



BERKELEY CITY COUNCILMEMBER  
**TERRY TAPLÍN**  
DISTRICT 2

CONSENT CALENDAR

March 2, 2023

To: Honorable Mayor and Members of the City Council

From: Councilmember Terry Taplin (Author)

Subject: 51 Bus Rapid Transit

RECOMMENDATION

- 1) Refer to the City Manager the development of an implementation and community engagement plan to install Bus Rapid Transit, including dedicated bus lanes, transit signal priority, elevated platforms, and enhanced sections, on the AC Transit 51B route along University Avenue from Sixth Street to Shattuck Avenue and along Shattuck Avenue from University Avenue to Durant Avenue, with engagement centering pedestrian, cyclist, transit and mobility justice advocates, the disability rights community, local faith communities, merchants, neighboring residential communities inclusive of tenants, seniors, and students, and historically marginalized communities.
- 2) Refer \$300,000 to the Fiscal Year 2024-2025 Budget Process to conduct a Complete Street Corridor Study antecedent to the installation of a cycle track along University Avenue from 6th Street to Oxford Street, consistent with the City of Berkeley's 2017 Bicycle Plan and integrating pedestrian amenities consistent with the City of Berkeley's 2020 Pedestrian Plan. As per the Bicycle Plan, the study will be evaluated in the context of the modal priorities established by the City of Berkeley General Plan's 2001 Transportation Element and the Alameda County Transportation Commission's (ACTC) 2016 Countywide Multimodal Arterial Plan.
- 3) Refer \$300,000 to the Fiscal Year 2024-2025 Budget Process to conduct a Complete Street Corridor Study antecedent to the installation of a cycle track along Oxford Street from Virginia Street to Durant Avenue consistent with the Bicycle Plan and integrating pedestrian amenities consistent with the Pedestrian Plan. As per the Bicycle Plan, the study will be evaluated in the context of the modal priorities established by the Transportation Element and ACTC's Countywide Multimodal Arterial Plan. It will be coordinated with proposed improvements to transit performance on this Primary Transit Route, such as bus boarding islands, transit-only lanes, transit signal priority/queue jump lanes, far-side bus stop relocations, and other improvements as described in AC Transit's

2016 Major Corridor Study.

- 4) Refer \$X to the Fiscal Year XX-XX Budget Process to install quick-build bus station improvements along the AC Transit 51B route.
- 5) Initiate consultation with AC Transit and UC Berkeley Bear Transit as soon as possible on the planning, scoping, and implementation of these items.

## BACKGROUND

### ***Existing Transit Lanes***

Currently, Berkeley has a transit lane on Bancroft Way between Telegraph and Downtown that is used by westbound buses, and a transit lane is planned for Durant Ave for eastbound buses. Bus lines using these lanes continue on to Shattuck, University, and Telegraph.

### ***Shattuck, University, and Telegraph Avenues***

Berkeley's University Avenue runs West to East from the Berkeley Marina and I-80 Freeway to its termination at UC Berkeley's Crescent Lawn. University Avenue is dubbed the "Gateway to Berkeley" due to the location of the city's lone Amtrak Station at the intersection of Fourth Street, the avenue's proximity to both the North Berkeley and Downtown Berkeley BART stations, the regularly congested I-80 exit onto the avenue, and the service of AC Transit's 51B, 52, 79, 88, 802, and FS lines. University Avenue is a wide street with two travel lanes in each direction, parking lanes, turn pockets, and a center median.

Berkeley's Shattuck Avenue runs North to South from Indian Rock Park in the Berkeley Hills to 45th Street in Oakland near the intersection of Telegraph Avenue. Shattuck Avenue serves as the main street of Berkeley, running through its Downtown, which is home to the Downtown Berkeley BART Station, AC Transit and Bear Transit stations, and various restaurants and office spaces.

Telegraph Avenue, from Woolsey Street on the Oakland border up through Dwight Way near UC Berkeley, is in the midst of its own Multimodal Corridor Project<sup>1</sup> that may result in BRT infrastructure in the coming years. Should this project be completed or significantly underway at the time of the development of BRT plans for Shattuck and University Avenues, close attention should be paid to its initial impacts, successes, and failures so that future applications of BRT infrastructure build on these lessons.

### ***Bus Rapid Transit***

While diverse in their application around the world, Bus Rapid Transit is typically a transportation corridor that prioritizes fast and efficient bus service that may include dedicated bus lanes, traffic signal priority, elevated platforms, and off-board fare

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<sup>1</sup><https://berkeleyca.gov/your-government/our-work/capital-projects/telegraph-avenue-multimodal-corridor-project#:~:text=The%20Telegraph%20Avenue%20Multimodal%20Corridor,bike%20lanes%2C%20and%20transit%20improvements.>

collection.<sup>2</sup> There is no one-size-fits-all approach to BRT and a University Avenue BRT is sure to look different than it might on Telegraph Avenue or International Boulevard in Oakland. However, pursuit of a quicker and more efficient bus corridor along University should result in dedicated bus lanes and elevated platforms at existing AC Transit stops. Most transit planners consider center running bus lanes--such as provided on International Boulevard and Van Ness Avenue in San Francisco--as more effective than curbside bus lanes. However, this would have to be determined in the course of planning the project. Relative to other rapid transit improvements such as light rail, BRT's advantages include lower upfront capital requirements, a higher degree of flexibility in their application, and a much quicker implementation timeline.<sup>3</sup>

