

BEFORE THE COUNCIL OF
THE METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF APPROVING A) RESOLUTION NO. 91-1433
CONTRACT TO DIGITIZE SOIL SURVEYS) INTRODUCED BY EXECUTIVE
OF CLACKAMAS AND MULTNOMAH COUNTIES) OFFICER RENA CUSMA

WHEREAS, resources for digitizing the Soil Conservation Service's Soil Surveys for the METRO region was approved by the Council in the FY90-91 budget; and

WHEREAS, the regional importance of acquiring this data has been demonstrated by the contributions by local governments toward sharing costs of the project; and

WHEREAS, digitization of the Washington County Soil Survey has been completed, with Clackamas and Multnomah Counties Soil Surveys remaining to complete the region; and

WHEREAS, digitization of the Soil Surveys has been identified as an important component in the Land Use Suitability Study approved in the FY90-91 budget under the "A" contract listing; and

WHEREAS, METRO Code 2.04.033(a)(1) requires Council approval of contracts prior to execution when expenditure of appropriations provided for that contract in the current fiscal year budget will occur in following fiscal year; now therefore,

BE IT RESOLVED,

That the Council of the Metropolitan Service District hereby approves release of the Request For Proposals for the Digitization of Soil Surveys of Clackamas and Multnomah Counties; and

That the Council of the Metropolitan Service District waives the requirement of Council approval of the contract and authorizes the Executive Officer to execute the contract.

ADOPTED by the Council of the Metropolitan Service District
this 25th day of April, 1991.



Jim Gardner, Deputy Presiding Officer

TRANSPORTATION AND PLANNING COMMITTEE REPORT

RESOLUTION NO. 91-1433 APPROVING A REQUEST FOR PROPOSALS (RFP) FOR PERSONAL SERVICES TO DIGITIZE SOIL SURVEYS OF CLACKAMAS AND MULTNOMAH COUNTIES

Date: April 10, 1991

Presented by: Councilor Bauer

COMMITTEE RECOMMENDATION: At the April 9, 1991 Transportation and Planning Committee meeting, Councilors Gardner, McLain, Van Bergen and myself voted 3 to 1 (Van Bergen dissenting) to recommend the Council adopt Resolution No. 91-1433. Councilor Devlin was excused.

COMMITTEE DISCUSSION/ISSUES: Resolution No. 91-1433 approves release of an RFP to secure services for preparing Multnomah and Clackamas County soils surveys ("digitizing") for inclusion on the Regional Land Information System (RLIS). Because the contract extends beyond a single fiscal year, Council review and approval of the RFP and subsequent contract are necessary. The project cost is \$36,000 and the resolution waives Code requirements for Council approval of the final contract, authorizing the Executive Officer to execute the contract.

Funding for the soils digitization comes from the Thematic/Land Use Suitability Study supported in the FY90-91 budget for \$100,000. The remaining study funds would pay for expansion of the RLIS base map to rural areas just outside the Urban Growth Boundary (a \$50,000 contract extension to be approved under Resolution No. 91-1430), a Satellite Imagery Project (\$9,000), and an intergovernmental agreement extension with the University of Oregon Landscape Architecture Department (\$1,500).

Department staff clarified the FY90-91 budget identified \$90,000 for soils digitization, but \$80,000 of that amount were targeted grants from federal and state sources. The grants were not received, but \$10,000 in Metro excise tax revenues was used to digitize Washington County soils surveys for the Unified Sewerage Agency.

The soils maps on RLIS will provide data for Planning and Development's Urban Reserves and Urban Infill analyses to support implementation of the Regional Urban Growth Goals and Objectives (RUGGO).

As with Resolution No. 91-1430, Councilor Van Bergen voted against Resolution No. 91-1433 due to concerns about the continued growth of RLIS.

