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MARYLAND NATURAL RESOURCES POLICE LEVEL OF SERVICE STANDARDS

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EXECUTIVE SUMMARY

In the 2012 Joint Chairmen's Report, the General Assembly directed the Department of Natural Resources (DNR) to submit "a report on the Natural Resources Police level of service standards," including "a workload analysis, response time metrics, staffing levels for authorized and filled law enforcement officer positions, evaluation of law enforcement officer work for civilianization, and pertinent crime rates."¹

This report has five parts:

- Background describes the responsibilities of the Natural Resources Police (NRP) and discusses current staffing levels for authorized and filled positions;
- Data Collection discusses patrol officer and computer aided dispatch system reports, regional differences in law enforcement, response time to calls for service, seasonal variations in law enforcement, patrol data trends, crime rates, and staffing levels in 2004 before the merger of the majority of the law enforcement officers in the Maryland Park Service into the NRP;
- Best Practices reviews best practices for conservation law enforcement that have developed since 2004 and are developing now, including the potential for civilianization of law enforcement officer (LEO) positions;
- Workload Analysis analyzes the collected data using a methodology developed by the International Association of Chiefs of Police in studies of other natural resource police agencies; and
- Conclusion describes the actions being taken to rebuild the capacity of the NRP.

Key findings of the report are:

Standards

- There are no universally applicable standards for assessing the adequacy of natural resource policing;
- Patrol staffing and deployment requirements are best established by careful analysis of all available data;
- The Department has not conducted a workload analysis of natural resource police staffing needs until this report.

Enforcement Trends

- Statewide patrol hours for boating safety have decreased 20% since 2004;
- Conservation patrols have decreased by 16% in the Eastern Region, where the largest amount of commercial fishing and crabbing activity takes place;
- Not including public lands, total annual NRP patrol hours have decreased statewide by 6.5% since 2004;

¹ Report on the Fiscal 2013 State Operating Budget (SB 150) and the State Capital Budget (SB 151) and Related Recommendations by the Chairmen of the Senate Budget and Taxation Committee and House Appropriations Committee 2012 Session, pages 46-47.

- Maintaining a patrol presence in the Maryland Park Service system, with over 10 million visitors and 66 parks, presents significant law enforcement demands since the 2005 merger;
- Law enforcement demands on public lands and public waterways are seasonal, peaking in the June to September time frame;
- Changes made during the past eight years are making conservation law enforcement more streamlined and effective.

Calls for Service

- The median time for an officer to arrive on the scene for urgent calls for service for a Priority 1 call (where an officer is needed to respond immediately) is 20 minutes; for Priority 2 calls (where prompt attention is required), the median time is 28 minutes;
- Calls for service from the public and other police agencies have increased over the past three years.

Staffing Levels

- To maintain the existing number of officers to compensate for coming retirements, NRP will need to hire and train enough recruits to replace a minimum of 14 officers during each of the next five years;
- A total of 233 patrol officers – 70 more than current staffing – would be able to meet the year-round patrol workload of recent years;
- A total of 33 contractual seasonal officers could fulfill the seasonal June through September peak workload demand in state parks at a substantial cost savings compared to hiring additional permanent, year-round officers;
- An additional 5 officers and 5 civilians in non-patrol functions would provide sufficient support for the increased number of patrol officers.

Rebuilding the NRP

The report concludes by noting measures that are already underway to rebuild NRP capability, including enactment of the Governor's FY 2013 Supplemental Budget request, continuing improvement in management and enforcement procedures, reduction of officers' non-patrol workload, and civilianization of support functions.

I. BACKGROUND

A. Responsibilities

The Maryland Natural Resources Police (NRP) is the enforcement arm of the Department of Natural Resources and is the only police force aside from the Maryland State Police with statewide jurisdiction. Maryland law makes the NRP responsible for:

- Enforcement of natural resource and conservation laws (NR 1-204);
- Maritime and rural search and rescue (NR 1-201.1(b)(1));
- Public education in hunting, boating and water safety (NR 1-201.1(b)(2));
- Primary law enforcement for State parks, State forests, wildlife management areas, and public lands owned and managed by DNR (NR 1-201.1(b)(3));
- Maritime homeland security on State waterways, serving as the lead state agency (NR 1-201.1(b)(4)).

The NRP patrols over 470,000 acres of public lands, the Maryland portion of the Chesapeake Bay and its tributaries, coastal bays off Ocean City and Assateague, three miles off the Atlantic coast, and over 9,000 miles of freshwater streams. In 2011 Maryland had 120,317 licensed hunters, 380,048 licensed sport fishermen, 5,961 licensed watermen, and 193,232 registered vessels.

Numerous memorandums of understanding (MOUs), grants, and joint agreements with federal, state, regional, county and municipal agencies, including mutual aid or reciprocal enforcement agreements, assign additional duties to the NRP. For example, in order to comply with Maryland's obligations under U.S. Food and Drug Administration rules, an MOU with Maryland's Department of Health and Mental Hygiene requires NRP to "conduct adequate patrol activities so as to prevent the harvesting of shellfish from other than approved areas" and to be "responsible for the apprehension and prosecution of persons violating the restrictions on harvesting shellfish." The FDA rules require specific levels of patrol depending upon the health risk of illegal harvesting of shellfish in restricted areas.² Failure to meet these requirements would place Maryland's interstate shellfish shipping at risk for closure.

As the lead agency for homeland security on waterways, NRP conducts frequent checks of designated critical infrastructure from both water and land. The checks include 18 critical infrastructure sites designated by the U.S. Department of Homeland Security and an additional 9 sites identified by the State of Maryland.

² U.S. Food and Drug Administration, NSSP 2009 Section II Chapter VIII Control of Shellfish Harvesting, National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish 2009, Section II. Model Ordinance, Chapter VIII. Control of Shellfish Harvesting, viewed online 11/7/2012 at <http://www.fda.gov/Food/FoodSafety/Product-SpecificInformation/Seafood/FederalStatePrograms/NationalShellfishSanitationProgram/ucm047104.htm>.

