

Attachment A: Scope of Services

Mill Valley to Corte Madera Bike and Pedestrian Corridor Study

TASK 1: PROJECT KICK-OFF MEETING/PROJECT MANAGEMENT

1.1 Organization and Scoping Meeting. An organization and scoping meeting will be held with DPW staff and others (as directed) to:

- a. Review objectives of project
- b. Review scope of services
- c. Confirm study area
- d. Collect available data and published materials
- e. Establish meeting and presentation schedule
- f. Establish communication channels with other departments
- g. Establish communication protocols for public interaction and queries
- h. Review and list State and Federal required elements
- i. Review and list all applicable design and planning standards
- j. Coordinate with local governments and agencies

Deliverables:

Amended Study Methodology and Schedule (if necessary).

1.2 Monthly progress meetings. LandPeople will organize, and moderate monthly progress meetings with the County, providing a report prior to each meeting that includes (a) work completed; (b) problems and resolutions; (c) work remaining; (d) anticipated problems; (e) budget status and analysis; (f) schedule status/updates (we like to use either Microsoft Project, or a Status of Open Items (SOI) tool); and (g) prepare and distribute meeting summaries.

Deliverables:

- Monthly Progress reports
- Status of Open Items (SOI)
- Meeting Notes

1.3 Project Management Work Plan. Land People will provide a Project Management Work Plan (PMWP) that includes objectives, organization, scope of services, schedule, budget, QA/QC, communications, document control, cost controls, invoicing and reporting for the development of the study along with project management as required to lead the project team, communicate information, complete required tasks, produce deliverables, and to report and control project costs and schedule performance. Tasks include but are not limited to: (a) manage project team, (b) project coordination, (c) conduct team meetings, (d) invoice processing, (e) schedule and budget control, and (f) Federal-Aid project process management (local procedures manual).

Deliverables:

- Project Management Work Plan
- Monthly Invoices
- Copies of Postal Correspondence
- Caltrans Federal-Aid Local Assistance documents for County staff review and execution
- Completed semi-annual NTPP status report

TASK 2: PROJECT ADVISORY COMMITTEE, PUBLIC OUTREACH

2.1 PAC Meetings. A Project Advisory Committee (PAC) will be formed to provide guidance and review, and to assist with coordination between agencies. The PAC will consist of agency representatives from: Marin County, Mill Valley, Corte Madera, Caltrans, and other stakeholder

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agencies. LandPeople will be responsible for organizing all PAC meetings and for providing presentation materials. Up to four (4) PAC meetings will be held during the course of the project. The PAC meetings will be held at Marin County facilities, preferably near the project corridor. LandPeople will be responsible for preparing a detailed project schedule and regularly updating the schedule throughout the duration of the project.

Standard meeting topics for the PAC could be:

Meeting #1: Introductions, Review of Scope, Schedule, Issues, Background

Meeting #2: Review of Existing Conditions, Needs, Volumes, Safety Conditions

Meeting #3: Evaluation Criteria, discussion on Roadway/Tunnel Issues

Meeting #4: Alignment Features, Implementation Strategy, Costs, Next Steps, Environmental Issues

Specific meeting/reference materials to be developed include:

1. Site Photo Library
2. Bikeway Connections Map
3. Projections on Future usage
4. Summary of Safety and Transportation Benefits
5. Sample Photos and Graphics of Similar Projects
6. Preliminary PhotoShop Illustrations of Project
7. Summaries of Scope and Schedule
8. Large-Scale Aerial Map of Project Corridor

2.2 Public Outreach. Communicating with the public and especially the neighborhoods is critical to determining needs, concerns, and other issues. LandPeople will complete the following tasks to help provide important information needed to include the public at two key stages: 1) initial data gathering/formulation of analysis criteria, and 2) review of the proposed configuration of routes and associated improvements::

- A. Project Website content with Fact Sheets for posting on walkbikemarin.org website.
- B. Project E-Newsletter
- C. Press Release
- D. Presentations at public meetings
- E. Informal Meetings with Neighborhood Groups (as specified in 2.4 below)
- F. On-line Survey

2.3 Public Workshops. Two (2) conventional public workshops are budgeted for key stages of the project, which may include an **Open House** approach where the public is invited to visit a room where different stations present different technical aspects of the project, and staff are available to answer questions.

