



Audit of Fleet Utilization

Project #14-15

Prepared by
Office of the Inspector General

J. Timothy Beirnes, CPA, Inspector General
Jankie Bhagudas, CPA, Lead Consulting Auditor



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

August 13, 2015

Governing Board Members

Re: Audit of Fleet Utilization
Project No. 14-15

This audit was performed pursuant to the Inspector General's authority set forth in Chapter 20.055, F.S. Our objective primarily focused on determining how vehicles are assigned and utilized and whether the fleet size is appropriate to carryout the District's mission. Jankie Bhagudas and I prepared this report.

Sincerely,

A handwritten signature in blue ink, appearing to read "J. Timothy Beirnes".

J. Timothy Beirnes, CPA
Inspector General

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BACKGROUND

In accordance with the Office of Inspector General's Fiscal Year 2014 Audit Plan, we conducted an Audit of Fleet Utilization.

As of December 2014, the District's fleet consisted of 919 vehicles, which are mostly assigned to the District's eight field stations. The District's fleet inventory is used to carry out its mission and is comprised of the following:

Type	Equipment Type	Total
On-Road	Sedans	18
	Light trucks	446
	Medium trucks	66
	Heavy trucks	68
	Total On-Road	598
Off-Road	Heavy equipment (e.g., dozers and excavators)	66
	Marine (e.g., boats, towboats, and airboats)	120
	Trailers (e.g., to transport equipment and materials)	111
	Tractors	24
	Total Off-Road	321
	Total	919

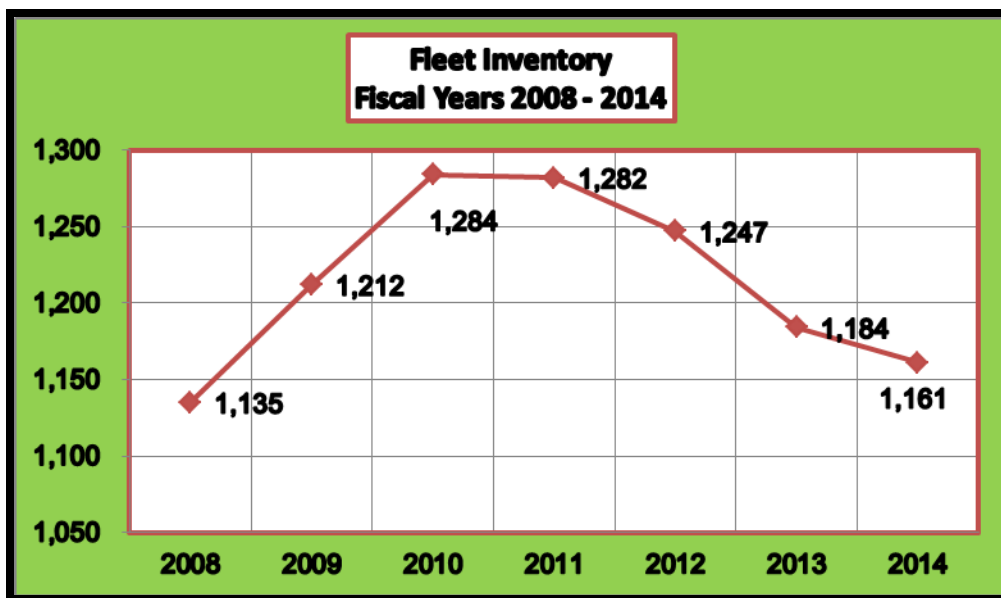
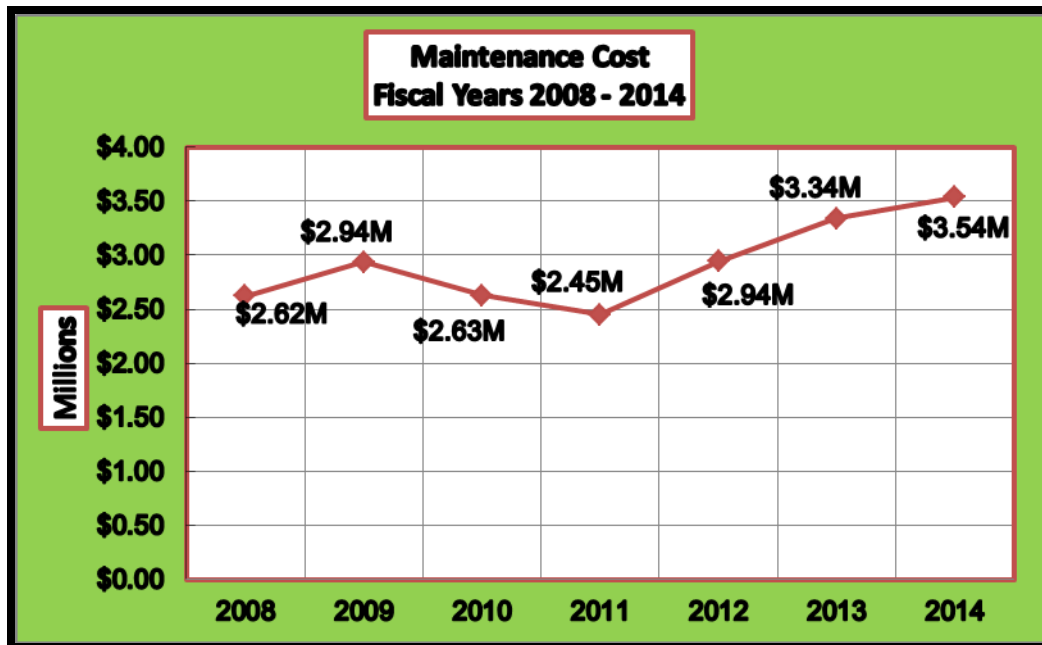
In addition, the District owns the following: 90 light single axle boat trailers (e.g., used to transport utility boats), 22 pumps, 15 generators, 17 forklifts, and 104 pieces of miscellaneous equipment (e.g., wood chippers, ATVs, lawn mowers, and golf carts).

The Fleet Management Unit, located in the Field Operations and Land Management Division, is responsible for District vehicle/equipment purchases. Vehicle purchases/replacements are primarily based on funding availability and whether certain replacement criteria are met. The following provides a brief description of the process.

- The Fleet Management Unit maintains a five year replacement schedule (spreadsheet) of the District's fleet, which takes age, mileage/hours, and maintenance cost per mile/hour into consideration. In addition, a vehicle's condition is taken into consideration.

