# Appendix TRA

Transportation Technical Memorandum

# Berkeley City College
# 2118 Milvia Street Project

## Transportation Technical Memorandum

## Draft #1

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# Table of Contents

**Section** **Page**



# Tables and Figures

**Tables** **Page**



**Figures** **Page**

# Appendices

Appendix A Project Trip Generation Calculations and Assumptions

# 1.0 Introduction

This transportation technical memorandum describes the existing transportation setting and provides a transportation impact analysis for the proposed Berkeley City College Project (herein referred to as the "proposed project").

## 1.1 Project Location

The project site is located at 2118 Milvia Street, on the northwest corner of the Milvia Street/Center Street intersection in the City of Berkeley (Assessor's Parcel Number 57-2022-5-1). The project site is 11,326 square feet in size. It is bounded by Milvia Street to the east, Center Street to the south, a six-story building (City of Berkeley municipal offices) to the west, and a parking lot with a three-story commercial building to the north. The project site is zoned C-DMU Buffer (Downtown Mixed Use), as defined by the City's Zoning Ordinance. The building was previously occupied by the City of Berkeley as municipal office space and is now vacant. **Figure 1** shows the project location.

## 1.2 Project Description

The Peralta Community College District (District) proposes to demolish the existing building at 2118 Milvia Street and construct a new six-story building. The new building would serve as an expansion of the main Berkeley City College (BCC) building located at 2050 Center Street, approximately 200 feet east of the project site. BCC currently occupies approximately 165,000 gross square feet of space in 2050 Center Street and the 2000 Center Street annex. When the proposed project is constructed, BCC would relocate part of its facilities to the project site and the 2000 Center Street annex would no longer be needed.

The proposed building would be approximately 60,000 gross square feet including general education facilities (labs, art studios, classrooms), faculty and administrative offices, and student services. The proposed project would not include on-site vehicle parking. Bicycle parking is proposed on the building's first floor adjacent to the main entrance on Milvia Street. No modifications to existing street parking are proposed. Pedestrians would access the building from the main entrance on Milvia Street and two additional side doors connected to two stairwells each on Milvia Street and Center Street. The proposed project would also include a loading dock on Center Street accessed by a roll up door.

## Figure 1 Project Site Location


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# 2.0 Setting

This section describes the existing transportation conditions in the vicinity of the project site including roadways, local and regional transit service, bicycle and pedestrian facilities, and parking conditions.

## 2.1 Roadway Network

### 2.1.1 Regional Access

The project site is located approximately 1.8 miles east of Interstate 580 (I-580) and 2.4 miles north of State Route 24 (SR-24). These freeway facilities are described below.

- ***Interstate 580 (I-580)*** is a major freeway that runs in a general east-west direction between US 101 in San Rafael and Interstate 5 in Tracy. Near the project site, I-580 runs north-south and has five lanes in each direction. Access to I-580 to/from the project site is provided via University Avenue on- and off-ramps.
- ***State Route 24 (SR-24)*** is a 15-mile-long east-west freeway that runs between I-580 in Oakland and I-680 in Walnut Creek. Near the project site, SR-24 has four lanes in each direction. The project site can be accessed via the Telegraph Avenue on- and off-ramps in the eastbound direction or the Martin Luther King Jr. Way on- and off-ramps in the westbound direction.

### 2.1.2 Local Access

Local access is provided by arterial and local roadways in the vicinity of project site. The functional designation of local roadways was obtained from the *City of Berkeley General Plan (General Plan)*.[1] These roadways are described below.

- **Milvia Street** is a north-south roadway that runs between Hopkins Street and Shattuck Avenue. Near the project site, this roadway has one travel lane in each direction and parallel parking on both sides. Milvia Street is designated as a Class III bike route between Hopkins Street and Allston Way. The *General Plan* identifies Milvia Street as a collector street and an emergency access and evacuation route (between University Avenue and Channing Way).
- **Center Street** is an east-west roadway that runs between Martin Luther King Jr. Way and Oxford Street. Near the project site, Center Street has one travel lane in each direction, 45-degree angled parking between Martin Luther King Jr. Way and Milvia Street, and parallel parking on both sides between Milvia and Oxford streets. There are Class II bike lanes between Milvia and Oxford streets. The *General Plan* identifies Center Street as a local street and an

[1] City of Berkeley General Plan, 2003

emergency access and evacuation route (between Martin Luther King Jr. Way and Oxford Street).

- **University Avenue** is an east-west roadway that runs between Oxford Street and the Berkeley Pier. Near the project site, University Avenue has two travel lanes in each direction and parallel parking on both sides. The *General Plan* identifies University Avenue as a major street and an emergency access and evacuation route.
- **Martin Luther King Jr. Way** is a north-south roadway that runs between Yolo Avenue and Adeline Street. Near the project site, Martin Luther King Jr. Way has two travel lanes in each direction and parallel parking on both sides. The *General Plan* identifies Martin Luther King Jr. Way as a major street and an emergency access and evacuation route.

## 2.2 Transit Network

The study area for transit generally covers a quarter-mile radius from the project site, which is served by Alameda-Contra Costa Transit District (AC Transit) buses and Bay Area Rapid Transit (BART) rail service.

### 2.2.1 Alameda-Contra Costa Transit (AC Transit)

AC Transit operates bus service within 13 cities and unincorporated areas in Alameda and Contra Costa counties, as well as connecting transbay service to and from San Francisco. **Table 1** shows AC Transit bus routes operating within a quarter-mile radius from the project site.

