

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF AUTHORIZING AN) RESOLUTION NO. 94-1976
AMENDMENT TO THE INTERGOVERNMENTAL)
AGREEMENT WITH PORTLAND STATE) Introduced by Rena Cusma,
UNIVERSITY (CONTRACT #903466)) Executive Officer

WHEREAS, Metro has operated the St. Johns Landfill since 1980; and

WHEREAS, Metro submitted its Revised Closure and Financial Assurance Plan for the landfill to the Oregon Department of Environmental Quality (DEQ) in September 1989; and

WHEREAS, In the spring of 1990, DEQ responded with a letter from its hydrogeologist and a Plan Review Report requesting more information about leachate seepage and its impact on the surrounding surface waters; and

WHEREAS, In June 1990, Metro contracted with Portland State University (PSU) for water monitoring and investigation services at St. Johns Landfill to satisfy DEQ's requirements and provide some of the data necessary to develop a groundwater model; and

WHEREAS, In the spring of 1991, Metro began final closure of the landfill; and

WHEREAS, In March 1992, another letter from DEQ reiterated the need to monitor potentiometric levels and determine groundwater flow paths in the vicinity of the site.; and

WHEREAS, In Fall 1992, Metro installed a number of piezometer clusters in order to continuously measure water levels; and

WHEREAS, In February 1994, Metro contracted with PSU to develop a 3-dimensional groundwater model; and

WHEREAS, DEQ has required Metro to produce a leachate management plan in the Spring of 1995; and

WHEREAS, DEQ is allocating total maximum daily loads (TMDLs) for the Columbia Slough; and

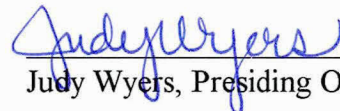
WHEREAS, In October 1994, Metro staff developed a series of questions the PSU model could answer: to assist in developing a leachate management plan, and assist in DEQ's determination of TMDLs allocated to the landfill; and

WHEREAS, the resolution was submitted to the Executive Officer for consideration and was forwarded to the Council for approval; now therefore,

BE IT RESOLVED,

That the Metro Council authorizes amendment of the intergovernmental agreement with PSU for work associated with developing a groundwater model for the St. Johns Landfill vicinity.

ADOPTED by the Metro Council this 10th day of November, 1994.



Judy Wyers, Presiding Officer

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Exhibit A (to Resolution #94-1976)

AMENDMENT 2

AMENDMENT NO. 2

This amendment, dated as of the last signature date below, hereby amends the Intergovernmental Agreement dated December 16, 1993, between Metro and the State of Oregon acting by and through the State Board of Higher Education on behalf of Portland State University (PSU), hereinafter referred to as "University." In exchange for the promises and other valuable consideration described in the original agreement, subsequent amendments, and this amendment, the parties agree as follows.

- I. The termination date shall be extended from September 15, 1994 to October 15, 1995.
- II. The original Scope of Work shall be changed as follows, at no additional compensation:
 1. Model Application Task IV-2, Task IV-3, and Task IV-4 shall be deleted.
 2. The following tasks shall be added to the original scope of work, as a result of additional data supplied by Metro, include:
 - A. Metro and University shall determine a format for the geological data provided by Metro, such that the data is compatible with the model.; and
 - B. University shall review historical photographs and topographic maps, and incorporate all new information into the model framework; and
 - C. University shall incorporate the low-permeability road (built up through the entire thickness of refuse in the landfill) into the model; and
 - D. University shall incorporate changed subarea boundaries (based on the underlying geology as defined by the location of the Blind Slough) into the model.

- III. Additionally, the following new tasks shall be added to the Scope of Work:

University shall determine the following:

1. Volume of leachate seepage over time to the sloughs from the landfill, based on use of a uniform (average) chloride concentration within the landfill (due no later than 1/1/95):
 - A. surface seepage (i.e., >5' MSL in sloughs); and
 - B. subsurface seepage (i.e., < 5' MSL in sloughs)

2. Volume of leachate seepage (based on chloride tracking) over time leaving the landfill:
 - A. to Columbia Slough (due no later than 1/1/95);
 - B. to North Slough (due no later than 1/1/95);
 - C. to Smith and Bybee Lakes (through silts) (due no later than 6/16/95);
 - i. lateral flux through silts; and
 - ii. vertical flux from gravel aquifer below the silts
 - D. to sand and gravel aquifer (due no later than 6/16/95)
3. Total chloride flux over time from the St. Johns Landfill based on actual chloride concentration from data (due no later than 3/15/95);
4. Impact of perimeter drain (due no later than 3/15/95):
 - A. on mound drawdown rate;
 - B. on leachate seepage rate to sloughs; and
 - C. on seepage into the drain from the sloughs
5. Rates of flow of chemicals-of-concern as specified by Metro from now up to 2025, (due no later than 3/15/95 or 60 days after specification by Metro, whichever is later);
6. Volume/rate of liquid flow in the sand and gravel aquifer (due no later than 6/16/95);
7. Volume/rate of liquid leakage from silt under landfill to sand and gravel aquifer (due no later than 6/16/95);
8. A ratio between the Smith and Bybee Lake levels and the sand and gravel aquifer or river level which will minimize or eliminate seepage from the sand and gravel aquifer to the lakes (due no later than 6/16/95);
9. Flow pattern under Bybee Lake with time showing relative fluxes from various directions (due no later than 6/16/95);
10. Seasonal rates of flow and the sensitivity to seasonal variation, now and in the future (due no later than 6/16/95);
11. Three-dimensional configuration of chloride plume after 100 years (i.e., year 2100)

