

BART Agreement Number: 6M6136

Approval Date: 11/21/23

Work Plan No. A.15-01 BART's Safety Action Plan for Roadways

Scope:

Task 1. Project Management

The consultant team will lead this task to ensure the project is managed efficiently per the scope, schedule, and budget identified herein.

- 1.1. Kick-off meeting (2 hour):** Lead this in-person/video conference hybrid kick-off meeting with key BART staff, the consultant team project manager, task leads, and at least one staff person from each subconsultant. At minimum, the consultant team project manager should plan to attend in-person. Prime consultant responsible for agenda, presentation materials, and meeting notes.

1.2. Consultant team regular check-ins (1 hour each): Lead this bi-weekly meeting by video conference for roughly 16 months with key BART staff, with consultant team project manager and/or their designee and relevant prime or subconsultant staff relevant to agenda topics. Prime consultant responsible for agenda, presentation materials, and meeting notes.

1.3. Progress reports and invoicing: Prepare monthly progress reports and invoicing (assume 16 months) that meet federal reporting requirements Title 2 Code of Federal Regulations (CFR) Chapter II Part 200.

Task 2. Coordination and Engagement

The consultant team will lead this task and should assume meetings are by video conference, unless otherwise specified. All engagement materials (agenda, meeting notes, fact sheets, intercept survey, online open house and survey, handouts, website, presentations, etc.) will be drafted by the consultant team. Assume two (2) reviews for new materials and one review for revised or derivative materials by BART staff. The BART project manager (PM) or their designee will be responsible for collecting one set of internally consistent and consolidated comments for each draft from relevant BART staff, either in the documents themselves using track changes and comments or in a comment resolution form (CRF).

The consultant team will incorporate relevant input from BART's consolidated set of comments in each subsequent draft, provide responses within the documents or in the CRF, then conduct an internal quality assurance/quality control (QA/QC) process before providing to BART for additional rounds of review. Finalized materials must be approved by BART before distribution to meeting attendees, the public, and/or other engaged parties. Information communication technology (ICT) must comply with FHWA Section 508 for accessibility. Attendance by two (2) members of the consultant team (the project manager or their designee and one other person) is required at meetings and in-person events in addition to attendance by at least one (1) BART staff person.

2.1. Outreach and Engagement Strategy

Develop a strategy to engage stakeholders and the public, as indicated in subtasks 2.2 and 2.3. The strategy should include the following:

- Outreach methods, key topics, needed resources, and deliverables for each interaction
- Information needed from each interaction
- Target populations, with particular focus on disadvantaged/equity priority communities
- Accessibility needs for target populations (e.g. language translation)
- Best practices for promoting the BSAPR effort to the public
- Easy-to-read BSAPR project timeline
- Mock dashboard for displaying dynamic information in a web-based portal that will link BSAPR projects with fatal and severe injury collisions
- Any other items suggested by the consultant team

2.2. Stakeholder Coordination and Support

2.2.1. BART working group: Provide guidance for topics, timing, and information needed for up to four (4) meetings that will be led and attended by BART staff. Review meeting notes provided by BART staff and respond to and/or incorporate relevant input in the BSAPR.

2.2.2. Regional coordination: Review notes from one (1) meeting with MTC, as provided by BART staff, and respond to and/or incorporate relevant input in the BSAPR. Schedule and lead an additional one-hour meeting with MTC. Respond to and incorporate relevant input in the BSAPR.

2.2.3. Agency staff: Review notes from up to 38 meetings with jurisdictions, transportation authorities and Caltrans led by BART staff regarding each agency's efforts for addressing roadway safety. Respond to and/or incorporate relevant input in the BSAPR. Schedule and lead up to two (2) additional one-hour meetings in each focus station area to identify public engagement opportunities and develop

the Focus Station Area Action Plans for up to seven (7) Focus Station Areas (see Task 6). Prime consultant is responsible for meeting materials and notes for Focus Station Areas.

- 2.2.4. Steering committee:** Schedule and lead up to four (4) in-person/ video conference hybrid 90-minute meetings with representatives from five (5) transportation authorities, MTC and Caltrans.

