

BEFORE THE COUNCIL OF THE
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF ENDORSING THE)	RESOLUTION NO. 89-1129
METRO PLANNING & DEVELOPMENT)	
DEPARTMENT SCOPE OF WORK FOR A)	Introduced by the Council
REGIONAL NATURAL AREAS INVENTORY AND)	Intergovernmental Relations
ANALYSIS)	Committee

WHEREAS, On February 9, 1989, by Resolution No. 89-1043, the Council of the Metropolitan Service District expressed its support of a continued parks planning and coordination role for the Metropolitan Service District, including preparation of an FY89-90 program to coordinate natural areas planning in the region; and

WHEREAS, The Metro FY89-90 Adopted Budget, in support of the natural areas program, provides \$20,000 for the Planning & Development Department to conduct a natural areas inventory and analysis; and

WHEREAS, Per the FY89-90 Budget program outline, the Planning & Development Department, with the support and cooperation of the Metro Parks & Natural Areas Advisory Group, purchased 1989 infrared aerial photographs of the region (Clackamas, Multnomah and Washington counties in Oregon, Clark County in Washington) to provide a base for a natural areas survey and assessment of the greater Portland metropolitan region; and

WHEREAS, The Metro Planning & Development Department, with the continued support of the Parks & Natural Areas Advisory Group and in conjunction with experts in environmental and related sciences, has developed a comprehensive five step scope of work, attached as Exhibit A hereto, for a regional natural areas inventory and analysis which shall be conducted by intergovernmental agreement with Portland State University; and

WHEREAS, Metro's FY89-90 budgeted amount of \$20,000 will fund steps one and two of the natural areas scope of work but additional outside revenues will be required to complete the project; now, therefore,

BE IT RESOLVED,

That the Council of the Metropolitan Service District endorses the five-step scope of work for a regional natural areas inventory and analysis, attached hereto as Exhibit A, and supports the Metro Planning & Development Department's continued efforts to secure additional outside resources to fund the entire scope of work as proposed.

ADOPTED by the Council of the Metropolitan Service District this 24th day of August, 1989.

Mike Ragsdale

Mike Ragsdale, Presiding Officer

**Scope of Work:
METRO NATURAL AREAS INVENTORY**

I. PROJECT DESCRIPTION

A. Project Summary

This project involves the collection, compilation and organization of data concerning natural areas in the Portland Metro Region. Five discrete tasks are identified:

1. Design of data collection schemes appropriate for mapping natural areas, from air photos and for collection of natural area field observations;
2. Preparation of a map of the natural areas in the Portland Metro region using airphoto interpretation techniques and employing the data collection scheme identified in Task 1;
3. Collection of detailed data of a large cross-section of sites in the Portland Metro region using field survey techniques and employing the data collection scheme identified in Task 1;
4. Review of existing data sources that would be of use in conjunction with the natural areas map and field data and a discussion of how these data might be analyzed;
5. Preparation of an air photo mosaic of the region to provide a detailed overview of the region, including development patterns, natural areas distribution, and transportation density.

B. Project Goals and Purpose

In 1988 Metro contracted to have a "Natural Areas" map prepared for the Metropolitan Service Area. That map was developed from aerial photography flown in 1980 and included brief descriptions of the major sites. During the first half of 1989 Metro coordinated an interagency cooperative effort to acquire new photography for the four-county metropolitan region, and flights to obtain that photography occurred during May and June.

The purpose of this project is to develop an updated and more detailed inventory of the natural areas. The study area for this inventory includes the areas within the Metropolitan Service District boundaries, plus the area within the immediate vicinity of Scoggins Valley Park - Hagg Lake in Washington County. Additional areas outside the Metro boundaries may also be included (though at a lesser degree of detail) because of their ecological significance and role as connections to natural areas within the Metro boundaries.

The inventory will include the preparation of a new

map based on the 1989 photography, and a fuller and more detailed set of site descriptions based on a combination of a collation of the existing knowledge base of local environmental experts and field inventory. The site descriptions will include information on vegetation, fish and wildlife habitat, unique/fragile plant and wildlife sites (e.g., heron rookeries), adjacent land uses, zoning, and surrounding development activity. Together, the map and the descriptions will constitute an up-to-date inventory of the location, extent and character of natural areas in the region. In addition, a survey will be performed to identify kinds of other available data, sources of the data, and how the data might be used in subsequent analyses.