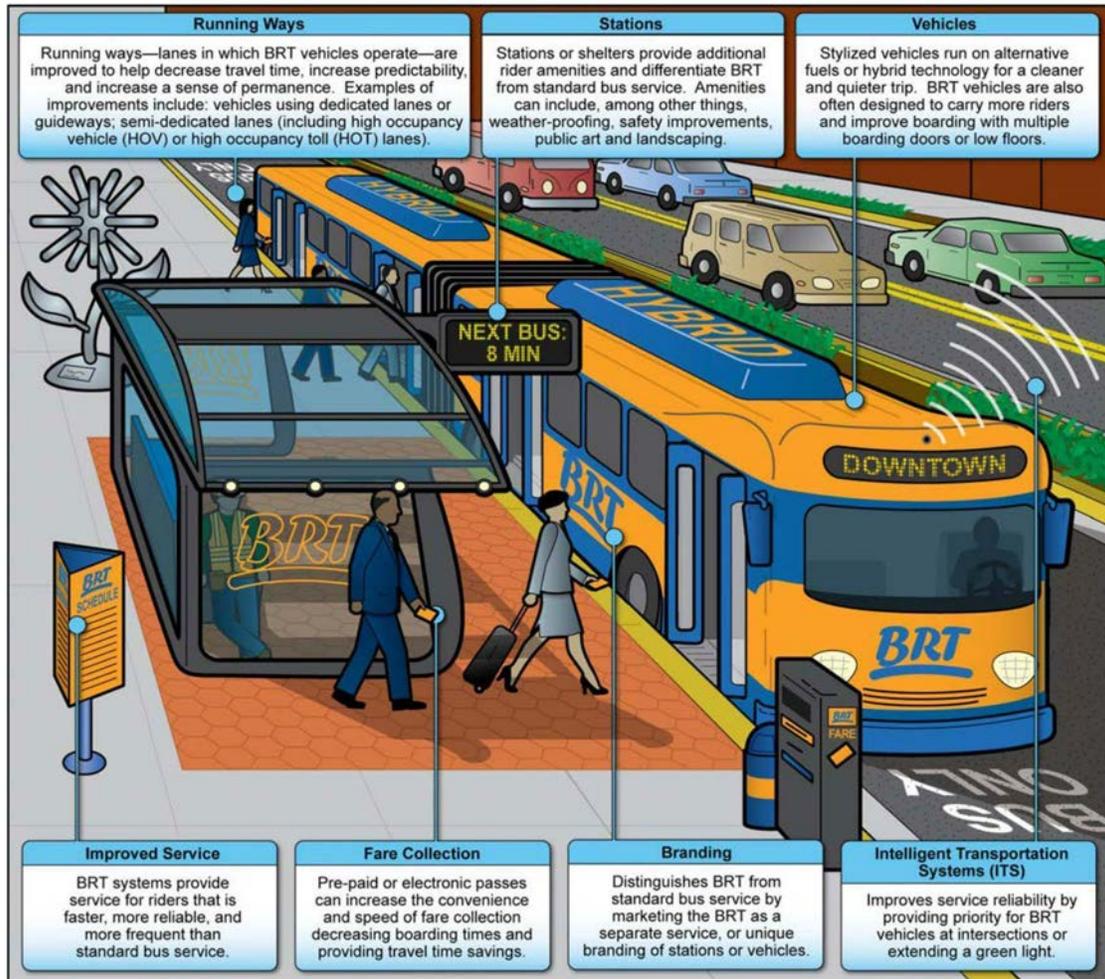


*Van Ness Avenue, San Francisco*

<sup>2</sup> <https://www.transit.dot.gov/research-innovation/bus-rapid-transit>

<sup>3</sup> <https://digitalcommons.usf.edu/cgi/viewcontent.cgi?article=1023&context=jpt>

Figure 1: Characteristics of Bus Rapid Transit



Source: GAO analysis of bus rapid transit research.

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### Population Trends

According to the City of Berkeley's 2023 Housing Element Update,<sup>5</sup> the city's population has grown steadily since 2000, increasing approximately 9% each decade. The Department of Finance estimates that the city's population was 122,580 in 2020. The Association of Bay Area Governments' Plan Bay Area 2040 projections anticipate Berkeley's population to reach about 136,000 by 2030 and 141,000 by 2040.

### Pedestrian Collisions

The City of Berkeley's 2020 Pedestrian Plan<sup>6</sup> determined that Shattuck and University Avenues represent two of the top five streets with pedestrian collisions between 2008 and 2017, ranked first and fifth, respectively, as well as two of the top four streets with fatal or severe pedestrian collisions in the same time period, ranked first and third (tied) respectively.

<sup>4</sup> <https://www.gao.gov/blog/2016/04/13/rapid-buses-for-rapid-transit>

<sup>5</sup> [https://berkeleyca.gov/sites/default/files/documents/Combined\\_HousingElementFinal\\_redline.pdf](https://berkeleyca.gov/sites/default/files/documents/Combined_HousingElementFinal_redline.pdf)

<sup>6</sup> <https://berkeleyca.gov/sites/default/files/2022-01/2020-Pedestrian-Plan.pdf>

## **AC Transit**

In AC Transit's 2019 Annual Report<sup>7</sup>, they reported a systemwide ridership of over 53 million customers, reflecting a 2.5% increase (1.28 million riders) over the previous year. This occurred at a time when major transit providers nationwide reported a ridership decline of 2.8%. Key factors attributed to this growth included proactive efforts to maintain high service levels, adding service frequency, and a robust local economy. That same year, AC Transit released their first Strategic Plan<sup>8</sup> in about 20 years. In April of 2022, an Addendum<sup>9</sup> was added to address the effects of the ongoing COVID-19 pandemic.

The pandemic has had an enormous impact on transit operations and economic activity. In 2020, fewer people needed to ride the bus, whether to commute to work or get around the city for personal errands and activities. Schools and colleges closed their campuses and several office workers began working from home. Although there has been a recovery in ridership<sup>10</sup> beginning in 2021, pre-pandemic levels have not been reached. Fiscal Year 2021-2022 saw an annual ridership of almost 29 million customers, which was a 36% increase (7.6 million riders) over the previous fiscal year. Service is at around 85% of pre-pandemic levels, which is the equivalent of deleting one out of every seven trips.

## **RATIONALE**

### ***City of Berkeley Plans***

The City of Berkeley's Climate Action Plan,<sup>11</sup> adopted in 2009, envisions public transit, walking, cycling, and other sustainable mobility modes as the primary means of transportation for residents and visitors. To do so, it lists various goals, such as increasing the safety, reliability, and frequency of public transit and managing parking effectively to minimize driving demand and encourage and support alternatives to driving. It also addresses the fact that transportation emissions are the largest source of greenhouse gas emissions, a trend that has continued as of the 2019 Greenhouse Gas Inventory.

