# REPORT

**To the Honorable Mayor and City Council**
**From the City Manager**

December 15, 2003

**Subject**
Professional Services Agreement - Drainage Improvements to Garrett Park

**Recommendation**
Approve a professional services agreement with Kennedy/Jenks Consultants for design of drainage improvements to Garrett Park.

**Background**
In 1970, as part of one of the City's General Improvement Projects for Storm Drain Improvements, the City installed a drainage inlet upstream of the park, with a channel across the park and leading to an underground, 48" diameter pipe. The downstream neighborhood in Redwood City was developed over time, and homes were built immediately adjacent to the 48" pipe.

When the original improvements for this channel were installed, the upstream drainage area (which is primarily unincorporated County), was mostly undeveloped. Since then, quite an increase in development has taken place, along with an accompanying increase in the amount of impervious surface. This new development has the impact of creating more storm water runoff. It is estimated that there is an increase of about 30% in the amount of runoff from the original condition.

The inlet upstream of Garrett Park clogs with debris occasionally, due to the trash and debris that washes downstream and/or is dumped into the creek. Even with conscientious efforts on the part of the City's maintenance crews, the inlet got plugged during the heavy rains of December 2002. The plugging of the inlet caused the overflow and the subsequent damage to the claimants' properties.

After studying the situation, City staff is recommending that modifications be made to the inlet structure, including enlarging the opening and reconstructing the grate, so that, even with the inevitable deposition of debris, the storm water can get into the pipe before overtopping the inlet and washing downstream to the adjacent property. This work will be designed now; advertisement for bid and construction will commence in the spring of 2004.

5.1 B-2

Since we cannot get this work accomplished before the upcoming rainy season, the following procedures will be put in place by the Public Works Services Department, to mitigate potential clogging and overflow during rain storms on a continuous, as-needed basis:

1. During light or average rainfall events, a roving crew will be assigned to check the inlet while on duty in the Garrett Park vicinity.

2. When heavy rains are forecast, a city worker will be stationed at the park with a truck, tools and a cell phone. Additional crews with heavy equipment will be on standby, and should debris accumulation at the inlet reach a predetermined level, they will give immediate response a top priority.

3. Necessary overtime to provide adequate coverage shall be absorbed by the department's approved budget, utilizing funds created by vacant positions.

**Alternatives**
The only other alternative is to not do this project.

**Fiscal Impact**
The estimated cost for the construction of these improvements is approximately $120,000, including design and construction administration. At this time, staff is requesting approval to go forward with the design services for an amount not to exceed $31,000. The firm of Kennedy Jenks Consultants was selected for this assignment because they are the original designer of the Redwood Creek storm drainage system. Also, they are intimately familiar with the City's storm drainage system and in particular with the Emerald Branch of the Creek to which this park is served.

Funds for this project will be available from the Capital Improvement Program, under Storm Drain Creeks and Channels.

Jon K. Lynch
City Engineer

Bruce Liedstrand
Community Development Services Director

Ed Everett
City Manager

Peter Ingram
Public Works Services Director

JKL/PI:ss
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EXHIBIT "A"

5.10-3

OCT 22 2003

# Kennedy/Jenks Consultants

**Engineers & Scientists**

2191 East Bayshore Road
Suite 200
Palo Alto, California 94303
650-852-2800
FAX 650-856-8527

16 October 2003

Jon Lynch
City Engineer
Engineering and Construction
City of Redwood City
1017 Middlefield Road
P.O. Box 391
Redwood City, CA 94064

Subject: Proposal for Design Services for Storm Drainage Improvements to the Emerald Branch of Redwood Creek at Garrett Park
K/J B03089

Dear Jon:

Provided herewith is our proposal for providing the City of Redwood City with design services for the improvement of the inlet conditions for the Emerald Branch of the Jefferson Branch of Redwood Creek located at Garrett Park in Redwood City. Per your request, we have modified our original proposal for design/build services with Power Engineering to this proposal for conventional design services that are consistent with the public bidding of the improvements. Our proposal is based on our understanding of your needs from discussions with you, visits to the site, a review of the report by BKF Engineers on the investigation of Bain Place flooding and a review of the original design drawings of the storm drainage system.