REQUEST FOR PROPOSALS

**DIGITIZATION OF SOIL SURVEYS
OF CLACKAMAS AND MULTNOMAH COUNTIES**

**METROPOLITAN SERVICE DISTRICT
PLANNING AND DEVELOPMENT DEPT.
2000 S.W. FIRST AVENUE
PORTLAND, OREGON 97201-5398**

APRIL, 1991

REQUEST FOR PROPOSALS
FOR DIGITIZATION OF SOIL SURVEY MAPS

I. CALL FOR PROPOSALS

The Planning and Development Department of the Metropolitan Service District (METRO) is requesting proposals for digitizing the Soil Conservation Service (SCS) maps for Clackamas and Multnomah Counties, Oregon. Soil lines, open water boundaries, and survey boundaries will be digitized and each polygon will be labeled. Each map sheet will be edge-matched with adjoining sections to form a 7.5 minute quadrant map.

Proposals must be addressed to:

Metropolitan Service District
Attn: Jim Morgan
2000 S.W. First Avenue
Portland, Oregon 97201-5398

The METRO staff person responsible for coordinating this project is Jim Morgan at (503)221-1646.

Proposals must be delivered to the METRO office at the address above no later than 5:00 p.m. PDT, April 29, 1991, attention Jim Morgan.

II. BACKGROUND

The Soil Surveys developed by the U.S.D.A. Soil Conservation Service (SCS) are the principal sources of soil information for planners and engineers. These surveys identify and locate soil types, describe their characteristics, and interpret their uses. The Soil Surveys have been completed for Clackamas and Multnomah Counties. The Soil Survey is published in the form of map, tabular, and text data. For extensive analysis using soils data alone or with other data layers, soil survey data needs to be digitized for use in a computerized geographical information system (GIS). The spatial data (soil maps) needs to be digitized and tabular data linked with the spatial data for analysis.

In a cooperative effort between METRO, SCS, and participating agencies, the Soil Surveys for the two counties will be digitized by a selected contractor. To date, the Washington County Soil Survey has been digitized using the procedures described herein. The final product will be digital files of the county survey maps with their associated attributes that can be used in a GIS for analysis and map generation. Each file will contain the data for one 7.5' quadrant map. Separate files will be created when more than one of the above mentioned counties occurs on a single 7.5' quadrant map.

BUDGET

Present funds allocated by METRO for digitization of soil surveys total \$43,000.

III. SCOPE OF WORK

The preferred method of map digitization described in the Scope of Work is electronic scanning and editing. This is preferred method given:

- 1) the availability of the source documents in separate layers, making scanning more feasible; and,
- 2) the availability of recently developed software efficient in editing scanned files.

SOURCE DOCUMENTS

The Soil Conservation Service will provide all source documents. Each map consists of two separate layers compiled on stable based mylar material: one layer with soil mapping unit polygons with streams, rivers, and lakes delineating, and some cultural features (e.g. major highways, airports); the other layer containing labels for each polygon.

The maps were originally compiled on an orthophoto base. Each map sheet is one-third of a USGS 7.5 minute quadrant map. Joining three maps along northern and southern edges will yield a USGS 7.5 minute quadrant map.

Soil maps were compiled at the 1:20,000 scale. Maps have adequate points for geo-registration, with the exception of oversize sheets and insets. The oversize and inset sections will have to be cut off the original mylar, taped to a plotted quad frame on mylar, and scanned separately. The overlay data is essentially the same as the map sheets published in the Soil Surveys, but without the orthophoto background.

Tabular data associated with the maps has been entered into the SCS soil database system. The consultant is not expected to enter nor correlate the tabular data.

There is a total of 98 soil map sheets for Clackamas and Multnomah Counties.

SCS PROVISIONS

~~SCS will provide to the contractor the following:~~

1. Source documents as described above.
2. Available soil scientist at the work site during normal working hours to provide corrections to errors originating from the source documents.

METRO PROVISIONS

METRO will provide to the contractor the following:

1. A contractual agreement, management of the agreement, and disbursement of funds to the contractor according to the agreement.
2. The role as the principal coordinator for the project.

PROCEDURES AND REQUIREMENTS

Technical requirements for digitizing soil survey maps will follow standards outlined in SCS National Instruction No.170-303, Second Ed., Technical Specifications for Digitizing Soil Survey Maps, issued September, 1990 (see Attachment A). These specifications will be followed with the exceptions of modifications approved by Oregon SCS. One important modification is the requirement that the final vector file format will be DLG-3 Optional and conform to requirements stated in Step 8 below.

