

Marsh Creek Trail Project Scope of Work for Feasibility Study

Background

Marsh Creek Road is a major thoroughfare that connects Central County and East County. Currently, a significant number of bicycle trips [\(do we have data on this?\)](#) take place on Marsh Creek Road, in spite of the lack of bicycle [facilities](#)~~paths~~. Marsh Creek Road within Clayton has an existing Class II bicycle lane, which connects to Clayton's extensive trail network. In East County, the Marsh Creek Trail currently runs from the Big Break Regional Shoreline in Oakley to the southern city limits of Brentwood. The East Bay Regional Park District plans to extend the Marsh Creek Trail from the Brentwood city limits along Marsh Creek Road to the Round Valley Regional Reserve.

The proposed Marsh Creek multi-use trail would create a new major non-motorized east-west thoroughfare for expanded commuting or recreational opportunities. It would provide non-motorized access to Downtown Clayton, Diablo View Middle School, Mount Diablo, Round Valley Regional Reserve, and the existing Marsh Creek Trail through Brentwood and Oakley. The purpose of the path would be to provide a safe, useful and enjoyable transportation corridor for various forms of non-motorized travel, including pedestrian, equestrian and bicycle users (including serious bicycle enthusiasts), and the trail is proposed to be sized and designed to encourage use by these various sectors. Once this path and adjacent paths are completed, there will be one continuous non-motorized path from Downtown Concord to Oakley. The trail could possibly be located on the opposite side of the creek from the road, immediately adjacent to the road itself or some distance from the creek or the road in constrained areas. Construction of the trail could be performed in conjunction with restoration of Marsh Creek, as anticipated in the East Contra Costa County [Habitat Conservation Plan/Natural Community Conservation Planning](#) ~~(expand acronym?)~~; and be [planned, designed and](#) constructed in a sensitive manner that reflects [and respects](#) the scenic, [agricultural](#), and natural resources of the area.

The following work plan provides a detailed description of the activities that the consultant design team will perform to complete the Marsh Creek Trail project. This work plan reflects our best estimate for completing the tasks outlined by the Stakeholder Team (Contra Costa County, City of Clayton, City of Brentwood, City of Oakley, [City of Pittsburg](#), City of Antioch, East Bay Regional Park District, Save Mt. Diablo, State Parks, East Contra Costa Habitat Conservancy) and to advance the design of a preferred alternative. The work plan below ensures the level of effort required to reach consensus on a preferred alternative and to develop a physical project definition.

Project Objectives

- Provide a non-motorized multi-modal trail connecting the terminus of the Marsh Creek Trail in the City Brentwood to the trail system in the City of Clayton with connections to Round Valley Regional Park, other State Park and Save Mt. Diablo parcels along the Marsh Creek Corridor, and Morgan Territory Road.
- The preferred trail would be separated from the Marsh Creek Road and located adjacent to Marsh Creek where feasible.
- Trail alignment should minimize impacts to private property and retain privacy for residences [to the extent possible](#) ~~(without a qualifier "retain privacy" might be an impossible bar to meet)~~.

- ~~The Trail~~ would be for ~~bicycle~~~~bicyclist~~~~bicycle~~, pedestrians, and equestrians (or other non-motorized travel).
- Trail design should consider the trail being used for a commute alternative between East and Central Contra Costa County and for recreational purposes.
- Trail design should reflect the rural nature of the corridor and use materials to blend in with surrounding features (i.e. retaining walls should be sculptured concrete to look like rock or wood)
- Consultant should develop design theme for trail (do we want consistency w/EB Parks signage/graphics/etc?)
- Trail design features should include interpretive panels that discuss the history and unique features of the corridor.
- Trail should include directional signing for parks, cities, historical sites, connecting trails, etc.
- Due to the length of the trail, consider water stations and restroom facilities, using existing park lands and staging areas where feasible.
- Allow on-leash pets on trail where feasible on-leash
- Provide picnic areas, ~~and~~ destination spots, and benches or rest stops along the facility-way
- Sensitive to habitat
- ~~Benches~~ (included above)
- Connections to publically accessible Habitat Conservation Plan, Save Mt. Diablo, East Bay Regional Parks, and State Parks ~~parcels~~~~facilities~~~~parcels~~
- Try to keep the trail focused in the Marsh Creek Road corridor
- Consider safety of users (cell service/call boxes)
- ADA accessible
- Coordinate with restoration efforts for Marsh Creek
- Consider facility design to accommodate the serious commute cyclists
- Tie the trail into the EBRPD Class I Network
- Incorporate green design elements, sustainable design elements
- Consider wildlife crossings that would allow passage for wildlife between key conservation parcels and possible trail connection over road
- Marsh Creek Big Bend property could be a potential staging area and connection to a north-south land conservation band