B. Staffing Levels

As of December 1, 2012 the NRP had 238 authorized law enforcement positions and 216 of these positions are filled, including 17 relatively new officers who graduated from the NRP Academy on November 9, 2012. The sworn law enforcement officers (LEOs) are supported by 55 authorized civilian personnel positions (50 filled) and 5 part-time contractual LEOs. Volunteer Natural Resources Police Reserve Officers assist the NRP in support, training and outreach, and their efforts are coordinated by 2 contractual Reserve Officer Coordinators. Another 13 civilian positions are set aside for hiring NRP cadets. The total number of filled positions is 273.

Patrol activities are conducted in 4 regions of the state, which are further divided into 8 “areas” (multiple counties) and 26 “districts” (individual counties or parts of counties). Each region has a captain, each area a lieutenant, and each district a sergeant and between 1 and 3 corporals and 1 and 5 officers. Patrol officers are deployed from seven field offices within the eight areas. A total of 175 officers are assigned to field offices, with 163 dedicated to patrol activities. In addition, 32 officers provide service as investigators, special operations, communications and planning (C & P), and technical services (TS) which includes the NRP Academy/Training and maintenance units. Nine law enforcement officers in headquarters oversee statewide operations.

NRP Filled Positions as of December 1 2012

| | HQ | East | South | Central | West | Special Ops | C & P | TS | Total | Auth. PINs |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-------------|-----------|-----------|------------|------------|
| Colonel | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| Lt. Colonel | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| Major | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | |
| Captain | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 | |
| Lieutenant | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 13 | |
| Sergeant | 1 | 7 | 5 | 4 | 5 | 3 | 3 | 2 | 30 | |
| Corporal | 0 | 19 | 13 | 15 | 12 | 13 | 1 | 2 | 75 | |
| S/Ofc./Off. | 1 | 22 | 24 | 22 | 15 | 1 | 0 | 0 | 85 | |
| | | | | | | | | | | |
| Total Officers | 9 | 51 | 45 | 44 | 35 | 19 | 6 | 7 | 216 | 238 |
| | | | | | | | | | | |
| Contractual Off. | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | |
| Res. Off. Coord. | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | |
| Civilian | 5 | 2 | 2 | 1 | 1 | 0 | 26 | 13 | 50 | 55 |
| NRP Cadets | | | | | | | | | | 13 |
| | | | | | | | | | | |
| Grand Total | 14 | 57 | 49 | 45 | 37 | 19 | 32 | 20 | 273 | 306 |

The FY 2013 Supplemental Budget included funding to hire 8 additional LEOs and reinstate the long-unused NRP cadet program.³ Cadets may be hired directly from high school and will assist NRP officers in the field, which provides the cadets with practical hands on education and experience. Both the agency and the cadets have the opportunity to determine if a career as an NRP officer best suits both parties, prior to the individual's investment and the agency's expense of formal NRP officer training. The process for selecting and hiring the NRP cadets and 8 additional LEOs has begun, but the people are not yet on board.

NRP has traditionally held open 20 LEO vacancies to account for turnover, but the number of vacancies held open is reduced to 12 because of the funding to hire 8 additional LEOs. In October of 2012, 8 LEO PINs were reclassified to Cadets/civilian and 5 PINs were transferred to NRP from other Department units to be used for NRP cadets. Also in October, 1 LEO PIN was reclassified as civilian as the position of public information officer was civilianized.

The current authorized strength of NRP is 238 LEOs, 13 Cadet/civilians, and 55 other civilians, for a total authorization of 306 personnel.

A significant number of current NRP officers are expected to retire during the next five years. NRP officers participate in the Law Enforcement Officers' Pension System (LEOPS) and are eligible to retire when they reach 25 years of service or 50 years of age.⁴ As of December 1, 2012, 88 (41%) of the current 216 NRP officers are eligible to retire.

Number of NRP Officers Becoming Eligible to Retire, by Year

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
|--------------------|------|------|------|------|------|------|-------|
| Eligible to Retire | 88 | 12 | 12 | 8 | 12 | 6 | 138 |

Officers who are eligible to retire have an option to enter the Deferred Retirement Option Program (DROP)⁵, which enables them to keep working as officers for up to five years beyond formal retirement. As of December 1, 2012, 47 officers (22% of current officers) are participating in the DROP with required retirement dates between 2012 and 2017.

Number of NRP Officers Who Must Retire, by Year

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
|--------------------|------|------|------|------|------|------|-------|
| Must Retire (DROP) | 1 | 7 | 8 | 3 | 7 | 21 | 47 |

From 2000 to 2011, 152 NRP officers retired – an average of 14 per year. This number of annual retirements is expected to continue, or increase slightly, because of the high numbers of NRP officers eligible to retire and already in the DROP. To maintain the

³ Chapter 148 (SB 150) of 2012, page 250.

⁴ State Retirement Agency, Pension System for Law Enforcement Officers of the State of Maryland Benefits Handbook, Revised July 2011, page 20.

⁵ Ibid., pages 31-35.

existing number of officers NRP will need to hire and train enough recruits to replace a minimum of 14 officers during each of the next five years.

II. DATA COLLECTION

A. Reports

Primary data sources for determining field officer level of activity are NRP officers' reports of daily activity and time allocation ("206" reports), and data from the computer aided dispatch (CAD) system, which includes arrests, citations, warnings, and all incidents reported to dispatch. The data was checked for quality and corrected as necessary before it was used in calculations.

Data for the last 3 years (2009 through 2011) was used to "smooth" any unusual or anomalous data. To identify changes in enforcement activities, the recent-year data was compared to data from 2004, the last year before the merger of state park law enforcement officers into the NRP.

Interviews with officers and command staff in each area NRP office provided information that was vital to understand the data, and also information about local conditions and factors that affect NRP's law enforcement responsibilities in each part of the state.

B. Regional Differences in Law Enforcement

Eastern Region

Area 1 (Johnson) – includes the lower Eastern Shore (Somerset, Wicomico, and Worcester Counties). Major patrol activities include tidal fisheries (commercial crabbing, oysters, striped bass), boating (including jet ski livery operations in Ocean City), and hunting/wildlife. Major public lands include Assateague State Park, Pocomoke River State Park, Janes Island State Park, and Somers Cove Marina. Public lands account for 18% of current patrol time in this Area.

Area 2 (Hillsboro) – includes the upper Eastern Shore (Caroline, Dorchester, Kent, Queen Anne's, and Talbot Counties). Major patrol activities are crabbing and tidal fisheries, hunting/wildlife, and boating. This area has had major cases involving commercial striped bass, oysters and waterfowl guides, and anticipates increased patrol needs for enforcement around shellfish leases. Public lands account for 5% of current patrol time in this Area.