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- Before the annual fleet budget is determined, vehicles/equipment identified for replacement are ranked and discussed by the Fleet Management Unit, Bureau Chiefs of the Field Operations Bureaus, and other relevant staff. Discussions result in a replacement tentative listing. It should be noted that funding is usually allocated to the Fleet Management Unit; however, in certain cases, a cost center may use its funding for vehicle/equipment purchases. These purchases are required to be justified and approved by management, and must be procured by the Fleet Management Unit.
 - Based on the anticipated funding amount, the replacement list is usually further revised.
 - Notifications are sent to relevant field station directors or cost center management informing them which vehicle may be replaced. At this point, the field station/cost center has the opportunity to request another type of vehicle that would better serve their business needs or add practical options to the replacement unit.
 - The Fleet Management Unit submits vehicle/equipment listing to the Budget Bureau. Listing includes specific vehicles to be replaced and the replacement cost. The Budget Bureau may further revise the list.
 - After the budget is approved and the fiscal year begins, the Fleet Management Unit starts the procurement process by reviewing State and local government contracts to obtain the best possible prices.

According to Field Operations and Land Management staff, a large number of vehicles in the District's fleet need to be replaced; however, due to limited funding they cannot be replaced. Instead, they are being repaired and maintained. Specifically, based on an analysis prepared by the Fleet Management Unit, over \$17 million is needed to replace 196 vehicles/equipment/boats that have met the District's replacement criteria. The following graphs illustrate the trend of increasing maintenance cost concurrent with decreasing fleet inventory during Fiscal Years 2008 – 2014.



OBJECTIVE, SCOPE, AND METHODOLOGY

Our objective primarily focused on determining how vehicles are assigned and utilized and whether the fleet size is appropriate to carryout the District's mission.

To accomplish our objective, we obtained an understanding of fleet operations by interviewing the Fleet Management Unit's staff and other relevant staff responsible for monitoring fleet utilization. We determined whether sufficient funding is being allocated to replace vehicles / equipment that have met certain District replacement criteria. We also determined whether there are adequate procedures in place to monitor fleet utilization and whether the process in place for determining replacement is adequate. In addition, to determine whether utilization was adequate we selected a sample of medium / heavy trucks, construction equipment, and boats and reviewed usage logs for the period March 2014 to August 2014. Further, we used utilization data maintained in SAP to analyze utilization of medium and heavy trucks, construction equipment, and boats, for the period September 1, 2013 to August 31, 2014, and obtained usage explanations and justifications for need from relevant staff throughout the District. We also determined whether costly repairs were made before vehicles taken out of service.

We also determined whether it would be more cost efficient for the District to consider disposing of low utilization equipment and rent as needed. Lastly, we determined whether vehicles are purchased via state and other government contracts.

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.

AUDIT RESULTS

Executive Summary

Overall, the District has an adequate process in place for ensuring that fleet vehicles and equipment are being efficiently utilized and that the District's fleet size is adequate; however, some minor improvements can be made to further strengthen controls. Specifically, the Fleet Maintenance Unit closely monitors utilization of light vehicles; however, underutilized light vehicles should be monitored on a six-month basis instead of just annually. Fleet Management Unit does not require cost centers to provide annual justification for underutilized medium/heavy trucks, equipment, and boats. Staff stated that these fleet classes are essential to District operations. Our tests disclosed that most of these classes are adequately utilized and adequate justifications were provided for low utilizations; however, there appears to be instances where certain boats could be reassigned to other cost centers or surplus.

Due to limited funding over the past several years, the District has not been able to replace its fleet that has met certain District replacement criteria. As a result, repair costs have been increasing and time spent on repairs can also impact productivity in other areas. More importantly, the number of vehicles and construction equipment meeting the replacement criteria is increasing each year; thus, replacement costs will continue to increase. Specifically, over the last six years only about \$8 million has been spent on fleet acquisition (an average of \$1.3 million per year). As of Fiscal Year 2015, it would cost approximately \$14.4 million to replace all the fleet units that meets the current replacement criteria. Fleet Management Unit estimated that about \$17.9 million is needed for replacements; however, we determined that \$14.4 million is needed (about \$3.5 million less) due to some inaccuracies in their analysis and by applying certain assumptions that better represent current economic conditions.

Our review of vehicles that were taken out of service for auction disclosed that in a few instances costly repairs were made before the vehicles were taken out of service. In one instance, repairs totaling \$2,179 were made three weeks before a vehicle was taken out of service. Further, this vehicle was used for only 20 miles after the repairs.

In addition, we determined that the District has three 25 ton truck mounted cranes that are over 30 years old and utilization ranged only from 15 days to 34 days during a two-year period. We determined whether it would be cost beneficial to dispose of the cranes and rent when needed. Based on the number of days the cranes were used, and maintenance and associated costs, we concluded that even at the low utilization it is more cost effective to retain these cranes rather than disposing of them and renting when needed. The District should consider keeping the three cranes if certain conditions are met; for example, if the cranes will continue to be utilized and maintenance costs remain minimal. However, if it is determined that costly major overhauls are required, then an analysis should be conducted to determine whether it would be cost effective to perform the overhaul or dispose of the cranes and rent as needed. Further, recent crane purchases by the District ranged from 60 ton – 150 ton and are more versatile than the older cranes; thus the District should also consider whether the cranes are really needed.

Our audit of fleet purchases during Fiscal Year 2014 disclosed that six vehicles (three pick-ups and three SUVs) were purchased by a contractor as part of a construction contract and title was transferred to the District upon purchase. Funding for the purchase was part of the contract's lump sum amount. Three of the vehicles are assigned to the Engineering and Construction Bureau and the remaining three to three field stations. We determined that the District would have saved an estimated \$35,880 if the vehicles were purchased by the District's Fleet Management Unit using local government contracts and the District's tax exempt status.

Additional Funding Needed to Replace the District's Aging Fleet

Due to limited funding over the past several years, the District has not been able to replace its fleet that has met certain District replacement criteria. As a result, repair costs for these vehicles/equipment have been increasing and time spent on repairs can also impact productivity in other areas. More importantly, the number of vehicles and equipment in the fleet meeting the replacement criteria is increasing each year; thus, replacement costs will continue to increase. Specifically, over the last six year only about \$8 million has been spent on fleet acquisition (an average of \$1.3 million per year). As of Fiscal Year 2015, an estimated \$14.4 million is needed to replace fleet that have met replacement criteria.

The following table summarizes funds budgeted for fleet purchases from Fiscal Year 2010 to Fiscal Year 2015.

Fiscal Year	Consumable Budget for Vehicles / Equipment / Boats (Note 1)	Less Encumbrances from the Prior Year	Total Budget
2010	\$ 1,176,084	\$ -	\$ 1,176,084
2011	4,826,783	111,012	4,715,771
2012	2,188,611	1,710,370	478,241
2013	594,408	154,156	440,252
2014	1,235,560	68,477	1,167,083
2015 (As of 01/15)	669,251	669,251	-
Total	\$ 10,690,697	\$ 2,713,266	\$ 7,977,431
Average Annual Budget per Year for Last Six Years			\$ 1,329,572

Note 1

The budgeted amounts represent the final budget at the end of the fiscal year budgeted primarily to the Fleet Management Unit for vehicles / equipment and boats. Some funds also budget to different fund centers (e.g., field stations and other areas). The amounts include but are not limited to the adopted budget at the beginning of the fiscal year, transfers and amendments during the year, and prior year's encumbrances.

