

Cost/Benefit Analysis

Personal Patrol Car Program



**BALTIMORE COUNTY, MARYLAND
COST/BENEFIT ANALYSIS: PERSONAL PATROL CAR PROGRAM**

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EXECUTIVE SUMMARY

At the request of the Baltimore County Council, the Office of the County Auditor conducted a cost-benefit analysis of a personal patrol car program (a program that would allow Baltimore County police officers to use their patrol cars for commuting and other personal purposes). As requested, our analysis limits the program benefit to officers residing in Baltimore County, and alternatively to officers residing in Community Conservation Areas within Baltimore County.

The potential benefits of a personal patrol car program are numerous but difficult to quantify monetarily. For example, how does one measure the savings resulting from a crime that was contemplated but not committed, or the dollar benefit of a sense of heightened security for citizens, because of increased police visibility? Nevertheless, it is important to identify these benefits, against which the costs of implementing such a program may be weighed.

Our analysis identified the following potential benefits associated with implementing a personal patrol car program:

- Deterrence of Crime;
- Increased Security for County Residents and Visitors;
- Improved Community Relations;
- Residence Incentive;
- Extended Useful Life of Vehicles;
- Lower Per-Mile Vehicle Costs;
- Enhanced Safety for Officers;
- Increased Patrol Time;
- Improved Emergency Response;
- Reduced Facility Costs;
- Improved Morale;
- Recruitment and Retention Incentive; and
- Mileage Reimbursement Savings.

Each of these benefits is detailed in the body of this report.

Implementing a personal patrol car program is not without significant costs. We have identified two major types of costs: initial outlay or start-up costs, and increased annual or ongoing costs.

Initial outlay costs necessary at the onset of the program would be incurred for the purchase of additional cars and equipment. Depending on the size of the fleet, other capital costs may be incurred to construct additional garage facilities and/or to upgrade the County's 800 MHz communication system to accommodate a larger fleet. Based on our analysis, initial outlay costs for implementing a personal patrol car program would total approximately \$7.1 million for the Baltimore County study area, and \$4.5 million for the Community Conservation study area. These costs could be phased-in over multiple fiscal years. For example, if the costs were phased-in over three fiscal years, the annual cost would be \$2.4 million and \$1.5 million, respectively. Further, after considering the size of the County's current fleet and the fleet augmentation that would be necessary to implement such a program in the Baltimore County or Community Conservation study areas, we conclude that additional garage facilities or upgrades to the 800 MHz communication system would not be required.

In addition to initial start-up costs, the program would require increased annual costs for fuel, maintenance, repairs, insurance, replacement vehicles and equipment, equipment installation and removal, and officer overtime. We also considered the cost of providing a compensatory benefit to officers ineligible for personal cars due to a non-patrol assignment (officers residing in the study area but who are not assigned to post patrol duties). The associated increase in annual expenditures is estimated to be \$3.6 million for the Baltimore County study area, and \$2.3 million for the Community Conservation study area, of which \$2.3 million and \$1.4 million, respectively, are earmarked to provide an annual compensatory benefit of \$3,500 per officer to

all sworn officers who reside in the study area but are ineligible for a personal patrol car due to a non-patrol assignment.

In addition to the benefits and costs identified above, our analysis identified a number of other policy and implementation issues, which are detailed in our report. Further, our analysis is based on a number of assumptions, which can be modified to provide different implementation scenarios, affecting program effectiveness and costs. For example, personal patrol cars could be limited to officers residing in designated “hot spots” within the County. Limiting the program in this way would lower the associated start-up and annual costs, while at the same time reducing the countywide effectiveness of such a program.

Finally, as previously stated, the purpose of our analysis is to evaluate the costs and benefits associated with a personal patrol car program. Our analysis is premised on the belief that such a program is primarily a benefits/salary enhancement for County police officers with a secondary crime-deterrent benefit for our citizenry. We recognize that there are other crime-fighting initiatives that could be more effective in deterring crime, such as increasing the number of patrol posts. However, benefits/salary enhancement is critical to the County’s effort at remaining competitive with other law enforcement agencies in order to recruit and retain qualified officers. Allocating resources to other crime-fighting initiatives, such as increasing the number of patrol posts, for example, at the expense of benefits/salary enhancement may prove to be ineffective and only succeed in raising the vacancy rate within the Police Department. A personal patrol car program is one police benefits/salary enhancement option, which yields additional benefits of providing increased police visibility, security to County citizens and visitors, and other benefits enumerated in the body of our report. Thus, a personal patrol car program should not be considered as an alternative to other crime-fighting initiatives or vice versa.

INTRODUCTION

In 1995, Baltimore County considered implementing a Police Vehicle Saturation Program, a program allowing police officers to take home patrol cars, but concluded that fiscal restraints precluded implementation, even on a pilot or phase-in basis, at that time. Unlike Baltimore County, most other jurisdictions in the Baltimore metropolitan region have adopted a personal patrol car policy for their police officers. Recognizing that public safety is a critically important issue, the Baltimore County Council recently directed the Office of the County Auditor to analyze the costs and benefits of adopting a personal patrol car policy¹ for Baltimore County police officers. The Council posits that by allowing Baltimore County police officers to use patrol cars for commuting and other personal purposes, the County may achieve its objective of enhancing the police benefits/salary package in order to remain competitive with other jurisdictions, while at the same time significantly enhancing public safety. The Council recognizes, however, that substantial costs may be associated with implementing a personal patrol car policy. Therefore, this study seeks to identify the potential benefits of a personal patrol car policy,² as well as the costs and other issues associated with implementing such a policy.

¹ Some people distinguish between a take-home patrol car program, which allows officers limited use of their patrol cars for commuting purposes only, and a personal patrol car program, which allows officers more broad use of their patrol cars for a range of department-approved personal purposes.

² The personal patrol car program we analyze would allow officers who reside in the target area and have a post assignment (i.e., those who regularly respond to calls for service) to receive a personal car benefit, and officers who reside in the target area but have a non-post assignment to receive a compensatory monetary benefit. Thus, throughout this analysis, when we refer to “patrol cars”, we are precisely referring to post cars (as opposed to police cars dedicated to purposes other than post patrol).

BENEFITS

There are numerous potential benefits associated with establishing a personal patrol car program for Baltimore County police officers. Many are related to the increased police visibility that would result from expanding the current patrol fleet in order to provide officers with personal cars. Others are related to improved departmental efficiencies and economies, a new sense of familiarity and ownership an officer would gain toward his or her car, and the financial value of a personal patrol car to its driver. Most benefits are difficult to quantify in the absence of intensive, long-term study, which is beyond the scope of this analysis. Although many of these benefits are not quantified in our cost analysis, it is nevertheless important to identify them, against which estimated costs may be weighed.

Deterrence of Crime

Perhaps the most obvious potential benefit of a personal patrol car policy is the deterrence of crime (including traffic violations) that could result from increased police visibility. *Ceteris paribus*³, a criminal would be less likely to commit a crime in the presence of a patrol car than in the absence of one.⁴ An obvious example is the reaction of most motorists when they become aware of the presence of a patrol car to drive the posted speed limit, come to a complete stop at a stop sign, or obey traffic signals. It is also likely that criminals contemplating other types of crime, e.g., robbery, would be similarly deterred.

³Literal translation: "all else being equal." This condition allows one to analyze the relationship between two variables while the values of other variables are held unchanged.

⁴However, some might note that while an individual patrol car might deter a crime from being committed in a specific locale, it may just "bump" the crime to another location.

In recent years, increased police visibility has been credited with significant reductions in accidents, breaking and entering, and robberies in targeted areas within Baltimore County. As noted by the Police Vehicle Saturation Program Committee in 1995: “An effort on Pulaski Highway involving 4,006 hours of high visibility police presence resulted in: a 54% reduction in accidents, a 12% reduction in robberies and a 46% reduction in breaking and entering.... A similar project on Liberty Road resulted in a 59% reduction in robbery.” More recently, Baltimore County’s Business Patrol Initiative (BPI) was announced in October 1997 and officially begun in February 1998, with the goal of increasing police visibility in certain target areas to deter crime. This initiative is credited with reducing robberies in the County’s nine business districts by 31% in its first year of operation (from 333 to 229), versus a 7% decline in robberies Countywide during the same period. The BPI is similarly credited with reducing burglaries and motor vehicle thefts. Preliminary data on crimes in buffer areas around the Hunt Valley and Timonium/Lutherville light rail stops suggest that the Department’s recent efforts to increase visibility there may also be having the intended results.⁵

While no concrete data are available to support a direct causal link between implementation of a personal patrol car program and crime deterrence, even if such data were available, other crime deterrence strategies could be deemed more effective. For example, as the above data suggest, the best possible way to deter crime may be to increase the number of police posts in a target area. While it may be more desirable to increase the number of posts, doing so may be cost prohibitive, though, if the County must also increase its overall benefits package for police officers to remain competitive with surrounding jurisdictions. That is, increasing the number of

⁵Some might argue, though, that it is difficult to establish a causal link between police visibility and crime reduction. For example, crime could decrease for reasons entirely unrelated to stepped-up police visibility, despite any correlation between the two. Alternatively, there could be a causal relationship between police presence (which would increase on-duty police visibility in a target area) and crime reduction, rather than between police visibility alone and crime reduction. Finally, according to the Prince George’s County Police Department, which has had a personal patrol car program since 1971: “Information is not available to determine the program impact on crime as law enforcement is unable to calculate what uncommitted crimes were contemplated but not carried out.”

posts at the expense of enhancing benefits may be somewhat pointless since it could just result in a higher vacancy rate (i.e., we may not be able to recruit qualified officers to fill the positions if our benefits are not competitive).