Southern Region

Area 3 (Broadneck) – includes Anne Arundel and Prince George’s Counties. Major patrol activities include boating, crabbing and tidal fisheries, and hunting/wildlife. Marine “raft-up” gatherings require significant enforcement effort. This area has seen a large increase in nuisance wildlife complaints since the Anne Arundel County animal control agency cut back its services. Public lands, primarily Sandy Point State Park, account for 15% of patrol time in this Area.

Area 4 (Waldorf) – includes Calvert, Charles and St. Mary’s Counties. Major patrol activities include crabbing and tidal fisheries, boating, and hunting/wildlife. This area has had major cases involving commercial striped bass. Public lands include Point Lookout and Greenwell State Parks. Public lands account for 18% of current patrol time in this Area.

Central Region

Area 5 (Gwynnbrook) – includes Carroll, Howard and Montgomery Counties and all marine operations in Baltimore City and County. Major patrol activities include hunting/wildlife, non-tidal fisheries, and boating. Major public lands include Seneca Creek and Patuxent River State Parks, and much of Patapsco Valley State Park (except the portion in Baltimore County). Public lands account for 21% of current patrol time in this Area.

Area 6 (also in Gwynnbrook) – includes Cecil and Harford Counties and the land area of Baltimore City and County. Major patrol activities include hunting/wildlife, tidal fisheries, and non-tidal fisheries. Major public lands include Gunpowder Falls, Elk Neck, Rocks and Susquehanna State Parks and Fair Hill Natural Resource Management Area. Public lands account for 26% of current patrol time in this Area.

Western Region

Area 7 (Echo Lake) – includes Frederick and Washington Counties. Major patrol activities include hunting/wildlife, non-tidal fisheries, and boating. Major public lands include Cunningham Falls, Greenbrier, Gambrill, and South Mountain State Parks and the Western Maryland Rail Trail. Public lands account for 18% of current patrol time in this Area.

Area 8 (Town Hill) – includes Allegany and Garrett Counties. Major patrol activities are hunting/wildlife, non-tidal fisheries, and boating. Major public lands include Rocky Gap, Deep Creek Lake, New Germany, Swallow Falls, and Herrington Manor State Parks and the Western Maryland Rail Trail. Use of illegal drugs is a significant issue in Green Ridge State Forest. Rocky Gap State Park is anticipated to need additional law enforcement attention when the new gaming facility opens. Public lands account for 25% of current patrol time in this Area.

C. Response Time to Calls for Service

NRP operates a single statewide dispatch center that serves as the 24/7 communications hub for officers in the field. The dispatch center answers calls from the public on both emergency and non-emergency lines (the dispatch center answers several 800 numbers that are available for the public to report violations and questions relating to wildlife, poaching, fishing, boating and parks). When calls are received the dispatchers use a Priority Classification Chart based on the nature of the incident and its urgency to determine the priority for response.

Priority 1 denotes incidents when an officer is required to respond in person immediately. This includes incidents where human life or injury is at risk. Priority 2 includes incidents that are in progress where notification of a field officer is necessary and some type of prompt attention is required. Priority 3 includes less urgent incidents where some type of action by phone call or personal contact is needed.

During calendar years 2009 to 2011, NRP officer median response time from the dispatch of a Priority 1 call to arrival at the scene was 20 minutes. The median response time for Priority 2 calls during the same time period was 28 minutes.

Data from the dispatch system indicate that calls for service from the public and other police agencies have been increasing in recent years, as shown in this table:

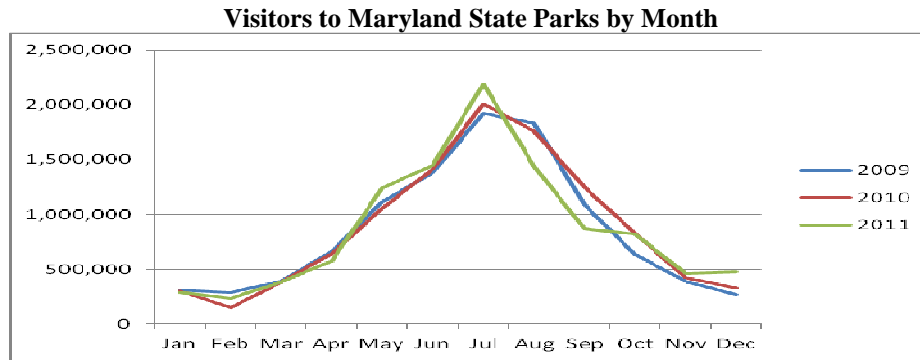
Calls for Service by Calendar Year

| | | |
|------|-------|-----|
| 2009 | 6,848 | - |
| 2010 | 7,184 | +5% |
| 2011 | 7,807 | +9% |

D. Seasonal Variations in Law Enforcement

Enforcement of natural resource and conservation laws has seasonal variations resulting from life cycle or migration patterns, hunting and fishing season openings and closures, and warm weather for recreational boating. Tidal fishing enforcement is becoming more year-round with the seasonal variation being the target species rather than the level of effort required. Year-round demand for shellfish enforcement is expected to increase along with the increase in leased areas for oyster aquaculture.

The Maryland Park Service manages 66 State parks located throughout Maryland, with an average of 10.4 million visitors each year. The Park Service's main law enforcement priority is maintaining a visible patrol presence in the parks to keep the peace and ensure a safe and welcoming environment for park visitors of all ages to enjoy. While some enforcement of natural resources laws does occur in parks, the main activity is on the same types of public safety issues encountered by urban police forces. Park visitorship is very seasonal and is highest in the months of July and August. The busy season for most state parks can be described as May through September or April through October.



During the 2009 to 2011 time period 64% of the calls for service in state parks were during the May through September busy season, and 78% were during the extended busy season of April through October.

Responding to law enforcement needs in state parks and other public lands has been one of the highest NRP priorities since the merger of park LEOs into NRP at the beginning of 2005. Officers stated that maintaining adequate coverage of law enforcement needs in the parks during the summer months has strained resources for other enforcement priorities, particularly boating safety patrols, and the available patrol data (discussed below) provide confirmation.

