

State of Arizona
Office
of the
Auditor General

PERFORMANCE AUDIT

**DEPARTMENT
OF
PUBLIC SAFETY
Highway Patrol**

**Report to the Arizona Legislature
By Debra K. Davenport
Auditor General**

**September 2001
Report No. 01-20**

The Auditor General is appointed by the Joint Legislative Audit Committee, a bipartisan committee composed of five senators and five representatives. Her mission is to provide independent and impartial information and specific recommendations to improve the operations of state and local government entities. To this end, she provides financial audits and accounting services to the state and political subdivisions and performance audits of state agencies and the programs they administer.

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DEBRA K. DAVENPORT, CPA
AUDITOR GENERAL

STATE OF ARIZONA
OFFICE OF THE
AUDITOR GENERAL

WILLIAM THOMSON
DEPUTY AUDITOR GENERAL

September 11, 2001

Members of the Arizona Legislature

The Honorable Jane Dee Hull, Governor

Colonel Dennis Garrett, Director
Department of Public Safety

Transmitted herewith is a report of the Auditor General, A Performance Audit of the Department of Public Safety's Highway Patrol Division. This report is in response to a June 16, 1999, resolution of the Joint Legislative Audit Committee. The performance audit was conducted as part of the Sunset review set forth in A.R.S. §41-2951 et seq. I am also transmitting with this report a copy of the Report Highlights for this audit to provide a quick summary for your convenience.

This is the sixth in a series of reports to be issued on the Department of Public Safety.

As outlined in its response, the Department of Public Safety agrees with all of the findings and will implement, or implement in a different manner, all of the recommendations.

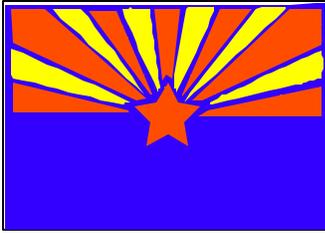
My staff and I will be pleased to discuss or clarify items in the report.

This report will be released to the public on September 12, 2001.

Sincerely,

Debbie Davenport
Auditor General

Enclosure

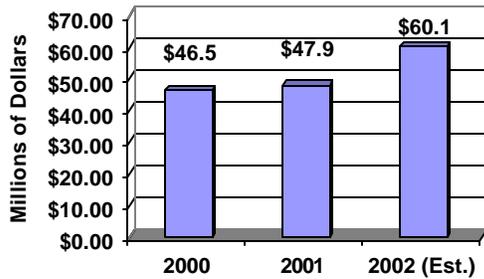


Program Fact Sheet

Department of Public Safety Highway Patrol

Services: The Highway Patrol provides the following services: **1) Patrol**—Officers regularly patrol nearly 6,000 miles of state highways; **2) Enforcement**—Officers enforce Arizona traffic, criminal, and state laws primarily on highways; **3) Investigation**—Officers investigate traffic collisions and potential criminal behavior primarily on highways; **4) Arrests**—Officers make criminal arrests as needed; **5) Public Safety**—Officers promote traffic awareness and safety by interacting with the public in several ways, including making presentations to citizens and participating in child safety seat drives; and **6) Law Enforcement Support**—The Highway Patrol supports other criminal justice agencies by providing specialized training and manpower when needed.

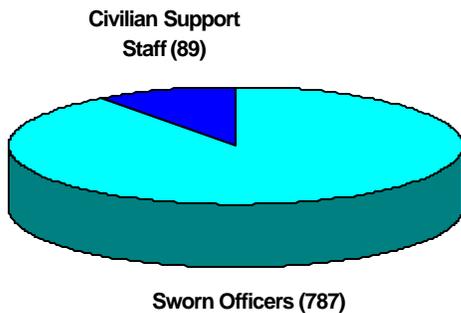
Program Revenue: \$47.9 million
(fiscal year 2001)



Mission Statement:

“To ensure the safe and expeditious use of the highway transportation system for the public and to provide assistance to local and county law enforcement.”

Personnel: 876 full-time staff
(fiscal year 2001)



Facilities:

The Highway Patrol operates from four key headquarters buildings: two in Phoenix, and one each in Tucson and Flagstaff. In addition, patrol officers work out of 12 district offices and 39 local area offices. Thirty-one of these offices are owned by DPS, while others are leased from other state agencies, local governments, the federal government, and the private sector at a total cost of approximately \$94,000 in fiscal year 2001.

Equipment: (fiscal year 2001)

DPS owns a wide variety of noteworthy and valuable equipment. For example:

- 1,600 motor vehicles which have a total market value of approximately \$20 million.¹ This includes:
 - 961 fully equipped patrol sedans which cost approximately \$33,000 each when new.
 - 57 fully equipped patrol motorcycles which cost approximately \$11,000 each when new.
- A standard equipment package issued to every officer. For example, each officer receives:
 - Body armor, which costs approximately \$475;
 - A semi-automatic weapon, 12 gauge shotgun, and gun belt, which cost approximately \$1,017 total; and
 - Office supplies, such as blank citations and audio tape, which cost approximately \$743.

¹ DPS also owns approximately 300 additional vehicles which are not yet in service, are slated for disposal, or are highly specialized.

Program Goals: (2001—2003)

1. To reduce the rates of vehicle collisions and vehicle fatalities.
2. To vigorously target aggressive and impaired drivers.
3. To minimize traffic congestion and delays on highways as a result of unexpected closures.
4. To ensure patrol districts are staffed to their proper operational levels utilizing the Patrol Allocation Manual and implement the appropriate allocation and distribution of personnel.

5. To maintain or increase the level of support by Highway Patrol personnel to other law enforcement agencies and respond to civil and natural emergencies as directed.
6. To improve services to the motoring public by expanding the Roadside Motorist Assistance Programs statewide.

Adequacy of Goals and Performance Measures:

The Highway Patrol's six goals are aligned with its Mission and it has established performance measures for each goal. However, auditors identified the following problems:

- The Highway Patrol has not established any input performance measures. Input measures, such as the number of vehicle miles traveled on Arizona highways, would help demonstrate the scope of the Highway Patrol's work as well as provide contextual information about external factors impacting its services.
- The Highway Patrol has not established key quality and efficiency measures. For example, there is no quality measure gauging citizen's satisfaction with the Highway Patrol's services. Similarly, efficiency measures, such as average response time, would help ensure that officers respond to emergencies in a timely manner.
- In addition, several of the performance measures are based on data from DPS' officer time and tracking system. However, auditors identified some problems that could impact the accuracy of this data. Therefore, DPS will need to take steps, such as providing additional training to officers about recording their patrolling activities and establishing additional quality control checks, to ensure data entered into the system is accurate.

SUMMARY

The Office of the Auditor General has conducted a performance audit of the Department of Public Safety's Highway Patrol Division (Division) pursuant to a June 16, 1999, resolution of the Joint Legislative Audit Committee. This audit was conducted as a part of the Sunset review set forth in A.R.S. §41-2951 et seq, and is the sixth in a series of nine audits to be conducted on programs within the Department of Public Safety (DPS). Specifically, performance audits have been previously issued concerning DPS' Aviation Section (Report No. 00-7), Scientific Analysis Bureau (Report No. 00-12), Drug Abuse Resistance Education Program (Report No. 01-3), Telecommunications Bureau (Report No. 01-5), and Licensing Bureau (Report No. 01-10). Future performance audits will cover DPS' Criminal Investigations Division, the Criminal Information Services and Fingerprint Identification Bureaus, and agency-wide Sunset Factors.

Officers patrol nearly 6,000 miles of state and federal highways.

This audit focuses on the Highway Patrol function within the Department of Public Safety. Although Highway Patrol officers focus on patrolling nearly 6,000 miles of state and federal highways, they have the authority to enforce traffic, criminal, and state laws anywhere in Arizona. Additionally, highway patrol officers investigate traffic collisions, make criminal arrests, promote traffic awareness and safety, and provide support and specialized training to other criminal justice agencies.

Highway Patrol Division Could Improve the Accuracy of its Staffing Estimates (See pages 9 through 15)

Division uses a nationally accepted staffing model.

