To: The Utah County Board of County Commissioners

Transmitted herewith is our report, A Management Review of Utah County's Motor Pool No. 87-4. The audit scope and objectives are included in the introduction.

We will gladly meet with Commissioners and other County Officials to discuss or clarify any item contained in the report or to facilitate implementation of the recommendations.

Sincerely,

Joseph M. Higbee
Director
Internal Auditing

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REPORT TO
UTAH COUNTY BOARD OF COUNTY COMMISSIONERS
Report No. 87-4

A PERFORMANCE AUDIT OF UTAH COUNTY MOTOR POOL

Audit Performed by:

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CHAPTER I

INTRODUCTION

The management of Utah County's passenger vehicle fleet is the responsibility of the Utah County Motor Pool. The Motor Pool was created in 1981 to ensure the economic management of all vehicles required in the conduct of County business. Typically, a motor pool should provide proper and reliable transportation, suitably equipped at the least total cost, with adequate controls to provide proper fleet administration. Using these general criteria as a basis for judgement, we found that the Utah County Motor Pool is well-managed.

Although we found the Motor Pool to be well-managed, it does not have all the tools needed to carry out its assigned tasks. The Motor Pool's overall efficiency and effectiveness can be enhanced: (1) by changing the way vehicles are internally financed; (2) by replacing vehicles in a more timely manner; (3) by developing a vehicle utilization standard; and (4) by tightening inventory control practices for parts and supplies. The Motor Pool management is cognizant of the need for these changes and is willing to work with the Board of County Commissioners to implement them.

The following 5 chapters detail our findings and recommendations. Chapter II highlights those practices that have helped Motor Pool management minimize operating expenses. Chapter III illustrates how state-of-the-art financing can reduce the County's capital outlay. Chapter IV explains why reasonable guidelines governing vehicle replacement need to be established. Chapter V discusses the need for a vehicle utilization standard. Finally, Chapter VI reaffirms the need for a perpetual inventory system for parts and supplies as discussed in a 1979 audit report.

Audit Scope and Objectives

The Utah County Audit Management Committee requested this review of the Utah County Motor Pool. Basically, the Audit Management Committee asked us to determine whether the Motor Pool is being run in the most efficient and effective manner possible. Given this rather broad assignment, we briefly examined the Motor Pool's various operations and limited our review to the passenger vehicle fleet which includes cars, vans and light pickup trucks (3/4 ton and less). During 1986, the period reviewed, Utah County had 89 passenger vehicles.

Our review focused on the passenger vehicle fleet because of various time constraints. We did not conduct extensive audit work in the heavy equipment and security fleets for two reasons.

First, after reviewing the management records for larger trucks and heavy equipment, we felt that the time needed to do a comprehensive review would be excessive. Primarily, utilization records are incomplete, making it difficult to determine meaningful evaluative standards. Although during 1986 there were 57 vehicles in this category, given various time constraints we determined that we could better utilize our resources by reviewing passenger vehicles. A separate review will best allow the time and resources needed to provide solid management information.

Second, not only did we exclude larger trucks and heavy equipment, we were originally asked by the Audit Management Committee to exclude all 45 vehicles used by the County Sheriff's Office during 1986. The Committee later asked that we include some information on the County's security fleet, believing that the requested information could be generated without much additional work. However, security fleet management has a different set of requirements than passenger fleet management and given various time constraints, we feel concerns in security fleet management can best be addressed in a separate review.

Although we did not audit the heavy equipment and security fleets, based on the information gathered, we believe the recommendations in this report apply to all areas of fleet management and can help improve management processes in all three categories.

Based on our preliminary review, we found that the Utah County Motor Pool is generally managed both efficiently and effectively. However, with the support of the Board of County Commissioners, Utah County's fleet manager can make a good motor pool even better. Our review incorporates the following 4 specific objectives:

1. Determine whether vehicles are internally financed in a manner that will best reduce future replacement costs.

2. Determine whether the County has established a vehicle replacement policy.

3. Determine whether all vehicles in the passenger fleet are adequately utilized.

4. Determine whether inventory management improvements recommended in a 1979 audit have been implemented.

Our examination was conducted in accordance with the United States General Accounting Office, "Standards for Audits of Governmental Organizations, Programs, Activities and Functions," and within the statutory requirements of the Office of the Utah County Auditor. Accordingly, our work includes such tests and other auditing procedures necessary to collect evidence in support of our conclusions and recommendations.

CHAPTER II

UTAH COUNTY'S MOTOR POOL FULFILLS ITS MISSION

The Utah County Motor Pool effectively fulfills its mission by providing Utah County with an economic and safe automobile fleet. The importance of having a well-managed fleet cannot be overly emphasized. According to fleet management experts, a poorly managed motor pool can increase operating expenses.

Two examples may help demonstrate the Utah County Motor Pool's effectiveness. The first example shows how purchasing rather than renting vehicles has resulted in overall savings to the County. The second example illustrates how the County is well-served by the Motor Pool's low maintenance costs.

Purchasing Is Cheaper Than Renting

To minimize capital outlay, the Utah County Motor Pool has reviewed both purchasing and renting options for its passenger vehicle needs and has determined that purchasing is less expensive than renting. This determination is supported by several studies conducted by the General Services Administration (GSA), which manages the Federal Government's automotive fleet. According to the GSA, renting is uneconomical. Renting simply cannot compete with the purchase price breaks offered by major car manufacturers.

Utah County receives price breaks on new vehicles by purchasing from dealers who contract with the State. The prices available through these contracts are as much as 20 percent below retail. To ensure Utah County is paying the least amount possible for its vehicles, the Motor Pool manager recently requested rental bids from three area dealers for a 1987 Dodge D-50 Ram Pickup. The following table shows the rental quotes for this vehicle. For comparison purposes, the vehicle's ownership costs are also shown.

