traffic frequently backs up to Russell, resulting in cars waiting in the middle of the intersection or rushing to get through to make the preceding light.

Recommendations

Figure 4.8: Recommended changes to the Russell intersection



Table 4.3: Recommended changes to the Russell intersection

Recommendation	Challenges addressed	Implementation
Install a high-intensity activated crosswalk (HAWK) beacon along College Avenue, as seen in Figure 4.9 . The beacon should be timed with the following signal at Ashby.	<p>Increased traffic control results in improved safety for pedestrians through reduction in conflicts with vehicles</p> <p>The HAWK beacon can also be coordinated with the fire station to improve response times</p>	The estimated cost of a HAWK beacon is \$250,000. Given high capital costs, a traffic study and community outreach would help inform if this would be the correct intervention, or if lighter traffic controls would be better suited.
Restore roadway striping, including crosswalks and keep clear paint.	<p>Crosswalk visibility</p> <p>Reduces number of vehicles in the middle of the intersection</p>	High-visibility crosswalk markings are \$2,500 per crossing. Funding for this project could be identified through FF parcel taxes.
Utilize green paint to highlight the presence of the Bicycle Boulevard & improve wayfinding.	<p>Bicyclist visibility</p> <p>Wayfinding; diverts bicyclists from College onto safer nearby Boulevards.</p>	The typical cost for painting is \$1.20 – \$1.60/sqft to install, though this varies with project scale. Funding for this project could be

See wayfinding recommendations for more details.		identified through FF parcel taxes and should be done in parallel with repaving.
Move southbound bus stop from the north end of the intersection to the south end	Pedestrian visibility; impedes vehicles from unsafe passing past the crosswalk into the intersection, possibly endangering transit riders disembarking and other pedestrians.	Incorporate bus stop relocation with AC Transit Realign implementation.

Figure 4.9: High-intensity activated crosswalk beacon adapted for bicycle use



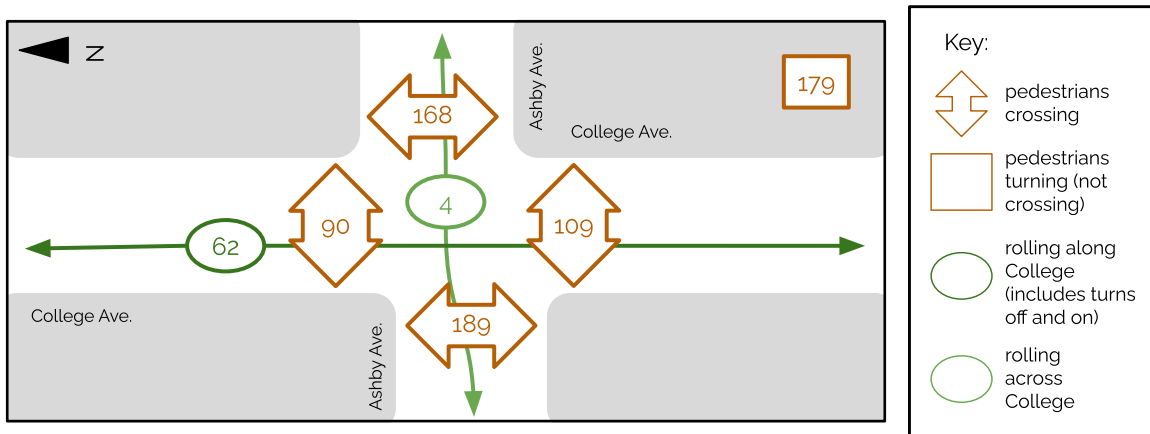
Notes: The HAWK beacon is a traffic control device that consists of a signal-head with two red lenses over a single yellow lens on the major street (College Ave), and pedestrian and/or bicycle signal heads for the minor street (Russell St).

Ashby Avenue

Characteristics

The intersection of Ashby (State Route 13) and College has the highest rates of car usage along College Ave in Berkeley. Ashby has two travel lanes in each direction, and lanes are 12 ft wide. It is also in the heart of the Elmwood Business District, bringing significant foot traffic through the intersection. Multiple restaurants sit upon the intersection along with a Wells Fargo Bank that draws substantial daytime pedestrian traffic, as well as a popular cafe and cosmetics store. Of the intersections assessed in this report, College and Ashby is particularly striving to accommodate pedestrians and drivers at once, making it one of the most challenging intersections on the corridor.

Figure 4.10: Active user counts at the Ashby intersection



Challenges

The combination of fast-moving car traffic and high pedestrian volumes presents a fundamental challenge at Ashby and College. Left turning cars often have to wait for pedestrians to clear the crosswalk. During busy times, cars might be stranded in the middle of the intersection after the light has turned red. This often delays drivers in the other direction who now have a green, induces impatient drivers to not give pedestrians appropriate clearance, and limits the number of drivers who can turn left during a single cycle. Ashby's status as a state route under Caltrans' jurisdiction means that localized changes - especially to signal timing and lane width - are often more difficult to implement because of Caltrans' unique review and approval requirements. Finally, Ashby's wide lanes induce speeding, as drivers from either direction must transition from driving 30+ mph on a wide arterial to being in the middle of a pedestrian commercial corridor seconds later. This quick change endangers other drivers and pedestrians in the intersection, and is especially worrisome as Ashby drivers try to catch a yellow light before it turns red.

Figure 4.11: a common problem at this intersection: a conflict point between left-turning cars onto Ashby Ave and pedestrians along College Ave crossing N/S, even after the light has turned red. This congests the intersection and endangers pedestrians.



