

A RESOLUTION ACCEPTING THE REPORT ON COSTS OF
DUMPSTER COLLECTION SERVICES AND FEASIBILITY OF
IMPLEMENTING A USER FEE
Resolution No. 138/2001-02

WHEREAS, the Carrboro Board of Aldermen has received the dumpster collection fee analysis and report; and

WHEREAS, the Aldermen were asked to consider a future work session or public hearing requesting input from the community regarding implementation of a user fee for dumpster collection services; and

NOW THEREFORE, THE BOARD OF ALDERMEN OF THE TOWN OF
CARRBORO:

Section 1: That the Board accepts the dumpster collection fee report.

Section 2: That the town staff schedule an informational meeting with affected business owners.

Section 3. That a public hearing be scheduled for June 4th to receive public comment on this proposal.

TO: Mayor and Board of Aldermen

FROM: L. Bingham Roenigk, Assistant Town Manager
Philip Prete, Environmental Planner
Claudia Sanderford, Administrative Analyst

DATE: April 23, 2002

RE: Dumpster Collection User Charge Analysis

Background

The Board of Aldermen, at their regular board meeting of February 12, 2002, requested that staff proceed with a study to levy a dumpster collection fee and to provide baseline data on what is being collected and the costs of providing dumpster collection services. With this directive, a project team spanning several departments was assembled to review the feasibility and costs of implementing user fees for dumpster collection services.

General Information

Currently, the Public Works Department provides dumpster collection services to numerous commercial businesses and multi-family developments. Dumpster collection is provided twice weekly at no charge. All extra dumpster service is charged at a fee based on the size of the dumpster (measured in cubic yards). Purchase and maintenance of the dumpsters are not the responsibility of the Town. Approximately 306 dumpsters owned by approximately 93 businesses and about 73 multi-family developments containing more than 4700 units are currently serviced.

The waste generated from these dumpsters, in FY00-01, comprised 59 percent of the total waste stream disposed at the landfill, representing 5,183 tons of the total 8,741 tons disposed. In contrast, single-family units generated 2,250 tons of waste, which is approximately 26 percent of the waste disposed. Yard waste and demolition debris comprised the remaining 15% of the waste stream.

The most expensive aspect of dumpster collection services is the tipping fee paid to the Orange Regional Landfill for waste disposal. This cost, estimated at \$234,000 (5183 tons at \$45 per ton), represents 51 percent of the current total costs to provide dumpster services (both direct and indirect costs).

Many municipalities have moved from a tax –based support system for waste management to user fees as a means to recover the cost of solid waste management services and to encourage recycling or purchasing items that do not add to the waste stream.

Cost of Providing Dumpster Collection to Commercial and Multi-Family Units

Cost accounting, or cost funding is a key function in the proper pricing of user fees. Carrboro's dumpster collection costs are comprised of direct salaries, annual operations and maintenance costs, vehicle & equipment costs, and indirect costs.

Most financial data for the analysis comes from the prior year audited figures. After completing cost estimates based on prior year numbers, some figures, due to significant changes, are adjusted for the current year. In this analysis, landfill tipping fees and personnel costs changed significantly in FY01-02, adding to the cost of collections.

Indirect Costs

Most service activity, such as dumpster collections, will have indirect costs from local government-wide support centers. Thus total costs for dumpster collection services can be calculated with the following equation:

Total Cost = Direct Cost + (AR X total municipal wide support costs), where AR is a cost allocation ratio.

Table 1-1 describes the allocation ratios applied to various municipal support costs and allocated to dumpster collection services.

Direct Costs

The calculation of salary costs is based on a calculated number of staff-hours dedicated to dumpster collection which approximates two fulltime positions. The salary costs reflect projected salary earnings as of June 30, 2002 and associated fringe costs including FICA, retirement, and insurance costs.

Operating costs directly associated with dumpster collection activities are based on actual audit figures presented in the Town's annual audit with one exception. Landfill tipping fees, which reflect the cost of disposing dumpster waste, are based on FY00-01 audited costs and then adjusted by the price increase that went into effect on July 1, 2001 (from \$42 to \$45 per ton). The largest single expense in dumpster collection services - 71 percent of the total direct costs - lies in disposal costs (landfill tipping fees). In FY00-01, landfill tipping fees for commercial waste was \$103,868 and multifamily waste was \$114,950.

