

REVIEW OF SOLID WASTE COLLECTION FEES

JULY 2011




**CITY AUDITOR'S OFFICE
CITY OF GAINESVILLE, FLORIDA**

City of
Gainesville

Inter-Office Communication

July 25, 2011

TO: Audit, Finance and Legislative Committee
Mayor Craig Lowe, Chair
Mayor-Commissioner Pro Tem Thomas Hawkins, Member

FROM: 
Brent Godshalk, City Auditor

SUBJECT: Review of Solid Waste Collection Fees

Recommendation

The Audit, Finance and Legislative Committee recommend that the City Commission:

- 1) Accept the City Auditor's report and the response from the City Manager, and
- 2) Instruct the City Auditor to conduct a follow-up review on recommendations made and report the results to the Audit, Finance and Legislative Committee.

Explanation

In accordance with our Annual Audit Plan, the City Auditor's Office has completed a Review of Solid Waste Collection Fees. The primary objective of our audit was to evaluate the system of management control over the billing and collection of solid waste collection fees. During our review, we interviewed key personnel, analyzed operating data and evaluated management controls.

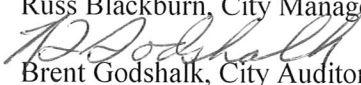
Based on the results of our review, we believe that opportunities exist for the Solid Waste Division to strengthen the billing and collection process for solid waste collection fees. Our report, which includes a response from the City Manager, is attached for your review. The report provides several recommendations related to improving the process for collecting franchise fee revenues, reviewing options to finance municipal waste costs, analyzing the allowance for road maintenance costs, drafting policies and procedures, ensuring duties are adequately segregated, and ensuring that cart swaps and customer credits are processed appropriately.

We request that the Committee recommend the City Commission accept our report and the City Manager's response. Also, in accordance with City Commission Resolution 970187, Section 10, Responsibilities for Follow-up on Audits, we request that the Committee recommend the City Commission instruct the City Auditor to conduct a follow-up review on recommendations made and report the results to the Audit, Finance and Legislative Committee.

City of
Gainesville

Inter-Office Communication

July 14, 2011

TO: Russ Blackburn, City Manager
FROM: 
Brent Godshalk, City Auditor
SUBJECT: Review of Solid Waste Collection Fees

In accordance with our Annual Audit Plan, the City Auditor's Office has completed a Review of Solid Waste Collection Fees. The primary objective of our audit was to evaluate the system of management control over the billing and collection of solid waste collection fees. During our review, we interviewed key personnel, analyzed operating data and evaluated management controls.

Based on the results of our review, we believe that opportunities exist for the Solid Waste Division to strengthen the billing and collection process for solid waste collection fees. The attached report provides several recommendations related to improving the process for collecting franchise fee revenues, reviewing options to finance municipal waste costs, analyzing the allowance for road maintenance costs, drafting policies and procedures, ensuring duties are adequately segregated, and ensuring that cart swaps and customer credits are processed appropriately.

Our recommendations for improvement have been reviewed with Teresa Scott, Public Works Director, and Steve Joplin, Solid Waste Manager, during our exit conference on June 20th. Since that time, Steve has worked with Senior Auditor Brecka Anderson to finalize any necessary edits to our report and to provide written management responses to our recommendations. I would like to acknowledge Steve and the members of the Solid Waste Division for their professional courtesy and cooperation during our review.

Please review the attached written report, which documents our audit recommendations and the responses from the Solid Waste Division, and let me know if you have any questions, comments or concerns with the information presented. Our final report, including the management responses, will then be submitted to the City Commission's Audit, Finance and Legislative Committee for review and approval. The next meeting is currently scheduled for July 25, 2011. Until that time, this draft report and your draft response are exempt from Florida's public records law.