2.4 Informal Meetings. Up to three (3) informal meetings or presentations are budgeted.

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TASK 3: MAPPING, SITE SURVEYS, FIELD INSPECTIONS

3.1 Data gathering and organization. LandPeople is very familiar with and already has most of the available mapping in Marin County, including digitized aerial maps and GIS maps. Our Team also already has all of the available plans, maps, and other documents related to the Alto Tunnel, Camino Alto, and Horse Hill Bike Path alignments. This mapping will be supplemented with field reviews and spot surveys where needed, along with rectified ortho digital aerial photos. Cross sections will be developed for each alignment at 1" = 5' showing right-of-way, roadways, sidewalks, and other features. Our data collection process is shown below.

TIER ONE: Data Collection

Collect all available data, including relevant local, regional, and State planning documents as noted in RFP. Work with the local agencies, County, and the PAC to develop one comprehensive base map of existing conditions. Develop map and database of existing, proposed, and potential bikeways/pedestrian routes for field inventory.

TIER TWO: Field Inventory

Conduct field inventory of potential corridor alternatives, photographing or otherwise recording all conditions observed in the field. Compare field notes, photographs, and drawings with maps, aerial photos, and other documents to ensure that the base map accurately reflects existing conditions. Information to be field surveyed and mapped:

- Existing and planned bikeways, parks, trail segments, gaps, barriers; roadway traffic volume, collision data roadway widths, subsurface drainage
- Proposed land uses & major developments; environmentally sensitive areas; ESA species
- Major destinations, access points, schools, parks, commercial centers, historic sites, museums, waterways
- Property ownership and easements: Demographic data: Special needs populations that may use the corridor

TIER THREE: Data Synthesis & Presentation

Synthesize field data and printed data into a user-friendly map. Opportunities and constraints will be clearly identified as will the overlap and conflicts between various plans. We will present all information on large-scale color maps using ArcView, Digital Orthophotos, and digital parcel maps for the corridor. We will supplement maps with our field notes so that they offer an accurate portrayal of existing and proposed conditions.

3.2 Base maps for planning. Base mapping suitable for preliminary engineering will be developed at a scale sufficient for planning and communication purposes, showing appropriate right-of-way, utilities and easements, topographic, land use, and other information using available materials. All mapping will conform to County and City of Mill Valley and City of Corte Madera map standards. It is understood that detailed mapping may be needed at selected critical locations to determine the feasibility of a specific proposal: as such, we will conduct more extensive research and prepare detailed mapping as needed once the selected alternatives and designs are known. Two days of Nolte Engineers' survey crew field time and associated office-processing time are included for this purpose.

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Deliverables (as needed):

- Aerial topographic maps augmented by field surveys
- AutoCAD drawing files at 1" = 20' with 1 foot contours and spot elevations to .1' from available sources or prepared by Nolte Associates for specific critical areas as required for preliminary design, subject to limits of 2 days survey crew time.
- ASCII file of set and ground control point data
- Copies of original field notes

TASK 4: TECHNICAL STUDIES

The expert consultants on the LandPeople Team will conduct the required focused studies on each technical issue as outlined below. LandPeople will coordinate regularly with the consultant and County staff to ensure that the relationships between all issues are understood, and the appropriate background information is available.

4.1 Geotechnical Study. Jacobs Associates will prepare geotechnical investigations necessary to develop conceptual tunnel rehabilitation recommendations and a conceptual cost estimate (within the hour allocation identified for this task) are anticipated to consist of the following sub-tasks:

- Review of existing data, including published and unpublished geologic maps and geotechnical reports, as well as review of the 2001 Alto Tunnel Scoping Study prepared by Jacobs Associates.
- Geologic field reconnaissance above tunnel, including mapping of portals and approaches to the portals, to gather data on rock properties such as joint orientations and rock mass classification.
- If permitted by the Marin Municipal Water District (MMWD), geologic field reconnaissance can include inspection and mapping of the 475 feet long Camino Alto Tunnel (a water supply tunnel), which lies 170 feet above, and parallel to, the Alto Tunnel. This could provide valuable geotechnical information for the middle third of the Alto Tunnel, which is currently inaccessible. Jacobs Associates has already contacted MMWD and performed a limited inspection of the construction shafts, and has remotely photographed the tunnel.

