

Work Plan A.24 BART's Transit Oriented Development (TOD) Survey & Modeling

Scope:

This scope references several of BART's modeling tools and policies as listed below. This effort will include coordination with a BART advisory committee for recommendations on the names and branding of each item moving forward.

1. **BART Ridership Model (BRM):** Forecasts of BART ridership and mode of station access. *Not addressed in this scope.*
2. **TOD Scenario Model:** Used to evaluate the effects of proposed TOD projects on BART ridership and revenue. Also known as BART TOD Financial Model, BART TOD Access Model, or the Willson methodology. *To be updated in task 6 of this scope.*
3. **Mode Shift Planning Tool:** Used to help determine the maximum level of BART rider parking and future station access needs. Also known as Choice Parker or replacement parking analysis. *To be updated in task 8 of this scope.*
4. **BART Station Access Policy and Performance Measures:** This policy helps guide station access practices and investments, with defined targets to help evaluate BART's progress in implementing the policy. *To be updated in task 5 of this scope.*

To keep BART staff informed over the course of the Project, Fehr & Peers will convene biweekly project check-in meetings and prepare attendance records, agendas, and meeting minutes. Meeting agendas will be aligned with the tasks in progress at the time of the meeting.

This task order will be performed on a time and materials basis, and Fehr & Peers will submit invoices monthly for services rendered.

▲ Task 1 – TOD Travel Behavior Survey

UC Berkeley is working with BART to develop and administer a TOD Travel Behavior Survey to capture and compare transportation choices among TOD tenants and users (and other relevant information including demographics) versus non-TOD tenants. UC Berkeley plans to prepare a report that summarizes the survey goals, methodology, outreach process, and overall findings from the surveys.

Fehr & Peers will support BART and UC Berkeley by providing input on the survey design and administration approach. Fehr & Peers will host up to three events and four visits to drop-off survey flyers at residential or non-residential locations at BART's direction. Additionally, Fehr &

Peers will provide feedback on the summary report with a focus on visual communication of the results to resonate with a wider audience.

Deliverables:

- Up to ten 60-minute meetings with UC Berkeley and BART staff including meeting agendas and meeting minutes
- Up to three events at residential or non-residential locations
- Up to four visits (approximately 14 hours in total) to drop-off survey flyers at residential or non-residential locations
- Up to two rounds of review for the UC Berkeley summary report
- Attendance records, agendas, and meeting minutes from biweekly project check-in meetings where this task was on the agenda

Task 2 – TOD Advisory Committee

Fehr & Peers will host two (preferably in-person) discussions with a TOD advisory committee to review the TOD travel behavior survey goals, methodology, outreach, and overall findings. Suggested members for the committee include experts from UC Berkeley, BART, MTC, Caltrans, and local agencies, commercial TOD managers, and other stakeholders as identified by Fehr & Peers with input from BART staff. The first meeting will serve as a project kick-off; the second will occur roughly mid-way through the project.

To facilitate keeping BART staff informed over the course of the Project as to the status of our efforts, Fehr & Peers will convene biweekly project check-in meetings with BART staff.

Deliverables:

- Two 90-minute discussions with advisory committee including agendas, meeting minutes, and recordings
- Attendance records, agendas, and meeting minutes from biweekly project check-in meetings where this task was on the agenda

Task 3 – TOD Scenario Model Update Literature Review

Fehr & Peers conducted a preliminary review of available national and regional literature on post-pandemic travel behavior trends in early 2025. Since that time, BART specific data such as the BART Station Profile Survey has become available. This task will include a detailed review of the BART specific data and a brief review of any additional national and regional literature that has become available since the initial review. Fehr & Peers will document the applicability of the incorporation of the following data sources into the TOD Scenario Model in the form of a literature review deliverable.