This project is primarily a data collection effort and it has as its goal the collection and compilation of information that will provide the basis on which to:

1. identify areas of region-wide, local (city-county), and neighborhood importance;
2. assess changes in the extent of natural areas since the initial (1980) map;
3. develop a short-term strategy for the monitoring and protection of natural areas;
4. develop a long-term plan for the acquisition, permanent protection and management of natural areas;
5. develop a digital database of natural areas information that can serve as a component of Metro's developing RLIS system.

C. Task Descriptions

This project has been divided into five separate tasks for planning and funding purposes. However, the sequence of the tasks is critical to the efficient completion of the project and work on the various tasks needs to be carefully coordinated.

The division of the project into separate tasks is necessitated by the fact that Metro presently has the funds available to complete only the first portion of the project. However, since it is anticipated that outside revenues may be forthcoming to finance additional tasks, the project is described as and should be viewed as a whole. As additional funds become available, Portland State University will be notified by a contract amendment from Metro to proceed on the additional task(s).

The description of the tasks below follows the sequence in which they should be performed for logical management of the project.

1. Design Data Collection Schemes

Two complementary data collection schemes will be developed, one for mapping from the aerial photographs and one for organizing and recording

field observations during site visits. These schemes will be reviewed by a technical advisory committee (TAC) to be appointed by Metro from a list provided by the project team. All TAC members will be locally recognized as having technical training and expertise in their respective fields.

1.1 Review applicable literature and design a preliminary natural area mapping scheme. This scheme will incorporate a classification scheme and photo interpretation guidelines for mapping and will include developing a photo interpretation key, minimum mapping unit criteria, and coding methods for describing natural area features. Factors to be considered in the design of the classification scheme include the number and density of vegetation layers, dominant plant types (e.g., deciduous vs. coniferous trees, shrubs, herbaceous vegetation), and topographic location (upland, riparian, wetland, aquatic.)

1.2 Review applicable literature and design a preliminary field data collection scheme. References to be consulted include the schemes used by the Lane Council of Governments, New York City Parks, the London Ecology Unit (England), King County (Washington), and East Bay Regional Parks (California.)

1.3 Meet with the TAC to review the two proposed data schemes and to obtain comments and suggestions. Pay special attention to the interaction between the two data schemes to ensure that they complement each other. Revise the data collection schemes in response to the comments received from the TAC.

1.4 Present the revised data collection schemes to the Metro's Parks and Natural Areas Advisory Group for review and comment. Revise the data collection schemes in response to the comments received.

1.5 Design a Natural Sites Database which will allow for easy entry, manipulation and retrieval of the data collected using the final field data collection scheme.

1.6 Prepare a Final Report describing the data classification schemes for the mapping and the field work, the rationale behind them, and the

procedure used to develop the schemes.

2. Update Map

An updated urban natural areas map will be prepared from the 1989 aerial photos. The map will be compiled on mylar copies of the existing Metro base at a scale of 1:24,000 (1"=2,000') and utilizing the classification scheme developed in Task 1.

2.1 Perform a training session for all photo interpretation personnel to familiarize them with the classification scheme and interpretation key, and to assure consistency of interpretation procedures.

2.2 Interpret (approximately) 75 photos, recording the data on the 1:24,000 scale mylar base maps.

2.3 Field check any unusual or anomalous areas.

2.4 Conduct quality assurance/quality control check of photo interpretation.

2.5 Transfer compiled information to a mylar overlay registered to the 1:48,000 (1"= 4,000') Metro base used for the earlier "Natural Areas, 1980" map. Ink and annotate as appropriate for use as a diazo master.

2.6 Perform some general comparisons of patterns between the 1980 and the 1989 maps. This will include items such as identification of natural areas lost, new areas not noted on the earlier map, and measurement of area sizes.

2.7 Prepare summary of procedures and results of the map update task. This will include a discussion of the patterns on the "Natural Areas, 1989" map and significant changes / differences from the "Natural Areas, 1980" map.

3. Collect Site Data / Conduct Field Survey

Detailed data on individual sites will be collected via two different mechanisms: a Delphi-like approach drawing on the knowledge that various individuals already have as a result of prior field experience, and a field survey of a representative sample of sites in the Metro region.

