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INTRODUCED BY PAUL BARD PROPOSED NO. 93 90

MOTION NO. 8928

A MOTION authorizing the King County Executive to enter into an agreement with the Washington State Department of Ecology regarding the joint funding of a water quality restoration study of Lake Desire.

WHEREAS, the Washington State legislature has created the Centennial Clean Water Fund for the joint funding of water quality improvement plans and projects with other public agencies in the state pursuant to RCW 70.146, and

WHEREAS, state requirements include a twenty-five percent local match for monies received, and

WHEREAS, degraded water quality conditions in Lake Desire include low
transparency, high nutrient levels, and excessive plant growth, which
reduce beneficial uses of the lake such as boating, swimming, fishing,
wildlife habitat, flood control, and aesthetics, and

WHEREAS, the King County department of public works has applied for and been offered a Centennial Clean Water Fund grant by the Washington State Department of Ecology to perform a phase I restoration analysis of Lake Desire, in south central King County;

NOW, THEREFORE, BE IT MOVED by the Council of King County:

The county executive is hereby authorized to enter into an agreement in substantially the form attached with the Washington State Department of Ecology to accept grant funding for a Phase I Restoration Analysis of Lake Desire.

PASSED this 8th day of Much . 1993.

KING COUNTY COUNCIL KING COUNTY, WASHINGTON

Mar Aullion VICE Char

ATTEST: etu Clerk of the Counci

Attachments:

A. Centennial Clean Water Fund Grant Agreement between the Washington State Department of Ecology and King County

CENTENNIAL CLEAN WATER FUND GRANT AGREEMENT BETWEEN THE STATE OF WASHINGTON DEPARTMENT OF ECOLOGY AND KING COUNTY

THIS is a binding agreement entered into by and between the State of Washington, Department of Ecology, hereinafter referred to as the "DEPARTMENT" and King County, hereinafter referred to as the "RECIPIENT". The purpose of this agreement is to provide funds to the RECIPIENT to carry out the activities described herein.

Project Title: Lake Desire Phase I Diagnostic/Feasibility Study

Grant Number: G9300

RECIPIENT Name and Address: King County, Surface Water Management Division 400 Yesler Way - Room 400 Seattle, Washington 98104-2637

RECIPIENT Authorized Representative and Title: Tim Hill King County Executive

RECIPIENT Contact and Telephone Number: Jim Kramer (206) 296-2637 SCAN 667-2637

DEPARTMENT Address: P.O. Box 47600 Olympia, Washington 98504-7600

DEPARTMENT Project Officer and Telephone Number: Allen Moore (206) 459-6063\SCAN 585-6063

The source of funds provided by the DEPARTMENT is: Centennial Clean Water Fund Program FY 93 Freshwater Lake Activities Subcategory

Total Project Cost	\$235,000
Total Eligible Project Cost	\$235,000
DEPARTMENT Share	\$176,250
RECIPIENT Share	\$ 58,750

DEPARTMENT Maximum Grant Percent: Seventy-five percent

The effective date of this grant agreement shall be the date this agreement is signed by the DEPARTMENT'S Water Quality Financial Assistance Program Manager. Any work performed prior to the effective date of this agreement without prior written authorization and specified in the Special Terms and Conditions will be at the sole expense and risk of the RECIPIENT.

This agreement shall expire no later than December 31, 1994.

PROJECT DESCRIPTION

Lake Desire is a 71-acre lake located in the Maple Valley area of southeast King County. The average lake depth is 13 feet with a maximum depth of only 21 feet. The majority of the 865-acre basin is forested with 27 percent of the basin developed for residential or commercial use (based on 1989 land use).

Lake Desire has been routinely monitored since the early 1970's, and is characterized as eutrophic. Degraded water quality conditions in the lake include: low summer transparency, high summer chlorophyll <u>a</u> levels and high winter total phosphorus levels. Frequent algal blooms and heavy aquatic plant growth currently impair the beneficial uses of the lake which include boating, swimming, fishing, wildlife habitat, flood control, and aesthetics. Without nonpoint pollution source controls, additional urbanization in the watershed will result in greater water quality degradation and beneficial use impairment or even loss.