The Fleet Management Unit is responsible for determining which vehicles/equipment/boats meet the District's replacement criteria. It performed an

analysis to determine the funding needed as of Fiscal Year 2015 to replace the fleet that met the District's replacement criteria. The replacement criteria for the different fleet classes are indicated in the following table.

Vehicles/Equipment/Boats Replacement Criteria for Fiscal Year 2015				
Classification	Age	Miles / Hours	Maintenance Cost per Mile / Hour (Note1)	Other Factors
Light vehicles (<i>Note 2</i>)	12 years	180,000 miles	\$ 0.55	Must meet two of three criteria, plus a physical inspection
Medium / heavy trucks	15 years	300,000 miles	\$ 0.86	
Construction and marine equipment	15 years	5,000 hours	\$ 42.00	

Note 1

*The maintenance cost per mile/hour for a vehicle/equipment for a specific period (e.g., 2015) = (average maintenance cost per year * age in 2015) / total estimated miles/hours by 2015. The average maintenance cost per class = total maintenance cost per mile/hours / total fleet in the class. It should be noted that we found several calculation errors and inconsistencies in the Fleet Management Unit's analysis, which will be further discussed in this section of the report.*

Note 2

A total of 510 vehicles were classified as light vehicles. The Fleet Management Unit determined the \$0.55 maintenance cost per mile using the costs for only 78 vehicles and not the entire population as in the other classes. The maintenance cost for most of the 78 were over \$0.55. Staff explained that due to the number and age variance of the light vehicles they decided to use the maintenance cost of the 78. Using this same methodology, we determined the cost to be \$0.33 per mile.

Audit procedures included reviewing the Fleet Management Unit's replacement analysis to verify that the replacement criteria were correctly applied and the estimated replacement cost was reasonable. The Fleet Management Unit used actual miles/hours and maintenance cost data maintained in SAP Plant Maintenance module from 2006 to 2013 (seven years) to estimate 2015 miles/hours and maintenance costs. Our review of the Fleet Management Unit's analysis to determine Fiscal Year 2015 replacements, which is maintained on excel spreadsheets, disclosed several calculation errors and inconsistencies, including the following:

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- The average maintenance cost per year and maintenance cost per mile/hour were determined incorrectly; for example, to determine the maintenance cost per year, seven years of costs were divided by five, instead of by seven. This error overstated maintenance costs per year which also resulted in an overestimation of total maintenance cost in the replacement analysis.
 - The average miles/hours per year and total estimated miles/hours were determined incorrectly; for example, to determine the average miles per year the Fleet Management Unit used the vehicle's total miles/hours as of 2013 divided by the vehicle's age in 2015. This error underestimated annual miles/hours in the replacement analysis. A vehicle's miles/hours in 2013 should have been divided by the age in 2013 to determine the average miles per year.
 - Estimated replacement costs did not appear reasonable. Costs were based on the initial acquisition value times an annual inflation rate of 4% over the total years owned. A more reasonable inflation rate would be 2.5% per year. As a result, the estimated replacement cost was overstated.
 - Each class of vehicles/equipment is analyzed separately due to the different criteria. Our review also disclosed calculation errors and inconsistencies within the different classes.

Although estimated miles/hours and costs are used in the replacement analysis, more effort should be made to ensure that replacement analysis is accurate and uses more reasonable assumptions since calculation errors may impact which vehicles/equipment are considered for replacement.

The results of the Fleet Management Unit's analysis are summarized in the following table.

Fleet Management Unit's Estimated Funding Needed in Fiscal 2015 to Replace District's Fleet Meeting Two of Three Replacement Criteria (Note 1)		
Vehicle / Equipment	Number that Met District's Replacement Criteria	Estimated Cost
Light trucks	44	\$ 2,930,052
Medium & heavy trucks	7	867,281
Construction equipment	28	10,150,892
Trailers (includes all types)	97	2,039,166
Marine equipment	20	1,937,923
Estimated Total	196	\$ 17,925,314

Note 1

Fleet replacement numbers are based on age, miles/hours, and maintenance cost criteria. Physical condition may not have been taken into consideration during the preliminary analysis phase.

Since our review of the Fleet Management Unit's replacement analysis disclosed several deficiencies, we reperformed the analysis by adjusting the inaccuracies and using an inflation rate of 2.5% instead of 4% to determine the estimated 2015 replacement costs. We estimated that about \$14.4 million would be needed in Fiscal Year 2015 to replace the District's fleet that meets the replacement criteria. Our estimate is about \$3.5 million less than the Fleet Management Unit's estimate.

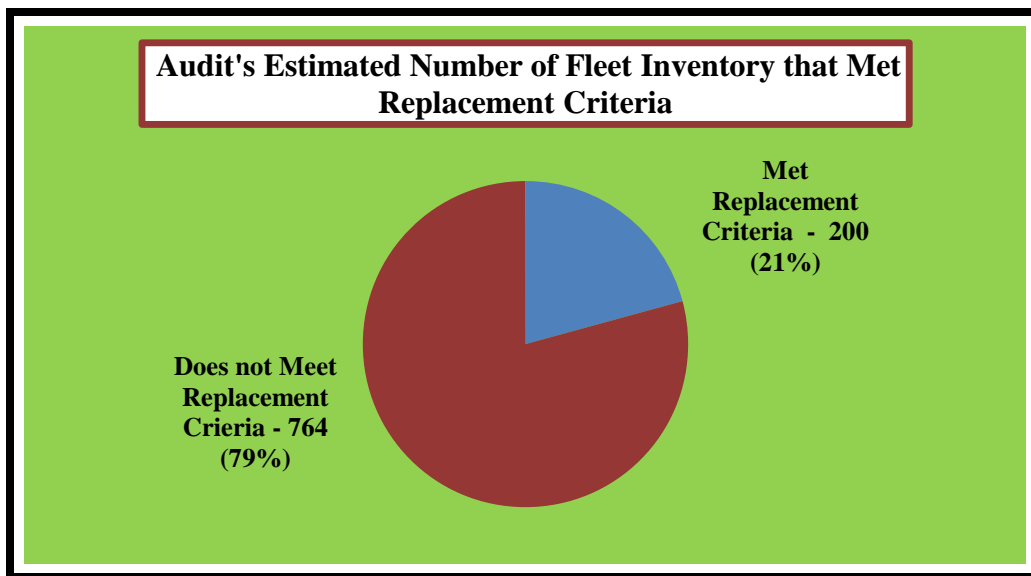
The costs are detailed in the following table.