A pilot project had verified that scanning with a Houston Instruments 4000 scanner or Houston Instruments Scan-Cad attachment to a DMP-62 Plotter and appropriate editing with LTPlus software can meet SCS specifications. The critical line placement standards of within 0.010" of the original source material were consistently met with this procedure.

A brief outline of procedures is given below.

1. Electronically scan the overlays.
Each sheet will be scanned at a minimum resolution of 200 DPI (Dots Per Inch) and a raster file created. Resolution of the raster file will be maintained in a manner that ensures no degradation of the original scanned resolution. An example of a typical working resolution from the pilot test is a 2784 pixel height by a 4896 pixel width with a pixel size of 8.199 feet for a 1/3 quad sheet.
2. Geo-register soils maps to standard map base and coordinates. Maps will be referenced by Latitude/Longitude, UTM, and State Plane coordinate systems.
3. Edit raster files.
Editing will include deletion of unwanted lines (roads, single-lined streams), closure of open polygons, cleanup of dangling lines. Neatlines will be removed between the

one-third quadrant map sheets and files combined to produce one data file for each USGS 7.5' quadrant area.

4. Add soil symbols.
Soil mapping unit symbols, as they appear in the manuscript, will be entered for each polygon in a soil polygon layer. The locations of special soil features, both point and linear, will be digitized as a separate line map layer.
5. Edge matching.
Joining each map sheet will require adjustments to be made due to information not matching at the edge of sheets. The soil boundaries ending at all four neatlines will be computer joined to any adjoining map sheets to achieve an exact match. Edge matching the soils between counties will also be necessary. SCS soil scientists will resolve edge matching questions.
6. Quality control by SCS.
Any abnormalities or errors noted throughout the editing process that originate from the source documents, such as mislabeled polygons or mismatched soil units along an edge of map, will require guidance from SCS prior to correction by the contractor. The contractor will provide checkplots of full 7.5 minute quad areas containing soil polygons, soil polygon map symbols, and soil feature locations for final quality control checks by SCS soil scientists. The check plots will be at the same scale as the published soil survey maps.
7. Prepare attributes for export.
Convert soil polygon and feature map symbols to integer attributes and construct data dictionary files relating new integer attributes to previous map symbols. There will be two data dictionary files for the entire survey, one for soil polygon symbols and one for feature symbols.
8. Prepare final vector files.
Thin vertices and export the 7.5 minute quad soil polygon layer and soil feature layer, both with integer attributes, in the Digital Line Graph Optional format (DLG-3 Optional). Options selected during the export will include both objects and attributes, coded pairs, UTM coordinate system, and all map type objects. This will result in a file that carries the integer attribute as a DLG minor code. Include the soil symbol and feature symbol data dictionary files for the Clackamas and Multnomah Counties Soil Surveys with the final set of DLG-3 files. File naming and file header information will conform to Oregon SCS conventions. Many GIS systems, including ARC/INFO and GRASS, have support

software to efficiently import map layers prepared in this format.

IV. QUALIFICATIONS

COMPANY DESCRIPTION AND EXPERIENCE

The company submitting a proposal must submit a general company description and list its experience specifically pertaining to the source documents of the project (SCS Soil Surveys) and digitization of spatial data. Descriptions should include any experience with geographical information systems (GIS) and spatial data management software.

V. PROPOSAL INSTRUCTIONS

A. Submission of Proposal

One (1) copy of the proposal shall be furnished to METRO addressed to:

Metropolitan Service District
Attn: Jim Morgan
2000 S.W. First Avenue
Portland, Oregon 97201-5398

B. Deadline

Proposals will not be considered if received after 5:00 p.m. April 29, 1991. Postmarks are not acceptable.

C. RFP as Basis for Proposals

This RFP represents the most definitive statement Metro will make concerning information upon which proposals are to be based. Any verbal information which is not contained in this RFP will not be considered by Metro in evaluating the proposals. All questions relating to the RFP must be submitted to Jim Morgan. Any questions which in the opinion of Metro warrant a written reply or RFP amendment will be furnished to all parties receiving a copy of this RFP. Metro will not respond to questions received after Friday, April 26, 1991.