Work Plan

Task 1: Project Management

Task 1.1: Project Initiation Activities

The Consultant team will coordinate with the Stakeholder Team's project manager ~~and~~ to finalize the project work plan, schedule, task budgets, deliverables, project milestones, and meeting schedules. The Consultant team will initiate startup activities, including scheduling a kick-off meeting, affirming the project goals and objectives, confirming the extents of the study area, and identifying key stakeholders to begin the outreach process.

Task 1.2: Meetings

Consultant Team will attend regular coordination meetings either in-person or via conference call. Consultant Team will budget time for up to ten (10) in-person project team meetings with Stakeholder Team staff. We anticipate that sub-consultants will attend the kick-off meeting and up to two additional project team meetings throughout the process to develop the feasibility study. The project team meetings in Task 1 do not include the public outreach and stakeholder meetings and workshops. These are scoped separately in [Task 5Task 3](#).^[JF1]

Task 1.3: Project Management Support

Consultant Team will lead the project management. Consultant Team will also assist the Stakeholder Team's project manager in coordinating with Cities, State Parks, EBRPD, residents, other state and regional agencies, local [stakeholders](#), [and stakeholders](#), [and](#) bicycle/pedestrian/equestrian advocacy organizations, environmental groups and utility providers.

Deliverables:

1. A detailed work plan schedule with deliverables and key team meeting dates
2. A "fact sheet" that articulates the project goals, objectives, [schedule](#) and study area. The fact sheet will include a map showing the study area with major landmarks shown. The fact sheet will be made available to stakeholders and the public.

Task 2: Data Collection and Base Mapping

Task 2.1: Review Available Plans and Data

Consultant will obtain and review information on existing conditions, relevant transportation and bicycle/pedestrian/equestrian plans and policies, [emerging best practices \(w/examples of implementation\)](#), design standards, regulatory requirements, and unique opportunities and constraints. This task will include coordination with Stakeholder Team staff to seek information on existing infrastructure and design standards and to confirm engineering input and drawings required to support the project submissions. Information sought may be in the form of as-built drawings, right-of-way drawings, parcel maps, GIS data, [usage data \(traffic counts, Strava Metro or the like\)](#) or reports.

Task 2.2: Utility Coordination

Consultant Team will coordinate with utility providers ([PG&E, EBMUD, etc.](#)) early during the design process to understand the potential for impacting utility infrastructure along the corridor. Project costs can be significantly impacted by planned or unplanned utility relocations if the existing utilities are not considered fully during the early design stages. We believe it is vitally important to understand the potential design constraints as early as possible during the design process.

Consultant Team will also identify and map the location of water, wastewater, electrical, and phone utilities to be used for locating trail facilities such as restrooms, call boxes, drinking fountains, safety lighting, etc.

Task 2.3: Aerial Survey

Consultant will contract with a surveying firm to obtain an aerial photogrammetric map of the corridor, which will be used to develop a topographic base map. Consultant will obtain natural color, vertical,

stereo aerial photography of the project area compliant with Cal-Trans mapping standards. ~~using a precision, calibrated, cartographic camera equipped with a six-inch focal length lens and forward motion compensation. The photography will be taken at an altitude of 1,000 feet above the mean elevation of the terrain.~~

Task 2.4: Base Mapping

From the aerial imagery, Consultant will compile a digital planimetric map at a scale of 1" = 40' for the project area (minimum width of 500 feet each side of existing road center-line). ~~with one-foot contours.~~ The aerial mapping will be done in the California Coordinate System of 1983 State Plan 4 (NAD83 CCS83, epoch 2011 or later, Zone 3) ~~and based on NSRS published stations: DE8492, AA3809 and HS3604.~~ with a vertical-Vertical datum of NAVD88. Break-lines and spot elevations will be digitized to create a digital terrain model (DTM). Contours at a one-foot interval will be generated from the DTM. Planimetric features—such as buildings, roads, fences, vegetation, trees, and the like—will also be generated.