The benefit of deterring crime is difficult to quantify. However, some efforts have been made at the national level to quantify the aggregate burden of crime on society. Most notably, a recent *Journal of Law and Economics* article by David A. Anderson (October 1999) estimated the net annual burden of crime in the United States to exceed \$1 trillion. According to a Centre College press release on this article:

While Anderson's article is written in scholarly language for a worldwide network of economists, he can explain the basic precepts by describing a common American crime -- auto theft. When an auto is stolen, says Anderson, the obvious cost is the value of the vehicle itself. Inevitably, though, the hidden costs pile up: wages lost when a family member misses work to file a police report, the cost of police time devoted to investigating the crime, the cost of court proceedings and incarceration if the criminal is apprehended and then convicted. Yet another cost: the family will be more likely to purchase theft-protection devices for future vehicles. The end result: an auto theft that appears to have an impact of \$20,000 on a family can easily cast a burden of \$40,000 to \$100,000 on society. The burden is shared by everyone in the form of higher insurance costs, higher taxes and a general loss in quality of life.

Specific expenses quantified in Anderson's study included: legal system costs (including court and correctional costs), victim losses (including personal injury and property damage), the costs of crime-prevention agencies (i.e., police, etc.), the opportunity costs⁶ of victims', criminals', and prisoners' time (i.e., the lost benefit of time that could have been spent more productively), the fear of being victimized, and the cost of private deterrence (e.g., security systems, padlocks, etc.).

⁶ Opportunity costs are defined by economists as what we give up, or forego, when we choose one thing over another.

Locally, costs of crime also could be imagined to include such indirect costs as increased insurance premiums, decreased property values, decreased tourism to Baltimore County (if tourists are disinclined to visit due to crime), and impaired economic development efforts. Additionally, crime directly impacts the County's operating and capital budgets by increasing public safety, court, and correctional costs. Crime deterrence could be expected to reduce such costs eventually, if not in the short term.

To summarize, crime is expensive. There is some indication that increased police visibility through personal patrol car programs may help deter crime. However, it is difficult to measure the impact of such programs on crime deterrence since it is difficult to identify crimes that might have been committed but were not due to a personal patrol car program. Nevertheless, the inability to measure the impact on crime deterrence does not diminish the likely crime-deterrence benefit of such a program.

Increased Security for County Residents and Visitors

Another potential benefit of increased police visibility is an increased sense of security for County residents and visitors. The more visible, active, and productive the police force, the more protected the people residing in or visiting the jurisdiction are likely to feel. For example, in 1995, the Police Vehicle Saturation Program Committee noted that: "High visibility efforts in several well publicized COPE projects resulted in citizen fear dropping as much as .9 points on a scale of 1 to 5 and the rating of the Police Department to increase as much as 1.1 points on the same scale." The socioeconomic benefit of such citizen reassurance, however, is also difficult to quantify monetarily.

Improved Community Relations

Increased police visibility may also enhance the public's general view of its police department. If citizens feel safer/more protected in the presence of a higher number of patrol cars, they are likely to have a better impression of the public safety services being provided by their government. Moreover, with a personal patrol car program, off-duty patrol officers may be more visible as they attend community meetings and events, sending a positive message to the public that police officers care about their neighborhoods, as well as improving police department accessibility and interaction with the public.

Residence Incentive

A personal patrol car program for officers residing in Baltimore County, or particular areas of Baltimore County could also serve as an incentive for officers to move into (or stay in) Baltimore County. While other residency incentives could be more effective, this potential benefit of a personal patrol car program is nevertheless notable.

Extended Useful Life of Vehicles

Another expected benefit of a personal patrol car program is the reduction in annual mileage incurred by each vehicle. Despite the fact that personal patrol cars would be used for commuting and other personal purposes, under a personal patrol car program, vehicles would be driven fewer shifts per year and hence, fewer miles per year than under the current program. Our cost analysis estimates that a typical car's useful patrol life (i.e., useful life as a patrol car, before being salvaged or used for other purposes) would be extended from 30 to 48 months – or an additional 18 months - under a personal patrol car program. We calculate that such an

extension in useful life equates to cost savings of over \$5,000 per year per car (refer to Exhibits C through G). Given the projected size of the County's fleet of marked patrol cars under a personal patrol car program for the Baltimore County study area, these savings could total as much as \$1.8 million per year. (Refer to the Costs section of this report for a more detailed explanation of useful life cost savings.)

Lower Per-Mile Vehicle Costs

A personal patrol car program may further benefit the patrol fleet as officers become intimately familiar with their personal cars, and develop a sense of pride in and responsibility for them. Such a program would also increase accountability for damage to cars. Out of pride and personal responsibility, officers may take better care of personal cars than pool cars. Moreover, officers would be more familiar with their own personal cars, which they alone would drive on a daily basis, than with the various pool cars they currently share. Such familiarity may lead to reduced maintenance, accident repair, and liability costs on a per-mile basis. For example, Donna Goins, Risk Manager for Anne Arundel County, advised that police cars are involved in more accidents when they are new than when they have been in use for awhile. She points to officers' vehicle familiarity as a mitigating factor to accident occurrence. These factors may lead to an even higher extension in useful life than the extension that would result from lower annual mileages alone (e.g., useful patrol life might be extended from 30 to 54 months, or an additional 24 months, versus the 18-month expansion assumed in our cost analysis).

Enhanced Safety for Officers

For similar reasons, vehicle familiarity would likely yield enhanced safety for officers. Driving the same car on a daily basis allows an individual to become comfortable with its handling and

other capabilities, further reducing the chance of accidents or breakdowns. Additionally, 24-hour access to patrol cars would increase back-up capabilities of the Department, as off-duty officers would be able to respond to nearby back-up calls for their fellow on-duty officers. Such safety enhancements could lead to cost savings by reducing vehicle repair, worker's compensation, and accident liability costs. Put another way, the fewer accidents officers incur, the lower the County's costs for accident repair, worker's compensation, and accident liability.

Increased Patrol Time

Another expected benefit of a personal patrol car program is increased patrol time. Officers would be fully equipped in patrol cars as they travel to and from work, rather than off-duty in unmarked cars. This stepped-up on-duty presence would allow for increased assistance to citizens, enhancing Police Department effectiveness and efficiency. For example, during a commute, an officer with a personal patrol car could provide immediate assistance upon observing a disabled vehicle, eliminating the need for another patrol officer to be dispatched to the scene, and providing prompter police service.⁷ Additionally, upon arrival to the station, time spent loading and unloading equipment from cars would be eliminated with personal cars. Also notably, patrol manpower would be doubled during shift changes, significantly increasing any crime deterrence benefit yielded by police visibility.

Improved Emergency Response

With greater deployment of patrol cars, emergency response time could also be expected to decline. A personal patrol car program would facilitate the Department's efforts to mobilize its

⁷ It would not reflect well on the Department, and could potentially turn into a County public relations issue, if a police cruiser failed to stop for a stranded motorist. However, program policies could address this issue (see "Departmental Policy Issues" section.)

officers for rapid response to emergency situations such as riots (off-duty officers in Indianapolis are credited with preventing a riot in 1995), natural disasters (e.g., the tornado in Reisterstown), major crimes, prison disturbances, hostage situations (e.g., the Palczynski incident), major accidents (e.g., Amtrak derailment), aircraft crashes (e.g., the stealth fighter crash), hazardous material spills, etc.⁸ Additionally, the likelihood that officers would ever have to wait at their precinct, all the while accruing overtime, for patrol vehicles to transport them to an emergency site would be greatly reduced.

Reduced Facility Costs

Capital cost savings may also result from adopting a personal car program for police officers, as officers driving personal cars would store personal items in their trunks and would use only one parking space, as opposed to two, at police stations. Hence, the need for lockers and parking at police station facilities would be reduced under a personal patrol car program. Even if these cost savings may not accrue in the short term (to alleviate current parking problems at various precincts), they may be significant in the long term when additional facilities upgrades are considered.

Improved Morale

Under a personal patrol car program, the morale of officers would also likely improve, due to the financial value of the personal car benefit. Although officers residing outside the study area would not be eligible for any benefit under the personal patrol car program we consider, all officers would benefit from such a program due to increased manpower and back-up

⁸ It is also notable that off-duty officers may arrive at the scene of an accident or fire and be able to provide medical emergency response to afflicted victims. Many officers are trained as EMTs or paramedics.

capabilities, as previously discussed. Because of the popularity of personal patrol car programs among many officers, morale would likely improve with the adoption of such a policy for Baltimore County. Improved morale is often linked to increased productivity.

