

Secretary of State Audit Report

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Forensic Services Division: Some Strategies to Help Address Delays in Evidence Testing

Executive Summary

The clients of the division are:

3 US Attorney Offices

36 District Attorneys

36 Sheriff's Departments

143 Police Departments

36 Oregon State Police Offices

6 Federal Bureau of Investigation Offices

Approximately 1,200 Criminal Defense Attorneys

Forensic analysts at the five laboratories operated by the Oregon State Police Forensic Services Division test most of the forensic evidence in Oregon. Yet, each year, more evidence awaits testing because of the growing demand for the division's laboratory services. We recommend some ways to better use analyst time, though these improvements fall short of meeting the growing demands for testing. We also found opportunities for the division to better use data and continue planning for a changing workload.

Our audit was substantially complete before allegations were publicly reported about an analyst tampering with evidence. Potential criminal behavior was not disclosed to us by division staff or others during our audit. A criminal investigation into these allegations is underway, and a workgroup appointed by the Governor is evaluating the division's practices and procedures around evidence control.

The State Police Provides Forensic Testing

The Oregon State Police Forensic Services Division (division) is the primary provider of forensic testing in Oregon. Approximately 90% of its testing workload is for clients other than the Oregon State Police. The division includes five forensic laboratories statewide and employs 127 employees. In 2014, the division received about 29,500 requests for testing.

The Testing Backlog Is Growing

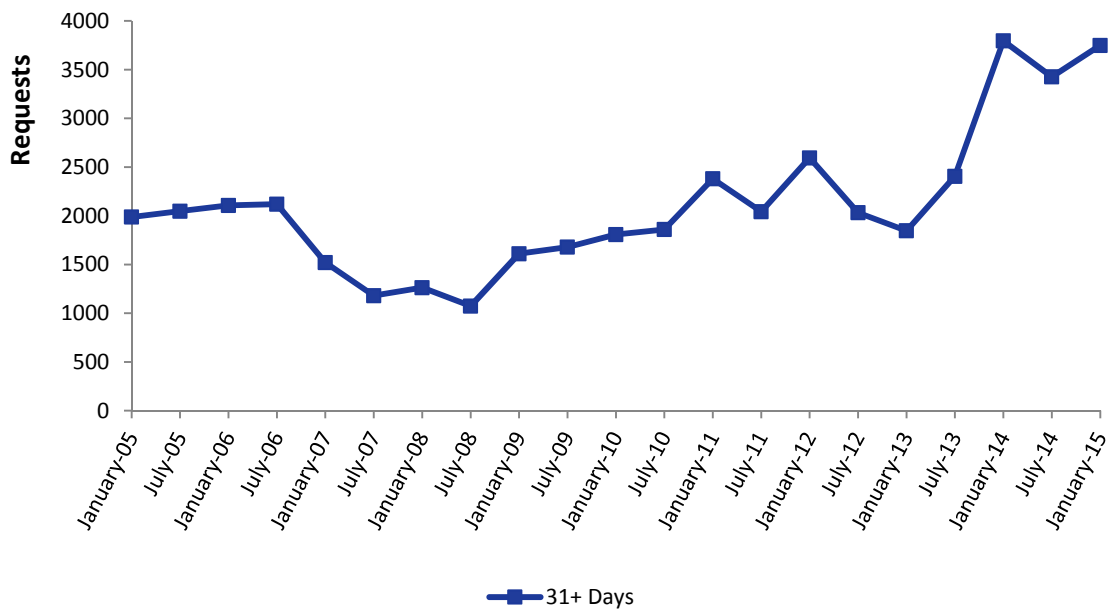


The National Institute of Justice defines a backlogged case as one untested within 30 days of submission to a crime laboratory. Oregon, like many forensic laboratories throughout the United States, has a backlog of evidence waiting to be tested.

Our audit found Oregon's backlog has grown 90% since 2005, with around 3,700 untested requests as of January 2015. The division's backlog has not dipped below 1,600 requests since 2009.

A number of factors affect the growing backlog. The demand for testing has increased 31% since 2005. During the same period, the number of division employees increased only marginally, and those analysts tested less evidence. According to the division, between January 2013 and January 2014, some laboratory director and analyst positions were vacant, and several analysts were on family leave or participating in training. These factors contributed to a large increase in backlog during that period.

Figure 1: Division Backlog



Casework Improvements Could Help Address Some of Backlog

There are many steps in testing evidence. The division receives evidence from law enforcement agencies, prioritizes it and assigns it to analysts for testing. Analysts apply scientific procedures and document the results. They then provide a report to the law enforcement agencies and attorneys involved in the case.



By investing in new technology and process improvements, the division has tried to reduce testing time while maintaining accuracy. Although the division has made these efforts, the backlog continues to grow.

We found some inefficient practices that if corrected could help the division make better use of analyst time. For example, there are often problems with the request forms law enforcement agencies fill out when submitting evidence to the laboratories. The division has guidelines for law enforcement to follow when filling out these forms and submitting evidence, but does not consistently enforce them.

The division prides itself on providing excellent customer service. There is a perception that enforcing evidence submission guidelines would be bad customer service. As a result, analysts tend to spend time following up with law enforcement to get information before they can begin testing. Additionally, the division is not involved with initial training law enforcement officers receive on how to collect and submit evidence.

Another improvement to casework that could help address the backlog is consistently using electronic notes. These could save analyst time during testing and the case review steps.

Analyst performance reviews are based in part on benchmarks like the number of requests they complete per hour. If an analyst closes a case without providing testing results, their performance numbers will decline. As a result, they sometimes work requests their clients have canceled, wasting valuable resources.

While these changes could help, they would not be sufficient to address the growing demand, year by year, for forensic testing experienced by the division.



Data and Planning to Improve the Division

The division is missing opportunities to reduce its backlog.

Managers of the five forensic crime laboratories could use data to better manage workload. Doing so could reduce the state's overall backlog. For example, laboratories can do a better job of transferring requests to one another, depending on their capacity to test evidence. Because the division is not systematically reviewing laboratory capacity and transfer options, it is missing additional opportunities to address the backlog throughout the state.

Management has completed some elements of a comprehensive strategic plan but there are pieces missing. The division projects future workload and staffing needs, but does not solicit input from clients when developing these projections. In addition, the performance benchmark data the division uses are incomplete. These benchmarks do not account for time

delays caused by incorrect evidence submissions or analysts working on canceled requests that do not serve a judicial purpose.

Recommendations



By continuing its process improvement efforts and better using data, the division can increase analyst productivity and potentially reduce the backlog. We recommend the division:

- Enforce its evidence submission guidelines and take an active role in the development and delivery of initial forensic training given to law enforcement officers.
- Consider using a business process improvement tool like Lean Six Sigma to evaluate casework and eliminate unnecessary procedures, implementing electronic notes, and developing a policy for analysts to follow when clients cancel requests for testing.
- Use data to implement a systematic review of workload transfers.
- Revise benchmarks to include canceled requests and time spent waiting for law enforcement to correct evidence submissions.
- Develop and implement a comprehensive strategic plan that includes considerations for laboratory facilities and staffing, and client input to forecast workload.
- Continue planning for changes in workload.