Table 2.1

Rental Quotes for a 1987 Dodge D-50 PU

Rental Time Period	RENTAL QUOTES Dealer A	Dealer B	Dealer C	Ownership Costs*
6 months	$ 2,160	$ N/Q	$ N/Q	$ 649
12 months	N/Q	3,852	N/Q	1,298
24 months	N/Q	N/Q	5,952	2,596
36 months	N/Q	N/Q	6,696	3,893
48 months	6,384	N/Q	7,440	5,191
60 months	7,560	8,482	N/Q	6,489

* Ownership costs are based on purchasing a 1987 Dodge D-50 PU for $6,489 and having it remain in service for 60 months.

NOTE: N/Q = No Quote Available.

Obviously, Utah County maximizes its fleet investment by purchasing vehicles rather than by renting them. We further found that it would be more expensive to rent seasonal vehicles that are needed each year than to buy them. Even if rental fees do not increase annually, the County would pay $4,000 more to rent a 6 month seasonal vehicle for 5 years than if the same vehicle were purchased (multiply the 6 month rate from Dealer "A" by 5 and subtract the purchase price of $6,489).

Clearly, if a vehicle is needed for extended use, it is more economical to buy than to rent. Besides being more expensive, rental vehicles usually have yearly mileage limitations and costs can be affected by high utilization. Furthermore, at the end of the rental period, if a vehicle's condition does not meet a somewhat subjective criteria, additional charges may be assessed.

Unless rental rates decrease or the County's cost to purchase new vehicles drastically increases, Utah County should continue to purchase its vehicles. However, the fleet manager or one of his staff may want to periodically check rental rates to ensure that the County is obtaining passenger vehicles in the most economical way possible.

Quality Maintenance Costs Are Low

Not only is capital outlay minimized, but maintenance costs are low and vehicles are well serviced. Utah County has kept maintenance costs low by maintaining reasonable staffing levels,

by performing preventive maintenance on a routine basis, and by buying parts at discount.

As with any labor intensive operation, personnel costs consume a large portion of the budget. To keep operational costs as low as possible, staffing levels must not be excessive. To determine whether the Motor Pool's staffing levels are acceptable, we took the average number of power units per mechanic, and compared that ratio with the same ratio from 4 other local government motor pools in the State. This is a commonly used method for comparing maintenance staffing levels with other fleet management organizations. In any comparison of this type, however, caution must be taken because no two governmental entities have identical equipment or service demands.

We compared the number of powered units, such as cars, pickup trucks, heavy equipment, lawn mowers, stationary engines, sprayer motors, etc., to the number of mechanics and found that 1 mechanic in Utah County services about 99 units. The 4 motor pools contacted averaged a range of 66 units per mechanic to about 100 units per mechanic. This comparison places Utah County at the top in terms of efficiency.

In addition to maintaining staffing levels within acceptable limits, motor pool personnel do a good job of maintaining the vehicles. Each time a vehicle is in the shop for repairs, the policy is to perform a standard list of preventative maintenance checks. For those vehicles which may not have required repairs, routine preventative maintenance is scheduled. The value of preventative maintenance should not be underestimated and is an industry accepted method for keeping maintenance costs low.

In addition to preventative maintenance policies aimed at keeping maintenance costs as low as possible, motor pool personnel take advantage of discounts for vehicle parts. Motor pool personnel deal with only those businesses that are willing to sell parts to the County at discount prices. By purchasing at discount, parts were obtained for prices 10 to 80 per cent below those quoted in industry publications.

CHAPTER III

IMPROVED VEHICLE FINANCING CAN REDUCE CAPITAL OUTLAY

Although Utah County's Motor Pool is well-managed, improved internal financing methods for new vehicles can reduce capital outlay. The Motor Pool serves Utah County Government as an internal service fund and as such, should operate on a cost reimbursement basis. In the strictest sense, the Motor Pool is currently reimbursed by user departments for a vehicle's ownership or purchase costs. However, the way that departments are currently assessed user charges does not provide for the future replacement costs of vehicles that will eventually be purchased to replace current vehicles.

Through our research, we have found that other governmental organizations in the State have implemented various internal financing processes to collect all funds needed to fully finance replacement vehicles. Basically, these methods focus on including an inflationary factor in the charges assessed. However, the most innovative process puts the investment advantage of an interest bearing account to work for the governing unit. Should Utah County adopt a similar internal financing process, actual capital outlay could be significantly reduced.

The County Motor Pool presently assesses user charges on a straight line basis. In other words, if a new vehicle costs $5,000 and has a 5 year life expectancy, the user agency will be assessed $1,000 per year for 5 years. This money is then put into a non interest bearing fund for the purpose of purchasing new vehicles. This method is effective for recouping money expended on the recently purchased vehicle, but does not consider the increased costs associated with the purchasing of a replacement vehicle at the end of the five year period.

In contrast, the State of Utah depreciates its vehicles on a straight line basis, but adds an inflationary factor to gain the extra money needed to purchase replacement vehicles. For example, when the State purchases a $5,000 vehicle with a 5 year life expectancy, in addition to the $1,000 yearly assessment, an inflationary factor of 4% is added into the yearly fee. (State personnel have determined that vehicle prices increase 4% each year.) The inflationary factor adds an additional $216 to the yearly fee, for a total charge of $1,216. The additional $216 for each of the five years will provide the projected money needed to buy a replacement vehicle.

Provo City, rather than using a simple inflationary factor, uses a future value of annuity table to identify how much money

needs to be invested annually into an interest bearing account to cover future replacement costs. An annuity table shows the amount of interest earned based upon the amount of the yearly investment, the number of years the money is invested, and the interest rate payable. By utilizing interest earnings, Provo pays less for a new vehicle than either the State or Utah County.

Table 3.1 illustrates how an annuity table works. To keep things simple, $1 is invested at a range of percentages for up to 6 years. As shown, by investing $1 each year for five years into an account earning 5% interest, the final payout would be $5.526; $.526 more than invested.