Recruitment and Retention Incentive

Other local jurisdictions have personal patrol car programs (see Exhibit I), which benefits their recruitment and retention efforts. By adopting a similar policy, Baltimore County would be more competitive with its counterparts, aiding in recruitment and retention of officers. While comparability may also be achieved by increasing salaries or other benefits, the associated benefit to County citizens may not be as great.

Mileage Reimbursement Savings

The Police Department currently reimburses officers for mileage costs incurred when they must drive their private vehicles to court or for other work-related purposes. In FY 2001, the Department budgeted \$145,640 for this expense. However, under a personal patrol car program, these costs would be reduced since officers assigned a personal patrol car would no longer receive such reimbursements. Because not all officers would receive personal cars under a personal patrol car program, some mileage reimbursement costs would still be incurred. However, it is reasonable to conclude that employee mileage reimbursement savings would not total more than \$100,000 for either study area.

COSTS

There are two major types of costs associated with implementing a personal patrol car program: initial outlay costs, and annual (ongoing) costs. Initial outlay costs, or "start-up" costs, are necessary to purchase additional cars and equipment in order to provide all eligible police officers with equipped personal patrol cars. In addition, initial outlay costs may be necessary for the construction of additional garage facilities and/or an upgrade of the County's 800 MHz system, depending on the size of the fleet increase and the current capacity of County facilities. By nature, initial outlay costs are one-time-only; they will be borne once at the start of the program - either in a lump sum all in one fiscal year, or phased in over multiple fiscal years.

In addition to initial outlay costs, a personal patrol car program would demand an ongoing commitment of funds for program implementation. The increase in annual costs would depend upon numerous factors, including: the number of officers eligible for personal cars; the change in usage and useful life associated with personal versus pool cars; the cost per mile for fuel, maintenance, repairs, and accident liability; the amount of overtime associated with the program; and the size of any compensatory benefit provided to officers ineligible for personal patrol cars due to non-patrol assignment.⁹ These costs are recurring and would only decline if implementation efficiencies are discovered or the number of participating officers decreases. Correspondingly, if implementation becomes less efficient or the number of participating officers increases over time, ongoing costs would increase.

⁹We assume that to be eligible for a program benefit, officers must reside in the study area (i.e., Baltimore County or Community Conservation Areas within Baltimore County). Specifically, we assume that officers who are assigned to post patrol duty would receive personal patrol cars, and officers with other assignments (e.g., administrative duties) would receive a compensatory monetary benefit. We assume that all officers residing outside the study area are ineligible for a program benefit.

This section describes our methodology for estimating both initial outlay and annual operating and/or capital costs associated with implementing a personal patrol car program in Baltimore County. As requested, our formal cost analysis limits program benefits to officers residing in Baltimore County, and alternatively to officers residing in Community Conservation Areas within Baltimore County. The assumptions utilized in our formal cost analysis, however, can easily be modified to provide for additional implementation scenarios, such as limiting the take-home benefit to officers residing in designated "hot spots" within the County.¹⁰

Initial Outlay Costs

The fundamental question in projecting initial outlay costs is: How many additional cars are needed? Once this question is answered, one can simply multiply by the cost of a single car (including the cost of equipping that car) to obtain the cost of purchasing and equipping all additional cars. At that point, it is also possible to determine whether additional garage facilities and/or communication upgrades are necessary.

In order to determine how many additional cars would be needed, we took the following steps:

1. Obtained from the Police Department the total number of sworn officers, ranked officer through lieutenant, Countywide ("total officers"). *The Police Department reported 1,663 total officers.*

¹⁰ Because numerous assumptions regarding departmental policy, labor agreements, and implementation scope and timeframe are necessary to obtain specific cost estimates, in subsequent sections of this report, we vary major program parameters to show the cost implications of each.

2. Obtained from the Police Department the actual number of sworn officers, ranked officer through lieutenant, residing in each study area ("resident officers"). *The Police Department reported 1,001 resident officers in Baltimore County, and 632 resident officers in Community Conservation Areas within Baltimore County.*¹¹

3. Obtained from the Police Department the existing number of (marked) patrol cars, Countywide ("existing fleet"). *The Police Department reported an existing fleet of 276 (marked) patrol cars, Countywide.*

4. Obtained from the Police Department the actual number of officers currently assigned to (marked) patrol cars, Countywide ("assigned officers"). *The Police Department reported 594 assigned officers.*

5. Estimated the number of officers residing in each study area who are assigned to (marked) patrol cars by multiplying the number of assigned officers by the ratio of resident officers to total officers. For each study area, this amount is the estimated number of officers eligible for personal cars ("eligible officers"), which is equal to the estimated number of personal cars needed ("personal cars"). *We estimated 358 eligible officers (personal cars needed) for the Baltimore County study area, and 226 eligible officers (personal cars needed) for the Community Conservation study area.*

6. Estimated the number of officers assigned to (marked) patrol cars who would not be eligible for personal cars due to residency outside the study area by subtracting the number of eligible officers from the number of assigned officers ("ineligible officers"). These officers would

¹¹ We do not consider sworn officers above the rank of lieutenant (i.e., captains and above) in our analysis because these officers do not occupy patrol positions. Additionally, these officers may already have personal vehicles under current departmental policy.

continue to drive pool cars (only while on-duty). *We estimated 236 ineligible officers for the Baltimore County study area, and 368 ineligible officers for the Community Conservation study area.*

7. Estimated the number of pool cars needed ("pool cars") by equating the ratio of existing cars (existing fleet) to assigned officers with the ratio of pool cars to ineligible officers.¹² In addition to utilizing this ratio, we assessed the overall number of pool cars necessary to determine if additional pool cars would likely be needed as contingency, in the case of very high numbers of personal cars. (That is, if all cars in a precinct were personal cars, that precinct would still need a number of back-up pool cars in the case of cars being out of service at a given time for maintenance, repairs, etc.) *We estimated 110 pool cars for the Baltimore County study, and 172 pool cars for the Community Conservation study using the ratio of pool cars to ineligible officers. The estimated number of personal cars was not great enough to demand an additional contingency of pool cars for the countywide fleet.*

8. Estimated the size of the fleet needed to provide personal cars to all eligible officers and pool cars to all ineligible officers by adding personal cars to pool cars ("expanded fleet"). *We estimated an expanded fleet of 468 cars for the Baltimore County study, and 398 cars for the Community Conservation study.*

9. Estimated the number of additional cars needed by subtracting the size of the existing fleet from the size of the expanded fleet. *We estimated 192 additional cars needed for the Baltimore County study, and 122 additional cars needed for the Community Conservation study.*

¹² *Caveat:* By setting up this ratio, we assumed that shift or precinct personnel reassignments might occur with implementation of a personal patrol car program. In other words, we assume that the Police Department's level of efficiency in utilizing pool cars under a personal patrol car program would be unchanged from its current level of efficiency. (See discussion under "Labor Issues" section.)

The Office of Budget and Finance advised that neither construction of additional garage facilities nor an upgrade of the County's 800 MHz system would be necessary if less than 500 cars are added to the County's fleet. Thus, after estimating the number of additional (marked) patrol cars needed, we multiplied by the cost of obtaining a fully equipped patrol car, or \$37,032, to yield the total estimated start-up costs for a personal patrol car program.¹³ Assuming only officers residing in Baltimore County are eligible for personal cars, estimated start-up costs total approximately \$7.1 million. Assuming only officers residing in Community Conservation Areas within Baltimore County are eligible for personal cars, estimated start-up costs total approximately \$4.5 million. (Refer to Exhibit A for cost estimates.) Further, based on the information provided by the Office of Budget and Finance, we conclude that neither additional garage facilities nor communication upgrades would be required.

Ongoing Costs

The ongoing costs associated with implementing a personal patrol car program include:

- the costs of maintaining an expanded fleet;
- overtime payments made to officers with personal cars who may respond to calls while off-duty;
- any compensatory benefit provided to officers residing in the study area who are ineligible for a personal car due to non-patrol job responsibilities; and
- program administration costs.

¹³ We assume the vehicle is a new Ford Crown Victoria (\$20,700), equipped with roof light bar assembly (\$1,830), vinyl coated wire screen (\$104), half sheet 0.5-inch thick plexiglass (\$62), head/tail light flasher (\$30), grill lights (\$16), shotgun rack assembly (\$103), shotgun (\$310), emergency accessory items (\$188), portable radio (\$3,020), mobile data terminal (\$8,000), siren (\$400), warning light control box (\$100), siren speaker (\$150), antennae (\$200), GPS location system (\$1,200), hardware for installation (\$300), and decal package (\$69), with an equipment installation cost of \$250. In total, this amounts to a cost of approximately \$37,032 per patrol car.

Annual costs were computed as follows.