These efforts will be documented in the technical report on existing conditions and recommendations for rehabilitation.

Deliverable:

- Geotechnical Findings TM (3 copies)

4.2 Tunnel Feasibility Analysis. Jacobs Associates will prepare Conceptual designs for tunnel rehabilitation following the geotechnical investigation. The conceptual designs for tunnel stabilization developed by Jacobs Associates in the 2001 Alto Tunnel Scoping Study are applicable for pathway use, subject to slight modification.

As noted in Jacobs Associates' 2001 report, all existing timber supports in the tunnel will likely be removed and replaced with an appropriate fire-resistant shotcrete lining. This lining will provide both support and protection from minor rock fall, while providing a natural looking surface. A rock bolt system and/or shotcrete lining with steel arches will be designed to create a structural arch of reinforced support in areas of rock instability.

In addition to re-lining the tunnel, emphasis will be placed on developing a conceptual tunnel rehabilitation plan which mitigates localized tunnel instability, ground settlement potential, and

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ground loss. It is clearly understood that residents near the tunnel are concerned about the impact of tunnel rehabilitation on their homes.

The collapsed and/or plugged portals present technical challenges and the most expensive portion of the tunnel repair. Soil and rock slope stability analyses would be performed and a portal excavation support scheme developed to safely construct a new portal at the south end.

Developing the surface routes from the existing paths to the tunnel portals will also be assessed. This will include:

- A survey of vegetation and species to preserve as much of the natural environment as possible.
- A drainage evaluation for surface waters, particularly at the south end which is subject to minor pooling.
- A road bed evaluation to identify technical requirements for the new paved surfaces and sub-base.
- Identifying and preserving natural screening barriers to reduce noise and visual impacts on existing residents.
- Identifying encroachments into the County's or other right-of-way from adjacent properties.
- Providing effective transitions to alternative corridor(s) for public safety vehicles access and egress.

Key criteria will be to assess development of the portal area slopes for long term stability and low maintenance requirements, developing safe transitions between the surface corridor and the tunnel corridor by considering adequate siting distances and surface transitions. Available utility maps will also be reviewed for overhead, surface, and underground utilities which could impact the permitting or construction.

Ventilation. Assuming that the tunnel pathway must also accommodate emergency vehicles, airborne contaminant concentration limits in vehicular tunnels are set by the U.S. Environmental Protection Agency and the Federal Highway Administration. Carbon Monoxide (CO) is one of the main contaminants for which permissible limits have been set.

There are four main types of tunnel ventilation: natural ventilation, semi-transverse ventilation, full transverse ventilation, and longitudinal ventilation. Ventilation will be assessed.

Lighting and Emergency/Security Systems. Lights must meet the requirements for bicycle and pedestrian usage, as well as emergency access. Light systems will be assessed that provide adequate illumination, while minimizing energy usage, maintenance requirements, and risk from vandalism.

In addition to lighting, fire detection and suppression, emergency communications, security and remote surveillance will be addressed. The Technical Memorandum will summarize the means, methods, and design criteria utilized to determine the scope of rehabilitation efforts, as well as identify key engineering issues with implementing this alternative

Deliverable:

- Tunnel use feasibility TM (2 copies)

4.3 Drainage Analysis. Nolte Associates will provide preliminary drainage analysis for existing conditions and all proposed design solutions. Per Jacobs Associates field studies, we are aware that the Alto Tunnel south portal has evidence of drainage problems, along with other drainage and landslide issues along Horse Hill and Camino Alto corridors. The analysis will identify where problems are located, the extent of those problems and conceptual designs to address the problem. The procedure will generally consist of (a) preparing a Technical memorandum describing existing

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drainage systems, and identifying problem areas, (b) preparing a draft Technical Memorandum summarizing recommended improvements resulting in changes in drainage patterns and/or reduction in flooding, (c) attend meetings with the TAC to review the TM results and respond to TAC comments, and (d) finalize the TM as needed.

Deliverables:

- Draft Drainage Technical Memorandum (2 copies)
- Final Technical Memorandum (2 copies)

4.4 Hazardous Materials Determination. Jacobs Associates will determine if a Hazardous Materials Corridor Study (Corridor Study) will be needed with the re-opening of the Alto Tunnel. One potential source of hazardous materials will be the old tunnel creosote-soaked timbers, roadbed, and water within the tunnel. The HM Corridor Study Determination is a subset of a Phase I environmental site assessment and is specific to projects where contaminated soil and groundwater may be encountered during construction. The goal of the HM Corridor Study is to avoid contamination or assist in locating, quantifying, and negotiating with agencies or disposal facilities to minimize the cost and time of handling the contaminated materials during construction.