Thank you to you and your staff for making this a productive process.

cc: Teresa Scott, Public Works Director
Steve Joplin, Solid Waste Manager
Brecka Anderson, Senior Auditor

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ATTACHMENT A

OBJECTIVES, SCOPE AND METHODOLOGY

In accordance with our Annual Audit Plan, the City Auditor's Office completed a Review of Solid Waste Collection Fees. The primary objective of this audit was to evaluate the system of management control over revenues generated within the City's Solid Waste Collection Fund. Our procedures included interviewing key staff, observing operations, reviewing management controls; and testing selected samples of transactions and supporting documentation. The scope of our review was generally for Solid Waste Collection Fund revenues billed or collected during fiscal years 2009 and 2010.

As for all of our audits, we conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Based on the results of our review, we believe that opportunities exist for strengthening the process of billing and collecting solid waste collection fees. The attached report provides several recommendations related to improving oversight of franchise fee revenues, municipal waste costs and road maintenance costs. Recommendations are also provided related to improving documented policies and procedures and better segregating incompatible duties. Each of our recommendations has been discussed with management. These recommendations, as well as management's written response, can be found in the following sections of this report.

BACKGROUND INFORMATION

The Solid Waste Department coordinates refuse services for City residents, businesses and City departments through various contracts with private companies. Services coordinated include collecting, processing and disposing of trash, yard waste and recycled materials. The department also sponsors programs designed to educate and encourage recycling, and promotes environmentally friendly activities such as community clean-ups.

The Solid Waste Department operates within the Public Works Department and is generally funded through the City's Solid Waste Collection Fund, an enterprise fund. Ten employees staff the department with duties ranging from customer service to refuse hauler contract negotiations. Operating revenues exceeded \$8.2 million during fiscal year 2010, with approximately 86% of fund revenues generated through user fees charged for residential services. The balance of fund revenues are primarily generated through franchise fees collected on commercial refuse services provided within the City.

Residential Refuse Services

Emerald Waste Services (EWS), a private waste hauler, provides residential refuse collection and disposal services for the City of Gainesville and Alachua County through an exclusive contract. City residents are charged a monthly fee on their GRU utility bill for a selected level of weekly refuse service, including garbage, recycling and yard trash collection and disposal. Fees charged offset costs incurred for the collection and disposal or recycling of refuse, including administrative costs such as monitoring residential areas for compliance with City ordinances and addressing customer complaints. Residential refuse collection revenues are the largest revenue source within the Solid Waste Enterprise Fund, exceeding \$7 million in fiscal year 2010.

Fees for residential refuse services are determined by the size of the garbage cart selected by each customer soon after electricity services are initiated. For fiscal year 2011, monthly residential service rates, as established by ordinance, are as follows:

MONTHLY RESIDENTIAL REFUSE RATES – FISCAL YEAR 2011

Curbside Service	Monthly Rate	Backyard Service	Monthly Rate
18 gallon cart	\$14.53	18 gallon cart	\$24.41
35 gallon cart	\$18.90	35 gallon cart	\$28.42
64 gallon cart	\$23.25	64 gallon cart	\$34.56
96 gallon cart	\$29.06	96 gallon cart	\$42.35

Residents requiring disposal of refuse beyond their cart sizes may request to either increase or decrease their cart sizes. The Solid Waste Department encourages recycling and limiting waste. While there is a fee to increase a cart size, residents are not charged a fee to decrease a cart size.

Residents may also purchase additional bags for disposal through the Yellow Bag program. The bags are sold at local grocery stores. Once purchased, residents may dispose of additional waste on their corresponding pick-up day by placing the bags near their waste carts.

Commercial Refuse Services

The Solid Waste Department facilitates refuse services provided to businesses, including construction and demolition debris removal, through annual non-exclusive commercial hauler franchise agreements. These franchises are granted to refuse companies whose applications meet the criteria set forth by City ordinance. Each application requires established levels of insurance coverage, equipment requirements and other operating requirements. Franchisees must solicit, contract, service, invoice and collect from commercial customers within the City. Solid Waste Department staff actively monitors commercial refuse services provided within the City, checking for compliance with established operating requirements.