Agency Response

The agency generally agreed with our findings and recommendations. The full agency response is located at the end of the audit report

Background

The Rise of Forensics

Forensic testing is the analysis of evidence and interpretation of the results of that analysis.

The foundations of forensic science date back hundreds of years. Over time, the science has evolved as technology advanced, techniques were refined, and new techniques were developed. For example, fingerprints were initially used as a means of identification in the 1880s, but their use continued to evolve into the early 1900s. The same holds true for DNA testing, which was developed in the 1980s and continues to evolve.

The CSI effect

Television programs showcasing forensic sciences such as Crime Scene Investigations (CSI) became extremely popular in the early 2000s. These programs showed forensic analysts gathering and testing evidence to solve crimes. The programs are often criticized for depicting inaccurate testing procedures and exaggerating forensics' ability to solve requests. These programs indicate testing of most evidence takes minutes or hours and offers absolute conclusions. In reality, requests may require complex testing procedures that can take days or weeks, and do not always result in absolute conclusions.

These programs also increased public awareness of forensics and the role it plays in investigations. One concern with this increased awareness is that these inaccurate portrayals might create unrealistic expectations for forensic testing, which is known as the CSI effect.

The CSI effect has also influenced law enforcement and district attorney expectations of the Oregon State Police Forensic Services Division (division). For example, law enforcement agencies may submit large amounts of evidence for testing, some of which may not be used in court, because there is a perception that jurors expect that certain tests be performed.

State Police Is the Primary Provider of Forensic Services in Oregon

Law enforcement agencies and district attorneys submit requests for evidence testing.

The division provides scientific, technical, and investigative support to all members of the criminal justice system across the state through forensic analyses. The division's budget for the 2013-2015 biennium was \$35.8 million, 94% of which came from the state's General Fund. The division is comprised of 127 positions allocated to five laboratories in Bend, Central Point, Clackamas, Pendleton and Springfield.

Over the last 10 years, the division has received an average of 23,800 new requests for evidence testing each year. According to division figures, 90% of the work completed is for the clients previously mentioned. The other 10% is completed for the Oregon State Police.

The division, which does not charge a fee, can perform the following:

- Biology Processing Analysis - screening and preliminary processing of physical evidence for biological material (e.g., blood, semen, saliva).
- Crime Scene Processing - analyzing physical locations or objects suspected to be involved in a crime.
- DNA Analysis - analyzing biological evidence for the presence of DNA and searching for matches in the national DNA database.
- Drug Analyses
 - Controlled Substance Analysis - identifying specific chemicals designated as controlled under Oregon Administrative Rule 855-080-0015, including tablets, powders and plant materials.
 - Clandestine Laboratory Analysis – using samples to determine the methods used to produce illegal drugs and how much of a drug could be produced given the evidence seized.
 - Methamphetamine Quantification - analyzing large amounts of evidence to determine its purity (only for federal requests).
- Fingerprint Analysis
 - Latent print processing - physical and chemical processing of evidence to develop and preserve fingerprints.
 - Latent print comparison - comparing fingerprint detail from evidence to databases of fingerprints.
- Firearms and Toolmark Analysis
 - Firearms analysis - screening and comparing bullets and cartridge requests, and entry of test-fires and unknown fired cartridge requests in the national database.
 - Toolmark analysis - comparing marks left during a crime to test marks on an item possibly used in the crime.
- Serial Number Restoration – using mechanical and chemical processes to restore original serial numbers on physical evidence such as firearms and vehicles.
- Toxicology Analysis
 - Analyzing biological fluids (e.g., blood and urine) for alcohol, controlled substances, non-controlled substances and poisons.
 - Quantitative analysis - determining blood alcohol levels in post and antemortem toxicology requests as well as controlled substance levels in post-mortem requests.
- Trace Evidence Analysis - screening for and analyzing ignitable liquids, fibers, soil, glass, paint, hair, explosives, footwear, tire impressions and other miscellaneous evidence.
- Implied Consent Program
 - Training and certifying of law enforcement officers to operate breath alcohol testing instruments.
 - Testing and certifying the accuracy of breath alcohol testing instruments throughout Oregon.

Audit Results

The objective of our audit was to determine strategies the division could use to reduce the forensic backlog through improved efficiencies. Each year, more evidence awaits testing because of the growing demand for the division's laboratory services. We identified some ways to better use analyst time, though these improvements fall short of meeting the growing demands for testing. We also found opportunities for the division to better use data and continue planning for a changing workload.

Our audit was substantially complete at the time allegations were publicly reported that an analyst tampered with evidence. This audit reports findings related to efficiency and time management to address the growing demand on the labs. Our work did not test the adequacy of the division's evidence controls nor was potential criminal behavior disclosed to us by division staff or others during our audit.

A criminal investigation into these allegations is underway, and a workgroup appointed by the Governor is reviewing the division's practices and procedures around evidence control.

Division Laboratories Undergo Accreditation and Quality Assurance Reviews

The quality and reliability of forensic testing is extremely important to the criminal justice system. If the best evidence is not submitted in court, the guilty may go unpunished or an innocent person may lose their liberty.

One method to address issues surrounding accuracy and quality of forensic testing is accreditation. Accreditation provides an independent, impartial and objective system by which laboratories undergo a total operational and technical assessment.

The division laboratories have been accredited through the American Society of Crime Laboratory Directors Laboratory Accreditation Board (ASCLD/LAB) since 1985. The accreditation process includes external assessments conducted every five years and surveillance assessments every two years. During these assessments, qualified assessors visit division laboratories and perform a full assessment of the management and technical operations of the laboratory to ensure compliance accreditation standards.

The assessment includes but is not limited to the review of technical procedures, analyst proficiency tests, and equipment maintenance and calibration records. Additionally, assessors follow-up on issues identified during prior assessments. The division may also undergo additional visits during accreditation cycles if ASCLD/LAB chooses. The DNA section undergoes an additional separate assessment every two years to ensure compliance with the FBI Quality Assurance Standards.

Annually, each lab undergoes an internal assessment. Division staff evaluate conformance with the accreditation standards, internal quality assurance documents, and division policies and procedures. After considering division efforts for accreditation, we decided to focus our audit on the division's growing backlog of untested evidence.

Forensic Backlog is Increasing

A common challenge in forensics is the backlog of untested evidence. Recent reports and studies highlight the backlog of DNA requests and sexual assault forensic evidence kits. For example, the National Institute of Justice (NIJ) released a report in 2012 discussing the status of DNA backlogs in the United States. The division has a similar problem, with backlogs in many types of forensic testing.

The NIJ defines a backlogged case as one untested within 30 days of submission to a crime laboratory. In 2008, the division adopted this definition, raising their turnaround goal from 15 to 30 days after finding the 15-day goal unrealistic. The current average turnaround time for the entire division is 65 days.