Audit's Estimated Funding Needed in Fiscal Year 2015 to Replace District's Fleet Meeting Replacement Criteria				
Vehicle / Equipment	Number that met District's Replacement Criteria		Maintenance Cost per Mile / Hour	Estimated Cost
Light trucks (<i>Note 1</i>)	54	11%	\$ 0.33	\$ 2,725,513
Medium & heavy trucks	10	15%	0.68	916,189
Construction equipment	30	31%	24.00	8,436,312
Trailers	87	44%	NA	917,123
Marine equipment	19	21%	32.00	1,449,475
Estimated Total	200			\$ 14,444,612

Note 1

We determined the \$0.33 maintenance cost per mile using the Fleet Management Unit's methodology (i.e., using the maintenance costs for only 78 light vehicles and not the entire population of 510 light vehicles). The Fleet Management Unit determined the maintenance cost per mile to be \$0.55 per mile. Staff explained that due to the number and age variances of the light vehicles they decided not to use the maintenance cost of the entire population. It should be noted that for the other fleet classes the entire population within each class was used to determine the maintenance cost per mile.

Based on the table above, 200 (21%) of the District's 964 fleet in our analysis have met at least two the three replacement criteria. This is illustrated in the following graph.



Based on the estimated \$14.4 million needed, as of Fiscal Year 2015, to replace aging vehicles/equipment up for replacement, the current average annual funding for \$1.3 million allocated to fleet purchase is insufficient. At this average funding rate, estimated replacement costs will continue to increase since additional vehicles/equipment will be up for replacement each year. Further, the District's maintenance and repair costs will continue to increase and productivity will be impacted when vehicles/equipment are out of service for repairs.

Recommendations

- 1. Consider increasing funding allocated to fleet replacement in future budgets and implement a plan to replace the District's aging fleet.**

Management Response: This recommendation is acknowledged, but the Inspector General's Office (IG) must understand that increasing funding for Fleet Replacement is out of the Bureau's control and entirely a function of the budget office. Fleet Management has a five year plan to replace the District aging fleet, but with reduced funding we can only work within the limitation of the budget.

Responsible Division: Budget Office

Estimated Completion: Completed

- 2. Ensure that the estimated miles/hours and maintenance costs in the Fleet Management Unit's fleet replacement analysis are properly calculated and that the replacement costs are reasonable.**

Management Response: Fleet Management will ensure that the spreadsheet formulas for calculating cost per mile (CPM), Cost per hour (CPH), and maintenance cost are correct and that estimated replacement cost are reasonable. Fleet will explore the possibility of automating the process by creating SAP/BW canned reports to replace the Excel Spreadsheets.

Responsible Division: Fleet Management Unit

Estimated Completion: 10/01/2016

3. Develop sound criteria for determining which light vehicles should be included in the calculation to determine the average maintenance cost per mile.

Management Response: Fleet Management has developed Cost Per Mile (CPM) rates per class independent of the replacement analysis. These rates will be used when determining if vehicles or equipment meet the replacement criteria. In other words, the Cost Per Mile (CPM) will be pre-established similarly to the Age (12 years), and Miles (180,000). This will reduce the confusion in figuring out the cost per mile criteria for fleet replacement.

Responsible Division: Fleet Management

Estimated Completion: Completed

Sufficient Controls over Utilization of Light Vehicles

Our audit disclosed that the District has a process in place for ensuring that fleet vehicles and equipment are being efficiently utilized and that the District's fleet size is adequate; however, some minor improvements can be made to further strengthen controls. Fleet utilization is one of the factors in determining whether the District's fleet size is adequate.

Light Vehicles (Less Than 1 Ton)

At the end of each fiscal year, the Fleet Management Unit generates a SAP utilization report of light vehicles (i.e., vehicles classified as less than 1 ton that includes sedans, SUVs, cargo vans, and pick-ups). Prior to Fiscal Year 2014, vehicles that were utilized for less than 6,000 miles per year were flagged as underutilized and the

responsible cost centers were to provide reasons for the low usage. Beginning in Fiscal Year 2014, adequate utilization for light vehicles was increased to 7,000 miles per year. If justifications for low usage are inadequate then the cost center may be required to give up the vehicle and the vehicle may be reassigned to another cost center or surplus. It should be noted that the Fleet Management Unit responsibilities include monitoring and advising management of low utilization and ultimately relevant resource area management are primarily responsible for determining whether assigned vehicles are needed or should be relinquished.

Our review of the Fleet Management Unit’s Fiscal Year 2013 light vehicle utilization analysis disclosed the following:

Fleet Management Unit’s Action	Number of Vehicles
Vehicles Analyzed (less than 1 ton)	504
Auctioned	26
Storage Yard (<i>Note 1</i>)	23
Transferred to Different Cost Centers	26
Donated	1

Note 1

Vehicles in the storage yard are usually auctioned. In some instances, a vehicle can be returned to the fleet depending on if the need is justified and it is in good condition. In other instances, if a vehicle in the yard is in better condition than one in the fleet, they may be exchanged.

The reduction of the light vehicles fleet ensured that remaining vehicles are adequately utilized and also reduced District resources expended on maintenance and repairs.

Low utilization is not the only factor in determining whether to dispose or reassign a vehicle. Age, miles/hours, maintenance costs, and physical condition are also taken into consideration. Listed below are some of the justifications provided by the custodial cost centers to the Fleet Management Unit for low utilization:

- Utilization will be increased, e.g., vehicles will be rotated to equalize usage.
- Low utilizations were due to vacancies, which have since been filled
- Primary users were out on extended leave.

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- Vehicle is used primarily to transport employees to field sites.
 - Used for short distances essential to District business.

Audit procedures entailed determining whether utilization increased in Fiscal Year 2014 for those vehicles that were underutilized in Fiscal Year 2013 and the custodial cost centers stated that utilization would be increased during Fiscal Year 2014. Our review disclosed in Fiscal Year 2014 several of these vehicles were still underutilized. Further, we noted that although the Fleet Management Unit generates the SAP utilization every six months, it performs only a cursory review, i.e., cost centers are not required to justify low utilizations. Those vehicles previously identified as underutilized that cost centers planned to increase utilization, should be closely monitored on a six-month basis. The Fleet Management Unit should require the cost centers to provide justifications for the continuing low utilization and management should be informed of those vehicles with unjustifiably low utilization so that management can take appropriate action, if necessary. According to Fleet Management Unit staff, all cost centers can easily generate the SAP utilization report to monitor vehicle utilization throughout the year. As a result, cost centers should generate the utilization reports and monitor their own utilization.