Within 20 days after the end of each month in which such services are provided, franchisees are required to remit to the City of Gainesville franchise fees equal to 10% of gross revenues collected from commercial customers within the City, along with operating reports set forth in the franchise agreements. Solid Waste Department staff monitors receipt of franchise fees and follows up with franchisees when payments are not received. A 1% monthly late fee is assessed to payments not received timely. Revenues associated with franchise fees from commercial haulers are the second largest revenue source within the Solid Waste Enterprise Fund, exceeding \$1.1 million in fiscal year 2010.

ISSUE #1

Franchise Fee Revenues

Discussion

City of Gainesville Code of Ordinances, Sections 27-79 through 27-84 establish specific rules and regulations regarding the provision of commercial refuse or construction and demolition debris services within the City. It is unlawful to engage in the business of providing these services within the City without first applying for and receiving a franchise from the City in accordance with these regulations.

After being awarded a commercial franchise, franchisees are required to file monthly reports with the City and remit, for the rights and benefits granted, monthly franchise fee payments equal to 10% of gross revenues generated from these services. Commercial franchisees are also required by ordinance to file an annual report with the City, which includes a schedule of total gross revenues for the year. The annual report must be examined by an independent certified public accountant “to certify that the computation of gross revenue used to calculate franchise fees remitted is in accordance with the terms of the franchise.” The annual report is required to be submitted to the City within 120 days of each franchisee’s year end.

Audit Results

During the time of our review, there were five commercial franchisees providing services within the City of Gainesville. As part of our testing, we requested a sample of franchisee annual reports from fiscal years 2008 and 2009 in order to validate that franchise fees were calculated properly and paid to the City in a timely manner. City management was unable to locate many of the annual audit reports we requested. As a result, reports were requested directly from franchisees. Based on these requests, required annual audit reports were obtained for three franchisees. However, two franchisees indicated that they were unaware of the requirement to have annual reports examined by an independent certified public accountant and reported to the City, as prescribed by ordinance.

Reconciliation of Franchise Fees Paid to Annual Audits

While monthly franchise fee payments received were being recorded by the Solid Waste Department, no comparison and reconciliation of monthly receipts to annual reports was being completed. As a result, we compared all monthly franchise fees paid in recent years to available reports of certified annual gross revenues.

Our review noted that one franchisee had never filed an annual audited report of gross revenues since receiving their franchise. Once notified, the franchisee completed the required reports for calendar years 2008 through 2010 and submitted them to the City. The independent certifications indicated that the franchisee had underpaid their franchise fees in the amounts of \$51,693 in 2008 and \$14,819 during 2009. Remittance for the full amount due of \$66,512 accompanied the audits.

The franchisee informed the City that it would not be possible for them to generate required certified reports of franchise fees collected for operations prior to 2008 due to changes in management and accounting software and requested the City provide guidance on settling this issue. As a result, management arranged for the franchisee to pay a difference of approximately \$50,000 for previous years in which the reports were not provided, based on calculations of the changes resulting from the audit reports submitted for 2008 and 2009.

A second franchisee was required to remit an additional \$1,293, based on differences noted in submitted annual certification reports. A third franchisee reported apparently erroneous data in one of their annual reports, which was very inconsistent with prior and subsequent years.

Commercial/Construction and Demolition Debris Franchise Applications and Renewals

City Ordinance Section 27-79.1 indicates that the term of any new or renewal franchise for commercial or construction and demolition debris service is valid through September 30 of each year unless forfeited or revoked sooner. It also requires that any new franchise issued or renewal of an existing franchise shall be by application.

We reviewed Solid Waste Department franchise applications and noted that original signed applications were adequately maintained; however, approximately 40% of franchisees did not have renewal applications on file as prescribed by ordinance. We also noted that franchise applications adequately document that commercial franchisees are required to follow City ordinance; however, the applications do not specifically state that annual certifications of gross revenue are required.