The Berkeley Strategic Transportation Plan<sup>12</sup>, adopted in 2016, envisions the city's streets, sidewalks, and pathways as multimodal, serving people walking, bicycling, riding transit, driving, and moving goods. To do so, it lists various goals, such as encouraging people to walk, bicycle, and ride transit, improving transit efficiency, designing street networks that ensure comfortable, safe environments for users of all abilities, and prioritizing transit services along transit routes.

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<sup>7</sup>[https://www.actransit.org/sites/default/files/2021-03/0017-20%20Annual%20Report%202019\\_small\\_FNL.pdf](https://www.actransit.org/sites/default/files/2021-03/0017-20%20Annual%20Report%202019_small_FNL.pdf)

<sup>8</sup><https://www.actransit.org/sites/default/files/2021-03/AC%20Transit%20Strategic%20Plan.pdf>

<sup>9</sup>[https://www.actransit.org/sites/default/files/2022-12/0230-22%20Strat%20Plan%20Adden\\_FNL.pdf](https://www.actransit.org/sites/default/files/2022-12/0230-22%20Strat%20Plan%20Adden_FNL.pdf)

<sup>10</sup><https://www.actransit.org/ridership>

<sup>11</sup><https://berkeleyca.gov/sites/default/files/2022-01/Berkeley-Climate-Action-Plan.pdf>

<sup>12</sup><https://berkeleyca.gov/your-government/our-work/adopted-plans/berkeley-strategic-transportation-best-plan>

The City of Berkeley's Strategic Plan<sup>13</sup>, adopted in 2018, includes long-term goals such as providing state-of-the-art, well-maintained infrastructure, amenities, and facilities, creating a resilient, safe, connected, and prepared city, and fostering a dynamic, sustainable, and locally-based economy. That same year, the city declared a climate emergency and committed to mobilize to end greenhouse gas emissions swiftly.

The Berkeley Vision Zero Action Plan<sup>14</sup>, adopted in 2019, is a strategy to eliminate all traffic fatalities and severe injuries while increasing safe, healthy, and equitable mobility for all. To do so, it lists various goals, such as creating safer transportation options for people who walk, bike, and take transit, which would make these modes more attractive and reduce the number of car trips in Berkeley, which can mean fewer severe and fatal collisions.

### ***AC Transit's Recovery***

Supporting AC Transit's recovery enhances the mobility and safety of Berkeley residents while simultaneously improving the walkability and bikeability of the city as well as breathing life into the local economy.

Any successful transportation project that seeks to increase the speed and reliability of AC Transit service in Berkeley will need to serve a longer route than the single relatively short corridor segment within Berkeley. There are several transit corridors within Berkeley connecting to other cities that AC Transit has identified as needing upgraded types of service. It would be important for the city to work with AC Transit to identify the routings which would be the most productive.

### ***Shattuck, University, and Telegraph Avenues***

The central location of University Avenue and the variety of communities it connects makes this corridor an incredibly important focus for the city's housing and transportation planning for the coming decades. University Avenue has had a number of housing developments completed recently, with additional developments under construction. With University Avenue likely seeing a growth in new housing development under the forthcoming Housing Element, it is important for Berkeley's transportation infrastructure to keep up with the changing needs of its old and new residents. On top of the expected growth in Berkeley's population and thus its transportation needs, climate change and the urgency of pedestrian and cyclist safety require that the transportation system of the City's future be one that prioritizes public transit and bicycle travel over the use personal automobiles. With this in mind, the 2017 Bicycle Plan recommends a Complete Streets Corridor Study for University Avenue.<sup>15</sup>

Furthermore, these three avenues are each unique and each present their own problems when considering the addition of BRT. The application of BRT on the downtown stretch of Shattuck Avenue, which could improve the service of AC Transit's

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<sup>13</sup><https://berkeleyca.gov/sites/default/files/2022-01/Berkeley-Strategic-Plan.pdf>

<sup>14</sup><https://berkeleyca.gov/sites/default/files/2022-02/Berkeley-Vision-Zero-Action-Plan.pdf>

<sup>15</sup>[https://berkeleyca.gov/sites/default/files/2022-01/Berkeley-Bicycle-Plan-2017\\_AppendixH\\_Complete%20Streets%20Corridors.pdf](https://berkeleyca.gov/sites/default/files/2022-01/Berkeley-Bicycle-Plan-2017_AppendixH_Complete%20Streets%20Corridors.pdf)

18 and various other lines which briefly serve Shattuck Avenue at the start and end of their routes, will require careful consideration of the already congested conditions of the street. The construction of elevated platforms on University Avenue as a pilot for BRT while completion of Telegraph Avenue's project is underway and Shattuck Avenue rapid transit is being considered will allow for some near-term service improvements while giving staff the time necessary to study how to bring multimodal improvements to the rest of the corridors as fastidiously as possible.

### ***Breakdown of Recommended Improvements***

Dedicated bus lanes improve travel speeds and reliability by reducing delays caused by other traffic. Transit signal priority uses technology to reduce dwell time at traffic signals for transit vehicles, such as extending the duration of green lights or shortening that of red lights. Raised platforms make it easier and more accessible for passengers to board or alight from buses by decreasing the distance between the platform and the vehicle, therefore increasing route efficiency.