Updated Station Profile Survey Data 2024/2025 and Available Customer Satisfaction Survey

In preparation for a subsequent model update task, Fehr & Peers will review the latest BART Station Profile Survey data set (2024/2025) and available BART Customer Satisfaction Survey data. High level takeaways pertaining to TOD travel behavior will be summarized. In addition, any takeaways that could support future updates to other tools in BART's modeling suite (such as the BART Ridership Model) will be identified. Metrics such as station access mode share, percentage of drive and park riders using BART parking lots, home to station distance for drive and park riders, and ridership by socioeconomic characteristics (e.g. by age) that were previously generated as part of the 2016 Access Policy will be replicated using the updated survey data. As part of the review of the datasets, Fehr & Peers will provide recommendations on how to standardize future questions for the Station Profile Survey and the Customer Satisfaction Survey such that summaries and comparisons of future versions of the surveys can be streamlined.

National Research

Fehr & Peers conducted a preliminary review of available national and regional literature on post-pandemic travel behavior trends in early 2025. Fehr & Peers will conduct a brief review of any additional national literature that has become available since the initial review.

Local Research

Fehr & Peers will coordinate with UC Berkeley and meet with their researchers to discuss their TOD Travel Behavior Survey literature review, findings, analysis methodologies, and how they could be incorporated into the updated TOD Scenario Model.

Fehr & Peers will coordinate with MTC to discuss their latest household and on-board transit surveys to determine if there are relevant findings that could be incorporated into the updated TOD Scenario Model.

▲ *BART-Specific Research*

Fehr & Peers conducted a BART stakeholder meeting in early 2025 to review and document issues with the current TOD Scenario model, compatibility with other BART tools, and requests for future functionality. Fehr & Peers will reach out to the stakeholders to detail how the comments will be incorporated and follow-up for any additional comments.

Fehr & Peers will review available travel behavior documentation of current built-out BART TODs, including available TOD resident surveys, TDM programs, and ridership patterns pre- and post-pandemic.

Deliverables:

- Draft Literature Review Memo with two rounds of review
- Final Literature Review Memo

- Attendance records, agendas, and meeting minutes from biweekly project check-in meetings where this task was on the agenda

Task 4 – TOD Scenario Model Update Data Preparation

Fehr & Peers will clean and prepare the data identified in Task 3 for purposes of incorporating as inputs into the updated model. Based on this process, strengths and weaknesses of the available data will be documented to inform subsequent steps.

Deliverables:

- Draft Data Preparation Memo with two rounds of review
- Final Data Preparation Memo
- Attendance records, agendas, and meeting minutes from biweekly project check-in meetings where this task was on the agenda

Task 5 – Access Policy and Performance Targets Update

BART currently has a Station Access Policy document,¹ last updated in 2016 and based on 2015 data, which contains a vision, goals, strategies, hierarchy, and investment framework. There exists an accompanying document containing a Station Typology map and definitions,² and a second accompanying document containing a Performance Targets table.³

In this task, Fehr & Peers will refresh these documents. The purpose of the refresh is to help ensure consistency between evolving access patterns, and planning for TOD-related access investments including walking, biking, connecting transit infrastructure, and rider parking. This update is not envisioned to be sweeping; rather it will be a refresh to incorporate the latest available input data and ensure the policy is brought into consistency with other BART policies that were adopted since the last Access Policy update in 2016.

Fehr & Peers will prepare a Background Report that identifies the current policy context, discusses recent travel behavior trends in BART's market area, summarizes best practices related to curb management for emerging technologies such as autonomous vehicles, and reviews station access best practices from up to five peer transit agencies.

Fehr & Peers will update the main Access Policy document's vision, goals, and strategies to bring them into consistency with updates to BART policies adopted since 2016 (such as BART's updated Parking Policy and TDM Guidelines), and incorporate relevant findings from the Background Report, as requested by BART staff.

Fehr & Peers will refresh the Station Typology definitions, station designations, and station typology map based on the latest station access survey data, updated state and regional policies (such as Assembly Bill 2923, Senate Bill 79, and MTC's TOC policy), and existing local land use context. Updated station designations will be shared with local jurisdictions at the local jurisdiction meetings and local jurisdictions will have the opportunity to provide one round of comment at and immediately following that meeting. Additional engagement with local jurisdictions or other stakeholders to further refine the station typology definitions are not included within the scope of this update.