Capital Allocation Costs

Another piece in costing direct services is converting expenditure data to expense data. Expenditure data represent the purchase of goods and services; expense data is the use of goods and services. When expenditures and expenses occur in the same fiscal year, differentiating between the two is fruitless.

In this study, fixed asset expenditures, heavy motorized equipment is a cost that covers more than one fiscal year and must be converted to expenses. Equipment cost estimates were taken from the Town's fixed asset records and depreciated according to a standard depreciation formula that assumes that the life of the motorized equipment used for collecting waste is five years. The annual amount represents an estimate of the amount of money needed to accumulate each year in order to replace the equipment.

Total Cost of Dumpster Collections

The total cost of providing dumpster collection services at current levels is estimated at \$460,158.

User Fees

Alternative cost-based rate structures include a flat-rate user fee schedule, variable rate user fee schedule, or a structure that combines flat and variable rates. Descriptions of the rate structures follow.

Flat-rate user fee schedule – Users are charged the same fee for all dumpsters, regardless of the size of the dumpster. The basic problem with the flat fee is that the bill received by the customer in no way reflects the volume or types of materials discarded into the waste stream. With this approach, customers have no incentive to change their consumption patterns in favor of more durable, reusable, or recyclable goods and packaging. In addition, this system provides no incentive for participating in existing recycling programs.

Variable-rate user fee schedule – Users are charged a fee based on the size of the dumpster. The rationale for this type of fee system is based on the assumption that reducing the amount of waste requiring disposal through recycling will lead to reduced collection, transportation, and disposal costs of the remainder of the waste stream. It follows that if such savings are realized, these savings should be passed on to participating customers in the form of reduced fees, and that those who are conscientious enough to reduce their waste will continue to do so if given an incentive.

Combined-rate user fee schedule – Users are charged a flat fee for each container and a variable fee based on the size of the container and frequency of servicing. The flat fee covers the fixed portion of the solid waste cost and the variable portion of the fee covers the primary variable portion of the cost – in the case of this analysis, landfill tipping fees.

Rate Structuring

Should user fees be implemented, staff proposes using a combined rate fee structure based on full costs of operations. Beyond serving as a revenue source to cover the cost of service, implementing a user fee is an opportunity to reduce the waste stream by changing consumers' behaviors in disposing of waste. Implementing new solid waste reduction initiatives targeting the commercial and multi-family customers coupled with an appropriately structured service fee will result in a reduction in the amount of waste Carrboro disposes at the landfill and some customer control over waste disposal cost.

The first component of the fee structure – the flat fee or “stopping fee” is the same for each dumpster regardless of size of dumpster and is based on the cost for getting a truck and crew to the customer to service the dumpster. Based on an analysis of fixed costs, the fee is set at \$10.97 per stop to cover projected costs.

The second component of the fee structure – the variable fee or “dumping fee” varies with the size of container. Since dumpsters are sized by their volume in “cubic yards,” the rate units used to set this portion of the fee for dumpster collection service is the cost per cubic yard serviced. Currently, Carrboro services dumpsters that range from 2 cubic yards to 8 cubic yards, and the fee will vary proportional to the size, since it is calculated to cover the cost of disposing the containerized waste at the Orange Regional Landfill.

Implementation Considerations

It is recommended that local governments, when establishing new collection fees, begin a public education program to inform service users of the reasons for the change, the true cost of providing the services, and the possibility of increased costs in the future. Ideally, the program should provide information on the benefits of reducing the amount of materials discarded in the waste stream and assist businesses in identifying and incorporating into their business operations opportunities for waste reduction and recycling.

Another issue for consideration is that many business owners are also in the midst of their budget process as well and will need to make a decision on allocating funds to cover this new expense as soon as possible. This will need to be taken into consideration when determining a schedule for implementing the fee.

The Public Works Department, in order to successfully implement the user fee program for dumpster collection services, will need to gather billing information and convey this information to the Management Services Department. In addition, the Public Works Department will need to develop an educational and enforcement program for dumpster collections.

Town staff will require at least two months lead-time from adoption by the Board to notify businesses, establish service agreements and to implement a billing system. The Board should be aware that the fee structure has to be determined prior to moving ahead with educating the businesses on the potential costs of charging for dumpster pickup.