Development in the watershed has been steadily expanding. Since 1976, urban development has increased from 10 to 27 percent. Recently, one-third of the watershed was designated for urban development in the Soos Creek Community Plan. Such urban development will only exacerbate the current condition of the lake. The opportunity to address new urbanization impacts to the lake still remains. If a watershed and lake management plan can be developed in the next several years, perhaps the use of more capital intensive restoration solutions may be avoided or minimized. Preventing additional degradation to Lake Desire will be one of the major goals of the project.

Historically, Wetland 14, which lies northeast of the lake, absorbed much of the runoff and filtered much of the contaminants before entering the lake. This area has been mined for peat for the past ten years. However, in the last two years, the wetland has been mined again, resulting in channelization and destruction of a large portion of the 43 acre wetland. The proposed project would examine the function and values of this wetland and how it plays a role in the water budget and overall quality of the lake. The effects of this wetland loss on water quantity and quality will be evaluated and the results incorporated into recommended restoration alternative(s).

PROJECT COSTS

BUDGET OBJECTS		TOTAL
1. Lake Desire Phase	I Restoration Project	\$235,000*
<pre>1.2 Goods/Servi 1.3 Contracts . 1.4 Travel 1.5 Indirect Total Eligible Pro</pre>	nefits ces/Supplies ject Cost l Office will track to the	\$ 19,704 \$113,000 \$ 720 \$ 9,523 \$235,000
Eligible Project		10001
MATCHING REQUIREMENTS		
Total Project Cost	•••••••••••••••••••••••••••••••••••••••	\$235,000
Total Eligible Projec	t Cost	\$235,000
DEPARTMENT Share (75 percent)	\$176,250
Cash (not less t	5 percent) han) e than)	\$ 47,990

Indirect Rate:

The indirect rate shall be fifteen percent of salaries and benefits incurred while conducting project related work.

PROJECT OBJECTIVES

The purpose of this project is to develop a lake management plan for Lake Desire based on the Phase I lake restoration study process. As part of this process, education and involvement of the public is essential to the success of the project and meeting project goals of improving current water quality and reducing future watershed impacts. In order to successfully complete this project, the following five objectives must be accomplished:

1. Provide education and involvement opportunities for the public throughout the project to foster public ownership and commitment to the development and implementation of the lake management plan;

2. Quantify and qualify the physical, chemical and biological components of the lake and its surrounding watershed;

3. Develop a nutrient and water budget which can be used as an analytical tool for the evaluation of restoration alternatives and development of a lake management plan;

4. Identify existing sources of point and nonpoint pollution and determine the relative contributions to the trophic condition of Lake Desire; and

5. Develop a comprehensive management plan for the improvement and protection of water quality in Lake Desire.

PROJECT ELEMENTS

TASK 1 - Project Management

The RECIPIENT shall be responsible for the effective and efficient administration of this grant project. Administration shall include project consultant management, coordination of committee meetings and scheduled events, record keeping and management, accounting, and related report review. The RECIPIENT will ensure that the grant project is conducted according to the details of this agreement and will carry out the project within the approximate time scheduled outlined in the agreement. The RECIPIENT will ensure that effective communication is maintained with the RECIPIENT's designees, the DEPARTMENT, the U.S. EPA, all affected local, state, or federal jurisdictions, and interested individuals. The RECIPIENT will ensure that the project is carried out in a manner that does not reflect adversely on the DEPARTMENT or the RECIPIENT.

The RECIPIENT will submit quarterly and annual project progress reports. Progress reports will document project accomplishments, problems encountered, future actions, updated cash flow projections, raw data summaries, and any other pertinent information. Quarterly reports shall be submitted according to the schedule in Section I. of the General Terms and Conditions (i.e., progress reports 30 days after quarter, quarterly billings 60 days after quarter). Annual progress reports will replace the regular quarterly progress report during the fourth quarter.

Approximate Cost: \$40,486

Anticipated Completion Date: December 31, 1994

Required Performance:

- 1. Quarterly reports;
- 2. Annual reports; and
- 3. Invoice vouchers.