2.3. Public Engagement

Utilize web-based engagement for system-wide efforts while taking a deeper dive into Focus Station Areas with in-person pop-ups, fact sheets, intercept surveys, and an online open house. The BSAPR will appear before BART's Board of Directors in a public forum at least twice. Develop materials as indicated below and under "3.0 Deliverables". BART will use its social media channels and project email list to promote public engagement in addition to any relevant best practices identified in the outreach and engagement strategy. Include an option to translate public engagement materials into Spanish and Chinese.

- 2.3.1. Asynchronous online engagement:** Create and maintain a web-based project (for computer and mobile device visibility) site to host plan information and documents, interactive maps and visualizations, and opportunities for the public to respond to at least one (1) survey soliciting feedback. Ensure that site visitors may opt-in to being included on project email lists and provide transparency on how their data will be stored and used. The website information will be updated at key milestones.
- 2.3.2. Materials for in-person pop-ups and intercept surveys:** Provide materials to assist BART staff with in-person outreach at the seven (7) Focus Station Areas (see Task 6). Develop a BSAPR fact sheet (physical handout and digitally compatible for website posting) and BART rider intercept survey (physical and digital) that encourages in-person interaction. Intercept surveys should be designed to create meaningful, equitable, and representative engagement around safety issues. Surveys should contain optional demographic information that could enable weighted analysis based on the representative transit rider population.
- 2.3.3. Online open house:** Develop and host an online open house that features the draft Focus Station Area Action Plans (FSAAP). Create a survey to solicit meaningful feedback on draft FSAAPs that will be incorporated into the final FSAAPs (Task 6). Use same data management practices as described in 2.3.1.
- 2.3.4. BART Board of Directors:** Assist BART with developing the presentation for up to two (2) meetings, including in-person attendance by the consultant team's project manager or their designee and at least one other team member.

2.4. Outreach Milestone Reports

Prepare up to three (3) outreach milestone reports that capture key stakeholder and public efforts and milestones.

Task 3. Existing Resources and Conditions

BART and many other public agencies in the Bay Area have engaged in planning and implementation efforts that could inform BSAPR. This task focuses on researching existing resources, such as plans, studies, and capital or non-infrastructure project implementation that support the Safe System Approach in station areas and regionally. The consultant team will lead this task to analyze collisions, document existing efforts by partner agencies, analyze transit operations reliability data, and review literature pertaining to transit investments leading to safer roadways. Work from this task will inform development of the systemic countermeasures in Task 5 for both station access (nodal) and for the transit system (regional). Information collected in subtask 3.1 will be included in a chapter in the BSAPR.

3.1. Nodal: Station Access

- 3.1.1. Zones of influence:** Establish criteria for determining zones of influence for station access. Examples may include using radii or time to access (i.e., ½ mile radius, 10 minutes for access trips by

walking, biking, transit, and driving). Apply criteria to the 48 non-airport stations to determine the zone of influence for each.

- 3.1.2. High-injury network (HIN):** Using the most recent five years of processed crash data, create a HIN and dashboard capturing all 48 non-airport station areas and their zones of influence that include roadways under the authority of BART, cities, counties, and Caltrans. Consultant may use the US DOT's [National Fatality Interactive Mapping](#) tool, MTC's Bay Area Vision Zero System (BayVIZ), UC Berkeley's Safe Transportation Research and Education Center (SafeTREC)'s Transportation Injury Mapping System (TIMS), Statewide Integrated Traffic Records System (SWITRS), BART police department collision records, agency documentation, or other resources to create the nodal HIN.
- 3.1.3. HIN analysis:** Assess high injury crash locations, trends over time, crash types and movements of individuals involved, and infrastructure associated with fatal and serious injury crashes, with particular focus on people walking or biking to transit stations. The analysis should incorporate an equity lens, identifying populations at a higher risk for crashes and neighborhoods with a history of underinvestment. Evaluate the differences in crashes based on the density and development typology within different station areas. If budget allows, third-party data may be purchased to help understand multimodal traffic volumes to understand crashes in context.
- 3.1.4. Existing efforts:** Incorporate and attribute plans, projects, programs, and dashboards (relating projects and changes to HIN) that address roadway safety. This may include Vision Zero, roadway safety and active transportation plans, studies, and capital projects led by jurisdictions, Caltrans, and BART. Identify safety countermeasures recently completed and/or programmed in each station area zone of influence.
- 3.1.5. Celebrate safety projects (optional):** Summarize and/or highlight projects implemented within the past five (5) years by agencies that improve multi-modal safety by reducing and/or eliminating fatal and severe injury collisions.