The need for additional officers during the summer season is one of the major findings of the workload analysis. Possible solutions include the hiring of additional seasonal officers on contract as done currently by the NRP and by the Ocean City Police Department for the summer months in Ocean City. The solutions are addressed in the Workload Analysis section of this report.

E. Patrol Data Trends

Statewide patrol hours for boating safety have decreased 20% since 2004 and conservation patrols have decreased 2% during the same time period. Within those overall trends are some significant regional variations.

Boating safety patrols have decreased 33% in the Eastern Region, 12% in the Southern Region, 35% in the Central Region, and increased 52% in the Western Region. The three regions with decreases in boating safety patrols are on the Chesapeake Bay. The Western Region has Deep Creek Lake.

Conservation patrol includes hunting/wildlife, crabbing, and both tidal and non-tidal fisheries. Conservation patrol decreased 16% in the Eastern Region and 7% in the Southern Region while increasing 17% in the Central Region and 31% in the Western Region. The largest part of the decrease in the Eastern and Southern regions was hunting/wildlife patrol, followed by tidal fisheries patrol. The largest part of the increase in the Central Region was non-tidal fisheries patrol, and the largest part of the increase in the Western Region was hunting/wildlife patrol.

The data confirms observations provided by NRP officers. In particular, the need to be available to respond to urgent calls from the public causes reductions in boating safety and conservation patrols, and in the intensive surveillance and investigation that are needed to apprehend and make a solid case against the deliberate repeat violators who cause damage to natural resources.

The data also shows that public lands enforcement constitutes a significant part of NRP activity, particularly in the suburban areas of the State with high park usage and in rural areas having a high percentage of public lands. The following chart illustrates this finding:

% of NRP Patrol Time Directed to Public Lands in Each Patrol Area

| Patrol Area | Major Public Lands | % of Patrol Time |
|-------------|---|------------------|
| 6 | Gunpowder Falls, Elk Neck, Rocks, Susquehanna, Fair Hill | 26% |
| 8 | Rocky Gap, Deep Creek Lake, New Germany, Swallow Falls, Herrington Manor, Western Maryland Rail Trail, Green Ridge State Forest | 25% |
| 5 | Seneca Creek, Patuxent, Patapsco Valley (except for Baltimore County) | 21% |
| 4 | Point Lookout, Greenwell | 18% |
| 1 | Assateague, Pocomoke, Janes Island, Somers Cove Marina | 18% |
| 7 | Cunningham Falls, Greenbrier, Gambrill, South Mountain, Western Maryland Rail Trail | 17% |
| 3 | Sandy Point | 15% |
| 2 | Tuckahoe, Wye Island | 5% |

F. Crime Rates

The annual Uniform Crime Reports present statistics on crimes known to, and reported by, law enforcement agencies, including murder, rape, robbery, aggravated assault, breaking or entering, larceny-theft, motor vehicle theft, and arson. Statewide, July and August were the months of highest reported crimes (July in 2009 and 2011, and August in 2004 and 2010). February was the lowest month in all four years.⁶ The Uniform Crime Reports do not include data on natural resource violations.

Many natural resource violations do not have immediate human victims or complainants, and are often discovered only when a law enforcement officer finds the violation or its aftermath on self-initiated patrol. As a result it is not possible to obtain complete statistics on the prevalence of hunting, fishing, and other natural resource violations; the best statistics available are the number of citations and warnings issued, but those statistics

⁶ The statewide statistics are contained in the annual Uniform Crime Reports for 2004, 2009, 2010 and 2011. The reports are all titled Crime in Maryland.

may reflect more the amount of NRP officer patrol activity than the number of actual violations.

The number of citations issued by NRP officers increased by 10% from 2004 to 2009-2011, and the number of warnings decreased by 24%. The main components of the increase in citations were crabbing, oyster, and tidal fisheries violations. The overwhelming part of the decrease in warnings was boating violations; that is very likely a result of the significant decrease in boating safety patrols noted earlier in this report.

G. Pre-Merger Information

At the beginning of 2005, law enforcement authority in state parks was assigned exclusively to the NRP, and a majority of the LEOs in state parks became LEOs in NRP. The numbers of officers in the state parks and NRP at the time of the merger are shown below:

Total Officers (LEOs) in 2004 (pre-merger)

| | HQ | East | South | Central | West | Other NRP Units* | Total |
|---------------|----|------|-------|---------|------|------------------|-------|
| LEOs in Parks | 10 | 18 | 21 | 46 | 48 | - | 143 |
| LEOs in NRP* | 11 | 71 | 54 | 33 | 20 | 21 | 210 |
| Total | 21 | 89 | 75 | 79 | 68 | 21 | 353 |

* Adjusted by removing Aircraft and Waterway Management (placing regulatory markers and navigation aids), which are no longer part of NRP

The merger had been recommended by the Commission on the Structure and Efficiency of State Government chaired by former Governor Marvin Mandel. In its report, the Commission included this statement, which provided in part a justification for the merger:

The current State classification system requires that Park Managers be sworn Rangers. In many cases, this requirement has created a situation where sworn police officers spend the majority of their time in park management operations rather than police operations.⁷

The report does not quantify the “many cases” and the “majority of time” that Park Service sworn officers spent on park management operations. However, this qualification should be taken into account when interpreting data on the number of LEOs in the Park Service before the merger. In addition, other data, including the hours of patrol time prior to the merger in 2005, should be considered. Finally, improvements in conservation law enforcement and technology developed over the past eight years, in addition to future efficiencies, should be considered as discussed in the next section.

⁷ Report of the Commission on the Structure and Efficiency of State Government, Marvin Mandel, Chairman, December 8, 2003, page 43.

The Mandel Commission report noted “some issues regarding staffing” and personnel allocations,⁸ but did not contain a workload analysis or detailed data. The number of LEOs in both NRP and the Parks had declined from 1990 to 2003. In July of 2005, 95 PINs were moved from the Maryland Park Service to NRP to effectuate the merger; 35 of those PINs were abolished or transferred to other purposes. Some LEOs remained in the Maryland Park Service but today they have advanced to senior park management and do not spend any significant part of their time performing law enforcement.

IV. BEST PRACTICES FOR CONSERVATION LAW ENFORCEMENT

This section considers best practices for conservation law enforcement that have developed since 2004, are developing now, and may be developed in the future, including the potential for civilianization of LEO positions.