Conclusion

An effective process of ensuring that required annual audited reports of gross revenues generated by commercial refuse franchisees are received timely and reconciled to monthly franchise fees paid is essential for providing reasonable assurance that the City is receiving franchise fees in accordance with City ordinances and franchise agreements.

Recommendation

We recommend management develop and implement a documented process to ensure that:

- Franchise fee monthly payments are properly calculated based on reported gross revenues, that they appear reasonable based on historical patterns and that they reconcile with monthly activity reports received.
- Annual audited reports of gross revenues and franchise fees paid include necessary information and are received timely from franchisees as required by City ordinance.
- Annual audited reports reconcile with monthly franchise fee payments received, with any differences identified for proper adjustment.
- Commercial solid waste and construction and demolition debris franchise applications are renewed annually as required by City ordinance. Additionally, application forms should clearly state that commercial franchisees are required to submit annual certifications of gross revenues.

We have met with management of the Solid Waste Department and the Finance Department and they have agreed to share the responsibilities regarding monitoring franchise fee payments. These shared responsibilities will require prompt and effective communication between these two areas in order to ensure the effectiveness of the monitoring system.

Management's Response

We agree with the recommendations. Staff currently keeps a spreadsheet of franchise revenues received from each hauler that is updated each month so historical patterns can be compared to present revenues. However, there is no way for staff to compare the tonnages reported to the gross receipts reported as a check on accuracy of fee payments.

The Solid Waste Division will need to coordinate with Finance Department to agree on a better method to ensure timely receipt of annual audit reports.

Solid Waste Division will also need to coordinate with Finance to verify that annual audited reports reconcile with monthly fees received.

Although all of the franchisees re-applied and paid, there were a few in 2009 and 2010 who only returned the payment portion of the application. Because of the audit, staff now realizes it is essential that each hauler return all parts of the application form, and we have already made that change. For 2011, all applications have been returned and are on file. SWD staff will redesign the Commercial Services Franchise Application to indicate that city ordinance requires each hauler to provide annual audited reports certifying that franchise fees were accurately calculated and paid to the city.

ISSUE #2

Municipal Waste Costs

Discussion

Enterprise funds are used to account for operations that are financed and operated in a manner similar to private business enterprises - where the intent of the governing body is that costs of providing goods or services should be financed or recovered primarily through user charges. The City of Gainesville has operated its solid waste system as an enterprise fund since 1993.

While most costs of the solid waste system are currently recovered through user fees and franchise fees, the Solid Waste Enterprise Fund currently absorbs all costs of providing solid waste services to City departments, as well as for the Airport and for small containers placed strategically in downtown business areas. For fiscal year 2010, these municipal solid waste service costs totaled approximately \$441,000, as summarized below:

WASTE TYPE	APPROXIMATE AMOUNT
Garbage	125,000
Rear-Load Recycling	13,000
Front-Load Recycling	15,000
Roll-Offs	70,000
Costs incurred by City Departments	223,000
Public HandCans throughout City	83,000
Costs for Collection	306,000
Disposal Costs	135,000
TOTAL 2010 MUNICIPAL COSTS	441,000

Of this total, approximately \$83,000 in annual expenses were associated with providing public hand cans throughout downtown Gainesville. Approximately 30% of costs incurred by City departments were associated with providing services to GRU departments and approximately 5% were associated with providing services at the Gainesville Regional Airport.

Service Delivery Issues and Cost Increases

EWS, the City's residential solid waste provider, provides these municipal services for City operations. Service costs are determined by the number, size and type of waste containers placed at City facilities, as well as the number of times per week the containers are serviced. The Solid Waste Department assists other City departments with determining an appropriate schedule of refuse collections. However, City departments periodically require additional pick-ups or additional containers due to increases in the amount of waste or a temporary special project. The Solid Waste Department attempts to budget for any increases in monthly expenses; however, they are not always aware of changes in service levels and planned special projects. In addition, they have been charged additional fees when recycled materials are co-mingled with items not intended for the container.

