March 17, 2003

Therese Mitchell Landfill & Environmental Technician St. Johns Landfill 9363 N Columbia Blvd Portland, OR 97203

Subject: Scope of Work for St. John's Landfill Vegetation Management

#### Dear Theresa:

This letter proposal outlines a general approach for proceeding with vegetation management for the St. Johns Landfill. Our approach is presented as a series of sequential steps starting with a meeting to discuss and formalize goals for the landfill. Once the goals are established, we will review the available literature regarding past vegetation management at the landfill, as well as current vegetative cover. From this information, we will determine if and why the current vegetative cover does not meet Metro's goals. Once we determine if and why current goals are not being met, we will work with you, applicable Metro staff, or other individuals (hereafter, "the team") to suggest ways that current vegetation might be managed to better meet Metro's local and regional goals. A line item cost estimate for this work is attached.

#### Step 1 - Meeting to Set Goals and Objectives

Landfill design and maintenance is guided by a variety of constraints intended to ensure that waste is properly contained. The constraints for each landfill vary depending on the type, age and location of the facility. Jones & Stokes has discussed some of these constraints with Metro, but we need to formally document them, as they will ultimately determine the range of options available for future management. I have attached a list of potential constraints and ideas that you might consider for discussion.

Jones & Stokes will attend this meeting and prepare notes that will summarize discussion on the above and the list of five to ten goals we develop related to landfill vegetation. This information will be sent to the team for review. Any additional comments made by the team will be incorporated into the goals.

**Product:** Set of preliminary landfill vegetation goals.

### Step 2 – Review of Past Activities and Site Reconnaissance

Jones & Stokes will review the historic and current status of landfill vegetation management (including soil and weed management). This information, including a large-scale landfill map (digital AutoCAD is preferable), will be provided by Metro. We will review these reports to determine whether current vegetation cover is meeting Metro's goals, and if not, why. Goals that are not being met will be discussed and possible management objectives and methods to meet those goals will be proposed.

Jones & Stokes will conduct a one-day qualitative survey of the landfill cover. Notes on vegetation cover will be transferred to the map(s) and areas that are not meeting goals will be noted. Suggestions for addressing deficiencies and proposed management will be outlined in point form and referenced to the site map. A brief, bulleted account of past activities will be written.

**Products:** 1) Set of landfill vegetation goals, appended as applicable, with suggested objectives and conceptual methods to meet those goals. 2) Landfill reference map. 3) List of past vegetation management activities at the landfill.

## Step 4 – Team Meeting: Summary of Findings

Jones & Stokes will meet with the team to present findings and a preliminary framework for development of a long-term vegetation management plan. This meeting will serve as a point at which the team can review available information, discuss the conceptual goals and objectives, and agree on a final approach framework.

**Product:** Finalized set of landfill vegetation goals, objectives, and methodology for vegetation management.

## Step 4 – Develop Conceptual Long-term Vegetation Management Plan

Jones & Stokes will develop a conceptual implementation plan for vegetation management. This plan will be sketched on a map and address the following in point form:

- Goals, objectives, and methods (including monitoring) for vegetation management.
- Expected management effort to meet goals. pacing / phasing suggestions
- Suggested planting methodology
  - Soil testing and amendments (including fertilizer, kind and rate)
  - Seed mixes (rate of application and method)

Species recommended

D Areas & plot sizes (shapes

- □ Schedule (by season)

- Dest estimates (25-50-20 accuracy) Maintenance plan. activity Hmrng est, hours or until cost Invasive species control. spp identified & specific ( & specific control methods, incl. timing
- Adaptive management.
- Recommendations for additional effort to final design.
- Additional information from test plots etc.

#### Step 5 – Project Management

Project management includes quality control and project oversight, as well as other duties such as budget tracking, scheduling, billing, progress reporting, coordination with Metro personnel, and development and maintenance of a project filing system.

Our proposed budget to implement these steps totals \$4930

Should you have any questions or comments, please contact me at 503-248-9507 x226.

Sincerely,

Shane Latimer, Ph.D. Senior Ecologist

#### **Questions and Ideas for Discussion:**

- Herbicides. Are herbicides allowed? 46- 1PM
- Mowing. Is mowing necessary in all areas? If short grass could be established, could mowing be more limited or cease?
- Burning. Is controlled burning, with adequate firebreaks, burn information (such as safety margins for atmospheric conditions and moisture content), and using more advanced methods likely to be allowed by the City of Portland and Metro?
- Plowing and tilling. Will plowing and tilling be possible, mainly for site preparation and initial weed control?
- Irrigation. Is irrigation likely to be possible and allowed during establishment periods?
- Shrubs and trees. Jones & Stokes has worked with some landfill engineers who are interested in planting shallow rooted shrubs and trees on the landfill cap. Such collaborative efforts resulted in design specifications for deeper soils to support woody vegetation. We are aware that some engineers are not interested in such design features. We would like to know if Metro is interested in meeting with landfill engineers interested in adding structural diversity of woody vegetation to

- both grassland both grassland i communities such as meadow lark or to support certain communities such as grassland or shrubland? The Metro Goal 5 effort to delineate Regionally Significant Natural Resources takes a community/ecosystem approach based on functions for riparian and upland wildlife habitat. We would like to discuss whether or not the vegetation selected should provide habitat warmed with the based on functions for selected species or functions associat influence the vegetation selected.
  - Artificial structure. Could large boulders or wooden tripods be added to provide perching sites or other habitat for a variety of wildlife?