Costs of maintaining an expanded fleet

To calculate the costs of maintaining an expanded fleet, the number of miles to be driven annually for both personal and pool patrol cars, and the associated cost per mile for vehicle and equipment acquisition, fuel, maintenance and repairs, accident liability, and equipment installation and removal must be estimated. These estimates are dependent upon a number of assumptions about useful life and patrol car usage:

1. New cars have a useful patrol life (i.e., useful life as a patrol car) of 100,000 miles. *The Office of Budget and Finance advised that cars, on average, are taken out of patrol service after approximately 100,000 miles.*
2. Pool patrol cars are driven 40,000 miles per car per year - equating to a useful patrol life of 2.5 years, or 30 months. *The Office of Budget and Finance advised that marked patrol cars, on average, have a useful patrol life of approximately 30 months. After analyzing various Vehicle Operations and Maintenance Division and Police Department data, we concluded that this assumption is reasonable.*
3. Personal cars are driven 20,000 miles per car per year (or half as much as pool patrol cars) for work-related purposes, plus 5,000 miles per car per year for commuting and other restricted personal purposes - equating to a useful patrol life of 4 years, or 48 months.¹⁴ *The Police Department advised that currently, (marked) patrol cars are driven, on average, 1 eight-*

¹⁴ Assuming a somewhat higher level of personal use would not alter our cost estimates substantially.

hour shift per day, every day (currently there are 278 "annual shifts" covered by (marked) patrol cars and 276 (marked) patrol cars - equating to approximately 1 annual shift per car).

Additionally, the Police Department advised that each patrol officer is available for shift work approximately ½ of an annual shift each year (described as an "availability factor" of 2, meaning that 2 officers are necessary to fill an annual shift due to scheduled days off, vacation days, personal leave, sick time, disability, etc.). Hence, it is reasonable to conclude that personal cars would be driven ½ shift per year, while pool cars would continue to be driven 1 shift per year. In addition, personal cars would be driven for commuting and other restricted personal purposes, which we roughly estimate would generate 5,000 additional miles per year (or 96 miles per week) of use.

4. When a car's useful patrol life is over (i.e., after 2.5 years for a pool patrol car, and 4 years for a personal patrol car), the car is used by the County for other (non-patrol) purposes for another 3 years.¹⁵ This useful "post-patrol" life can be calculated from the estimated annual acquisition cost (\$15,000) and useful life (8 years) associated with a typical non-patrol car. *The Office of Budget and Finance advised that (marked) patrol cars are typically rotated out of patrol service and into other, less intensive County service (after markings are removed). We concluded that at least three years of post-patrol service, on average, for each car is a reasonable assumption.*

To estimate costs of maintaining an expanded fleet, the following steps were taken:

¹⁵ Alternatively, the car could be sold at auction after its useful patrol life. It might be expected that personal patrol cars would yield a higher salvage value than pool patrol cars with similar mileages. However, such differences are not estimated as part of our cost analysis. (Refer to the "Benefits" section of the report for a more detailed discussion of differences in per-mile vehicle costs.)

1. The current annual costs for the County's fleet of (marked) patrol cars were estimated.

These costs are comprised of the following annual costs per vehicle:

Estimated annual cost per pool patrol car	
Vehicle acquisition (net) cost ¹⁶	\$ 6,030
Equipment acquisition cost ¹⁷	1,340
Fuel, maintenance, and repair costs (including cost of accident repairs) ¹⁸	6,000
Liability insurance cost ¹⁹	2,000
Equipment installation and removal costs ²⁰	100
TOTAL	\$15,470

2. The number of pool cars (calculated previously) was multiplied by the estimated annual cost per pool patrol car (calculated in #1, above). This amount, \$1.70 million for the Baltimore County study and \$2.66 million for the Community Conservation study, is the total estimated annual cost for all pool patrol cars.

3. Next, the annual costs per personal patrol car were estimated:

Estimated annual cost per personal patrol car	
Vehicle acquisition (net) cost ²¹	\$ 3,769
Equipment acquisition cost ²²	1,340
Fuel, maintenance, and repair costs (including cost of accident repairs) ²³	3,750
Liability insurance cost ²⁴	1,250
Equipment installation and removal costs ²⁵	63
TOTAL	\$10,172

¹⁶ These costs are amortized over the useful patrol life. See Exhibit C.

¹⁷ These costs are amortized over the useful patrol life. See Exhibit D.

¹⁸ See Exhibit E.

¹⁹ See Exhibit F.

²⁰ These costs are amortized over the useful patrol life. See Exhibit G.

²¹ Vehicle acquisition costs are lower for personal patrol cars than for pool patrol cars due to the longer useful patrol life of personal patrol cars. These costs are amortized over the useful patrol life. See Exhibit C.

²² The Office of Budget and Finance advised that the useful life of patrol car equipment is approximately 12 years. Thus, we assumed a useful equipment life of 12 years, or 144 months, for both personal and pool patrol cars. These costs are amortized over the useful patrol life. See Exhibit D.

²³ Fuel, maintenance, and repair costs are related to the number of miles driven. Therefore, due to the lower number of miles driven annually for personal patrol cars, the estimated annual cost of fuel, maintenance, and repairs is lower for personal cars than for pool cars. (Note: We assume the total cost of maintaining personal cars, including the cost of fuel for personal use, is paid by the County.) See Exhibit E.

²⁴ Liability insurance costs are similarly related to the number of miles driven. Therefore, annual insurance costs are also lower for personal cars than for pool cars. See Exhibit F.

²⁵ Equipment installation and removal costs are lower for personal cars than for pool cars due to the longer useful life of personal patrol cars. These costs are amortized over the useful patrol life. See Exhibit G.

4. Then, the number of personal cars (calculated previously) was multiplied by the estimated annual cost per personal patrol car (calculated in #3, above). This amount, \$3.64 million for the Baltimore County study and \$2.3 million for the Community Conservation study, is the total estimated annual cost for all personal patrol cars.

5. The total estimated annual cost for all pool patrol cars was then added to the total estimated annual cost for all personal patrol cars. This amount, \$5.34 million for the Baltimore County study and \$4.96 million for the Community Conservation study, is the total estimated annual cost for all patrol cars.

6. From this result, the total estimated annual cost for the County's existing fleet of (marked) patrol cars, equal to \$4.27 million, was subtracted. This difference, approximately \$1.07 million for the Baltimore County study and \$0.69 million for the Community Conservation study, is the estimated annual cost associated with providing the additional patrol cars needed for a personal patrol car program.

Exhibit B provides a summary of this information. Exhibits C through G provide additional detail on each type of cost.

Overtime costs

In order to calculate the increase in overtime costs associated with officers responding off-duty to calls or other emergencies in their personal cars, the following steps were taken:

1. The number of eligible officers was multiplied by the estimated number of additional overtime hours per year. We assumed each officer driving a personal patrol car would accrue 25 additional hours of overtime per year, or approximately one hour every two weeks.

2. The result was multiplied by the estimated hourly rate of overtime pay for the average police officer, equal to approximately \$31 per hour.

These costs, summarized in Exhibit A, total \$277,450 for the Baltimore County study, and \$175,150 for the Community Conservation study. Labor issues surrounding Police Department approval of overtime are discussed later in this report.

Compensatory benefit

Because some officers may reside in the implementation (i.e., "study") area while being ineligible for personal cars due to non-patrol job responsibilities, it presumably would be reasonable for them to receive some sort of compensatory benefit, to keep them on an "equal playing field" with their fellow officers. The amount of such a benefit would be negotiable.

For the purposes of this study, we assumed a compensatory benefit of \$3,500 per officer per year. Multiplying this amount by the number of ineligible officers yields a cost of \$2.25 million for the Baltimore County study, and \$1.42 million for the Community Conservation study.²⁶

These costs are summarized in Exhibit A. Labor issues surrounding compensatory benefits are discussed later in this report.

²⁶ Previously, we defined "ineligible officers" as sworn officers, ranked officer through lieutenant, who do not reside in the study area. However, in this section, we utilized this term to describe those officers, ranked officer through lieutenant, who reside in the study area but are not eligible for a personal car due to non-patrol assignments. It should be noted that captains and above – even those who reside in the study area - are not included in this calculation. Refer to the "Labor Issues" section of this report for further discussion.

Program Administration Costs

Finally, the Police Department would have to develop administrative policies and procedures, as well as implement them, at both the departmental and precinct levels. Development of such policies and procedures would cost time and money, as would implementation of such. For example, additional manpower hours in the Police Department, Vehicle Operations and Maintenance Division, and (to a lesser extent) various other County agencies would likely be necessitated by the adoption of such a program. However, we do not expect that such costs would affect our cost estimates to any great extent.

DEPARTMENTAL POLICY ISSUES

As mentioned previously, in conducting such an analysis, it is necessary to make numerous assumptions about implementation of the program. This section focuses on program rules and guidelines with a fiscal impact that presumably would be formulated by the Police Department.

Officer Eligibility

The Police Department would likely take a number of factors into consideration to determine an officer's eligibility for a personal patrol car program benefit. These factors include the officer's:

- place of residence;
- current assignment/status; and
- job performance.