Table 3.1

Future Value of Annuity Table

Number of Years	1%	2%	3%	4%	5%
1	1.000	1.000	1.000	1.000	1.000
2	2.010	2.020	2.030	2.040	2.050
3	3.030	3.060	3.091	3.122	3.153
4	4.060	4.122	4.184	4.247	4.310
5	5.101	5.204	5.309	5.416	**5.526**
6	6.152	6.308	6.648	6.633	6.802

The future value of annuity table is the key tool Provo uses to determine exactly how much money will be needed to purchase replacement vehicles; however, it is actually the third step of a three step process.

The first step in the process is to determine how much the replacement vehicle will cost. According to Provo's studies, the cost of a replacement vehicle increases 5% yearly. Therefore, replacement costs are estimated by multiplying the purchase price of the vehicle by 5% for each expected year of service. For example, the money needed in five years to replace a vehicle purchased today for $5,000 is $6,078. ($5,000 * 105% = $5,250. $5,250 * 105% = $5,513. $5,513 * 105% = $5,788. $5,788 * 105% = $6,078.)

The second step is to determine the salvage value, or the resale value of the vehicle at the end of the five year period, and subtract that amount from the replacement monies needed. Provo City estimates, from past experience, that their older vehicles sell for 5% of the purchase price of a similar, new vehicle. In other words, if the replacement cost of a vehicle is

$6,078, then the salvage value of the old vehicle is $304. The $304 salvage value is subtracted from the new vehicle's replacement cost, leaving $5,774.

The third and final step is to use an annuity table to determine how much money needs to be invested each year into an interest bearing account in order to have the $5,774 at the end of the five year period. Referring to the portion of a future value of annuity table in Table 3.1, we see that the number which corresponds to both a 5% interest rate and a 5 year life expectancy is 5.526. The yearly lease is calculated by dividing the replacement monies needed ($5,774) by 5.526, for a total yearly charge of $1,045, payable five times. At the end of the 5 year period, the yearly user charges plus the interest earned, together provide enough money to purchase a replacement vehicle.

Table 3.2 compares the financing methods currently used by Utah County, the State of Utah, and Provo City to purchase replacement vehicles. For illustrative purposes, Table 3.2 makes the following three assumptions: (1) the price of a new vehicle increases 5% yearly; (2) the interest available for savings is 5%; and (3) the salvage value of an old vehicle is 5% of the replacement vehicle's cost. (For additional examples, please refer to Appendix I.)

Table 3.2

Comparison of Three
Replacement Methods

Vehicle Statistics			
Original Cost:	$10,500	Salvage Value:	$ 670
Life:	6 years	Money Needed for Replacement:	$12,731
Interest Rate:	5%		
Replacement Cost:	$13,401		

	County Method	Inflat. Factor	Annuity Tables
Yearly lease for 6 years:	$ 1,750	$ 2,122	$ 1,872
Total Accrued at end of 6 years:	10,500	12,731	11,232
Replacement Money Needed:	12,731	12,731	12,731
Money Needed from other Sources:	**1,829**	**0**	**0**
Total Money Paid Out by County:	**$12,731**	**$12,731**	**$11,232**

Table 3.2 shows how the utilization of annuity tables to levy user charges could save the County about $1,500 on a similarly priced vehicle. If even ten vehicles similar to the one cited in Table 3.2 were financed using this process, the County could reduce capital outlay by nearly $15,000. The potential benefits associated with the use of annuity tables become even more impressive when realizing that Utah County is continually purchasing new vehicles.

RECOMMENDATION

1. We recommend that under the direction of the Utah County Board of County Commissioners, the Utah County Motor Pool adopt a replacement policy that uses either an inflationary factor or a future value of annuity table to finance replacement vehicles.

CHAPTER IV

VEHICLE REPLACEMENT GUIDELINES ARE NEEDED

In addition to a financial formula that fully recoups future vehicle replacement costs, Utah County needs a comprehensive replacement policy specifying when vehicles should be replaced. A replacement policy ensures that vehicles are disposed of at an appropriate time and that vehicles with high maintenance costs are identified and replaced.

The first of the following two sections examines the replacement policies of 6 other motor pools. The second section describes a computer generated tool that will help the fleet manager identify vehicles with high maintenance costs. Using this information, vehicles with high expenses can be identified and either reassigned or replaced.

Effective Replacement Policies Reduce Costly Maintenance

According to fleet management literature, an organization that has a motor pool should have a detailed replacement policy specifying mileage, time, or any other factors which govern vehicle replacement. Such policies help fleet managers identify vehicles with high maintenance costs so that appropriate actions can be taken. Fleet management literature points out, however, that a replacement policy is a guideline and should not be interpreted as meaning that all vehicles will be replaced only when they meet the replacement criteria.

An effective replacement policy makes certain that each vehicle is evaluated periodically to ensure that maintenance costs are acceptable. Some vehicles with high maintenance costs may need to be replaced earlier than specified by the replacement guidelines. Other vehicles with lower maintenance costs, however, may be kept beyond the recommended time frame or mileage limits. Nevertheless, the majority of the vehicles should be disposed of within the time frame specified in the replacement policy.

In order to identify a reasonable replacement policy, we contacted six organizations and reviewed fleet management literature. We found that no standard replacement policy exists. Rather, each organization has developed its own replacement policy to meet its specific needs. Table 4.1 lists the replacement policies of the six organizations contacted.

TABLE 4.1

Replacement Policies of
Six Fleet Management Organizations

Organization		Replacement Policy
Organization A		3 years/50,000 miles
Organization B		5 years/80,000 miles
Organization C		7 years/70,000 miles
Organization D		4 years/70,000 miles
Organization E		5 years/60,000 miles
Organization F		
	Heavy Use [1]	3 years
	Medium Use [2]	8 years

1 Heavy use vehicles are those vehicles which exceed 25,000 miles per year.

2 Medium use vehicles are those vehicles which average 7,500 miles per year.

As Table 4.1 illustrates, each organization contacted has a vehicle replacement guideline tailored to meet its specific needs. Since Utah County's vehicles are used in a variety of ways by the various departments, a flexible vehicle replacement program is recommended. Furthermore, a flexible guideline allows the fleet manager to exercise his expertise.