**Table 1: AC Transit Routes**

| Route | Service Area | Service Hours | Frequency | Nearest Stop (Distance from Project Site) |
|---|---|---|---|---|
| **18** | Albany, Berkeley, and Oakland | 6:21 AM to 12:27 AM | 20 min | Shattuck Avenue/ Allston Way (800 feet) |
| **51B** | Berkeley and Oakland | 5:21 AM to 12:09 AM | 10 min | Shattuck Avenue/ Center Street (1,000 feet) |
| **52** | Albany and Berkeley | 8:20 AM to 8:01 PM | 20 min | Shattuck Avenue/ Center Street (1,000 feet) |
| **65** | Berkeley | 7:30 AM to 7:22 PM | 60 min | Shattuck Avenue/ Center Street (1,000 feet) |
| **67** | Berkeley | 8:12 AM to 6:56 PM | 60 min | Shattuck Avenue/ Center Street (1,000 feet) |
| **79** | El Cerrito, Kensington, Berkeley, and Oakland | 6:04 AM to 8:33 PM | 30 min | Shattuck Avenue/ Center Street (1,000 feet) |

| | | | | |
|---|---|---|---|---|
| **88** | Berkeley and Oakland | 5:48 AM to 10:11 PM | 20 min | Center Street and Shattuck Avenue (600 feet) |
| **800** | Albany, Berkeley, Oakland, and San Francisco | 11:50 PM to 6:57 AM | 30 min | Shattuck Avenue/ Allston Way (800 feet) |
| **F** | Berkeley, Emeryville, and San Francisco | 6:46 AM to 1:16 AM | 30 min | Shattuck Avenue/ Allston Way (800 feet) |

Source: AC Transit, 2021; CHS Consulting Group, 2021.

### 2.2.2 Bay Area Rapid Transit (BART)

BART provides regional commuter rail service between the East Bay (from Pittsburg/Bay Point, Richmond, Dublin/Pleasanton, and Berryessa), San Mateo County (from San Francisco International Airport and Millbrae), and San Francisco, with operating hours between 4:00 AM and midnight on weekdays, and 7:30 AM to 1:00 AM on weekends. The Downtown Berkeley BART Station is located approximately 800 feet east of the project site. It is served by two routes (i.e., Richmond-Millbrae and Richmond-Berryessa) which operate with approximately 30-minute frequency during the peak hour.[2]

## 2.3 Bicycle Conditions

On-street bicycle facilities include Class I bikeways (bike paths with exclusive right-of-way for use by bicyclists or pedestrians); Class II bike lanes (bike lanes striped within the paved areas of roadways and established for the preferential use of bicycles); Class III bikeways (signed bike routes that allow bicycles to share travel lanes with vehicles); and Class IV cycle tracks (facilities for the exclusive use of bicycles that include physical separation from motor vehicle traffic). The following bicycle facilities are in the vicinity of the project site:

- **Class II Bike Lanes**
  - Milvia Street, between Allston Way and Haste Street
  - Center Street, between Milvia and Oxford streets
  - Oxford Street, between Hearst Avenue and Channing Way
- **Class III Bike Routes**
  - Milvia Street, between Hopkins Street and Allston Way

The *City of Berkeley Bicycle Plan (Bicycle Plan)* recommends developing the following additional bicycle facilities near the project site[3]:

[2] BART timetables as of September 2020.

[3] City of Berkeley Bicycle Plan, 2017.

- **Class III Bicycle Boulevard Network**
  - Milvia Street, between Hopkins and Russell streets
  - Addison Street, between Bolivar Drive and Oxford Street
- **Class IV Cycletrack**
  - University Avenue, between 4th and Oxford streets
  - Bancroft Way, between Milvia Street and Piedmont Avenue
  - Oxford Street, between Virginia and Bancroft streets
  - Shattuck Avenue, between Rose and Woolsey streets

## 2.4 Pedestrian Conditions

Existing sidewalks on Center and Milvia streets fronting the project site are generally eight feet wide with a six-foot effective width. The signalized Center Street/Milvia Street intersection has high-visibility crosswalks with pedestrian push buttons and signal heads at all four legs, as well as ADA-accessible curb ramps at all four corners.

The proposed project is located within the Downtown Mixed-Use zone established in the *City of Berkeley Pedestrian Master Plan* (*Pedestrian Plan*).[4] Near the project site, the *Pedestrian Plan* identifies University Avenue, Martin Luther King Jr. Way, Shattuck Avenue, and Oxford Street as high-injury streets where Berkeley's most severe pedestrian collisions occur. The *Pedestrian Plan* proposes upgrading and adding enhanced sidewalks on the following street segments near the project site:

- University Avenue, between San Pablo Avenue and Oxford Street
- Shattuck Avenue, between Adeline Street and the Berkeley city limits
- Martin Luther King Jr. Way, between Dwight Way and Adeline Street

## 2.5 Parking Conditions

There are several private parking facilities located nearby, mostly serving employees and customers of local businesses. The nearest off-street parking facility is the city-owned Center Street Parking Garage located approximately 250-feet east of the project site, which provides a combination of reserved parking at monthly, daily, and hourly rates. On-street parking in the vicinity of the project site consists of time-limited metered spaces located along both sides of most streets.

[4] City of Berkeley Pedestrian Master Plan, 2020.

# 3.0 Travel Demand

This section presents the methodology and assumptions used to estimate the travel demand for the proposed project.

## 3.1 Methodology

Berkeley City College's student population is expected to continue growing at a similar rate to the increases experienced over the past few years and these increases are not driven by this project. As a result, under the Existing plus Project condition, the existing BCC population at 2000/2050 Center Street would simply be distributed between the project site and 2050 Center Street without any new trip generation. For the purposes of transportation analysis, the proposed project's travel demand was estimated for the Existing condition (Year 2020) and Future Cumulative condition (Year 2040), using the anticipated growth rate obtained from the District. Year 2040 was chosen because it is the timeline included in the Alameda County Transportation Commission's countywide travel demand model. The process for projecting the proposed project's travel demand is described in the following steps:

- **Step 1 Population Estimates** – Existing BCC population was estimated based on student and faculty data. Future BCC population was estimated by applying an annual growth rate of 2.4 percent to the existing population.
- **Step 2 Trip Generation** – The estimated existing and future BCC populations from Step 1 were converted to daily, AM, and PM peak hour person trips based on comparable person-to-trip rates obtained from similar college/university projects in the San Francisco Bay Area.
- **Step 3 Mode Split** – The estimated existing and future BCC person trips were assigned to various transportation modes based on the BCC student and faculty transportation survey data.