Since 2009, the division has maintained a backlog of at least 1,600 requests.

Risks of backlog

Law enforcement agencies and the criminal justice system rely on the division's scientific testing, which may result in exonerating the innocent or prosecuting the guilty. Delays in testing caused by backlogs may hinder justice for victims, and could enable serial offenders to continue harming victims. There are also programs such as post-conviction DNA testing that allow convicted persons to request retesting of evidence that could exonerate them. If these requests were backlogged, persons who may be innocent would remain incarcerated.

Additionally, most crimes have timeframes within which the criminal justice system can charge suspects. If backlogs in testing cause a case to exceed these timeframes, suspects cannot be prosecuted and victims may not receive justice.

Most types of testing have a backlog

While testing backlogs are not uncommon, the division's backlog increased 90% since 2005. Mostly notably, from 2009 to 2015 it increased from about 1,600 to 3,700 requests. See figure 2 for a graph showing the increase in requests for testing older than 31 days.

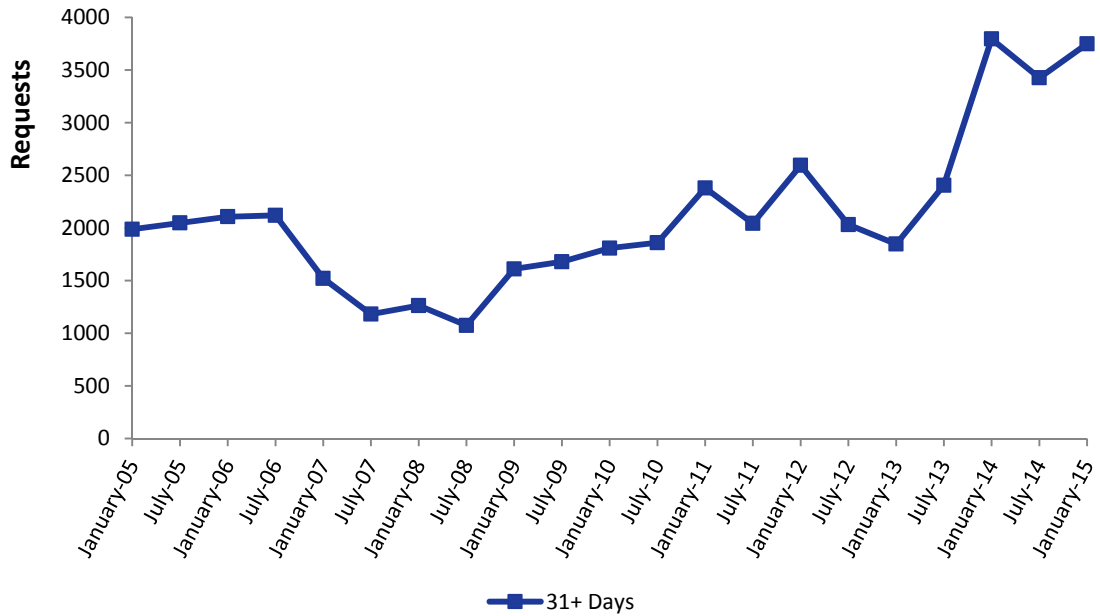
Not all types of testing have a backlog, but many of the common types like DNA and fingerprint testing do. Division reports from 2015 show that over half of the types of testing have backlogs greater than 100 requests. Two of the largest backlogs are for DNA testing and fingerprint testing.

Agency-wide, the backlog has increased by 90% since 2005.

Biology processing screens various types of evidence for the presence of DNA.

For this audit, we focused on DNA, biology processing, fingerprint, and drug chemistry requests. All of these types of testing had significant backlogs. For example, as of January 2015, the backlog in fingerprints testing was over 1,000 requests, an increase of more than 35% from January 2005.

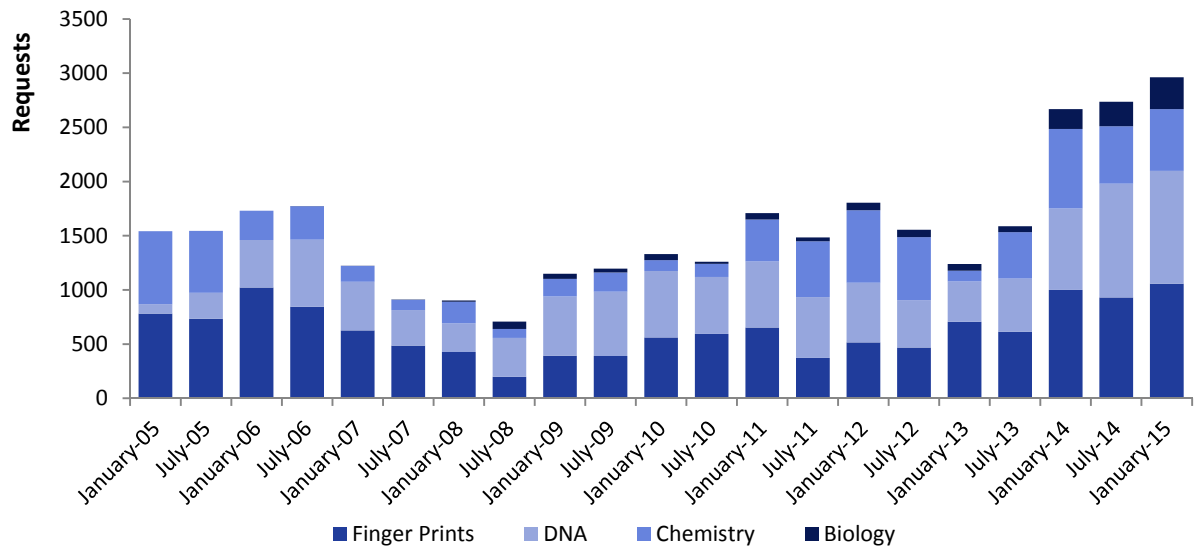
Figure 2: Backlog has Increased 90%



A number of factors could affect the size of the backlog. An increase in the number of requests for testing could grow the backlog. Other factors include complying with changes to accreditation standards, permanently closing the Ontario lab in 2011 and adding new types of testing. Additionally, if staff is not available for testing, the backlog could increase. For instance, according to the division, between January 2014 and November 2015, more than 14% of the division staff was on family leave.

During that time, the division also made improvements that required staff to validate new equipment and procedures for analysis. Several analysts were also involved in training. Additionally, the division had several vacancies in key positions during that period, including analyst, laboratory supervisor and laboratory director positions.

Figure 3: Largest Testing Backlogs



Note: The division began tracking Biology requests late in 2006.

As the backlog grows, the division has options for how it can respond. The division has offered analysts overtime funded by general fund and federal backlog reduction grants. However, these funds are limited and the overtime is voluntary. The division could also streamline testing processes or seek other efficiency improvements. Additionally, management could continue requesting additional resources from the Oregon Legislature.