In the "Costs" section of this report, we assumed that all sworn officers residing in Baltimore County, or alternatively, in a Community Conservation Area within Baltimore County, and currently assigned to a (marked) patrol car would receive a personal car. Additionally, for reasons discussed later in this report (see "Labor Issues" section, which follows), we assumed that all sworn officers who reside in the target area but are not currently assigned to patrol cars would receive a monetary annual benefit in lieu of a personal car. We did not assume any restrictions on eligibility related to whether an officer is on probationary status or has not received favorable performance evaluations or supervisory recommendations. Alternative eligibility criteria, of course, are also plausible. For example, the Police Department could choose to limit a personal patrol car program benefit to officers residing in more localized "hot

spots" within the County. Or, the benefit could be limited to officers residing in the precinct where assigned.

In 1995, the County's Police Vehicle Saturation Program Committee recommended that its proposed program be restricted to officers residing in Baltimore County who have successfully completed the two-year probationary period, received a favorable recommendation from their Bureau Commander, have at least a competent evaluation at the time of application, and are not on light duty status or extended disability leave.²⁷ It is notable that this Committee did not distinguish between officers currently assigned to patrol cars (i.e., those who regularly respond to calls for service) and officers with non-patrol assignments. Hence, under the Committee's implementation scenario, personal vehicles could go relatively unused during the officer's shift, only being utilized for commuting and other personal uses except when needed for off-duty emergency response.

The decisions surrounding officer eligibility have a significant effect on program costs. The more restrictive the eligibility requirements for a program benefit, the less expensive the program would be to implement, and vice versa. To appreciate the fiscal impact of this policy issue, one might compare program costs for a more restrictive program and, alternatively, for a less restrictive program than the one we utilized in our formal cost analysis. For example, assuming everything else from our formal cost analysis remains the same, if we consider a smaller study area, where only 500, as opposed to where 1,001, officers reside, estimated program start-up costs drop from \$7.1 million to \$3.6 million, and the estimated increase in annual expenses falls from \$3.6 million to \$1.8 million. On the other hand, if we increase the current number of officers residing in the study area from 1,001 to 1,500, estimated program

²⁷ See Exhibit H.

start-up costs increase to \$10.7 million and the estimated increase in annual expenses rises to \$5.4 million.

Compensatory Benefit

Most local police departments with a personal patrol car program provide a personal car to all sworn officers residing in the jurisdiction. However, it may be deemed more cost-effective and/or reasonable to restrict allocation of personal cars to officers currently assigned to a patrol car (i.e., who regularly respond to calls for service). For this reason, in our analysis, we assumed that officers residing in the target area but not assigned to a patrol car would be eligible for a compensatory monetary benefit.

Presumably, the amount of such a compensatory benefit would be determined through labor negotiations between the County and the Fraternal Order of Police. (Specific labor issues are discussed in the “Labor Issues” section of this report, which follows.) In our cost analysis, we assumed a compensatory benefit of \$3,500. This amount is in the vicinity of the ongoing annual cost to the County of providing an officer with a personal car (estimated at \$3,800), and appears equitable, as officers receiving a personal car are not only receiving a benefit - which would exceed \$3,500 - but also are acquiring additional responsibilities – such as responding to certain calls and community needs according to program guidelines, and complying with all departmental rules and regulations regarding personal cars. Moreover, it is unlikely that this amount is high enough to tempt officers to refuse a personal car (i.e., to “opt-out” of a personal car benefit), or to discourage them from accepting a patrol assignment (in the absence of an “opt-out” provision – discussed below, in the subsection that follows).

The amount of the compensatory benefit would not affect program start-up costs, but would have a significant effect on ongoing annual costs. For example, assuming that all other parameters of our cost analysis remain the same, a \$500 per year increase in the compensatory benefit would generate additional annual costs of \$321,500.

Opt-out Provision

Another issue that the Police Department likely would weigh when considering implementation of a personal patrol car program is that some patrol officers may desire to remain anonymous, and hence would be averse to parking a marked patrol car in front of their residence. Oftentimes, police officers go to extraordinary lengths to protect personal and family privacy. For example, some officers do not leave their homes in uniform, but rather drive to the station in plain clothes in order to avoid being identified as a police officer. Such officers would likely prefer to opt out of a personal car benefit, hoping instead to receive a monetary compensatory benefit.

Because it would be difficult for the Police Department to enforce regulations requiring officers to park their personal cars outside where visible, instead of in a garage or another obscured location, such an opt-out provision may appear reasonable. Additionally, although such a provision would undermine the purpose of a personal patrol car program if the majority of officers were to utilize it (i.e., to “opt out”), a strategically-determined compensatory benefit amount would encourage officers to choose a personal car over the compensatory monetary benefit (see “Compensatory benefit” subsection, above).²⁸ To opt out of a personal car benefit, officers presumably would have to meet all eligibility requirements for receiving it.

²⁸ Whether or not officers who choose to opt out would actually be provided with an opportunity to choose a monetary benefit over a personal patrol car could be a negotiated issue.

To evaluate the impact of an opt-out provision on program costs, we can raise or lower the percentage of resident officers eligible to receive a personal car as opposed to a compensatory benefit. For example, provided that all other parameters of our cost analysis remain the same, if we assume that 10% of officers residing in the target area receive a personal car and 90% of officers residing in the target area receive a compensatory benefit, estimated program start-up costs total \$2.0 million and the estimated increase in annual expenditures totals \$3.5 million. These amounts are in contrast to our formal cost analysis figures of \$7.1 million in start-up costs and \$3.6 million in annual expenditures, for a program in which approximately 36% of officers in the target area receive a personal car and 64% of officers reside in the target area receive a compensatory benefit. It should be noted, however, that annual expenditures under these scenarios are similar, since the annual cost of providing a personal car is only about \$300 more than a \$3,500 compensatory benefit. Thus, adoption of an opt-out provision could lower start-up costs, but would not likely affect annual program costs to any great extent.

Personnel Reassignments

Additionally, in order to assure as efficient as possible fleet management of its remaining pool cars, the Police Department would have to reconsider the precinct and shift assignments of officers receiving personal cars. As an extreme example, consider one precinct where all officers on the busiest shift were assigned personal cars, and another precinct, on the opposite side of the County, where all officers on the busiest shift were ineligible for a personal car for residency reasons. All pool cars assigned to the first precinct would go underutilized during the busiest shift, when they were needed most by the second precinct. A potential solution to this fleet management problem would be to require program participants to accept shift and/or

precinct reassignments according to negotiated guidelines. (See discussion in the “Labor Issues” section, which follows.)

Overtime

Another program issue that the Police Department presumably would address is the approval of overtime compensation for off-duty response to calls and emergencies. Without clear program guidelines, officers could accrue unreasonable amounts of overtime by utilizing their personal patrol cars in an off-duty capacity. At the same time, it would be important for the Department to specify what calls for service or circumstances would necessitate response by or other engagement of off-duty officers.²⁹ Additionally, for the purpose of off-duty personal patrol car response, the Police Department could seek, through labor negotiations, to achieve a waiver of the four-hour minimum call back requirement.³⁰ Finally, a number of local jurisdictions have a policy of not monetarily compensating officers for the first hour or two of their off-duty time spent responding to incidents, apparently considering the personal patrol car in and of itself as compensation for such labor.

In 1995, in its draft policy statement, the Police Vehicle Saturation Program Committee addressed various implementation issues regarding overtime accrual. For example, under the draft policy, officers would be required to obtain supervisor approval for any overtime compensation at the time of the occurrence. (See Exhibit H for additional information.)

²⁹ Certainly, it would not reflect well on the Department, and could potentially turn into a public relations issue for the County, if a police cruiser failed to stop for a stranded motorist, accident, etc.

³⁰ Currently, the memorandum of understanding between the County and the FOP provides a minimum of four hours of call-back pay when an officer must go on-duty on a regularly scheduled leave day, regardless of the actual time spent on-duty.

The amount of additional overtime compensation that would result from implementing a personal patrol car program is difficult to project. In our cost analysis, we assumed that each officer driving a personal patrol car would accrue 25 additional hours of overtime per year, or approximately one hour every two weeks. In 1995, the Police Vehicle Saturation Program Committee estimated additional overtime costs based on Anne Arundel County Police Department data and a ratio of the size of the proposed personal patrol car fleet for Baltimore County to the size of the personal patrol car fleet in Anne Arundel County. The Committee assumed an annual rate of approximately 22.2 off-duty incidents per personal vehicle, with each incident costing the County 0.935 hour in overtime, or approximately 20.8 overtime hours per participating officer per year.

To evaluate the impact of a significantly higher level of overtime compensation on overall program costs, we can double the estimated number of additional overtime hours per year per officer from 25 to 50. Assuming all other assumptions of our cost analysis remain the same, annual costs would increase by approximately \$366,000.

Driving Restrictions

The Police Department also may develop driving restrictions applicable to officers with personal cars. Such rules could restrict officers from taking their personal cars outside the County, or State, or could restrict the use of the cars for transporting passengers. The more driving restrictions the Department would adopt, the less miles officers could be expected to put on their personal cars, thus impacting, albeit indirectly, useful patrol life and hence annual costs. Refer to Exhibit H for a draft of proposed guidelines, including driving restrictions, prepared by the Police Vehicle Saturation Program Committee in 1995.