Recommendations

Figure 4.12: Recommended changes to the Ashby intersection

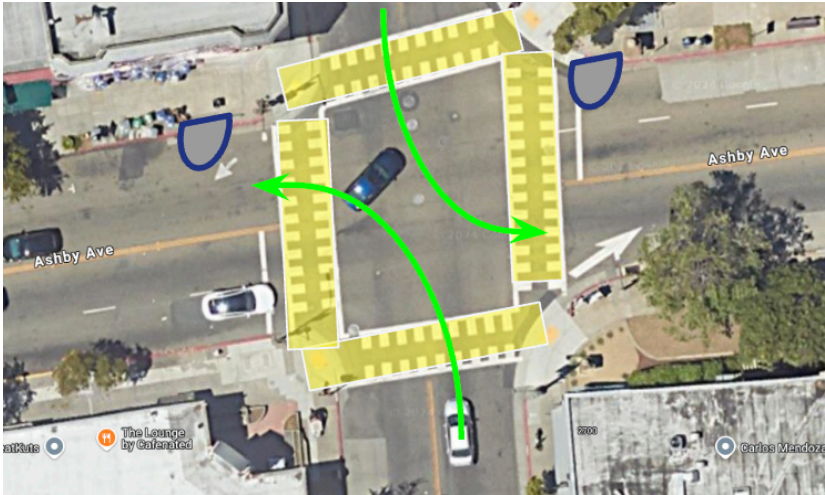


Table 4.4: Recommended changes to the Ashby intersection

Recommendation	Challenges addressed	Implementation
4-way pedestrian scramble OR Protected left turn	Protect pedestrians from turning cars Facilitate left turns to smooth vehicle flow Timing has not been updated since 2003	Engage consultants for traffic flow study to determine traffic volumes and inform choice between scramble and protected turn. . Work with Caltrans on an encroachment permit (simpler process) to change signal timing. Check with Caltrans post-design. Could be enhanced by placemaking investments like asphalt art that have been shown to increase bike/ped visibility ¹⁹
Bulbouts on Ashby	Slow right turning vehicles Shorten crossing distance Opportunity for placemaking & parklets	Likely Caltrans full oversight process Engagement with surrounding businesses
Narrow Ashby lanes from 12' to 10'	Slow vehicles entering the intersection Shorten crossing distance	Caltrans full oversight process (for under 11') ²⁰

¹⁹ Schwarts, "Asphalt Art Safety Study."

²⁰ If narrowing lane width below 11' ([Caltrans minimum](#)), an encroachment permit would likely no longer be sufficient per item 11 in the [Encroachment Permit Application Checklist](#). This would require a more costly full oversight process.

4.2 | Corridor-Wide Recommendations

This section covers our analysis of challenges and proposed improvements in four focus areas that apply to the corridor as a whole: wayfinding, general safety and accessibility, placemaking, and parking. These focus areas emerged out of our community engagement process and personal observations of the corridor. As with the key intersections, recommendations center on our guiding principles of safety and community vitality.

Wayfinding

Challenges

College Ave acts as a main artery for more than just vehicles—bicyclists, skaters, and scooters also ride along the street in relatively high volumes. Given the street's narrow width, drivers in vehicles are not able to safely pass riders without moving into the lane of oncoming traffic. Significant vehicle traffic in both directions results in drivers passing bikers in an unsafe fashion, passing either too close, too fast, or both. This poses a significant risk to users of all types along College Ave. While College Ave is the most direct route between the southeast edge of UC Berkeley campus and Oakland's Rockridge neighborhood, an adjacent route along Bowditch and Hillegass Avenues through residential streets parallels College Ave and is part of Berkeley's Bicycle Boulevard network (see **Figure 4.13**). The City of Berkeley has identified this route as optimal for cyclists and other riders due to the quiet and safe nature of the primarily residential streets and has added traffic diverters to discourage cut through vehicle traffic.

Figure 4.13: Bicycle Boulevard striping



While the Bicycle Boulevard route would seem to pose a good alternative for riders, many still use College Ave. When interviewed in our pedestrian intercept surveys, some riders we spoke to were unaware that there was an alternative route. This is likely due to the lack of signage along College Ave, indicating the safer and quieter Bicycle Boulevard is only a few blocks to the west. As northbound riders come from Oakland, the bike lane along the wider stretch of College Ave in the Rockridge Neighborhood disappears. The same issue arises as southbound riders depart from UC Berkeley campus and head south. Both Channing Way and Russell St are also on the Bicycle Boulevard network and cross College Ave and are poorly marked. Channing has signage that is not visible for riders on College Ave, and

Russell has one stylized street sign but no other indication. Currently, identity signage and street painting only exists on the Bicycle Boulevard routes themselves. However, this wayfinding does not benefit the many riders along main arterials who are unaware of their options. Though riders are allowed along College Ave, they are left with little or no indication of the alternative route, or how to get to it.

Recommendations & Implementation

Increasing the amount of wayfinding along College Ave for the Bicycle Boulevard would help divert riders who would prefer a safer or quieter alternative. As seen in **Figure 4.15**, it is recommended to add more wayfinding features at the north-most point near UC Berkeley campus, the south-most point near Alcatraz Ave, and at the locations where College intersects with the Bicycle Boulevard. Additionally, it is recommended to collaborate with the City of Oakland to extend the Hillegass Bicycle Boulevard route by one additional block at the south end, so that it reaches Alcatraz Ave and makes more intuitive sense for those trying to locate the greater Bicycle Boulevard network. This way, when northbound riders are coming from Oakland they are more easily able to locate and identify the route. It is also worth considering adding signage that includes a map of the entire network. Providing maps would allow riders to access this information in a direct way and would help increase awareness of the entire network.

Figure 4.14: Street signage indicating the Bike Boulevard



Note: While this sign is elsewhere along the Russell Boulevard route, a similar street sign exists at the College-Russell intersection.

Wayfinding at these four locations could be accomplished through either signage and/or street paint. At the north and south ends of College Ave, signs should be added with arrows indicating the direction of the Bicycle Boulevard. At Channing Way, the Bicycle Boulevard signage should be moved so that it is visible from College Ave, or an additional sign should be added at the intersection. Signs should be included in both directions but diversion is most important for southbound riders coming from campus, so signage in this direction

should be prioritized. At Russell St, signage should be included in both directions, in addition to the stylized street sign that currently stands. An additional wayfinding option for these two intersections would be to use colored pavement through the intersection (**Figure 4.16**). This would not only make the Bicycle Boulevard routes more noticeable for riders, but also indicate to drivers that they should use caution and watch for bikes when crossing these streets. [Bicycle Boulevard Guidelines](#)²¹ indicate that brick red paint should be used for this purpose, but it is likely better to use green in this case as that is the standard for bicycle facilities throughout the Bay Area and beyond.

The extension of the Bicycle Boulevard would be relatively low effort, given the block of Hillegass to be included in the extension is already a quieter residential street with low traffic volumes. To provide wayfinding for the new extension, the addition of two to three pavement legends would suffice.

Figure 4.15: Recommended Bicycle Boulevard wayfinding points along College Ave



Figure 4.16: Bike lane painted pavement through an intersection



²¹ City of Berkeley, "Bicycle Boulevard Design Tools and Guidelines."

Cost

According to the [Bicycle Boulevard Design Tools and Guidelines](#),²² estimated costs for wayfinding improvements are provided in **Table 4.5**. Note that this document was prepared in April 2000, and as such values have been adjusted for inflation.