A. Recent Changes in Natural Resource Management and Enforcement Procedures

The Department continually strives to identify and respond to opportunities to improve resource management and enforcement procedures. Some of the improvements have been enacted by the General Assembly, such as Chapters 468 and 469 of 2011 that authorized NRP officers to inspect places where fish may be stored on commercial fishing vessels. Other improvements have been made administratively by the Department, including development of the Maritime Law Enforcement Information Network (MLEIN).

Working with the Maryland Judiciary, NRP established a natural resources day – one day per month per court for hearing only natural resource violations in Anne Arundel, Dorchester, Wicomico and Worcester Counties. A single day for hearing natural resource violations has improved natural resources case resolution in the courts and reduced the number of days NRP officers need to leave patrol to be present in court.

State park managers continue to make changes intended to reduce the incidence of behaviors that would otherwise lead to law enforcement problems, including installing speed bumps, extending campground quiet hours, and declaring the state parks alcohol-free.

The Maryland Fisheries Service recently inaugurated a pilot “hail in, hail out” system that will assist enforcement by letting NRP officers know where crabbing activity is occurring. The Department’s new licensing software, COMPASS, will by next summer be producing license documents that clearly show the dates of all authorizations, which will make that information available to NRP patrol officers at the scene and eliminate the need for checking of remote sources and paper records.

⁸ Ibid, pages 42-43.

The Wildlife and Heritage Service recently began electronic deer and turkey check-in, with data available to NRP officers instantly.

B. Potential Improvements in Natural Resource Management and Enforcement Procedures

Several opportunities for improvement in technology and administrative procedures will help patrol officers make more effective use of time and improve NRP operations:

Improvements in Dispatch – While managing communications with patrol officers, NRP dispatchers also answer several phone lines from the public. Having to answer low priority phone calls or multiple citizen reports of a situation already being managed can distract a dispatcher and interfere with their efficiency in managing an urgent situation. Some emergency operations centers use a two-tiered system for handling incoming calls; one person answers a call and determines whether the call needs to be given to a dispatcher or can be handled in a different way. Providing this extra person during the busiest hours would allow dispatchers to maintain focus on the officers in the field and the most urgent and important situations they are managing.

Automated Record Checks – When an officer in the field wants a record check on an individual, the officer currently reads the individual’s identification over radio to a dispatcher, who does the records check and gives a verbal report to the officer. Making drivers’ licenses and perhaps other forms of identification scannable would enable officers to simply swipe the identification in a mobile device, saving both officer and dispatcher time for other duties.

Warrant Validation – The FBI’s National Crime Information Center (NCIC) requires validation of warrants in the NCIC database after the first 30 days and yearly thereafter. The NCIC generates computerized monthly lists of warrants due for validation, but civilians in the NRP’s Records and Communications Center validate them manually. Automating at least part of the validation process, or getting the warrants served so validation is not necessary, would free considerable staff time for other work.

Transmission of Court Data – Prompt response after a violation is one of the factors that lead to effective deterrence. The Fisheries Service relies on data regarding citations and court actions to assess points and impose penalties, which can include suspension or removal of license to fish. The Forest Service also uses court data. The data is currently being rekeyed by hand. Sending the data directly from one computer system to the other would improve accuracy and promptness.

Boating Improvements – The Department’s Boating Services unit is working to replace old style references in laws and regulations with exact coordinates, and is planning to propose regulations that will provide a detailed definition of “negligent operation” of a vessel; both efforts should increase clarity and reduce the number of difficult issues in court cases.

C. Potential for Civilianization

By law, only certified and sworn officers are authorized to conduct enforcement activities. However, support functions can and are being performed by civilian employees. These include administrative and administrative support, taking and dispatching calls at the NRP Communications Center, vessel maintenance and repair, record keeping and data entry, and scheduling people for boating and hunter safety courses. Using civilians where possible for support functions saves cost because civilians do not need all of the support equipment provided to law enforcement officers.

As part of the study leading to preparation of this report, the Department has identified several additional support positions now being performed by officers that can be civilianized, freeing up officers for patrol activity. While conducting the study, the NRP's Public Information Officer position became vacant; the Department moved forward to reclassify the position as a civilian. The Department will continue efforts to identify additional support positions that can be civilianized.

NRP operates a NRP Training Academy to train new recruits. Academy subject matter is taught by active NRP officers who are pulled away from patrol or other duties to teach academy classes. Some of the subject matter in the training relates specifically to natural resource and conservation laws and enforcement, and that subject matter needs to be taught by active or retired NRP officers. However, a significant amount of the training that leads to law enforcement certification is more general. The Department plans to look into the possibility of having recruits learn the general law enforcement material in the Maryland Police and Correctional Training Commission's Police Entrance Level Training, followed by training in natural resource and conservation matters by retired NRP officers (instead of pulling active officers away from patrol).

When NRP is recruiting new officer candidates, active officers are pulled away from their duties to perform background investigations of applicants. The Department evaluated the possibility of hiring a consulting firm to perform background investigations but found that alternative to be very costly. The Department will consider the feasibility of hiring retired officers from NRP or other police departments, perhaps on a contractual basis, to perform background investigations.

IV. WORKLOAD ANALYSIS

A. Methodology

While a number of observers have offered opinions about the levels of staffing and service by law enforcement officers in the NRP, none of those previous opinions have resulted from a detailed analysis of the documented workload. The workload analysis described in this report is the first data-driven analysis of NRP that has been conducted.

The International Association of Chiefs of Police (IACP) has conducted workforce analyses for state and federal fish and wildlife conservation agencies, including the Florida Fish and Wildlife Conservation Commission, the Washington Department of Fish and Wildlife, the National Park System, and the National Wildlife Refuge System.