### ***ADA Compliance***

The recommended improvements also help advance the city's goal of increasing mobility access for transit riders and cyclists with disabilities. ADA Accessibility Standards for transportation facilities are issued by the US Department of Transportation and include guidance for bus boarding and alighting areas, shelters, signs, and more.<sup>16</sup>

### ***Impact to Local Businesses and Economy***

In addition to advancing various climate and public safety goals of the city, investing in bus and bicycle infrastructure benefits local businesses and the economy. The League of American Bicyclists's report entitled "Bicycling Benefits Business"<sup>17</sup> illustrates that the bicycle industry and its related transportation, tourism, and health benefits spur job creation, economic activity, and cost savings. The Outdoor Industry Association reported that outdoor recreation consumers spend \$887 billion annually and create 7.6 million jobs.<sup>18</sup>

The National Institute for Transportation and Communities published a peer-reviewed study examining BRT lines and found that the areas within a half-mile of BRT corridors increased their share of new office space by one third from 2000-2007, and new multifamily apartment construction doubled in those half-mile areas since 2008.<sup>19</sup> PolicyLink released a report entitled "Business Impact Mitigations for Transit Projects"<sup>20</sup> that address BRT projects, concluding that best practices include providing the right

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<sup>16</sup><https://federalist-e3fba26d-2806-4f02-bf0e-89c97cfba93c.app.cloud.gov/preview/atbcb/usab-uswds/ada-alternative/ada/#ada-810>

<sup>17</sup><https://bikeleague.org/sites/default/files/Bicycling%20Benefits%20Business.pdf>

<sup>18</sup><https://outdoorindustry.org/resource/2017-outdoor-recreation-economy-report/>

<sup>19</sup><https://t4america.org/wp-content/uploads/2016/01/NATIONAL-STUDY-OF-BRT-DEVELOPMENT-OUTCOMES-11-30-15.pdf>

<sup>20</sup>[https://www.policylink.org/sites/default/files/FINAL%20PolicyLink%20Business%20Impact%20Mitigation%20Strategies\\_0.pdf](https://www.policylink.org/sites/default/files/FINAL%20PolicyLink%20Business%20Impact%20Mitigation%20Strategies_0.pdf)

type of financial and technical assistance and proactive outreach to businesses built on constant communication, flexibility, and trust.

## ENVIRONMENTAL IMPACTS

The City estimates that transportation-related emissions accounts for approximately 60% of our community's total annual greenhouse gas emissions.<sup>21</sup> By encouraging alternatives to car transportation by making public transportation options quicker and more appealing, policy stands to lower the emissions from our community's dominant source of carbon emissions.

The goal of any new public transportation initiative must be to increase the local mode share of residents choosing public transportation over personal automobiles for commuting and other trips.. BRT offers many advantages for this pursuit. The U.S. Government Accountability Office reviewed implemented BRT projects in 2012 and found that "13 of the 15 project sponsors...reported increases in ridership after 1 year of service and reduced average travel times of 10 to 35 percent over previous bus services."<sup>22</sup> Paired with the multimodal project along Telegraph Avenue, Berkeley has the potential for a large increase in transit ridership and thus a decline in greenhouse gas emissions if the City follows through on BRT in the coming years.

## FISCAL IMPACTS

Staff costs. An estimated \$300,000 for the staff costs of engaging a consultant for the Multimodal Corridor Project. An estimated \$30,000 for two elevated platforms, or "bus bulbs", at an estimated cost of \$15,000 per platform.<sup>23</sup>

## CONTACT

Councilmember Terry Taplin, District 2, (510) 981-7120, [TTaplin@cityofberkeley.info](mailto:TTaplin@cityofberkeley.info)

## ATTACHMENTS

1. AC Transit Multimodal Corridor Guidelines

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<sup>21</sup>[https://www.cityofberkeley.info/Clerk/City\\_Council/2018/12\\_Dec/Documents/2018-12-06\\_WS\\_Item\\_01\\_Climate\\_Action\\_Plan\\_Update\\_pdf.aspx](https://www.cityofberkeley.info/Clerk/City_Council/2018/12_Dec/Documents/2018-12-06_WS_Item_01_Climate_Action_Plan_Update_pdf.aspx)

<sup>22</sup><https://www.gao.gov/products/gao-12-811>

<sup>23</sup><https://berkeleyca.gov/sites/default/files/documents/2020%20Pedestrian%20Plan%20Appendix%20E%20%28adoped%29.pdf>



CONSENT CALENDAR

March 2 ~~December 13~~, 2023

To: —Honorable Mayor and Members of the City Council

From: —Councilmember Terry Taplin (Author)

Subject: 51 ~~University Downtown Avenue~~ Bus Rapid Transit

RECOMMENDATION

- ~~(1) Refer to the City Manager and the Department of Public Works the installation initiation of a University Avenue Multimodal Corridor Project that centers the creation of a transit-only lane Bus Rapid Transit (BRT) corridor spanning along University Avenue, Shattuck Avenue, and Telegraph Avenue with dedicated lanes and elevated platforms.~~
- ~~(2) Refer \$300,000 to the budget process to be allotted to the Department of Public Works engage a consultant for study, community engagement, and project design for the study, community feedback process, and design of the project.~~
- ~~— Refer \$30,000 to the budget process for the construction of elevated bus stop platforms for the purposes of bringing BRT elevated platforms to University Avenue on a pilot basis while the wider project is in development.~~
- ~~— initiate consultation with AC Transit and UC Berkeley Bear Transit as soon as possible on the planning, scoping and implementation of these items.~~

RECOMMENDATION

- 1) Refer to the City Manager the development of an implementation and community engagement plan to install Bus Rapid Transit, including dedicated bus lanes, transit signal priority, elevated platforms, and enhanced sections, on the AC Transit 51B route along University Avenue from Sixth Street to Shattuck Avenue and along Shattuck Avenue from University Avenue to Durant Avenue, with engagement centering pedestrian, cyclist, transit and mobility justice advocates, the disability rights community, local faith communities, merchants, neighboring residential communities inclusive of tenants, seniors, and students, and historically marginalized communities. Refer to the City Manager the development of an implementation and community engagement plan to install Bus Rapid Transit including dedicated bus lanes, transit signal priority, elevated platforms, and enhanced sections, along the AC Transit 51B route along University Ave from Sixth St to Shattuck Ave and along Shattuck Avenue from University Sixth to Durant, with engagement centering pedestrian, cyclist, transit and mobility justice advocates, the disability rights community, local faith communities, merchants,

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neighboring residential communities inclusive of tenants, seniors, and students, and historically marginalized communities.