The Highway Patrol Division needs to take several steps to improve the accuracy of its staffing estimates. The Division uses the Police Allocation Manual (PAM), a nationally accepted staffing model, to estimate the number of officers it needs to adequately patrol the State's highways. The PAM model calculates staffing

needs based on officer workload data, such as the number of accidents responded to; highway miles patrolled; and policy decisions, such as how often a particular roadway should be patrolled. Several other states, such as Colorado, Missouri, Oregon, and Washington, use the PAM model.

Division should improve its staffing estimates.

However, the Division has not updated the model nor some of the key information used in the model since 1993. Therefore, before using its staffing model to develop future budget requests, the Division should take steps to refine the accuracy of the staffing estimates its model produces. As one of the first steps, the Division should identify exactly how changes in its workload data and policy decision inputs impact the complex model's results. To do so, the Division should conduct a sensitivity analysis, which consists of changing each input in the model one at a time by 5 percent to identify how the change impacts staffing estimates. This would allow the Division to focus its efforts on refining and ensuring the accuracy of those inputs which have the greatest impact on the staffing estimates. The Division should then review and revise as necessary the policy inputs or goals used in the model before running the model as a part of future budget requests.

Additionally, the Division should take steps to ensure the accuracy of the officer workload data that is entered into PAM. Finally, the Division should also consider having its model updated or choosing an improved version of PAM.

**DPS Needs to Develop Comprehensive Motor Vehicle Fleet Size and Replacement Policies
(See pages 17 through 25)**

Currently, DPS has over 1,600 vehicles in its fleet.

DPS needs to develop comprehensive, objective vehicle fleet size and replacement policies. DPS lacks sufficient and reliable vehicle use data to evaluate whether the size of its fleet, currently over 1,600 vehicles, is appropriate. Because DPS' motor vehicle fleet represents a substantial financial investment to the State, approximately \$20 million, it is important to ensure it is the appropriate size. A similar concern was raised in an Auditor General report in 1991 (No. 91-11). At that time, DPS owned approximately 1,580 vehicles.

DPS needs to ensure that its fleet consists of the appropriate number of vehicles. First, it should collect sufficient and reliable vehicle use data and then evaluate and revise, as necessary, its practice of assigning a vehicle on a 24-hour-per-day basis to virtually all sworn officers. Four of the 14 states auditors contacted restrict take-home vehicles to certain officer positions. For example, the California Highway Patrol and the Oregon State Police assign vehicles to officers on a 24-hour-per-day basis only under special circumstances. Second, DPS should use its vehicle usage data to develop formal fleet size policies for all of DPS' divisions. Currently, only the Highway Patrol has a fleet size policy. However, this policy is based on current practice rather than demonstrated need. Third, DPS needs to better monitor how many miles each vehicle is driven and eliminate low-mileage vehicles as appropriate.

DPS should develop an objective vehicle replacement standard.

In addition to developing fleet size policies, DPS also needs to develop a comprehensive vehicle replacement policy. Currently, there is no consistently applied, objective standard identifying when Department vehicles will be replaced. Although DPS reports that highway patrol vehicles are eligible for replacement after they have reached 100,000 miles, auditors identified several problems with this standard. For example, it was developed based on perceptions of available monies rather than on an objective study that identified when it is most cost-effective to replace vehicles.

Other Pertinent Information (See pages 27 through 28)

During the audit, other pertinent information was gathered regarding the new highway patrol officer positions recently appropriated by the Legislature. The Division will be receiving funding to create 116 new highway patrol officer positions over fiscal years 2002 and 2003, but the Division did not request as many officers as its staffing model indicates are needed. The most recent appropriation of officer positions focused solely on the staffing needs for metropolitan Phoenix and Tucson, which had the greater officer shortage. The model continues to show that an additional 65 officers are needed statewide. Further, the Division believes these estimates may understate its staffing needs because the Arizona Department of Transportation has not been able to provide the Division with updated traffic counts since 1999 due to a computer problem.

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INTRODUCTION AND BACKGROUND

The Office of the Auditor General has conducted a performance audit of the Department of Public Safety's Highway Patrol Division (Division) pursuant to a June 16, 1999, resolution of the Joint Legislative Audit Committee. This audit was conducted as part of the Sunset review set forth in A.R.S. §41-2951 et seq, and is the sixth in a series of nine audits to be conducted on programs within the Department of Public Safety (DPS). Specifically, performance audits have been previously issued concerning DPS' Aviation Section (Report No. 00-7), Scientific Analysis Bureau (Report No. 00-12), Drug Abuse Resistance Education Program (Report No. 01-3), Telecommunications Bureau (Report No. 01-5), and Licensing Bureau (Report No. 01-10). Future performance audits will cover DPS' Criminal Investigations Division, the Criminal Information Services and Fingerprint Identification Bureaus, and agency-wide Sunset Factors.

Highway Patrol Provides Various Public Safety Services

The Highway Patrol strives "to ensure the safe and expeditious use of the highway transportation system for the public and to provide assistance to local and county law enforcement agencies." To meet this goal, officers focus on patrolling and enforcing traffic and criminal laws on nearly 6,000 miles of state and federal highways. However, as Arizona peace officers, they have the authority to enforce laws anywhere in Arizona. Additionally, highway patrol officers investigate traffic collisions, make criminal arrests, promote traffic awareness and safety, and provide support and specialized training to other criminal justice agencies.¹

The Highway Patrol serves the public and other criminal justice agencies.

¹ The Commercial Vehicle Enforcement Bureau and the Aviation Section are also part of the Highway Patrol Division but are not included in this audit. The Commercial Vehicle Enforcement Bureau was excluded from this audit because it was the subject of a 1998 Strategic Program Authorization Review. A separate performance audit of the Aviation Section was previously conducted in 2000 (Auditor General Report No. 00-7).

The Highway Patrol is organized into three geographic bureaus.

Organization and Staffing

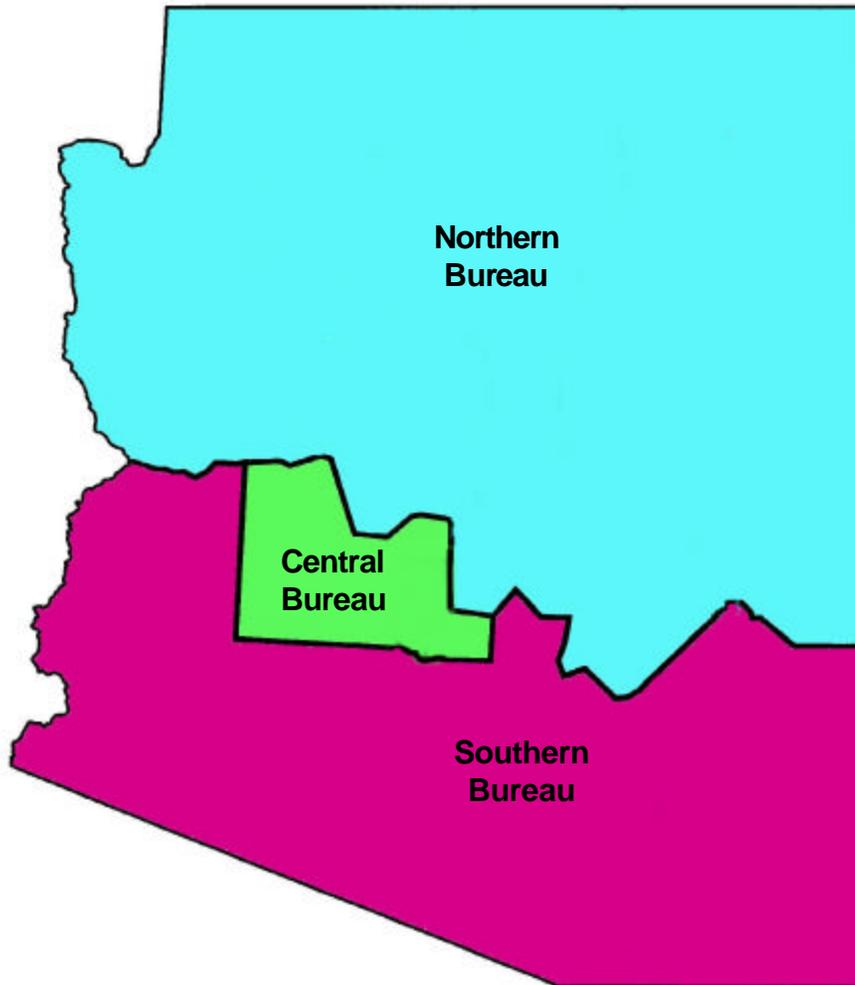
The Highway Patrol is divided into three geographically based bureaus, as illustrated in Figure 1 (see page 3), and has 876 full-time equivalent (FTE) employees.

