



UNIVERSITY OF  
FLORIDA

Department of Environmental Engineering Sciences  
Solid and Hazardous Waste Engineering Program  
Brajesh K Dubey  
Post Doctoral Fellow  
Email: [bkdubey@ufl.edu](mailto:bkdubey@ufl.edu)

P.O. Box 116450  
332 NEB  
Gainesville, FL 32611-6450  
Phone: (352) 846-3035  
Fax: (352) 392-3076

September 29, 2007

To,  
Alan Altman  
Deputy Director Solid Waste Division  
3545 Rosemary Hill Road  
Green Cove Springs, Florida 32043  
E-mail: [Alan.Altman@co.clay.fl.us](mailto:Alan.Altman@co.clay.fl.us)

Subject: Progress report on project activities for duration of March 15<sup>th</sup>, 2007 to September 30<sup>th</sup> 2007

Hi Alan

Attached please find a brief progress report for different activities related to Innovative Recycling Grant project for the period March 15<sup>th</sup> to Sept 30<sup>th</sup> 2007. The contract between the Clay County and the University of Florida ends on Sept 30<sup>th</sup> 2007. I have also enclosed the previous progress report we have sent earlier for this project. The final deliverables of Policy Option Guide will be submitted to you in next few days. Let me know if you have any questions.

Thank you for your time. It was our pleasure working with you on this project and we look forward to assist you in future as and when you need our assistance.

Best Regards,

A handwritten signature in black ink, appearing to read 'Brajesh'.

Brajesh K Dubey

## Clay County Innovative Recycling Grant

### An Analysis of Management Policies that Encourage C&D Debris Recycling

This document presents the project activities progress report for work period from March 15<sup>th</sup> 2007 to September 30<sup>th</sup> 2007. During this period, the focus of the project was on tasks related to policy and program analysis, analyzing and summarizing the information collected during the workshop in the earlier part of the project, updating the website with newer information and to prepare the final deliverable of Policy Option Guide.

#### **Policy and Program Analysis**

The objectives of this part of the research project were to define possible policies that can be used to encourage C&D debris recycling, find locations in the US where these policies had been enacted, and determine their success. Policies were evaluated based on the potential for increasing the recycling rate and potential costs. A survey was used to obtain this data from state, city, and county governments. A brief summary of policy and program analysis is presented in next few paragraphs of this section.

The policy and program analysis found that local policies can be implemented quickly, but only with the approval of the government. This can be difficult if public sentiment is not for recycling policies in general. However, a policy that incurs little cost to the government, little cost to the public, and large increases in recycling might be popular. Deposits (or advanced disposal fees or rebates) have positive effects on recycling rates while keeping costs down. Deposits generally appeal more to demolition contractors than to other contractors due to the large return they may get. Other contractors may just pass the costs onto the consumer. Percent recycling requirements and disposal bans, however, can ensure that recycling does occur at minimal cost to the government.

For any recycling policy, recycling facilities are needed. If there are no private recycling facilities the government may need to set up a recycling operation so that the contractors in the area may be able to legally manage their debris. This can be costly, as seen in Orange County, North Carolina. Revenues from marketing the material, however, may offset these costs, but markets should be explored before policy implementation. Government recycling requirements may encourage private C&D debris recycling capabilities in the region.

For states, recycling goals do not seem to have an effect on the amount of C&D debris that is recycled. Instead, state mandates for recycling, state encouragement of recycling through grants, tipping fees, disposal scarcity, and markets have more impact. The California counties and cities enacted policies to satisfy state diversion mandates, while the North Carolina county needed a method to ease the problems foreseen due to lack of disposal.

Other communities looking to implement such recycling ordinances need to determine if similar characteristics exist in their area to be successful. While the population of an area is seemingly irrelevant to the type of policy, costs for programs such as percent recycling requirements and deposits can vary depending on the amount of construction, renovation, or demolition activity that occurs. Table 1 presents questions that cities and counties need to answer to help determine which type of policy will work for them.