The County will provide a Microstation file containing the assessor's parcel lines for the project study area. For the project alternatives, the right-of-way lines will need to be resolved. Consultant will coordinate with the County Surveyor on these efforts. Consultant will also compile GIS data and develop mapping and visualization templates for the project.

Task 2.5: Intersections and Access Points

Consultant will identify and map existing road crossings, public lands, parks, driveways, etc. Inventory access points located within the corridor for possible vehicular, pedestrian, bicycle, and equestrian access to and through the corridor.

Task 2.6: Natural Inventory

Consultant will identify and map adjacent or intersecting streams, significant natural features (creeks, ponds, rock outcroppings, wetlands, floodplains, etc.), and existing vegetation and wildlife analysis (identify any species of concern or sensitive habitat areas in the project area and/or the existence of aggressive, weedy species/major invasive plants). (How detailed does this need to be and for what purpose? Is this a "fatal flaw" analysis? This seems like it could be a very expensive task and I would like to scale it back to just the minimum of what we need.)

Task 2.7: Environmental Concerns

Based on preliminary assessments, Consultant will determine the need for environmental assessment studies relative to toxic waste disposal or other environmental hazards.

Task 2.8: Physical Inventory and Assessment of the Right of Way

Consultant will prepare detailed mapping of the proposed trail corridor alignment at an appropriate scale. Consultant will perform office and field research to delineate major areas of concern. Consultant will prepare a physiographic analysis that shows the following:

- The length, dimensions and right of way boundaries
- Steep slopes
- Topography

- The composition of soils
- Surrounding land use and ownership (public, private, etc)
- Erosion and drainage problems along the possible trail alignments

Deliverables:

1. Flight plan/photo control plan
2. Black & white contact prints of the aerial photography
3. Orthophotography, resolution 0.25'
4. Analytical aero-triangulation report
5. Copies of all field notes.
6. Electronic transmittal of points (Excel or ASCII in PNEZD or Pt No., Northing, Easting, Elevation, Description format)
7. 3D CADD file of planimetric features and contours, preferably DGN format, using County seed file and level structure
8. Inroads DTM file of terrain model
9. Survey control report by a licensed Land Surveyor summarizing the field procedures used to establish the control and stating the accuracy and confidence level of those points .
10. Durable control point pairs set for use in supplemental surveys; number of pairs not to exceed 20 pairs. These control point values and all flight target points are to comply with current Caltrans standards (Survey Manual Chapter 5) for positional accuracy and elevation.
- 1.11. _____ Aerial survey and base map
- 2.12. _____ Engineering Existing Conditions memorandum (right-of-way constraints, environmentally sensitive areas, grading, utilities, etc.)

Task 3: Public Outreach

Consultant will lead the organization and scheduling of all public outreach activities with Stakeholder Team staff and local stakeholder and community groups, with support from sub-consultants to prepare materials and staff the meetings. We have included in this scope a total of ten (10) (That is a lot of meetings. Do we need 10? I'm guessing we would want meetings duplicated at each end of the corridor? 2 project launch meetings, 2 study mid-point meetings, 2 draft final, 2 final recommendations presentation...that is eight so rounding up to 10 seems reasonable. Just thinking aloud here...) We have included in this scope a total of ten (10) outreach meetings, which would include a combination of stakeholder meetings and community workshops.