Deliverable:

- HM Corridor Study Determination Report (if needed and authorized separately)

4.5 Multi-Modal Traffic Analysis. David Parisi, PE, will lead this task, which will include an assessment of available crash data, existing and projected traffic volumes, speeds, potential traffic operations, and sight distance constraints. He will also evaluate the alternative cross-sections, including travel lane, bike lane, and shoulder widths.

Deliverable:

- Multi-modal Traffic Safety Study Findings TM (2 copies)

4.6 Use Projections. LandPeople will conduct vehicle, pedestrian, and bicycle counts in each of the three corridors, building on counts and surveys conducted as part of the NTPP project. LandPeople uses a Multi-Modal Corridor Trip Generation Model that can predict bicycle and pedestrian volumes based on a variety of factors, including (a) surround land uses, (b) topography, (c) type of facility, (d) number of attractions, and other factors. This model has been used successfully on similar corridor projects around the state, and is constantly being calibrated to actual daily and annual counts on bikeways and walkways. A breakdown of expected users by mode, age, gender, trip length, trip purpose, and other information will be developed.

Deliverable:

- Use Projections Findings TM (2 copies)

4.7 Emergency Response Analysis. LandPeople will determine the benefit of each of the three alternative corridors relative to the emergency preparedness/evacuation of Mill Valley-Corte Madera (i.e., can a fire truck access and use alternative routes safely, can people evacuate on foot or bicycle, etc.

Deliverable:

- Emergency Response Findings TM (2 copies)

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TASK 5: ALTERNATIVES ANALYSIS, ENVIRONMENTAL, DESIGN, IMPLEMENTATION

This task will involve laying out the existing bicycle and pedestrian alignments as well as mapping alternatives for each of the three corridors. We will explore all alternatives to ensure the best possible alignment from the perspective of the facility user. Our fieldwork has already helped us understand likely options and constraints. Our analysis of options will also focus on safety, roadway crossings, cost, ease of implementation, aesthetics, topographical constraints, environmental constraints, private property impacts, and public support. We will illustrate the potential connections to key destinations such as other non-motorized systems in the area, trailheads, access points, transit connections, as well as potential connections to schools, parks, and employment centers.

5.1 Development of design alternatives. Based on the preliminary technical memoranda to be prepared by LandPeople team members, the Team will collaborate to resolve the features of the three alternative routes identified in the RFP. Likely types of design alternatives to be studied include any one or combination of facilities:

- (A) Widened roadways/shoulders
- (B) Improved signage, striping
- (C) New or enhanced Class I bike path
- (D) New or enhanced Class II bike lanes
- (E) New or enhanced Class III bike route
- (F) Bicycle Boulevard
- (G) New or enhanced sidewalks or pathways
- (H) Rehabilitated tunnel

5.2 Alternatives Evaluation. Building on the advantages and disadvantages of the alternatives for each corridor identified in the RFP, the LandPeople Team will collaborate to evaluate the alternatives based on the findings of the technical studies, including preliminary environmental evaluation form Task 5.3. The alignment alternatives will be evaluated for each of the three corridors according to some or all of the following evaluation criteria:

- **Safety and Liability**
Based on conformance with state and federal standards and guidelines, potential impact on existing homes, input from experienced planners and engineers, emergency service providers, and design of major roadway crossings.
- **Bikeway and Community Connections**
Highest priority for alternatives that provide the most direct and convenient access to other trails or bikeways, schools, parks, commercial or employment areas
- **Functionality/Efficiency**
Providing a positive user experience that reflects the need for access to the corridor and nearby destinations. The cross section should be designed to accommodate the range and volume of potential users.
- **Environmental Impacts**
Identify environmental impacts and opportunities for pre-mitigation through re-routing, native species re-vegetation, and design (based on preliminary results of Task 5.3).