With an increasing workload and backlog, staff tries to test the highest priority requests first. For example, evidence related to person crimes such as homicides and sexual assaults are tested first, as these have greater public safety implications than some other crime types. The next priority is high-dollar property crimes such as burglary, while the lowest priorities are low-dollar property crimes like automobile theft.

Delays in testing impact local law enforcement agencies

Many stakeholders rely on the division to test evidence and provide results in a timely and accurate manner. Delays in evidence testing can deny or delay justice to crime victims. In fact, the division’s backlog and long turnaround times, have led some law enforcement agencies to perform certain forensic tests themselves.

Law enforcement agencies we contacted know the division has a backlog. Because of this, some do not submit all of the evidence they would like tested. Submitting every piece of evidence for testing would be impractical and inefficient.

Instead, many agencies work with the division to determine which evidence gives them the best chance to solve requests quickly. However, agencies

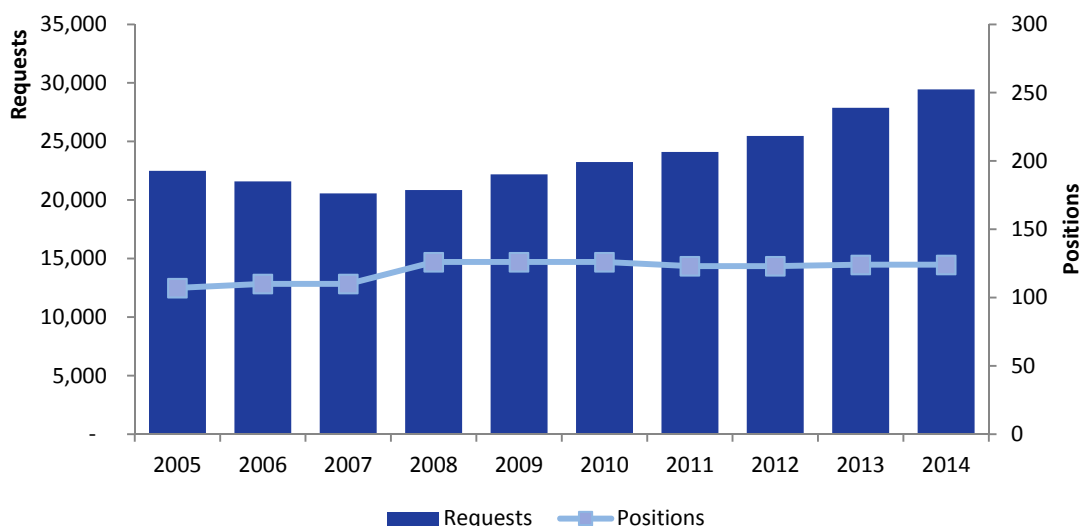
could risk missing crucial testing results if evidence is not submitted because of concerns related to the backlog.

Staffing levels have not kept pace with workload increases

Requests for testing have increased by 31%.

As noted above, the division prioritizes requests to ensure threats to public safety are resolved quickly. However, its workload has increased substantially while staffing levels increased only marginally. The rising demand from its clients has outpaced the division's ability to complete tests timely. For example from 2005 through 2014, new requests for testing increased by 31%.

Figure 4: Workload Increasing with Few Additional Staff



Note: The lower levels of division staffing prior to 2008 were due to budget cuts in the 2001-2003 biennium. The increase in 2008 was intended to restore division staffing to its previous levels.

The division is committed to improving its efficiency, having invested resources into technological and process improvements. For example, it has implemented the High Throughput Property Crimes pilot project, which streamlined the submission process, standardized the evidence submitted and utilized advanced DNA equipment to achieve faster testing results. Additionally, the division proactively developed testing procedures for an expanded set of DNA testing parameters required by the FBI. These parameters must be in place by January 1, 2017. By developing these procedures before they were required, the division will be able to use them immediately.

Though the division looks for ways to increase efficiency, it continues to face an increasing backlog and workload.

Clarify and Enforce Expectations for Submitting Evidence Requests

When law enforcement officers investigate crime scenes, they are often responsible for collecting evidence for forensic testing. Once they have collected the evidence, they prepare and submit it to the division.

The division provides detailed guidelines on how to prepare and submit evidence for testing, including how to submit a testing request form. This form contains information about the crime, evidence and what kind of tests the law enforcement agency would like performed.

However, analysts must often follow-up with law enforcement because the request form they fill out is incomplete or unclear. Some forms are missing key information such as the desired type of DNA testing and whose DNA the test is meant to identify. For example, staff said they frequently receive forms simply requesting "DNA." Because analysts spend their time following up on these errors, they have less time to test evidence.

Customer service at a cost

One of the division's priorities is providing excellent customer service. Generally, intake staff has the first interactions with law enforcement. Because they want to be as helpful as possible, evidence submission guidelines are not always enforced, leading to delays in processing evidence. One example is that law enforcement agencies sometimes submit more than two items of a controlled substance per suspect, which is a violation of the division's submission guidelines. Another example occurs when law enforcement agencies submit multiple unrelated items when they only want one piece of evidence tested. Because analysts are required to document all evidence submitted, even if the evidence will not be tested, this takes time away from testing.

If the division improves its enforcement of evidence submission guidelines, turnaround times and backlog may improve.

Effective feedback may help with evidence submission issues

Analysts should receive requests for testing that are as clear and complete as possible. This allows them to spend more time on testing. However, in some requests, analysts need to follow up with law enforcement before they can complete testing.

Due to the division's customer service focus, intake staff are not encouraged to provide immediate feedback to law enforcement officers about issues regarding their evidence submission forms. If there are recurring issues, staff must let their supervisor or laboratory director know about the issue, who can then talk to the head of the law enforcement agency or an officer's supervisor to address it. Alternatively, staff can send a form to law enforcement agencies that states the laboratory is rejecting the evidence and why.

Division management acknowledged they could do more to encourage intake staff's enforcement of the submission guidelines. In addition, better communication with law enforcement is needed regarding the importance of following the submission guidelines and the division's intention to enforce them.

During the audit, duties of intake staff were expanded, requiring them to spend more time ensuring evidence submissions align with the guidelines. The intention was to free up analyst time.

Training could improve evidence submissions

The Department of Public Safety Standards and Training (DPSST) provides initial training for law enforcement officers, including forensic training on evidence collection and submission. Currently, the division is not involved in the development or delivery of DPSST's initial forensic training. The training may not be up-to-date with current practices, which contributes to the evidence submission issues.

As the primary provider of forensic testing in Oregon, the division should take a more active role with DPSST to ensure initial evidence collection and submission training given to law enforcement officers is up-to-date.

The division could also provide refresher training to improve evidence submissions. For example, the Portland laboratory had problems with submissions from one police precinct and offered the precinct refresher training, which eliminated many of the submission issues.

The division is not involved with developing or delivering initial forensic training to law enforcement agencies.