Detailed trip generation analysis spreadsheets and assumptions are provided in **Appendix A**.

## 3.2 Population Estimates

CHS's estimates of BCC's current population are based on the existing student enrollment data provided by the District and a faculty directory obtained from the District's website.[5], [6] In addition, CHS estimated the existing number of BCC staff using the student-to-staff ratio documented in the Transportation Study prepared for the University of San Francisco's Institutional Master Plan.[7] To forecast BCC's 2040 population, CHS applied the annual student enrollment growth rate of 2.4 percent

[5] Peralta Community College District Enrollment Report, September 29, 2020

[6] https://www.berkeleycitycollege.edu/wp/administration/faculty-staff-directory/, accessed January 2021.

[7] University of San Francisco Institutional Master Plan Transportation Study, March 2012.

observed from 2016 to 2021 and assumed that the number of faculty and staff will increase in proportion to enrollment growth over the same period.

**Table 2** includes the existing and future BCC population estimates. It shows that there are a total of 1,820 persons as of the fall semester in 2020, including 1,491 full-time equivalent students, 128 faculty, and 201 staff. Under the Existing plus Project condition, total BCC population would be the same as the Existing condition because there would be no growth in student enrollment in the same year. Under the Future Cumulative condition, BCC's population is expected to increase to a total 2,925 persons by 2040. This equates to a net increase in 1,105 persons, including 905 full-time equivalent students, 78 faculty, and 122 staff.

### Table 2: Existing (2020) and Future (2040) BCC Population Estimates

| Scenario Year | Students | Faculty | Staff | Total |
|---|---|---|---|---|
| **Existing (Year 2020)** | 1,491 | 128 | 201 | 1,820 |
| **Existing plus Project (Year 2020)** | 1,491 | 128 | 201 | 1,820 |
| **Future Cumulative (Year 2040)** | 2,396 | 206 | 323 | 2,925 |
| **Annual Growth Rate** | 2.4% | 2.4% | 2.4% | 2.4% |
| **Net Change** | 905 | 78 | 122 | 1,105 |

Source: Berkeley City College, 2021; CHS Consulting Group, 2021.

## 3.3 Trip Generation

To estimate the number of "trips" generated by the BCC population, CHS reviewed industry standard trip generation rates as well as trip generation rates used for similar college/university projects in the San Francisco Bay Area. Although the Institute of Transportation Engineers (ITE) Trip Generation Manual is widely used as an industry standard for trip generation analysis, its rates are based on a national average that does not accurately represent the trip generation characteristics of an urban college such as BCC. CHS also reviewed the trip generation rates used for urban colleges in the Bay Area including the Academy of Art University (AAU) Transportation Study and University of San Francisco (USF) Institutional Master Plan Transportation Study. After analyzing the geographic settings and operational characteristics of AAU and USF, it was determined that the USF trip rates were the most applicable to BCC.[8] These rates were derived from direct reporting from students on their arrival and departure times from campus.[9] **Table 3** shows daily person trip rates for students, faculty, and staff and the proportion of daily trips occurring during the AM and PM peak hours.

[8] Academy of Art University has a dispersed campus that requires students to travel between various parts of San Francisco to attend different classes. USF has classes located in a main consolidated campus.

[9] University of San Francisco Institutional Master Plan Transportation Study, March 2012; Faculty, Staff, and Student Travel Surveys (including questions on travel mode to campus, arrival and departure times, days per week traveling to campus) were conducted in April 2011.

## Table 3: Project Trip Generation Rates

| | Daily Trip Rate | AM Peak Hour | | PM Peak Hour | |
|---|---|---|---|---|---|
| | | IB % of Daily | OB % of Daily | IB % of Daily | OB % of Daily |
| Student | 1.6 /person | 21% | 1% | 4% | 16% |
| Faculty | 1.6 /person | 20% | 0% | 2% | 16% |
| Staff | 2.0 /person | 53% | 0% | 0% | 55% |

Source: University of San Francisco Institutional Master Plan Transportation Study, November 2019.
Notes: IB = Inbound, OB = Outbound

Person trips were estimated based on the total number of existing and future BCC students, faculty, and staff (see **Table 2**) and the average daily trip rates for each population type (see **Table 3**). **Table 4** shows the existing (Year 2020) and future (Year 2040) person trips generated by BCC on a daily, AM, and PM peak hour basis. It shows that BCC currently generates approximately 2,993 daily trips and 779 AM and 735 PM peak hour trips. Under the Year 2040 Future Cumulative condition, BCC-generated trips would increase to 4,810 daily trips, and 1,252 AM and 1,182 PM peak hour trips.