- **The Northern Patrol Bureau (255 FTEs)**—The Northern Patrol Bureau, headquartered in Flagstaff, is responsible for patrolling the northern portions of Arizona, including Kingman, Holbrook, Globe, and Prescott. The Bureau is organized into five geographic districts. These districts are further organized into approximately 26 small groups of patrol officers. These small groups, responsible for patrolling a specific geographic area within their district, vary in size, but often range from six to ten officers. In rural areas, officer groups are usually too small to patrol highways 24 hours per day. Because rural roads often carry less traffic than urban freeways, continuous coverage may not be necessary. However, officers in rural areas may be required to respond to emergencies during their off-duty hours.
- **The Southern Patrol Bureau (228 FTEs)**—The Southern Patrol Bureau, headquartered in Tucson, is responsible for patrolling the southern portions of Arizona, including Yuma, Casa Grande, and Sierra Vista. The Southern Patrol Bureau is organized similarly to the Northern Patrol Bureau, with a total of four districts and 25 small groups of officers. Some of these officers are assigned to patrol the Tucson metropolitan area 24 hours per day.
- **The Central Patrol Bureau (212 FTEs)**—The Central Patrol Bureau, headquartered in Phoenix, is primarily responsible for the freeways in the Phoenix metropolitan area, including Interstate 17, Interstate 10, Loop 202, and State Route 51. It is organized in shifts so that there are at least three groups of officers on duty within the Phoenix Metropolitan area 24 hours per day. The Central Patrol Bureau also includes approximately 28 motorcycle officers.

In addition, the Highway Patrol Division has 181 FTEs working in administrative, aviation, and commercial vehicle enforcement functions.

Figure 1

**Department of Public Safety
Highway Patrol Division
Areas Patrolled by Regional Bureaus
As of June 2001**



Source: Auditor General staff analysis of the Highway Patrol's district maps.

Budget and Recent Appropriations

As illustrated in Table 1 (see page 5), the Highway Patrol received approximately \$7.7 million from the General Fund during fiscal year 2001. Additionally, it received a total of approximately \$40.2 million from a combination of the Arizona Highway Patrol Fund, State Highway Fund, Highway User Revenue Fund, and other governmental sources.¹

The Legislature recently appropriated monies for 116 new highway patrol officers.

The Legislature also recently provided a notable increase in monies to the Highway Patrol. Specifically, Laws 2001, Chapter 1 provides over \$11 million from the Highway User Revenue Fund to hire a total of 116 new highway patrol officers over fiscal years 2002 and 2003. The officers are expected to be primarily assigned to the Phoenix and Tucson metropolitan areas. Additionally, the Legislature provided approximately \$2.5 million for officer overtime costs and over \$11 million for new vehicles.

Audit Scope and Methodology

This audit focuses on DPS' officer staffing projections and motor vehicle fleet size and replacement. Specifically, the audit presents findings and recommendations as follows: DPS needs to take steps to improve its officer staffing projections and needs to develop comprehensive motor vehicle fleet size and replacement policies. Although this audit focuses on the Highway Patrol Division, department-wide vehicle fleet issues are also included in this report because the Division controls the majority of vehicles in DPS' motor vehicle fleet.

¹ The Arizona Highway Patrol Fund consists of taxes levied on vehicle insurance premiums that are appropriated to fund eligible contributions to the Public Safety Personnel Retirement System. The State Highway Patrol Fund and Highway User Revenue Fund primarily consist of motor fuel taxes and motor vehicle license and registration fees that are appropriated to fund a portion of highway patrol costs.

Table 1

**Department of Public Safety
Highway Patrol
Statement of Revenues, Expenditures, and Changes in Fund Balance
Years Ended or Ending June 30, 2000, 2001, and 2002
(In Thousands)
(Unaudited)**

	2000	2001	2002
	(Actual)	(Actual)	(Estimated)
Revenues:			
Appropriations:			
State General Fund	\$ 9,215.2	\$ 7,710.9	\$ 7,294.0
Arizona Highway Patrol Fund ¹	10,474.2	12,017.9	10,167.8
State Highway Fund ²	11,314.6	11,343.5	11,957.1
Highway User Revenue Fund ²	11,513.5	11,560.0	26,164.0
Intergovernmental	<u>3,999.5</u>	<u>5,241.0</u>	<u>4,521.2</u>
Total revenues	<u>46,517.0</u>	<u>47,873.3</u>	<u>60,104.1</u>
Expenditures:			
Personal services	33,400.2	34,197.4	38,034.1
Employee related	7,791.8	8,291.2	11,281.0
Professional and outside services	5.7	4.5	33.8
Travel, in-state	176.8	132.2	365.2
Travel, out-of-state	53.1	57.1	35.7
Aid to organizations	7.0	10.6	
Other operating	1,077.5	894.5	3,850.9
Equipment	3,422.2	3,579.1	7,266.5
Total expenditures	<u>45,934.3</u>	<u>47,166.6</u>	<u>60,867.2</u>
Excess of revenues over expenditures	582.7	706.7	(763.1)
Reversions to the State General Fund	<u>561.0</u>	_____	_____
Excess of revenues over expenditures and rever-			
sions to the State General Fund	21.7	706.7	(763.1)
Fund balance, beginning of year	<u>34.7</u>	<u>56.4</u>	<u>763.1</u>
Fund balance, end of year	\$ 56.4	\$ 763.1	\$ 0

¹ Consists primarily of insurance premium taxes that are appropriated to fund eligible contributions to the Public Safety Personnel Retirement System.

² Consists primarily of motor fuel taxes, and motor vehicle license and registration fees that are appropriated to fund a portion of highway patrol costs. In addition, the 2002 Highway User Fund appropriation includes \$4.6 million for an additional 58 full-time equivalent positions and related operating expenditures, and \$5.4 million to replace highway patrol vehicles.

Source: Auditor General Staff analysis of financial information provided by the Department of Public Safety for the years ended or ending June 30, 2000, 2001, and 2002.

Part of this audit included reviewing DPS' efforts to address problems previously identified in the 1991 performance audit reports of the Highway Patrol (Report No. 91-5) and DPS' Administration Bureau and Office of the Director (Report No. 91-11). The 1991 Highway Patrol report contained two findings regarding the model DPS uses to identify how many officers it needs to adequately patrol Arizona's highways and DPS' computerized tracking system. Finding 1 of this report (see pages 9 through 15) addresses ways that DPS can continue to improve in both areas. Similarly, the 1991 Administration Bureau and Office of the Director report included findings about DPS' management of take-home vehicles and the size of its fleet. Both of these topics are addressed in Finding II (see pages 17 through 25).¹

In addition to the follow-up work, several other methods were used to study the issues addressed in this audit, including:

- Obtaining a download, as of April 2001, of DPS' motor vehicle inventory database to identify and analyze the fleet's size and age;
- Contacting officials from 17 other states to obtain information about their staffing projection and motor vehicle fleet management methods for comparison to Arizona's practices;²
- Reviewing manuals and other state audit reports regarding the officer projection model used by the Division and motor vehicle fleet management practices;
- Identifying and interviewing police force management experts, including the author of the officer projection model used by the Division;

¹ The Administration Bureau no longer exists. However, its functions have been primarily assumed by DPS' Agency Support Division.

² California, Colorado, Idaho, Iowa, Kansas, Missouri, Montana, Nevada, New Mexico, Oregon, Texas, Utah, Washington, and Wyoming were contacted because they are either western states that operate under similar geographic conditions as Arizona or because they are acknowledged experts in state highway patrol motor vehicle fleet management. Similarly, California, Michigan, Missouri, Nevada, New York, Ohio, Oregon, Texas, and Washington were contacted to identify best and comparative practices in projecting officer staffing needs.