2) Refer \$300,000 to the Fiscal Year 2024-2025 Budget Process to conduct a Complete Street Corridor Study antecedent to the installation of a cycle track along University Avenue from 6th Street to Oxford Street, consistent with the City of Berkeley's 2017 Bicycle Plan and integrating pedestrian amenities consistent with the City of Berkeley's 2020 Pedestrian Plan. As per the Bicycle Plan, the study will be evaluated in the context of the modal priorities established by the City of Berkeley General Plan's 2001 Transportation Element and the Alameda County Transportation Commission's (ACTC) 2016 Countywide Multimodal Arterial Plan.~~Refer \$300k to the FY 24-25 Budget Process to conduct a Complete Street Corridor Study antecedent to the installation of a two-cycle track along the University from 6th to Oxford consistent with the adopted 2017 Bicycle9 Bike Plan and integrating pedestrian amenities consistent with the Pedestrian Plan. As per the 2017 Bicycle Plan, the study will be evaluated in the context of the modal priorities established by the Berkeley General Plan Transportation Element and the Alameda County Transportation Commission Countywide Multimodal Arterial Plan.~~

3) Refer \$300,000 to the Fiscal Year 2024-2025 Budget Process to conduct a Complete Street Corridor Study antecedent to the installation of a cycle track along Oxford Street from Virginia Street to Durant Avenue consistent with the Bicycle Plan and integrating pedestrian amenities consistent with the Pedestrian Plan. As per the Bicycle Plan, the study will be evaluated in the context of the modal priorities established by the Transportation Element and ACTC's Countywide Multimodal Arterial Plan. It will be coordinated with proposed improvements to transit performance on this Primary Transit Route, such as bus boarding islands, transit-only lanes, transit signal priority/queue jump lanes, far-side bus stop relocations, and other improvements as described in AC Transit's 2016 Major Corridor Study.~~Refer \$300k Refer \$X to the FY 24-25 Budget Process to conduct a Complete Street Corridor Study antecedent to the installation of a two-cycle track along Shattuck from Virginia to Woolsey consistent with the adopted 2017 Bicycle9 Bike Plan, and integrating pedestrian amenities consistent with the Pedestrian Plan. As per the 2017 Bicycle Plan, the study will be evaluated in the context of the modal priorities established by the Berkeley General Plan Transportation Element and the Alameda County Transportation Commission Countywide Multimodal Arterial Plan. It will be coordinated with proposed improvements to transit performance on this Primary Transit Route, such as bus boarding islands, transit-only lanes, transit signal priority/queue jump lanes, far-side bus stop relocations, and other improvements as described in the AC Transit Major Corridor Study.~~

4) Refer \$X to the Fiscal Year XX-XX Budget Process to install quick-build bus station improvements along the AC Transit 51B route.~~Refer to the FYx \$X to install quick-build bus station improvements along the 51b route.~~

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5) Initiate consultation with AC Transit and UC Berkeley Bear Transit as soon as possible on the planning, scoping, and implementation of these items.~~Initiate consultation with AC Transit and UC Berkeley Bear Transit as soon as possible on the planning, scoping, and implementation of these items.~~

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#### FISCAL IMPACTS

~~Staff costs. An estimated \$300,000 for the staff costs of engaging a consultant for the Multimodal Corridor Project. An estimated \$30,000 for two elevated platforms, or "bus bulbs", at an estimated cost of \$15,000 per platform.<sup>1</sup>~~

#### BACKGROUND CURRENT SITUATION AND ITS EFFECTS

##### Existing Transit Lanes**Existing Transit Lanes in Berkeley**

~~Currently, Berkeley has a transit lane on Bancroft Way between Telegraph and Downtown that is used by westbound buses, and a transit lane is planned for Durant Ave for eastbound buses. Bus lines using these lanes continue on to Shattuck, University, and Telegraph.~~

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##### Shattuck, University, and Telegraph Avenues

~~Berkeley's University Avenue runs West to East from the Berkeley Marina and I-80 Freeway to its termination at UC Berkeley's Crescent Lawn. University Avenue is dubbed the "Gateway to Berkeley" due to the location of the city's lone Amtrak Station at the intersection of Fourth Street, the avenue's proximity to both the North Berkeley and Downtown Berkeley BART stations, the regularly congested I-80 exit onto the avenue, and the service of AC Transit's 51B, 52, 79, 88, 802, and FS lines. University Avenue is a wide street with two travel lanes in each direction, parking lanes, turn pockets, and a center median.~~

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~~Telegraph Avenue, from Woolsey Street on the Oakland border up through Dwight Way near UC Berkeley, is in the midst of its own Multimodal Corridor Project<sup>2</sup> that may result in BRT infrastructure in the coming years. Should this project be completed or significantly underway at the time of the development of BRT plans for Shattuck and University Avenues, close attention should be paid to its initial impacts, successes, and failures so that future applications of BRT infrastructure build on these lessons.~~

##### **University Avenue**

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<sup>1</sup><https://berkeleyca.gov/sites/default/files/documents/2020%20Pedestrian%20Plan%20Appendix%20E%20%28adopted%29.pdf>

<sup>2</sup><https://berkeleyca.gov/your-government/our-work/capital-projects/telegraph-avenue-multimodal-corridor-project#:~:text=The%20Telegraph%20Avenue%20Multimodal%20Corridor.bike%20lanes%2C%20and%20transit%20improvements.>

Berkeley's University Avenue runs West to East from the Berkeley Marina and I-80 Freeway to its termination at the Crescent Lawn of the UC Berkeley campus. University Ave is dubbed the "Gateway to Berkeley" due to the location of the city's lone Amtrak Station at University & Fourth Street, the avenue's proximity to both the North Berkeley and Downtown Berkeley BART stations, the regularly congested I-80 exit onto the avenue, and the service of AC Transit's 51B, 52, 79, 88, 802, and FS lines on at least part of the corridor. University Avenue is a wide street with two travel lanes in each direction, parking lanes, turn pockets, and a center median.

