

OPTIMISATION OF THE DEKALB COUNTY FATS, OILS, AND GREASE MANAGEMENT PROGRAM

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Abstract. The formal Fats, Oil, and Grease (FOG) Management Program was optimized in order to increase the productivity by efficiently operating its current resources. Using the same number of inspectors and the same equipment, the number of establishments inspected per day and the total inspections per month were considerably increased.

The Daily Planner was implemented as the tool to plan and to review the Inspectors' daily activities. It helps the Inspectors meet their minimum daily inspection requirements. It also helps with the route optimization decreasing travel time. The new zone distribution method will allow the Inspectors to rotate through all the zones as often as required. It warrants that all the FSEs in the County will be inspected at least once per quarter thus properly enforcing the DeKalb County Ordinance.

Additional significant changes were implemented to improve the program productivity. A new database XC2 was integrated into the FOG Program. It helped improve proper data storage and management. The FOG Evaluation for new construction and remodeling was incorporated to the County permitting software "Hansen". The FOG Evaluation Check list was designed based on the Ordinance requirements. The incorporation to "Hansen" improved the customer service assistance since the customer submits all the requirements at once.

The FOG Permit payment administration was changed in order to give more time to the Inspectors to perform FSE inspections. More changes will be applied to maximize the FOG Permit Renewal Payment.

INTRODUCTION

The DeKalb County (the County) Department of Watershed Management (DWM) Fats, Oil, and Grease (FOG) Management Program started in 2003. Initially there were two inspectors and one supervisor. By 2004 the number of inspectors increased to nine. At the beginning there were no regulations for the proper disposal of Fats, Oil and Grease (FOG) from the establishments that generate it. It was very hard to enforce the Best Management Practices (BMP) to Food Service Establishments (FSEs)

owner that were not in use to be inspected. By 2007 the Code of the County chapter 25 Water, Sewer and Sewage Disposal¹ was amended by enacting Article IV, section 25.265 to section 25.265.21 called the Fat, Oil and Grease regulations of DeKalb County, Georgia. The new regulations were designed by the formal FOG Management Program and they were amended to the County regulations to help reduce blockages and sewer overflows that results from discharges of FOG into the sewer system. The FOG management Program had the difficult task at that time to enforce the new ordinance and to collect the new fees related to the FOG permitting process.

During the following four years from 2007 to 2011 there were several changes of the management personnel. The lack of continuity on the program management decreased the FSEs inspections productivity. The inspectors were in use to inspect the same FSEs all the time without an efficient inspection planning. As a consequence some FSEs away from their routine driving path were never inspected. The data was stored on a spread sheet which made it hard to manipulate and analyze. The administrative work was inadequately distributed giving the inspectors one whole day dedicated to data and payment management.

From 2012 the new FOG Program Management introduced several changes to improve the Program efficiency with the current personnel resources.

Many utilities around the country have established a FOG Program to reduce the occurrence of Sanitary Sewer Overflow (SSO). The utilities have used different strategies to optimize their FOG Programs. Some rely on software programs to monitor the Hauler company's activities to ensure the proper maintenance of grease traps and interceptors.^{2,3} Other Municipal and City utilities have introduced new regulation to their code of ordinance to properly control the FSEs wastewater effluents. Many have adopted new educational programs to the general public and to the FSE's Owners to enforce the BMP.⁴

DATA ANALYSIS

A. Comparison between 2011 and 2012 FOG Program Performance.

The initial results of the FOG Program optimization can be seen on Table 1. The FOG inspections and FOG Evaluations have increased considerably from 2011 to 2012 due to the implemented protocols changes.

Table 1. FOG Program Performance

	Total FOG Permits issued	FSE Inspections	FSE evaluations	Total Inspections
2011	1352	3970	235	4205
2012	2115	5525	403	5928

This data analysis is for the months of February to October 2011 and February to October 2012. The same data is presented on Figure 3.