The IACP states, “Ready-made, universally applicable patrol staffing standards do not exist. Ratios, such as officers-per-thousand population, are totally inappropriate as a basis for staffing decisions.”⁹

The IACP starts with the “common practice” of dividing patrol officer time equally among three types of activities: (1) response time to calls from the public, (2) officer-initiated patrols to identify and deter natural resource violations, and (3) administrative duties, such as writing reports or conferring with supervisors. According to the IACP, “Variations of this basic formula occur, especially in jurisdictions committed to problem-solving and/or neighborhood-oriented approaches. In these jurisdictions, the portion of time allocated for proactive activity must be substantially greater.”¹⁰

This report applies the IACP methodology as closely as possible in conducting the workload analysis, using data available from the NRP dispatch system and officers’ weekly reports of the time spent on each activity, with one exception. The CAD and 206 reports do not provide a record of the total time officers spend in response to calls for service (i.e., number of officers who responded, time each spent at the scene and in follow-up), or distinguish clearly between calls for service from the public and incidents discovered by officers while on patrol. The workload analysis, therefore, examines the overall patrol officer workload without distinguishing between officer-initiated enforcement and response to calls from the public.

The workload analysis focuses primarily on patrol officers – officers in the field who have responsibility for responding to urgent calls for service in addition to conservation and other public safety priorities. Details of some of the calculations for the analysis are shown in **Appendix A**.

⁹ IACP, “Patrol Staffing and Deployment Study”, page 2. Viewed online at <http://www.theiacp.org/LinkClick.aspx?fileticket=AKL78d4MBw8%3D&tabid=252> on 11/6/2012.

¹⁰ Ibid, page 3.

B. Officer Hours Available for Patrol

The amount of time each patrol officer is available to be on patrol is:

- (a) the number of hours the officer is available for duty (i.e., not on leave)
- (b) minus the hours of on-duty time the officer spends on administrative, non-patrol tasks.

On average, current NRP patrol officers are available for duty 32.5 hours per 40-hour week, for a total of 1,694 on-duty hours per year. Newly hired officers are estimated to have an additional 45 hours of availability (less leave), for a total of 1,739 on-duty hours per year. Officers hired on contract without benefits would not be entitled to paid leave and would be available for duty 40 hours per week.

The amount of time an NRP officer while on duty spends on non-patrol, administrative activities is slightly less than 30%. While officers suggest that administrative time is slightly underreported, the level of slightly less than 30% is in line with the IACP guideline of one-third of patrol officers' time.

The calculation of officer hours available for patrol is shown in the following tables:

Calculation of Officer Hours per Year Available for Patrol

| | Available for Duty | Admin. Time* | Available for Patrol |
|----------------------|--------------------|--------------|----------------------|
| Existing LEO/year | 1,694 | 508 | 1,186 |
| Newly Hired LEO/year | 1,739 | 522 | 1,217 |
| Contract LEO/year | 2,080 | 624 | 1,456 |

* Data show that patrol officers spend 30% of their on-duty time doing administrative, non-patrol tasks

The time periods were calculated on a per month basis to allow detailed comparison with the workload needs for patrol:

Calculation of Officer Hours per Month Available for Patrol

| | Available for Duty | Admin. Time* | Available for Patrol |
|-----------------------|--------------------|--------------|----------------------|
| Existing LEO/month | 141 | 42 | 99 |
| Newly Hired LEO/month | 145 | 44 | 101 |
| Contract LEO/month | 173 | 52 | 121 |

* Data show that patrol officers spend 30% of their on-duty time doing administrative, non-patrol tasks

The existing 146 previously serving patrol officers and 17 recently trained officers can meet 16,171 hours of the monthly patrol needs.¹¹

¹¹ 146 officers times 99 hours/month each = 14,454 hours/month + 17 recently graduated officers times 101 hours/month each = 1,717 for a total of 16,171 hours/month.

C. Officer Hours Needed for Patrol

The data collected and analyzed establishes several baseline findings:

- Statewide patrol hours for boating safety have decreased 20% since 2004;
- Conservation patrols have decreased by 16% in the Eastern Region, where the largest amount of commercial fishing and crabbing activity takes place;
- Not including public lands, total annual NRP patrol hours have decreased statewide by 6.5% since 2004;
- Maintaining a patrol presence in the Maryland Park Service system, with over 10 million visitors and 66 parks, presents significant law enforcement demands since the 2005 merger;
- Law enforcement demands on public lands and public waterways are seasonal, peaking in the June to September time frame;
- Calls for service from the public and other police agencies have increased over the past three years;
- The median time for responding to urgent calls for service for a Priority 1 call – the time to arrive on the scene – is 20 minutes; for Priority 2 calls, the median time is 28 minutes.

The IACP approach urges police agencies to “consciously choose” a policing style. Here, it is evident that the reduction in staffing has tilted the NRP more toward responding to calls for service than patrol and prevention. It is evident that more hours of officer-initiated patrols to identify and deter natural resource violations are needed.

Examination of the data and discussions with officers both confirm that the nature of the patrol workload varies both by calendar month and patrol area. In order to calculate the number of additional hours needed for patrol, the analysis proceeded as follows.

1. For each month of recent years (2009-2011) patrol hours reported by officers within each of the eight patrol areas were grouped into the following seven categories: boating, game/wildlife, crabs, non-tidal fisheries, tidal fisheries, public lands, and other patrol. The data includes all hours of patrol, whether during regular shift hours or on overtime.

2. The maximum patrol hours spent for each of the seven categories in each of the eight patrol areas and month of recent years was identified, and they were summed to give the hours of workload demand for each month of the year. As documented earlier in this report, boating safety and some conservation patrols have declined since 2004. To calculate the patrol hours that would be needed to restore those patrols to 2004 levels, the recent year figures for each patrol category, month and geographical area were compared to 2004 and the larger number was used in the calculation of monthly workload. The table in **Appendix B** shows the results of these calculations.

As seen from Appendix B, the season of highest overall patrol demand is June through September. Patrol demand for the other months, October through May, was averaged to arrive at a consistent need for 23,212 officer patrol hours per month to meet year-round workload. June has the highest demand of 27,226 patrol hours, so an additional 4,014 patrol hours are needed to meet this peak demand during the summer months.

To use an analogy with the way electricity demand is described, the year-round baseload patrol demand is 23,212 officer hours per month and the peak demand in the June through September busy season is 27,226 patrol hours per month.

D. Number of Officers to Meet Year-Round Patrol Workload

As noted above, the existing 163 patrol officers can meet 16,171 hours (70%) of the monthly patrol needs, leaving 7,041 (23,212 – 16,171) hours per month to be covered by newly hired patrol officers to cover the calculated workload. Since each new patrol officer will have 101 hours available for patrol each month, 70 additional patrol officers will be able to meet the year-round patrol demand without relying on overtime.