Introduction and Background

- Interviewing DPS management and patrol officers, including riding with officers in patrol vehicles during rush hour to gain an understanding of highway patrol procedures, to obtain officer opinions about DPS, and to identify the impact of potential vehicle problems on citizens;
- Interviewing officials from all of the patrol officer representative organizations recognized by DPS to identify officers' concerns and opinions about DPS; and
- Interviewing Arizona legislative and Department of Administration staff regarding legislative involvement in identifying the number of DPS officers and vehicles needed and motor vehicle fleet management.

This audit was conducted in accordance with government auditing standards.

The Auditor General and staff express appreciation to the director, assistant directors, officers, and staff of the Department of Public Safety for their cooperation and assistance throughout the audit.

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FINDING I

HIGHWAY PATROL DIVISION COULD IMPROVE THE ACCURACY OF ITS STAFFING ESTIMATES

The Highway Patrol Division needs to take several steps to improve the accuracy of its staffing estimates. The Division uses a complex, nationally accepted model to estimate the number of officers needed to adequately patrol state highways. However, the Division has not updated the model and some of the key information entered into the model since it was implemented in 1993.

Division Uses a Nationally Accepted Staffing Model

The Division uses the Police Allocation Manual (PAM), a nationally accepted staffing model, to estimate the number of officers it needs to adequately patrol state highways. In 1991, Northwestern University's Traffic Institute, under contract by the National Highway Traffic Safety Administration, completed this universal state patrol staffing model. That same year, the Arizona Auditor General (Report No. 91-5) reviewed the model and characterized it as logical, flexible, and based on sound theoretical principles. Several other states, such as Colorado, Missouri, Oregon, and Washington, use the PAM model.

Staffing model uses workload data and policy decisions.

The Division inputs many types of information into the model to calculate highway patrol staffing needs. For example, this complex model takes into account the number of highway miles patrolled and officer workload, such as the number of violators stopped, the number of accidents responded to, and the average amount of time spent per accident. In addition, the model takes into account policy decisions or goals the Division sets based on actual workload data. For example, the Division decides the amount of time that should be dedicated to patrolling a particular highway and the amount of time that should be spent on administrative tasks, such as completing paperwork. In total, the model applies a variety of formulas to over 40 variables to produce an estimate of the minimum number of officers needed to adequately patrol the State's highways.

Item 1	Examples of Information Entered Into the PAM Model	
Workload Data	<ul style="list-style-type: none"> ◆ Miles of roadway patrolled ◆ Number of accidents and requests for assistance responded to ◆ Average time per type of response 	Policy
		<ul style="list-style-type: none"> ◆ Shift length ◆ Percentage of time officers in supervisory positions spend patrolling the highways ◆ Patrol speed by highway
Source: 1996 Personnel Allocation Plan, Arizona Department of Public Safety.		

Improvements to Staffing Model Should be Made

The Division should take steps to refine the quality and accuracy of the estimates the model produces. The Division has not updated key model inputs nor the model itself since its implementation in 1993. First, the Division needs to take steps to ensure the information and policy decisions put into the model are as accurate as possible. Second, the Division should conduct an analysis to determine whether it would benefit from updating its model or choosing a newer version of PAM. Establishing a study committee consisting of Division staff and key stakeholders could help the Division make these changes.

Ensure the appropriateness and accuracy of the information used in the model—PAM can be a useful tool for budget request development because it can consider many factors that influence the Division’s workload and need for officers. However, periodic review of the model is necessary to ensure the input information is accurate and appropriate so that the staffing estimates are as accurate as possible.

One of the first steps the Division should take prior to using the model to develop its next budget request is to identify exactly how changes in its workload and policy decisions impact the model’s results. To do so, the Division should conduct a sensitivity analysis, which consists of changing each input in the model one at a time by 5 percent to identify how the change impacts staffing estimates. This would provide the Division and other key stakeholders, such as budget analysts, with a better understanding of how the Division’s staffing estimates change

A sensitivity analysis would determine which inputs have the greatest impact.

Finding I

when workload factors change or policy decisions are changed. In addition, a sensitivity analysis would help the Division to focus its efforts on ensuring the data or policy inputs that have the greatest impact are as accurate or as reasonable as possible. Specifically, the Division can use the sensitivity analysis to help it address three key items before running the model to support its next budget request.

Policy inputs, such as patrol speed, should be reevaluated.

- **Reevaluate policy decisions**—First, the Division should review and revise as necessary the policy inputs or goals used in the model. The model’s developer indicated that policy inputs should be reevaluated every three to five years. However, these inputs have not been reviewed or changed since the model was fully implemented in 1993. For example, in 1993, the Division determined its officers should travel at 35 to 50 miles per hour based on the type of highway. However, since that time, some roadways have experienced an increase of at least 10 miles per hour in the legal speed limit. Therefore, the Division’s policy inputs relating to patrol speed may need to be revised.
- **Ensure accuracy of workload data**—Second, the Division should take steps to ensure the accuracy of officer workload data that is entered into the model. Officers record workload data, such as the number of motorist assists and accidents they respond to in their assigned patrol areas. This workload data is entered into an officer time-tracking system and then used to update the PAM model and recalculate the number of officers needed.

However, Division staff indicate that the degree of accuracy and detail in the officers’ time tracking varies considerably among the officers. Specifically, Division staff indicated that generally new officers tend to track their patrolling activities more accurately than officers who have been with the Division for a longer period of time. This is consistent with the 1991 Auditor General’s report (No. 91-5), which found both under- and over-reporting of workload data.

To address data accuracy concerns, the Division should:

- **Provide additional training**—The Division should periodically provide additional training to ensure officers are accurately reporting their patrolling activities. Currently, the Division conducts time-tracking training only during the officers' initial academy training. Additional training could be provided through formal courses or informal approaches, such as periodic reminder memorandums.
- **Establish additional quality control checks**—The Division should establish additional quality control checks for the data entry process. Currently, some system edits exist, such as the inability to enter a code that does not exist. However, the Division may also want to verify the accuracy of a percentage of the information entered or develop some management or exception reports that would help them monitor data entry accuracy.
- **Consider using overtime in the staffing model**—The Division should also use the sensitivity analysis to determine the impact of including paid overtime hours into its staffing model. Including paid overtime hours in the staffing model increases the number of staff hours available and thus can reduce the number of staff needed.¹ Historically, the Division has had little money available to pay for highway patrol officer overtime and therefore has not reflected overtime in its model. However, the Division was recently appropriated a little over \$850,000 for fiscal year 2002 and \$1.7 million for fiscal year 2003 specifically for officer overtime. Division officials indicate that although this represents an increase in overtime funding, it only amounts to about six hours of overtime each month per highway patrol officer and thus is not likely to impact the amount of staff needed. However, if the sensitivity analysis shows that including overtime hours has a significant impact on its staffing estimates and overtime funding continues to be provided, the Division should add overtime hours into the model.

¹ Including cash paid overtime hours into the staffing model would have the effect of decreasing the staffing estimates, whereas officer overtime earned as compensatory time would have the opposite effect on the staffing estimates.

Consider using an improved version of PAM—After the Division takes the necessary steps to refine the data used in its staffing model, it should also consider whether a revised model would further improve its staffing estimates. Specifically, the Division should conduct an analysis of the costs and benefits of further improving its staffing model.

■ **Revising its current staffing model**—The Division should consider contracting with the model’s developer to further improve PAM. The state patrol version of PAM used by Arizona was developed in 1991 and no funding has been obtained to update the overall model since. However, Washington’s state patrol recently contracted with the model’s developer to improve the state version of PAM. Washington’s revisions included tailoring the model to its time entry system, as well as incorporating improvements from more recent versions of PAM. Washington expects to spend no more than \$95,000 for the revisions to its PAM model.