Fehr & Peers will update the Performance Targets table using newly collected 2024/2025 Station Profile Survey, 2025 TOD survey data, and incorporating related updates since 2016 to BART policies and guidelines, such as BART's updated Parking Policy and TDM Guidelines. Fehr & Peers will devise and deploy an efficiently reproducible process of summarizing survey data to update the Performance Targets, that is intended to be used to inform future updates of the document.

Fehr & Peers will host up to three (preferably in-person) discussions with an advisory committee. The first purpose of the first meeting will be to gather initial input on key priorities for the Station Access Policy update to be done within this task. Subsequent meetings will focus on reviewing the Background Report and gathering feedback on proposed changes to BART's policies. Suggested members for the committee include experts from UC Berkeley, BART, MTC, local agencies, and other stakeholders as identified by BART staff.

Fehr & Peers will provide administrative support for up to eight (8) ninety-minute (90) meetings with local jurisdictions to present information from the Background Report and review existing and draft updates to the Station Access Policy including station typologies. Fehr & Peers suggests that the meetings include coverage for each of the counties that BART serves, with multiple meetings for counties that contain more jurisdictions. BART will ultimately decide which stakeholders or jurisdictions to include in each meeting. Fehr & Peers will provide support for scheduling and notetaking, and BART staff will be responsible for developing meeting materials and facilitating meetings.

Deliverables:

- Draft Station Access Policy Background Report with two rounds of review
- Final Station Access Policy Background Report
- Up to three 90-minute discussions with advisory committee including agendas, meeting minutes, and recordings
- Coordination and administrative support for up to 8 meetings with local jurisdictions including meeting scheduling, agendas, and summary notes
- Draft Updated Station Access Policy with two rounds of review
- Final Station Access policy

- Draft Updated Station Access Typology Definitions and Map with two rounds of review (inclusive of review at and after local jurisdiction meetings)
- Final Updated Station Access Typology Definitions and Map
- Draft Performance Targets Table with two rounds of review
- Final Performance Targets Table
- BART Board Meeting materials with two rounds of review
- Attendance records, agendas, and meeting minutes from biweekly project check-in meetings where this task was on the agenda

Task 6 – TOD Scenario Model Update

Fehr & Peers will update the TOD Scenario Model using the data and guidance from Tasks 1 through 4 to reflect impacts of remote work on travel behavior and BART ridership to determine TOD's impacts on BART ridership and revenue based on varied levels of housing/commercial development and parking.

Fehr & Peers will first recalibrate the base functionality of the TOD Scenario Model, including TOD trip generation rates, transit capture percentages, updates on BART retention rates, the relationship of BART rider parking changes to overall ridership, and sensitivity to work from home percentages. In this first step of the model update, underlying parameters and functions within the model may change but the overall model architecture will not.

Next, based on Task 4's evaluation of the strengths and weaknesses of the available data, additional functionality will be considered, tested, and if appropriate incorporated into the model. Potential additional functionalities could include: presentations of results as a range of results due to travel behavior uncertainty, time-of-day variation (e.g. peak vs. off-peak), batch processing of scenarios, high-level sensitivity to travel behavior patterns for different station access policy typologies, and high-level sensitivity/elasticities for elements such as TDM programs, parking management, different futures of rider hailing/transportation network companies (e.g. Uber/Lyft/Waymo), and parking pricing. These additional functions will be prioritized based on the combination of BART's needs, the quality of the supporting data, and the level of effort required to add them. Fehr & Peers will add functionality in priority order, constrained by the task budget and schedule.

Fehr & Peers will create a user-friendly summary dashboard as a front-end to the Excel spreadsheet tool that highlights the most important and pertinent outputs from the model.

Fehr & Peers will host two (preferably in-person) discussions with an advisory committee to review the draft TOD Scenario Model update and gather feedback. Suggested members for the committee include direct users of the TOD Scenario Model, those who use outputs from the TOD Scenario Model, and other stakeholders as identified by BART staff.