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- **Cost**
Cost estimation of alternatives, especially where crossing improvements, fencing, or other infrastructure improvements are being considered.
- **Roadway Crossings**
Evaluate alternative crossing options based on available traffic speed, visibility, and volume data, using state guidelines and experience.
- **Permitting Requirements:**
Identify likely required permits, the likelihood of obtaining permits, and the impact on cost and schedule
- **Security**
Review accident data, police reports, crime statistics, and other data with strategies to address those concerns.
- **Consistency with Local Plans**
Evaluate local pedestrian/trail/bikeway plans and policies, and determine the compatibility/conflict with the proposed project.
- **Multiple Users/Level of Use**
Develop alternatives with potential users in mind, including: bicyclists, walkers, joggers, in-line skaters, motorized and non-motorized wheelchair users, maintenance vehicles, security vehicles.
- **Private Property Impacts**
Identify potential impacts of alignments on private properties and conceptual opportunities to mitigate for those impacts, including construction impacts.

5.3 Environmental Analysis. LSA Associates will conduct environmental analyses, including background research and a biological field survey to identify any significant adverse impacts to environmental resources that could occur along the three alternative alignments within the hour and cost allocation identified for these tasks. LSA will obtain and review all available documents pertaining to the bike and pedestrian corridor and conduct a field visit to identify potential environmental issues and constraints. We will conduct a biological resources assessment to identify any significant adverse impacts to biological resources and special status species using available material. As part of this assessment, LSA will obtain a list of special status species from the U.S. Fish and Wildlife Service (USFWS), will query the California Natural Diversity Data Base and California Native Plant Society Online Database, and will conduct a general field survey. LSA will also conduct a cultural resources study consisting of a records search of the project area, a literature and cultural resources inventory review, and consultation with the Native American Heritage Commission (NAHC). LSA will prepare a Technical Memorandum that will document the background research, study methods, research findings, and biological resources field findings. The Technical Memorandum will also identify any additional studies/surveys that may be required.

LSA will complete an Initial Study checklist for each of the alternatives proposed in the Corridor Study. The Initial Study Checklist will be based on the CEQA Checklist (Appendix G) and the County's Environmental Review Guidelines. LSA will provide a cursory level response to each environmental factor in the checklist to assist the County in determining the appropriate environmental document required for obtaining clearance under both CEQA and NEPA. LSA will also conduct a Preliminary Environmental Study (PES) for each of the alternatives. The PES form will outline the recommended federal environmental documentation, technical studies, surveys, clearances, agency coordination and

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required permits. Both the PES and Initial Study Checklists will be submitted to the County for review prior to submission to Caltrans.

Deliverables:

- Environmental Analysis Results Technical Memorandum
- CEQA and NEPA Initial Study Checklist
- Caltrans PES Study Form

5.4 Evaluate Alignments. Each route alternative will be developed in enough detail so that critical environmental, cost, safety, and other items can be identified. An evaluation matrix with clearly described criteria will be used to evaluate each alternative. The results will be summarized and presented to staff and the TAC.

Evaluation effort will focus on resolving issues or flaws, which may be in the form of environmental, cost, drainage, hazardous materials, emergency response, aesthetic, function, safety, or maintenance impacts. The objective will be to develop all three alternatives into sufficient detail so that the advantages, disadvantages, and potentially fatal flaws can be identified.

It is recognized that the process may result in two or even three “preferred alignments” in that they may be preferred for different objectives – e.g. as an interim route given certain improvements, as a long-term route based on available funding, and/or preferred by two different important user/interest groups. The alternatives will be mapped, described, quantified and analyzed at this stage sufficient that the relative benefits of and support for the three alternatives and potential sub-alternatives is documented.

5.5 Preliminary Engineering/Concept Design. Preliminary Engineering/Concept-level designs will be prepared for up to three Corte Madera to Mill Valley route alignments. The design documents will include corridor alignment plans, typical and special cross-sections, enlarged plan areas, and conceptual details sufficient to characterize and quantify the proposed improvements. Accuracy will be consistent with the available GIS base information, supplemented by existing CAD base data where provided by the participating agencies.