TASK 2 - Public Involvement and Education

Public involvement and education will be accomplished by:

1) Establishing a technical advisory committee (TAC) with the Lake Desire Community Club, King County and State agency representatives, and other interested parties within the watershed;

2) Regular meetings of the TAC to discuss the status and direction of the project;

3) Conducting a series (approximately 3-4) of public workshops, projects, and/or meetings to involve and educate watershed residents in the project; and

4) Developing a project sign to acknowledge the DEPARTMENT, the RECIPIENT, and other participants in the study.

Moreover, the public involvement phase gives the project team an opportunity to get input from the public on the project goals, watershed and lake conditions, monitoring program and results, restoration alternatives and recommendations for the management plan.

Approximate Cost: \$19,853

Anticipated Completion Date: December 31, 1994

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Required Performance:

- 1. Establishment of the Technical Advisory Committee (TAC);
- 2. Quarterly or Biannual TAC meetings during the project;
- 3. Quarterly or Biannual workshops, projects and/or meetings; and
- 4. Project sign.

TASK 3 - Background Data, Monitoring, and Wetland Assessment

Completion of this task will be accomplished through the:

1) Collection of historical and background data for the project;

2) Definition of the existing environmental conditions of the lake and the water quality impacts of the watershed and groundwater on Lake Desire; and

3) Assessment of the function and quality of upstream wetland systems associated with the lake.

Background data collection will include a summary of existing land use, zoning, population, public access, point and nonpoint pollution sources, geology, groundwater and surface water conditions. The information collected during background data collection will be summarized in report form for the DEPARTMENT'S review and incorporation into the lake management plan.

The existing environmental conditions of Lake Desire and the water quality impacts of the watershed and groundwater on the lake will be quantified and qualified through the completion of the monitoring program described IN TABLE 1. Limnological analyses will include chemical, biological, and physical characterization of the water column, calculations of sedimentation rates, calculation of phosphorus release rates, and derivation of lake water and nutrient budgets.

A wetland assessment will be performed using standardized assessment forms provided by the DEPARTMENT in addition to the King County 1983 wetland survey and the 1990 update by King County Resource Planning.

Portions of these tasks will be conducted by the RECIPIENT, the remaining portions will be performed by a private consultant to the project. The details of this distribution of labor and subsequent details of the monitoring program for this task will be provided in the monitoring plan (see <u>SPECIAL</u> <u>TERMS AND CONDITIONS NO. 7</u>) which must be approved by the DEPARTMENT before monitoring may commence.

Approximate Cost: \$121,536

Anticipated Completion Date: April 30, 1994

Required Performance:

- 1. Monitoring Plan;
- 2. Background Data Report;
- 3. Raw data;
- 4. Phosphorus budget;
- 5. Water budget; and
- 6. Wetland Assessment.

COMPONENT	SAMPLING FREQUENCY	STATIONS	PARAMETERS
In-lake	Monthly: Oct-Mar Biweekly: April- Sept	2 stations, deep spots, each meter, triplicate TP* at surface, mid- depth, and bottom	Temperature, pH, Dissolved Oxygen, Conductivity, Total Phosphorus, Soluble Reactive Phosphorus, Nitrite+Nitrate- Nitrogen, Ammonia, Total Nitrogen, Turbidity, Alkalinity
	Same	2 stations	Secchi depth
	Same	2 stations, surface (1M), water column, triplicate chl a*	Chlorophyll a, Phaeophytin a, Phytoplankton species, biovolume, and identification
	Same	2 stations, vertical tow	Zooplankton species, enumeration, and identification
	monthly	2 stations, surface only	Fecal Coliform
	Three times during bloom	l station	Mouse toxicity for blue-green algae