■ **Switching to an improved version of the staffing model**—If hiring the model’s developer is not a viable option, the Division should consider switching to an improved version of PAM, such as the improved “municipal” version published in 1993. Although the municipal version is not specifically designed for a state highway patrol agency, according to the model’s developer, it is largely interchangeable and contains improvements that would further increase the accuracy of the Division’s staffing estimates. Specifically, the municipal model allows the user to indicate that certain activities, such as completing paperwork, do not prevent the officer from being immediately available to respond to a call. The municipal model is available at no cost through the National Highway Traffic Safety Administration. However, it will require that DPS allocate some employee resources because data currently used by the PAM state model will need to be manually transferred to the new PAM municipal model.

A study committee could provide expertise and consensus—The Division should consider establishing a study committee to assist DPS in deciding which PAM model should be used and revising policy inputs. Because changes to the information entered into the model would increase or decrease the number of staff and

Finding I

service levels, key stakeholders could provide additional insight into the process. In addition to DPS management, legislative and executive budget staff could provide oversight while officer representatives could ensure that policy goals are reasonable and reflect actual officer practices.

Recommendations

Prior to making future staffing requests, the Division should take the following steps to improve the accuracy of its staffing model:

1. The Division should perform a sensitivity analysis of its PAM model to focus its efforts on first refining the model inputs that have the greatest impact on the staffing estimates.
2. The Division should reevaluate all policy decisions that are used in the model and make appropriate revisions.
3. The Division should establish a schedule to regularly review the policy decision inputs that impact their PAM model.
4. The Division should provide periodic formal or informal refresher training to officers to ensure accurate reporting of workload data.
5. The Division should take steps to ensure the accuracy of workload data entered into the Division's officer time-tracking system, such as verifying a percentage of workload data and/or developing management or exception reports.
6. When conducting the sensitivity analysis, DPS should specifically test whether overtime hours have a significant impact on its staffing estimates. If so, the Division should include overtime hours into its model.
7. The Division should analyze the costs and benefits of contracting with the model's developer to revise its staffing model or switching to an improved version of the model.
8. The Division should consider establishing a study committee to assist in deciding which PAM model will be used and reviewing policy inputs.

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FINDING II

DPS NEEDS TO DEVELOP COMPREHENSIVE MOTOR VEHICLE FLEET SIZE AND REPLACEMENT POLICIES

The Department of Public Safety (DPS) needs to develop comprehensive, objective vehicle fleet size and replacement policies. Because of a lack of sufficient and reliable data, it is difficult to assess whether DPS' motor vehicle fleet is the appropriate size. Similarly, it is unclear whether its vehicles are being replaced at a cost-effective rate. To address these problems, DPS should first continue to develop additional vehicle use data and then develop comprehensive fleet size and replacement policies.

DPS Lacks Needed Vehicle Use Data and Fleet Size Policies

DPS lacks sufficient and reliable vehicle use data to evaluate whether the size of its motor vehicle fleet is appropriate. Therefore, DPS needs to gather and use this data to develop objective fleet assignment and size policies, as well as regularly monitor fleet utilization.

*DPS owns over 1,600
vehicles.*

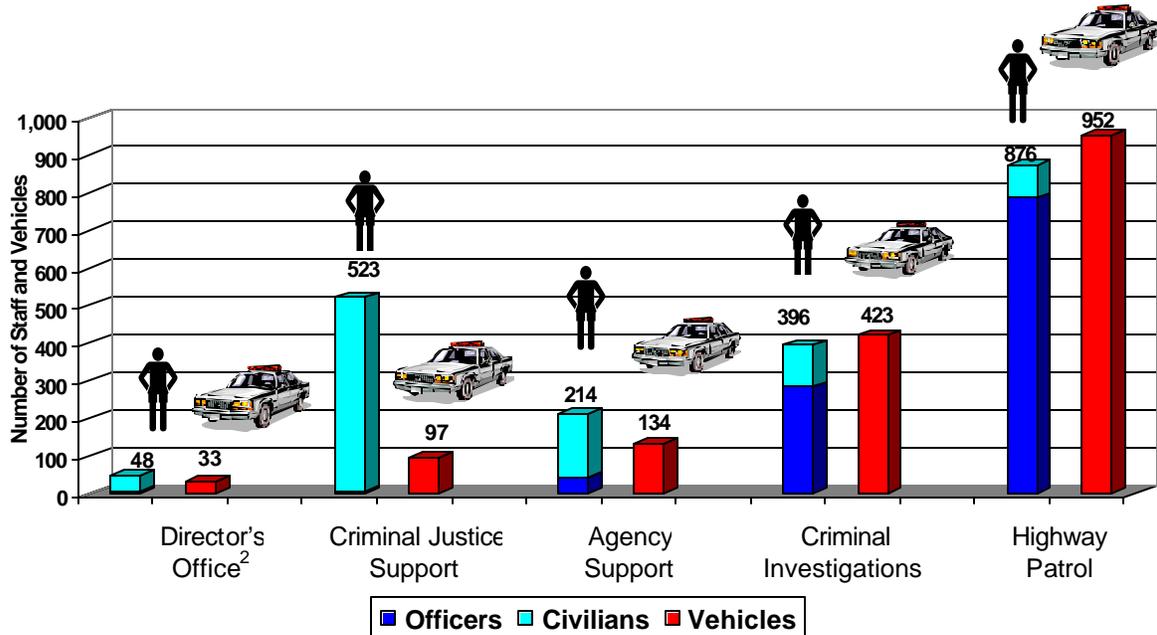
Fleet size—DPS' motor vehicle fleet represents a substantial financial investment to the State of approximately \$20 million.¹ As illustrated in Figure 2 (see page 18), DPS' fleet comprised over 1,600 vehicles as of April 2001.² DPS employs approximately 2,000 sworn officers and civilians who use these vehicles for a

¹ Estimated market value of DPS fleet as of June 30, 2001, reported by DPS' fleet management based on industry price guides.

² The vehicle inventory data also shows that DPS owned approximately 300 additional vehicles. Auditors excluded these vehicles from this analysis because the vehicles are new and not yet ready for service, are slated for disposal, or can be used only for special circumstances (such as tow trucks and tactical vehicles).

Figure 2

**Department of Public Safety
Comparison by Division
Number of Authorized Staff Positions vs.
Number of Vehicles¹**



¹ Excludes approximately 300 vehicles owned by DPS because they are new and not yet ready for service, are slated for disposal, or can be used only for special circumstances, such as tow trucks and tactical vehicles.

² The Director's Office is assigned 33 vehicles; however, 27 are used by organizations that are legally part of DPS but not managed by DPS Personnel, such as the Arizona Peace Officer Standards and Training Board and the Governor's Office of Highway Safety

Source: Vehicle information obtained from the April 13, 2001, Department of Public Safety, fleet management systems. Staffing information obtained from Department of Public Safety, *Position Control System* as of May 14, 2001.

wide variety of purposes, including patrolling highways, conducting undercover operations, and maintaining DPS' telecommunications equipment across the State. Two divisions, Criminal Investigations and Highway Patrol, are assigned more vehicles

than authorized staff positions. In comparison, an Auditor General report in 1991 found that DPS employed 1,617 officers and civilians and owned 1,580 vehicles (Report No. 91-11).¹

DPS should gather after-hour usage data—Determining whether the size of DPS' fleet is appropriate is difficult because DPS lacks key vehicle use data. Currently, DPS assigns a vehicle to virtually every sworn officer and certain civilians on a 24-hour basis. This practice is based on the assumption that officers need a vehicle when they are called out after their normal working hours to respond to emergencies. Yet how frequently this occurs cannot be evaluated, because DPS lacks sufficient and reliable vehicle use data showing how often all officers are called out for after-hours emergencies. Although DPS requires all employees in non-exempt positions (i.e., officers and civilians in non-

Photo 1: A Department of Public Safety Highway Patrol Sedan



Approximate cost—\$33,000.

Virtually all officers take DPS vehicles home at night.

management positions) to report call-out information on their timesheets, DPS determined the data for highway patrol officers was unreliable due to coding errors between the Highway Patrol Division's time and activity system and DPS' time accounting system. In addition, DPS does not have a process for collecting this information for officers and civilians in exempt, or management, positions even though these employees may be assigned vehicles on a 24-hour-per-day basis. Therefore, DPS needs to continue its efforts to fix the problems associated with call-out data in the Highway Patrol Division. In addition, it needs to establish a process for collecting call-out data from exempt employees because there may be some officers or civilians working in administrative or management positions who are assigned, but may not need, a vehicle on a 24-hour-per-day basis.