Table 4.5: Costs of wayfinding & Boulevard extension, adjusted for inflation

Wayfinding Strategy	2000 Estimates, City of Berkeley	2024 Estimates for purposes of this report
Identity Signage (A-1)	\$200: sign & structure \$50: sign only	\$368: sign & structure \$92: sign only
Unique Pavement (B-2)	\$140,000 - \$200,000 per mile (depending on street width) ²³	\$257,846 - \$368,351
Pavement Legends (B-4)	\$500: Type 1 tape (preferred) \$150: Thermoplastic (acceptable alternative)	\$921: Type 1 tape \$276: Thermoplastic

Notes: Source is City of Berkeley, Bicycle Boulevard Design Tools and Guidelines, 2000. Codes included reference codes used in the original Tools and Guidelines document. Given that construction costs have risen at a rate higher than inflation, these values likely underestimate the cost.

Stakeholders

Implementing these recommendations would have relatively low impact and as such would not necessitate a significant amount of community involvement or be likely to generate much public disapproval. However, particular organizations and individuals would either be likely to support the project, or should be notified of its occurrence as listed in **Table 4.6**.

²² City of Berkeley, "Bicycle Boulevard Design Tools and Guidelines."

²³ Note that the proposed amount of colored pavement is significantly less than one mile; however if improvements to the Bicycle Boulevard are considered comprehensively, these segments of green paint may add up to a comparable length.

Table 4.6: Potential stakeholders for wayfinding implementation

Group	Possible Response	Recommended City Action
UC Berkeley	Likely supportive, as it will improve student transportation options to and from campus. Possible coordination challenges.	Work with the university to improve wayfinding near campus.
City of Oakland	Likely supportive of extension, as it will help facilitate travel across the Oakland-Berkeley border. Discussions about financing the extension are also likely to arise.	Meet proactively with the City of Oakland to discuss collaboration on an extension, before implementing wayfinding near Alcatraz.
Elmwood Business Association	Likely supportive, as it will improve transportation options to and from the Elmwood District. Possible dissatisfaction with City priorities, given their other concerns unrelated to wayfinding.	Meet with businesses close to Russell Street and/or the Elmwood Business Association to discuss potential improvements.
Bicycle focused non-profit organizations (Bike East Bay, Berkeley Bicycle Club, Walk Oakland Bike Oakland, etc)	Very likely supportive, as it will support and further their mission of safe and accessible bike facilities.	Partner with non-profit organizations to provide input and spread awareness about the existence of the Bicycle Boulevard.
Nearby residents	Likely supportive, possible dissatisfaction with how City funds might be spent for proposed improvements.	Discuss with residents about changes near their home, and provide a forum for input, if desired.

Further Applications

A number of the recommendations applied here to College Ave, relative to the Bowditch/Hillegass Bicycle Boulevard route, could be applied in other locations along the network. A number of the routes run parallel to major arteries, similar to the case discussed here. For instance, the Ninth St. Bicycle Boulevard runs parallel to San Pablo Ave, which is just two blocks east. The Milvia St. Bicycle Boulevard runs parallel to Shattuck Ave. As such, similar wayfinding strategies could be used to divert less confident riders away from these main corridors and improve awareness of the entire network. It is likely most cost and labor effective to consider improvements to the network as a whole, and therefore it is likely best to implement these wayfinding strategies comprehensively, and not just along College.

General Safety & Accessibility

Challenges

College Ave has numerous safety issues for people walking, biking, and rolling that span much of the corridor. A key issue raised by dozens of people raised in our intercept interviews was the poor sidewalk quality and unsafe walking conditions. College is renowned as a pedestrian corridor even outside of the Elmwood District, yet the surface quality of sidewalks varied startlingly. Several sections had received temporary "make safe" improvements with small patches of poured asphalt that had since deteriorated, making for mounds and slopes in the middle of the sidewalk. In many other places, sidewalk squares had become cracked and indented, leaving ruts and jagged edges in the middle of the pedestrian right of way. Sometimes this was caused by tree roots under the sidewalk, other times by apparent water damage or unknown sources. **Figure 4.17** below captures a few of these instances from a wheelchair audit the team conducted.

All of these challenges become more pronounced after dark, given College's low level of street lighting and abundant tree cover that obstructs natural and artificial light.

Figure 4.17: Uneven sidewalk and tripping hazards



Road quality is another key issue raised in intercept surveys. The pavement condition index (PCI) is rated between 35 and 40²⁴ on the three segments from Dwight to Alcatraz, which falls in the "Poor" rating. They were last resurfaced nearly a quarter of a century ago in 2000.

²⁴ PCI is on a scale of 0 to 100 used to indicate general pavement condition, 100 being the best. 0 - 49 is "Poor" according to [MTC](#) (per comment, please include full citation of the specific PCI ratings included). City of Berkeley [segment-specific PCIs available here](#)

This lapse in service is evident in the many long cracks, potholes, and ruts between surface sections. Surfaces such as these are hazards for pedestrians in crosswalks, as well as the hundreds of bike and scooter riders that use College Ave daily.

As a related issue, certain key intersections like Derby St have faded striping - crosswalks, triangular marking indicating potential conflict points (shark teeth) - that fails to alert motorists that they are approaching a potential conflict point with active users. Unfortunately, College Ave is not included in the resurfacing plan through 2028 in part because it is not in an officially-designated historically disinvested part of the City or a Vision Zero Priority Zone.

Finally, daylighting is a visibility concern along College, referring to improving visibility at crosswalks by removing parked cars and other obstructions. Strapped for obvious parking options, cars will often park within 20 ft of an intersection, especially if unmarked by red paint. In an informal walk audit on a Sunday morning, our team found 8% intersections with at least one car parked within 20 ft, which is likely much higher at busy times. This crowding prevents drivers from seeing pedestrians entering the crosswalk, especially children or wheelchair users. It also makes it more dangerous for drivers from side streets attempting to pull on to College, who may not see fast-moving cars with enough time to react safely. We discuss implications of AB 413 below, the state's new daylighting requirement.

Recommendations & Implementation

Our safety recommendations focus on sidewalk quality, pavement quality, and improved pedestrian visibility via daylighting intersections.

1. Sidewalks

More funding for Berkeley's sidewalk repair program would be very helpful. In Berkeley, property owners are currently responsible for funding sidewalk repair. If they choose, they can apply to have the city cover 50% of the cost through the [50-50 program](#).²⁵ Thanks to an injection of infrastructure funds from 2016 Measure T1, [the backlog recently shrunk from 10+ years to 3-4 years](#).²⁶ according to the Berkeley parks director. 3 - 4 years is still significant, especially with this measure's funds dwindling. The program also does not have a preventative aspect to incentivize uninterested owners in investing in their sidewalk until someone injures themselves and sues the city.