Officer Residency Patterns

Finally, the Police Department may recognize that the concentration of officers' residences in a particular area of the County could localize the crime deterrent effect of such a program. For example, if there were a high concentration of officers with personal patrol cars residing in Essex, but very few officers with personal patrol cars residing in Hunt Valley, the crime deterrence resulting from the personal patrol car program could be skewed to benefit the Essex area more favorably than the Hunt Valley area, since police visibility would be greater in Essex. In other words, the crime deterrence benefit could be more localized than broadly distributed, depending on the residency patterns of the Baltimore County police force and whether the Police Department would choose to adopt additional program restrictions to address this issue.³¹

At the same time, the Police Department may not be very concerned about this issue, recognizing that increased police visibility would have its most significant effect when officers are mobile in their patrol cars (e.g., when commuting to and from work) and when patrol cars are manifest in commercial areas (e.g., when officers utilize their patrol cars for personal purposes, such as shopping, or for secondary employment). Certainly, a high concentration of officers residing in a particular area of the County would not imply that all such officers are stationed to work in that area, or that they would choose not to drive their personal patrol cars to other areas of the County for off-duty purposes.

³¹ Information regarding residency, by Council District, of officers ranked officer through lieutenant who are assigned to post patrol was not readily available. However, for reasons discussed subsequently, we do not believe that a disproportionate distribution of officer residencies among Council Districts would have a significant impact on program effectiveness.

LABOR ISSUES

Specific issues regarding the implementation of a personal patrol car program are also of special concern from a labor perspective. This section of the report focuses on such labor issues, which presumably would be negotiated between the County and the Fraternal Order of Police (or at least given ample consideration by both).

Equity

Design and implementation of a personal patrol car program would have to be done equitably, with special importance placed on ensuring that all officers at similar ranks receive equal opportunity to participate in the program, and that all program participants are treated fairly. In our cost analysis, we assumed that all officers ranked officer through lieutenant would be eligible for a program benefit, provided they reside in the County. Moreover, we assumed that all eligible officers assigned to a patrol car would have the opportunity, by choosing to reside in the County, to qualify for a personal car benefit, while all eligible officers with other non-patrol assignments would be offered a compensatory benefit of \$3,500 per year. Such a benefit would yield an approximate increase of \$3,000 in salary per participating officer (or an average increase of between 4% and 7% depending on the officer's rank, excluding \$500 per participating officer in fringe benefits).

Such assumptions appear to pass the muster of union concerns, as all officers would have equal opportunity to qualify for equally fair program benefits, as well as management concerns, as officers would not be discouraged from moving from patrol to administrative duty. Whether or not officers ranked captain and above would pursue further benefits/salary enhancements as

a result of a personal patrol car program being initiated for lower-ranking officers would be a matter of these officers' priorities, but any such enhancements are not considered as part of this analysis, as they are not considered a direct cost of a personal patrol car program.

Seniority

Another labor concern related to implementing a personal patrol car program pertains to the seniority system established in the County's memoranda of understanding (i.e., contracts) with the Fraternal Order of Police. Union representatives would seek to ensure that program policies are consistent with the seniority system. Specifically, the FOP would question any personnel reassignments, such as the potential shift and precinct assignments described previously in this report. Our cost analysis, however, does not assume that involuntary personnel reassignments would occur with program implementation. Rather, it assumes that eligible officers who choose to drive personal cars could be subject to reassignment according to negotiated guidelines that could include seniority provisions. Thus, under our assumptions, reassignments deemed necessary to maximize fleet efficiency might be consistent with seniority principals.

Fair Labor Standards Act

A third labor issue to consider in implementing a personal patrol car program is that of overtime costs. Under the Fair Labor Standards Act (FLSA), employees must be compensated for all overtime hours worked, and in no circumstance may any employee be allowed to "volunteer" for his or her employer (i.e., to work more than normal working hours without being compensated). How this law is interpreted for the purposes of a personal patrol car program is yet unclear. Numerous other local jurisdictions appear to consider a personal patrol car in and of itself as

compensation, and have a policy of not monetarily compensating officers for the first hour or two of their off-duty time spent responding to incidents.

A recent case involving canine officers' off-duty care for their dogs established that overtime compensation is required for all approved off-duty job-related activities. Therefore, one can also assume that the washing, vacuuming, and other maintaining of personal cars, for instance, would generate overtime payments to County officers. The cost implications of additional overtime payments are described in the previous "Departmental Policy Issues" section of this report. It is difficult to estimate the precise effect of such automobile maintenance activities, however, as they also yield Vehicle Operations and Maintenance Division savings (i.e., other County employees would no longer be required to perform these duties). Labor negotiations could presumably establish reasonable expectations for personal patrol car program overtime accrual.

BUDGET ISSUES

Finally, a number of implementation issues are of special importance from a budget perspective. This section focuses on such critical budget issues.

Opportunity Costs

Most obviously, implementation of a personal patrol car program implies that resources dedicated to this purpose would not be better spent on other Police Department or County priorities. Some may argue that such funds would be better spent, for example, on: increasing the number of police posts in a direct effort to deter crime in targeted "hot spots" of the County; increasing salaries across-the-board for police officers to encourage recruitment and retention of high-quality personnel; or even raising teachers' salaries - a non-police-related priority.

While it is beyond the scope of this analysis to evaluate the benefits of a personal patrol car program in relation to other priorities, it is notable that such a program may be a reasonable alternative to increasing police officer salaries or other types of benefits. As shown in this analysis, implementing a personal patrol car program could provide an option for addressing officer retention/recruitment needs and at the same time deterring crime. Additionally, it is also notable that while other benefits/salary enhancements can be viewed as alternatives to implementing a personal patrol car program, crime-fighting initiatives (or teacher raises, for that matter) are not a substitute for such, but rather represent a different type of priority.

Program Scope

Another budgetary issue pertains to the desired program target area and implementation level. As shown previously under the "Departmental Policy" section, the more stringent the residency eligibility requirements, the less the personal patrol car program would cost. Therefore, a program target area consistent with funds availability could be pro-actively selected. Similarly, a targeted pilot program could be established consistent with funds availability, with the intention of increasing program scale upon evidence of successful implementation.

In any case, it is important to recognize that the number of eligible officers could change over time. More officers could move into the implementation area upon recognizing the residency incentive, for example, or more officers could be hired to fill eligible positions. In such situations, higher implementation costs could result, but at the same time, the benefits of the program could be expected to increase.

Implementation Timeframe

Another area of budgetary flexibility is the implementation timeframe. By choosing to phase-in the project, start-up costs and initial increases in annual costs could be spread out over the course of a few years. Seniority, or another negotiated criterion, could be used to determine which officers would first be eligible for the personal patrol car program benefit.

Useful Patrol Life

In determining how long to keep patrol cars in service, a budgetary decision affecting projected program costs is made. Thus, personal patrol cars could have a longer or shorter useful life, depending on how the fleet and program would be managed.

Risk Management

Finally, from a budget perspective, the uncertainty surrounding the liability costs of a personal patrol car program may be of notable concern. Both accident liability and worker's compensation claims could grow by an unknown amount as a result of putting more County vehicles in circulation, for personal as well as on-duty use. While specific program guidelines would address certain issues (e.g., allowing passengers to travel in cars), program guidelines could not prevent every accident that would result from implementation.

On a more positive note, Anne Arundel County's Risk Manager advises that after decades of implementation there, a personal patrol car program in and of itself does not appear to yield significant numbers of accident or workers' compensation claims. Rather, it is individual officers that cause specific problems on a repeated basis. Thus, by establishing firm program guidelines for accident occurrence, such problem cases can be eliminated and the personal patrol car program could fulfill its potential without significant increased risk.

EPILOGUE

The decision to implement a personal patrol car program in Baltimore County, like any major policy decision, requires careful consideration of both its expected benefits and its expected costs. Additionally, because the primary purpose of a personal patrol car program is to provide a cost-effective recruitment and retention incentive for the Baltimore County Police Department, this policy decision also requires careful consideration of alternative strategies for police benefits/salary enhancement.

For example, if the personal patrol car program evaluated in our cost analysis were expanded to provide a program benefit (either a personal patrol car or a \$3,500 compensatory benefit depending on assignment) to all officers ranked officer through lieutenant regardless of residency, the annual cost would be approximately \$6.1 million. Additionally, one-time start-up costs for such a program would total approximately \$12.4 million, or \$4.1 million per year, phased-in over a three-year period. In lieu of implementing such a comprehensive personal patrol car program, a comparable across-the-board \$3,500 per officer benefits/salary enhancement for all officers ranked officer through lieutenant would cost the County approximately \$5.8 million in its first year of implementation. This would equate to providing a 7% increase to the average salary of a police officer (or a 4% increase to the average salary of a lieutenant).