RECOMMENDATION

1. We recommend that the Board of County Commissioners and the fleet manager establish a detailed replacement policy specifying mileage, time, or any other factors which impact vehicle replacement needs. The policy should be flexible and allow the fleet manager to exercise his expertise in determining when individual vehicles need to be replaced.

A Cost per Mile Expense Report Can Help Identify Expensive Vehicles

As mentioned, a replacement policy establishes a general guideline for vehicle turnover. However, other vehicles may need to be replaced regardless of guideline criteria because of high maintenance costs. To help identify those vehicles with high maintenance costs, a cost per mile operating expense report is needed.

A maintenance expense report is presently available to the fleet manager for each vehicle in the Motor Pool. However, this report makes no correlation between maintenance costs and the number of miles driven. The importance of having operating expenses expressed in a cost per mile format is emphasized by the National Association of Fleet Administrators. In their publication, The Fleet Manager's Manual, they state that operating expenses should be expressed in a cost per mile format so a meaningful relationship between miles and maintenance costs exists. Such a report can easily be generated by the County's computer system.

To illustrate the advantage of having a cost per mile operating expense report, let's compare the operating expenses of two of the Motor Pool's current passenger vehicles. During 1986, Vehicle A had a maintenance cost of $1,436 while Vehicle B had a maintenance cost of $668. At this point, it appears that Vehicle B is less expensive to maintain than Vehicle A. In reality, however, Vehicle A was driven 20,327 miles for a maintenance cost of 7 cents per mile while Vehicle B was driven 3,878 miles for a maintenance cost of 17 cents per mile. (Refer to Appendix II for a cost per mile breakdown of the vehicles in the County's fleet during 1986.)

A cost per mile expense report can also be used to identify a vehicle's maintenance cost over an extended period of time. By comparing a vehicle's per mile maintenance cost for a number of years, progressively expensive vehicles can be identified. Appendix III lists a randomly selected number of Utah County's passenger vehicles and shows each vehicle's operating expenses for the past five years. This type of information enables the fleet manager to identify vehicles with progressively high maintenance costs so he can either dispose of them or reassign them.

RECOMMENDATION

1. We recommend that the fleet manager use an operating expense report based upon costs per mile to identify high-expense vehicles.

CHAPTER V

UTILIZATION RATES HELP IDENTIFY WHETHER VEHICLES ARE NEEDED

In addition to developing vehicle replacement guidelines, Utah County needs to establish an utilization rate to help identify whether all passenger vehicles in the Motor Pool are needed. Utilization rates project the number of miles that a vehicle should be driven each month to ensure that the County is not maintaining more vehicles than necessary. Specifically, an utilization rate enables the fleet manager to determine whether vehicles are being used adequately or whether some vehicles need to be reassigned or sold. Ultimately, utilization rates help the manager maximize the County's fleet investment. Without an established utilization rate, the County may be maintaining more vehicles than are needed.

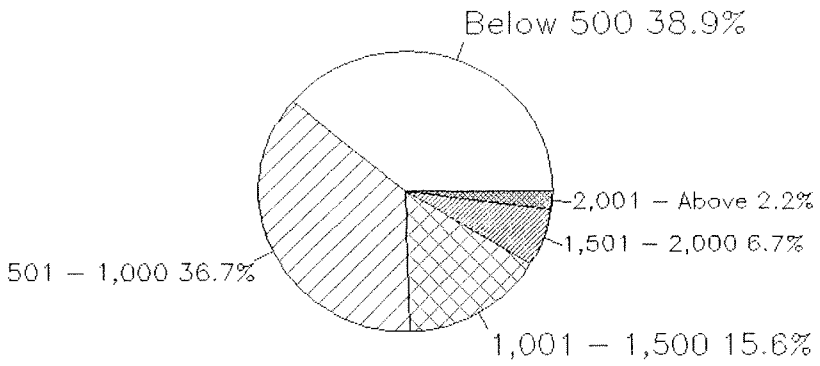
Since no two organizations are exactly alike, utilization rates should be tailored to meet specific fleet management needs. An organization that has sales people on the road, for example, will likely have an higher utilization rate than a governmental unit whose work is done in a smaller geographical area. Although the first organization's utilization rate may be higher than the second organization's utilization rate, vehicles in both organizations can be equally well utilized.

Despite the absence of a standard utilization rate, we used a rate established by the American Public Works Association (APWA) for motor pool vehicles to determine how many of Utah County's passenger vehicles were properly utilized. We feel that the utilization rate established by the APWA best reflects Utah County's fleet management needs: (1) because it is specifically designed for government motor pool vehicles; and (2) because it is the most conservative utilization rate we found. According to the APWA, passenger vehicles should be driven a minimum average of 500 miles per month.

Using this standard, 34 of the 89 passenger vehicles in Utah County's fleet were underutilized during 1986. The remaining 55 vehicles met or exceeded the standard. Graph 5.1 illustrates the County's 1986 utilization rates for its passenger vehicles. The vehicles are grouped in 500 mile increments. (Appendix IV lists the 1986 utilization statistics for each of Utah County's passenger vehicles.)

Graph 5.1

Utilization of
Passenger Vehicles
(in miles)



Although nearly 39 per cent of the passenger vehicles were underutilized, a number of the vehicles have specialized functions that do not require extensive road travel. Ten of the underutilized vehicles are assigned to a department that conducts most of its work during the summer months and does not travel extensively. During the audit, an additional twelve of the underutilized vehicles were sold.