## Table 4: Existing (2020) and Future (2040) BCC Trip Generation

| | Population | Daily Trips | AM Peak Hour Trips | | | PM Peak Hour Trips | | |
|---|---|---|---|---|---|---|---|---|
| | | | Inbound | Outbound | Total | Inbound | Outbound | Total |
| **Existing/ Existing plus Project (Year 2020)** | | | | | | | | |
| Student | 1,491 | 2,386 | 501 | 24 | 525 | 95 | 382 | 477 |
| Faculty | 128 | 205 | 41 | 0 | 41 | 4 | 33 | 37 |
| Staff | 201 | 402 | 213 | 0 | 213 | 0 | 221 | 221 |
| *Total* | *1,820* | *2,993* | *755* | *24* | *779* | *99* | *636* | *735* |
| **Future Cumulative (Year 2040)** | | | | | | | | |
| Student | 2,396 | 3,834 | 805 | 38 | 843 | 153 | 613 | 766 |
| Faculty | 206 | 329 | 66 | 0 | 66 | 7 | 53 | 60 |
| Staff | 323 | 647 | 343 | 0 | 343 | 0 | 356 | 356 |
| *Total* | *2,925* | *4,810* | *1,214* | *38* | *1,252* | *160* | *1,022* | *1,182* |
| **Net Change from Year 2020 to Year 2040** | | | | | | | | |
| **Total** | **1,105** | **1,817** | **459** | **14** | **473** | **61** | **386** | **447** |

Source: CHS Consulting Group, 2021.
Notes: The numbers presented in the table herein may marginally differ from calculations provided in the technical appendix due to rounding.

Existing BCC operations are located at 2050 Center Street and 2000 Center Street (leased annex). When the proposed project is constructed, BCC plans to move many of these functions to the project site, making the 2000 Center Street annex obsolete. Therefore, the share of trips generated to and from the project site and at 2050 Center Street were estimated based on the gross square footage for each building (i.e., 165,000 square feet at 2050 Center Street and 60,000 square feet at 2118 Milvia Street).

**Table 5** shows the number of trips generated to and from the project site and 2050 Center Street. Under the Existing plus Project condition, the total BCC-generated trips would remain the same as the Existing condition (i.e., 2,993 daily and 779 AM and 736 PM peak hour trips) but would spread between the project site and 2050 Center Street. Under the Year 2040 Future Cumulative condition, the project site would generate approximately 1,282 new daily trips and 334 AM and 315 PM peak hour trips while trips to 2050 Center Street would also have increased by approximately 534 daily trips and 139 AM and 130 PM peak hour trips.

### Table 5: Existing (2020) and Future (2040) BCC Trip Generation by Location

| | Daily Trips | AM Peak Hour Trips | | | PM Peak Hour Trips | | |
|---|---|---|---|---|---|---|---|
| | | Inbound | Outbound | Total | Inbound | Outbound | Total |
| **Existing (Year 2020)** | | | | | | | |
| 2000/2050 Center Street | 2,993 | 755 | 24 | 779 | 100 | 636 | 736 |
| **Existing plus Project (Year 2020)** | | | | | | | |
| 2050 Center Street | 2,195 | 554 | 18 | 572 | 73 | 466 | 539 |
| 2118 Milvia Street | 798 | 201 | 6 | 207 | 27 | 170 | 197 |
| *Total* | *2,993* | *755* | *24* | *779* | *100* | *636* | *736* |
| **Future Cumulative (Year 2040)** | | | | | | | |
| 2050 Center Street | 3,527 | 890 | 28 | 918 | 117 | 749 | 866 |
| 2118 Milvia Street | 1,282 | 324 | 10 | 334 | 43 | 272 | 315 |
| *Total* | *4,809* | *1,214* | *38* | *1,252* | *160* | *1,021* | *1,181* |
| **Net Change from Year 2020 to Year 2040** | | | | | | | |
| 2050 Center Street | 534 | 135 | 4 | 139 | 17 | 113 | 130 |
| 2118 Milvia Street | 1,282 | 324 | 10 | 334 | 43 | 272 | 315 |
| *Total* | *1,816* | *459* | *14* | *473* | *60* | *385* | *445* |

Source: CHS Consulting Group, 2021.

Notes: The numbers presented in the table herein may marginally differ from calculations provided in the technical appendix due to rounding.

## 3.4 Project Mode Split

The average mode splits for current students, faculty, and staff were provided by the District. **Table 6** shows the existing mode splits and the estimated BCC trip generation by mode. It shows that BCC would generate approximately 1,169 additional automobile trips (drive and park or pick-up/drop-off) on a daily basis, and 189 AM and 179 PM peak hour trips by Year 2040. It would also add 1,198 daily transit riders and 194 AM and 183 PM peak hour transit riders by Year 2040.

### Table 6: Existing (2020) and Future (2040) BCC Trip Generation by Mode

| Mode of Travel | % | Year 2020 | | | Year 2040 | | | Net Change | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Daily | AM | PM | Daily | AM | PM | Daily | AM | PM |
| Drive and Park | 36% | 1,733 | 280 | 265 | 2,784 | 451 | 425 | 1,052 | 170 | 161 |
| Pick-up/Drop-off | 4% | 193 | 31 | 29 | 309 | 50 | 47 | 117 | 19 | 18 |
| Transit | 41% | 1,973 | 319 | 301 | 3,171 | 513 | 484 | 1,198 | 194 | 183 |
| Bike or Walk | 15% | 722 | 117 | 110 | 1,160 | 188 | 177 | 438 | 71 | 67 |
| Other | 4% | 193 | 31 | 29 | 309 | 50 | 47 | 117 | 19 | 18 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **100%** | 4,814 | 778 | 734 | 7,734 | 1,252 | 1,180 | 2,922 | 473 | 447 |
| ***Vehicle Trips*** | | *1,926* | *311* | *294* | *3,093* | *501* | *472* | *1,169* | *189* | *179* |

Source: CHS Consulting Group, 2021.

Notes: IB = Inbound, OB = Outbound; The numbers presented in the table herein may marginally differ from calculations provided in the technical appendix due to rounding.

# 4.0 Transportation Evaluation

This section presents the assessment of transportation conditions impacted by the proposed project, in terms of vehicle miles traveled (VMT); transit; pedestrian and bicycle access; and emergency access. Transportation-related impacts are analyzed for Existing plus Project (Year 2020) and Future Cumulative (Year 2040) conditions.