E. Number of Officers to Meet Peak Season Patrol Workload in State Parks

The June through September busy season has a peak month demand for 27,226 patrol hours, 4,014 hours more than the year-round demand. An additional 40 full time officers would be needed to meet the seasonal demand.¹² However, staffing the NRP with enough full time year-round officers to meet the need in the busiest summer months would result in having more patrol officers available than absolutely needed in the slower winter months.

This leads to the possibility of hiring seasonal officers for just the busy summer months. The fact that the greatest need for law enforcement in state parks occurs in the summer months opens an opportunity to meet that seasonal demand by hiring short-term, seasonal officers on contract – at a significant savings over the cost of hiring permanent, year-round officers.

The seasonal officers would be hired at a low rank, would not receive the full benefits available to permanent officers, and would be supervised by permanent officers. Contractual employees do not receive the leave that permanent employees receive, so contractual seasonal officers would have more hours available for patrol; 33 seasonal officers could perform the same number of patrol hours as 40 permanent officers.¹³

The seasonal officers could be either retired NRP officers hired under a program similar to the “DROP-back” program of the Maryland State Police, or freshly trained young adults similar to those hired each summer season by the Ocean City Police Department.

¹² 4,014 patrol hours/month divided by 101 hours/month per new officer = 40 new full time officers

¹³ A seasonal officer would have 121 hours per month available for patrol. 4,014 divided by 121 = 33.

Ocean City’s hiring of seasonal officers is authorized by state law,¹⁴ and their seasonal officers receive four weeks of training before they go on duty.¹⁵ The Maryland State Police “DROP-back” program is also authorized by state law.¹⁶

Hiring seasonal patrol officers to handle at least part of the peak summer load will provide a considerable cost savings compared to the cost of hiring permanent officers to handle the peak load.

The Department would prefer to hire already certified, experienced officers under a “DROP-back” program for retired NRP officers because those officers would not need a full month of paid training before going on duty. However, the number of recently-retired NRP officers available will likely be less than the number of seasonal officers needed.

| | |
|---|-----|
| Existing Patrol Officers | 163 |
| New Year-Round Permanent Officers | 70 |
| Existing Seasonal Contractual Officers | 5 |
| New Seasonal Officers for Seasonal Peak | 28 |
| Total Officers to Meet Patrol Demand | 266 |

F. Support Personnel for Patrol Officers

With only a few exceptions, the command and support structures of the NRP appear to be sufficient to support the larger number of patrol officers that are needed to meet demand.

The workload of some of NRP’s support units varies directly with the number of officers on patrol in the field. Investigators in the Special Operations Division follow up on leads and events generated by patrol officers, particularly in investigations of crimes and deaths on public lands, reconstruction of boating accidents, and in-depth conservation law enforcement. Along with the increase in the number of patrol officers, an increase of 3 specially trained investigators in the Special Operations Division is warranted, plus one civilian to provide administrative support.

The position of in-service training coordinator is not included in the table of current filled positions because the position is currently vacant. This civilian position is vital, however, to coordinate scheduling of in-service training for existing officers and to keep records of that training to maintain the law enforcement certification of those officers.

A small Internal Affairs Unit (IAU) is responsible for investigating the discharge of agency weapons, maintaining all records pertaining to administrative investigations and alleged traffic violations, investigating allegations of serious misconduct or criminal

¹⁴ Public Safety Article, section 3-216(b).

¹⁵ The Ocean City Seasonal Police Officer program is described online at http://oceancitymd.gov/police/police_employment.html.

¹⁶ State Personnel and Pensions Article, section 24-405, as amended by Chapters 643/644 of 2009.

activity, and reviewing the disposition of all disciplinary actions taken against NRP employees. The IAU also conducts inspections of NRP facilities to maintain compliance with required evidence handling procedures and the overall integrity of the agency. A significant increase in patrol officers will generate enough workload for 2 additional LEOs in the Internal Affairs Unit.

Increasing the number of patrol officers on duty will cause increased workload for dispatchers who communicate with those officers and maintain knowledge of all ongoing situations in the region. Adding call takers (3 civilians) to do triage and screen calls during the busiest shifts at the communications center will allow dispatchers to focus on deploying and communicating with the increased number of patrol officers.

The total number of new support filled positions resulting from the workload analysis is 5 LEO positions and 5 civilian positions.

G. Summary of Workload Analysis

The key findings of the workload analysis are:

- There are no universally applicable standards for assessing the adequacy of natural resource policing;
- Patrol staffing and deployment requirements are best established by careful analysis of all available data;
- Calls for service from the public and other police agencies have increased over the past three years;
- Statewide patrol hours for boating safety have decreased 20% since 2004;
- Conservation patrols have decreased by 16% in the Eastern Region, where the largest amount of commercial fishing and crabbing activity takes place;
- Not including public lands, total annual NRP patrol hours have decreased statewide by 6.5% since 2004;
- Maintaining a patrol presence in the Maryland Park Service system, with over 10 million visitors and 66 parks, presents significant law enforcement demands since the 2005 merger;
- Law enforcement demands on public lands and public waterways are seasonal, peaking in the June to September time frame.

The data examined and analyzed in the workload analysis indicates that 233 fulltime patrol officers, supplemented by 33 contractual officers in state parks during the peak summer busy season, could handle the current patrol workload. Five additional officers and 5 civilians added to the existing staff would provide adequate support for the patrol officers.

V. CONCLUSION

Rebuilding the NRP's capacity is being led by the Department in partnership with the Department of Management and Budget, the Governor, and the General Assembly. A class of newly-trained officers graduated from the Natural Resources Police Academy on November 9, 2012, and those officers are now on patrol in the field.

In the spring of 2012 the Governor proposed and the General Assembly adopted a FY 2013 Supplemental Budget item that includes funding to hire 8 additional officers and to reinstate the long-unused NRP cadet program. Those actions are now being implemented.

While increasing the number of patrol officers is essential to achieving the desired levels of service, other means of increasing patrol effectiveness and efficiency are equally important. Improvements to management and enforcement procedures, reducing officers' non-patrol workload, and civilianizing support functions among other things will help to offset increased patrol demands that result from increasing calls for service and increasing responsibilities.