The central location of University Avenue and the variety of communities it connects makes this corridor an incredibly important focus for the City's housing and transportation planning for the coming decades. University Avenue has had a number of housing developments completed recently, with additional developments under construction. With University Avenue likely seeing a growth in new housing development under the forthcoming Housing Element, it is important for Berkeley's transportation infrastructure to keep up with the changing needs of its old and new residents. On top of the expected growth in Berkeley's population and thus its transportation needs, climate change and the urgency of pedestrian and cyclist safety require that the transportation system of the City's future be one that prioritizes public transit and bicycle travel over the use personal automobiles. With this in mind, the 2017 Bicycle Plan recommends a Complete Streets Corridor Study for University Avenue.<sup>3</sup>

#### Shattuck & Telegraph Avenues

Any successful transportation project that seeks to increase the speed and reliability of AC Transit service in Berkeley will need to serve a longer route have to apply to more than the a single relatively short corridor segment just one major within Berkeley. There are several transit corridors within Berkeley, and connecting to other cities, that AC Transit has identified as needing upgraded types of service. We It would be important for the City would like to work with the City AC Transit to identify the routings which would roadway, be the most productive.

Telegraph Avenue, running from the Oakland border in South East Berkeley up through downtown to UC Berkeley, is in the midst of its own multimodal corridor project at this time that may result in rapid transit infrastructure on the avenue in the coming years.<sup>4</sup> Should the Telegraph Avenue Multimodal Project be completed or significantly underway at the time of the development of BRT plans for University Avenue and Shattuck Avenue, close attention should be paid to initial impacts, successes, and failures of the Telegraph project so that application of rapid transit infrastructure on University and Shattuck is done that builds on the lessons of Telegraph.

Furthermore, these three avenues are each unique and each present their own problems when considering the addition of BRT. The application of BRT on the

<sup>3</sup><https://berkeleyca.gov/sites/default/files/2022-01/Berkeley-Bicycle-Plan-2017-AppendixH-Complete%20Streets%20Corridors.pdf>

<sup>4</sup><https://berkeleyca.gov/your-government/our-work/capital-projects/telegraph-avenue-multimodal-corridor-project#:~:text=The%20Telegraph%20Avenue%20Multimodal%20Corridor.bike%20lanes%2C%20and%20transit%20improvements>

~~downtown stretch of Shattuck Avenue, which could improve the service of AC Transit's 18 and various other lines which briefly serve Shattuck at the start/end of their routes, will require careful consideration of the already congested conditions of the street. The construction of elevated platforms on University Avenue as a pilot for BRT while completion of Telegraph Avenue's project is underway and Shattuck Avenue rapid transit is being considered will allow for some near-term service improvements while giving staff the time necessary to study how to bring multimodal improvements to the rest of the corridors as fastidiously as possible.~~

### ***Bus Rapid Transit***

While diverse in their application around the world, Bus Rapid Transit is typically a transportation corridor that prioritizes fast and efficient bus service that may include dedicated bus lanes, traffic signal priority, elevated platforms, and off-board fare collection.<sup>5</sup> There is no one-size-fits-all approach to BRT and a University Avenue BRT is sure to look different than it might on Telegraph Avenue or International Boulevard in Oakland. ~~However, ,but~~ pursuit of a quicker and more efficient bus corridor along University should result in dedicated bus lanes and elevated platforms at existing AC Transit stops. ~~Most transit planners consider center running bus lanes--such as provided on International Boulevard, and Van Ness Avenue, in San Francisco--as more effective than curbside bus lanes. However, this would have to be determined in the course of planning the project.~~ Relative to other rapid transit improvements such as light rail, BRT's advantages include lower upfront capital requirements, a higher degree of flexibility in their application, and a much ~~er~~ quicker ~~be~~ implementation timeline.<sup>6</sup>

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<sup>5</sup> <https://www.transit.dot.gov/research-innovation/bus-rapid-transit>

<sup>6</sup> <https://digitalcommons.usf.edu/cgi/viewcontent.cgi?article=1023&context=jpt>



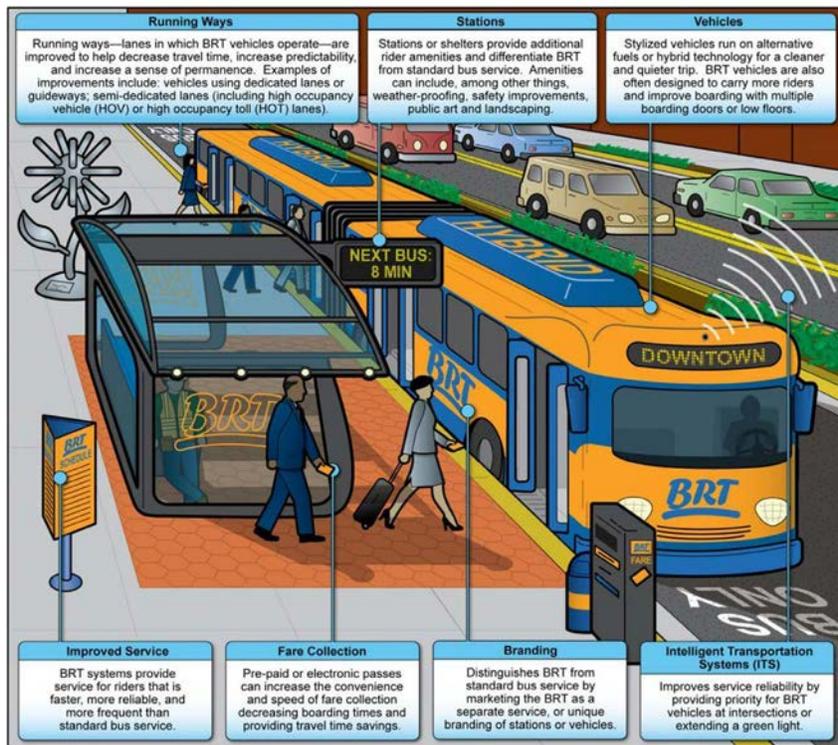
*Van Ness Avenue, San Francisco*

*~~Do we want to include a photo? Van Ness Ave is probably the best example—it is designed to work with multiple existing bus lines using regular buses~~*

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Figure 1: Characteristics of Bus Rapid Transit



Source: GAO analysis of bus rapid transit research.

### Population Trends

According to the City of Berkeley's 2023 Housing Element Update,<sup>8</sup> the city's population has grown steadily since 2000, increasing approximately 9% each decade. The Department of Finance estimates that the city's population was 122,580 in 2020. The Association of Bay Area Governments' Plan Bay Area 2040 projections anticipate Berkeley's population to reach about 136,000 by 2030 and 141,000 by 2040.