Improve Utilization Monitoring Over Medium/Heavy Trucks, Equipment, and Boats

The Fleet Management Unit does not perform the same detailed annual utilization analysis of medium/heavy trucks, construction equipment, and boats as it does for light vehicles. Specifically, cost centers are not required to provide annual justification for underutilized medium/heavy trucks, construction equipment, and boats. Staff stated that these fleet classes are essential to core District operations and low utilized equipment are transferred between field stations when needed. It should be noted that beginning in Fiscal Year 2015 cost centers are required to provide justifications for all District fleet with low utilization. Our audit tests included reviewing utilization and maintenance costs of medium/heavy trucks, construction equipment, and boats for the period September 1,

2013 to August 31, 2014. Our audit population comprised of 291 medium/heavy trucks, equipment, and boats as listed in the following table.

Classifications	# Medium/Heavy Trucks, Equipment & Boats	Adequate Utilization per Year
Construction equipment (e.g., bulldozers, cranes, excavators, and graders)	38	300 hours
Medium and heavy trucks (over 1 ton, e.g., utilities, flatbeds, dumps, buckets, and semi-tractors)	128	6,000 miles
Towboats, airboats, utility boats, tractors, and riding mowers	125	300 hours

Most of these vehicles/equipment/boats are assigned to the District's eight field stations and the Land Stewardship Section. We requested staff from the different cost centers to provide us with the following information for vehicle/equipment/boat:

- Primary purpose/use,
- Whether vehicle/equipment/boat were assigned to specific employees, and
- Reasons/justifications for utilization levels.

We analyzed and discussed the information provided with pertinent staff. Our utilization analysis disclosed that several vehicles/equipment/boats do not meet the District's annual utilization thresholds. However, discussions with staff disclosed that due to the District's mission, certain types of vehicles/equipment must be readily available when needed regardless of utilization levels. Staff used the fire truck scenario explaining that although certain equipment are not utilized everyday they must be available when needed and that low utilization is not necessarily an indication that vehicles/equipment/boats are not required by a cost center. Staff provided several factors to justify low utilization levels; for example:

- A vehicle may be used for short distances to transport work crews to job site. This reduces the number of vehicles needed and increases efficiency.

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- Certain older vehicles/equipment cannot be fully utilized because they are in constant need of repairs due to their age and other factors.
 - Certain utility trucks are equipped with tools and materials needed to perform field repairs; for example, electrical, fleet, structural, and welding repairs are done offsite. Overall, we found that most utility trucks are adequately utilized.
 - Low utilization of certain construction equipment was due to operator vacancies. Specifically, staff explained that crane operators must be certified and it is difficult to find certified operators. Further, in some cases cranes and other trucks/equipment are used to complete a single type task; such as, gate overhauls. Thus, a crane's utilization can impact the utilization of other trucks/equipment.
 - Several different pieces of equipment may be needed at a project site; however, they are used at different phases and must be available as standby.

The following sections provide further utilization details and reasons for low utilization for specific vehicles/equipment/boats. Audit procedures included selecting 89 medium/heavy trucks, equipment, and boats and reviewed the trip logs, for the period March 2014 to August 2014, to determine number of days¹ used. Some of the usage results are also presented in the following sections.

¹ Field stations have a 4-day work week and most cost centers have 5-day work week. For the period March 2014 to August 2014, there were 103 work days at the field stations and 128 work days at other cost centers.

Construction Equipment

Overall, our audit disclosed that most of the District's construction equipment (e.g., cranes, bulldozers, excavators and graders) was adequately utilized. According to District's policy, utilization of 300 hours per year is considered adequate. Based on this threshold, our utilization analysis disclosed the following.

Hours Utilized During 09/01/2013 – 08/31/2014	Number of Construction Equipment Units	
Over 300 Hours	25	66%
Less Than 300 Hours	13	34%
Total	38	100%
Other Relevant Statistics		
More Than 200 Hours	30	79%
Less Than 100 Hours	5	13%

The following are examples of construction equipment in the District's fleet.

District Construction Equipment: 80 Ton Hydraulic Crane



District Construction Equipment: Excavator / Trackhoe



District staff provided justifications for the low utilization. Some specific examples are presented in the following table.

Examples of Reasons Provided for Underutilized Equipment During September 1, 2013 to August 31, 2014			
Field Station	Equipment Description / Inventory #	Age / Hour Used	Reasons Provided by Field Station Staff for Low Utilization and Audit Comments
Big Cypress Basin	25 Ton Truck Mounted Crane (V10027571)	30 Yrs. / Used 34 Hours	Crane is primarily used to remove stop logs from structures. Without a certified crane operator for about a year; an operator was hired in November 2014. Requested help from the Fort Lauderdale Field Station and rented equipment with operator, if District assistance was not available. <i>Review of trip logs for March 2014 to August 2014: Used 10 days of the 103 work days during this period.</i>
Fort Lauderdale	Excavator, Trackhoe, (V10027573)	14 Yrs. / Used 0 Hours	A critical piece of equipment required at Pump Station S-9. It is used to remove vegetation from the intake bays at Pump Station S-9; it is used primarily when the station is pumping.
Homestead	35 Ton Truck Mounted Crane (V10027651)	29 Yrs. / Used 69 Hours	Without a certified crane operator for a while, an operator was recently hired. Relied on the Miami and Fort Lauderdale Field Stations for help. <i>Review of trip logs for March 2014 to August 2014: Used 21 days of the 103 work days during this period.</i>
Okeechobee	25 Ton Truck Mounted Crane (V10027959)	30 Yrs. / Used 28 Hours	Primarily used as a backup and is useful for debris removal after storm events. Though the crane sits idle at times it is essential during certain situations throughout the year and can be used by several field stations. Utilization has decreased since the purchase of a 150 ton crane. <i>Review of trip logs for March 2014 to August 2014: No usage.</i>

It should be noted that 4 of the 38 heavy/construction equipment are over 30 years old and 8 are over 20 years old. Further, based on a Fleet Management Unit's analysis, 20 of the 38 have met the District's replacement criteria; however, due to limited District

resources they cannot be replaced and are being maintained and repaired for continued use. As a result, maintenance costs to repair the old equipment will continue to increase.

It is important to note that there are efforts to ensure that District resources are used efficiently; for example,

- Field stations share equipment with each other.
- A new grader was acquired three years ago and is shared by the Fort Lauderdale, Miami, and Homestead Field Stations. Staff concluded that these three field stations needed graders; however, usage by each field station would be limited. As a result, a single grader was purchased and it being shared. It should be noted that the grader was used 622 hours during September 2013 to August 2014.
- New equipment purchases have multipurpose uses; for example, three year ago a 60 ton hydraulic crane with a dragline attachment was purchased for the Miami Field Station that can used for canal dredging and lifting gates

Medium / Heavy Trucks

Overall, our audit disclosed that about 83 of the District’s 128 medium and heavy trucks (for example, utility trucks over 1 ton, dump trucks, flatbeds, and semi-tractors) were adequately utilized. Based on the District’s 2013 mileage utilization threshold, 6,000 miles per year is considered adequate utilization. Based on this threshold, our utilization analysis disclosed the following.