Table 5.1 on the following page identifies those vehicles that were underutilized, according to the APWA standard. Included in the table is a brief description of the specialized functions performed by some of the vehicles. The remaining vehicles are those that did not meet the APWA's standard and do not perform specialized functions. Utah County's fleet manager and the Board of County Commissioners should together determine whether these vehicles are needed.

RECOMMENDATIONS

1. We recommend that Utah County's fleet manager establish an utilization rate to ensure that the County is not maintaining more vehicles than necessary.

2. Once an utilization rate is established, we recommend that Utah County's fleet manager and the Board of County Commissioners determine whether those vehicles that do not meet the standard should be sold.

Table 5.1

Vehicles Underutilized During 1986

Vehicle #	Description	Mileage-86	Monthly Utilization	Specialized Function
700476	'85 Plymouth	5700	475.00	
700419	'84 Dodge PU	5581	465.08	Mosquito Abatement
700495	'86 Dodge PU	3604	450.50	New Vehicle - 8 months service
700163	'80 Chev PU	5401	450.08	(Sold June, 1987)
700468	'85 Chev PU	5123	426.92	
700335	'82 Ford Sedan	5079	423.25	(Sold June, 1987)
700317	'77 Chev PU	5000	416.67	Mosquito Abatement
700177	'77 Ford PU	3229	403.63	Sold 1986 - 8 months service
700315	'76 Chev PU	4841	403.42	(Sold June 1987)
700165	'80 2 Door Sedan	4813	401.08	(Sold June 1987)
700469	'85 Chev PU	4799	399.92	
700346	'83 Dodge PU	4703	391.92	Mosquito Abatement
700002	'81 Chev Sedan	4697	391.42	Sold 1986 - 8 months service
700319	'76 Chev PU	4459	371.58	Mosquito Abatement
700190	'80 Chev Sedan	4149	345.75	
700200	'79 Chev	3892	324.33	(Sold June 1987)
700144	'80 PU	3881	323.42	
700348	'83 Dodge PU	3878	323.17	
700347	'83 Dodge PU	3593	299.42	Mosquito Abatement
700187	'77 Ford Courier	3255	271.25	(Sold June 1987)
700158	'78 GMC PU	3156	263.00	(Sold June 1987)
700012	'73 Ford Van	3118	259.83	Road Crew Transportation
700189	'78 Ford PU	2917	243.08	Service Tire Truck
700222	'81 Chev. Impala	2860	238.33	Sold 1986 - 8 months service
700312	'75 Chev PU	2768	230.67	Mosquito Abatement (Sold June 1987)
700074	'67 Chev PU	2468	205.67	Road Sweep Broom Attached (Sold June 1987)
700226	'68 Chev PU	2410	200.83	Weed Sprayer Attached
700324	'80 Chev PU	2352	196.00	
700314	'76 Chev PU	1889	157.42	Mosquito Abatement (Sold June 1987)
700306	'73 Chev PU	1694	141.17	(Sold June 1987)
700345	'83 Dodge PU	1261	105.08	Weed Sprayer Attached
700062	'67 Chev PU	1181	98.42	Road Sweeping Broom Attached (Sold June 1987)
700320	'77 Chev PU	1154	96.17	Mosquito Abatement
700325	'80 Chev PU	861	71.75	Mosquito Abatement

CHAPTER VI

PAST AUDIT RECOMMENDATIONS STILL NEED TO BE IMPLEMENTED

In December of 1979, the Utah County Auditor's Office issued a report recommending the use of a computerized, perpetual inventory system for all fuels and supplies used by what was then called the Utah County Highway Department. According to the report, a computerized, perpetual inventory system constantly monitors usage, reduces inventory carrying costs, controls loss and inhibits theft. In accordance with this report, the County Motor Pool now has a fuel station that monitors fuel usage on a continual, or perpetual basis. However, a perpetual inventory system is still needed to monitor the $170,000 annual parts and supply inventory.

Currently, a periodic inventory tracking system is used to account for parts and supplies used by the Motor Pool. Basically, a periodic inventory system simply requires an annual count of all parts and supplies on hand. Such inventory practices, however, do not identify when items are used so inventory carrying cost can be determined and economic order quantities can be established.

A computerized perpetual inventory system should also increase overall security and control by constantly monitoring inventory usage. Without a proper inventory tracking system, inventory items can be misplaced, lost or stolen and not be identified unless workers happen to notice that they are gone.

We have no evidence to suggest that items are being taken from the parts and supply inventory. However, access to the inventory supply area is open to all personnel and without needed controls, the risk certainly exists. In fact, given the Motor Pool's lack of inventory controls in the parts and supply area, the County may wish to review inventory control practices in all areas of County Government.

RECOMMENDATIONS

1. We recommend that a computerized, perpetual inventory system be established to provide more control over inventory items.

2. If possible, we recommend that the current parts and supply inventory be confined to a more secure area.

3. We recommend that an audit be conducted to examine the inventory control practices in all areas of County Government.

APPENDIX I

Three Examples Comparing Three Financing Methods.

EXAMPLE 1

Original Cost:	$6,000	
Life:	5 years	
Interest Rate:	5%	
Replacement Cost:	$7,293	(5% yearly increase)
Salvage Value:	$ 365	(5% of replacement cost)
Money Needed for Replacement:	$6,928	

Method Used by County:

Yearly payment for 5 years:	$1,200
Total Accrued at end of 5 years:	$6,000
Replacement Money Needed:	$6,928
Difference:	$ 928

Total Money Paid Out by County: $6,928

Method Using Inflationary Factor:

Yearly payment for 5 years:	$1,386
Total accrued at end of 5 years:	$6,928
Replacement Money Needed:	$6,928
Difference:	$ -0-

Total Money Paid Out by County: $6,928

Method Using Annuity Tables:

Yearly Payment for 5 years:	$1,254
Total accrued at end of 5 years:	$6,270
Interest Earned:	$ 658
Replacement Money Needed:	$6,928
Difference:	$ -0-

