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Transmitted via e-mail

March 28, 2011

Mr. Scott Harvey, Acting Director
Department of General Services
707 Third Street
West Sacramento, CA 95605

Dear Mr. Harvey:

Final Report—Department of General Services, Division of the State Architect Performance Review

The Department of Finance, Office of State Audits and Evaluations (Finance), has completed its performance review of the Division of the State Architect's plan review and construction oversight processes. The enclosed report is for your information and use.

The Division of the State Architect's response to the report findings is incorporated into this final report. The Division of the State Architect generally agreed with our recommendations and we appreciate its willingness to implement corrective actions. The recommendations in our report are intended to assist management in improving the effectiveness and efficiency of its operations.

This report will be placed on our website. Additionally, pursuant to Executive Order S-20-09, please post this report in its entirety to the Reporting Government Transparency website at http://www.reportingtransparency.ca.gov/ within five working days of this transmittal.

We appreciate the assistance and cooperation of the Division of the State Architect. If you have any questions regarding this report, please contact Kim Tarvin, Manager, or Zach Stacy, Supervisor, at (916) 322-2985.

Sincerely,

David Botelho, CPA
Chief, Office of State Audits and Evaluations

Enclosure

cc: On following page

cc: Mr. Howard Smith, Acting State Architect, Division of the State Architect, Department of General Services
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A Performance Review

Department of General Services
Division of the State Architect
Plan Review and Construction Oversight

Source: Robert F. Kennedy Community Schools Complex, illustration courtesy of http://www.nowpublic.com

Prepared By:
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EXECUTIVE SUMMARY

The Department of General Services (DGS), Division of the State Architect (DSA), ensures K-12 schools and community colleges are safe and accessible. State law mandates that DSA review and approve plans for new school buildings, rehabilitated school buildings, or additions to existing school buildings prior to construction. DSA is also responsible for ensuring public buildings comply with the building code.

DSA entered into an interagency agreement with the Department of Finance, Office of State Audits and Evaluations (Finance), to identify areas where DSA could improve the plan review and construction oversight processes.

RESULTS

DSA's plan review and construction oversight processes consist of the following critical components. See Appendices A and B for further detail regarding each of these components.

- Project Intake
- Plan Review
- Field Oversight
- Post Approval Document Review
- Close-Out and Certification

Within these components, DSA has implemented many existing or recently developed procedures and tools designed to ensure timely, consistent, and cost effective operations. The Current Efficiency Measures section of this report highlights several of these measures.

Based on a trend analysis of projects submitted between fiscal year 2007-08 and 2009-10, project application submittals and estimated costs of these projects declined 37.8 percent and 47.4 percent, respectively, from 2007-08 to 2009-10.

Because of this declining trend and DSA's ability to temporarily redirect staff, DSA staffing levels, as of November 2010, appear adequate to manage its current plan review workload while maintaining a bin time of less than five weeks. However, if the plan review workload significantly increases, DSA may need to reassess staffing needs, consider utilizing plan review contractors, or allow overtime for plan reviewers. See the Workload Trends and Performance section of the report for further detail.

For the period 2007-08 through 2009-10, DSA's bin time, plan review time, and back check completion to plan approval time for access only, schools (K-12), and community colleges averaged as follows. The data presented below does not include projects that were processed over the counter.

Process	Days
Bin Time	40
Plan Review Time	18
Back Check Finish to Plan Approval Date	19

Based on our inquiry of DSA staff, interviews with stakeholders, analytical procedures, and inquiry from other entities that conduct plan reviews, DSA can further strengthen its plan review and construction oversight processes as follows:

- Promote regional consistency through information sharing and training.
- Engage clients early in project design and construction.
- Increase efficiencies through technology.
- Other plan review and construction oversight process improvements to increase efficiencies.

See the Recommendations section of the report for additional details.

During fieldwork, we consistently communicated the progress of our review and observations with DSA management. In some instances, DSA management has already initiated activities to address the observations. We encourage continued action in addressing all the recommendations in this report.