TABLE 1: LIMNOLOGICAL, BIOLOGICAL AND HYDROLOGIC MONITORING

Table 1 Continued In-Lake	Quarterly	2 stations, deep spots, each meter	Calcium, Magnesium, Sodium, Potassium, Chloride, Aluminum, Sulfate, Iron, Total Soluble Phosphorus
Inlets/Outlet	Four storm events	2 stations, triplicate TP at inflow*	Temperature, pH, Dissolved Oxygen, Conductivity, Total Phosphorus, Soluble Reactive Phosphorus, Nitrite+Nitrate- Nitrogen, Ammonia, Total Nitrogen, Alkalinity, Chloride, Fecal Coliform (inflow)
		2 stations, composited over storm	Baseflow parameters plus Turbidity, Total Suspended Solids, Oil/Grease, Hardness, Copper**, Lead**, and Zinc**
Groundwater	Quarterly	4 to 8 sites: existing wells or shallow monitoring wells	Total Phosphorus, Soluble Reactive Phosphorus, Nitrite+Nitrate- Nitrogen, Ammonia, Total Nitrogen, Chloride
Sediment, in lake	Once	2 stations, 0.5 M core, analyzed at 10 cm increments	Total Phosphorus, Total Nitrogen, Percent Water, Total Organic Carbon, Lead 210, Aluminum, Zinc, and Iron
Sediment release	Once	2 stations, 4 cores/station, 10 samples/core, aerobic, anaerobic	Total Phosphorus, Soluble Reactive Phosphorus, Dissolved Oxygen, Temperature, pH

Table 1 Continued Precipitation	Monthly	2 stations, composited	Total Phosphorus, Soluble Reactive Phosphorus, Nitrite+Nitrate- Nitrogen, Ammonia, Total Nitrogen,
Macrophytes	Once	6 transects, 10 samples/transect	Species, Biomass, Total Phosphorus, Areal Mapping
Benthic Invertebrates	Bimonthly, growing season	Three sites, bottom grab	Density, identification to genus except for chironomids and oligochaetes
Fisheries	Two times, spring and fall	selected sites	Age class, condition factor, diversity, gut analysis
Hydrology	Biweekly: Oct-Mar Monthly:April- Sept	Lake level Inflow and Outflow Monitoring wells Rain Gauge	Volume Fluctuations Total Discharge Water level Total Precipitation
Septic Tank Inputs	Survey	to be determined	to be determined

*Triplicate samples of in-lake TP at surface, mid-, and bottom depths; inflow TP; and chlorophyll <u>a</u> will used to assess the variation in the sample media with respect to site, depth and/or season.

**Total and dissolved.

TASK 4 - Restoration Alternatives Analysis

Lake restoration alternatives will be evaluated by a private consultant using a non-steady state mass balance model for phosphorus which incorporates internal loading. The consultant will be responsible for taking the products of Task 3 and developing the lake phosphorus model for Lake Desire. The

consultant will quantify and evaluate the relative contribution of various cultural sources of phosphorus and summarize them by source for the RECIPIENT. Additionally, the role of sediment release phosphorus and macrophyte decay phosphorus will be evaluated by the consultant using the mass balance model. Restoration techniques including, but not limited to: detention/detention pond-effluent polishing; septic drainfield diversion, enhancement, or alternative design systems; dredging; harvesting; nutrient inactivation; and hypolimnetic aeration may be considered to improve current water quality as well as to prevent further water quality degradation.

The RECIPIENT's analysis will include (but is not limited to): definition of restoration goals; assignment and comparison of costs associated with each alternative; determination of treatment effectiveness in relation to goals; delineation of environmental impacts and drawbacks associated with each alternative; and identification of the preferred alternative.

Upon identification of the preferred alternative, a watershed management plan for the long-term water quality of the Lake Desire will be developed. Engineering analysis of the preferred restoration technique will be performed by the consultant and included in the draft report.

The draft report will be prepared by the consultant in conjunction with the RECIPIENT. The draft report will include a definition of the current environmental conditions (i.e., physical conditions, interpretation of sediment core results, analysis of water chemistry, and analysis of the biota including fisheries), development of nutrient loading a d hydraulic models, and determination of the lake trophic state. The draft management plan will also include a public access plan consistent with the Contennial Clean Water Fund lake restoration Phase II access requirements.