VI. PROPOSAL CONTENTS

1. Company Description and Experience
2. Time for Completion (maximum of 6 months)
3. Proposed Cost

VII. GENERAL PROPOSAL/CONTRACT CONDITIONS

- A. Limitation and Award -- This RFP does not commit Metro to the award of a contract, nor to pay any costs incurred in the preparation and submission of proposals in anticipation of a contract. Metro reserves the right to accept or reject any or all proposals received as the result of this request, to negotiate with all qualified sources, or to cancel all or part of this RFP.
- B. Subconsultants -- In the event that any subconsultants are to be used in the performance of this Agreement, the contractor agrees to make a good faith effort, as that term is defined in Metro's Disadvantaged Business Program (Section 2.04.160 of Metro's Code), to reach the goals of subconsulting 7 percent of the contract amount to Disadvantaged Businesses and 5 percent of the contract amount to Women Businesses. The consultant shall contact Metro prior to negotiating any subcontracts. Metro reserves the right, at all times during the period of this Agreement, to monitor compliance with the terms of this paragraph and Metro's Disadvantaged Business Program.
- C. Contract Type--A copy of the standard form contract which the successful vendor will be required to execute is attached (Attachment B).
- D. Validity Period and Authority--The proposal shall be considered valid for a period of at least ninety (90) days and shall contain a statement to that effect. The proposal shall contain the name, title, address and telephone number of an individual or individuals with authority to bind any company contacted during the period in which Metro is evaluating the proposal.
- E. Insurance Requirements--The contractor shall provide (from insurance companies acceptable to METRO) General Liability insurance coverage with a combined single limit of not less than \$500,000. Before commencing work under this contract, the contractor shall furnish METRO with a certificate of insurance evidencing coverage as specified, naming METRO as an additional insured.

VIII. EVALUATION OF PROPOSALS

Criteria for final selection of the vendor will be based on:

1. Company's General Experience
2. Experience Working with Source Documents
3. Experience in Digitizing
4. Proposed Cost

STAFF REPORT

DIGITIZATION OF SCS SOILS SURVEYS OF CLACKAMAS AND MULTNOMAH COUNTIES

Date: April 9, 1991

Presented by: Pat Lee

PROPOSED ACTION

Resolution No. 91-1433 requests that the Council approve release of a Request For Proposals (RFP) to contract digitization of the SCS Soil Surveys of Clackamas and Washington Counties using the funds appropriated in fiscal year 1990-91. The contract will extend into fiscal year 1991-92 before the project will be completed. By adopting the resolution, the Council waives the requirement of Council approval of the contract and authorizes the Executive Officer to execute the contract once awarded.

BACKGROUND AND ANALYSIS

The USDA Soil Conservation Service's Soil Surveys identify and locate soil types, describe their characteristics, and interpret their uses. The Soil Survey is published in the form of map, tabular, and text data. For extensive analysis using soils data alone or with other data layers, soil survey data needs to be digitized for use in a computerized geographical information system (GIS). Soils data is critical for identifying prime agricultural lands, secondary lands' characteristics, wetlands (hydric soils), potentially highly erodible lands, and other soil characteristics related to land use potential.

Through the coordinated efforts of METRO and under the auspices of the SCS, the three counties of the METRO region will be the first counties in the state to be digitized. Digitization of the Soil Survey of Washington County has been completed by a METRO contractor. The proposed project will develop the same data in the RLIS database layer for Clackamas and Multnomah counties.

The Request for Proposals for Digitization of Clackamas and Multnomah Counties to be sent to prospective contractors is attached.

BUDGET IMPACT

The first phase of the soil digitization project covering Washington County was financed through a joint effort of the Unified Sewerage Agency of Washington County and METRO. METRO appropriation for this phase in FY90-91 was in the "B" contract listing. The proposed final phase of the project, with an estimated cost of \$43,000, will be funded primarily through funds appropriated in FY90-91 for the Land Use Suitability Study on the "A" contract list. Additional contributions to fund this final phase are expected from Clackamas County and the Oregon Bureau of State Lands.

EXECUTIVE OFFICER'S RECOMMENDATION

The Executive Officer recommends that the Council adopt Resolution No. 91-1433.