Once data is gathered, DPS should develop formal policies—DPS needs to use the vehicle usage information to ensure that its fleet consists of the appropriate number of vehicles needed to complete its work in an effective yet cost-efficient manner. Specifically, DPS should:

¹ Auditors also reported that DPS owned an additional 90 pieces of equipment as a part of its motor vehicle fleet (Report No. 91-11).

- **Use data to evaluate vehicle assignment practices—** Once sufficient and reliable use data is collected, DPS should use this data to evaluate its existing vehicle assignment practices. Specifically, DPS should consider modifying its current practice of automatically assigning a vehicle to almost every sworn officer and select civilians if the data shows they are never or rarely called to respond to emergencies after their normal working hours. Based on other states' experiences, the practice of assigning a vehicle to every sworn officer may not be necessary.

Three of the 14 states auditors contacted assign vehicles on a take-home basis to only some of their officers. For example, the Oregon State Police assigns vehicles to officers on a 24-hour-per-day basis only under special circumstances, such as officers who work on special tactical teams and officers who work and live in isolated rural areas where they are the only officer. Similarly, the California Highway Patrol assigns vehicles to officers on a take-home basis only in special circumstances, such as officers who work as area commanders. DPS reports that it is already in the process of developing new vehicle assignment policies for its 170 civilian employees in the Agency Support Division. However, it should also evaluate its vehicle assignment policies department-wide.

- **Develop formal fleet size policies for all divisions—** Once DPS has examined its vehicle assignment policies, it should use this information to develop formal fleet size policies. Currently, only the Highway Patrol Division has a policy specifying how the size of its fleet will be determined. However, this policy was not developed based on vehicle usage data and may result in more vehicles than needed (see Item 2, page 21).

After evaluating and improving the existing highway patrol policy, DPS should also develop formal fleet size policies for its other divisions. DPS management indicated that other divisions may be directed to write policies indicating how the number of needed vehicles will be calculated. Because usage data would help demonstrate the need for vehicles, DPS

Item 2:

**Highway Patrol Division
Major Formulas Used to Identify
the Number of Vehicles Needed**

- One take-home vehicle for virtually every sworn officer and certain civilians
- One spare vehicle for every four vehicles assigned to a squad
- One extra vehicle for every squad located in a remote area
- One enforcement vehicle for every three active sworn reserve officers
- One vehicle for every three civilian reserve employees who regularly perform motorist assist duties
- Specialty vehicles, such as command and passenger vans, as needed.

Source: Auditor General staff summary of the Highway Patrol Division's Authorized Vehicle Strength policy.

should ensure that all Departmental fleet size policies are based on data showing how frequently vehicles are used by DPS' officers and civilians.

- **Regularly monitor vehicle use data**—DPS needs to better monitor how its motor vehicles are used on a regular basis. Specifically, DPS should monitor how many miles each vehicle is driven, examine more closely any vehicles that are driven relatively few miles, and eliminate low-mileage vehicles as appropriate. According to fleet management experts, such vehicle utilization reviews are one of the best methods of identifying opportunities to reduce the number of vehicles in a fleet, reassign underused vehicles, and increase vehicle sharing. However, such utilization reviews should not be based on mileage alone, as some vehicles may be driven relatively few miles but provide an invaluable service when needed. For example, some tactical vehicles may be infrequently driven, but are critical to protecting officers' and citizens' safety in crisis situations.

**DPS Lacks a Consistent,
Objective Vehicle
Replacement Policy**

DPS also needs to develop an objective vehicle replacement policy. Currently, DPS does not have a consistently applied, objective standard identifying when its vehicles will be replaced. As a

result, the State may not be replacing vehicles at the most cost-effective age possible. DPS should develop a vehicle replacement standard based on objective cost data and other fleets' experiences to ensure that both cost-efficiency and effectiveness are considered when developing the policy.

DPS lacks a consistent, objective vehicle replacement policy—Currently, there is no consistent standard identifying when DPS' vehicles will be replaced. Although DPS reports that highway patrol vehicles are eligible for replacement after they have reached 100,000 miles, there are several problems with this standard.

- **The replacement standard is not based on objective information**—The replacement standard was developed primarily based on perceptions of available monies rather than on an objective study, such as a cost-benefit analysis. As a result, it is unknown whether the current standard enables DPS to replace vehicles at the most effective, cost-efficient age possible. Likewise, the lack of objective data may contribute to the fact that the policy regularly changes. For example, at one point the standard was 75,000 miles.
- **The replacement standard has not been consistently applied**—DPS has not consistently used the existing vehicle replacement policy. First, DPS only uses this standard for determining when to replace highway patrol vehicles. Other divisions have not developed specific replacement standards. Second, DPS does not always fully apply this standard when requesting funding for highway patrol vehicles. For example, DPS made a policy decision to request monies to replace only 375 highway patrol vehicles in its most recent budget request, even though 443 highway patrol vehicles were expected to surpass 100,000 miles during the same period.

DPS needs to develop a consistent, objective vehicle replacement policy—In order to ensure that vehicles are regularly replaced in a cost-effective manner, DPS should develop a more consistent, objective vehicle replacement standard. It is important that DPS replace vehicles at the optimal point where the costs of keeping an older vehicle become higher than the costs of acquiring a new vehicle. If a vehicle is replaced too late, DPS may incur unnecessary maintenance costs and face increased vehicle downtime.

DPS' vehicle replacement standard changes frequently.

Finding II

Likewise, DPS may not receive the maximum price possible when disposing of its used vehicles. Finally, employee morale may suffer. For example, officer association representatives report that DPS officers are concerned about the safety and reliability of DPS' older vehicles. Similarly, professional fleet management literature reports that employee morale may suffer when vehicles are not replaced in a timely manner.

When developing a consistent, objective vehicle replacement standard, DPS should consider several important sources of information.

- **DPS' vehicle data**—Because vehicles should be optimally replaced at the point where the costs of keeping them exceed the costs of purchasing new vehicles, it is important that DPS identify these costs. This will require DPS to review the historical operating costs and repair data, which it already tracks in its vehicle maintenance database, in conjunction with the age of its vehicles, which it tracks in its vehicle inventory database. However, auditors attempting to validate this latter database found that the odometer readings were not reliable. Specifically, auditors attempting to verify 86 odometer readings in DPS' vehicle inventory database found that 6 readings were inaccurate. For example, one odometer reading was over-reported in the database by over 11,000 miles. DPS reports that these errors are most likely due to employees reporting incorrect odometer readings. While DPS already has some processes in place to help ensure that its data are accurate, more actions are needed. For example, DPS could reinforce to employees the importance of reporting accurate odometer readings.

Operating cost data could help identify optimal replacement age.

Missouri and Kansas Highway Patrols replace vehicles at 49,500 miles.

- **Other fleets' experiences**—Fleet management experts report that one of the best methods of identifying opportunities for potential cost-saving practices would be to compare DPS' current fleet management practices with the practices of other fleet managers. For example, the National Association of Fleet Administrators reports that commercial fleets typically retain vehicles for 37 months and/or 68,000 miles. Similarly, 5 of the 14 states auditors contacted replace vehicles at a lower mileage than Arizona. For example, Missouri's State

Highway Patrol and the Kansas Highway Patrol report that they replace patrol vehicles at 49,500 miles. As a result, they report incurring lower maintenance costs, higher vehicle reliability, and higher resale revenues. Similarly, both the Colorado State Patrol and the Texas Department of Public Safety are seriously considering lowering their replacement standards to 49,500 and 80,000 miles, respectively.

Photo 2: A Department of Public Safety Motorcycle



Approximate cost—\$11,000.

Based on this information, DPS should develop a vehicle replacement policy. This policy should provide a standard odometer reading at which vehicles should be replaced, but should also allow for flexibility under certain circumstances.