Upon approval of the fee structure, the Public Works Department will notify businesses of the fees via mail. Following the letters, the department can schedule meetings with all the owners during the months preceding implementation to present the new fee structure and to ascertain levels of services needed for each business. In addition, Public Works administrative staff will work with Management Services to determine how the businesses will be billed based on each service agreement. Staff anticipates a quarterly billing cycle on a subscription basis where payments are received in advance.

While the Public Works Department is uncertain of the level of work it will take to implement this program, staff is comfortable that the user fee itself can be implemented and enforced with existing staff and with cooperation of Management Services. The Solid Waste Supervisor will allocate time as necessary to answer any queries and to work with the business owners in helping them to understand how to reduce their current waste stream using source reduction and recycling measures. This could take the form of preparing information packets specifically geared toward answering "frequently asked questions"(FAQs) which can be distributed to these owners, once billing begins.

However, opportunities to engage in a proactive program whereby staff educates businesses about the benefits of reducing the amount of materials going to the waste stream and identifying opportunities and programs for recycling are limited without adding additional staff.

Given the Town's overall Solid Waste Management plans regarding recycling, and future solid waste management program changes, the Town may have need of additional manpower to manage the education and enforcement of new ordinances over time. The Public Works Department will consider further evaluation of staffing needs during the first six months of the dumpster fee implementation and after Board discussions on solid waste management in the upcoming months.

Additional Costs

The cost analyses above project current costs. Two additional costs will need to be factored into this estimate in order to administer the program.

First, it is likely that landfill-tipping fees will increase in FY02-03. Public Works, in its budget request, projects that landfill tipping fees will increase \$2 per ton. Cost of disposing the same 5,183 tons from dumpsters will increase by \$10,367. This analysis includes this projected cost into the fee structure.

In addition, an additional supporting budget item will need to be added to enable the Management Services Department, with current staff, to implement the billing and collections (accounts receivable) module in the MUNIS financial system. This budget, estimated at \$15,000, will cover the cost of a printer, forms, and MUNIS staff consulting.

Adding these additional costs brings the total collection costs to an estimated \$485,525.

Calculating the Fee to be Charged

Calculating the full costs of dumpster collections is based on the estimated level of service demand for solid waste collected by the Town. The estimated fee based on full costs must be adjusted to reflect the expected changes in service demand that will occur when moving from a property tax-based financing to a variable rate fee structure.

Two factors should be considered in adjusting the rate to account for these changes:

1. Change in patterns of dumpster use

Current service to commercial customers provides no incentive for subscribing for a dumpster size or service frequency that optimizes the capacity of the dumpster. It is expected that many dumpsters are over-sized and serviced before full. This results in inefficiencies to the collection system because labor, fuel, and equipment are allocated to servicing only partially full dumpsters – in other words, collecting empty air space.

The Town of Carrboro currently services a total of 306 dumpsters varying in size from two to eight cubic yards capacity, for the most part, twice per week. The calculated dumpster capacity serviced by the town in a twelve month period is approximately 233,000 cubic yards – enough capacity to hold 20,420 tons of waste if every dumpster were crammed full every time it is serviced. The amount of waste actually collected from

dumpsters from the commercial and multi-family housing sectors in FY 2000-01 was 5,183 tons (based on weight records for waste that was disposed in the Orange Regional Landfill). Comparing these two numbers, approximately 75 percent of the dumpster capacity was empty air space.

By charging for this service, commercial customers can be expected to adjust the sizing of the dumpsters used and the frequency of service to better reflect the actual need. If we assume that customers optimize the use of dumpster capacity to the extent that even one third of the unused capacity is filled with waste when a fee is implemented, that will mean a significant change in the number of dumpsters emptied, and hence a reduction in the projected revenue as well as potential reduced direct costs. The exact impact cannot be predicted with certainty, but fees per cubic yard serviced must be adjusted upward in this analysis to prevent too much of a revenue shortfall.

2. Reduction in the waste stream

In addition, some change in the actual amount of waste disposed can be expected due to heightened awareness of the cost of waste disposal. Commercial customers can be expected to take advantage more fully of available opportunities and find new opportunities for recycling and other innovative waste reduction measures. As additional opportunities for waste reduction are implemented in the future, more waste can be expected to be diverted resulting in additional reductions in the demand for waste disposal.