3.1 Conduct a two-day Metropolitan Natural Areas Information-Sharing Workshop involving a limited group of individuals having field experience and detailed first-hand knowledge about local natural areas. The goals of the workshop are (1) to collaborate in the collection and documentation of existing knowledge about as many areas as possible, and (2) to develop a preliminary list of sites for field survey.

This workshop will make use of the air photos and the "Natural Areas, 1989" map (with a superimposed grid) as aids to identifying and locating natural areas under discussion.

3.2 Enter information collected during the workshop into the Natural Sites Database.

3.3 Select a number of areas for site visits and field survey. The criteria for selection of these areas are that each be (a) representative of the range of natural resource areas within the study area, and/or (b) of special significance or interest.

Sites meeting the specified criteria will be identified during the Natural Areas Workshop, as a result of recommendations from the TAC, and during the photo interpretation for the map update (based on appearance, geographic and topographic location, size, and level of surrounding development activity.) Consideration of the amount of information already known about an area will also be a factor in the selection process.

3.4 Design, review, and finalize field survey data sheets with the assistance of the TAC. The data sheets will be designed to facilitate entry into the Natural Sites Database.

Survey methodologies to be used will be recognized in their fields as valid. The information gathered will be consistent with applicable Goal 5 elements and will ensure that information will be available to provide assistance to jurisdictions during future periodic reviews.

A preliminary list of information to be gathered includes the following: vegetation, wildlife, habitat types, quality, rarity, diversity, level of disturbance, size, interspersions/corridor connections, fragility,

enhancement potential, wetland function, intrinsic appeal, values (social, educational, economic, recreational), linkages with regional corridors and trails, and regional/local significance.

3.5 Conduct field surveys of a representative sample of sites. These field surveys will be done by individuals qualified in botany and wildlife ecology, and with experience in delineating wetland areas. These field surveys will be designed to last for at least 30 minutes at each site, and will be conducted during the spring of 1990.

3.6 Enter field data into database, perform quality control on the entries, and prepare listings of the database.

3.7 Prepare a Final Report describing the procedures employed in the field survey, summarizing and discussing the data collected in the Natural Areas Database.

4. Identify Additional Data

A variety of other spatial data would have analytical importance if used in conjunction with the inventory data that this project will generate. Zoning is probably the item of highest priority, particularly as it relates to the amount of protection given to a natural area. Additional items would include present and future land use, ownership, transportation plans, environmental overlays (such as the E-Zone in Portland), and other types of data.

Most of this data already exists in the form of printed maps, but is scattered in the offices of various public and private agencies, in various formats, and at various scales. Actual collection and analysis of these other data is beyond the range of this project. However, these data should be considered for incorporation in subsequent detailed analyses, probably utilizing geographic information system technology of the kind employed by Metro's RLIS.

In recognition of this need for further analysis, this project will review the types of additional data that would likely be of interest, identify the sources of these data, and make specific suggestions as to how these other data might be used in conjunction with the inventory data

developed in this project to perform further analysis.

4.1 Visit various jurisdiction offices to survey available map and spatial data and collect information about it (e.g., format, date, areas covered, categories employed, projected changes / updates, implementation of plans, etc.)

4.2 Organize results of survey into a consistent and organized format. Prepare estimates of the time and effort involved in entering these data into the RLIS.

4.3 Identify ways that the various data sets may be combined, correlated, and analyzed to answer questions about natural areas on a regional, local and neighborhood level.

4.4 Prepare a Final Report summarizing the additional data that is available and how it might be used in subsequent analyses.

5. Prepare Mosaic

An uncontrolled photomosaic of the Metro area (Metropolitan Service District boundaries plus Sauvie Island) will be prepared from the 1989 photographs. Due to the large size (approximately 9' x 9'), the mosaic will need to be assembled in about five sections.

5.1 Order semi-rectified prints at scale of 1:24,000 (1"=2,000') on single-weight paper. Organize prints into mosaic format and tape each print in place.

5.2 Identify appropriate match lines, mark photos, and trim as necessary. Registration of features between photos will be kept at maximum within the constraints of the semi-rectification process.