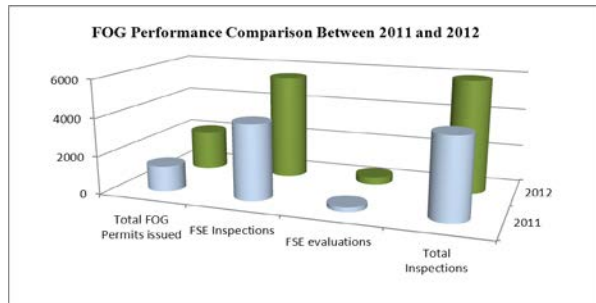


Figure 3. Performance Comparison 2011 vs. 2012

Figure 3 shows that the total inspections have increased from 4205 to 5928. Total inspections included FSE inspections and re-inspections, FSE evaluations for new constructions, change of name and change of ownership. The FOG Evaluations have increased from 235 in 2011 to 403 in 2012. This is due mostly to the FOG Evaluation incorporation to the County permitting software “Hansen” for new construction and remodeling. Additionally Table 1 includes the total FOG permit issued information. The Administrative changes implemented helped increasing the FOG permit issued from 1352 to 2115 in the same period of time for each year. This fact suggests that the optimization has enhanced the enforcement procedures since more FSEs have to come to compliance before they obtain the FOG Permit.

Total FOG Permits issued	FSE Inspections	FSE evaluations	Total Inspections
56%	39%	71%	41%

Table 2. Percent increase from 2011 to 2012

The percentage of increase for each variables analyzed is presented on Table 2.

It was calculated as:

$$\% \text{ increase} = (N_{2012} - N_{2011}) / N_{2011} \times 100$$

Where N represents the number of : FSE inspections, FSE evaluation, Total inspections and Total FOG Permit issued respectively.

The total inspections from 2011 to 2012 have increased 41%, this is mainly due to the inspection scheduling organization. The total Fog Permit issued improved 56% from 2011 to 2012. This is a clear result of the administration duties redistribution. With all the Program improvements the Inspectors dedicate more time to inspect FSEs and the Administrative Assistants concentrate on Permit payments and Permit issued.

B. Performance measures.

The monthly performance measures are:

- 600 inspections per month
- 4 inspections per day per inspector.

Because the FOG Management Program was improved, the number of inspection days and the time the inspectors spend in the field was increased to maximize the inspections productivity. The average FSE inspections, re-inspections and FSE evaluation from February to October 2012 was 662 inspections per month. The average FSE inspections and re-inspections was 671 and the average FOG evaluations was 45. The average program productivity from February to October was 4.4 inspections per day. This is showed on Table 3.

Month	Total Inspections	FSE Evaluations	FSE Inspections	FOG Productivity
February	489	25	464	3.4
March	685	60	625	4.4
April	666	32	634	4.5
May	709	42	667	4.5
June	650	48	602	4.5
July	621	58	563	4.8
August	757	62	695	4.7
September	627	33	594	4.6
October	750	43	707	4.6
Average	662	45	617	4.4
Total	5954	403	5551	

Table 3. FOG Monthly Performance 2012

The Productivity is calculated as:

$$P = (I+E)/ t$$

Where: I is the total FSE inspections and re-inspections

E is the total FOG evaluations and

t is the time on worked days

CONCLUSIONS

The optimization of the FOG program successfully improved the overall performance of the County FOG Management Program. The changes implemented on the inspection protocols like the use of the Daily Planner in combination with the database support significantly increased the number of inspections and evaluations performed per month. The percentage increase from 2011 to 2012 of total FSE inspection and FSE evaluation per month was 41%. The incorporation into the County permitting software "Hansen" increased by 71 % the amount of FOG evaluations performed. The improvements applied to the administration of the FOG Management Program induced an increase of the FOG permit issued. In 2012 there were issued 56 % more FOG permits than in 2011 thus bringing more customers to compliance. The program productivity remains constant at an average rate of 4.4 inspections per day. The Program Optimization will continue through 2013, more changes to improve the FOG Permit Payment protocols will be implemented on the following months.

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