University shall:

12. Prioritize additional monitoring efforts to improve model calibration and obtain high quality data (due no later than 6/16/95);
13. Assist Metro in calibrating its piezometer data to an absolute elevation with use of appropriate model runs (due as soon as possible, but no later than 3/15/95);
14. Provide written progress reports at the end of each school term (due no later than 1/1/95, 3/15/95, and 6/16/95); and

15. Provide a final report, with detailed technical documentation of the model and all aspects of the project, including what has been learned (due no later than 9/30/95).
16. Make a reasonable effort to provide any of the above work products at dates earlier than the above listed dates, if requested by Metro staff.
17. By 6/30/95 submit an electronic copy of the entire model to Metro in a reasonably user friendly format and provide training as specified in the agreement.

Metro and University agree that the contract price, \$83,459, shall be increased by FIFTY-FOUR THOUSAND and NO/100 Dollars (\$54,000.00), to a new total of \$137,459. It is acknowledged by Metro and University that the additional services were not provided for in the original agreement. No payment beyond the additional sum shall be authorized by Metro without specific written amendment to the original agreement.

All terms of the original agreement and any previous amendments shall remain in full force and effect, except as modified herein.

PORTLAND STATE UNIVERSITY.

METRO

Signature

Signature

Print Name and Title

Print Name and Title

Date

Date

STAFF REPORT

IN CONSIDERATION OF RESOLUTION NO. 94-1976 FOR THE PURPOSE OF
AUTHORIZING AN AMENDMENT TO THE INTERGOVERNMENTAL
AGREEMENT WITH PORTLAND STATE UNIVERSITY
(CONTRACT #903466)

Date: November 1, 1994

Presented by: Jim Watkins
Joanna Karl

PROPOSED ACTION

Adoption of Resolution No. 94-1976, which grants exemption from the competitive procurement process and authorizes execution of Amendment No. 2 to the intergovernmental agreement with Portland State University (Contract #903466), for groundwater modeling in the St. Johns Landfill region.

FACTUAL BACKGROUND and ANALYSIS

I. Purpose of Amendment

It is proposed that the intergovernmental agreement with Portland State University (PSU) to construct a groundwater model for the St. Johns Landfill region be amended (see Exhibit A to Resolution #94-1976) to:

- Extend the termination date;
- Add/delete tasks in original Scope of Work (no additional compensation); and
- Refine model calibration as needed to answer environmental questions posed by staff to assist in responding to the Oregon Department of Environmental Quality's (DEQ's) closure requirements.

II. Background

Since 1980, Metro has operated the St. Johns Landfill which is located adjacent to the Columbia and North Sloughs and the Smith and Bybee Lakes. In 1991, Metro began final closure of the landfill.

In September 1989, Metro submitted its Revised Closure and Financial Assurance Plan for St. Johns Landfill to the Oregon Department of Environmental Quality (DEQ). DEQ requested more information about leachate seepage and its impact on the surrounding surface waters. In 1992, DEQ emphasized the need to monitor potentiometric levels and determine groundwater flow paths in the vicinity of the site to assist in determining the rate and extent of groundwater input from the landfill to the adjacent sloughs and to Smith and Bybee Lakes.

In 1994, DEQ required Metro to submit a seepage control plan for St. Johns Landfill by May 1995.

In June 1990, the Metro Council approved an intergovernmental agreement with Portland State University (PSU) for water monitoring and investigation services at St. Johns Landfill to satisfy DEQ's requirements and provide some of the data necessary to develop the proposed groundwater model. In the fall of 1992, Metro installed a number of piezometer clusters in order to continuously measure water levels, and collect more of the needed data to develop and calibrate a groundwater model at St. Johns Landfill.

In February 1994, Metro entered into an intergovernmental agreement with PSU to select, construct, and calibrate a three-dimensional, numerical groundwater model to simulate groundwater flow patterns and contaminant transport in the St. Johns Landfill area, as required by DEQ for the landfill's closure. To date, the PSU modeling study has provided: an estimate of the quantity of annual leachate seepage and contamination (for a contaminant such as chloride, which travels at the same rate as the groundwater) leaving the landfill over time; and estimated the number of years for the leachate mound to decrease.

As PSU developed the model Metro discovered additional historical data, which then could be used to further improve the model. This led to an extension of the deadlines and termination date (Amendment #1). The model development process generated additional questions as well. Both the modifications to the original Scope of Work to incorporate Metro's new data, and the additional questions are described in Amendment 2.