The TOD Scenario Model will continue to be implemented as an Excel spreadsheet tool.

Deliverables:

- Two 90-minute discussions with advisory committee to review drafts of the model and tool including agendas, meeting minutes, and recordings
- Draft Updated TOD Scenario Model with two rounds of review
- Final Updated TOD Scenario Model
- Attendance records, agendas, and meeting minutes from biweekly project check-in meetings where this task was on the agenda

Task 7 – TOD Scenario Model Development Documentation

Fehr & Peers will document model calculations and equations, data sources, the limitations of the model's methodology and data sources, sample sensitivity tests, and guidance on the appropriate use of the tool.

Fehr & Peers will host one (preferably in-person) TOD Scenario Model training session with stakeholders identified by BART staff.

Deliverables:

- Draft TOD Scenario Model Development Report with two rounds of review
- Final TOD Scenario Model Development Report
- Draft TOD Scenario Model User Guide with two rounds of review
- Final TOD Scenario Model User Guide
- One 90-minute TOD Scenario Model training session including agenda, presentation slides, and recording
- Attendance records, agendas, and meeting minutes from biweekly project check-in meetings where this task was on the agenda

Task 8 – BART's Mode Shift Planning Tool and Board Presentation

Fehr & Peers will update the Mode Shift Planning Tool (previously referred to as the "Choice Parker" model in the Berkeley-El Cerrito Corridor Access Plan – BECCAP and also known as replacement parking analysis), which is a tool designed to determine the maximum level of BART rider parking and future access needs at stations with planned TOD. The full process for determining the maximum level of BART rider parking and future access needs often includes supplementing use of the Tool (i.e. calibrating its outputs) with localized rider behavior survey data, local on-street parking occupancy data, and stakeholder engagement with local jurisdictions and potentially the public. This task will be focused on automating and processing standardized data for the tool across all BART stations, and upgrades to the tool architecture and equations. Fehr & Peers will integrate supplemental data from parallel station planning efforts to the extent that such data is available at the time of this task.

Fehr & Peers will host one (preferably in-person) initial discussion with an advisory committee to gather needs and priorities for the tool, with stakeholders identified by BART staff.

Fehr & Peers will automate and prepare standardized station data for the tool from Tasks 1, 3, and 4 including GIS travel sheds, station profile study findings, and relevant travel behavior trends. The tool will be designed to allow further enhancement at any station to include additional data such as public outreach or individual station stated preference surveys when and where such data becomes available. Fehr & Peers will integrate supplemental data from parallel station planning efforts to the extent that such data is available at the time of this task. Fehr & Peers will apply the standardized version of the tool to all TOD workplan stations.

Fehr & Peers will document model calculations and equations, data sources, the limitations of the model's methodology and data sources, sample sensitivity tests, and guidance on the appropriate use of the tool including guidance on adding the enhanced data described above.

Fehr & Peers will host a second (preferably in-person) meeting with the advisory committee to present the final tool.

Fehr & Peers will support BART staff in preparing presentation materials for a BART Board meeting.

The Mode Shift Planning Tool will continue to be implemented as an Excel spreadsheet tool.

Deliverables:

- One meeting with BART staff and stakeholders to discuss needs and priorities for Station Access Mode Shift Planning Tool including agenda and meeting minutes
- Draft Station Access Mode Shift Planning Tool with two rounds of review
- Final Station Access Mode Shift Planning Tool
- One meeting with BART staff and other stakeholders to present final Station Access Mode Shift Planning Tool, including agenda, presentation slides, and recording
- Draft Station Access Mode Shift Planning Tool Report with two rounds of review
- Final Station Access Mode Shift Planning Tool Report
- BART Board Meeting materials with two rounds of review
- Attendance records, agendas, and meeting minutes from biweekly project check-in meetings where this task was on the agenda

Prime: Fehr and Peers

Subconsultants: None.

Total Work Plan Value: \$ 587,425