Miles Driven During 09/01/2013 – 08/31/2014	Medium/Heavy Trucks	
Over 6,000 Miles	83	65%
Under 6,000 Miles	45	35%
Total	128	100%
Other Relevant Statistics		
Over 5,000 Miles	92	72%
Below 3,000 Miles	17	13%
Below 2,000 Miles	12	9%

The following are examples of heavy trucks in the District's fleet.

District Heavy Truck: 20 Ton, Boom Crane



District Heavy Truck: 18 Cubic Yard Dump Truck



District staff provided justifications for the low utilization. Some specific examples are presented in the following table.

Examples of Reasons Provided for Trucks Utilized Less Than 2,000 Miles During September 1, 2013 to August 31, 2014			
Field Station / Section	Truck Description / Inventory #	Age / Miles Driven	Reasons Provided by Staff for Low Utilization and Audit Comments
Clewiston	2.5 Ton Bucket Truck, 2WD (V10027556)	9 Yrs. / Used 980 Miles	Shared by all the electricians and is used for specialized maintenance and repairs.
Homestead	14 Cubic Yard Dump Truck, 2WD (V10027688)	12 Yrs. / Used 1,952 Miles	Truck is used to support field station's crane; however, there was no crane operator at the field station. An operator was recently hired. <i>Review of trip logs for March 2014 to August 2014: Used 19 days of the 103 work days during this period.</i>
Land Stewardship Section	3.5 Cubic Yard Dump Truck, 2WD (V10028093)	23 Yrs. / Used 732 Miles	Used as needed to haul materials for road repairs, culvert installation and replacement. Operated by Land Management technicians primarily in the Land Management East Coast Region. <i>Review of trip logs for March 2014 to August 2014: Used 14 days of the 128 work days during this period.</i>
Miami	14 Cubic Yard Dump Truck, 2WD (V10027877)	12 Yrs. / Used 754 Miles	Used to haul fill material to various work sites. Issues with dumping due to a manufacturing design flaw. There are plans to surplus this truck. <i>Review of trip logs for March 2014 to August 2014: Used 14 days of the 103 work days during this period.</i>
West Palm Beach	2.5 Ton Flatbed Truck, 2WD (V10028481)	17 Yrs. / Used 599 Miles	Used to off load materials, supplies and equipment. Specialized for safely transporting oversized loads. High priority usage during emergency response.

Boats, Mower Tractors, and Other Equipment

Overall, our audit disclosed that only 21 of the District’s 91 boats (for example, air, utility, and tow) were utilized in accordance with District utilization levels. Further, 43 of the 91 were utilized less than 50 hours during a one-year period. Based on the District’s policy, utilization of 300 hours per year is considered adequate. Our utilization analysis disclosed the following.

Hours Utilized During 09/01/2013 – 08/31/2014	Number of Mowing Tractors, Riding Mowers, & Other Mics.		Number of Boats (Various Types)	
Over 300 Hours	14	41%	21	23%
Less Than 300 Hours	20	59%	70	77%
Total	34	100%	91	100%
Other Relevant Statistics				
Less Than 100 Hours	10	29%	58	64%
Less Than 50 Hours	7	21%	43	47%

District Towboat: 20 Foot Inboard



District Airboat with Vehicle Engine



District Boat: 20 Foot Aluminum Utility



District staff provided justifications for the low utilization. Some specific examples are presented in the following table.

Examples of Reasons Provided for Underutilized Boats During September 1, 2013 to August 31, 2014			
Field Station / Section	Equipment Description / Inventory #	Age / Hour Used	Reasons Provided by Staff for Low Utilization
Clewiston	18 Ft. Aluminum Utility Boat (V10027466)	13 Yrs. / Used 26 Hours	Used to perform maintenance and repairs throughout the Clewiston Field Station's area of responsibility.
Fort Lauderdale	15 Ft. Airboat, w/Vehicle Engine (V10027567)	16 Yrs. / Used 25 Hours	Used infrequently, but is one of only two airboats located in the south. Used primarily for inspections and tours in the WCAs and has been used to assist stranded employees. Without this boat, the response time would be considerable and could pose a safety risk to employees.
West Palm Beach	18 Ft. Aluminum Utility Boat (V10028182)	16 Yrs. / Used 2 Hours	Used to assist with various tasks, e.g., installation and repair of boat barriers and tuff boom at structures and pump stations. It is used to add or remove boards from water control structures. Further, it is used to assist the engineering group during inspections of structures and pump stations.
Lake and River Section	6 Airboats and 4 Utility Boats	Usage Ranged From 9 to 70 Hours	Mostly used for sampling in remote areas of the Kissimmee River and Upper Chain of Lakes. In addition, utilized for numerous ongoing long and short term monitoring Lake Okeechobee projects. Occasionally used for giving tours.
Everglades Systems Assessment Section	5 Airboats and 2 Utility Boats	Usage Ranged From 24 to 64 Hours	Used to support various scientific projects that are heavily watercraft dependent. Experiments require relatively short airboat travel times but long periods of ecological sampling and observations.

Since there are a large number of boats with relatively low utilization levels, management should assess whether all the boats are needed. Although, the boats are not costly, maintenance is still required.

Fleet Pilot Program to Increase Efficiencies

The District will soon implement a pilot program to increase fleet and employee efficiencies. Specifically, the District is planning to install GPS tracking devices in 25 vehicles that will track location, speed, fuel usage and mileage. Certain employees; for example, professional supervisors, electricians, and structure maintenance technicians, will be allowed to take these vehicles home and drive directly to their job site. The anticipated benefits are as follows:

- Increased employee productivity,
- Reduced response time and travel time,
- Increased time on the job site,
- Reduced fleet utilization and maintenance cost, and
- Increased fleet life.

It should be noted that management is aware that supervisors and their staff will have to adapt and ensure effective communication since in person contact will be reduced. In addition, vehicles will need to be adequately monitored and secured.

Recommendations

- 4. Semi-annually monitor those light vehicles with low utilization that cost centers indicated would realize increase utilization in the future. Inform pertinent management as necessary.**

Management Response: We concur with this recommendation and have implemented semi-annual monitoring.

Responsible Division: Fleet Management

Estimated Completion: Completed

- 5. Require cost centers to take a more active role in monitoring utilization of vehicles/equipment/boats.**

Management Response: Currently, the field stations are monitoring their utilization by running BW reports, annual or semiannual. This represents approximately 83% of the District fleet. The cost centers outside of OM usually track their utilization using trip logs which are scanned into server monthly. Fleet Management will play a greater role in emphasizing the effectiveness of monitoring fleet utilization at the cost center level. This issue has also been taken up by the Fleet STAN Team.