Ensure Efficiency of Work Practices and Limit Unnecessary Work

Electronic case notes

With an overall backlog of about 3,700 requests and an average turn-around time of 65 days, the division should continue to evaluate ways to increase efficiency. We identified some opportunities to increase efficiency, which could give analysts more time to test evidence.

When testing evidence, some analysts typically record their case notes on paper initially. Then analysts transfer notes to the electronic Laboratory Information Management System (LIMS). This adds time to testing.

Electronic notes can save time in a few ways. In some division labs, several analysts type their notes into LIMS as they test evidence instead of transferring them in later. As part of its quality control system, the division reviews all requests. Analysts said it would be easier to review electronic notes, with a standardized format, than the different types of notes currently used.

In some division laboratories, analysts are recording case notes in LIMS directly. According to division management, data shows these analysts

complete more requests than their peers do. However, there is no division-wide standard for electronic note-taking. During the audit, management evaluated electronic notes and committed to their use for certain testing types. Additionally, management will be pursuing the purchase of a system in the 2017-19 biennium that will allow the use of electronic notes for all types of testing.

Some requests are canceled but laboratory work continues

Suspects in criminal requests often face multiple charges. Sometimes suspects plead to lesser charges, which can occur while the division is testing evidence. Ideally, district attorneys would notify the division that testing is no longer needed in these requests, but that does not always happen.

The Oregon Judicial Department's electronic system allows division staff to check on the status of requests. While information in the system can sometimes be outdated or missing, some staff have found checking the system periodically to see if requests are still active may allow the division to avoid unnecessary testing. If the division believes a request could be canceled, they would need to contact the client who submitted the request for testing.

There are times, however, when clients cancel a request for testing but the division has already obtained preliminary results. In some requests, the division chooses to finish the testing and report the results to clients. For example, if preliminary results of testing may exonerate a suspect, the division has an obligation to complete testing and report the results to the law enforcement agency that made the request.

These are not the only canceled requests analysts finish. Some analysts work canceled requests because they believe the time it takes to finish the case is similar to the time it takes to close a canceled case. However, management noted that closing canceled requests should take little time. Analysts may also be concerned about the impact on their performance benchmarks. Benchmarks are discussed with analysts during their performance reviews, and analysts believe their benchmarks would look bad if they close requests with a lot of hours and no results.

Currently, analysts do not have a way to account for time spent on a case that was canceled prior to completion. Although the number of canceled requests may be small, the benchmarks the division uses may be incomplete. The policy for canceled requests does not offer analysts guidance on how to account for canceled requests in their timekeeping. It also does not indicate how analysts should handle these requests where preliminary results may exonerate a suspect. Management was not aware analysts were working canceled requests and told us they do not want analysts feeling pressured to perform unnecessary tests because of benchmarks.

The division does not track the number of requests that were canceled by clients then completed by analysts. Therefore, it currently is not possible to determine how often this occurs. As noted above, division policy is to review all completed requests as a quality control measure. This represents additional time that could be saved if analysts did not work canceled requests. This in turn could improve turnaround time and help reduce the backlog.

Some testing steps may be unnecessary

There is a recent interest in forensics to adopt Lean Six Sigma (LEAN) as a way to improve efficiency. LEAN is a managerial approach that tries to eliminate waste of physical resources, time, effort and talent – while assuring quality in production and organizational processes. The goals of LEAN in forensics are to reduce backlog and increase efficiency.

As the division evaluates its practices, it may find some procedures are inefficient. In fact, we found that some analysts are duplicating work.

One example analysts told us about is in fingerprint testing. There are two types of fingerprint analysts. A processing analyst obtains fingerprints from physical evidence and uses computer software to prepare the image for analysis. Then, a comparison analyst takes these prints, compares them to prints from suspects and victims and if appropriate enters them into a regional database to check for matches. In some laboratories, comparison analysts are not using the prints prepared by processing analysts. Instead, they are repeating some of the processing steps.

Analysts said the duplication of processing is not due to a deficiency in training or skill with processing analysts. Instead, comparison analysts sometimes duplicate processing because someone taught them to or because they have preferences for how prints are processed. While comparison analysts may review prints prior to comparing them to victim or suspect prints, reprocessing all prints due to personal preference is inefficient.

Toward the end of the audit, division management issued a directive to prevent unnecessary reprocessing of fingerprints.

*Some analysts reworked
finger print requests due to
personal preference.*

**Enhanced Process Improvement Efforts Could Help
Reduce Backlog**

The division has invested in some process improvements. In the DNA unit, analysts batch requests requiring similar steps and rotate case reviews, which saves time trying to find an analyst who has time to review requests. They also developed guidelines for how division laboratories should screen DNA requests before sending them on to the DNA unit. Additionally, there is an internal workgroup tasked with identifying efficiencies in fingerprint testing.

Though the division has made investments to improve some types of testing, it should develop division-wide process improvements. For example, management has interest in LEAN. However, because the division has five laboratory locations with various types of testing, they are concerned about the costs.

Other state laboratory systems have implemented LEAN successfully. In 2011, the Louisiana state crime laboratory had a large backlog and long turnaround times when they learned about LEAN at a national conference. Louisiana was creative in obtaining funding. They applied for federal DNA backlog reduction grants, which they used to pay a consultant \$100,000 for LEAN training. The division has also applied for these grants, and has used them to fund analyst positions, equipment, training and overtime.

Louisiana required managers from the non-DNA units to attend the training. They took the concepts covered during the training and implemented them in the other units.

Using LEAN, Louisiana halved its turnaround time and backlog within six months. They eventually eliminated the backlog and reduced turnaround time to three weeks or less. Louisiana was concerned about maintaining quality and accreditation requirements, but LEAN has allowed them to maintain both.

The division could adopt a similar approach by implementing LEAN, which could help reduce the backlog and turnaround time.

Strategies to Manage Current Workload

Better use of data could help increase efficiency

An organization should know its performance history before it can improve efficiency. Currently, the division tracks data such as new and completed requests, current backlog and analyst time spent testing. While these are valuable measures, other available data would also help better manage current workload.

The division could better use workload transfers

The division's five laboratory sites operate under a concept called the "one laboratory" system. As such, there are types of forensic testing common at each laboratory. Each laboratory generally works in a defined geographical area and serves clients in those areas. However, if a laboratory does not have a backlog in a certain type of testing, it can take in requests from other laboratories. These are known as workload transfers.

Managers consult reports showing the backlog at each lab when deciding on the benefits of a workload transfer. For workload transfers to occur, managers must agree to them at their monthly management meetings. During these meetings, they discuss which laboratories have the ability to take on additional work. It could be more efficient to have a systematic

There is no centralized review of workload transfers between laboratories.

method that uses backlog data when deciding on workload transfers. For example, managers could use this data to trigger transfers outside of their monthly meetings, something they are not doing. Alternatively, the division could assign someone to independently review the data and transfer work to laboratories that are caught up.

Because the division is not systematically reviewing laboratory capacity and transfer options, it is missing additional opportunities to address the backlog throughout the state.