## 4.1 Existing plus Project Condition (Year 2020)

### 4.1.1 VMT Impacts

Effective July 1, 2020, Senate Bill (SB) 743 requires all CEQA lead agencies to establish VMT as the metric replacing LOS for evaluating CEQA traffic and transportation impacts. The District has not established VMT per capita thresholds for its uses as there is no available data, and any assumptions would be speculative. The Governor's Office of Planning and Research (OPR) guidance establishes that a project that is located in a traffic analysis zone (TAZ) generating VMT per capita at least 15 percent below regional averages would have a less than significant impact.[10] It also recommends that lead agencies screen out VMT impacts for projects located within one-half mile of an existing major transit stop or an existing stop along a high-quality transit corridor.[11]

For the purpose of this study, the Alameda County Transportation Commission (Alameda CTC) Countywide Travel Demand Model was used to determine the average VMT per capita consistent with SB 743 guidance from the OPR. Since the model does not provide VMT for educational land uses, the analysis utilized its office designation as a proxy land use to determine an average VMT per employee.[12] As shown in **Table 7**, the average daily VMT per employee in TAZ 59 where the project site is located is 9.5, which is below the 15 percent minus the citywide average (19.5) or countywide average (24.2) thresholds. Because the proposed project would generate vehicle trips in an area with relatively low VMT, it would not have an adverse effect related to VMT. Furthermore, the proposed project would be located within one-half mile of a major transit stop (see *Section 2.2*), which would reduce the proposed project's vehicle trips and associated VMT.

**Table 7: Year 2020 VMT per Employee**

| Region | Regional Average | Regional Average minus 15% | TAZ 59 |
|---|---|---|---|

[10] Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018.

[11] Major transit stop includes an existing rail transit station or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods (Pub. Resources Code, § 21064.3); A high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours (Public Resource Code, § 21155).

[12] The Alameda CTC travel demand model provides VMT thresholds for residential, office, and retail uses only.

| | | | |
|---|---|---|---|
| City of Berkeley | 22.9 | 19.5 | 9.5 |
| Alameda County | 28.5 | 24.2 | |

Source: Alameda CTC Countywide Travel Demand Model; CHS Consulting Group, 2021

As explained in *Section 3.0*, under the Existing plus Project Condition, the same number of trips currently generated at 2000/2050 Center Street would be distributed between the project site (2118 Milvia Street) and 2050 Center Street. Since the project site is located directly across the Center Street/Miliva Street intersection from 2050 Center Street and would not provide any new off-street or on-street parking supply, vehicle trips generated by either building would likely use the same parking or on-street loading facilities in the area. Therefore, any shift in vehicle trips from 2050 Center Street to the project site would not result in a substantial increase in VMT.

The project site is in a low-VMT zone and within a half mile from a major transit stop, and it would not generate net new trips under the Existing plus Project condition. Therefore, the proposed project would result in less-than-significant impacts related to VMT.

### 4.1.2 Other Impacts

The proposed project would not include on-site parking that would otherwise concentrate vehicle traffic to a specific driveway, and thus, would not increase potential conflicts with nearby vehicular circulation, transit operations, or bicycle access. There would be increased pedestrian trips between the project site and the existing BCC facilities at 2050 Center Street. These pedestrian trips would be adequately and safely accommodated by the existing pedestrian facilities at the Center Street/Milvia Street intersection, which has high visibility crosswalks and pedestrian signal heads on all four legs of the intersection. Furthermore, the proposed project does not feature any unusual design elements that could obstruct emergency vehicle access or otherwise pose a substantial safety hazard to vehicles, bicyclists, or pedestrians. Therefore, the proposed project would result in less-than-significant impacts related to transit, bicycle, pedestrian, and emergency access.

## 4.2 Future Cumulative Condition (Year 2040)

This section presents an assessment of the proposed project's contributions to transportation impacts under the Future Cumulative condition. This scenario is defined as future Year 2040 including added traffic from the anticipated growth in student enrollment and proportional increases in the number of BCC faculty and staff.

### 4.2.1 VMT

The Alameda CTC Countywide Travel Demand Model provides the average regional daily VMT per employee under the Future Cumulative conditions (2040) but does not provide estimates for specific TAZs. The average VMT in TAZ 59 is not anticipated to significantly increase from existing conditions

given its dense urban setting with close proximity to a major transit stop. As such, the existing VMT per employee for TAZ 59 are used for this analysis. As shown in **Table 8**, the average daily VMT of 9.5 per employee would be below the 15 percent minus the citywide average (20.7) or countywide average (24.7) thresholds under the Year 2040 Future Cumulative condition. Because the proposed project would generate vehicle trips in an area with relatively low VMT, it would not have an adverse effect related to VMT.

**Table 8: Year 2040 VMT per Employee**

| Region | Regional Average | Regional Average minus 15% | TAZ 59 |
|---|---|---|---|
| City of Berkeley | 24.4 | 20.7 | 9.5 |
| Alameda County | 29.1 | 24.7 | |

Source: Alameda CTC Countywide Travel Demand Model; CHS Consulting Group, 2021

Although the proposed project is expected to generate 1,169 net new daily vehicle trips when compared to existing conditions, the proposed project's existing per capita VMT is not anticipated to change since the proposed project would not provide any new off-street or on-street parking supply. The Project site is located within one-half mile of a major transit stop, and the proposed project would continue to generate vehicle trips in an area with relatively low VMT which would reduce the proposed project's vehicle trips and associated VMT. For these reasons, the proposed project would result in less-than-significant cumulative impacts related to VMT.