Responsible Division: Fleet Management

Estimated Completion: Completed

- 6. Assess whether all vehicles/equipment/boats with low utilization are needed. Surplus those that not needed.**

Management Response: Utilization assessment is an ongoing process through our annual and semi-annual utilization analysis of not just vehicles but marine and other equipment. An indication of this is we have two airboats to be sent to auction for underutilization. One was sent last month. The next utilization analysis will be performed in October 2015. Vehicles that are underutilized without justification will be sent to auction.

Responsible Division: Fleet Management

Estimated Completion: 12/1/2015

- 7. Dispose of the Miami Field Station's malfunctioning dump truck (V2353-10027877) in a cost efficient manner.**

Management Response: The Miami dump truck was repaired by replacing the hydraulic pump. Okeechobee Field station traded their 1998, Dump Truck, V1812 for V2353. V1812 was sent to auction.

Responsible Division: Fleet Management

Estimated Completion: Completed

- 8. Continue to assess whether new construction equipment and other fleet purchases can be shared by field stations and other cost centers in order to increase utilization and reduce costs.**

Management Response: We concur with the recommendation. This is an ongoing process. The south is currently sharing one (1) motor grader between three field stations, Miami, Homestead, and Ft. Lauderdale. With the possible merger of the field stations (Okeechobee & St. Cloud) this will be more feasible.

Responsible Division: Fleet Management

Estimated Completion: Ongoing

Improved Efforts Needed to Ensure Cost Effective Repairs

During our review of the light vehicles that were auctioned, we noted a few instances where costly repairs were made right before the vehicles were taken out of service. In one instance, repairs totaling \$2,179 were made three weeks before a vehicle was taken out of service. Further, this vehicle was used for only 20 miles after the repairs. Other examples are listed in the following table.

Examples of High Repair Costs Prior to Vehicle Being Taken Out of Service		
Vehicle Description / Date Taken Out of Service	Estimated Miles from Repair Dates to Date Vehicle Taken Out of Service	Repair Totals (Excludes Cost to Take Out of Service)
Compact Truck (SUV) 4WD (V2378) - 12/3/13	6/13/13 to 12/3/13: <u>204 miles</u>	<u>6/27/13</u> : \$3,034 - front end drive differential
		<u>7/29/13</u> : \$115 - 5000 miles preventive maintenance
		<u>8/14/13</u> : \$1,818 - road call, engine over heating
		<u>10/29/13</u> : \$2,439 - power steering leaking and overheating
Observation: \$7,406 was spent approximately six months before vehicle was taken out of service and used for only 204 miles.		
¾ Ton Pickup, 4WD (V1962) – 4/4/14	3/12/14 to 4/4/14: <u>20 miles</u>	<u>3/12/14</u> : \$115 - semi-annual inspection, 50,000 miles transmission service
		<u>3/25/14</u> : \$2,064 - fire extinguisher, air filters, and tires
Observation: \$2,179 was spent less than a month before vehicle was taken out of service and used for only 20 miles.		
1 Ton Utility Truck, 4WD (V2044) - 12/10/13	10/28/13 to 12/10/13: <u>543 miles</u>	<u>10/28/13</u> : \$1,517 - preventive maintenance repairs
		<u>11/5/13</u> : \$461 - road call, vehicle stalled
Observation: \$1,978 was spent about one month before vehicle was taken out of service.		
½ Ton Cargo Van, AWD (V2549) - 1/28/14	11/26/13 to 1/28/14: <u>29 miles</u>	<u>11/26/13 & 12/3/13</u> : \$1,672 - preventive maintenance repairs
Observation: \$1,672 was spent approximately two months before vehicle was taken out of service and used for only 29 miles.		
½ Ton Pickup, Extended Cab, 4WD (V2107) - 4/1/14	1/3/14 to 4/1/14: <u>97 miles</u>	<u>1/3/14</u> : \$2,092 - 30,000 miles transmission service, semi-annual inspection, air bag light, and rear view mirror
		<u>2/19/14</u> : \$45 - repair District radio
Observation: \$2,137 was spent approximately two months before vehicle was taken out of service and used for only 97 miles.		

According to staff, these vehicles were taken out of service as a result of a District-wide fleet reduction effort by management. They stated that costly repairs are usually not made to vehicles prior to auction and the repairs were made prior to the fleet reduction instructions. Based on our review, it appears that the vehicles were underutilized after the repairs were made. Staff stated that these vehicles met all or some of the following criteria: high maintenance cost per mile, over 12 years old, and/or underutilized. As a result, better planning is required before costly repairs are made to vehicles.

Recommendation

9. Consider a vehicle's age, mileage, maintenance cost per mile, and utilization levels, as necessary, before making costly repairs.

Management Response: Fleet Maintenance has always considered the above indicators prior to costly repairs. However, the IG must understand that sometime the Division has no choice but to proceed with the repairs despite the cost. This can be attributed to the lack of spare vehicles or vehicle availability. Divisions are keeping vehicles longer due to lack of replacement capital. When these vehicles fail, the repairs are necessary to keep the vehicle on the road.

Responsible Division: Fleet Management

Estimated Completion: Ongoing

Analysis of Heavy Equipment with Low Utilization

As detailed in a previous section of our report, we concluded that overall most of the District's construction equipment was adequately utilized; for example, 25 of the 38 equipment analyzed were used more than 300 hours per year. However, we noted that there are three 25 ton truck mounted cranes that are over 30 years old with very low utilization over the last two years. Staff stated that utilizations were low because of operator vacancies and the cranes served as back-ups to other critical equipment. Based on the equipment usage logs, we determined that daily usage ranged only from 15 days to

34 days during a two-year period. The details of our analysis are presented in the following table.

Usage Based on Utilization Logs and SAP for 25 Ton Truck Mounted Cranes January 2013 to December 2014			
	Big Cypress Basin FS (V876)	Okeechobee FS (V806)	West Palm Beach FS (843)
# of Hours Used per SAP	119	46	122
Total Days Used	34	22	15
Number of Logs Reviewed	24	23	21
# of Months not Used (Note 1)	13	16	13
# of Months Used only 1 Day	5	4	4
# of Months Used More than 1 Day	6	3	4

Note 1

The Big Cypress Basin Field Station crane was not used August 2014 to December 2014 because of a crane operator vacancy.

It should be noted that a small portion of the field stations' budgets are allocated to rentals. Our review disclosed that some field stations rented equipment due to various reasons; for example, operator vacancies, additional equipment needed to expedite jobs, and unavailability of District equipment due to repairs. In late 2013, the Big Cypress Basin Field Station rented a 30 ton crane on three separate dates because of a crane operator vacancy. The rental rates were on an hourly basis and included time from port to port, cost for an operator, and fuel.