Different types and uses of vehicles require different replacement standards.

- **Various vehicle types and uses**—Different standards should be developed based on the type and/or use of the vehicle. The current replacement standard of 100,000 miles is primarily intended to apply to sedans equipped and used for active law enforcement purposes. However, DPS owns at least 11 different types of vehicles, some of which naturally deteriorate at a different rate than patrol sedans. For example, DPS owns 57 motorcycles, which have a more realistic life expectancy of 50,000 to 60,000 miles, according to DPS managers. Similarly, vehicles which are used for less intense administrative purposes could conceivably be replaced at higher mileage than fully equipped police sedans which are often driven at extremely high rates of speed.
- **Problematic vehicles**—Additionally, according to the National Association of Fleet Managers, replacement standards should be flexible enough to allow fleet managers to make cost-effective decisions. Specifically, if an individual vehicle requires repeated expensive repairs, fleet managers need the ability to dispose of it earlier than required by the replacement standard. Otherwise, the State could spend too much money repairing a vehicle that will never be reliable or cost-effective.

Recommendations

1. DPS should take steps to ensure it collects reliable data on an ongoing basis showing how frequently all of its sworn officers and civilians in all divisions respond to emergencies outside of their normal working hours.
2. Once collected, DPS should use the data to:
 - a. Evaluate and revise as necessary its existing Highway Patrol Division vehicle assignment and fleet size policies; and
 - b. Develop formal vehicle assignment and fleet size policies for DPS' other divisions.
3. DPS should monitor how many miles each vehicle is driven and examine more closely any vehicles that are driven relatively few miles to determine whether they can be eliminated from the fleet.
4. DPS should take further steps to ensure the accuracy of vehicle odometer readings maintained in its motor vehicle fleet database.
5. DPS should develop a comprehensive, objective vehicle replacement policy. In developing this policy, DPS should:
 - a. Use its historical vehicle operating cost data to identify the most cost-effective time to replace vehicles;
 - b. Compare its standard to the practices of other fleet managers; and
 - c. Provide unique replacement standards for different types and uses of vehicles.

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OTHER PERTINENT INFORMATION

During the audit, other pertinent information was gathered regarding the new highway patrol officer positions appropriated by the Legislature for 2002 and 2003.

Staffing Model Indicates Division Remains Understaffed

The Legislature recently appropriated funds to create 116 new highway patrol officer positions over fiscal years 2002 and 2003, but the Division did not request as many officer positions as its staffing model indicates are needed. The most recent appropriation focused solely on the staffing needs for metropolitan Phoenix and Tucson, which had the greatest officer shortage. However, the staffing model continues to show an officer shortage statewide.

New officers slated for urban areas—Laws 2001, Chapter 1 provides over \$11 million from the Highway User Revenue Fund to hire a total of 116 new highway patrol officers over fiscal years 2002 and 2003. Additionally, the Legislature provided approximately \$2.5 million for officer overtime costs and over \$11 million for new vehicles.

Phoenix will get over 80 percent of the new officer positions.

The Division intends to place over 80 percent of these new officer positions in metropolitan Phoenix and approximately 13 percent in the Tucson area. The majority of these officers will patrol the metropolitan Phoenix area because it has the greatest officer shortage as a result of both increased population and highway miles. Despite the significant growth in the metropolitan areas, the Division added only four officer positions for Phoenix and none for Tucson between 1990 and 2000.

DPS did not request as many officers as model determined were needed—The Division's model continues to show that additional staff are needed statewide because the Division did not request

Other Pertinent Information

enough officers to fully address its shortage. Specifically, the Division's model determined that a total of 140 new officers would be needed to fully staff metropolitan Phoenix and Tucson through the end of 2003 to meet the increase in population and highways. The model also indicates that an additional 41 officers are needed to fully staff the state's rural areas through the end of 2003. However, the Division requested only an additional 120 officer positions for Phoenix and Tucson because it believed this was the number of officers it could reasonably hire and train over a two-year period.¹ Therefore, the Division's staffing request was not intended to fully staff the Highway Patrol Division, but rather to decrease the significant staffing deficits in the urban areas.

Division officials indicate that its model's calculations are likely low because they have been unable to update the model to reflect current traffic counts. As a result of a computer problem, the Arizona Department of Transportation has not been able to provide the Division with updated counts since 1999. The Division uses these counts to determine how frequently a particular roadway should be patrolled.

¹ Although the Division's budget request was primarily directed toward urban areas, 5 of the 120 officers in the Division's original request were to be placed in rural areas in fiscal year 2003. However, the Division was appropriated 116 officers and Division officials indicate that there has not been a decision on how the difference will be handled.

Agency Response

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September 5, 2001

Ms. Debra K. Davenport, Auditor General
Office of the Auditor General
2910 North 44th Street
Phoenix, Arizona 85018

Dear Auditor General Davenport:

The attached page is our reply from the Highway Patrol for the performance audit of the Arizona Department of Public Safety.

On behalf of the Highway Patrol, I thank you and your team for working with us and making this process as non-intrusive as possible. If you have any questions or require additional information, please contact myself or Commander Jeff Resler.

Sincerely,

Acting Deputy Director

W. R. Reutter, Lieutenant Colonel
Assistant Director
Highway Patrol Division

Arizona Department of Public Safety
State Headquarters
Highway Patrol Division

Performance Audit - Reply

The Highway Patrol Division appreciates the comments offered within the Auditor General's review. We realize this process is necessary for accountability and that it serves to provide an oversight to our operations. Since our last review, there have been several administrations and changes within the department and the highway patrol. Over the past year, we have done some readjustments and the timing of this audit was beneficial to our overall look at the operation.

In the spirit of our agency, the highway patrol has continued to develop and foster working partnerships with law enforcement and non-enforcement agencies. These relationships are pursued to better serve the motoring public and the needs of our state. By using these relationships we are able to minimize internal resources and extend our influence. An example of this teamwork is our leadership and participation with local agencies in the pursuit of impaired drivers all across the state. Another is our newly formalized relations with the Department of Transportation. After many years of working together, we now exchange direct communications with ADOT and have a partnership in managing transportation needs.

As a part of the audit we have had an opportunity to review and reflect upon many of our activities. Over the past five years, patrol officers have investigated 107,706 traffic collisions, issued 1,598,161 citations, 1,306,904 equipment repair orders, made 32,810 impaired driver arrests, assisted 807,612 stranded or disabled motorists, arrested 44,245 misdemeanor violators and incarcerated 20,318 felons. This workload was carried by a force of officers being pulled in multiple directions by a growing population with constant demands for service. With the additional officers added in the next two years, we hope to keep pace with the demands and re-institute proactive programs that will promote highway safety and reduce collisions.

As a member of the National Highway Safety Committee, our agency is poised to learn from other state and national leaders. In the same fashion, we find ourselves as being the model and leader for other states. In our future we must continue to look for better ways of doing business while being mindful of our obligations and responsibilities. The comments of this audit review are helpful, but they do not necessarily provide the final answer. We're proud of the job our people do and we appreciate the opportunity to improve. As we advance ahead, we look forward to a continued service to the motorists and citizens of Arizona.

Responses to Recommendations and Findings

Finding I: Highway Patrol Division Could Improve the Accuracy of Its Staffing Estimates

Recommendation 1: The Division should perform a sensitivity analysis of its PAM model to focus its efforts on first refining the model inputs that have the greatest impact on the staffing estimates.

Reply: The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

- A sensitivity analysis will be conducted on the major factors. The data utilized by the Department to determine both policy decisions and calls and activity is based upon data inputs from the officers in the field. The data that will be reviewed for the sensitivity analysis will be evaluated with special emphasis placed upon those factors that affect policy decisions.
- Each of the factors will be reviewed using a standard increases to determine sensitivities in PAM and how changes in those factors will affect the required number of officers that the PAM recommends.

Recommendation 2: The Division should reevaluate all policy decisions that are used in the model and make appropriate revisions.

Reply: The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

- Policy decisions need to be reevaluated and entered into the new allocation review. This evaluation was planned for during the past year when PAM was revisited. As a result of current Average Daily Traffic data has not been available, PAM and all policy decisions have not been updated. The policy decisions will be updated as the new PAM numbers are generated.