### 4.2.2 Transit

The proposed project is not directly adjacent to any existing or planned transit facilities on Center or Milvia streets and would not conflict with nearby transit routes that could result in hazardous conditions or transit delays. Although there would be a net increase of 189 AM and 179 PM peak hour vehicle trips, these trips would be dispersed throughout Downtown Berkeley, and thus would not conflict with existing or planned transit operations. The cumulative net increase of 194 AM and 183 PM peak hour transit riders constitute approximately six percent of the existing seating capacity on AC Transit bus routes and BART lines serving the project area (see *Section 2.2*).[13] This increase would likely be accommodated by the existing transit capacity, which typically includes seats and standees. For these reasons, the proposed project would have a less-than-significant cumulative impacts to transit.

[13] Assumes an average of 36 seats per bus and a total of 21 bus trips during a peak hour based on the existing service frequency of eight daytime bus routes (36 seats per bus*21 bus trips=756 seats). For BART service, it assumes an average of 56 seats per car, 10 car trains, and a total of four trips during a peak hour (56 seats per car*10 cars*4 trips=2,240 seats).

### 4.2.3 Bicycle and Pedestrian Access

The proposed project is located directly adjacent to a Class III bike route on Milvia Street and near Class II bike lanes on Center Street (east of Milvia Street). The proposed project would not include on-site parking that would otherwise concentrate vehicle traffic to a specific driveway, and thus, would not increase potential conflicts with nearby bicycle access. To encourage and accommodate alternative modes of travel, the proposed project would provide Class I bicycle parking on the building's first floor adjacent to the main entrance.[14] The high level of pedestrian traffic that would be generated between the existing BCC facilities at 2050 Center Street and the project site would be adequately and safely accommodated by existing pedestrian facilities at the Center Street/Milvia Street intersection. Furthermore, planned changes to the existing bicycle and pedestrian network would improve pedestrian conditions in the project area. For these reasons, the proposed project would result in less-than-significant cumulative impacts to bicycle and pedestrian access.

### 4.2.4 Emergency Access

The proposed project does not include any unusual design elements that could obstruct emergency vehicle access or otherwise pose a substantial safety hazard to vehicles, bicyclists, or pedestrians. Although there would be a net increase of 189 AM and 179 PM peak hour vehicle trips, these trips would be dispersed throughout Downtown Berkeley, and thus would not impede or hinder the movement of emergency vehicles in the project area. For these reasons, the proposed project would result in no cumulative impact to emergency access.

[14] Class I bicycle parking is defined as secure bicycle lockers, rooms, or cages where bicycles can be individually locked.

# Appendix A

## Project Trip Generation Calculations and Assumptions

**Berkeley City College Campus Expansion Project Transportation Study**
**Trip Generation Analysis**

**BCC Population**

| Analysis Year | Student | Faculty | Staff | Total |
|---|---|---|---|---|
| 2020 | 1,491 [a] | 128 [b] | 201 [c] | 1,820 |
| 2040 | 2,396 | 206 | 323 | 2,925 |
| Annual Growth Rate [d] | 2.4% | 2.4% | 2.4% | 2.4% |
| Net Change | 905 | 78 | 122 | 1,105 |

**Notes:**

[a] Source: Full time equivalent students (FTES) in 2020 Fall Semester, Peralta Community College District Enrollment Report, 9/29/2020.

[b] Source: BCC Faculty Directory, https://web.peralta.edu/directory/, accessed 1/6/2020.

[c] The same student-to-staff ratio in USF (7.4:1) is used to estimate the number of staff in BCC (BCC's existing student-to-faculty ratio is similar to USF).

[d] The annual growth rate from 2016-2021 (i.e., 2.4%) as was used per email from Aileen Mahoney (Rincon Consultants) on 12/29/2020.
It is assumed that the number of faculty and staff will increase in proportion to enrollment growth over the same period.

**BCC Population by Location**

| | Gross Floor | Use | | | BCC Population [a] | | | |
|---|---|---|---|---|---|---|---|---|
| BCC Site | Area (GSF) | Existing | Existing+PJ | Cumulative | Existing | Existing+PJ | Cumulative | Percent |
| 2050 Center Street | 165,000 | BCC | BCC | BCC | 1,820 | 1,335 | 2,145 | 73% |
| 2000 Center Street | | BCC | N/A | N/A | | - | - | 0% |
| 2118 Milvia Street | 60,000 | Vacant | BCC | BCC | - | 485 | 780 | 27% |
| Total | 225,000 | | | | 1,820 | 1,820 | 2,925 | 100% |

**Notes:**

GSF=Gross Square Feet

[a] Total estimated population under the Project condition is distributed between 2050 Center Street and 2118 Milvia Street in proportion of GFA at each site.