It may also be helpful to compare, dollar-for-dollar, the equivalent benefits/salary enhancement that could be provided with similar funds as would be necessary to implement a personal patrol car program, as presented in our analysis. For instance, consider the across-the-board benefits/salary enhancement that could be provided as an alternative to adopting a personal patrol car program for the Baltimore County study area. As reflected in Exhibit A, this

implementation scenario has ongoing annual costs of approximately \$3.6 million. Such funds could alternatively be used to provide a benefits/salary package increase of approximately \$2,200 per officer (approximately \$1,900 per officer in salary – or 4.3% of the average police officer's salary – and \$300 per officer in fringe benefits) to all sworn officers ranked officer through lieutenant. Similarly, \$2.3 million could be used either to implement a personal patrol car program in the Community Conservation study area or to provide a benefits/salary package enhancement of approximately \$1,400 per officer (approximately \$1,200 per officer in salary – or 2.8% of the average police officer's salary – and \$200 per officer in fringe benefits) to all sworn officers ranked officer through lieutenant. Clearly, such equivalent across-the-board enhancements to the police benefits/salary package lack both the initial start-up costs and many of the implementation issues associated with a personal patrol car program. However, it is important to note that such enhancements also do not yield many of the benefits that could be achieved by a personal patrol car program.

Exhibit A

**Baltimore County, Maryland
Costs of Implementing a Personal Patrol Car Program**

	<u>Community Conservation Study</u>	<u>Baltimore County Study</u>
Current # of sworn officers, ranked officer through lieutenant, residing in study area	632	1001
Current # of sworn officers, ranked officer through lieutenant, Countywide	1663	1663
Current # of officers assigned to marked patrol cars, Countywide	594	594
Estimated # of officers assigned to marked patrol cars, residing in study area	226	358
Current # of marked patrol cars, Countywide	276	276
Estimated # of personal cars needed	226	358
Estimated # of pool cars needed	172	110
Estimated # of cars needed, in total	<u>398</u>	<u>468</u>
Estimated # of patrol cars needed	398	468
Current # of patrol cars	276	276
Estimated # of additional patrol cars needed	<u>122</u>	<u>192</u>
Cost per vehicle (not including equipment or equipment installation cost)	\$20,700	\$20,700
Equipment cost per vehicle	\$16,082	\$16,082
Equipment installation cost per vehicle	\$250	\$250
Total cost per vehicle	<u>\$37,032</u>	<u>\$37,032</u>
ESTIMATED PROGRAM START-UP COSTS (ONE-TIME COST)	<u>\$4,517,904</u>	<u>\$7,110,144</u>
Estimated annual cost associated with providing additional patrol cars*	\$689,843	\$1,073,320
* - see Exhibit B for detail		
Estimated # of officers assigned to marked personal patrol cars	226	358
Estimated number of additional overtime hours per year per officer	25	25
Estimated hourly rate of overtime pay	\$31	\$31
Estimated annual cost associated with providing additional overtime	<u>\$175,150</u>	<u>\$277,450</u>
Estimated # of officers eligible for compensatory benefit	406	643
Amount of annual compensatory benefit	\$3,500	\$3,500
Estimated annual cost associated with providing compensatory benefit	<u>\$1,421,000</u>	<u>\$2,250,500</u>
TOTAL ESTIMATED INCREASE IN ANNUAL EXPENDITURES	<u>\$2,285,993</u>	<u>\$3,601,270</u>

Exhibit B

Baltimore County, Maryland
Annual Costs Associated with Providing Additional Patrol Cars

	<u>Community Conservation Study</u> (122 cars)	<u>Baltimore County Study</u> (192 cars)
Vehicle acquisition costs*	\$224,618	\$348,233
Equipment acquisition costs*	\$163,500	\$257,312
Fuel, maintenance, and repair costs (including accident repairs)	\$223,500	\$346,500
Liability insurance costs	\$74,500	\$115,500
Equipment installation and removal costs*	\$3,725	\$5,775
	<hr/>	<hr/>
TOTAL	<u>\$689,843</u>	<u>\$1,073,320</u>

*Amortized cost

Exhibit C

**Baltimore County, Maryland
Annual Patrol Car Acquisition Costs**

	Community Conservation Study		Baltimore County Study		Current Fleet
	pool	personal	pool	personal	pool
Number of vehicles	172	226	110	358	276
Cost per vehicle*	\$20,700	\$20,700	\$20,700	\$20,700	\$20,700
Useful patrol life (months)	30	48	30	48	30
Annual cost per vehicle	<u>\$8,280</u>	<u>\$5,175</u>	<u>\$8,280</u>	<u>\$5,175</u>	<u>\$8,280</u>
Useful post-patrol life (months)	36	36	36	36	36
Estimated value of a non-patrol vehicle	(\$15,000)	(\$15,000)	(\$15,000)	(\$15,000)	(\$15,000)
Useful life of a non-patrol vehicle (months)	96	96	96	96	96
Annual value per non-patrol vehicle	(\$1,875)	(\$1,875)	(\$1,875)	(\$1,875)	(\$1,875)
Total value, over useful post-patrol life	(\$5,625)	(\$5,625)	(\$5,625)	(\$5,625)	(\$5,625)
Useful patrol life (months)	30	48	30	48	30
Value per vehicle, per year of useful patrol life	<u>(\$2,250)</u>	<u>(\$1,406)</u>	<u>(\$2,250)</u>	<u>(\$1,406)</u>	<u>(\$2,250)</u>
Net annual cost per vehicle	<u>\$6,030</u>	<u>\$3,769</u>	<u>\$6,030</u>	<u>\$3,769</u>	<u>\$6,030</u>
Total annual cost	\$1,037,160	\$851,738	\$663,300	\$1,349,213	\$1,664,280
Difference from Current Fleet	(pool & personal)	\$224,618	(pool & personal)	\$348,233	

*Source: Police Department.

Exhibit D

**Baltimore County, Maryland
Annual Equipment Acquisition Costs**

	Community Conservation Study		Baltimore County Study		Current Fleet
	pool	personal	pool	personal	pool
Number of vehicles	172	226	110	358	276
Cost per vehicle*	\$16,082	\$16,082	\$16,082	\$16,082	\$16,082
Useful patrol life (months)*	144	144	144	144	144
Annual cost per vehicle	\$1,340	\$1,340	\$1,340	\$1,340	\$1,340
Total annual cost	\$230,509	\$302,878	\$147,418	\$479,780	\$369,886
Difference from Current Fleet	(pool & personal)	\$163,500	(pool & personal)	\$257,312	

*Source: Office of Budget and Finance, with some cost data updated by Police Department.

Exhibit E

**Baltimore County, Maryland
Annual Fuel, Maintenance, and Repair Costs (Including Accident Repair Costs)**

	Community Conservation Study		Baltimore County Study		Current Fleet
	pool	personal	pool	personal	pool
Number of vehicles	172	226	110	358	276
Annual cost per vehicle*	\$6,000	\$3,750	\$6,000	\$3,750	\$6,000
Total annual cost	\$1,032,000	\$847,500	\$660,000	\$1,342,500	\$1,656,000
Difference from Current Fleet	(pool & personal) \$223,500		(pool & personal) \$346,500		

* Includes all Vehicle Operations and Maintenance personnel and other overhead expenses. Based on Calendar Year 1998-1999 average vehicle costs of \$4,997 for all Police Department Ford Crown Victorias, increased to \$6,000 to compensate for lower costs possibly associated with unmarked Ford Crown Victorias, which may have driven down the per-car average.

Exhibit F

**Baltimore County, Maryland
Annual Liability Insurance Costs**

	Community Conservation Study		Baltimore County Study		Current Fleet
	pool	personal	pool	personal	pool
Number of vehicles	172	226	110	358	276
Annual cost per vehicle*	\$2,000	\$1,250	\$2,000	\$1,250	\$2,000
Total annual cost	\$344,000	\$282,500	\$220,000	\$447,500	\$552,000
Difference from Current Fleet	(pool & personal) \$74,500		(pool & personal) \$115,500		

*Office of the County Auditor estimate.

Exhibit G

**Baltimore County, Maryland
Annual Equipment Installation and Removal Costs**

	Community Conservation Study		Baltimore County Study		Current Fleet
	pool	personal	pool	personal	pool
Number of vehicles	172	226	110	358	276
Cost per vehicle*	\$250	\$250	\$250	\$250	\$250
Useful patrol life (months)	30	48	30	48	30
Annual cost per vehicle	\$100	\$63	\$100	\$63	\$100
Total annual cost	\$17,200	\$14,125	\$11,000	\$22,375	\$27,600
Difference from Current Fleet	(pool & personal) \$3,725		(pool & personal) \$5,775		

*Source: Office of Budget and Finance.

Exhibit H

ISSUING COMMAND: Commanding Officer Field Operations		S.O.P. #94-
ISSUE DATE:	EFFECTIVE DATE:	
REVISION DATE:	REVISION #	
SUBJECT:	Police Vehicle Saturation Program	
SUB-TOPIC:	Officer Assigned Marked Patrol Vehicles	
REFERENCES:	C.A.L.E.A. 41.1.14	
<small>Rules, regulations, policies and procedures stated in written directives of the Baltimore County Police Department are for Departmental use only and do not apply in any criminal or civil proceeding. They shall not be construed as creating a higher legal standard of care or safety in an evidentiary sense with respect to third party claims. Violations thereof will only form the basis for Departmental administrative sanctions.</small>		

Background

Since 1971 various police jurisdictions throughout the state have implemented a police vehicle saturation program to enhance patrol. The greater visibility of police resulting from an increased number of marked police vehicles on the streets serve to increase citizens' feeling of security and promote the concept of omnipresence of police in the community.