Total Money Paid Out by County: $6,270

EXAMPLE TWO

Original Cost:	$8,000	
Life:	7 years	
Interest Rate:	5%	
Replacement Cost:	$10,721	(5% yearly increase)
Salvage Value:	$ 536	(5% of replacement cost)
Money Needed for Replacement:	$10,185	

Method Used by County:

Yearly payment for 7 years:	$ 1,143
Total Accrued at end of 7 years:	$ 8,000
Replacement Money Needed:	$10,185
Difference:	$ 2,185

Total Money Paid Out by County: $10,185

Method of Using Inflationary Factor:

Yearly payment for 7 years:	$ 1,455
Total accrued at end of 7 years:	$10,185
Replacement Money Needed:	$10,185
Difference:	$ -0-

Total Money Paid Out by County: $10,185

Method Using Annuity Tables:

Yearly Payment for 7 years:	$ 1,251
Total accrued at end of 7 years:	$ 8,757
Interest Earned:	$ 1,428
Replacement Money Needed:	$10,185
Difference:	$ -0-

Total Money Paid Out by County: $8,757

EXAMPLE THREE

Original Cost:	$8,500	
Life:	3 years	
Interest Rate:	5%	
Replacement Cost:	$ 9,371	(5% yearly increase)
Salvage Value:	$ 469	(5% of replacement cost)
Money Needed for Replacement:	$ 8,902	

Method Used by County:

Yearly payment for 3 years:	$2,883
Total Accrued at end of 3 years:	$8,500
Replacement Money Needed:	$8,902
Difference:	$ 402

Total Money Paid Out by County: $8,902

Method of Using Inflationary Factor:

Yearly payment for 3 years:	$2,967
Total accrued at end of 3 years:	$8,902
Replacement Money Needed:	$8,902
Difference:	$ -0-

Total Money Paid Out by County: $8,902

Method Using Annuity Tables:

Yearly Payment for 3 years:	$2,823
Total accrued at end of 3 years:	$8,469
Interest Earned:	$ 433
Replacement Money Needed:	$8,902
Difference:	$ -0-

Total Money Paid Out by County: $8,469

APPENDIX II

1986 Cost per mile statistics for passenger vehicles.

Vehicle #	Description	1986 Mileage	'86 Maint. Cost	Cost per mile
700345	'83 Dodge PU	1261	$583.20	$0.46
700144	'80 PU	3881	$1021.05	$0.26
700074	'67 Chev PU	2468	$618.47	$0.25
700012	'73 Ford Van	3118	$729.16	$0.23
700246	'81 GMC Flatbed	6611	$1331.05	$0.20
700348	'83 Dodge PU	3878	$668.03	$0.17
700189	'78 Ford PU	2917	$490.68	$0.17
700347	'83 Dodge PU	3593	$591.95	$0.16
700325	'80 Chev PU	861	$123.23	$0.14
700320	'77 Chev PU	1154	$154.44	$0.13
700343	'83 Dodge PU	6657	$881.57	$0.13
700062	'67 Chev PU	1181	$139.23	$0.12
700007	'79 Chev	9180	$1079.64	$0.12
700476	'85 Plymouth	5700	$644.64	$0.11
700314	'76 Chev PU	1889	$187.60	$0.10
700346	'83 Dodge PU	4703	$434.19	$0.09
700420	'84 Dodge PU	7108	$627.88	$0.09
700306	'73 Chev PU	1694	$147.84	$0.09
700468	'85 Chev PU	5123	$425.76	$0.08
700174	'80 Chev PU	8951	$738.81	$0.08
700328	'78 Chev PU	8469	$682.28	$0.08
700215	'81 Chev PU	14621	$1162.86	$0.08
700431	'84 Dodge Ram	7930	$629.92	$0.08
700016	'76 Ford PU	11122	$869.74	$0.08
700218	'81 Chev PU	10015	$766.10	$0.08
700236	'83 Concord	7151	$529.76	$0.07
700217	'81 Chev PU	9429	$684.94	$0.07
700221	'81 Chev Impala	9758	$697.69	$0.07
700419	'84 Dodge PU	5581	$398.12	$0.07
700200	'79 Chev	3892	$275.46	$0.07
700429	'84 Dodge Ram	20327	$1436.20	$0.07
700428	'84 Dodge Ram	18175	$1178.59	$0.06
700349	'83 Dodge PU	6291	$405.74	$0.06
700342	'83 Dodge PU	10158	$616.76	$0.06
700234	'83 Concord	13846	$817.64	$0.06
700187	'77 Ford Courier	3255	$188.57	$0.06
700232	'83 Ford PU	9991	$548.62	$0.05
700317	'77 Chev PU	5000	$270.92	$0.05
700414	'84 Dodge Ram	12309	$653.09	$0.05
700430	'84 Dodge Ram	23704	$1254.48	$0.05
700177	'77 Ford PU	3229	$169.35	$0.05
700432	'84 Dodge Ram	12476	$624.73	$0.05
700437	'84 Ford PU	13324	$646.85	$0.05

