M E M O R A N D U M

METRO

DATE: January 4, 1995

TO: Dennis O'Neil, Project Coordinator, St. Johns Landfill Closure
Pete Hillmann, Construction Coordinator, St. Johns Landfill Closure
Jim Morgan, Senior Planner
Mark Wilson, Horticulturist

FROM: Janell Davis, Site Manager

RE: Draft Native Vegetation Plan for 1996

Scheduled activities are detailed according to Sub-Area. Please review and return comments to me by January 12, 1996.

In order to control undesirable scotchbroom, blackberries and various non-native plants and shrubs throughout the site, Metro personnel will manually cut back and/or apply small amounts of herbicide, as needed.

1. SUB-AREA 1

   a) Mow all grass in late winter to prevent non-natives from setting seed.

   b) Continue mowing all grass in April and May.

   c) Do not mow in June or July except within 25' of wells, surface gas pipes, condensate and Vacuum Pump Stations.

   d) Mow all grass in August and September as needed.

2. SUB-AREA 2

   a) Follow the same procedure in mowing as for Sub-Area 1.

   b) The exception will be that Metro will **not** mow in the swale between gas pipe laterals 2 and 3. Willows will be planted in compact stands adjacent to the lower drainage dike.

c) Select an area on the high ground between Wells 12 and 14 for planting native seed in a mix to be determined. Disc the area as often as necessary to kill off existing plants from July to September. Plant native species in September.

3. SUB-AREA 3

a) Follow the same procedure in mowing as for Sub-Area 1.

b) Select an area on the northeast facing slopes of Sub-Area 3 where the existing temporary cover crop and rye grass is not doing well. Disc the area as often as necessary to kill off existing plants between July and September. Plant native species in September.

c) Consider fertilizing the native plant area as well as other adjacent areas where the cover crop is not doing well.

4. SUB-AREA 4

a) This area will be covered during the period April - September 1996.

b) Cover crop planned for Sub-Area 4 is Winter Wheat.

c) If topsoil devoid of seed bank becomes available, consider using on the flatter top area and planting with native seed.

5. SUB-AREA 5.

a) Mow all grass this year starting in late Winter through September.

b) The exception will be the 1-acre area planted with Elymus gloucus (Blue Wild Rye) between Wells 45 and 46. Do **not** cut this area in June or July, including the portion of the area adjacent to the wells.

6. SUB-AREA 5A

a) Mow all grass this year starting in early Spring through September.

b) This area was planted late in the 1995 construction season. In addition, there are some areas on the South side which did not receive topsoil or even crop yet. Completion of the cover soils and vegetation will take place probably in July 1996 when dry weather returns.

c) No native grasses will be planted there this year.

1996 Vegetation Treatment Plots at St. Johns Landfill

The purpose of this experiment design is to test the efficacy of two treatments, tillage and herbicide, on the suppression of exotic plant species and the promote of native grasses plant after treatment. The suggested design in a factorial approach with replicates, rather than a single-factor approach without replications we have pursued thus far. The advantage in the factorial approach is that it reduces the number of plots needed to gain the same estimate of variance attributed to each treatment.

Treatments

T = Tillage: till plots will be disc harrowed to a depth of approximately 4 inches as early in the growing season as possible (March/April). Dependent on the soil moisture and consistency conditions, the disc harrow may have to pass over the plots several times in perpendicular directions to ensure effective break-up of the grasses. Plots will be tilled as needed throughout the spring/early summer growing season, whenever the grasses have re-sprouted but prior to seed formation. This will probably be 3 to 4 times in a year.

H = Herbicide: Glyphosate, a rapidly decomposing, systemic herbicide often under the name brand Roundup, will be applied under two different treatment levels: (1) high level in April and again in late May/early June after re-sprout of pest plant seeds, whatever is needed to result in no exotic grasses developing in the fall; and (2) low level once in April only.

Test Plots Layout

Till & Low Herbicide	Till & High Herbicide	Till Only
Low Herbicide Only	High Herbicide Only	No Treatment

All plots will be in Sub-area 2 on the similar % slope, south-facing, and have the same soil depth. Suggested dimensions are 100 meters (approximately 328 feet) on each side. This will yield a total area of 1 hectare (2.47 acres) or 0.25 hectare (0.62 acre) for each treatment quadrant. Six of the larger plots, each containing four sub-plots, should be separated by at least a 3-meter (10 ft.) corridor. This will yield five replicates for each treatment, totaling 30 treatment plots, with six control plots.

Native grass seeds will be drilled in the fall on all plots. The untreated control plot will be mown at the same time the surrounding untreated area outside the plots, then sown at the same time as the other plots. Density of introduced and native grasses will be measured in each plot over a minimum of two growing seasons.