### Pedestrian Collisions

The City of Berkeley's 2020 Pedestrian Plan<sup>9</sup> determined that Shattuck and University Avenues represent two of the top five streets with pedestrian collisions between 2008 and 2017, ranked first and fifth, respectively, as well as two of the top four streets with fatal or severe pedestrian collisions in the same time period, ranked first and third (tied) respectively.

<sup>7</sup> <https://www.gao.gov/blog/2016/04/13/rapid-buses-for-rapid-transit>

<sup>8</sup> [https://berkeleyca.gov/sites/default/files/documents/Combined\\_HousingElementFinal\\_redline.pdf](https://berkeleyca.gov/sites/default/files/documents/Combined_HousingElementFinal_redline.pdf)

<sup>9</sup> <https://berkeleyca.gov/sites/default/files/2022-01/2020-Pedestrian-Plan.pdf>

## AC Transit

In AC Transit's 2019 Annual Report<sup>10</sup>, they reported a systemwide ridership of over 53 million customers, reflecting a 2.5% increase (1.28 million riders) over the previous year. This occurred at a time when major transit providers nationwide reported a ridership decline of 2.8%. Key factors attributed to this growth included proactive efforts to maintain high service levels, adding service frequency, and a robust local economy. That same year, AC Transit released their first Strategic Plan<sup>11</sup> in about 20 years. In April of 2022, an Addendum<sup>12</sup> was added to address the effects of the ongoing COVID-19 pandemic.

The pandemic has had an enormous impact on transit operations and economic activity. In 2020, fewer people needed to ride the bus, whether to commute to work or get around the city for personal errands and activities. Schools and colleges closed their campuses and several office workers began working from home. Although there has been a recovery in ridership<sup>13</sup> beginning in 2021, pre-pandemic levels have not been reached. Fiscal Year 2021-2022 saw an annual ridership of almost 29 million customers, which was a 36% increase (7.6 million riders) over the previous fiscal year. Service is at around 85% of pre-pandemic levels, which is the equivalent of deleting one out of every seven trips.

## RATIONALE

### City of Berkeley Plans

The City of Berkeley's Climate Action Plan,<sup>14</sup> adopted in 2009, envisions public transit, walking, cycling, and other sustainable mobility modes as the primary means of transportation for residents and visitors. To do so, it lists various goals, such as increasing the safety, reliability, and frequency of public transit and managing parking effectively to minimize driving demand and encourage and support alternatives to driving. It also addresses the fact that transportation emissions are the largest source of greenhouse gas emissions, a trend that has continued as of the 2019 Greenhouse Gas Inventory.

The Berkeley Strategic Transportation Plan<sup>15</sup>, adopted in 2016, envisions the city's streets, sidewalks, and pathways as multimodal, serving people walking, bicycling, riding transit, driving, and moving goods. To do so, it lists various goals, such as encouraging people to walk, bicycle, and ride transit, improving transit efficiency, designing street networks that ensure comfortable, safe environments for users of all abilities, and prioritizing transit services along transit routes.

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<sup>10</sup>[https://www.actransit.org/sites/default/files/2021-03/0017-20%20Annual%20Report%202019\\_small\\_FNL.pdf](https://www.actransit.org/sites/default/files/2021-03/0017-20%20Annual%20Report%202019_small_FNL.pdf)

<sup>11</sup><https://www.actransit.org/sites/default/files/2021-03/AC%20Transit%20Strategic%20Plan.pdf>

<sup>12</sup>[https://www.actransit.org/sites/default/files/2022-12/0230-22%20Strat%20Plan%20Adden\\_FNL.pdf](https://www.actransit.org/sites/default/files/2022-12/0230-22%20Strat%20Plan%20Adden_FNL.pdf)

<sup>13</sup><https://www.actransit.org/ridership>

<sup>14</sup><https://berkeleyca.gov/sites/default/files/2022-01/Berkeley-Climate-Action-Plan.pdf>

<sup>15</sup><https://berkeleyca.gov/your-government/our-work/adopted-plans/berkeley-strategic-transportation-best-plan>

The City of Berkeley's Strategic Plan<sup>16</sup>, adopted in 2018, includes long-term goals such as providing state-of-the-art, well-maintained infrastructure, amenities, and facilities, creating a resilient, safe, connected, and prepared city, and fostering a dynamic, sustainable, and locally-based economy. That same year, the city declared a climate emergency and committed to mobilize to end greenhouse gas emissions swiftly.

The Berkeley Vision Zero Action Plan<sup>17</sup>, adopted in 2019, is a strategy to eliminate all traffic fatalities and severe injuries while increasing safe, healthy, and equitable mobility for all. To do so, it lists various goals, such as creating safer transportation options for people who walk, bike, and take transit, which would make these modes more attractive and reduce the number of car trips in Berkeley, which can mean fewer severe and fatal collisions.

#### AC Transit's Recovery

Supporting AC Transit's recovery enhances the mobility and safety of Berkeley residents while simultaneously improving the walkability and bikeability of the city as well as breathing life into the local economy.

Any successful transportation project that seeks to increase the speed and reliability of AC Transit service in Berkeley will need to serve a longer route than the single relatively short corridor segment within Berkeley. There are several transit corridors within Berkeley connecting to other cities that AC Transit has identified as needing upgraded types of service. It would be important for the city to work with AC Transit to identify the routings which would be the most productive.

