

Greenwaste Diversion and Recycling Plan

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Introduction

*"This deluge of garbage is growing steadily and we must find ways to manage it safely and effectively. We're running out of space to bury it in existing landfills; more than one third of the nation's landfills will be full within the next few years and many cities are unable to find enough acceptable sites for new landfills or new combustors. All levels of government, the public and industry must forge a new alliance to develop and implement integrated systems for solid waste management"*¹

The Washoe County District Health Department's Solid Waste Management Program is experiencing a solid waste dilemma similar to the rest of the nation. The program has identified two environmental health issues that need to be addressed: 1) extending the service-life of the local landfill and, 2) achieving the State's mandated 25% recycling rate. Staff agreed to address these issues simultaneously by developing the Greenwaste Diversion and Recycling Plan to reduce greenwaste disposal at the landfill to increase its life expectancy and to develop commodities from greenwaste generation (compost and mulch) to enhance the County's recycling rate.



Photo # 1 courtesy of Craig Witt, Full Circle Compost

This report examines the process involved in developing and initiating the Plan, discusses the successes to date, outlines the steps required to complete execution, and identifies conflicts, which may arise during the process.

Goals and Objectives

Program Goal: Reduce the amount of recyclable materials being disposed in the regional landfill.

Health Problem: Solid waste may contain toxic chemicals and disease-causing organisms that could compromise the public's health if improperly disposed. Proper solid waste disposal reduces the risk of public exposure to hazardous materials by confining wastes to approved landfill sites.

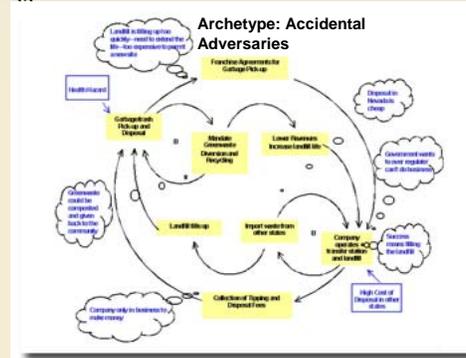
Outcome Objective: By January 01, 2009, the amount of greenwaste disposed in the landfill will be reduced by 50% from the 2006 baseline amount.

Contributing Factors:

- Lack of low-cost disposal facilities
- Rapid population growth
- Increased transportation costs
- Lack of public awareness
- Mandated recycling rate
- Increase in illegal dump sites

Systems Analysis Approach

The "Accidental Adversaries" archetype identifies the mental models and root causes of the solid waste



Development Steps Completed

- developed.
- ✓Successful greenwaste recycling programs identified
- ✓Greenwaste task force selected, and convened 4 times in 2005.
- ✓Solid waste/recycling infrastructure identified and evaluated.
- ✓System thinking analysis completed/implementation barriers identified (see *Accidental Adversaries Archetype* above).
- ✓Logic model drafted outlining the Plan's



Photo # 2 Compost Awareness Day May 2005

Project Logic Model

INPUTS	<ul style="list-style-type: none"> - number of members/volunteers/regulators/business owners/partners involved in greenwaste activities - landscapers, homeowners and residents, trainers - training curriculum - materials: sites, water accessibility, signage, bins, materials, flyers
ACTIVITIES	<ul style="list-style-type: none"> - collaborate with local government agencies, businesses, University of Nevada, landfill and transfer station owners, landscaping industry, parks departments to partner in setting up and/or operating composting sites, collection facilities and markets for processed greenwaste - partner with farmers, community gardeners, and other potential customers to purchase and/or contribute materials to the compost sites - train community volunteers & partners in composting procedures & care - distribute composting containers to households - set up and maintain transfer stations and composting sites; collect materials and advise public of drop-off points, maintain and care for compost, distribute or sell humus to growers, individual or community gardeners and landscapers
OUTPUTS	<ul style="list-style-type: none"> - number of solid waste permits issued by the agency for haulers, transfer stations, and compost facilities - number of collaborative partners and community outreach events - number of tons of organic material collected - number of hours transfer stations and compost facilities are in operation - number of educational materials developed and used in outreach efforts - number of households using home compost bins
INTERMEDIATE OUTCOMES	<ul style="list-style-type: none"> - increased public and commercial awareness of and contribution to compost site(s) - increased use of compost by home and community gardeners and landscapers - decrease greenwaste disposal at transfer stations and landfill
END OUTCOMES	<ul style="list-style-type: none"> - reduction in the amount of greenwaste generated (e.g. lbs. per capita) - improved soil quality where compost was added and reduced water use (soil retains moisture and nutrients, prevents runoff, lessens need for fertilizer) - reduction in the number of illegal dumpsites in outlying areas and increase beautification of land - increase in amount of available compost and life of landfill
HOW MEASURED	<ul style="list-style-type: none"> - record of greenwaste hauled to transfer station - record of greenwaste taken in at compost facility - checklist of households where containers were distributed - schedule of outreach programs with estimated attendance - checklist of educational materials developed - record of hits on website - record of greenwaste disposed of at transfer stations - survey of landscape companies, hauling companies, community gardeners, parks departments, landscaping industry, households - county records

Successes to date

- Compost Awareness Day conducted May 2005 with community partners (see photo # 2)
- Annual Christmas tree recycling program and multimedia campaign, January 2005 & 2006
- Educational outreach program with community partners; brochures fliers, and fact sheets
- Goals and objectives presented to District Board of Health, June 2005
- Composting facility field trip for stakeholders and task force members, Fall 2005

Future Outcomes

Significant progress has been made on implementation of the Plan; however, with a project of this magnitude, one year's time is not enough to complete the process. Full completion of the project is estimated at the end of 2012. The following steps and activities must be completed for full implementation of the project:

- Conduct an economic feasibility study and cost/benefit analysis
- Conduct a community-wide waste stream analysis
- Identify suitable sites for composting facilities and transfer stations
- Identify sustainable monetary sources and incentive opportunities to offset revenue reductions of waste companies
- Enhance current public outreach program
- Evaluate current policies and regulations for appropriateness
- Present plan to community leaders and obtain endorsements
- Evaluate the effectiveness of the plan in accomplishing established goals

References

1. U.S. EPA. *The Solid Waste Dilemma: An Agenda for Action*. Washington D.C. United States Environmental Protection Agency. 1989: 1.

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