Municipal waste costs have increased significantly in recent years, in part due to users' lack of awareness since departments are not responsible for paying for these services. Additionally, a lack of management oversight of waste containers invoiced contributed to some overpayments.

Conclusion

In our opinion, management should develop and implement a process to charge municipal waste costs to end users, as is done for other enterprise fund operations of the City. This would help to control costs by transferring accountability for costs incurred to fund or departmental users.

Recommendation

We recommend management implement a system of charging other City funds and the Airport for municipal solid waste services received. Consideration should also be given to charging the City's Community Redevelopment Agency for the services associated with providing public hand cans throughout downtown Gainesville.

Management's Response

We agree with the recommendations. If the city is serious about reducing its waste and striving for a 75% recycling goal, it will be essential that each department be held monetarily accountable for its own waste and recycling. By continuing to negotiate and administer the contract for municipal services the Solid Waste Division can help facilitate uniform lower rates for collection, processing and disposal for all city departments.

ISSUE #3

Road Maintenance Costs

Discussion

The Solid Waste Management Act of 1988 strongly encourages local governments to recover the full cost of their solid waste management systems through user fees. In 1993, based on this principle of full cost recovery, the City Commission established by Resolution R-93-5 the authority to transfer funds from the Solid Waste Enterprise Fund to the General Fund to offset the costs of residential road maintenance.

Based on a documented analysis of the estimated annual costs associated with solid waste trucks driving on residential streets in the City, an annual amount of \$600,000 was established. This annual amount has not been changed since that time. Currently, \$300,000 is transferred to the City's General Fund and \$300,000 is transferred to the City's Capital Projects Fund for the purpose of offsetting road maintenance costs associated with the provision of residential solid waste services.

Conclusion

Costs associated with maintaining residential streets have increased significantly since this resolution was approved in 1993. At the same time, the City has annexed many residential areas, increasing the areas that the City Public Works Department is responsible for maintaining. However, the \$600,000 per year transfer from the solid waste system to offset the costs of road maintenance has not been reevaluated or increased.

Recommendation

We recommend management evaluate the methodology established in 1993 to calculate road maintenance costs associated with providing residential solid waste collection services and determine if annual allocations should be changed to reflect current cost factors and inventory of residential streets. If additional amounts are necessary to reflect current estimated costs, consideration should be given to phasing these additional costs into future annual budgets of the Solid Waste Enterprise Fund.

On May 10, 2011, the Public Works Director submitted a memo to the Mayor and members of the City Commission analyzing estimated current costs related to road maintenance (see Attachment A). This analysis indicated that estimated annual amounts for road maintenance costs associated with providing residential solid waste services total approximately \$1.7 million based on the methodology utilized in 1993 with updated rates and inventory of City residential streets.

Management's Response

As stated above, staff has already submitted a memo to the City Commission on this issue.

ISSUE #4

Segregation of Duties, Documented Policies and Procedures and Business Continuity

Discussion

The Solid Waste Department manages the City's refuse services by administering pertinent functions such as customer service, processing franchise applications, and billing and collecting for various activities. While residential refuse invoicing and receipts are processed through GRU's billing system, Solid Waste Department staff handles the ongoing billing and collection processes for other refuse services.

Segregation of Duties

Duties related to billing and collecting fees should be segregated to provide accountability and adequate oversight of City assets. During our review, we noted that staff members administering the commercial refuse program were responsible for the franchise application process, as well as creating invoices and receiving payments. No compensating control, such as management review, was in place to mitigate the risk of error, loss or theft. A prior control instructing franchisees to remit payments directly to the City's Finance Department had been adjusted so that Solid Waste Department staff could ensure that payments were expedited. We also noted limited management involvement in administering the commercial refuse program.

The vendor processing the City's residential recycling materials is required by contract to share with the City a percentage of the proceeds earned from the selling the materials. Solid Waste Department staff pays the vendor's invoices and receives and records reimbursement checks. Management signs off on checks as a review. However, having checks sent to the City's Finance Department would provide better accountability.