Fortunately, potential funding is available. With the recent passage of Measure FF, the city should gather updated data on pedestrian counts in various corridors and cross-reference it against segments with low PCI ratings. The City could consider prioritizing funding for heavily traveled places of poor pavement quality. College Ave will likely rank high on this joint scoring and could receive targeted funds for sidewalk repair.

²⁵ City of Berkeley, "Sidewalk Repair."

²⁶ Rauch, "Berkeley's Sidewalk Repair Backlog Is Shrinking."

2. Pavement

As an alternative to seeking inclusion into the current resurfacing plan, city staff should prioritize College Ave in 2029 for Heavy Rehabilitation within the next resurfacing plan. This is the designated treatment for arterials (like the segments of College Ave from Dwight to Alcatraz) that have a PCI of "Poor". This will cost an estimated \$2.23 million; see the cost matrix in **Appendix 2**. Though such a treatment includes comprehensive restriping, the road marking in certain sections are so poor and dangerous that they cannot wait another five years. The intersection of Derby St and College Ave, as well as the mid-block crossing in the Elmwood District should receive emergency restriping now for pedestrian visibility. This is included in our intersection-specific recommendation above.

3. Daylighting

California state legislation, AB 413 of 2023, prohibits cars from parking within 20 feet of almost every intersection, regardless of the presence of red paint. Effective January 1, 2025, this new law will significantly impact congested mixed use arterials like College Ave. Patrons and food delivery workers often struggle to find sufficient parking, leading them to park close to intersections and contributing to the daylighting issue. We recommend two steps:

1. Conduct a **red zone audit** as soon as possible to determine the extensiveness of the legislation's impact. By our count on a fairly quiet Sunday afternoon, **83% of curbs** at intersections along College Ave that AB 413 would apply to are currently painted red, though with varying degrees of paint age and visibility. **8% of all 20-ft applicable curb zones had cars parked** in them during our count. These occupancy numbers will likely be significantly higher during busier times. After the City conducts a formal analysis, they should develop a long-term plan for red-zoning all curbs within 20 ft of intersections.
2. Implement a "warning ticket" program for 6 months starting on January 1. Illegally parked cars within 20 ft of an intersection receive a dashboard ticket that does not have a fine but simply notifies them of the new law and that starting July 1, 2025 the City will begin enforcing it fully. This will get shoppers and residents accustomed to the new law without penalty as a way to change parking behavior. This program will require some training for parking enforcement field staff and 311 staff - who will likely field calls from confused violators - plus moderate software adaptation to print such tickets.

Placemaking

Placemaking is a way of improving public space with an emphasis on community vitality and enjoyment. Many of the people we interacted with spoke to the pleasant character of Elmwood and College Avenue generally. We propose that simple improvements to public space would contribute to transportation safety and sense of community.

Challenges

Elmwood

College Avenue, especially in the Elmwood district, is well known as a destination for restaurants, shopping, and entertainment. It sees high levels of pedestrian activity seven days a week and most visitors stay in the area for a prolonged period of time taking part in the offerings available. Under the current conditions, Elmwood is critically lacking accessible public spaces that facilitate a more enjoyable and safe experience for those enjoying the neighborhood. Only two restaurants have parklet seating and other outdoor seating tends to obstruct the sidewalks which created challenging conditions during our wheelchair audit. In general, there are no public spaces where people can sit, relax or otherwise enjoy themselves outside the busy sidewalks. Additional public space would alleviate curb crowding and encourage visitors to spend more time in the area. Under current conditions, pedestrians must walk single-file which creates challenges for groups of people, families with children, and wheelchair users, as shown in **Figure 4.18** below.

Figure 4.18: Narrow sidewalks in the Elmwood Commercial District



Another issue from a placemaking perspective is the constant vehicle congestion during busy times that detract from the visitor experience. Pedestrians must make their way across busy and sometimes dangerous intersections to move through the business district. This is especially true at night when car-pedestrian incidents are more likely.

Derby Area

The segment of College surrounding the Derby intersection is a small pocket of businesses that sees high pedestrian traffic and visits due to its proximity to the UC Berkeley campus. The Derby segment has a coffee shop, convenience store, salon, and the Berkeley Playhouse - a performing arts center that has programming for both children and adults. As outlined in our intersection analysis, the traffic conditions here create a dangerous road environment and there is no public space that could accommodate the visitors.

Overall Corridor

For the section of the corridor that is between the campus and Elmwood zones, stretching from Dwight Way to Russell St, the primary concerns are insufficient lighting at night and a general lack of amenities. Given the high levels of pedestrian traffic along this corridor, night-time lighting is both a safety and placemaking challenge. From a safety perspective, ensuring that pedestrians are visible at intersections is critical. Lighting also relates to peoples' general sense of safety, not just relative to traffic conflicts. Having a well-lit street improves the overall sense of safety and many pedestrians walking here are young students who have not had much time to acclimate to living away from home. In the winter months darkness sets in around 5pm, the peak of rush hour. Students and everyone else using College Ave. deserves to feel safe and secure walking along this corridor.

Recommendations & Implementation

Elmwood

Placemaking improvements in Elmwood should be guided by the goal of improving overall community vitality. As an exclusively commercial district, attracting visitors and having them spend more time in the area will benefit current and future businesses. Making the stretch of College from Russell to Webster more pleasant to spend time in will benefit the businesses while making the space more enjoyable for nearby residents and visitors alike. There are 3 categories of placemaking improvements that should be pursued in the Elmwood district.

1. Street closures for events

Closing off the Elmwood stretch of College Ave. for occasional street fairs, parades, and markets has major potential to boost the vibrancy of the area. A mere three blocks down the road and across the city boundary in Oakland, College Avenue is closed down on six Saturdays throughout the year for the Rockridge Rock-N-Stroll. Concerns about disruptions on College can be easily addressed by the precedent that this event provides. First Fridays in Downtown Oakland with significant bus service serves as a case study for how regular

events can reimagine streets to bring people together over food, performances, shopping, and music. These monthly events bring up to 30,000 people to celebrate the neighborhood and support both brick and mortar businesses and numerous pop ups from local chefs, merchants, and performers. San Francisco has seen similar success with its network of night markets in areas like Chinatown and the Inner Sunset as well as its numerous other street fairs. Berkeley also regularly closes off a stretch of Telegraph avenue on Sundays, showing that there are relevant examples within the city too. These regular events can be a role model for Elmwood.

From an implementation perspective, street fairs require no infrastructure changes and can be piloted with a one-off event. Events can be organized around holidays as well, especially considering the closure of Russell street in Elmwood during Halloween for trick or treating. Allowing pedestrians into the road and opening up the space for new purposes helps people reimagine how space can be used, and pockets of activity that are home to a variety of attractions, like Elmwood, are best situated to host these events.