Recommendation 3: The Division should establish a schedule to regularly review the policy decision inputs that impact their PAM model.

Reply: The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

- A review of those decisions every other year prior to the Department's budget cycle would allow the agency the opportunity to review and implement policy changes on a more frequent basis.

Recommendation 4: The Division should provide periodic formal or informal refresher training to officers to ensure accurate reporting of workload data.

Reply: The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

- This process and will be implemented in quarterly Roll Call Training.

Recommendation 5: The Division should take steps to ensure the accuracy of workload data entered into the Division's officer time tracking system, such as verifying a percentage of workload data and/or developing management or exception reports.

Reply: The finding of the Auditor General is agreed to and a different method of dealing with the finding will be implemented.

- An electronic system is currently unavailable to complete such an electronic review. Area sergeants review officers' time and activity and will be instructed to more carefully check the completion of time and activity reports, and ensure through Roll Call Training the proper codes are utilized.
- District Lieutenants will review data and statistics to ensure the data appears to be consistent and in line with district enforcement activities.

Recommendation 6: When conducting a sensitivity analysis, DPS should specifically test whether overtime hours have a significant impact on its staffing estimates. If so, the Division should include overtime hours into its model.

Reply: The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

- The Division has had insufficient overtime in the past to affect the model and officer allocation. Overtime is rarely utilized to supplement shift or activity, and is most often utilized to support on-going work in progress that began prior to the overtime. Even with the increase in overtime funding, and the increase of 116 officers over two years, overtime will have minimal impact on PAM.
- Overtime hours are not substitutes for officers and patrol strength. While minimal change would be anticipated with the inclusion of overtime hours, hours and activity will be reviewed to ascertain the impact on PAM.
- Activity codes, overtime hours and activity will be reviewed and tested to determine the impact of overtime on the PAM recommendations.

Recommendation 7: The Division should analyze the costs and benefits to contracting with the model's developer to revise its staffing model or switching to an improved version of the model.

Reply: The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

- The Department's PAM model was transferred to a system that will work with the DPS mainframe data provided by officers Weekly Time and Accounting Summaries. This data is then transferred to a series of Excel worksheets that apply the PAM formulas and model.
- The review and updating by the model's developer can be investigated to tweak the current program, applying any new changes that may affect the final outcome for staffing numbers. In regards to utilization of the Municipal Model, the Division does not have the ability to determine response time, a major component of the Municipal Model. When a computer aided dispatch system is in place in the Department, that component may be applied to the Municipal Model or the State Model.
- In the interim, the models developer will be contacted to discuss changes. The Patrol Division will investigate the potential for contracting with the developer to review the current model.

Recommendation 8: The Division should consider establishing a study committee assist it in selecting which PAM model will be used and reviewing policy inputs.

Reply: The finding of the Auditor General is agreed to and a different method of dealing with the finding will be implemented.

- To complete this process, a working group with Patrol Commanders, staff and selected sergeants will be formed to review the data and establish policy input recommendations. These will be forwarded to the Assistant Director, Highway Patrol Division and the Director.
- These inputs will be based on actual data collected and established through inputs from the officers Weekly Time and Accounting Summaries.
- The information and methodology for establishing those policy decisions will be clearly communicated to the legislature and Governor's Office when presenting the requests for manpower and staffing.

Finding II: DPS Needs to Develop Comprehensive Motor Vehicle Fleet Size and Replacement Policies

Recommendation 1: DPS should collect data on an ongoing basis showing how frequently its sworn officers and civilians in all divisions respond to emergencies outside of their normal working hours.

Response: The finding of the Auditor General is agreed to and the recommendation will be implemented.

- The DPS General Order 55.09 addresses how *all non-exempt employees* are to mark their overtime on the Employee Time Accounting Summary report prepared weekly. Included in the order are overtime codes for reporting scheduled overtime (S), workday extension (E), and call-out overtime (C) from which relevant overtime data may be extracted from the DPS Time Accounting System.
- Exempt personnel in executive, administrative or professional positions are not eligible for overtime compensation. They are required to work the hours necessary to carry out their responsibilities and currently do not report hours worked beyond scheduled work hours on the Exempt Employee Biweekly Leave Report form.
- Both the time accounting report form for exempt personnel and the Time Accounting System can be modified to obtain the information needed to review vehicle usage and assignments.
- The Patrol Division will emphasize to all personnel the importance of utilizing accurate codes for overtime and activity on the Employee Time and Weekly Summary.

Recommendation 2: Once collected, DPS should use the data to:

- a. Evaluate and revise as necessary its existing Highway Patrol Division vehicle assignment and fleet size policies; and
- b. Develop formal vehicle assignment and fleet size policies for DPS' other divisions.

Response: The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

Recommendation 3: DPS should monitor how many miles each vehicle is driven and examine more closely any vehicles that are driven relatively few miles to determine whether they can be eliminated from the fleet.

Response: The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

- DPS is currently developing vehicle use and assignment standards which will be based on the need to carry out mandated and administrative support functions.

Recommendation 4: DPS should take further steps to ensure the accuracy of vehicle odometer readings maintained in its motor vehicle fleet database.

Response: The findings of the Auditor General is agreed to and a different method of dealing with the finding will be implemented.

- Odometer readings need to be recorded accurately and consistently by occupants/drivers of the individual vehicles. Fleet Management systems make every attempt to collect and maintain accurate figures. The accuracy of data entry will be reemphasized to all users of the DPS fleet.
- Fleet Management emphasizes the need to maintain accurate fleet usage data in its District Vehicle Administrator meetings, in EMS messages it publishes and in Fleet Bulletins. General Order 72.01, Vehicle Assignment and Use, requires employees to capture this data whenever fuel is appropriated. General Order 72.03, Vehicle Work Orders, requires the employee to complete the work order for all repairs and maintenance and for supervisors to assure accuracy and completeness of the work order. Accurate odometer readings are a required field for completion of this report.

Recommendation 5: DPS should develop a comprehensive, objective vehicle replacement policy. In developing this policy, DPS should:

- a. Use its historical vehicle operating cost data to identify the most cost-effective time to replace vehicles;
- b. Compare its standard to the practices of other fleet managers; and
- c. Provide unique replacement standards for different types and uses of vehicles.

Response: The finding of the Auditor General is agreed to, and the audit recommendation will be implemented.

- Current replacement standards have been determined on a variety of factors.
- DPS is developing replacement standards which will be based on a vehicle's type, use, age, mileage, condition, and maintenance and repair costs. Other factors may be included after further research is conducted.

Other Performance Audit Reports Issued Within the Last 12 Months

00-21	Universities—Funding Study	01-9	Arizona Game and Fish Commission—Heritage Fund
00-22	Annual Evaluation—Arizona’s Family Literacy Program	01-10	Department of Public Safety— Licensing Bureau
01-1	Department of Economic Security— Child Support Enforcement	01-11	Arizona Commission on the Arts
01-2	Department of Economic Security— Healthy Families Program	01-12	Board of Chiropractic Examiners
01-3	Arizona Department of Public Safety—Drug Abuse Resistance Education (D.A.R.E.) Program	01-13	Arizona Department of Corrections—Private Prisons
01-4	Arizona Department of Corrections—Human Resources Management	01-14	Arizona Automobile Theft Authority
01-5	Arizona Department of Public Safety—Telecommunications Bureau	01-15	Department of Real Estate
01-6	Board of Osteopathic Examiners in Medicine and Surgery	01-16	Department of Veterans’ Services Arizona State Veteran Home, Veterans’ Conservatorship/ Guardianship Program, and Veterans’ Services Program
01-7	Arizona Department of Corrections—Support Services	01-17	Arizona Board of Dispensing Opticians
01-8	Arizona Game and Fish Commission and Department—Wildlife Management Program	01-18	Arizona Department of Correct- ions—Administrative Services and Information Technology
		01-19	Arizona Department of Education— Early Childhood Block Grant Program

Future Performance Audit Reports

Arizona Department of Corrections—Arizona Correctional Industries

Board of Nursing

Department of Building and Fire Safety