During past storm events the existing trash rack at the inlet to the Emerald Branch on the upstream side of Garrett Park has become blocked with debris causing flooding of Garrett Park and subsequent flooding of two adjacent properties on Bain Place. As indicated in the BKF report, there are several improvements that can be implemented to reduce the risk of flooding in the future. These improvements include:

- Modifying the inlet structure to increase the trash rack area and the time between cleanings before flooding would occur
- Increasing the size or adding additional downstream inlets to the system to allow for flow bypassing the trash rack to enter the storm drainage system downstream of the trash rack prior to flooding downstream homes
- Installing a downstream barrier to divert flow that bypasses the storm drainage system inlets to Glenwood Avenue, rather than through the Bain Place properties.

5.1B-4



Based on your request not to include the downstream barrier as one of the designed improvements we have developed the following items to meet the City's needs and reduce the potential for downstream flooding:

- **Inlet Structure Modifications:**

  Remove the existing trash rack and extend the inlet structure upstream approximately six feet and raise it one foot with a wider structure. A new trash rack (11-½ feet wide and 5-½ feet high) would be installed in the extended inlet structure to replace the existing trash rack (7 feet wide and 4-½ feet tall). This would provide a 100 percent increase (doubling) in the trash rack surface area. In addition, the space vacated by the existing trash rack (7 feet wide and 4-½ long) would be covered by a horizontal grating (trash rack) and used as an area to drain removed debris. This horizontal trash rack would also serve as a second downstream inlet in the event the primary trash rack is blocked with debris. This modification includes installing riprap within the first six feet upstream of the extended structure and relocation of the guard railing around the downstream side of the structure that allows for access to clean the widened trash rack configuration.

- **Adding Additional Downstream Inlets:**

  On the down stream side of Garrett Park there is an existing box structure that provides for the transition between the storm drainage piping that crosses the Hetch Hetchy Right-of-Way and the buried downstream 48-inch storm drainage piping. Remove the existing at-grade steel hatch that is 7-feet by 6-feet in area and replace the hatch with a trash rack similar to the racks at the inlet structure. The existing box is currently surrounded by handrail and is located behind the park landscaping so that this new inlet would not affect the park usage.

Our proposed services include obtaining a survey of the site, preparation of design drawings for the inlet structure modifications and additional downstream inlet as identified above (four sheet anticipated), preparation of technical specifications for the improvements and construction support. Construction support would include submittal review, construction observation on an as requested basis, response to Contractor's Requests for Information and assistance with the preparation of change orders, if necessary. Attached with this letter is a breakdown of our estimated effort to provide these services.

Since the exact scope of services cannot be clearly defined at this time, we propose that compensation for our services be on a time and expense reimbursement basis in accordance with our Schedule of Charges dated 1 January, 2003, attached. Payments shall be made monthly based on invoices which describe services and list actual costs and expenses.

Based on our estimate of services required and the enclosed effort breakdown, we propose a budget of $31,600.00, which will not be exceeded without authorization. The budget may be increased if necessary to complete the scope of work. We will notify you prior to expenditure of 80 percent of the budget if the need for a budget increase is anticipated. We will not be obligated to continue providing services upon expenditure of authorized funding if the increased budget needed to complete the scope of work is not authorized. If you have any questions or require any additional information, please give me a call at (650) 852-2822.