Policies, Procedures and Business Continuity

The Solid Waste Department maintains written policies and procedures for functions related to the commercial refuse program and the recycling program. However, no written policies and procedures were identified to guide activities related to billing and collecting residential refuse fees.

We did note that the Solid Waste Department has done a good job of establishing a defined system of cross training staff within the department, enabling staff to be knowledgeable of each other's basic duties. Such cross training assists the department's ability to effectively continue business operations in the absence of a co-worker.

Conclusion

Good accounting practices suggest that duties conflicting in nature should be adequately separated or that other compensating controls, such as documented management review, should be implemented to ensure proper accountability and oversight. Although no misuse was identified during our review, a lack of adequately separated duties or compensating controls can provide opportunities for misuse of City assets. Additionally, policies and procedures should be documented to properly direct operations.

Recommendation

We recommend management consider reassignment of staff responsibilities or the implementation of documented compensating controls to ensure that conflicting duties are properly controlled. Additionally, management should improve documented policies and procedures to better guide operations.

Management's Response

We agree with the recommendations. We will work to improve policies and procedures and establish controls to ensure that duties are segregated.

ISSUE #5

Other Operational and Procedural Improvements

Discussion

During our review of Solid Waste Collection Fees, we noted the following areas where we believe operational and procedural improvements should be implemented:

Cart Swaps

Residential refuse customers periodically request refuse collection cart swaps through the Solid Waste Department as their needs change. After notification from City staff, the City's residential service provider, EWS, switches out the carts at the customer's residence. After the cart swap occurs, Solid Waste Department staff applies the changes to the customer's account within the GRU billing system (SAP).

We noted during our review that cart swaps were not prorated accurately on customer bills, resulting in customers consistently being under billed for services received during the month of the swap. Based on an average under billing of \$5 for each cart swap and with approximately 1,800 cart swaps per year, the loss to the City totals approximately \$9,000 per year.

Residential Customer Credits

The Solid Waste Department's process for initiating, processing, documenting and approving customer credits to their refuse accounts through SAP includes the completion of a Refuse Account Action Form and an Account Action Log. These forms serve as key control processes as they capture the purpose for each credit as well as documenting management approval. During our review of the reasonableness of customer account credits, we noted that 40% of the Refuse Account Action Forms requested were not available for review and that some credits were not properly documented on the Account Action Log.

Vacant Home Credits

Customers are allowed to request credits for previous periods when their homes were vacant and did not require refuse collection services. Credits for customers with vacant homes are processed utilizing the same general methodology as other residential customer credits. Additionally, Solid Waste Department staff reviews the customer's GRU billing history to determine whether other utilities were used during the period of the corresponding vacancy. We sampled four customer accounts with vacant home credits and noted that one of the four showed some signs of utility usage during the period in which the credit was granted.

Conclusion

In our opinion, management controls over Solid Waste Collection Fees would be enhanced through implementation of the following recommendations.

Recommendation

We recommend management:

- Work with GRU to implement procedures to ensure that residential refuse services are properly prorated during months in which cart swaps occur.
- Improve procedures to ensure that customer credits are properly documented, reviewed and approved by management.
- Improve the review process related to evaluating the appropriateness of all vacant home credits requested.

Management's Response

We agree with the recommendations. We have already contacted GRU to work on the issue of improperly prorated cart swaps, which seems to be a GRU/SAP issue.

With regard to residential customer credits and missing Refuse Account Action forms, our practice has been to handle smaller customer credits by placing a memo in the account on SAP rather than filling out a Refuse Account Action form and keeping it on file. Effective immediately customer service will fill out a Refuse Account Action form for all credits, submit it to the manager for review and signature, and keep it on file.

All vacation credits are issued after the residence has been vacant at least 90 days, and each account's utilities usage is reviewed to verify that the account was indeed vacant that whole time. With the large amount of unsold houses on the real estate market currently, there are many vacant residences with greater utilities usage than one might expect because owners and realtors are using heating & AC units and irrigation systems to maintain the vacant property. Effective immediately, management will search for additional ways to verify vacancy whenever a request for vacation credit is submitted.