Vehicle #	Description	1986 Mileage	'86 Maint. Cost	Cost per mile
700118	'80 Chev PU	13808	$661.19	$0.05
700481	'85 Ford Van	8570	$395.27	$0.05
700213	'81 Chev PU	17782	$786.72	$0.04
700190	'80 Chev Sedan	4149	$181.78	$0.04
700423	'84 Dodge Ram	10432	$455.21	$0.04
700416	'84 Dodge	10500	$454.04	$0.04
700165	'80 2 Door Sedan	4813	$203.00	$0.04
700344	'83 Dodge PU	8000	$334.66	$0.04
700335	'82 Ford Sedan	5079	$207.67	$0.04
700470	'85 Chev	11644	$438.97	$0.04
700480	'85 Ford PU	25157	$890.73	$0.04
700214	'81 Chev PU	12258	$429.37	$0.04
700220	'81 Chev	19233	$654.57	$0.03
700436	'84 Chev	8979	$293.71	$0.03
700240	'83 Bronco	13825	$445.52	$0.03
700417	'84 Dodge Ram	10000	$310.45	$0.03
700418	'84 Dodge	12316	$355.28	$0.03
700612	'86 Chev PU	8424	$241.96	$0.03
700467	'85 Ford Van	9577	$257.39	$0.03
700229	'83 Ford PU	21458	$575.51	$0.03
700415	'84 Dodge Ram	12458	$327.53	$0.03
700222	'81 Chev. Impala	2860	$74.56	$0.03
700315	'76 Chev PU	4841	$118.82	$0.02
700324	'80 Chev PU	2352	$56.46	$0.02
700453	'85 Plymouth	13469	$320.92	$0.02
700469	'85 Chev PU	4799	$110.38	$0.02
700421	'84 Dodge Ram	6020	$134.64	$0.02
700226	'68 Chev PU	2410	$50.40	$0.02
700495	'86 Dodge PU	3604	$67.64	$0.02
700454	'85 Plymouth Reliant	7402	$123.02	$0.02
700494	'86 Dodge Ram	7382	$121.57	$0.02
700459	'85 Dodge Ram	9251	$147.98	$0.02
700613	'86 Chev PU	14656	$223.75	$0.02
700497	'86 Bronco	11663	$177.19	$0.02
700493	'86 Dodge Ram	5163	$74.02	$0.01
700455	'85 Plymouth Reliant	7370	$101.66	$0.01
700312	'75 Chev PU	2768	$36.00	$0.01
700319	'76 Chev PU	4459	$54.75	$0.01
700188	'79 GMC PU	8880	$105.95	$0.01
700422	'84 Dodge Ram	6770	$79.78	$0.01
700163	'80 Chev PU	5401	$59.53	$0.01
700318	'77 Chev PU	11068	$121.70	$0.01
700496	'86 Chev PU	19224	$85.72	$0.00

APPENDIX III

Randomly selected passenger vehicles and their 5 year maintenance costs.

Vehicle #	Description	1982 $ per mile	1983 $ per mile	1984 $ per mile	1985 $ per mile	1986 $ per mile
700493	'86 Dodge Ram					$0.01
700495	'86 Dodge PU					$0.02
700612	'86 Chev PU					$0.03
700496	'86 Chev PU					$0.00
700497	'86 Bronco					$0.02
700454	'85 Plymouth Reliant				$0.01	$0.02
700467	'85 Ford Van				$0.02	$0.03
700481	'85 Ford Van				$0.01	$0.05
700468	'85 Chev PU				$0.01	$0.08
700469	'85 Chev PU				$0.01	$0.02
700437	'84 Ford PU			$0.00	$0.02	$0.05
700414	'84 Dodge Ram			$0.01	$0.04	$0.05
700430	'84 Dodge Ram			$0.04	$0.03	$0.05
700419	'84 Dodge PU			$0.01	$0.01	$0.07
700229	'83 Ford PU		$0.01	$0.01	$0.02	$0.03
700345	'83 Dodge PU		$0.09	$0.18	$0.41	$0.46
700342	'83 Dodge PU		$0.01	$0.02	$0.05	$0.06
700240	'83 Bronco		$0.01	$0.03	$0.02	$0.03
700335	'82 Ford Sedan	$0.02	$0.01	$0.15	$0.05	$0.04
700222	'81 Chev. Impala	$0.02	$0.02	$0.04	$0.02	$0.03
700213	'81 Chev PU	$0.03	$0.03	$0.04	$0.28	$0.04
700218	'81 Chev PU	$0.03	$0.04	$0.03	$0.12	$0.08
700220	'81 Chev	$0.02	$0.02	$0.05	$0.03	$0.03
700118	'80 Chev PU	$0.01	$0.04	$0.10	$0.11	$0.05
700174	'80 Chev PU	$0.05	$0.07	$0.11	$0.05	$0.08
700325	'80 Chev PU	$0.02	$0.01	$0.05	$0.06	$0.14
700165	'80 2 Door Sedan	$0.02	$0.04	$0.03	$0.07	$0.04
700188	'79 GMC PU	$0.02	$0.04	$0.08	$0.03	$0.01
700007	'79 Chev	$0.01	$0.06	$0.07	$0.07	$0.12
700200	'79 Chev	$0.01	$0.02	$0.04	$0.05	$0.07
700189	'78 Ford PU	$0.01	$0.10	$0.19	$0.06	$0.17
700328	'78 Chev PU	$0.03	$0.06	$0.03	$0.21	$0.08
700187	'77 Ford Courier	$0.03	$0.03	$0.21	$0.08	$0.06
700320	'77 Chev PU	$0.07	$0.03	$0.01	$0.03	$0.13
700317	'77 Chev PU	$0.02	$0.01	$0.03	$0.02	$0.05
700315	'76 Chev PU	$0.10	$0.00	$0.02	$0.05	$0.02
700319	'76 Chev PU	$0.02	$0.02	$0.12	$0.02	$0.01
700312	'75 Chev PU	$0.03	$0.03	$0.05	$0.02	$0.01
700012	'73 Ford Van	$0.11	$0.07	$0.03	$0.13	$0.23
700306	'73 Chev PU	$0.10	$0.02	$0.06	$0.04	$0.09
700226	'68 Chev PU	$0.02	$0.12	$0.04	$0.39	$0.02
700074	'67 Chev PU	$0.37	$0.09	$0.19	$0.21	$0.25
700062	'67 Chev PU	$0.03	$0.27	$0.14	$1.66	$0.12

APPENDIX IV

Utilization of passenger vehicles during 1986.

