



CALIFORNIA STATE AUDITOR

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The Governor of California
President pro Tempore of the Senate
Speaker of the Assembly
State Capital
Sacramento, California 95814

Dear Governor and Legislative Leaders:

This letter report presents the results of a follow-up review the Bureau of State Audits (bureau) conducted concerning the California Department of Corrections and Rehabilitation's (department) efforts to implement selected recommendations from a report the bureau issued in September 2005 titled *Department of Corrections: It Needs to Better Ensure Against Conflicts of Interest and to Improve its Inmate Population Projections (2005-105)*. During the follow-up review we focused on three key recommendations regarding the department's inmate population projections, and found that the department has made minimal progress in implementing those recommendations. Specifically, we determined that the department has done little to seek advice from statistical experts to assist it in establishing a statistically valid forecasting methodology. Furthermore, we determined that although the department asserts it has revised its population projection model, it could not provide us with documentation to support the population projections it published in the fall of 2006. Finally, we noted that the department has not begun to update its variable projections using a revised inmate classification database. Because the department has done little to address our recommendations and those of our statistical consultant, we believe the usefulness of the department's current inmate population projections remains questionable.

BUREAU OF STATE AUDITS

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BACKGROUND

In March 2005 the Joint Legislative Audit Committee requested that the bureau evaluate the process the department used to negotiate and enter into two no-bid contracts for private prison facilities and to analyze the reasonableness and consistency of the department's method of tracking and projecting inmate population. In September 2005 we issued our report and concluded that although the department's policies and procedures for processing the two no-bid contracts and identifying potential conflicts of interest were consistent with state requirements, the department did not ensure that these contracts were free of conflicts. In addition, we concluded that although the department's inmate population projections are reasonably accurate for the first two years, they are significantly less accurate after the second year. As a result, the projections are useful for assessing the next two years' budget needs but have limited usefulness for longer-range planning, such as determining when additional facilities should be built.

During our 2005 audit, to determine whether the department's method of tracking and projecting inmate populations was reasonable and consistent, we reviewed forecasts for the previous three fiscal years to assess whether the assumptions and variables included were reasonable and consistent, and further analyzed those that have a material effect on the population projection. We also consulted with a statistical expert to obtain an analysis of the department's use of its microsimulation model. In addition, we compared the actual inmate populations to the levels forecasted by the department over the past 10 years to determine their accuracy, and analyzed the sufficiency of the department's method of projecting the number of needed inmate beds for facility planning purposes.

We concluded that although the inmate population projection of the department has an average error rate of less than 5 percent for the first two years of its six-year projection, by the last year the average error rate climbs to almost 30 percent. In addition, we found that the department did not update the inputs to its projection model with historical data using a statistical process but rather adjusted the variables by relying on staff experience. Also, because it did not update information related to prisoners' security classifications using the most recent data, we concluded that the department was projecting security needs based on an obsolete classification system that may differ significantly from the current inmate population. Furthermore, our statistical

expert advised us the department's process for making inmate population projections was not based on a statistically valid method for creating a forecast.

Pursuant to the authority granted to the bureau, including the audit standards the bureau operates under, it has been a long-standing administrative practice to require each agency or department we have audited to report to the bureau on its progress on implementing our recommendations at three intervals—60 days, six months, and one year (California Government Code, Title 2, Section 8543, and Government Auditing Standards, paragraph 1.27). Under that same authority, it has also been a long-standing administrative practice of the bureau to conduct follow-up reviews of audits when resources are available and the bureau determines it is prudent to do so. After receiving and reviewing the department's status reports, the bureau determined that it was appropriate to conduct a follow-up review of certain key recommendations. Specifically, we reviewed the department's progress in implementing the following three recommendations:

If the department intends to continue using the projections for long-term decision making, such as facility planning, it should ensure that it employs statistically valid forecasting methods. It should consider seeking the advice of experts in selecting and establishing forecasting methods that will suit its needs.

To increase the accuracy and reliability of its inmate projections, at a minimum the department should do the following:

- Fully document its projection methodology and model.
- Update its variable projections with actual information, such as new security level data, whenever feasible to do so.

THE DEPARTMENT'S SIX-MONTH RESPONSE INDICATES MINIMAL PROGRESS IN IMPLEMENTING KEY RECOMMENDATIONS

To address our recommendation regarding the use of statistical experts to establish a valid method of forecasting inmate populations, the department stated in its six-month response that it was working with its Office of Research to establish an interagency agreement with statistical experts at either the California State University (CSU) or University of California (UC) systems to review the existing simulation model and

projections process. The department provided us with e-mail correspondence that occurred in September 2005 between department staff indicating that the department should seek those who have demonstrable practical application of statistical methods as they relate to projections, preferably as they relate to prison systems. Department staff stated their belief that a search for a national expert on prison population projections was appropriate. One of the department's staff believed that CSU Sacramento did not offer classes in applied mathematics and concluded the department should not approach CSU Sacramento. However, the department did not provide us with evidence to demonstrate that it made any attempts to contact CSU Sacramento's Department of Mathematics and Statistics directly to find out whether or not it could actually assist the department with its projection model. Furthermore, the department did not have evidence to demonstrate that it contacted any other campuses within the CSU system.

Additionally, in September 2005, the assistant secretary of the department's Office of Research contacted a professor at UC Davis via e-mail asking for a recommendation of someone either at UC Davis or within the UC system that might be able to assist the department in refining its prison population forecasting model. The professor responded to the assistant secretary indicating that he did not think anyone at UC Davis would be willing to work with the department based upon earlier experiences certain UC Davis staff had with the department. Specifically, the professor stated that UC Davis had previously contracted with the department to forecast prison populations, and the department did not like the projections furnished by UC Davis because they were too low. The professor further stated that the department did not want unbiased expert advice. Beyond this e-mail, the department did not provide us with evidence showing that it made any other attempts to contact UC Davis or other UC campuses to find out whether or not anyone would be willing to assist the department in evaluating its projection model.