The LandPeople Team consists of some of the foremost bikeway and pedestrian design experts in California, with an in-depth knowledge of every aspect of design from ADA through MUTCD and the Caltrans Highway Design Manual. Team staff including registered landscape architects and traffic engineers will review the plans submitted by the design team. Key design elements that will be reviewed at a preliminary engineering level of detail for this project include:

- Right of way needs
- Tunnel rehabilitation
- ADA access
- Conformance with Caltrans standards and practices
- Caltrans minimum setbacks
- Minimum and recommended width
- Vertical and horizontal clearances
- Type of barriers
- Signing and striping
- Lighting
- Roadway crossings
- Ramps and access routes
- Visibility and line of sight

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In addition, all published design criteria will be used as well including:

- Caltrans Highway Design Manual on Bikeway facilities (Chapter 1000)
- Manual on Uniform Traffic Control Devices (MUTCD), part 9 and California Supplement
- Americans with Disabilities Act
- AASHTO Guide for the Development of Bicycle Facilities (1999)
- FHWA/FRT and Alta Planning + Design, 'Rails-with-Trails: Lessons Learned', (2004)
- Non-Motorized Technical Reference Guide, Caltrans/Alta Planning + Design (2005)

Typical cross sections and details will be developed for the pathway, fencing, driveway crossings, and other features that conform to the above criteria.

5.6 Cost Estimates. LandPeople and its design team will prepare feasibility study level cost estimates for the route alignments based on available surface and sub-surface information, and existing right-of-way conditions. The cost estimates will provide a rational assessment of the construction cost and duration necessary to construct the alternative alignments by assessing:

- The expected amount that a responsive and responsible bidder would tender for the construction of the project in current dollars, including allowances for risk that are typically managed by the contractor;
- The amount by which construction costs are expected to increase between now and the time of expenditure (i.e. escalation); and
- The recommended amount of contingency that should be included to reflect the confidence in the current level of design definition, the current bid climate, and an amount for as-yet uncertain environmental mitigation measures. Cost estimate contingencies for above ground work and underground work will be applied to the feasibility estimate to reflect the differing levels of certainty.

The cost estimates will be consistent with the Association for the Advancement of Cost Engineering recommendations for a Class 4 feasibility level opinion of probable construction cost. We will use clearly stated unit cost assumptions based on recent construction experience in the area and LandPeople's in-house database of construction cost estimates for trail, pedestrian, and bikeway facilities. This database is constantly updated when new projects are constructed, and is used by agencies around the country.

We will work with the Department of Public Works to ensure consistency with local practices and experiences. LandPeople will also develop lifecycle, operating and maintenance costs based on its experience preparing Path Management Plans around California. We will talk with appropriate City staff to determine the likely level of operation and maintenance required for this project.

5.7 Project Time Line and Implementation. A **Phasing Plan** and Project Timeline will be developed identifying the likely phasing of the projects on up to three Corte Madera to Mill Valley route alignments so that an accurate financing and funding strategy can be completed. Phasing of distinct segments will be based on (a) funding availability and requirements, (b) other programmed transportation improvements, (c) eliminating an immediate bottleneck or safety hazard, and (d) ensuring that the project is implemented rationally rather than as a series of disconnected pieces over time. LandPeople will develop a Project Timeline that will help facilitate development of the project by breaking it up into fundable and functional segments. LandPeople will also assist in developing a funding and financial plan that identifies likely funding sources, provides strategies for obtaining funding, and input into the development of funding applications.

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LandPeople will develop a Management Plan based on successful efforts on several other multi-jurisdictional projects throughout northern California. The Plan will consist of several distinct elements. An **Operations and Maintenance** section will address future needs of the corridor, including enforcement, routine and annual maintenance, operating and maintenance costs, agency responsibility, capital needs, staging, response procedures, and design elements that will facilitate this process. The Plan will include a section on emergency response systems, construction management techniques, and techniques for closing the trail as needed over time for maintenance.

The **Operations** section will provide details on how the facility should be designed and managed in terms of safety for users. This includes signing, striping, speed limits, visibility, user conflicts, distance markers, pavement width, trail etiquette signs, and other measures to ensure that safety is maintained.

5.8 Report Production. LandPeople will produce one administrative draft Bike and Pedestrian Corridor Study, circulate it to the PAC for one round of revisions. The Draft Report will be circulated to the PAC and the public for comment and include information generated from previous tasks and incorporate revisions based on received comments and project team input. A final report will be prepared after public input

Deliverables:

- One printed copy for each PAC member plus one electronic copy of the Draft Plan
- One printed copy for each PAC member plus one electronic copy of the Final Plan