Besides full-street closures, the post office parking lot at the corner of College and Webster is government-operated space that could be used for smaller events like farmer's markets. Especially given that the post office is closed on Sundays, this space could be a hub of weekend activities and events that would be yet another draw for visitors to the area.

Figure 4.19: Chinatown Night Market, Oakland First Friday



2. Public art

Public art installations such as murals on walls, sculptures, road painting, and decorative lighting help contribute to the sense of comfort and enjoyment along commercial corridors. The East Bay is known for its murals as catalogued by the Instagram account [@muralsofoakland](#) and Elmwood would be a natural setting for some of the incredible public art that decorates the area.

Figure 4.20: An example of a mural on Telegraph (Telegraph BID)



This is an opportunity to showcase local artists and give visitors another reason to come to Elmwood and help them enjoy the space even more than they do today. Lighting, such as the holiday-themed installations seen on Shattuck avenue in Berkeley, serve dual purposes of improving visibility for pedestrians and cars while making the space more enjoyable. Artistic installations contribute to an overall boost to local vibrancy as well as deepen ties and engagement with the local arts community.

3. Extend public space via parklets and pocket parks

Currently, only two restaurants have outdoor seating in parklets. Using parklets for outdoor dining seating permits movement of existing street furniture off the sidewalk, which makes for a more accessible sidewalk environment, and would benefit local restaurants and cafes with additional capacity. Additionally, parklets need not be affiliated with businesses. The Elmwood BID or the city could install parklets that are open to anyone passing through who wants to enjoy their food or beverage, relax, or take a rest during a visit. While parklets would replace some street parking, this is in line with our recommendation to reframe the conversation on curb space from a focus on lost parking toward a more positive discussion of what can be gained. Currently, there is no feasible location to add meaningful public space in Elmwood, so being resourceful with the current conditions is necessary to incorporate additional placemaking projects.

Figure 4.21: NACTO examples of parklets



To address potential concerns that the parklets will capture valuable curb space on College Ave itself, publicly-operated parklets could be placed on side streets in close proximity to College. There are numerous streets that intersect College with traffic calming barricades that prevent or limit cars from turning onto or off of College. These intersections are ideal for new public amenities because they are out of the way of the heavy vehicle traffic on the main thoroughfare of College.

Derby

Recommendations for the Derby area can be thought of as a scaled down version of our proposed improvements for Elmwood. Public parklet seating at Souvenir Coffee would facilitate improved capacity and additional space for visitors. Depending upon the design, it has the potential to aesthetically improve the intersection while encouraging slower vehicle traffic in this high-traffic area for pedestrians. It also would discourage dangerous jaywalking. This would be contingent on moving the current northbound bus stop to the far side of the intersection, which is considered a best practice improvement. We also propose additional lighting to improve safety at night. This is especially pertinent with large numbers of people entering and exiting the Berkeley Playhouse. In the winter months it is dark at 5pm but there are still substantial flows of both pedestrian and vehicle traffic after dark. Ensuring that pedestrians are visible to drivers is critical for safety and also extends the time period that people will be able to comfortably enjoy visiting the amenities at this intersection.

Overall Corridor

While many recommendations focus on intersections, minor improvements to the stretches in between Elmwood, Derby, and Campus would also help with placemaking and community vitality. Adding and improving lighting at other intersections is critical for traffic safety. Furthermore, lighting will only further a sense of safety and comfort for people traversing the corridor by foot. The city could also be creative by using decorative lighting

which could create a more pleasant environment overall. For example, Berkeley installs holiday-themed lights on other major corridors like Shattuck and Telegraph during the winter. College could have the same treatment as well as some rotating lighting linked to seasonal themes. In terms of amenities, the first step should be ensuring each bus stop has a bench if not a shelter with seating. The 51B has the [second-highest ridership](#)²⁷ across the AC Transit network and bus stop seating improves the overall bus accessibility and riding experience. While the sidewalks are narrow for much of the corridor, the city should take advantage of available space to add amenities like plants and gardens. The sidewalks are generally narrow, but existing unutilized planter spaces for trees should either have greenery added or be paved over to improve walking space. These could be community gardens where residents could tend to, which is one of the requests that surfaced in our street-intercept interviews. Community-maintained gardens or planters would only be worth pursuing if there was confirmed interest and commitment to maintain them.

²⁷ AC Transit, "Monthly Ridership Summary."

Parking

Challenges

Parking was an oft-cited challenge for many people we spoke to about College Avenue, though they had highly varied perspectives on what the challenges are. For AC Transit riders, cars pulling in and out of parallel parking spaces slow down bus service, especially through Elmwood. For the Elmwood Business Association, street parking outside their businesses is a scarce resource, and harsh ticketing deters customers. For the Willard Neighborhood Association, parking enforcement on neighborhood streets is insufficient to prevent people from parking past legal time limits. For other residents we spoke to, parking regulations are confusing, and it's difficult to see past parked cars when turning onto College Avenue from neighboring streets. Altogether, these diverging opinions about parking are almost more of a challenge than any one of the individual problems themselves.

Currently, there is metered street parking on College Avenue between campus and Dwight (4 blocks), and in Elmwood between Stuart and Webster (3 blocks), with prices between \$2.75 and \$3.50 an hour. Residential streets generally have 2-hour time limits. In Elmwood, there is also a 36-space paid parking lot behind the front row of businesses on Russell, and several years ago businesses and local residents reached an agreement to allow a limited number of preferential parking permits for employees to be able to park on neighborhood streets for longer than two hours.

Recommendations & Implementation

For any approach the City may take to address challenges associated with parking on College Avenue, it would benefit from striving to shift the public narrative around parking from a 'scarcity' or 'problem' mindset, to a more generative space where people can talk about opportunities and possibilities. For example, what may at first just look like the loss of a parking space in front of a business could be an opportunity to innovate alternative uses that allow businesses to thrive, such as a parklet, commercial loading zone, or simply a wider sidewalk that adds to the placemaking qualities of a neighborhood.

We also recommend conducting a thorough study of parking in Elmwood and surrounding streets before implementing changes. Academic studies have shown that most travellers to transit-rich areas arrive by walking or transit; customers who arrive by alternative modes shop more often and spend more per shopping trip than those who arrive by car, while shop owners tend to overestimate how many of their patrons arrive by car;²⁸ reducing on-street parking can actually boost retail revenue when sufficient alternative modes, off-street parking, or street parking within a comfortable distance is provided;²⁹ and nearly half of people are willing to park more than a quarter mile away for non-weekly shopping trips.³⁰

²⁸ Bent and Singa, "Modal Choices and Spending Patterns of Travelers to Downtown San Francisco, California."