This change in demand for waste disposal services can be explained by a basic principle called Price Elasticity of Demand (PED), which is a measure that projects the responsiveness of consumer demand for waste services once a fee is implemented. PED has been documented in other communities that have implemented user fees and allows an adjustment of the projected per unit full cost of providing the service to compensate for these changes. The measure is calculated as follows:

$$\text{PED} = \frac{\% \text{ change in QD (quantity demanded)}}{\% \text{ change in Price}}$$

Based on experiences in other communities, the price elasticity used in this analysis is -0.15.

Both of these influences cited above depend on demand for service, and hence revenue projections require that the estimated cost per cubic yard serviced based on past (pre-fee) level of service be subjected to an iterative adjustment to anticipate new levels of service. The recent experience by Chapel Hill with commercial dumpster collection fees resulting in a revenue shortfall is in part owing to a failure to allow for these types of changes. While it is impossible to predict the necessary adjustment with a high degree of certainty, failure to make some attempt will most certainly result in an inability to cover cost of service.

Recommended Fees Based on Full Cost of Providing Dumpster Collection Services

Considering all of the factors discussed above, the combined variable rate fee structure, based on full costs and adjustments in service levels is proposed at a base fee of \$10.97 per stop for each dumpster serviced combined with a disposal rate of \$1.43 per cubic yard capacity. The following rate table (Table 1) shows the cost of dumpster collection service that could be expected by Carrboro dumpster service users.

Table 1: Dumpster Fee Schedule					
Dumpster Size - Cubic Yards	once per week		twice per week		extra pickup
	base fee = \$10.97		base fee = \$21.94		
	variable fee	total fee	variable fee	total fee	
2	\$2.87	\$13.84	\$ 5.73	\$ 27.67	\$13.84
4	\$5.73	\$16.70	\$ 11.46	\$ 33.40	\$16.70
6	\$8.60	\$19.57	\$ 17.19	\$ 39.13	\$19.57
8	\$11.46	\$22.43	\$ 22.93	\$ 44.87	\$22.43

Consumers will likely be billed on a quarterly basis as is done in Chapel Hill or in conjunction with other payments, such as property taxes. Assuming a quarterly billing cycle, commercial and multi-family units can expect to see a recurring invoice as summarized below in Table 2.

Table 2: Dumpster Fee Schedule			
Dumpster Size - Cubic Yards	cost per quarter (13 weeks service)		extra pickup (each time)
	once per week	twice per week	
2	\$179.87	\$359.74	\$13.84
4	\$217.12	\$434.25	\$16.70
6	\$254.38	\$508.75	\$19.57
8	\$291.63	\$583.26	\$22.43

Fees, on an annual basis, for once-a-week dumpster collection would range from \$719 per year for a 2 cubic yard dumpster to \$1166 per year for an 8 cubic yard dumpster.

This fee will need to be evaluated as soon after implementation as changes can be detected. The fee should be either adjusted based on actual measured changes, or there should be an account established to buffer shortfalls/excesses and adjust annually with the adjusted fee either making up the shortfall or reduced by the excess. In addition, changes in fees would be necessary to cover changes in tipping fees or other direct costs.

Comparison with Other Jurisdictions

A survey of neighboring municipalities in the Triangle region indicate that fee structures and collection schedules vary significantly from one Town to the next, and are set based on varying criteria. As Table 3 reveals, numerous municipalities, particularly in Wake County, do not provide dumpster collection services.

Table 3: Services in other Triangle Communities

Municipality	Dumpster Collection Services Provided by the Municipality
DURHAM COUNTY	
City of Durham	YES
ORANGE COUNTY	
Town of Chapel Hill	YES
Hillsborough	YES, but considering a contract arrangement
Carrboro	YES
WAKE COUNTY	
Raleigh	NO
Cary	NO
Fuquay Varina	NO
Apex	YES, via government contract; user fees pay for contractual costs
Holly Springs	NO

Fee Structures Used By Various Jurisdictions

Of the jurisdictions listed above, the city of Durham is the only one that uses a flat fee structure. Dumpster users are billed for once-a-week pickup on a monthly basis. Durham uses a 3-tier rate, which offers local businesses a monthly, one or two-year contract rate option. The month-to-month contract provides once per week service at a cost of \$85; the one-year contract rate at \$80.75 per month and the two-year contract rate provide a monthly charge of \$76.50.