**Project Trip Generation**

| | Daily | | | AM Peak Hour | | | | PM Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Existing (Year 2020)** | Population | Person Trips | Trip Rate [a] | IB Trips | OB Trips | IB % of Daily | OB % of Daily | IB Trips | OB Trips | IB % of Daily | OB % of Daily |
| Student | 1,491 | 2,386 | 1.6 /person | 501 | 24 | 21% | 1% | 95 | 382 | 4% | 16% |
| Faculty | 128 | 205 | 1.6 /person | 41 | - | 20% | 0% | 4 | 33 | 2% | 16% |
| Staff | 201 | 402 | 2.0 /person | 213 | - | 53% | 0% | - | 221 | 0% | 55% |
| Total | 1,820 | 2,993 | | 755 | 24 | | | 100 | 636 | | |
| *2050 Center Street* | *1,820* | *2,993* | - | *755* | *24* | - | - | *100* | *636* | - | - |
| | Daily | | | AM Peak Hour | | | | PM Peak Hour | | | |
| **Existing plus Project (Year 2020)** | Population | Person Trips | Trip Rate | IB Trips | OB Trips | IB % of Daily | OB % of Daily | IB Trips | OB Trips | IB % of Daily | OB % of Daily |
| *2050 Center Street* | *1,335* | *2,195* | - | *554* | *17* | - | - | *73* | *466* | - | - |
| *2118 Milvia Street* | *485* | *798* | - | *201* | *6* | - | - | *27* | *170* | - | - |
| | Daily | | | AM Peak Hour | | | | PM Peak Hour | | | |
| **Future (Year 2040)** | Population | Person Trips | Trip Rate | IB Trips | OB Trips | IB % of Daily | OB % of Daily | IB Trips | OB Trips | IB % of Daily | OB % of Daily |
| Student | 2,396 | 3,834 | 1.6 /person | 805 | 38 | 21% | 1% | 153 | 613 | 4% | 16% |
| Faculty | 206 | 329 | 1.6 /person | 66 | - | 20% | 0% | 7 | 53 | 2% | 16% |
| Staff | 323 | 647 | 2.0 /person | 343 | - | 53% | 0% | - | 356 | 0% | 55% |
| Total | 2,925 | 4,809 | | 1,214 | 38 | | | 160 | 1,022 | | |
| *2050 Center Street* | *2,145* | *3,527* | - | *890* | *28* | - | - | *117* | *749* | - | - |
| *2118 Milvia Street* | *780* | *1,282* | - | *324* | *10* | - | - | *43* | *272* | - | - |
| | Daily | | | AM Peak Hour | | | | PM Peak Hour | | | |
| **Net Change from 2020 to 2040** | Population | Person Trips | Trip Rate | IB Trips | OB Trips | IB % of Daily | OB % of Daily | IB Trips | OB Trips | IB % of Daily | OB % of Daily |
| Student | 905 | 1,448 | 1.6 /person | 304 | 14 | 21% | 1% | 58 | 232 | 4% | 16% |
| Faculty | 78 | 124 | 1.6 /person | 25 | - | 20% | 0% | 2 | 20 | 2% | 16% |
| Staff | 122 | 244 | 2.0 /person | 129 | - | 53% | 0% | - | 134 | 0% | 55% |
| Total | 1,105 | 1,816 | | 458 | 14 | | | 60 | 386 | | |
| *2050 Center Street* | *325* | *534* | - | *135* | *4* | - | - | *18* | *113* | - | - |
| *2118 Milvia Street* | *780* | *1,282* | - | *324* | *10* | - | - | *43* | *272* | - | - |

**Notes:**

[a] Used the same trip generation rates developed for the University of San Francisco Institutional Master Plan Transportation Study.

**Berkeley City College Campus Expansion Project Transportation Study**
**Mode Split and VMT**

**Daily Trips**

| | Exisitng/ Existing plus Project (2020) | | | | Cumulative (2040) | | | | Net Change | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mode of Travel | Mode Split | Inbound PT | Outbound PT | Total PT | Mode Split | Inbound PT | Outbound PT | Total PT | Inbound PT | Outbound PT | Total PT |
| Drive and Park | 36% | 655 | 1,077 | 1,733 | 36% | 1,053 | 1,731 | 2,784 | 398 | 654 | 1,052 |
| Picked-up/Dropped-Off | 4% | 73 | 120 | 193 | 4% | 117 | 192 | 309 | 44 | 73 | 117 |
| Transit (BART/Bus) | 41% | 746 | 1,227 | 1,973 | 41% | 1,199 | 1,972 | 3,171 | 453 | 745 | 1,198 |
| Bike or Walk | 15% | 273 | 449 | 722 | 15% | 439 | 721 | 1,160 | 166 | 272 | 438 |
| Other | 4% | 73 | 120 | 193 | 4% | 117 | 192 | 309 | 44 | 73 | 117 |
| Total | 100% | 1,820 | 2,993 | 4,813 | 100% | 2,925 | 4,809 | 7,734 | 1,105 | 1,816 | 2,921 |
| *2050 Center Street* | | *1,335* | *2,195* | *3,530* | | *2,145* | *3,527* | *5,672* | *810* | *1,332* | *2,142* |
| *2118 Milvia Street* | | *485* | *798* | *1,283* | | *780* | *1,282* | *2,062* | *295* | *484* | *779* |
| | | | | | | | | | | | |
| Vehicle Trips [a] | 40% | 728 | 1,197 | 1,925 | 40% | 1,170 | 1,924 | 3,094 | 442 | 727 | 1,168 |
| Daily VMT [b] | | 11,649 | 19,154 | 30,804 | | 18,720 | 30,780 | 49,500 | 7,070 | 11,625 | 18,696 |

**Notes:**

[a] Include Drive and Park and Pick-up/Drop-off. For the purpose of transportation analysis, vehicle occupancy rate is assumed to be 1.

[b] Average travel distance for students and faculty = 16

**AM Peak Hour Trips**

| | Exisitng/ Existing plus Project (2020) | | | | Cumulative (2040) | | | | Net Change | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mode of Travel | Mode Split | Inbound PT | Outbound PT | Total PT | Mode Split | Inbound PT | Outbound PT | Total PT | Inbound PT | Outbound PT | Total PT |
| Drive and Park | 36% | 272 | 9 | 280 | 36% | 437 | 14 | 451 | 165 | 5 | 170 |
| Picked-up/Dropped-Off | 4% | 30 | 1 | 31 | 4% | 49 | 2 | 50 | 18 | 1 | 19 |
| Transit (BART/Bus) | 41% | 310 | 10 | 319 | 41% | 498 | 16 | 513 | 188 | 6 | 194 |
| Bike or Walk | 15% | 113 | 4 | 117 | 15% | 182 | 6 | 188 | 69 | 2 | 71 |
| Other | 4% | 30 | 1 | 31 | 4% | 49 | 2 | 50 | 18 | 1 | 19 |
| Total | 100% | 755 | 24 | 779 | 100% | 1,214 | 38 | 1,252 | 458 | 14 | 473 |
| *2050 Center Street* | | *554* | *17* | *571* | | *890* | *28* | *918* | *336* | *11* | *347* |
| *2118 Milvia Street* | | *201* | *6* | *208* | | *324* | *10* | *334* | *122* | *4* | *126* |
| | | | | | | | | | | | |
| Vehicle Trips | 40% | 302 | 10 | 312 | 40% | 485 | 15 | 501 | 183 | 6 | 189 |