²⁹ Merten and Kuhnimhof, "Impacts of Parking and Accessibility on Retail-Oriented City Centres."

³⁰ Waerden, Timmermans, and Bruin-Verhoeven, "Car Drivers' Characteristics and the Maximum Walking Distance between Parking Facility and Final Destination."

However, each of these academic findings must be grounded in the local context if they're going to meaningfully be part of local discussions. Even better, the City of Berkeley could collaborate with locals to collect the data for the parking study and conduct analysis, thereby grounding findings in local expertise. Data could be collected to answer the following questions:

- How do Elmwood patrons travel to the district?
- What proportion of patrons to different kinds of businesses arrive by car vs. other modes?
- How far away from their intended destination do people driving to Elmwood park?
- Who parks on College Avenue - is it patrons, employees, delivery services, or others?
- How long do patrons park on College and on neighboring streets?
- How much does parallel parking or double parking delay bus service? How does this vary at different times of day?

Despite diverging views about parking between businesses and local residents, these two groups of stakeholders demonstrated that they can work together by jointly developing the employee parking program, discussed above. This success can be built upon for further collaboration of diverse stakeholders on parking strategies.

Table 4.6: Potential Parking Solutions, Stakeholder Responses, and Strategies

Challenges and Potential Solutions	Hypothetical Stakeholder Responses	Supportive Arguments or Strategies
<p>Limited off-street parking options in Elmwood cause drivers to cruise for on-street parking, leading to safety, emissions, and traffic impacts.</p> <p>Solution: Build a centralized off-street parking structure with lower rates than on-street parking.</p>	<p>EBA: Supportive.</p> <p>Local residents: Adding a parking structure will attract more vehicle traffic to the area.</p>	<p>This intervention would reduce cruising for parking and its adverse safety, emissions, and traffic impacts. It will also make it more likely that street parking spaces are available for those who need it and are willing to pay the premium.^{31 32}</p> <p>As with the Center Street garage, a centralized parking structure can enable the City to make changes to surrounding streets more freely because parking availability is preserved.</p>
<p>Parallel parking in Elmwood slows down transit service, and the area has scarce public and outdoor space.</p> <p>Solution: Replace some</p>	<p>EBA: Removing on-street parking will hurt business revenue by dissuading</p>	<p>Street space can be reallocated to help businesses thrive, whether by adding parklets that restaurants can use directly, enhancing public space to encourage patrons to</p>

³¹ Shoup, *High Cost of Free Parking*.

³² Though outside the scope of this report, the equity implications of raising the cost of on-street parking must be considered as they pertain to visitors to College with disabilities. Ideally, sufficient free disabled parking spaces would be provided.

<p>on-street Elmwood parking spaces with parklets, loading zones, and expanded sidewalk.</p>	<p>customers.</p>	<p>linger longer, or facilitating smoother commercial loading needs. Fewer parallel parking spaces will mean less time that cars are pulling in and out, improving transit and vehicle flow.</p> <p>Collect data in collaboration with businesses and residents/associations to learn about how far away current patrons park and walk from, who uses the parking spaces, and how the quality of public space influences how long patrons stay in the area.</p>
<p>Some residents near Elmwood are unhappy that Elmwood customers park in the neighborhood and feel that enforcement of time limits is insufficient.</p> <p>Solution: Implement a parking benefit district for Elmwood with priced parking on neighboring streets. Studies have shown that this strategy can improve the chance that at least some open spaces on the street are always available for those who really need it, reduce carbon dioxide emissions from people driving around to look for parking, and generate more than \$1,000 per household per year.³³ Revenues can be used for sidewalk rehabilitation and many other types of improvements.</p>	<p>Local residents: Concerned that this will not leave enough parking spaces for residents, and that Parking Benefit District revenues will not be fairly spent.</p> <p>EBA: Loss of free parking will dissuade customers.</p>	<p>Free parking will still be available within a reasonable distance of College Avenue, and studies show that patrons will walk a quarter mile or more from their parking spot for non-habitual shopping trips. Patrons could receive partial rebates for parking by submitting receipts to businesses when they make a purchase.</p> <p>Residential parking permits will exempt local residents from paying for street parking. The City would assist local residents and EBA to jointly develop the terms of the parking benefit district, potential parking rebate programs, and a democratic governance system to allocate revenues. Local residents, businesses, patrons, and passers-through would all benefit from better maintained sidewalks.</p>
<p>Elmwood business owners worry that harsh parking enforcement scares away customers.</p> <p>Solution: Reduce parking</p>	<p>EBA: Supportive.</p> <p>Local residents: More lenient</p>	<p>People not following parking regulations will still be fined, they will just pay a reduced fine when they submit a receipt showing they patronized Elmwood during that</p>

³³ Shoup, "Parking Benefit Districts."

<p>finer for paying Elmwood customers.</p>	<p>parking enforcement on neighborhood streets is the opposite of what they need.</p>	<p>time period. Coupled with increased parking enforcement, this could increase parking compliance while bolstering business performance.</p>
<p>Parking rules are poorly signed and difficult to understand for visitors to Elmwood. It's difficult for those visiting for the first time to know where they can park, and traffic diverters make it hard to turn off of College to look for parking on neighboring streets.</p> <p>Solution: Improve signage for parking regulations. Add signage to direct visitors to the Russell Street lot.</p>	<p>EBA: Supportive because this eases patrons' experience.</p> <p>Local residents: Supportive because regulations on residential streets would be better signed and drivers would be directed to the Russell Street lot instead of onto residential streets.</p>	<p>Work with merchants, residents, and patrons of Elmwood to assess what is most confusing and difficult to navigate, and identify ideal locations for adding signage. Signage for the Russell Street lot can incorporate Elmwood Commercial District branding to add to placemaking efforts.</p>

5 | Conclusion

College Avenue is one of Berkeley's essential streets and harbors many different communities. It is home to the 100-year-old Elmwood commercial district and also houses an ever-rotating population of UC students. It is a major transit thoroughfare and also has a mix of residential and commercial uses giving it strong promise for upzoning, which the city is pursuing. These upzoning plans can improve the mixed-use function of the corridor while also emanating the quaint charm of a small neighborhood.

Behind this backdrop is the mobility question of how College Ave's many users can best navigate the street safely and happily. This report aims to answer that question. Our research approach saw us spending hours on College Ave interviewing pedestrians and shop owners, counting intersection users, and conducting audits of curb paint and wheelchair accessibility along the corridor. We spoke with numerous public officials about the plans, constraints, and opportunities, and interviewed neighborhood groups and business associations that are long-standing facets of College Ave's community.