The Town of Chapel Hill currently provides one collection per week to businesses and multi-family residential neighborhoods through their tax rate. Businesses and apartment complexes may arrange additional service up to five days a week for a fee through a fairly complex fee structure depending on the type of garbage truck used, size of dumpster, number of pickups, and whether the business is tax-exempt or the dumpster is shared by a business. The charge for a twice weekly pickup, on an annual basis, amounts to a range of \$200-\$700 per year.

Hillsborough currently provides and finances commercial waste collection through its property tax. However, they are in the midst of a request-for-proposal process to award an exclusive franchise agreement for the collection of commercial waste, of which Orange County is a bidder. This type of arrangement is similar to the Town's cable franchise arrangement whereby a private collector agrees to take over the dumpster collection service on certain conditions set by the Town. In this case, Hillsborough is requiring the bidding companies to agree that they will continue to dispose waste at the County's landfill. The winning company will be able to implement a fee for the service. However, the contract will not be awarded until May 3.

The Town of Carrboro's fee schedule, if implemented at full cost, indicates that the Town should be able to perform this function in a manner that is competitive with the market and other jurisdictions (see Table 4). Different variables are considered when determining the service needs of local businesses. Some private contractors take into account density and weight of dumpster materials, while others set their fees based on cubic size. Frequency of pickup and billing also vary significantly from one contractor to the next. BFI, Durham provided information for once weekly pickup as indicated in Table 4 below.

Table 4: COMPARISON OF CARRBORO'S PROPOSED FEE TO EXISTING FEES – BASED ON QUARTERLY BILLING CYCLE – DUMPSTER COLLECTION SERVICES (13 WEEKS)

Municipality	2 cy	4 cy	6 cy	8 cy	Annual Cost
Durham	N/A	\$229.50	\$229.50	\$229.50	\$918
Chapel Hill	0 - \$100	0- \$125	0- \$150	0- \$175	\$0-700 *
Hillsborough	N/A	N/A	N/A	N/A	N/A
BFI, Durham	N/A	\$276	\$333	\$393	\$1104-\$1572
Carrboro – <i>PROPOSED</i>	\$179.87	\$217.12	\$254.38	\$291.63	\$719 -\$1166

Notes:

Chapel Hill – has a complex fee structure. Shared dumpsters are free for pickup arrangements that are two times or less per week. The Town finances shared pickups and first pickup through general fund tax rate. Fee above projects potential cost for two pickups per week for a business. Tax-exempt organizations pay half of this fee.

Durham – Fee analysis represents cost for once a week pickup. Fee is same regardless of size of dumpster.

Carrboro – proposed fee provides some economic incentive for lower rates of waste generation.

Neighboring towns in the Triangle region such as Cary, Fuquay-Varina, and Holly Springs do not provide dumpster service. Rather, commercial dumpster collection services are performed by private vendors via individual subscription. Apex provides the service via a government contract, and recovers the costs of this contract through user fees. The City of Raleigh provides dumpster services to multi-family units only (8 yard dumpsters and compactors (20-40 cu.) only. Service is provided through a private contractor and no fees charged to the residents. All costs are covered with the general property tax funds.

Implementation Schedule

Staff believes that the fee structure can be in place within two months of Board action to implement the system. This will allow time for staff to compile and create the billing data in the financial system and to educate the affected community about the user fees associated with dumpster collection.

This will also allow the Public Works Department time to prepare and distribute educational materials, conduct informational forums for customers, handle the procedural and policy issues that will arise upon implementation of the fee, and create educational and enforcement programs to make this a successful program. Components of the public awareness and educational module should include:

- Developing a brochure: what, why, when, how much, who to call, how to reduce - (2-3 month lead)
- Hosting business forums: early in process, another after start-up: description of changes with question and answer period - real follow-up on concerns - (1-2 month lead)
- Web-page: description of fee program, links to commercial recycling assistance
- Creation of a hotline: for problems, questions, change of service requests, etc.

Revenue Impact, FY02-03

With adoption of the fees effective at July 1, 2002, gross revenue that could be generated equals \$485,525. However, with no previous large-scale billing and collection process experience, town staff recommends an estimated collection at 85% of the total projected revenue. Adjusting for collection experience, estimated revenues could come in at \$412,696, with the remainder of the projected cost to be budgeted from general fund appropriation.

Should the Board consider a delayed implementation schedule, say the second quarter of the fiscal year (effective October 1), revenue estimates, adjusted for collection experience, would equal \$309,522.