BACKGROUND, SCOPE, AND METHODOLOGY

BACKGROUND

The Department of General Services (DGS), Division of the State Architect's (DSA) primary role is to ensure California's K-12 schools and community colleges are seismically safe and accessible to all. DSA fulfills this role by reviewing construction project plans for structural safety, fire and life safety, and access to persons with a disability. In this role, DSA works closely with school districts and design firms. DSA also ensures public buildings comply with the building code. In the last three fiscal years, DSA reviewed over 9,500 project plans. In addition, DSA provides oversight of construction and testing labs.

DSA consists of a headquarters office in Sacramento and four regional offices located in Sacramento, San Diego, Los Angeles, and Oakland. The headquarters office is responsible for the development and administration of statewide programs and the recruitment of new DSA employees. The regional offices conduct project plan reviews, construction oversight, and project close-out activities.

SCOPE

The Department of General Services entered into an interagency agreement with the Department of Finance, Office of State Audits and Evaluations (Finance), to identify areas where the DSA could improve the plan review and construction oversight processes.

We reviewed DSA's plan review and construction oversight processes only, and did not evaluate the Office of Public School Construction, the State Allocation Board, or the California Department of Education's role in public school construction. Additionally, we did not perform a staffing study to fully evaluate current staffing levels.

METHODOLOGY

In conducting our performance review of DSA's plan review and construction oversight process, we relied on inquiry, analytical procedures, and site visit observations to identify improvements to the plan review and construction oversight processes. Specifically, we performed the following:

- Reviewed prior audit reports.
- Interviewed DSA headquarters and regional office staff to gain an understanding of plan review and construction oversight processes.
- Identified best practices from DSA regional offices, DSA plan review contractors, and other organizations that conduct similar reviews.
- Contacted a sample of school districts and design firms to identify concerns and suggestions for improvement.

- Contacted a DSA Advisory Board member to identify suggestions to improve the processes.
- Gained an understanding of the performance measures developed by DSA's Performance Metrics Unit and validated a sample of information posted on DSA's website.
- Evaluated how DSA currently measures performance.
- Performed various analytical procedures including bin time, plan review time, and back check finish to plan approval time.
- Performed a trend analysis to identify workflow patterns.
- Facilitated a brainstorming session with DSA management to solicit suggestions to improve the plan review and construction oversight processes.
- Considered DSA staffing levels related to plan review.

The results of the review are based on our review of documentation, other information made available to us, and interviews with the management and staff responsible for plan reviews and construction oversight. The review was conducted from July 2010 through February 2011.

This review was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the review to obtain sufficient, appropriate evidence to provide a reasonable basis for our recommendations based on the review objectives. We believe the evidence obtained provides a reasonable basis for our recommendations based on the review objectives.

In connection with the aforementioned services, Finance is not independent of DGS, as both DGS and Finance are part of the State of California's Executive Branch. As required by various statutes within the California Government Code, Finance performs certain management and accounting functions. These activities impair independence. However, sufficient safeguards exist for users of these services to rely on the work performed and reported.

CURRENT EFFICIENCY MEASURES

The Division of the State Architect (DSA) has established efficiency measures to promote timely, consistent, and cost effective operations in its plan review and construction oversight processes. Our inquiries of regional offices and other stakeholders reported positive results related to the following:

1. Statewide Teams

Statewide Teams are comprised of subject-matter experts from headquarters and each of the regional offices. These teams meet when questions on interpretation of regulations and codes arise in their area of expertise. Decisions from the Statewide Teams are forwarded to DSA headquarters and disseminated to regional offices. This provides a tool for management to keep informed, create consistency among regions, and develop statewide best practices.

2. DSA Academy

The DSA Academy (Academy) was created to provide a uniform understanding and knowledge of the application of Title 24 of the California Building Standards Code (building code). Newly hired DSA plan reviewers and contracted plan reviewers are required to attend training from the Academy before they can perform plan reviews of DSA projects. The Academy is available to all parties involved in the planning, design, and construction process. The curriculum is designed and presented by senior DSA plan reviewers.