Through our findings, we have presented two sets of recommendations that center on enhancing road user safety and community vitality. The first set focuses on four key intersections with unique challenges for the various categories of road users. The second set looks at the corridor holistically to promote ease of navigation, safety for those walking, biking, and rolling, efficient parking approaches, and an enhanced sense of place. We proudly present this report to the City of Berkeley and other relevant actors who can help to make College Avenue a Bay Area model for safe, enjoyable mixed-use destinations.

6 | Appendices

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Wheelchair Audit

Intro & Summary

The experience of manually operating a wheelchair on roads that we effortlessly walk down each day was eye-opening. We learned firsthand that sidewalks and intersections that appear to have thoughtful accessibility considerations can be laden with cumbersome obstacles that can only be noticed when trying to navigate them in a wheelchair. While we were able to successfully complete the one-mile course without deviating from the route or getting assistance from a team-member, each of us stood up from the chair tired, sweaty, and with a new appreciation of the subtle infrastructure characteristics that have a disproportionate impact on wheelchair users.

Objective Description

Our trio chose the College Ave route, taking the chair out on a Tuesday from approximately 1 - 3 pm. The weather was sunny, visibility was good, and the sidewalk was dry. Our timing helped us avoid most of the rush of post-classes traffic, though by the end of our time the sidewalk was becoming more congested with students leaving campus. We each used the chair for approximately 30-40 minutes and rolled ourselves rather than being pushed by a groupmate, except for a few intractable moments.

Slope

The first thing we noticed when getting into the wheelchair was the effect of slope on the chair's movement. Even slopes that seemed small to us while walking became much more noticeable in the chair. This became a challenge especially when crossing the street, because the ground and the road pavement sloped down to the west, causing the chair to turn downhill. Our uphill arms soon became sore from braking to maintain a straight path through cross-slopes like these.

We got some relief when we turned west (downhill) on Ashby and were able to roll in the direction of the slope. The wider sidewalk even made it fun to accelerate downhill, because it felt like there was enough space on either side to allow for potential slip-ups; just like a wide shoulder will encourage faster driving, the wider sidewalk facilitated faster rolling.

When we turned north onto Hillegass, it became immediately apparent that we had not been traversing a flat route southward on College. What seemed a tiny grade to us while walking was now a literal uphill battle, and our pace slowed considerably. Whoever was in the chair got tired, out of breath, and sweaty more quickly, and found it harder to carry on a conversation because of the focus required to keep moving. It was eye-opening to feel just how difficult it can be for someone in a wheelchair to push themselves up a hill that may seem negligible to people walking.

One way to provide relief from slopes for people using wheelchairs could be to add completely flat rest areas at even intervals along a route. A perfectly flat three-by-three-foot square of pavement placed out of the way of pedestrian traffic once a block or so would have offered a welcome break for our arms and focus.



Sidewalk Condition

Similarly to slope, we noticed that seemingly small imperfections in the pavement surface have a large effect on maneuverability. The wheels of the chair would get stuck in narrow ruts, halting our momentum and sometimes derailing the chair so that the other wheel was lifted off the ground. It was difficult to get the chair over any lips of $\frac{1}{2}$ inch or more, and we learned to approach these as perpendicularly as possible. At one crosswalk (the eastern end of the southern crossing of College and Derby), the lip from the surface of the road to the surface of the gutter and ramp was a full two inches high; Kyler braved the crossing and figured out how to 'jump' the chair over the lip. Making this maneuver in an intersection was stressful and demonstrated that uneven pavement is an even more critical issue in crosswalks, where dangerous conflicts with cars may occur.

At several locations, the sidewalk condition was so rough as to be impassable in the wheelchair. Luckily there was usually a strip of passable sidewalk next to these rough patches, highlighting the necessity of maintaining at least one even path at all points that is wide enough for a wheelchair. Compared to the rest of the city, our route was in a relatively well-maintained area. Using a wheelchair was feasible here, albeit unpleasant, while

ill-maintained or hillier areas would have been much more difficult to navigate, potentially limiting those with mobility impairments to car travel alone.

Uneven sidewalks and pavement must be maintained. Public works departments could adjust their methodology for assessing pavement quality by incorporating an exercise like this assignment; rolling along a sidewalk in a wheelchair offers a valuable change in perspective. In addition to this experiential change in city processes, the City could rethink their sidewalk repair scheme. Currently in Berkeley, sidewalk repair is the property owner's responsibility, though owners can request the City to contribute 50% of the cost through the [50-50 program](#). This program has [several challenges](#): a long waitlist, it is often confusing to owners, and leaves little incentives to owners unable or uninterested in upkeeping their sidewalks until someone injures themselves and files a suit. Infrastructure bonds like 2016's [Measure T](#) have been one successful approach to injecting new funding into the 50-50 program and speeding up these repairs.



Furnishing and Frontage Zones

Even though all sidewalks were technically wide enough for us as wheelchair users, certain elements were still problematic. Several residences on College have fences or 3-4 ft hedges directly abutting the sidewalk, presumably for privacy. This did not leave much room for maneuverability and elbow movement to pilot the chair at those heights. In commercial segments, A-frame sandwich boards, sidewalk sales racks for clothing, sidewalk cafe / restaurant seating all constricted the sidewalk space and posed navigability challenges that

are harder to get around than they are for more pedestrians, who have a smaller width and footprint than the chair.

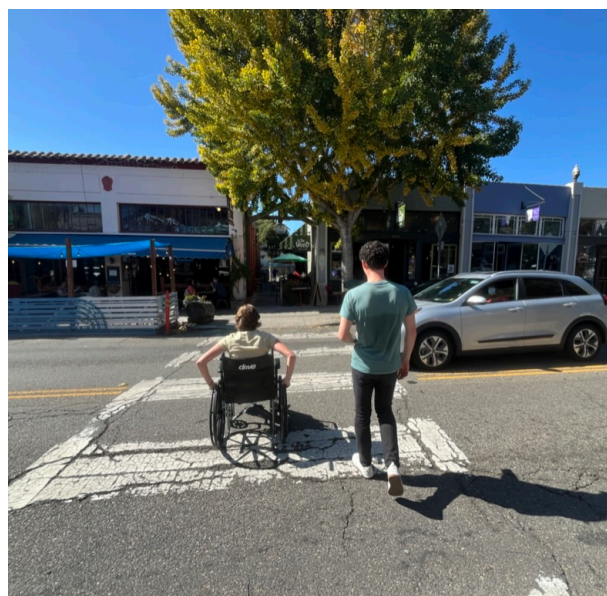
These objects are good for drawing customers into shops but pose hazards to those with mobility differences. Wider sidewalks or extended parklets - perhaps by partially removing street parking in congested commercial districts - for these objects would allow for freer flow of sidewalk users. In residential areas, hedges and fences that effectively form walls should be reconsidered and perhaps have a slight setback in places that have other factors that narrow the sidewalk (trees, signs, signal timing boxes, etc).