Approximate Cost: \$38,230

Anticipated Completion Date: June 30, 1994

Required Performance:

- 1. Lake Model (Mass Balance);
- 2. Restoration Alternatives Analysis Report; and
- 3. Draft Management Plan.

TASK 5 - SEPA Review and Final Report

In compliance with the State Environmental Policy Act (SEPA), an environmental checklist to evaluate the Threshold Determination on elements of the preferred restoration alternative will be prepared by the RECIPIENT and included in the final report.

The final report will be prepared by the consultant in conjunction with the RECIPIENT. The report shall incorporate King County's, the TAC's, and all other interested parties comments and revisions to the draft report. The report design and format shall be consistent with other products of the King County Surface Water Management Division. The RECIPIENT will submit fifteen (15) copies of the final report to the DEPARTMENT by September 30, 1994.

Approximate Cost: \$14,895

Anticipated Completion Date: September 30, 1994

Required Performance:

- 1. SEPA Checklist; and
- 2. Final Report.

SPECIAL TERMS AND CONDITIONS

- 1. <u>Budget Object Billing</u>. The RECIPIENT shall bill the DEPARTMENT for eligible project costs using a budget object format as supported by Budget Activity Reporting System (BARS) or similar documentation. All in-kind contributions must follow this format, as well. If RECIPIENT performance becomes the subject of a dispute, the total dollar amount indicated for each task element shall become the financial basis for partial payment or repayment.
- 2. <u>Consultant Agreements</u>. The RECIPIENT shall certify by letter to the DEPARTMENT that all applicable requirements have been satisfied in the procurement of professional services and eligible and ineligible costs are separated and identified. The RECIPIENT shall submit a copy of the final negotiated agreement to the DEPARTMENT for eligibility determination.
- 3. <u>Equipment Rental</u>. All equipment rental shall be approved in writing by the DEPARTMENT and rental fees shall be established prior to reimbursement.
- 4. <u>Interlocal Agreements</u>. The Recipient certifies by signing this agreement that all negotiated interlocal agreements necessary for the project are, or will be, consistent with the terms of this grant agreement and Chapter 39.34 RCW "Interlocal Cooperation Act".
- 5. <u>Minority and Women's Business Participation</u>. The RECIPIENT agrees to utilize to the maximum extent possible, minority owned and women owned businesses in purchases and contracts initiated after the effective date of this agreement.

In the absence of more stringent goals established by the RECIPIENT's jurisdiction, the RECIPIENT agrees to utilize the DEPARTMENT's goals for minority and women owned business participation in all bid packages, request for proposals and purchase orders. These goals are expressed as a percentage of the total dollars available for the purchase or contract and are as follows:

Minority owned business participation - 10 percent Women owned business participation - 6 percent

The RECIPIENT and ALL prospective bidders or persons submitting qualifications shall take the following steps in any procurement initiated after the effective date of this agreement:

- A. Include qualified minority and women's businesses on solicitation lists.
- B. Ensure that qualified minority and women's businesses are solicited whenever they are potential sources of services or supplies.
- C. Divide the total requirements, when economically feasible, into smaller tasks or quantities, to permit maximum participation by qualified minority and women's businesses.
- D. Establish delivery schedules, where work requirements permit, which will encourage participation of qualified minority and women's businesses.
- E. Use the services and assistance of the State Office of Minority and Women's Business Enterprises and the Office of Minority Business Enterprises of the U.S. Department of Commerce, as appropriate.

The RECIPIENT shall provide written certification; on a form provided by the DEPARTMENT, that the above steps were/will be followed.

The RECIPIENT shall report to the DEPARTMENT at the time of submitting each invoice, on forms provided by the DEPARTMENT, payments made to qualified firms. The report will address:

- a. Name and state OMWBE certification number of any qualified firm receiving funds under the voucher, including any sub and/or sub-subcontractors.
- b. The total dollar amount paid to qualified firms under this invoice.

6.