III. Related Projects

This amendment will result in highly useful information affecting the following projects:

A. Smith and Bybee Lakes Management Plan

The Smith and Bybee Lakes Management Area occupies more than 2,000 acres along the Columbia Slough near the confluence of the Willamette and Columbia Rivers. The Smith and Bybee Lakes wetlands area includes St. Johns Landfill and surrounding surface waters.

The Management Plan indicates that groundwater mounding (of contaminated leachate) and resulting groundwater flow from the landfill may produce major impacts on groundwater recharge and discharge functions, on acceptable habitat for fish, and on the active recreation potential of surrounding sloughs and wetlands. Furthermore, the hydrology of the area is controlled by such human development as landfilling and the creation of water control structures. The future environment of the wetlands complex will depend on such hydrologic management practices as altering lake elevations. Landfill impacts on the surrounding surface waters may be further altered by some of the potential environmental projects discussed in the Plan. The model can simulate how the proposed projects will change the environmental impact from the landfill.

B. Total Maximum Daily Loads (TMDLs)

The Oregon Department of Environmental Quality (DEQ) is currently in the process of setting and allocating Total Maximum Daily Loads (TMDLs) for the Columbia and North Sloughs, which are adjacent to St. Johns Landfill. Lacking specific accurate data, they may set an arbitrary and conservative estimate of waste load allocation for St. Johns Landfill. Metro must stay within this allocation. By quantifying seepage and pollutant loading as accurately as possible, Metro can help to determine more realistically the landfill's TMDL allocation - and reduce the risk that Metro will be required to spend additional money without technical justification.

C. St. Johns Landfill Closure

The St. Johns Landfill's third year of landfill closure construction has been completed. Although the closure design is intended to decrease the elevation of the contaminated groundwater mound and result in lesser impacts to the surrounding surface waters, Metro must demonstrate that the closure plan fulfills the TMDL requirements. The TMDL allocation process may result in the need for construction of a perimeter leachate collection system. The proposed Scope of Work would provide a tool to model potential design scenarios.

Also, it is anticipated that there will be increased regulatory interest in the deeper groundwater around St. Johns Landfill. For example, Metro is expected by DEQ to propose the location of wells used to monitor groundwater for compliance with the groundwater protection rules. The information from this model will help Metro determine where best to drill more wells.

In summary, the PSU model appears to be a powerful tool to estimate groundwater flow and contaminant movement under and around St. Johns Landfill. This amendment will allow staff's use of the model to answer specific questions of importance to Metro in the months ahead.

BUDGET IMPACT

The cost of the amendment is \$54,000, which will come from delayed projects in the \$5.2 million budget for Miscellaneous Professional Services in the FY 1994-1995 closure fund. Work products completed in FY 1995-1996 will be budgeted in FY 1995-1996.

EXECUTIVE OFFICER RECOMMENDATION

The Executive Officer recommends approval of Resolution No. 94-1976.

SOLID WASTE COMMITTEE REPORT

CONSIDERATION OF RESOLUTION NO. 94-1976, FOR THE PURPOSE OF AUTHORIZING AN AMENDMENT TO THE INTERGOVERNMENTAL AGREEMENT WITH PORTLAND STATE UNIVERSITY

Date: November 3, 1994

Presented by: Councilor McLain

Committee Recommendation: At the November 1 meeting, the Committee voted 5-0 to recommend Council adoption of Resolution No. 94-1976. Voting in favor: Councilors Hansen, McFarland, McLain, Monroe and Wyers. Councilor Buchanan was absent.

Committee Issues/Discussion: Jim Watkins, Solid Waste Engineering and Analysis Manager, and Dennis O,Neil and Joanna Karl, Senior Engineers presented the staff report. They noted that Metro had entered into an intergovernmental agreement with Portland State University in February 1994 to provide groundwater and leachate modelling for use in the closure of the St. Johns Landfill. Staff reviewed several slides which showed the results of the modelling work as it relates to estimating the amount and movement of the groundwater and leachate at the landfill.

This resolution results from the need to revise the original scope of work of the project. Staff noted that the initial modelling results indicate that some of the original work tasks will not be needed while other new tasks will need to be performed to maximize the benefits of the data being developed. For example, the modelling data will allow Metro to be an active participant in ongoing environmental studies of the Smith and Bybee Lakes and Columbia Slough. The data also will assist in the development of the groundwater and leachate management systems that Metro will be proposing to the DEQ in mid-1995.

The total net additional cost of the revised scope of work will be \$54,000. These funds will come from the landfill closure account.

Councilor McLain asked how the revised scope of work will contribute to the closure process. Staff noted that it will facilitate the preparation of more cost-effective environmental management programs for the landfill and allow Metro to more effectively argue the merits of such programs before environmental regulatory agencies. McLain asked how the results of the modelling will be given to Metro. Staff noted that the results and the programming related to the modelling will be given to Metro in a form that will be compatible with Metro's computer systems and allow Metro staff to utilize the modelling work on an ongoing basis.