Crossings

As mentioned before, street crossings were areas of particular danger. Certain crossings of College in heavily-trafficked parts of Elmwood had no buttons at all to indicate that a pedestrian was present. For those that did have buttons, the button was often located several feet from the ramp and the ramp generally did not flow into the crossing. This meant that wheelchair users have to reorient themselves significantly while rolling down a bumpy ramp into a potentially busy street. Certainly our novice wheelchair abilities were at play here, but even experienced users might not find the disconnect between the ramp and crosswalk direction enjoyable. Furthermore, narrow ramps - including large ones bisected by a short cement block to discourage cars from mounting the curb while turning - allow for a very small margin of error for wheelchair users. It would be helpful to understand if regular wheelchair users felt as constrained by these dimensions as we did.

Daylighting was a particular issue with certain side streets. Wheelchair users aren't as tall as most pedestrians and are likely less able to stop and start quickly. It is difficult to see whether a car is approaching the intersection and to be seen by drivers, and react accordingly. Cars often roll through the stop sign to nudge their way into the intersection to get a jump on faster-moving traffic along College or Ashby, and are likely looking left to spot cars. Wheelchair users approaching from the right are therefore in an especially dangerous position because of sight lines and impatient drivers looking the other direction. The southern side of Ashby and Benvenue is one particular example of this dynamic.



Fatigue

Aside from infrastructure, this activity helped us empathize with the human elements of using a wheelchair in this area. Long stretches without shade are more bothersome when moving slowly and physically exerting oneself more. Maintaining a conversation with traveling companions was challenging because of the exertion and focus required to navigate the issues above. Even somewhat longer distances might put certain destinations out of reach, emphasizing the need for dense mixed-use developments. Adding rain, unusual heat or cold, heightened car and foot traffic (on Game Day, street festivals, etc), or darkness to the setting would multiply these difficulties.

Helpful additions could include designated places to take a breather that are flat, shady, and out of the way of other sidewalk traffic. Bringing down the cost of high-quality motorized chairs will help more low- and middle-income people afford these products, making fatigue and distance to destinations (to a certain extent) less limiting factors for users.

Well-Designed Features

Despite the difficulties listed above, our route was overall navigable in a wheelchair. We did not need to alter our path at any point due to design failures or obstructions. As motor-assisted devices become more ubiquitous, the physical strain of navigating slopes and minor sidewalk imperfections that we dealt with as novice users in a manual chair would be minimized. On both commercial and residential blocks, while not effortless, there was always a path wide and smooth enough for the wheelchair. Assistance was not necessary to get the chair past any obstacles. Examples include trash cans placed on the street off the sidewalk, furniture hugging buildings to maintain a clear path, and driveway design that facilitated wheelchair crossings. We found it noteworthy that all of the crosswalks on our journey had curb cuts. The cuts were on a spectrum of navigability, with some providing a smooth transition from road to sidewalk and others having minor lips or cracks that presented a small challenge. The cuts were not consistent either, with variations discussed in the crossings section above. Despite challenges, the presence of cuts at each crossing is not something we took for granted. The same can be said of general sidewalk accessibility. Our ability to navigate this specific route is not indicative of Berkeley's overall wheelchair accessibility, and we believe the city would be served by an accessibility study that identifies impassable locations for wheelchair users.

While not a design feature, we found that other people, both pedestrians and drivers we encountered, were generally considerate and courteous. Pedestrians moved out of the path of the wheelchair and patiently stood to the side for the chair to pass in narrow sections. Drivers made eye contact with us at intersections and we did not pick up any hostility if they needed to wait a few extra seconds before proceeding. We cannot make claims about what motivates more accommodating culture on the streets and sidewalks, but the decency and courtesy we experienced certainly improved our wheelchair experience and we recommend simple public information campaigns that encourage courtesy for all mobility-restricted road users.

Cost matrix

Item	Unit Cost	Quantity	Total Cost	Notes
Entire Corridor				
Heavy surface rehabilitation	\$104 / sqft	21,480 sq. yds	\$2,230,000	Sections from Dwight to Alcatraz. Heavy rehab is the <u>designated</u> improvement. This includes ADA accommodations, restriping, etc
Durant Intersection				
Protected Right Turn Signal	\$75,000	1	\$75,000	2 signals need right turn arrows.
Bike Wayfinding Paint Project	\$750	1	\$750	Based on per mile cost of lane narrowing/bike lane paint
Signal Retiming	\$90,000	1 intersection/ 6 signal posts	\$90,000	Based on cost listed for ped. scramble retiming.
Derby Intersection				
Advance yield striping	\$500	2	\$1,000	
High-visibility crosswalk marking	\$2,500	2	\$5,000	Or, fold into raised crosswalk treatment.
Raised crosswalk	\$10,000	2	\$20,000	
In-street 'Yield to Pedestrian' sign	\$800	2	\$1,600	May complement raised crosswalks.
Move bus stop sign	\$600	2	\$1,200	Based on stop sign cost estimate
Closing curb cut (redoing curb and sidewalk)	\$5,000	4	\$20,000	For relocating bus stops (removing 2 and adding 2) and adjusting curb for bus stop compliance.
Red curb	\$500	2	\$1,000	For bus stops
Raised landscaping or community curbside garden		2		Consider if jaywalking is found to be a safety concern.

Russell Intersection				
HAWK beacon	\$250,000	2	\$500,000	Traffic study recommended to determine need
High-visibility crosswalk marking	\$2,500	2	\$5,000	
Green bike lane paint	\$1.20 – \$1.60/sqft	~700 sqft	\$1,050	
Move bus stop sign	\$600	2	\$1,200	Based on stop sign cost estimate
Closing curb cut (redoing curb and sidewalk)	\$5,000	4	\$20,000	For relocating bus stops (removing 2 and adding 2) and adjusting curb for bus stop compliance.
Red curb	\$500	2	\$1,000	For bus stops
Ashby Intersection				
Traffic Flow Study	\$6,000	1	\$6,000	
Signal Retiming changes	\$1,000	2	\$2,000	
Caltrans Time for lane narrowing	\$60 / hr	20 hrs	\$1,200	Paying for Caltrans time is required for Full Oversight Process
Total			\$2,454,750	

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