In the past eight years, conservation law enforcement in Maryland has become more streamlined and effective, and further opportunities for efficiency exist in the future. Among other things:

- DNR managers have worked with General Assembly to improve NRP enforcement measures, including increased penalties providing added deterrence for offenders;
- A natural resources day has improved outcomes in courts and reduced the number of days NRP patrol officers need to leave patrol to be present in court;
- Making the state parks alcohol-free has reduced the rate of alcohol violations;
- New technology, including MLEIN, a pilot "hail in, hail out" system for crabbers and electronic deer and turkey check-in, continues to improve law enforcement efficiency;
- Improvements in communication dispatch and automated record checks, among others, will result in additional efficiencies; and
- The NRP public information officer position has been reclassified to civilian status, and the Department has identified additional support positions now being performed by officers that can be civilianized, freeing up officers for patrol activity.

The Department will explore the possibility of legislation to amend the current law that authorizes the hiring of contractual NRP officers to provide eligibility for benefits to retired officers rehired under contract in a "DROP-back" program if they suffer death or disabling injury in the line of duty, similar to the eligibility now provided by law for officers in the Maryland State Police "DROP-back" program. The legislation could also require any officer in the "DROP" to complete and exit the "DROP" before being rehired under contract.

The Department will also explore the possibility of legislation to authorize the hiring of seasonal officers to serve in state parks during the summer season, under the supervision of fulltime NRP officers. The authorization for seasonal NRP officers could be similar to the existing law that authorizes seasonal officers for the Ocean City Police Department.

The Department will continue these and other efforts to rebuild the capability of the NRP to provide desired levels of service.

APPENDIX A

Workload Analysis Calculation Details

Officer Time Available for Duty

The amount of time officers are available for duty was computed as follows. Leave data for existing patrol officers during calendar year 2011 was obtained from payroll timesheet records and compared with the number of weeks each officer was employed by NRP during the year. On average, patrol officers were available for duty 32.5 hours per 40-hour week, for a total of 1,694 on-duty hours per year.

| Patrol Officer Leave Breakdown | |
|--------------------------------|-------|
| Accident Leave | 6.9% |
| Annual Leave | 32.0% |
| Personal Leave | 16.7% |
| Sick Leave | 18.2% |
| Holiday Leave | 24.4% |
| Other Leave | 1.8% |

Time recovering from work-related accidents amounted to 6.9% of patrol officer leave during 2011; annual leave 32.0%; personal leave 16.7%; sick leave 18.2%; and holiday leave 24.4%. Personal leave includes leave for the five days that Maryland state government was closed during the year.

Long-term state employees can earn as much as 25 days of annual leave per year; new employees earn 10 days that they cannot use during the first 6 months. Average annual leave taken by patrol officers during 2011 was 125 hours, which is more than the 80 hours a new officer can earn in a year. Newly hired officers are estimated to have an additional 45 hours of availability, for a total of 1,739 on-duty hours per year.

Officers hired on contract without benefits would not be entitled to paid leave and would be available for duty 40 hours per week.

Time on Administrative, Non-Patrol Tasks

NRP patrol officers fill out weekly reports summarizing their daily activity and time allocation, called "206" reports. Hours coded as administrative, maintenance, training, court time, meetings and other non-patrol activities were summed for each year to calculate the percentage of patrol officer time reported as spent on administrative, non-patrol tasks. The results were 26.7% in 2009, 28.2% in 2010, and 29.4% in 2011. The average of 28.0% in recent years compares to 30.4% in 2004.

The actual percentage in practice is believed to be slightly higher than shown by the recorded data; both senior management and patrol officers indicated in conversations that there is a tendency to report time as being spent on substantive law enforcement rather than administrative duties (officers, for example, might report time spent writing reports on a fishing arrest as being spent on fisheries enforcement rather than administrative work).

APPENDIX B

Patrol Workload Hours by Activity and Month

Patrol Workload Hours by Month with Boating Safety and Conservation Patrols Restored to 2004 Levels*

| | Jan | Feb | Mar | Apr | May | Peak Months | | | | Oct | Nov | Dec |
|--------------------|----------|----------|----------|----------|----------|-------------|----------|----------|----------|----------|----------|----------|
| | | | | | | Jun | Jul | Aug | Sep | | | |
| Boating | 1,852.5 | 2,308.5 | 2,798.0 | 3,466.5 | 4,748.0 | 7,235.5 | 7,157.0 | 4,825.5 | 4,822.0 | 2,447.5 | 1,677.5 | 1,692.5 |
| Game/Wildlife | 8,532.0 | 3,674.5 | 2,989.0 | 4,275.5 | 1,655.5 | 1,509.0 | 1,394.5 | 1,963.0 | 6,365.5 | 9,582.0 | 12,307.5 | 13,016.5 |
| Crabs | 33.0 | 67.0 | 263.0 | 660.0 | 1,432.5 | 2,740.5 | 2,500.0 | 2,614.0 | 2,330.5 | 773.5 | 292.5 | 62.0 |
| Nontidal Fisheries | 801.5 | 2,157.0 | 4,813.5 | 3,872.0 | 2,963.0 | 2,523.5 | 1,961.5 | 1,573.0 | 992.5 | 619.0 | 326.5 | 325.5 |
| Tidal Fisheries | 3,144.5 | 6,932.0 | 6,370.0 | 4,835.5 | 4,580.5 | 4,663.0 | 3,907.5 | 3,432.5 | 3,878.0 | 3,241.5 | 3,675.5 | 4,208.0 |
| Public Lands | 4,522.0 | 5,080.5 | 5,145.0 | 5,298.5 | 6,172.0 | 6,996.0 | 7,112.5 | 5,757.5 | 6,119.5 | 4,106.0 | 3,546.5 | 4,078.5 |
| Other Patrol | 1,686.5 | 2,478.0 | 1,739.5 | 1,676.0 | 1,503.0 | 1,558.0 | 1,496.5 | 3,987.5 | 2,338.0 | 1,427.0 | 2,118.0 | 1,645.0 |
| Total | 20,572.0 | 22,697.5 | 24,118.0 | 24,084.0 | 23,054.5 | 27,225.5 | 25,529.5 | 24,153.0 | 26,846.0 | 22,196.5 | 23,944.0 | 25,028.0 |

23,211.8 = average of non-peak months (October through May)

* Patrol area boundaries in Central and Western regions changed between 2004 and 2009 so calculations were done for those two regions as a whole.