ATTACHMENT A

Memo



To: Mayor Lowe
VIA: Russ Blackburn
From: Teresa Scott, P.E.
Date: Thursday, July 14, 2011
Subject: Solid Waste Funding to Residential Resurfacing

In 1992 the Public Works Department conducted an analysis (a copy is attached) to evaluate a rational nexus between use of solid waste funds towards road maintenance. Subsequently, the City Commission adopted a resolution (a copy is attached) that states that all future transfers from the Solid Waste Enterprise Fund to the General Fund are to be directed towards offsetting the costs of road maintenance.

The 1992 justification was based on \$211,200/mile to reconstruct a residential roadway pavement across 230 miles of residential roadway (assumed 75% of their 308 miles were classified as residential) and assuming a life expectancy of the pavement at 50 years. This resulted in an equivalent annual cost of the residential roadway pavement reconstruction for the solid waste program at \$840,365.

At the time \$600,000/year was being transferred from the residential solid waste funds – not the commercial franchise fees. To my knowledge the budget practice since that time has been to direct \$300,000 to the general fund for operating expenses associated with the repair of damaged concrete curbing and \$300,000 into the multi-year account for residential roadway resurfacing.

Using a methodology similar to the one used in 1992, the current average cost to reconstruct a residential roadway pavement is \$422,000/mile and our network consists of 385 (75% of which equals 289 miles). Using the 50 years, the equivalent annual cost of the residential roadway pavement reconstruction for the solid waste program would be \$2,109,873.

Since 1992, our pavement management program has been developed to provide a more balanced approach towards maintaining the pavement condition. If we considered the current approach, the average cost for pavement management (including preventive, resurfacing and reconstruction treatments) and based on the current pavement condition for our entire road network of 385 miles is \$103,867/mile. The average life span of pavement without preventative treatments is 17 – 20 years. This would result in

an equivalent annual cost of roadway pavement management for the solid waste program at \$1,729,515.

Based on the current average number of residential solid waste accounts of 26,291, the additional \$1,129,515 would result in an additional cost of \$3.58/month/residential account.

Attachments (2)

Copy: City Commissioners

Paul Folkers

Don Hambidge

Steve Joplin

Jerry Hansen

CITY OF GAINESVILLE

Inter-Office Communication PUBLIC WORKS DEPARTMENT Administration

Telephone № 334-2051
FAX № 334-2271
Mail Station 58

Paul D. White, City Manager
BFI Vehicle Impacts on Residential Roadway Life

June 5, 1992
Page 2

June 5, 1992

TO: Paul D. White, City Manager
FROM: Public Works Department
SUBJ: BFI Vehicle Impacts on Residential Roadway Life

Unfortunately, this will be a very technical IOC concerning this subject. I will attempt to explain the process, assumptions and other aspects of the calculations so that they may be more easily understood by persons not familiar with pavement design.

Fully loaded, BFI vehicles weigh between 50,000 and 80,000 pounds. I have used an average of 65,000 pounds fully loaded. In addition, to be on the conservative side, I have used an average operating weight of 45,000 pounds. Also, the BFI vehicles were considered to have two tandem axles and one single axle.

Pavement design procedures equate projected truck loads to equivalent 18,000 pounds per axle loads. Using this methodology, the equivalency factor for a small, single axle truck with less than 3,000 on that axle is 0.0002. The same factor for a tandem axle with between 13,000 and 15,000 pounds is 0.03. The ratio between these factors is 150.

In order to adjust this factor ratio of 150 from an 18,000 pounds per axle basis to a typical passenger car basis, I have used the direct interpolation method. The average passenger car weighs less than 2,000 pounds per axle, but 2,000 pounds per axle is used to define an adjustment factor of 9 (18,000/2,000 = 9). Therefore, the destruction factor between BFI vehicles and average passenger cars is 1,350 (9 x 150 = 1,350).