Transfers may not make sense in all situations. For example, analysts frequently testify in court as forensic experts. When analysts work requests transferred from other laboratories, they might have to travel to testify. This travel time reduces the amount of testing analysts can perform. If the impact on testing time is too great, the division may decide not transfer the case or transfer it to a laboratory that is closer in proximity. Despite this complication, the division should use workload transfers to combat the backlog when it is efficient to do so.

Better benchmark data could inform decision making

Waiting for law enforcement to submit additional information may artificially inflate turn-around time.

When law enforcement agencies submit evidence to a laboratory, regardless of any problems with the submission, the clock starts for turnaround time. For instance, law enforcement reports and victim elimination samples are often missing from evidence submissions. The division is not tracking time it takes law enforcement to correct these submissions. As such, they do not know the full impact these issues have on turnaround time and the backlog.

These submission issues can also affect how analyst performance is assessed. Analysts inherit the turnaround time of requests they are assigned regardless of how long law enforcement takes to correct submissions.

Also, as noted earlier, benchmark calculations do not account for canceled requests. Although the number of canceled requests may be small, there is potential impact to backlog. Because of these variables in the data, the division may not have a complete picture of staff performance and capability.

Aside from individual analyst performance, management relies on benchmark data to assess staffing needs for the future and to evaluate timeliness among laboratories and their testing types.

Therefore, it should be cautious when relying on the benchmarks as currently constructed. The division could more accurately assess performance and plan for the future by improving performance benchmarks.

Plan for a Changing Workload

Strategic planning efforts could be strengthened

Strategic planning is a process of developing a long-term plan to guide an organization. It can include assessing current performance, evaluating an organization's challenges and opportunities, and developing goals and plans to achieve them.

The division has completed many elements necessary for strategic planning, but is missing some components. While the division plans its workload and staffing needs using the previous year's data, soliciting client input would be useful. While this would require additional effort and coordination with its clients, the division could work with law enforcement agencies to obtain information about the types and evidence trends of requests they expect to send for analysis. This is likely to be better for workload planning than only knowing how many requests the DNA or drug chemistry units had the previous year.

The division fulfills its mission primarily through its laboratories and analysts who test evidence. Currently, the division is heavily focused on the quality of its work. This is due in part to accreditation standards, which require it to perform certain quality tasks throughout testing. These tasks, which are critical to quality, add time to testing.

The division should give additional emphasis to other aspects of laboratory operations in its planning efforts. For example, it should determine the number of physical laboratories needed and the number of analysts and equipment needed to properly equip each laboratory. Planning should also include considering the geographical location of laboratories. When well documented, this helps ensure laboratory systems are efficiently implemented and allows the division to evaluate if they are operating as intended.

Every two years, each discipline (type of forensic testing) develops a business plan that includes goals, equipment and staffing needs, and potential challenges for the next two years. While these plans should be part of the strategic planning process, they are restricted to specific disciplines that are spread among the five laboratories throughout the state.

The division can improve its strategic planning efforts by including the elements outlined above into a well-documented division-wide strategic plan that sets priorities for operating all of the separate laboratories and disciplines.

Potential increases in future workload

Over the last few years, the division has experienced changes to its workload. As part of its strategic planning efforts, the division will need to continue to assess the impacts of legislation and changes in technology.

In November 2014, Oregon voters passed Ballot Measure 91 to legalize the possession, private use and cultivation of marijuana by adults 21 and over. In response, the division assessed potential impacts, including increased testing in some disciplines. For example, citing data from Washington, the division anticipated additional workload to test blood and urine samples for the presence of marijuana in requests of driving while under the influence of marijuana. The division does not currently test the amount of marijuana in blood like blood alcohol testing. If Oregon passed a law establishing limits for marijuana in the blood, the division's workload would increase.

The division used this assessment to ask the Legislature for additional resources and received one additional position to help with the increased workload. While there is still uncertainty about how the division's actual workload will be impacted, more resources may be needed to test the additional evidence submissions.

Although this is a good example of how the division can plan for and respond to workload increases, it faces additional increases it should continue to plan for. For example, during the 2015 legislative session, the Legislature passed a bill expanding post-conviction DNA testing. This law provides convicted persons the opportunity to have evidence tested if they believe it may exonerate them. The division will be primarily responsible for providing these services.

In addition, the division faces a workload increase related to sexual assault forensic evidence (SAFE) kits. During a sexual assault examination, a specially trained nurse or doctor collects a SAFE kit. The kits typically contain DNA evidence such as blood, hair, and semen.

Based on a recent inventory conducted by Oregon law enforcement agencies, these agencies have about 5,600 kits in their possession. The Superintendent of the State Police formed a workgroup that is finalizing recommendations for how these kits should be addressed. One of the proposed recommendations is that the division tests these kits. However, about 750 of these kits would not be tested unless a victim reports a crime to law enforcement.

To help meet the increased need for testing these kits, the division plans to hire and train two DNA analysts. However, it will take time for the division to realize the benefit of these positions. Approximately a year of training is required for new DNA analysts before they can work requests. The division also plans to reassign analysts from the property crimes section to help test SAFE kits. While helpful in testing SAFE kits, this may cause delays in property crimes requests.

In September 2015, the Portland Police Bureau and Marion, Lane and Multnomah counties were awarded a total of \$3.2 million in grants to test the approximately 2,900 SAFE kits in their possession. While the division will not have to test these kits, it will still be involved. Specifically, it will review the work of private laboratories to ensure they comply with

accreditation standards, and will enter qualifying testing results into the DNA database.

While these grants will reduce the number of kits the division would otherwise test, it will still experience an increase in workload to monitor the work of the private laboratories. It will also have to test SAFE kits from the jurisdictions not receiving grants for SAFE kit testing, while also trying to reduce its current backlog.

The division should pursue additional efficiencies

Advances in technology could increase efficiency at the division's laboratories, which could help meet increases in workload and reduce the backlog. However, because the division has procedures it must go through when implementing new technology, efficiency gains may not be realized right away.

As discussed above, we identified areas in which the division could increase efficiency, allowing it to work more requests and potentially reduce backlog. However, we did not exhaust all the areas in which the division can improve. The division should continue to look for efficiencies through process improvements. One way it could unify these efforts is by developing a comprehensive strategic plan.

A comprehensive strategic plan would allow the division to:

- identify LEAN as a way to increase efficiency;
- recalculate productivity benchmarks;
- solicit input from clients to plan for future workload;
- estimate staff and equipment needed to achieve the 30 day turnaround goal; and
- begin planning for changes that may result from new legislation or other events.

Doing all of these things could allow the division to identify opportunities to eliminate waste, improve efficiency, better know the needs of their clients, and reduce backlog.

The division could also consider requesting additional resources from the Oregon Legislature if it determines that its backlog poses a threat to public safety.

Recommendations

To ensure consistent, high quality evidence submissions, increase productivity and reduce turnaround time the division should:

- Take an active role with the Department of Public Safety Standards and Training to ensure initial evidence collection and submission training given to law enforcement officers is up-to-date.
- Consider expanding refresher training for law enforcement agencies on evidence submissions.
- Enforce evidence submission guidelines.
- Communicate with division staff their roles in enforcing submission guidelines and continue monitoring submissions to ensure consistency.