Task 4. Safety Benefits of Transit

4.1. Regional: Safety Benefits of Transit

Prepare a stand-alone report or white paper focused on answering the following question: Would improving BART's transit levels of service and reliability improve roadway safety on parallel routes? The results of this research are to be summarized as a chapter in the BSAPR and in the executive summary. Information communication technology (ICT) must comply with [FHWA Section 508](#) for accessibility.

- 4.1.1. Literature review:** Conduct a literature review of past research related to the impacts of transit investments (i.e., increasing service frequency and spans, improving reliability, and growing ridership) on vehicle miles traveled and fatal and severe injury crashes. Include reviews of "The Hidden Traffic Safety Solution: Public Transportation", published by the American Public Transportation Association, and "Safer Than You Think! Revising the Transit Safety Narrative", by the Victoria Policy Institute, among others.
- 4.1.2. Analysis for BART system:** Establish a regional HIN that identifies roadways in parallel to the BART system. Consider analyzing historical collision trends when transportation patterns were changed due to disruption in BART services. Conduct specific analysis using BART's Ridership Model among other tools that quantifies the effect of improved BART transit service levels on parallel roadway fatalities, injuries, and overall crashes. Such an analysis was conducted for southern Alameda County on Interstate 880, comparing crashes under no build and build scenarios for transit service improvements. These documents will be provided to the consultant team for reference. BART's service levels and reliability should be analyzed using metrics identified in the literature review and BART's past analysis by developing scenarios for changes in transit ridership and their impacts on roadway fatalities and injuries.
- 4.1.3. Report or white paper:** Author a stand-alone white paper or report summarizing findings in 4.1.1 and 4.1.2. An abstract should summarize the findings succinctly in addition to identifying any follow-

on research needed. Assume two (2) reviews by key BART BSAPR staff and one (1) stakeholder review by BART working group members and relevant agency staff. The consultant team will conduct QA/QC in advance of every review, identify how they want input received, and be responsible for collecting, reviewing, incorporating, and responding to comments.

Task 5. Systemic Countermeasures

The consultant team will utilize input and data gathered in Tasks 2, 3, and 4 to evaluate safety issues and develop a comprehensive set of countermeasures to eliminate fatal and severe injury roadway crashes. Identify which agencies would be responsible for implementing the identified countermeasures. These safety countermeasures will include policy and process improvements that can be made by transit agency, local government, regional, and California actors. Infrastructure and program-related safety countermeasures for roadways and the transit system are to be analyzed for order of magnitude benefit-cost estimates. The countermeasures will be prioritized based on benefit-cost analysis, implementation feasibility, and equity considerations. Countermeasures developed as part of this task will be evaluated with an equity lens.

Task 6. Focus Station Areas

The consultant team will utilize input and data gathered in Tasks 2, 3, and 4 to identify up to seven (7) Focus Station Areas for more detailed and individualized safety plans. These Focus Station Area Action Plans (FSAAP) will include BART-owned and/or operated roadways and roadways in each station's zone of influence under the jurisdiction of other public agencies. More extensive coordination and engagement, as detailed in Task 2, will be conducted for FSAAPs. The goal is to identify, amplify, and/or support countermeasures that agencies could implement on roadways under their authority, so this task includes a high level of agency coordination that will empower them to apply for federal, state, or local grants directly. The FSAAPs will be packaged as an addendum or appendix for the BSAPR. Information communication technology (ICT) must comply with [FHWA Section 508](#) for accessibility. Note that this completion of this task will occur after finalizing the BSAPR due to the level of effort.