<u>Monitoring Plan</u>. Prior to the start of any water quality sampling, a Water Quality Monitoring Plan (Monitoring Plan) must be approved by the DEPARTMENT. The Monitoring Plan is required by the DEPARTMENT's quality assurance policy and must be developed and approved according to the

"Guidelines and Specifications for Preparing Quality Assurance Project Plans," (May 1991). The Monitoring Plan must describe in detail the organization and objectives of the project and procedures to be followed to ensure that the data generated will serve to meet those objectives. The Monitoring Plan must also describe the procedures which will be used to document and report the estimated accuracy of the data. The Monitoring Plan will provide information in the following areas:

- A. Title page with provision for approval signatures of the RECIPIENT, the Project Manager, and if desired the DEPARTMENT's Environmental Investigations and Laboratory Services Program;
- B. Project description;
- C. Project organization;
- D. Data quality objectives;
- E. Sampling procedures;
- F. Analytical procedures;
- G. Quality control procedures;
- H. Data handling protocols; and
- I. Data assessment procedures.

The Monitoring Plan must be submitted for review and approval by the DEPARTMENT prior to the commencement of data collection activities.

- 7. <u>Payment Cashflow Projections</u>. The RECIPIENT shall prepare an estimate of expenditures by quarter and submit this estimate to the DEPARTMENT. Payment Cash Flow Projection forms will be provided by the DEPARTMENT. Initial cash flow projections are due when the first invoice is submitted. Cash flow estimates shall be submitted with every quarterly report and revised and/or updated whenever major changes occur.
- 8. <u>Quarterly Reports</u>. Each Quarter the RECIPIENT shall submit a project status report. The report shall be submitted with the current payment request.
- 9. Water Quality Monitoring. Samples collected through water quality monitoring activities under this grant or loan shall be analyzed by an environmental laboratory accredited by the DEPARTMENT. When an accredited laboratory is not locally available and a hardship is placed upon the RECIPIENT to fulfill this requirement, a laboratory quality assurance plan shall be submitted by the RECIPIENT for review and approval by the DEPARTMENT. This plan shall include laboratory operations, data quality objectives, analytical procedures, internal quality control checks, data assessment procedures, performance audits, and quality assurance reports. The DEPARTMENT shall approve all quality assurance/quality control procedures prior to the initiation of field data collection as set forth in this project.

10. <u>Recycled/Recyclable Paper</u>. All documents and materials published under this contract shall be produced on recycled paper containing the highest level of post consumer and recycled content that is available. At a minimum, paper with 10 percent post consumer content and 50 percent recycled content shall be used. Whenever possible, all materials shall be published on paper that is unbleached or has not been treated with chlorine gas and/or hypochlorite.

As appropriate, all materials shall be published on both sides of the paper and shall minimize the use of glossy or colored paper, and other items which reduce the recyclability of the document.

11. <u>Sales Tax Information</u>. A Sales and Use Tax Report Form (ECY 060-14) shall be submitted with each voucher. The DEPARTMENT will supply the RECIPIENT with the forms and training necessary to properly document capital purchases.

ALL WRITINGS CONTAINED HEREIN

This agreement, the appended <u>GENERAL TERMS AND CONDITIONS</u>, the DEPARTMENT's current edition of <u>Administration Requirements for Ecology Grants and Loans</u>, and the Centennial Clean Water Fund program guidelines, contain the entire understanding between the parties, and there are no other understandings or representations set forth or incorporated by reference herein. No subsequent modification(s) or amendment(s) of this agreement shall be of any force or effect unless signed in writing by authorized representatives of the RECIPIENT and DEPARTMENT and made a part of this agreement; EXCEPT, that in relation to change of Project Officer, the DEPARTMENT may modify or amend this agreement without the signature of the RECIPIENT.

IN WITNESS WHEREOF, the parties hereby execute this Grant:

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

KING COUNTY

ALLEN W. MOORE PROJECT OFFICER DATE

TIM HILL KING COUNTY EXECUTIVE DATE

CHERYL L. STRANGE DATE

PROGRAM MANAGER WATER QUALITY FINANCIAL ASSISTANCE

APPROVED AS TO FORM ONLY ASSISTANT ATTORNEY GENERAL

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