Our audit tests included using these rental rates to determine whether it would be more beneficial for the District to retain the three cranes or dispose of them and rent comparable cranes as needed. Specifically, we compared the District's cost to maintain and operate the three cranes to the rental cost for the number of days the cranes were utilized. We also allocated the initial acquisition cost over a useful life of 15 years (currently no cost since the cranes are 30 years old) and 30 years (currently only about \$5,200 annually). Based on the number of limited days the cranes were used, and maintenance and associated costs, we concluded that it is more cost effective to retain these cranes rather than disposing of them and rent when needed. Using the District's

cranes can result in savings of as much as \$28,000 compared to rental costs. The results of our analysis are detailed in the following table.

Analysis of Costs to Retain and Use 25 Ton Truck Mounted Cranes with Low Utilization vs. Cost to Rent						
	BCB FS		Okeechobee FS		WPB FS	
Purchase Price	\$	174,983	\$	173,484	\$	174,983
Estimated Residual Value (10%)		(17,498)		(17,348)		(17,498)
Depreciable Amt.	\$	157,485	\$	156,136	\$	157,485
Costs Based on # of Days Used from January 2013 to December 2014 AND With / Without Depreciation Expenses						
Days Used in 2 Yrs. – per Trip Logs	34 Days		22 Days		15 Days	
Dep. Incl. (Note 1)	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>No</i>
Annual Dep. Over 30 Years. (Note 1)	\$ 5,250	\$ -	\$ 5,205	\$ -	\$ 5,249	\$ -
Annual Maintenance	6,397	6,397	10,685	10,685	8,342	8,342
Annual Fuel	500	500	500	500	500	500
Total Annual Cost	\$ 12,147	\$ 6,897	\$ 16,390	\$ 11,185	\$ 14,091	\$ 8,842
Cost for Two Years	\$ 24,294	\$ 13,794	\$ 32,780	\$ 22,370	\$ 28,182	\$ 17,684
Labor Cost for Days Used (Note 2)	9,180	9,180	5,940	5,940	4,050	4,050
Total Cost for Two Years	\$ 33,474	\$ 22,974	\$ 38,720	\$ 28,310	\$ 32,232	\$ 21,734
Estimated Rental Cost Based on Days Used (Note 3)	\$ 51,000	\$ 51,000	\$ 33,000	\$ 33,000	\$ 22,500	\$ 22,500
Est. Savings Using District Cranes	\$ 17,526	\$ 28,026	\$ (5,720)	\$ 4,690	\$(9,732)	\$ 766

Note 1

Based on the Fleet Management Unit's replacement analysis, these cranes have a useful life of 15 years. However, since they are still being used we determined depreciation based on a useful life of 30 years. Further, as part of our analysis, we presented costs with and without depreciation.

Note 2

We determined the labor cost by using the mid-salary range for crane operators plus fringe benefits. Further, we assumed 10-hour work days since field station employee work 10 hours per day. We calculated an hourly rate of \$27 per hour.

Note 3

During our review, we noted that in several instances the Big Cypress Basin Field Station rented a 30-ton crane for about \$150 per hour (cost includes an operator, fuel, and a 7% surcharge). As a result, we used this rate as the average rental rate. Further, we assumed the cranes were rented for a 10-hour day.

Overall, based on our analysis there are several options that the District should considered. Specifically, the District should consider keeping the three cranes if the cranes will continue to be utilized and maintenance costs remain minimal; however, if it is determined that costly major overhauls are required then an analysis should be conducted to determine whether it would be cost effective to perform the overhaul or dispose of the cranes and rent as needed.

It should be noted that recent crane purchases by the District ranged from 60 ton to 150 ton and are more versatile than the older cranes. Specifically, the Okeechobee and West Palm Beach Field Stations have newer and larger cranes that can perform the same functions as 25 ton cranes, which are primarily back-up cranes. As a result, the District should also analyze whether the cranes are really still needed.

Recommendations

10. Consider keeping the three cranes if the cranes will continue to be utilized and maintenance costs remain minimal.

Management Response: Concur with recommendation.

Responsible Division: Fleet Management

Estimated Completion: Completed

11. Perform a cost benefit analysis if at a future time it is determined that costly major overhauls are required to determine whether it would be cost effective to perform the overhaul or dispose of the cranes and rent as needed.

Management Response: Concur with recommendation.

Responsible Division: Fleet Management

Estimated Completion: Completed

12. Explore the option of disposing of the cranes if the newer cranes can fulfill the District's needs.

Management Response: Concur with recommendation.

Responsible Division: Fleet Management

Estimated Completion: Completed

District Vehicles Procured by Contractor Through a Construction Contract

Our review of fleet purchases during Fiscal Year 2014 disclosed that six vehicles (three pick-ups and three SUVs) were purchased by a contractor as part of a construction contract and the ownership was transferred to the District upon purchase. Funding of \$182,500 for the purchase was included in the contract amount. Based on the contract, the contractor was required to purchase the vehicles for use by District on-site staff, consultants, and contract employees. Based on our review of trip logs for the period March 2014 to August 2014, three of the vehicles are assigned to the Engineering and Construction Bureau and the remaining three to three field stations. We determined that the District would have saved an estimated \$35,880 if the vehicles were purchases by the District's Fleet Management Unit using local government contracts and tax exempt status. The following table shows the cost savings if the vehicles had been procured by the District.

Contract vs. District Purchase	
Purchased by Contractor	
Cost allocated for purchase	\$ 182,500
Options added by the District	\$ 3,953
Total Cost	\$ 186,453
Estimated Cost if District Made Purchase	
District's estimated purchase price / with options	\$ 150,573
Estimated District Savings	\$ 35,880

According to District staff, there are now controls in place to ensure that District vehicles purchases will not be included in contracts and will be procured by the Fleet Management Unit.

Recommendations

13. Take action to ensure that District contract specifications do not include fleet purchases with contract funds.

Management Response: This will be communicated in writing to the Divisions that have previously included vehicles and equipment as part of their contractual agreement with contractors. Concur with recommendation.

Responsible Division: Fleet Management

Estimated Completion: Completed

14. Ensure that all District vehicles/equipment are acquired by the Fleet Management Unit using state or local government contracts or District bid solicitations to obtain the best prices.

Management Response: Ninety percent of Fleet purchases are through the Sheriff Association Contract, Florida Department of Management Services State Contract, and the National Joint Power Association (NJPA) Contract. The other ten percent are purchased through competitive bidding or other contracts. Vehicles that were purchased as part of projects constitute a minute percentage of total vehicles purchased. Every effort will be made to curtail, if not eliminate this practice.

Responsible Division: Fleet Management

Estimated Completion: Completed