Task 3.1 Stakeholder Meetings and Community Workshops

For the ten outreach meetings, we-Consultant will coordinate with Stakeholder Team staff to identify the appropriate stakeholders and the schedule of the meetings throughout the project schedule. We will utilize scheduled meetings with the City of Clayton and Brentwood and the regional planning

committees of CCTA, TRANSPAN and TRANSPAC, to communicate with both stakeholders and the public in a cost-effective way. We will schedule the majority of the stakeholder meetings early in the process to better understand the opportunities and constraints along the corridor. The stakeholder meetings could include (but are not limited to) the following: Contra Costa County, City of Clayton, City of Brentwood, City of Antioch, [City of Pittsburg](#), City of Oakley, East Bay Regional Park District, State Parks; bicycle and pedestrian advocacy groups and clubs such as Bike East Bay, [Delta Pedalers, etc](#); Environmental groups such as Save Mt. Diablo and the East Contra Costa Habitat Conservancy; Emergency Services including CalFire.

The community workshop would be held after the initial alternatives are developed in Task 5.

Task 3.2: Other Outreach

The Consultant Team will develop four fact sheets, announcements, or update for the Stakeholder Team website at key points throughout the project.

Task 4: Transportation Analysis

Consultant will conduct a multi-modal transportation analysis for the study corridor that will focus on traffic operations, safety, and bicycle, pedestrian and equestrian conditions. Consultant will structure the transportation analysis so that it can easily be adapted for any level of environmental analysis pursuant to the California Environmental Quality Act (CEQA) in later stages of the project. The transportation analysis will develop along with various stages of the project

Task 4.1: Traffic Data Collection

Consultant will contract with a data collection firm to collect peak period intersection counts for two periods on one mid-week day (Tuesday, Wednesday, or Thursday) and hourly machine tube counts with vehicle classifications (using FHWA's standard class types) for one seven day period to understand hourly volume profiles. We will coordinate with County staff to identify the peak periods for the intersection counts and to include the turning movement ~~counts~~, counts, vehicle classifications and pedestrian/bicycle flows. We anticipate the counts will occur during the morning (7-9 AM) and evening (4-6 PM) peak periods. (is this for just auto traffic or bike as well? If it is to include bike traffic we should talk about how the data will be used) Data collection should occur when local schools are in session.

Task 4.2: Transportation Assessment

Consultant will complete a multimodal analysis of the corridor. Consultant will review land use plans and planned or proposed projects in the vicinity of the study area. Consultant will develop traffic forecasts (will these forecasts include bike/ped or just vehicular?) for the study area using the latest version of the CCTA regional travel demand model and information from the land use plans and pending projects. The analysis will include the following:

- A summary of the overall transportation context and how Marsh Creek Road functions between Clayton and Brentwood.
- Bicycle, Pedestrian and Equestrian assessment: these modes will be addressed by performing an inventory of existing facilities and documenting the following: the location of bike lanes, sidewalks, trails, crosswalks and push buttons and the width and condition of bike lanes, trails

[trails](#), and sidewalks; identify if there are gaps in the network; identify other impediments to cycling, horseback riding, and walking.

- [Accident](#)^[UF2] analysis: Consultant will download ten years of vehicle incident records from the Statewide Integrated Traffic Records System (SWITRS) that is maintained by the California Highway Patrol (CHP). Consultant will plot the accident history, calculate accident rates, and compare them to comparable state highways. The accident history plot should have accidents categorized by modes of travel (bicycle, pedestrian, equestrian, and vehicle)
- During the alternatives evaluation in Tasks 4 and 6, we will update the transportation analysis to reflect how any physical changes to Marsh Creek Road will affect vehicle traffic and safety.

The transportation analysis will first address existing and Future Year “No Build” conditions, to set a baseline for the alternatives analysis. Consultant will update the transportation analysis as the project progresses from the alternatives analysis through the selection of a preferred alternative.

Deliverables:

1. Transportation Analysis memorandum for existing and Future Year “No Build” conditions. This memorandum will focus on traffic operations along Marsh Creek Road.
2. The Transportation Analysis memorandum will be updated to reflect the alternatives that are developed in the following tasks.

Task 5: Alternatives Development

Task 5.1: Develop Project Alternative Concepts

Consultant will lead the development of up to three project alternatives consistent with the project objectives defined at the beginning of this document. The desire is to have the trail alignment stay generally in the Marsh Creek Road Corridor. However, if necessary, the trail alignment may need to deviate from the immediate vicinity of the road to avoid [cost and](#) alignment constraints. The alternatives will consist of a range of configurations, likely to include the following, but are not limited to:

- [Separated Class I facility](#)
- [Class IV Bikeway](#)
- Combination of a Class I facility adjacent to Marsh Creek Road and separated from the road
- Combination of a Class I facility and Class II facility where constraints dictate.