5.3 Working outward from center of mosaic area, cement trimmed photos to foam core board (or similar material.)

5.4 Have several large-format (8" x 10") copy negatives prepared of the entire mosaic and of various portions of it.

5.5 Have three prints (40" x 60") of the entire Metro region made from the copy negative.

5.6 Prepare summary of procedures and results of mosaic preparation task.

II. UPDATES AND BRIEFINGS

Metro will be provided with progress reports on a regular basis, both in the form of written status reports and verbal briefings.

A. Personnel

Principle Investigator for the contractor will be Joseph Poracsky (Associate Professor of Geography, Portland State University.) In addition to overall project supervision, he will have direct supervision of the design of the mapping scheme, photo interpretation / map update, and preparation of the photomosaic. Work on these areas will be performed by students at PSU. Other PSU faculty will be Richard Forbes and Robert Tinnin (both Professors of Biology, Portland State University), who will be involved in the design of the field data collection scheme, the Workshop portion of the data collection, and the actual field data collection.

Lynn Sharp (Environmental Consultant) will be responsible for the design of the field data collection scheme and the performance of the field data collection. Esther Lev (Environmental Consultant) will be working with her. They will be assisted by at least one student from PSU and, for the field collection, by at two other individuals with appropriate field experience.

Primary Metro contacts will be personnel from the Planning and Development Department, Richard Carson (Director), Patrick Lee (Regional Planning Supervisor), and Mel Huie (Senior Planner.)

B. Coordination with Urban Wildlife Refuge System

The goals of this project closely relate to the efforts of the Audubon Society of Portland to establish an Urban Wildlife Refuge System in the Portland Metropolitan region. Successful completion of the aerial photography required for this project was the result of a cooperative effort with Portland Audubon. It is anticipated that work on this inventory will continue to be coordinated with the Audubon Society's efforts surrounding the Refuge System.

C. Schedule of Progress Reports

On the 15th of each month Metro will receive a memo describing progress to date, significant problems /

questions encountered, and anticipated progress over the next one month period. At the completion of each major task (map, mosaic, data collection design, field data collection) there will be a detailed briefing of the Metro Staff.

III. PROJECT PRODUCTS

A. Description of Products

1. Description of Data Classification Schemes

A written report will be prepared, containing:

- a. A brief outline of the project, discussing the role of the data classification schemes and the procedure used to develop them;
- b. A description and explanation of the data classification schemes developed for the mapping and field data collection portions of the project;

2. Map and Discussion of Significant Patterns

A map showing "Natural Areas, 1989" will be produced and provided to Metro in the form of a mylar-based, diazo-reproducible copy. The map will be registered to the Metro 1:48,000 (1"=4,000') scale base, making it readily comparable with the earlier "Natural Areas, 1980" map at the same scale. In addition, Metro will receive the 1:24,000 (1"=2,000') compilation map. This compilation constitutes the best possible source for later entry of the data into RLIS.

A brief report will also be included that will discuss the patterns on the "Natural Areas, 1989" map and significant changes / differences from the "Natural Areas, 1980" map;

3. Final Report on Field Data Collection and Database

A report will be prepared which discusses summarizes the data in the Natural Sites Database and the techniques employed in the data collection effort. Appendices to the report will include the actual data from the Natural Sites Database and the detailed information collected on the additional data sources.

In addition, the data from the Natural Sites Database will be supplied to Metro on floppy disk in a standard retrieval format.

4. Final Report on Additional Data Sources

A report will be prepared that discusses kinds

and sources of additional data that are available and how this data would be used in subsequent analyses.

5. Aerial Photo Mosaic

An air photo mosaic of the Metro region will be prepared from the 1989 color infrared photography and provided to Metro. Metro will receive a large-format (8" x 10") copy negative and three 40" x 60" prints. In addition, several other copy negatives of subsections of the mosaic will be delivered. Metro will then be able to have various size prints (e.g., 16" x 20", 20" x 24", 40" x 60") made from the copy negatives.

IV. COMPENSATION SUMMARY

Portland State will enter into this price and performance contract on a task-by-task basis. Each task or group of tasks will require a written agreement between the two parties stipulating the fixed price cost for each task in question, the period of service for completing the task(s), and directing Portland State to proceed on a specific task or tasks.

Payment shall be made for each task upon the delivery to Metro of the final product(s) identified for that task and the receipt of an invoice from Portland State University.