Vehicle #	Description	Mileage-86	Monthly Utilization
700496	'86 Chev PU	19224	2746.29
700480	'85 Ford PU	25157	2096.42
700430	'84 Dodge Ram	23704	1975.33
700229	'83 Ford PU	21458	1788.17
700429	'84 Dodge Ram	20327	1693.92
700497	'86 Bronco	11663	1666.14
700220	'81 Chev	19233	1602.75
700428	'84 Dodge Ram	18175	1514.58
700213	'81 Chev PU	17782	1481.83
700411	'84 Chev 4 door	14995	1249.58
700613	'86 Chev PU	14656	1221.33
700215	'81 Chev PU	14621	1218.42
700234	'83 Concord	13846	1153.83
700240	'83 Bronco	13825	1152.08
700118	'80 Chev PU	13808	1150.67
700453	'85 Plymouth	13469	1122.42
700437	'84 Ford PU	13324	1110.33
700432	'84 Dodge Ram	12476	1039.67
700415	'84 Dodge Ram	12458	1038.17
700418	'84 Dodge	12316	1026.33
700414	'84 Dodge Ram	12309	1025.75
700214	'81 Chev PU	12258	1021.50
700470	'85 Chev	11644	970.33
700016	'76 Ford PU	11122	926.83
700494	'86 Dodge Ram	7382	922.75
700416	'84 Dodge	10500	875.00
700423	'84 Dodge Ram	10432	869.33
700342	'83 Dodge PU	10158	846.50
700218	'81 Chev PU	10015	834.58
700417	'84 Dodge Ram	10000	833.33
700232	'83 Ford PU	9991	832.58
700221	'81 Chev Impala	9758	813.17
700467	'85 Ford Van	9577	798.08
700217	'81 Chev PU	9429	785.75
700459	'85 Dodge Ram	9251	770.92
700007	'79 Chev	9180	765.00
700436	'84 Chev	8979	748.25
700174	'80 Chev PU	8951	745.92
700188	'79 GMC PU	8880	740.00
700481	'85 Ford Van	8570	714.17
700328	'78 Chev PU	8469	705.75
700612	'86 Chev PU	8424	702.00
700344	'83 Dodge PU	8000	666.67
700431	'84 Dodge Ram	7930	660.83
700493	'86 Dodge Ram	5163	645.38
700454	'85 Plymouth Reliant	7402	616.83
700455	'85 Plymouth Reliant	7370	614.17
700236	'83 Concord	7151	595.92
700420	'84 Dodge PU	7108	592.33
700422	'84 Dodge Ram	6770	564.17
700318	'77 Chev PU	6694	557.83
700343	'83 Dodge PU	6657	554.75
700349	'83 Dodge PU	6291	524.25
700421	'84 Dodge Ram	6020	501.67
700476	'85 Plymouth	5700	475.00
700419	'84 Dodge PU	5581	465.08
700495	'86 Dodge PU	3604	450.50
700163	'80 Chev PU	5401	450.08
700468	'85 Chev PU	5123	426.92
700335	'82 Ford Sedan	5079	423.25
700317	'77 Chev PU	5000	416.67
700177	'77 Ford PU	3229	403.63
700315	'76 Chev PU	4841	403.42
700165	'80 2 Door Sedan	4813	401.08
700469	'85 Chev PU	4799	399.92
700346	'83 Dodge PU	4703	391.92
700002	'81 Chev Sedan	4697	391.42
700319	'76 Chev PU	4459	371.58
700190	'80 Chev Sedan	4149	345.75
700200	'79 Chev	3892	324.33
700144	'80 PU	3881	323.42
700348	'83 Dodge PU	3878	323.17
700347	'83 Dodge PU	3593	299.42
700187	'77 Ford Courier	3255	271.25
700158	'78 GMC PU	3156	263.00
700012	'73 Ford Van	3118	259.83
700189	'78 Ford PU	2917	243.08
700222	'81 Chev. Impala	2860	238.33
700312	'75 Chev PU	2768	230.67
700074	'67 Chev PU	2468	205.67
700226	'68 Chev PU	2410	200.83
700324	'80 Chev PU	2352	196.00
700314	'76 Chev PU	1889	157.42
700306	'73 Chev PU	1694	141.17
700345	'83 Dodge PU	1261	105.08
700062	'67 Chev PU	1181	98.42
700320	'77 Chev PU	1154	96.17
700325	'80 Chev PU	861	71.75

As a courtesy to the auditee, it is the policy of the Utah County Internal Audit Division to include, without edit, a response from the auditee on the issues raised in the audit report. The auditee's response is reproduced without edit on the following pages.

RESPONSE TO AUDIT

UTAH COUNTY MOTOR POOL

Submitted by

T. Jack Phillips
Motor Pool Director

August 20, 1987

INTRODUCTION

I am pleased with the audit of the Utah County Motor Pool, and it has been a pleasure working with Marvin Higbee and Lynn McCrary. They have done a lot of work and have made helpful suggestions to upgrade the Motor Pool. I have not commented on the entire report, only where an explanation is needed by the Motor Pool.

COMMENTS

Chapter III - Improved Vehicle Financing Can Reduce Capital Outlay

We presently use straight line depreciation. I agree we need to change, and I feel straight line with an inflation factor built in would be the best for the Motor Pool.

Chapter IV - Vehicle Replacement Guidelines are Needed

A policy is in place where the vehicle has a mileage or year service replacement. We have a cumulative vehicle cost report that shows cost per mile and a vehicle evaluation report showing total costs.

Chapter V - Utilization Rates Help Identify whether Vehicles are Needed

Utilization for the County needs to be considered by department usage and needs. We are getting good utilization out of the vehicles for the areas they are used in.

Out of the 34 vehicles cited in the Audit Report:

15 were sold in June, 1987
1 was used only eight months
9 mosquito (6 month usage at the most)
2 weed spraying (6 month usage at the most)
1 Road Department transport
1 Animal Control
1 Youth Detention
2 Property Management
1 Planning
1 Road Department tire truck

Chapter VI - Past Audit Recommendations Still Need to be Implemented

I feel that with some help to get our inventory and fueling system into the computer system we would have excellent control and save many man-hours.