All part of SBLWA; this work adds to the complex/mosoric Smith Bybee Lake restoration effort. Should we discuss how the landfill vegetation might be able to compliment restoration efforts on adjacent areas?

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yes. Only way to go.

Test plots. What level of effort is likely?

- Monitoring. What level, period and budget are likely?
- Adaptive management. Adaptive management approaches are becoming more common and accepted by the agencies. Is the landfill interested in discussing such an approach?

	Consulting Staff			· · · · · ·	· [	
	Latimer S	Butler L		Labor	Direct	Total
Task	Env Spec IV	Admin Tech	Subtotal	Total	Expenses	Price
1 - Scoping Meeting	4		\$360	\$360		
2 - Site Reconnaissance and of review of past activities	16		\$1,440	\$1,440	1	•
3 - Meeting with METRO staff to discuss findings and recommendations	4		\$360	\$360	] [	
4 - Develop conceptual long-term management plan	24		\$2,160	\$2,160	] [	
5 - Project Management	4	2	\$500	\$500	] [	
Total hours	52	2			1	
Billing rates (2003 Portland)	\$90	\$70		•		
Subtotals	\$4,680	\$140	\$4,820	\$4,820	]	
Direct Expenses					1	
523.02 Reproductions					\$100	
Mark up of 10% on all non-labor costs and subcontractors		•			\$10	
Direct expense subtotal					\$110	
Total price						\$4,930

## Table 1. Cost Estimate for St. John's Landfill Vegetation Consultation



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- Plowing and tilling. Will plowing and tilling be possible, mainly for site preparation and initial weed control?
- Irrigation. Is irrigation likely to be possible and allowed during establishment periods?
- Shrubs and trees. Jones & Stokes has worked with some landfill engineers who are interested in planting shallow rooted shrubs and trees on the landfill cap. Such collaborative efforts resulted in design specifications for deeper soils to support woody vegetation. We are aware that some engineers are not interested in such design features. We would like to know if Metro is interested in meeting with landfill engineers interested in adding structural diversity of woody vegetation to parts of the landfill cover?
- The vegetation for the landfill could be selected to support certain species such as meadow lark or to support certain communities such as grassland or shrubland? The Metro Goal 5 effort to delineate Regionally Significant Natural Resources takes a community/ecosystem approach based on functions for riparian and upland wildlife habitat. We would like to discuss whether or not the vegetation selected should provide habitat elements for selected species or functions associated with selected communities. The habitat elements or functions desired would likely influence the vegetation selected.
- Artificial structure. Could large boulders or wooden tripods be added to provide perching sites or other habitat for a variety of wildlife?
- Smith Bybee Lake restoration effort. Should we discuss how the landfill vegetation might be able to compliment restoration efforts on adjacent areas?
- Test plots. What level of effort is likely?
- Monitoring. What level, period and budget are likely?
- Adaptive management. Adaptive management approaches are becoming more common and accepted by the agencies. Is the landfill interested in discussing such an approach?

#### Scope of Work

- 1. Review previous vegetation work at St. Johns Landfill
  - a. Establishment of cover vegetation (ryegrass)
  - b. Prior attempts to establish native grasses
- 2. Review past and current management practices
  - a. Mowing regimen
  - b. Grazing
  - c. Other?
- 3. Assess current situation on the landfill, which may include:
  - a. Soil survey
  - b. Topography
  - c. Hydrology
  - d. Existing plant community
  - e. Other conditions
- 4. Develop test plot recommendations for establishing native plants
  - a. Plot size, shape and location
  - b. Site preparation
  - c. Recommended plant community and specifications for seeds or other plant material
  - d. Planting season and method
  - e. Maintenance techniques
  - f. Monitoring and adaptive management regime
- 5. Develop approach for long-term establishment of native vegetation on entire landfill
  - a. Recommended plant community composition
  - b. Appropriate benchmarks, e.g., percentage of non-native species tolerated
- 6. Develop management plan for exotics other than ryegrass
  - a. Identify exotic plants established on landfill
  - b. Prioritize species and infestations to be controlled
  - c. Recommend control methods

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## Draft

Vegetation consultant scope of work

Scope of work:

- Review the vegetation history on the St. Johns Landfill.
- Evaluate former test plots -- produce report of findings.
- Assess invasive weed problems on the landfill and recommend controls based on St. Johns Landfill Vegetation Management Plan.
- Meet with Metro staff to discuss findings.
- Recommend native species, how to set up test plots and possible vendors for seed or stock.
- Recommend planting methods and care for cover crop.
- Recommend planting schedule and mowing schedule.
- Recommend implementation plan to establish native vegetation on a portion of the landfill.
- Develop a long-term goal of establishing native vegetation on the entire landfill.