#### Shattuck, University, and Telegraph Avenues

The central location of University Avenue and the variety of communities it connects makes this corridor an incredibly important focus for the city's housing and transportation planning for the coming decades. University Avenue has had a number of housing developments completed recently, with additional developments under construction. With University Avenue likely seeing a growth in new housing development under the forthcoming Housing Element, it is important for Berkeley's transportation infrastructure to keep up with the changing needs of its old and new residents. On top of the expected growth in Berkeley's population and thus its transportation needs, climate change and the urgency of pedestrian and cyclist safety require that the transportation system of the City's future be one that prioritizes public transit and bicycle travel over the use personal automobiles. With this in mind, the 2017 Bicycle Plan recommends a Complete Streets Corridor Study for University Avenue.<sup>18</sup>

Furthermore, these three avenues are each unique and each present their own problems when considering the addition of BRT. The application of BRT on the downtown stretch of Shattuck Avenue, which could improve the service of AC Transit's

<sup>16</sup><https://berkeleyca.gov/sites/default/files/2022-01/Berkeley-Strategic-Plan.pdf>

<sup>17</sup><https://berkeleyca.gov/sites/default/files/2022-02/Berkeley-Vision-Zero-Action-Plan.pdf>

<sup>18</sup>[https://berkeleyca.gov/sites/default/files/2022-01/Berkeley-Bicycle-Plan-2017\\_AppendixH\\_Complete%20Streets%20Corridors.pdf](https://berkeleyca.gov/sites/default/files/2022-01/Berkeley-Bicycle-Plan-2017_AppendixH_Complete%20Streets%20Corridors.pdf)

18 and various other lines which briefly serve Shattuck Avenue at the start and end of their routes, will require careful consideration of the already congested conditions of the street. The construction of elevated platforms on University Avenue as a pilot for BRT while completion of Telegraph Avenue's project is underway and Shattuck Avenue rapid transit is being considered will allow for some near-term service improvements while giving staff the time necessary to study how to bring multimodal improvements to the rest of the corridors as fastidiously as possible.

#### Breakdown of Recommended Improvements

Dedicated bus lanes improve travel speeds and reliability by reducing delays caused by other traffic. Transit signal priority uses technology to reduce dwell time at traffic signals for transit vehicles, such as extending the duration of green lights or shortening that of red lights. Raised platforms make it easier and more accessible for passengers to board or alight from buses by decreasing the distance between the platform and the vehicle, therefore increasing route efficiency.

#### ADA Compliance

The recommended improvements also help advance the city's goal of increasing mobility access for transit riders and cyclists with disabilities. ADA Accessibility Standards for transportation facilities are issued by the US Department of Transportation and include guidance for bus boarding and alighting areas, shelters, signs, and more.<sup>19</sup>

#### Impact to Local Businesses and Economy

In addition to advancing various climate and public safety goals of the city, investing in bus and bicycle infrastructure benefits local businesses and the economy. The League of American Bicyclists's report entitled "Bicycling Benefits Business"<sup>20</sup> illustrates that the bicycle industry and its related transportation, tourism, and health benefits spur job creation, economic activity, and cost savings. The Outdoor Industry Association reported that outdoor recreation consumers spend \$887 billion annually and create 7.6 million jobs.<sup>21</sup>

The National Institute for Transportation and Communities published a peer-reviewed study examining BRT lines and found that the areas within a half-mile of BRT corridors increased their share of new office space by one third from 2000-2007, and new multifamily apartment construction doubled in those half-mile areas since 2008.<sup>22</sup> PolicyLink released a report entitled "Business Impact Mitigations for Transit Projects"<sup>23</sup> that address BRT projects, concluding that best practices include providing the right

<sup>19</sup><https://federalist-e3fba26d-2806-4f02-bf0e-89c97cfba93c.app.cloud.gov/preview/atbcb/usab-uswds/ada-alternative/ada/#ada-810>

<sup>20</sup><https://bikeleague.org/sites/default/files/Bicycling%20Benefits%20Business.pdf>

<sup>21</sup><https://outdoorindustry.org/resource/2017-outdoor-recreation-economy-report/>

<sup>22</sup><https://t4america.org/wp-content/uploads/2016/01/NATIONAL-STUDY-OF-BRT-DEVELOPMENT-OUTCOMES-11-30-15.pdf>

<sup>23</sup>[https://www.policylink.org/sites/default/files/FINAL%20PolicyLink%20Business%20Impact%20Mitigation%20Strategies\\_0.pdf](https://www.policylink.org/sites/default/files/FINAL%20PolicyLink%20Business%20Impact%20Mitigation%20Strategies_0.pdf)

type of financial and technical assistance and proactive outreach to businesses built on constant communication, flexibility, and trust.

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## ENVIRONMENTAL IMPACTS

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The City estimates that transportation-related emissions accounts for approximately 60% of our community's total annual greenhouse gas emissions.<sup>24</sup> By encouraging alternatives to car transportation by making public transportation options quicker and more appealing, policy stands to lower the emissions from our community's dominant source of carbon emissions.

The goal of any new public transportation initiative must be to increase the local mode share of residents choosing public transportation over personal automobiles for commuting and other trips. BRT offers many advantages for this pursuit. The U.S. Government Accountability Office reviewed implemented BRT projects in 2012 and found that "13 of the 15 project sponsors...reported increases in ridership after 1 year of service and reduced average travel times of 10 to 35 percent over previous bus services."<sup>25</sup> Paired with the multimodal project along Telegraph Avenue, Berkeley has the potential for a large increase in transit ridership and thus a decline in greenhouse gas emissions if the City follows through on BRT in the coming years.

## FISCAL IMPACTS

Staff costs. An estimated \$300,000 for the staff costs of engaging a consultant for the Multimodal Corridor Project. An estimated \$30,000 for two elevated platforms, or "bus bulbs", at an estimated cost of \$15,000 per platform.<sup>26</sup>

## CONTACT

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## ATTACHMENTS

1. AC Transit Multimodal Corridor Guidelines

<sup>24</sup>[https://www.cityofberkeley.info/Clerk/City\\_Council/2018/12\\_Dec/Documents/2018-12-06\\_WS\\_Item\\_01\\_Climate\\_Action\\_Plan\\_Update\\_pdf.aspx](https://www.cityofberkeley.info/Clerk/City_Council/2018/12_Dec/Documents/2018-12-06_WS_Item_01_Climate_Action_Plan_Update_pdf.aspx)

<sup>25</sup><https://www.gao.gov/products/gao-12-811>

<sup>26</sup><https://berkeleyca.gov/sites/default/files/documents/2020%20Pedestrian%20Plan%20Appendix%20E%20%28adopted%29.pdf>