**PM Peak Hour Trips**

| | Exisitng/ Existing plus Project (2020) | | | | Cumulative (2040) | | | | Net Change | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mode of Travel | Mode Split | Inbound PT | Outbound PT | Total PT | Mode Split | Inbound PT | Outbound PT | Total PT | Inbound PT | Outbound PT | Total PT |
| Drive and Park | 36% | 36 | 229 | 265 | 36% | 58 | 368 | 425 | 22 | 139 | 161 |
| Picked-up/Dropped-Off | 4% | 4 | 25 | 29 | 4% | 6 | 41 | 47 | 2 | 15 | 18 |
| Transit (BART/Bus) | 41% | 41 | 261 | 301 | 41% | 66 | 419 | 484 | 25 | 158 | 183 |
| Bike or Walk | 15% | 15 | 95 | 110 | 15% | 24 | 153 | 177 | 9 | 58 | 67 |
| Other | 4% | 4 | 25 | 29 | 4% | 6 | 41 | 47 | 2 | 15 | 18 |
| Total | 100% | 100 | 636 | 735 | 100% | 160 | 1,022 | 1,182 | 60 | 386 | 446 |
| *2050 Center Street* | | *73* | *466* | *539* | | *117* | *749* | *867* | *44* | *283* | *327* |
| *2118 Milvia Street* | | *27* | *170* | *196* | | *43* | *272* | *315* | *16* | *103* | *119* |
| | | | | | | | | | | | |
| Vehicle Trips | 40% | 40 | 254 | 294 | 40% | 64 | 409 | 473 | 24 | 154 | 179 |

**Berkeley City College Campus Expansion Project Transportation Study**
**Trip Generation Rate Comparables**

**University of San Francisco**

| | Daily Population and Trips (2012) | | | | AM Peak Hour Trips | | PM Peak Hour Trips | |
|---|---|---|---|---|---|---|---|---|
| | | | | | % of Daily Trips | | | |
| Population Type | Population | Percent | Person Trips | Trip Rate [1] | Inbound | Outbound | Inbound | Outbound |
| Students | 8,810 | 80% | 14,096 | 1.6 trips/person | 21.0% | 1.0% | 4.0% | 16.0% |
| Faculty | 1,001 | 9% | 1,602 | 1.6 trips/person | 20.0% | 0.0% | 2.0% | 16.0% |
| Staff | 1,189 | 11% | 2,378 | 2.0 trips/person | 53.0% | 0.0% | 0.0% | 55.0% |
| Total | 11,000 | 100% | 18,076 | 1.6 trips/person | | | | |

***Source: University of San Francisco IMP Transportation Impact Study, Fehr & Peers, 1/2012.***

[1] Daily, AM and PM trip generation rates were derived based on an online survey of USF students, faculty and staff;
USF students and faculty reported coming to campus four days per week, and staff reported coming to work five days per week.

**Academy of Art University**

| Trip Rates for Academic/Admin Building | | | |
|---|---|---|---|
| | Trip Rate | Inbound | Outbound |
| Daily | 53.65 trips/ksf | 50% | 50% |
| AM Peak Hour | 4.56 trips/ksf | N/A | N/A |
| PM Peak Hour | 4.56 trips/ksf | 39% | 61% |

***Source: AAU Transportation Impact Study, CHS, 5/2014; AAU Existing Sites Transportation Memo, CHS, 2016.***

| | Daily Population (2014) | | Land Use (2014) | |
|---|---|---|---|---|
| Population Type | Population | Percent | Use | GSF |
| Students | 17,711 | 89% | Institutional | 890,104 |
| Faculty | 2,291 | 11% | Residential | 272,769 |
| Staff | | | Other | 50,700 |
| Total | 20,002 | 100% | Total | 1,213,573 |

**Comparison**

**Population Composition**

| | USF | AAU | *BCC* |
|---|---|---|---|
| Students | 80% | 89% | *82%* |
| Faculty | 9% | 11% | *7%* |
| Staff | 11% | | *11%* |
| Total | 100% | 100% | *100%* |

**Trip Rates (per Student)**

| | USF | AAU | ITE |
|---|---|---|---|
| Daily | **2.05** | 2.68 | 1.56 |
| AM | **0.53** | 0.23 | 0.15 |
| PM | **0.50** | 0.23 | 0.15 |

***BCC Trip Estimation***

| *USF Rates* | *AAU Rates* | *ITE Rates* |
|---|---|---|
| 3,059 | 3,989 | 2,326 |
| 792 | 339 | 224 |
| 747 | 339 | 224 |

**Trip Rates (per 1,000 gsf)**

| | USF | AAU | ITE |
|---|---|---|---|
| Daily | N/A | 53.65 | **26.04** |
| AM | N/A | 4.56 | **1.09** |
| PM | N/A | 4.56 | **1.17** |

| *USF Rates* | *AAU Rates* | *ITE Rates* |
|---|---|---|
| N/A | 12,071 | 5,859 |
| N/A | 245 | 245 |
| N/A | 263 | 263 |

***CHS decided to use the USF rates for the following reasons:***

1. Both USF and BCC are located in an urban setting with insitutional buidlings/classrooms clustered in close proximity to each other.
2. AAU rates are substantially higher because students travel throughout SF to attend classes in different parts of the City, as opposed to moving around within a campus or building.
4. ITE rates tend to be lower because they represent a national average including those located in a suburban location.
5. USF rates result in a conservation estimation of AM and PM peak hour trips.