Depending on your reference source, the average daily traffic (ADT) generated by an average single family residential facility is 10 or 12. Again, to be conservative, I have used 12.

ADTs are based on Mondays through Fridays. However, I have used a seven day week in my calculations. I have also assumed that the average block in a residential neighborhood serves 10 residential lots. Therefore, 10 homes times 12 trips per day, times 7 days, yields 840 trips for this period. During this same time, BFI generates 4 truck trips (2 standard solid waste, 1 recycle and 1 yard trash). This is an equivalent of 5,400 trips (1,350 x 4 = 5,400). This means that 86.5 percent of the roadway destruction may be attributed to BFI vehicles.

As of October 1, 1991, Gainesville was responsible for maintaining 307.9 miles of streets. The vast majority of these streets are residential. I have conservatively assumed that 75 percent of these streets are residential and average 24 feet in width. I have conservatively estimated that the reconstruction of roadway pavement cost today is \$15.00 per square yard. The cost is only for pavement reconstruction and does not consider ancillary costs such as administration, mobilization, traffic control, utility facility adjustments, etc. Utilizing \$15.00 per yard, a mile of residential roadway pavement reconstruction would cost \$211,200 [(5,280 ft/mi) x (24 ft wide) / (9 SqFt/SqYd) x \$15.00/SqYd = \$211,200/Mile]. With an estimated 230 miles of residential streets, total residential roadway pavement reconstruction would cost \$48,576,000. If a

conservative life expectancy of 50 years is assumed, the equivalent annual cost of the residential roadway pavement reconstruction for BFI would be \$840,365 [(\$48,576,000 x 0.865)/50 Years = \$840,365]. No amortization considerations were given to this process since it is assumed that the City would have annual need to provide streets maintenance. Also, again on the very conservative side, no costs for resurfacing of roadways in the 50 year total life expectancy were used.

This has been a very complicated and rather inexact exercise. However, given the constant conservative selection of assumptive values, the assessment of \$600,000 annual to BFI to recover cost of damages to residential roadway pavements is clearly defensible from an engineering standpoint.

Should you have any additional questions or requests concerning this matter, please contact me at your convenience.

J.E. Swearingen, P.E., Director
Public Works Department

JES:jes

xc: Joseph E. Bradshaw, Jr., Deputy City Manager for Operations
Stewart E. Pearson, P.E., City Engineer

RECEIVED
FEB 5 1993
PUBLIC WORKS
DEPARTMENT
CITY OF GAINESVILLE

RESOLUTION NO. R-93-5
PASSED January 25, 1993

**A RESOLUTION PROVIDING EXPENDITURE OF FUNDS
GENERATED FROM SOLID WASTE ENTERPRISE FUND;
AND PROVIDING AN EFFECTIVE DATE.**

WHEREAS, the Florida Solid Waste Management Act of 1988 strongly encourages local governments to recover the full cost of their solid waste management systems through fees;

and

WHEREAS, damage to Gainesville streets by solid waste collection vehicles has been documented; and

and

WHEREAS, solid waste fees have been set to provide this service at a reasonable cost;

and

WHEREAS, on October 19, 1992, the City Commission indicated its desire to transfer any unallocated funds in the solid waste enterprise fund to the General Fund; and

WHEREAS, the City Commission believes that while the transferred funds may be used for any City obligation, a fair use of such transferred funds would be to help finance road maintenance throughout the City.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF GAINESVILLE, FLORIDA:

Section 1. Future transfers from the Solid Waste Enterprise Fund to the General Fund are to be directed towards offsetting the costs of road maintenance.

Section 2. This Resolution shall become effective immediately upon its adoption.

DATED this 25th day of January, 1993.


MAYOR-COMMISSIONER
THOMAS B. MCKNEW

ATTEST:


CLERK OF THE COMMISSION
JOSEPH R. HURT


MARION J. MASON, CITY ATTORNEY
CITY OF GAINESVILLE, FLORIDA

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