**Table 1.** Guidance questions for implementing C&D debris recycling policies.

Item	Question	Recommendation	
1.	Are there C&D debris recycling facilities close by?	Yes – any policy will work	No – any policy will work, but purchasing recycling equipment is necessary. Government recycling requirement may develop recycling programs
2.	What is the primary activity in your area?	construction - % recycling requirements, disposal bans	Renovation - % recycling requirements, disposal bans Demolition – Deposits/ ADF/ Rebate
3.	Do you have one or two staff members that will be able to monitor the policy as part of their daily activities?	Yes - % recycling requirements, disposal bans, Deposits/ADF	No – Green building, government recycling requirement
4.	Do you want to make sure that the program does not cost anything to the government	Yes – Deposits/ADF	No – all other policies

### Analysis and Summary of Information Collected at workshop

The workshop was held on October 27, 2006 at the Clay County Administrative Building in Green Cove Springs, Florida. Fifteen people attended the workshop and their backgrounds varied from county officials, state officials, waste haulers and waste management personnel. The workshop's agenda began with an introduction. Then, the current C&D debris management practices in the US and abroad were presented. Next, an overview of the policies to encourage C&D debris recycling was given. Following lunch a presentation on the applicability of C&D debris recycling policies to Florida, in particular Clay County, was given. The presentation material from the workshop is included as an appendix to this document. A question and discussion section was held to conclude the workshop.

The workshop attendees provided comments that have been deemed very useful. They seemed open to the idea of implementing a C&D debris recycling policy in Florida. However, they are all very aware of the problems associated with enforcing the recycling of C&D debris materials. They are looking to the state to provide assistance before requiring that the management of C&D debris is changed. The main focus of the attendees was on the availability of markets. They are in a business and are only interested in making a profit. Therefore, the markets must be available and accessible. The summary of feedback received at the workshop is included below.

#### *Markets*

The haulers had many issues regarding the markets for C&D debris that currently exist in Florida. The census was that there were not many places to bring the recyclable material for processing and the cost of recycling was not feasible. The haulers agreed that equipment needed to be purchased in order to maximize the materials load. They went on to say that it was more cost effective and profitable to landfill the materials than to process the materials with own their equipment. The equipment is expensive and the maintenance is costly, these expenditures are not feasible for small companies. Haulers are not willing to buy expensive processing equipment and then pay the cost of trucking the material to the buyer, if the payment for the materials is not enough to balance the costs of the equipment and transporting.

### *Policy*

Recent IRG have shown that collecting recyclables onsite was difficult; however pulling the materials at the disposal site was much more efficient. In two or three more years Florida may start to see some movement occur in the legislative sector toward the introduction of C&D debris recycling policies for the whole of the state. A big issue for the movement of writing policies requiring C&D debris to be recycled is that the tipping fees are too low. With low tipping fees there is no driver for establishing the desire to recycle C&D debris. California has tipping fees comparable to Florida's; however it issued a percent recycling mandate. FDEP does not have the authority to mandate a percent recycling requirement. In order for such an event to occur the legislature must recognize the need for C&D debris recycling and this is accomplished through a collective voice from the community. This is a cyclical process: the government must declare the forthcoming policy, and then individuals/companies that seek financial gain will begin to develop the markets for the recycled material. After markets are established the rest is left to the enforcement of the policy.

### *Hauler Concerns*

Source separating is labor intensive and unless the load contains an excess of the desired material it is not worth paying the labor to pull it out. Metals have a good market in Northeast Florida but unless the waste load has a high percentage of metal content then the labor to separate the metal from the load is not cost effective. The government and the laws restrict non-permitte (the small haulers were complaining about not being able to take the materials to their business lot- TSDf permit?) to source separate at their own sites. Haulers said that source separating at the work site is not feasible unless they will benefit, by way of separating materials that would lessen the tipping fees for that load, i.e. concrete because of its voluminous and heavy mass. Haulers lacking certain permits are concerned about labor costs. By bringing the waste loads back to yard where the business is located for source separation a supervisor can assess what is being done by the paid workers, thereby creating a governed job site. Paying for source separation at the job site causes some skepticism by the owner of the hauling business, for he is not at the job site to ensure that the labor is being fulfilled. Therefore, it is believed to be easier to source separate in the yard than at the job site.

Big companies that own haulers and landfills hold an advantage over the smaller haulers that don't own their own landfill. Big companies have the freedom of bringing the waste to their landfill site and dropping the materials their for source separation because they have a permit that allows them to store waste. However, big company representatives claim that in order to be competitive in the C&D waste management market they often resort to hiring third party haulers and transporting the material to a landfill other than their own. This strategy enabled the bigger company, one which owns a landfill and hauling trucks, to bid out bigger contracts.

### **Website ([www.constructiondebris.org](http://www.constructiondebris.org))**

ConstructionDebris.org, the website developed and being maintained as part of this project was updated with newer information about the project and other related information on construction and demolition waste in general throughout this project duration. The progress reports and the final deliverable of Policy Option Guide will also be made available on web after the project completion in next few weeks.

### **Preparation of Final Deliverables**

The final deliverable of Policy Option Guide is being prepared and will be submitted to the County in very near future.

# Appendix

## Workshop Presentation Material