The goal of the Baltimore County Police Department is to maintain a fleet of officer assigned marked patrol vehicles in order to provide greater police visibility in the county, increase citizen security, enhance responsiveness to calls for service, and provide a greater level of police service to the residents of Baltimore County. Residential communities, business areas, malls, parks, etc., are examples of locations that can benefit from this type of patrol. This accessibility gives the public a better opportunity to interact with officers on matters that concern them.

By using the Police Vehicle Saturation Program (PVSP) for off-duty purposes the Baltimore County Police Officer is more easily recognized by the public thus more accessible to them and wider person to person communication is achieved therefore fulfilling the overall community policing philosophy. In addition the regular duty force will be supplemented by additional off-duty officers. Therefore, the additional off-duty officers will be available for response to emergency situations, providing back-up in dangerous situations and to address other concerns that may arise in our communities.

Purpose

This Standard Operating Procedure establishes criteria for eligibility into the program and sets forth procedures and guidelines for their use, both on and off duty.

Values Statement

Service - We provide dedicated and compassionate assistance by promoting leadership, cooperation, creativity. We aspire to improve the quality of life in partnership with the community.

Procedures

A. Program responsibility:

The Chief of the Operations Bureau, or his/her designee, will act as the Program Director for the Police Vehicle Saturation Program. The Chief, or his/her designee, will be responsible for overall administration of the program.

B. The Chief of Operations Bureau will compile statistics, on a monthly and annual basis.

C. Community Services will conduct an annual management audit of the program.

Program Eligibility

A. The vehicles in the Patrol Vehicle Saturation Program will be assigned to eligible personnel as availability permits. This program is limited to sworn personnel meeting the following requirements:

1. The officer must have successfully completed his/her probationary period (two year period).
2. The officer/supervisor must be assigned to uniform patrol, Traffic or K-9.
3. The officer/supervisor must have a favorable recommendation from his Bureau Commander.
4. The officer/supervisor must have at least a competent evaluation at the time of application.
5. The officer/supervisor must physically reside in Baltimore County.
6. The officer/supervisor must not be on light duty status or extended disability leave.

B. Personnel meeting the above criteria shall submit a PVSP application and forward it to their immediate supervisor for review.

C. Approved applicants will be placed on an eligibility list.

- D. Applicants will be selected based upon qualifications, including training, skill and ability, physical and mental condition, balance staffing, performance evaluation and the needs of the Department. Provided these factors are all relatively equal, seniority shall be determinative.
- E. Selections shall be made by the precinct/unit commander.
- F. Participation in the Patrol Vehicle Saturation Program is a privilege and is extended to only those members who meet the qualifications and maintain satisfactory performance in the program. The commanding officer of a member assigned to the PVSP can, for cause, rescind the privilege. Such cause shall be explained to the member and it will not be considered a disciplinary action. Any officer who has been removed from the program may reapply for participation.

Program Guidelines

- A. Officers operating a PVSP on duty will follow Departmental guidelines set forth in this SOP.
- B. Off-duty officers will use their assigned vehicles within the borders of Baltimore County. Requests for approval to use the vehicles outside the boundaries of Baltimore County (school, training seminars, etc.) will be made in writing to the requesting officer's Precinct Commander.
- C. Vehicles will not be used in the course of any secondary employment, but may be used to transport the officer to and from that employment.
- D. Off duty officers will not use their vehicles to visit any liquor establishment, nor will they consume any alcoholic beverage six (6) hours prior to the operation of their vehicles.
- E. Off-duty officers and passengers will be attired in a fashion that allows them to perform the police function. They will not be attired so as to bring discredit upon the Department. The following are examples of unacceptable attire:
1. Halter tops
 2. Tank tops
 3. Tube tops
 4. Sleeveless "T" shirts
 5. Shower shoes
 6. Exposed swimming suits
 7. "Cutoffs"
 8. Any clothing with offensive language
- F. Officers will be armed at all times while operating the PVSP vehicle.
- G. The PVSP vehicle will not be utilized to carry excessively large or heavy loads, or objects which protrude from the trunk or windows, except as required in the performance of official duties.

- H. Animals will not be transported in the personal patrol vehicle except in unusual circumstances/emergencies.
- I. Off-duty officers are required to perform traffic stops in those incidents where the violations are life threatening and require immediate action or when inaction may be viewed unfavorably by the public.
- J. Off-duty officers are required to respond to calls or incidents that come to the officer's attention either through contact with citizens, on-view incidents, or through the monitoring of a serious call within close proximity of the officer. Off-duty officers will handle all minor, on-view incidents encountered during the use of the vehicle. Any incident encountered that becomes involved or time consuming may be turned over to an on-duty officer with supervisory approval.
- K. Whenever an officer with a civilian passenger is in the proximity of a serious or life threatening call (ie. homicide, armed robbery, burglary, or assault with weapons, etc.), that passenger must be discharged at a safe location prior to the officer's arrival at the scene of the call. The off-duty officer may contact the Communications Section and have another officer pick up the civilian passenger.
- L. Reports completed by off-duty officers will be placed in the "log and hold box", located in the desk area, within forty-eight (48) hours of the incident.
- Officers who are on disability leave, light duty, leave away from the county for more than one week, or suspended from duty, will turn in their vehicle to his/her Precinct Commander. Any alternative use of the vehicle will be at the discretion of the Precinct Commander.
- N. If a PVSP vehicle is taken out of service, the officer will use a spare vehicle assigned to his command. General assignment vehicles shall only be used during an officer's normal tour of duty. A spare PVSP will not be available to take home.
- O. Non-authorized civilian personnel are not permitted to operate a police vehicle except in an emergency.
- P. Officers are not permitted to place bumper stickers, decals, insignia, banners or placards on the PVSP vehicle without prior written approval from the Chief of Police. Forbidden are stickers that could be interpreted as carrying a political message. The only exceptions to this order would be those bumper stickers which encourage proper social behavior and promote public safety.
- Q. Participating personnel will turn in the following required reports within five (5) days after the end of the reporting month:
1. Monthly Log
 2. Off Duty Incident Log
 3. Maintenance Record
- k. Officers assigned PVSP vehicles are responsible for scheduling maintenance of the vehicle in compliance with V.O.M. Standards.

3. There shall be no additions or mechanical/electrical modifications to the vehicles unless approved by the fleet manager in Technical Support Services.

Overtime Exchange Time

Officers responding to calls during off duty hours will not normally be required to remain on the call as a primary unit. However, should the officers presence be required for an extended period of time, an compensation provided will be provided in accordance with the current agreement between the County and the Fraternal Order of Police. An on duty supervisor must approve any overtime compensation at the time of its occurrence.

Exhibit I

Personal Patrol Car Programs in Other Jurisdictions

Jurisdiction	Program Summary	Contact Info.
Anne Arundel Co.	Program is restricted to sworn officers who reside in County. Waiting list of 2-3 years may exist. Personal cars may not be driven outside of County. Personal cars may be used for secondary employment if authorized by Department, however gasoline and mileage may be charged to secondary employer.	Richard Cassard, Fleet Coordinator (410) 222-8655
Howard Co.	Program is restricted to sworn officers who reside in County and to sergeants and above who reside in State. Officers are not eligible to receive personal cars while in probationary period. Officers may drive personal cars for personal use up to 10 miles out of County. Program participation is dependent upon vehicle availability.	Sgt. John Superson, Public Information Officer (410) 313-3724
Montgomery Co.	Program is restricted to sworn officers who reside in County. Officers are not eligible until one year from the date they graduate from academy. Exemptions may be granted for non-residents provided they agree to be on 24-hour call.	Bob Berkey, Budget Office (240) 773-5235
Prince George's Co.	Program is restricted to sworn officers who have graduated from academy and reside in County. Pool cars are available to non-residents, but they may not be driven home - rather, they must be parked at an approved "satellite" facility located in County.	Lt. Jeff Yeomans, (301) 772-4784
State of MD	Program is restricted to sworn officers who reside in State (note: MD State troopers must reside in Maryland). Cadets are not eligible while in training. Program participation is dependent upon vehicle availability, need, and seniority. Officers may not drive personal cars out of State unless on official business. Personal cars may be used for secondary employment if authorized by Department.	Capt. McClean, Motor Vehicle Division (410) 799-5404
Indianapolis, IN	Program restricted to sworn officers who reside in Marion County. Exceptions granted for "special duty" positions. Officers may drive personal cars in County and seven adjoining counties, but not outside this area unless authorized by the chief of police. Vehicles may be used for secondary employment with certain restrictions.	Mark Wells, Special Projects Officer, Planning and Research Office (317) 327-3170