To increase efficiency and streamline testing the division should:

- Expand its continuous improvement process, including using LEAN concepts to evaluate all testing types for unnecessary testing steps, and rework.
- Continue exploring efficiencies for casework such as requiring the use of electronic notes.
- Revise the policy analysts follow when clients cancel requests for testing to include guidance on closing these types of canceled requests.

To ensure effective utilization of the “one laboratory” system the division should:

- Implement a systematic review of workload transfers to ensure workload is appropriately distributed among the division’s five laboratories.

To improve its use of data and better plan for a changing workload, the division should:

- Revise benchmarks to include canceled requests and delays to analyses due to incorrect evidence submissions.
- Further develop and implement a comprehensive strategic plan that includes considerations for laboratory facilities and staffing, accreditation requirements and uses client data to forecast workload.
- Continue planning for changes in workload as result of legislation and new technology.

Objectives, Scope and Methodology

The objective of the audit was to determine strategies the division could use to reduce forensic backlogs and provide additional forensic analysis through improved efficiencies. We did not evaluate the types of forensic testing and their related procedures for possible efficiency gains.

We reviewed applicable state laws and rules, division policies, and best practices for management and efficiency in forensic laboratories. To understand historical context and budget concerns, we analyzed budget documents prepared by the Oregon Legislative Fiscal Office.

We interviewed more than 40 division employees and conducted site visits at all five laboratory locations to identify common impediments to efficiency and productivity and to look for ways to increase efficiency in an effort to reduce the backlog. We also interviewed two judges, nine District Attorneys, 11 law enforcement agencies and two defense attorneys across the state to determine how the backlog and turnaround times affect investigations and court proceedings.

We obtained reports from the division covering the period of 2005 to 2014. We reviewed the data in these reports to determine the amount of workload and backlog the division has. The division uses these reports to manage the division and plan future work. As such, we did not conduct independent data reliability testing, and determined the data to be sufficient for our audit purposes.

For the work on SAFE kits, we interviewed members of the Oregon Attorney General's Sexual Assault Task Force, division management, District Attorneys and law enforcement agencies. We reviewed the relevant laws, and guidance created by the task force.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Auditors from our office, who were not involved with the audit, reviewed our report for accuracy, checking facts and conclusions against our supporting evidence.



Oregon

Kate Brown, Governor

Department of State Police

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December 15, 2015

William K. Garber MPA, CGFM
Deputy Director
Office of the Secretary of State
Oregon Audits Division
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Salem, Oregon 97310

Re: Performance Audit of Oregon State Police Forensic Services Division 2014-15

Dear Mr. Garber,

I would like to extend my thanks to you and the rest of the Audit Team for your efforts associated with the performance audit of the Forensic Services Division. The Division strives to provide timely and accurate scientific, technical and investigative support to the criminal justice system through forensic analysis. We recognize that an impartial outside assessment is a valuable tool to help us accomplish our goals.

The focus of this audit was centered on ways to reduce the Division's backlog. The reduction and control of the backlog has been a focus for some time and our *Key Performance Measure* is centered on this issue. The goal of this measure is to provide the majority of analytical results to the requesting agency within 30 days or less to assist with the timely and successful administration of justice.

The Division generally agrees with the recommendations. We also agree that implementing the recommendations will help but not meet the current and growing demands the Division is facing. The Division is addressing the recommendations in the ways described below.

Recommendation - Take an active role with the Department of Public Safety Standards and Training to ensure initial evidence collection and submission training given to law enforcement officers is up to date.

The Division will address this recommendation by partnering with the Department of Public Safety Standards and Training (DPSST) instructors to review course materials on a regular basis to ensure they are complete and up to date. Currently, the DPSST employs a former Lab Director from the Oregon State Police Forensic Services Division to provide most of the initial training to law enforcement officers in evidence collection practices. This approach is advantageous because it provides a knowledgeable trainer, while allowing the Division's Forensic Scientists to stay focused on vital priority case work. It is essential to assess the time a scientist spends away from performing their primary mission in order to maximize our efforts on case work and reduce the backlog. It is also important that the training that law enforcement

receives follows current practices and recommendations. This 'train the trainer' approach will allow Division staff to remain focused on reducing backlogs, while also ensuring that up to date training in evidence collection practices is provided to new law enforcement officers by qualified DPSST instructors.

Recommendation – Consider expanding refresher training for law enforcement agencies on evidence submissions.

It is important that the forensic laboratories receive evidence from law enforcement in a way that contributes to efficiency. Discretionary time available for scientists to commit to an expanded law enforcement training program simply does not currently exist. Expanding training to law enforcement will compete with additional duties the scientists have that are above and beyond casework responsibilities. Other non-casework related responsibilities include proficiency testing, training to maintain competency and validation of new technology or instrumentation.

The Division communicates with our partners regarding changes or updates to submission practices in several ways. They include a published Physical Evidence Manual, which is available on the Oregon State Police website, regional training, law enforcement meetings, and letters. In addition, Forensic Services Division management attends local and regional law enforcement meetings routinely to reinforce these communications. The Division will continually evaluate its priorities and will consider expanding a training program when sufficient resources are available to sustain it.

Recommendation – Enforce evidence submission guidelines.

The Division agrees that evidence submission guidelines should be enforced. As mentioned, the ultimate goal for the Division is to provide timely and accurate scientific, technical and investigative support to the criminal justice system through forensic analysis. The audit report notes that delays in evidence testing can deny or delay justice to crime victims. Sending back submitted evidence like the examples given in the report will net less work for Division staff. This practice will not necessarily reduce the overall delay created by returning the evidence to the submitting agency for repackaging. This could result in a greater delay to crime victims than handling some items as they are submitted. There are times when communicating with law enforcement to clarify a request for service creates efficiency. Appropriate technical guidance can serve to eliminate misunderstanding and unnecessary work, which ultimately has a positive effect on the case and the Division's backlog. The Division will continue to work on finding the balance between returning submitted evidence that falls outside our submission guidelines with accepting evidence and correcting some issues through communication with the submitting agencies.

Recommendation – Communicate with the Division staff their roles in enforcing submission guidelines and continue monitoring submissions to ensure consistency.

The Division agrees that establishing clear expectations for the Division staff about their roles in enforcing submission guidelines is important. The audit describes the process for addressing recurring issues which includes staff making their supervisor or laboratory director aware of issues with evidence submission. The supervisor or laboratory director can then communicate with the head of the law enforcement agency or an officer's supervisor to address it. This practice promotes appropriate use of the chain of command and avoids putting line staff in the role of potentially relaying a personnel issue to outside agencies. The Division will address this recommendation through appropriate communication and training of our staff.

Recommendation – Expand its continuous improvement process, including LEAN concepts to evaluate all testing types for unnecessary testing steps, and rework.