We question the department's efforts to seek advice from statistical experts in the CSU or UC systems. As stated earlier, we consulted with a statistical expert from CSU Sacramento and in our September 2005 audit report to address the validity of the department's projection model, she stated the following:

The department needs to bring a group of statisticians together to get advice on establishing a statistically valid forecasting methodology with

the current data system. A time series specialist, a non-parametric statistician, and a finite population sampling theorist along with a statistical computing expert will be able to design a suitable forecasting tool for the department's needs. There are national experts available in all these areas of statistics within California's higher education system. Both the CSU and UC campuses have researchers specializing in these areas right here in Northern California. One of the benefits for the department is that this group of statisticians will be able to provide the state-of-the-art statistical tools needed for the department's short-term and long-term forecasts.

Regarding our recommendation to document its projection methodology and model, the department asserted that its documentation of the projection methodology and model was 50 percent complete and estimated that it would be fully documented by October 1, 2006. In addition, to address our recommendation that the department update its variable projections with actual information, the department reported that its action plan was to establish an Inmate Classification Scoring System database, create programs to be used in its simulation model, and revise the simulation model to include classification data; however, it had not begun to implement its action plan and estimated that it would not be complete until October 1, 2007.

THE DEPARTMENT'S ONE-YEAR RESPONSE SHOWS A CHANGE IN APPROACH TO IMPLEMENT OUR RECOMMENDATIONS

In its one-year response to the audit recommendations, the department changed its proposed action to seek advice to ensure that it employs statistically valid forecasting methods. Rather than establishing an interagency agreement with either the CSU or UC systems as it had asserted it would do in its six-month response to our report, the department stated in its one-year response dated October 23, 2006, that it was working with its contracts staff to establish a public entity agreement with Ohio State University (Ohio State) in its search for a national expert to assist in selecting and establishing forecasting methods that will suit the department's needs. However, as of March 9, 2007, the contract had not been signed because, according to a department senior staff counsel, the department and Ohio State have not reached an agreement on

two of the contract's clauses pertaining to indemnification and adjudication. The section chief of the Estimates and Statistical Analysis Section of the Offender Information Services Branch (section chief) stated that, if the contract is not executed with Ohio State, the department intends to pursue other methods to find an expert, such as using a sole-source contract or competitive bidding process.

Regarding our recommendations to document its projection methodology and model and to update its variable projections with actual information, the department again stated that it was only 50 percent complete in its efforts to document the methodology and the model and it had not started its process to establish the Inmate Classification Scoring System database. Furthermore, as part of the action plan, the department stated that it intended to hire a retired annuitant to begin working on the database in the spring of 2007 with an expected completion date of October 1, 2007.

LACK OF DOCUMENTATION OF RECENT PROJECTIONS CASTS DOUBT ON THE VALIDITY OF THE PROJECTION PROCESS

During our follow-up review, the section chief stated that beginning in fall 2006, the department reported the Adult Population Projections for 2007 through 2012 using a projection model that had been revised since the one we evaluated for our September 2005 audit report. On March 5, 2007, we asked to review the supporting documentation for the revised projections model and were told by the section chief that the documentation did not completely match the population projections included in its fall 2006 report. According to the section chief, this is because three of the four components comprising the current documentation for the model had already been updated for the spring 2007 projections, which the department intends to release by April 6, 2007. Therefore, the section chief stated that the existing documentation no longer exactly matched that of the model that produced the fall 2006 projections. Without having the supporting documentation to review, we cannot determine how the projection model used for the fall 2006 projections differs from the previous version we reviewed. Consequently, we are still concerned that the department publishes its projections without having adequate supporting documentation. Moreover, similar to the concerns we expressed in the September 2005 audit, as of March 21, 2007, the lack of documentation to support the projections casts doubt

on the validity of the revised projection model that was used for the fall 2006 projections. This is important because, according to the assistant secretary of the department's Office of Research, the fall 2006 revised statistical model was used to generate the latest population counts and projections that are among the factors considered in making capital outlay decisions. The assistant secretary also indicated that these capital outlay decisions include other factors, such as new compliance requirements, life and safety concerns, and maintenance of capacity. Finally, as stated earlier, we are still concerned about the statistical validity of the population projections since the department has yet to seek advice from statistical experts.

The section chief indicated that he would provide us the existing supporting documentation for the model used for the spring 2007 projections on March 23, 2007. We received the supporting documentation, and we plan to have a statistical expert review the sufficiency of the department's projection model. However, the section chief also stated that the documentation we receive on March 23, 2007, would not represent the complete model the department is developing because, as stated earlier, it plans to establish a security classification database with the assistance of a retired annuitant who will begin work by April 30, 2007. According to the section chief, the retired annuitant will assist in revising a portion of the model, a classification database that is used for projecting the number of inmates by security level. The section chief also stated that the revised classification database would contain a new method for scoring an inmate's security level. According to its one-year response, the department estimates that the classification database will be completed by October 1, 2007.

We conducted this review under the authority vested in the California State Auditor by Section 8543 et seq. of the California Government Code and according to generally accepted government auditing standards. We limited our review to those areas specified in the letter report.

Respectfully submitted,



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cc: Members of the Legislature
Office of the Lieutenant Governor
Milton Marks Commission on California State
Government Organization and Economy
Department of Finance
Attorney General
State Controller
State Treasurer
Legislative Analyst
Senate Office of Research
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