Budget Estimate:
METRO NATURAL AREAS INVENTORY

Task	Por	Sharp	Lev	Field	GRA	Supp's	Total
1 DESIGN DATA COLLECTION							
1.1 Design Map Scheme	18	6	6		8		38
1.2 Design Field Schem	4	6	6		8		24
1.3 TAC Review/Revise	8	8	8				24
1.4 Pks/NA AG Revise	4	4	4		8		20
1.5 Design NA Database	2	6	6				14
1.6 Prepare Report	20	18	18		28		84
COST	2,632	2,880	2,400		728	1,100	11,201
2 UPDATE MAP							
2.1 PI Training	6	6			6		18
2.2 Interpret photos	8				160		168
2.3 Field check areas	8		8		8		24
2.4 QA/QC Interp	32				8		40
2.5 Map to 1:48,000	8				80		88
2.6 Make Comparisons	16				24		40
2.7 Prepare Report	20	2	2		18		42
COST	4,606	480	500		4,256	2,585	14,291
3 FIELD SURVEY							
3.1 Conduct Workshop	16				32		48
3.2 Data into NSD	4	8			64		76
3.3 Select Sites	4	4	4		2		14
3.4 Final Data Sheets	2	8	8		8		26
3.5 Field Survey	8	8	48	128	16		208
3.6 Data into NSD	4	2	8		80		94
3.7 Prepare Report	12	12	12		8		44
COST	2,350	2,520	4,000	3,840	2,940	1,675	19,924
4 ID ADDITIONAL DATA							
4.1 Survey Sources	40	4	4		40		88
4.2 Organize Results	8	2	2		8		20
4.3 ID Analyses	12	8	8		12		40
4.4 Prepare Report	16	6	6		34		62
COST	3,572	1,200	1,000		1,316	495	8,720
5 PREPARE MOSAIC							
5.1 Organize Prints	4				8		12
5.2 Mark & Trim Prints	16				32		48
5.3 Cement Photos	8				16		24
5.4 Shoot Copy Negs	2				2		4
5.5 Have Prints Made	2				2		4
5.6 Prepare Report	12				18		30
COST	2,068				1,092	2,640	6,670
PROJECT TOTALS							
	15,228	7,080	7,900	3,840	10,332	8,495	60,806

Por -- Joseph Poracsky, PSU Geography Department
 Sharp -- Lynn Sharp, Environmental Consultant
 Lev -- Esther Lev, Environmental Consultant
 Field -- Field Crew
 GRA -- Graduate Research Assistants

COUNCIL INTERGOVERNMENTAL
RELATIONS COMMITTEE REPORTAgenda Item No. 7.1Meeting Date August 24, 1989**RESOLUTION NO. 89-1129, ENDORSING THE METRO PLANNING &
DEVELOPMENT DEPARTMENT SCOPE OF WORK FOR A REGIONAL NATURAL
AREAS INVENTORY AND ANALYSIS**

Date: August 22, 1989

Presented By: Councilor Gardner

COMMITTEE RECOMMENDATION: At the August 15, 1989 Intergovernmental Relations Committee meeting, members present -- Councilors Bauer, DeJardin, Devlin and myself -- voted unanimously to recommend Council adoption of Resolution No. 89-1129. Councilor Collier was absent.

COMMITTEE DISCUSSION/ISSUES: The Committee reviewed the resolution with Planning and Development Director Rich Carson and Parks Program Coordinator Mel Huie. Resolution No. 89-1129 provides a vehicle for the Council to express support of the Metro Planning & Development Department's proposed scope of work for conducting the FY89-90 natural areas inventory and analysis. Staff walked through the scope of work to be conducted by Portland State University under an Intergovernmental Agreement with Metro. The FY89-90 Metro Budget identifies \$20,000 for the natural areas project but the actual budget for the complete 5-step scope of work developed by PSU and Metro Planning & Development is \$60,806. Planning & Development staff has worked to secure additional outside revenues to fund the \$40,806 gap, with grants and contributions raised to date totalling \$13,761. The balance of funds to raise is \$27,045. The Committee noted there were no anticipated requests for additional Metro funds this fiscal year. The scope of work provides for the study to cover natural areas outside of the District as well because those areas could be important in long-term land use planning and management.

Urban Naturalist Mike Houck with the Audubon Society testified in support of the proposed scope of work, noting he had never seen a more "fundable" project because it was extremely popular throughout the region. Mr. Houck identified foundations and persons he had contacted who are likely to contribute.

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