We will divide the corridor into segments to address site specific constraints and design issues. We anticipate using the following segments:

1. **City of Clayton to Morgan Territory Road**
2. **[Terminus](#)^[UF3] of Marsh Creek Trail in Brentwood to Round Valley Park Entrance**
3. **Round Valley Park to Morgan Territory Road**

Task 5.2: Conceptual Plans of Alternatives

Based on the early stakeholder outreach, the consultant team will refine the three alternatives and host an internal design charrette with Stakeholder Team. The Consultant team will use this input to develop high-level conceptual plans for the three alternatives. The conceptual plans will reflect engineering design standards and basic right-of-way constraints, but will not represent detailed design. The

alternatives will be shown in plan-view and will feature cross-sections at key locations along the corridor. Consultant will explore the possibility of incorporating the alternative designs into a 3D view or a [kmz file](#) for importing into Google Earth.

The alternative concepts should identify:

- Trail design that safely accommodates target user groups (this will include the recreational cyclist, do we also want to attract serious cyclists? Is that even a goal? We should discuss, I would hate to invest in the facility only to have the hardcores stay on the roadway...might be unavoidable though).
- Proposed location of trailheads and related facilities (restrooms, water, emergency telephone, lighting, parking, maintenance, etc.)
- Areas for trail barriers and emergency access
- Areas needing natural buffers and/or screening
- Proposed linkages to parks and other trail systems or areas of interest
- Possible handicap-ADA access and required facilities
- Identify and prepare conceptual design for facilities required to restrict use of the trail (Is this to limit motor vehicles?)
- Identify auxiliary facilities necessary to operate the trail and provide conceptual designs for these areas such as rest areas, parking facilities, fencing or buffer systems, drainage systems, emergency vehicle access, facilities that met the needs of persons with disabilities
- Design to separate trail users operating at different speeds.

Task 5.3: Develop Presentation Materials for Public Outreach

Consultant will lead the development of public outreach materials for stakeholder and community workshops.

Deliverables:

1. Three alternative project concepts
2. Conceptual plans for three alternatives
3. Presentation materials for public outreach

Task 6: Alternatives Analysis

Task 6.1: Detailed Alternatives Evaluation and Selection of a Preferred Alternative

Consultant will utilize a multi-criteria evaluation matrix to assess the three alternatives developed in Task 5. The matrix will consider a range of quantitative and qualitative performance measures including: the user benefits for cyclists, pedestrians, and equestrians, potential traffic impacts, the effect on access and safety for all travel modes, right-of-way impacts, utility impacts, constructability, potential environmental impacts, and cost. Consultant will update the Transportation Analysis memorandum. Consultant will also develop planning level cost estimates for each alternative to use in the evaluation. Environmental review will provide a high-level review of potential environmental “red flags” for the evaluation matrix.

Based on the detailed alternatives analysis and the preliminary cost estimates, the Stakeholder Team and the Consultant will recommend a preferred alternative to advance to detailed design. (should the consultant also identify project phasing?)

Task 6.2: Preliminary Environmental Assessment

Environmental Consultant will perform a preliminary environmental assessment of the preferred alternative to identify potential areas of focus under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). This preliminary assessment will consider the appropriate environmental documents (i.e., Mitigated Negative Declaration or Environmental Impact Report) and the environmental analyses that will need to be completed within the corridor during the next phase of the project.

Deliverables:

1. Detailed Alternatives Evaluation Matrix memorandum
2. Preliminary Environmental Assessment memorandum

Task 7: Feasibility Report

Consultant will prepare a draft feasibility report that will incorporate all of the findings of the study through the alternatives analysis. We will submit the report to the Stakeholder Team staff for review and comment. Based on the comments received, Consultant will revise the report and submit a final version. Consultant will respond to comments and make any necessary revisions before submitting the final report.

Deliverables:

1. Final Feasibility Study