The Division agrees that all processes should continually be evaluated for more efficient methods that eliminate waste of time and resources. The Division has implemented many LEAN concepts into its operation including robotics, batching, and systematic problem solving. Ultimately LEAN is the concept of focusing efforts and resources in the most productive model possible. One method often employed is standardization, which is addressed in the next recommendation regarding electronic notes. Another example would be reliance on trained DPSST staff to provide initial training to law enforcement rather than committing Forensic Scientist time to the task which essentially outsources training to keep scientists focused on case work.

The use of LEAN consultation by the Louisiana State Police Crime Laboratory (LSPCL) is cited in the audit report. While this laboratory paid \$100,000 for LEAN consultants, the efficiencies gained required much larger expenditures. LSPCL spent an additional \$500,000 to purchase equipment, validate robotics, and transition to a paperless environment as part of this project. Additional funding was obtained and contributed further to the efficiency improvements by allowing the laboratory to outsource over 1000 cases, purchase more equipment, and hire and train additional staff.

Consultant fees accumulate with each process that they evaluate. With several processes in our Division, these costs will add up quickly and the recommendations will likely be costly as well. The Division will continue to evaluate each of our processes to find efficiencies but will have to do so with existing staff members.

Recommendation – Continue exploring efficiencies for casework such as requiring the use of electronic notes.

The Division has continued evaluating various electronic note taking systems during this past biennium. The goal is to find the system that works the best with the most disciplines possible. We have sent teams to other laboratory systems outside Oregon to evaluate the electronic note taking systems they are using. With varied requirements in each discipline, the system must accommodate many components. There are several benefits to electronic note taking. Standardizing the method for recording notes will result in efficiencies during analysis and during technical review because of the uniformity in format. This can be considered evaluation of a LEAN concept. The Division will continue to work toward finding the right system that will benefit as many disciplines as possible. The goal is to implement this at the beginning of the next biennium.

Recommendation – Revise the policy analysts follow when clients cancel requests for testing to include guidance on closing these types of canceled cases.

The Division agrees there should be additional clarifying language in the current operational policy regarding canceled cases. The Canceled Request section of the manual will be updated to include language to the effect that if analysis has begun and a conclusion is reached, a report will be written regarding the results and the case will be technically reviewed; however, no additional analysis will be conducted. Additionally the language will be included that if no analytical results have been obtained, no report will be written.

Recommendation – Implement a systematic review of workload transfers to ensure workload is appropriately distributed among the Division’s five laboratories.

The Division agrees that a more systematic review of backlog between the five laboratories should be implemented. All laboratories and all disciplines have a backlog; however, some backlogs are higher and work could be transferred on a more regular basis. This would result in an equalization of the backlog among the laboratories. The Division has recently gained access to a data warehouse tool that will allow the creation of a “dashboard” to simplify the evaluation of backlogs on a real time basis and increase consistency in workload transfers.

Recommendation – Revise benchmarks to include canceled cases and delays to analyses due to incorrect evidence submissions

The Division benchmarks for scientists are used for two reasons. One is to monitor performance and the other is to project staffing needs. The number of canceled cases being completed by scientists and counted towards benchmarks is very low. The Division sees this as a training issue and will modify the policy on canceled cases as described above. Canceled cases that are worked to the point of obtaining a result should be followed up with a report of the findings made. The time that a scientist spends working through issues with evidence submissions should be included in the benchmark because it’s an important element to determine how many cases an average scientist can process in a given time frame.

Supervisors are trained to take into account the time scientists spend working on a request that is canceled so that performance evaluations are not adversely affected.

The Division will address this recommendation by reinforcing training to supervisors on factors that affect benchmark performance and clarifying action to be taken on canceled cases by scientists as described previously. In addition to this, the Division will address the issue of proper evidence submissions by the means mentioned above.

Recommendation - Further develop and implement a comprehensive strategic plan that includes considerations for laboratory facilities and staffing, accreditation requirements and uses client data to forecast workload.

Each biennium a business plan is created for each forensic discipline. These plans are addressed by discipline in order to promote a holistic approach to the needs of each discipline state wide.

These plans cover the following topics:

- Goals and objectives
- Training
- Equipment
- Risks and Obstacles
- Staffing needs
- Facility needs
- Performance measures
- Technology/Methodology enhancements

Planning and considerations for each laboratory facility are projected on several levels. Addressing the facilities needs requires substantial planning. Specifically the Springfield and Pendleton laboratories have undergone considerable assessments. A policy option package to move the Springfield Laboratory into a larger facility was secured for this biennium. Specifications for the new facility have been evaluated to project current and future staffing and workloads. The Pendleton Laboratory is in need of a new facility and the Division is actively

engaged in finding the best approach to accommodate this need. These issues were noted as part of our Enterprise Risk Assessment.

Benchmarks are being used in each discipline to project future personnel needs. Using client data to accurately forecast workload will be difficult. The Division will continue to communicate with clients on trends by participating in regional law enforcement meetings where these trends and other forensic needs are discussed. This is likely a better indicator of what can be expected from our clients than data obtained by requesting a subjective numerical estimate of changes in workload anticipated by Division customers.

The Division considers the combination of its *Key Performance Measure*, business plans, enterprise risk assessment, fiscal analysis and budget projections as its strategic plan. These elements separately and combined provide the framework to make educated decisions. We will continue to develop these components in the future.

Recommendation - Continue planning for changes in workload as a result of legislation and new technology.

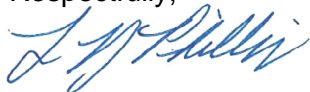
The Division will continue to engage in successful planning for changes in workload by carrying on current practices of legislative bill reviews, fiscal analysis and strategic planning. The Division will also continue to evaluate emerging technologies through applicable literature review, participation in professional organizations, training and engaging in business planning as described.

Conclusion

We anticipate that the described actions to the recommendations will be complete prior to the audit follow-up report, with the exception of the electronic note taking project which is targeted for implementation at the beginning of next biennium.

The Division values the assessment provided by the Secretary of State's Audit Team. We are accustomed to rigorous audits both internal and external and welcome opportunities to improve. The Division is committed to maximizing its available resources to provide outstanding service in a timely fashion. Acting in the areas mentioned will create even more opportunities to reduce our backlog and accomplish our goals.

Respectfully,



Ted Phillips, Captain
Oregon State Police
Forensic Services Division

About the Secretary of State Audits Division

The Oregon Constitution provides that the Secretary of State shall be, by virtue of her office, Auditor of Public Accounts. The Audits Division exists to carry out this duty. The division reports to the elected Secretary of State and is independent of other agencies within the Executive, Legislative, and Judicial branches of Oregon government. The division audits all state officers, agencies, boards, and commissions and oversees audits and financial reporting for local governments.

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This report, a public record, is intended to promote the best possible management of public resources. Copies may be obtained from:

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The courtesies and cooperation extended by officials and employees of the Oregon State Police during the course of this audit were commendable and sincerely appreciated.