Very truly yours,

KENNEDY/JENKS CONSULTANTS

John M. Wyckoff, PE
Vice President

cc: file

City of Redwood City
Garrett Park Storm Drainage Improvements
Design Proposal
Kennedy/Jenks Consultants

5.1B-6

| Task | Eng. Principal $170/Hr. | Eng. Senior $158/Hr | Eng. Sr. Staff $98/Hr | Drafting $97/Hr | Total Hours | Direct Expenses | Costs |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| Design (Design Build/4 Sheets) | | | | | | | |
| - Title Sheet w/Project Location | 1 | | 4 | 12 | 17 | | $1,334 |
| - Entrance Modifications | 4 | 12 | 2 | 32 | 50 | $150 | $7,006 |
| - Downstream Inlet Modifications | 2 | 4 | 2 | 24 | 32 | | $3,692 |
| - Diversion Wall | | | | | 0 | | $0 |
| - Site Plans (Existing and Final Condition) | 2 | 2 | 4 | 24 | 32 | | $3,180 |
| - Specifications | 4 | 8 | 16 | 0 | 28 | | $2,728 |
| Subtotal | 12 | 26 | 24 | 80 | 142 | | |
| Survey | | | | | | $4,500 | $4,500 |
| | | | | | | | |
| Subtotal | | | | | | | $21,106 |
| | | | | | | | |
| 10% Design Contingency | | | | | | | $2,111 |
| | | | | | | | |
| Design Subtotal | | | | | | | $23,217 |
| | | | | | | | |
| Construction Support | 8 | 24 | 24 | 8 | 64 | $100 | $8,380 |
| | | | | | | | |
| Construction | | | | | | | |
| | | | | | | | |
| Construction Insurance (3%) | | | | | | $0 | $0 |
| | | | | | | | |
| Construction Markup (15%) | | | | | | | $0 |
| | | | | | | | |
| 10% Construction Contingency | | | | | | | $0 |
| | | | | | | | |
| Construction Subtotal | | | | | | | $8,380 |
| | | | | | | | |
| Total | | | | | | | $31,597 |

Sheets

1 Title Sheet and Location Map
2 Abbrevations, Notes and Details
3 Site Plan and Structure Modifications
4 Sections and Details

5.1 B-7

**Client/Address:** City of Redwood City
1017 Middlefield Road
P.O. Box 391
Redwood City, CA 94064

**Kennedy/Jenks Consultants**

**Contract/Proposal Date:** 16 October 2003

# Schedule of Charges

**January 1, 2003**

## Personnel Compensation

| Classification | Hourly Rate |
|---|---|
| Drafter/Technician | $73 |
| Designer/Senior Technician | $87 |
| Staff Engineer-Scientist-Specialist | $83 |
| Senior Staff Engineer-Scientist-Specialist | $98 |
| Engineer-Scientist-Specialist | $110 |
| Associate Engineer-Scientist-Specialist | $128 |
| Senior Associate Engineer-Scientist-Specialist | $140 |
| Senior Engineer-Scientist-Specialist | $158 |
| Principal Engineer-Scientist-Specialist | $170 |
| Senior Principal | $180 |
| Project Administrator | $67 |
| Word Processor | $58 |
| Non-Technical | $46 |

The above Hourly Rates include normal and incidental costs such as routine communications, postage and office supplies.

## Direct Expenses

Reimbursement for direct expenses, as listed below, incurred in connection with the work, will be at cost plus ten percent for items such as:

a. Maps, photographs, reproductions, printing, equipment rental, and special supplies related to the work.
b. Consultants, soils engineers, surveyors, contractors, and other outside services.
c. Rented vehicles, local public transportation and taxis, travel and subsistence.
d. Specific telecommunications and delivery charges.
e. Special fees, insurance, permits, and licenses applicable to the work.
f. Outside computer processing, computation, and proprietary programs purchased for the work.

Reimbursement for owned vehicles used in connection with the work will be at the rate of 36 cents per mile or at a monthly rate.

Reimbursement for use of computerized drafting systems (CADD), geographical information systems (GIS), and other specialized software and hardware will be at the rate of $12 per hour.

Rates for professional staff for legal proceedings or as expert witnesses will be at rates one and one-half times the Hourly Rates specified above.

Other in-house charges for prints and reproductions, equipment usage, laboratory analyses, etc. will be at standard company rates.

Excise and gross receipts taxes, if any, will be added as a direct expense.

The foregoing Schedule of Charges is incorporated into the agreement for the services provided, effective January 1, 2003 through December 31, 2003. After December 31, 2003, invoices will reflect the Schedule of Charges currently in effect.