- 6.1. Focus station area identification:** Determine criteria that will be used to select the Focus Station Areas, such as fatal and serious injury crashes, equity, transit ridership and ridership potential, station development plans, and local stakeholder commitment. The criteria will be weighted and applied to identify up to seven (7) locations where FSAAPs will be developed. Locations to be analyzed per the HIN established in 3.1.1.
- 6.2. Design and analysis:** Create conceptual-level designs for each Focus Station Area based on the nodal HIN that include countermeasures identified by the local jurisdictions, as appropriate. Develop rough order-of-magnitude cost estimates, an estimate of the safety benefit, and an evaluation of impacts to pedestrians, cyclists, transit users, and drivers. Include any considerations of and requirements for environmental (CEQA, NEPA) approvals.
- 6.3. Template/Mockup:** Create an FSAAP template that identifies graphics and key information to be included in each fact sheet. Assume one (1) review by BART (key BSAPR staff and working group members) and relevant agency staff. The consultant team will identify how they want input received, and be responsible for collecting, reviewing, incorporating, and responding to comments.
- 6.4. FSAAPs:** Create individualized fact sheets for each station area and their zones of influence. Assume two (2) reviews by BART and relevant agency staff for each FSAAP. The consultant team will conduct QA/QC in advance of every review, identify how they want input received, and be responsible for collecting, reviewing, incorporating, and responding to comments.

Task 7. BART's Safety Action Plan for Roadways (BSAPR)

The consultant team will prepare the BSAPR considering the input suggested in "6.0 Suggested Document Outline" and assist BART staff with drafting a Vision Zero resolution to be adopted by BART's Board of Directors. The consultant team will conduct QA/QC in advance of every review, identify how they want input received, and be responsible for collecting, reviewing, incorporating, and responding to comments. Each draft of the BSAPR must be approved by the BART PM or their designee for advancement to the subsequent deliverable. Information communication technology (ICT) must comply with [FHWA Section 508](#) for accessibility.

7.1. BSAPR

Prepare the BSAPR and its appendices using information collected in Task 2 through Task 5. The BSAPR should identify who will be responsible for leading implementation of each countermeasure identified in the BSAPR. It should also identify who at BART will be responsible for monitoring projects and implementing and updating the web-based dashboard to reflect impacts on roadway safety. The consultant team will conduct QA/QC in advance of every review, identify how they want input received, and be responsible for collecting, reviewing, incorporating, and responding to comments. The BART PM or their designee will work with the consultant team to identify which comments should be incorporated in the subsequent draft by the consultant team. Each draft must be approved by the BART PM or their designee for advancement to the subsequent deliverable.

7.1.1. Administrative draft: Assume two (2) reviews by key BART BSAPR staff. The BART PM or their designee will be responsible for collecting one set of consolidated comments for each draft from relevant BART staff.

7.1.2. Agency Partners review: Assume one (1) consolidated review by agency partners on the Systemic Countermeasures and Existing Resources chapters.

7.1.3. Stakeholder draft: Assume one (1) review by BART working group members or their designees, steering committee members, and external stakeholders, such as MTC and Caltrans.

7.1.4. Public draft: Assume one (1) round of review by the general public and for presentation to the BART Board of Directors.

7.1.5. Final draft: Incorporate public and Board input and provide to the BART PM or their designee for final review of minor editing needs.

7.1.6. Final plan: Produce the document.

7.2. BART Board of Directors Resolution: Assist BART staff with drafting a Vision Zero resolution for consideration by BART's Board of Directors. It should encompass SMART (specific, measurable, achievable, relevant, and time-bound) objectives that identify actions within BART's control and those that entail supporting our partner agencies. The draft resolution will be presented to the Board first as an information item at a regular meeting along with BSAPR's public draft release. Assist BART staff with suggestions for editing the draft resolution based on feedback received at the first Board meeting. The final resolution will be considered by the Board for adoption at a subsequent regular meeting for inclusion in the BSAPR.

Prime: ARUP N. A.

Subconsultant	Amount	DBE (Y/N)	SBE (Y/N)
Safe Streets Research & Consulting	\$ 202,415	Y	Y
Winter Consulting	\$ 163,324	Y	Y

Total Work Plan Value: \$ 999,595