

EXHIBIT B

**Preliminary Work Scope Outline
Chimes Creek Restoration Feasibility Study**

Objective:

The objective of this project is to complete a feasibility analysis for the restoration and rehabilitation of Chimes Creek ("Creek Project") below Interstate 580 in Oakland, California ("Feasibility Study"). For the purposes of this Feasibility Study, the limits of work will include Chimes Creek between the culvert outfall below Delmont Avenue and the existing Alameda County Flood Control inlet near Nairobi Place.

The final product will be a written report which includes an analysis of existing conditions; alternative design concepts for the Creek Project; a recommended design concept for the Creek Project, including flow and other design standards specified below; an estimate of associated design, construction and project management costs, and a schedule for completion of all phases of project implementation, as specified in the tasks below. The Feasibility Study shall also address permitting requirements needed to complete the proposed work.

Background and Setting:

Chimes Creek is a natural, urban creek situated below the Interstate 580 Freeway in Oakland. The creek is surrounded on both sides by houses. Retenments such as retaining walls and concrete inverts have been constructed over the years. Public sanitary sewers are located within at least one bank along the length of the study area.

Significant erosion occurred along Chimes Creek below Nairobi Place during the 1981-1982 El Niño winter and subsequent years. The Alameda County Flood Control District mitigated this erosion in a project in the early 1990's under which a bypass culvert was constructed in the creek bed and a reconstituted creek constructed on top. The banks in this area have been stable since, and the creek has been restored to a relatively natural condition.

Erosion upstream of Nairobi Place in the area to be studied in this report began in the 1980s and accelerated in the 1990s. The sanitary sewer pipe is exposed at several locations along this area.

Design Team:

The consultant team shall include a registered civil engineer and landscape architect with expertise in several key areas, including but not limited to the following:

- Hydrologic, hydraulic, and geomorphic design of urban streams;
- Experience in similar stabilization projects for urban streams;

FINAL - 1/26/07

- 1 -

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- An ability to conduct community meetings;
- Knowledge of bio-engineering techniques with a proven capability to stabilize banks in urban streams similar to Chimes Creek.

Scope of Work:

The following work tasks are considered the minimum necessary to complete this Feasibility Study. Consultants are expected to recommend additions or modifications to these tasks as they see necessary to complete the Feasibility Study. The primary objective of the Feasibility Study is to develop a plan to restore Chimes Creek to a condition as natural as possible in its urban location. An emphasis on bio-engineered stabilization techniques should be considered wherever feasible and practicable.

1) Review existing conditions.

- a) Compile and review available information and data, including but not limited to:
 - i) Records of City of Oakland, including stormwater system;
 - ii) Records of Alameda County Flood Control District, including any relevant flow monitoring data; and
 - iii) Environmental documents, including drainage plans, and supporting information for the Leona Quarry Project and Ridgemont Development
- b) Review existing site conditions for Chimes Creek.
 - i) Conduct field survey of affected reach, including cross-sections and profile adequate to complete hydraulic analysis and conceptual design;
 - ii) Review existing construction documents, including as-builts;
 - iii) Review existing hydrologic studies;
 - iv) Review existing hydraulic studies; and
 - v) Compile annotated bibliography.
- c) Engage neighbors, City staff, and other individuals with a history in the area or nearby to provide relevant anecdotal or other information in assessing the existing and previous conditions relevant to Feasibility Study.
- d) Review historic aerial and other photographs to determine historic conditions of Chimes Creek.
- e) Conduct hydraulic modeling necessary to support design concepts.

2) Conduct Focused Surveys and Data Acquisition

FINAL - 1/26/07

- 2 -

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- a) Conduct focused Hydrological Survey and Hydraulic Analysis relevant to Feasibility Study
 - b) Conduct Geomorphic Survey including analysis of conditions necessary for protection of riparian properties in light of expected flow discharges.
 - c) Conduct focused Biological Survey, as needed, including water quality parameters relevant to Feasibility Study.
- 3) Conduct Community Meetings
- a) The Creek Project will be located in an urban setting, and proposed improvements will have a direct impact on the residents of the area.
 - b) The consultant is expected to conduct community meetings at key points in the feasibility analysis to gather existing information, and to consult the community regarding alternative design concepts for consideration and development of the recommended concept.
 - c) There are numerous owners of private property along Chimes Creek, all of whom should be given notice of such community meetings.
- 4) Develop Design Concepts for Creek Project.
- a) Statement of project goals
 - b) Summary of available information
 - c) Analysis of alternative design concepts
 - i) Include a summary of all design constraints to the proposed project, including permitting, physical constraints, legal constraints
 - ii) Integration Requirements [moved from below]
 - iii) Data Gap Analysis [moved from below]
 - iv) Technical Feasibility Analysis [moved from below]
 - d) Recommend Design Concept for Creek Project.
 - i) Include a summary of the design standards to be used in the final design, including but not limited to hydrologic and hydraulic design standards; slope stability guidelines; setback standards
 - ii) Recommended design concept, including design standards, shall be presented to the City and MHA for approval prior to beginning actual feasibility level design work.
 - e) Undertake Feasibility-level design work for recommended design concept.
- 5) Project Schedule [renumber as new 5]

FINAL - 1/26/07

- a) Develop a project schedule for design, bid/award, and construction for recommended Creek Project.
 - b) Develop a schedule for permitting required for the recommended Creek Project.
 - i) Includes Department of Fish and Game, Army Corps of Engineers, and any other permits necessary for the construction of the recommended alternative
- 6) Prepare Project Cost Estimate
- a) Estimate cost to produce final Construction Documents for recommended design
 - b) Estimate to prepare and process required permits
 - c) Estimate Construction Costs
 - d) Estimate Project Management and Construction Management Costs
- 7) Alternative Task – Assist in Grant Applications
- a) The consultant may be required to assist the City in appropriate technical tasks involved in applying for grants for the design and construction of the recommended design concept.

FINAL – 1/26/07

- 4 -

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