3. Bin Time Reduction Project

Bin time represents the period from the submission of plans to when the plans are assigned to a plan reviewer. The Bin Time Reduction Project reduced bin time from 12 weeks to less than 5 weeks. DSA achieved this by redirecting supervisors and field engineers to perform plan reviews instead of hiring contractors. Additionally, staff from DGS' Real Estate Service Division assisted with construction oversight. Furthermore, staff deferred vacations and furloughs. At the conclusion of the Bin Time Reduction Project, supervisors and field engineers were redirected back to their regular duties. Between June 2009 and November 2010, bin time continued to average less than 5 weeks.

4. Pre-Application Meetings

Before a school district submits an application for a project, the design firm and/or school district may request a meeting with DSA. These meetings identify issues before the plans are officially submitted, which ultimately reduces the plan review time. Additionally, these meetings facilitate an understanding between the state's expectations and school district needs. Pre-application meetings can occur informally or through the formal collaborative process.

Informal Preliminary Review Process

The informal preliminary review process is available on request by design firms and/or school districts for any project, regardless of size or complexity. The informal preliminary review process consists of one or two preliminary review meetings held during the project design phase with the school district, the design team, and DSA. Preliminary review meeting minutes are kept and provided to the plan reviewer after plan submittal.

Formal Collaborative Process

The formal collaborative process is available on request by community college districts (CCD) for their project, and typically benefits larger or complex projects. The application and filing fees must be submitted 30 to 60 days prior to the first design phase collaborative meeting with DSA (which must be held prior to design development phase). During the formal collaborative process, pre-established milestone meetings during project design are scheduled with the CCD, design team, and DSA project team. The number of meetings depends on project size and complexities. DSA senior staff perform desk reviews of design documents subsequent to each meeting to identify significant building code conflicts that could adversely affect intake or the plan approval time.

5. Project Priority Categories

In April 2009, DSA began focusing on “shovel ready” projects. Projects are assigned to one of the four priority categories based on estimated start of construction and funding source. This expedites approvals of projects that are facing funding deadlines or that can start construction within 90 days of plan approval. Without this priority system, these immediate projects could be scheduled for review after less urgent projects, causing construction delays.

6. E-Tracker

The e-Tracker is DSA’s online system that tracks the status of projects from application receipt through construction and close-out. E-Tracker was recently migrated into a new platform where it is accessible through the Internet giving access to design professionals, clients, and other interested parties. It gives management the ability to oversee multiple functions of the plan review process along with other performance measures. Additionally, e-Tracker provides information regarding other aspects of projects such as construction costs and responsible parties.

7. Performance Metrics Unit

The Performance Metrics Unit was established in 2010 to assist management in making process improvement decisions and to provide clients with Internet access to project status. The unit tracks activity such as bin time, number of projects approved, and average number of plan review days. This provides management with tools to monitor workload and evaluate performance. Additionally, this unit created the Project Scorecard, a visual snapshot of the plan review timeline. This is an additional improvement towards transparency because it allows the public access to a graph depicting actual processing days for the various tasks performed by DSA and the design firms.

In the future, the unit plans to develop performance metrics associated with change documents, deferred approvals, addenda, and plan revisions processed during the construction phase of projects.

8. Internet Website References

DSA uses its Internet website to disseminate information relevant to its staff, clients, design professionals, and other stakeholders. DSA posts bulletins, Interpretations of Regulations (IR), and information on DSA's processes including, but not limited to, plan review and construction oversight. This enables plan reviewers to quickly access building code requirements, facilitating faster plan reviews. It also assists design professionals to complete plans in accordance with building code requirements. Posting these references increases transparency, may improve the number of complete plans submitted, and increase the number of projects closed with certification.

9. Town Hall Meetings

DSA periodically schedules Town Hall Meetings to communicate updates to clients, design professionals, and other stakeholders. This allows DSA stakeholders to provide input, discuss concerns, and become more involved in improving processes.

10. Project Certification and Close-Out Efforts

Through a combination of legislative proposals, regulation amendments, and process changes, DSA intends to close-out and certify a backlog of approximately 12,000 older projects that were previously closed without certification. Examples of changes to assist in closing these projects include the following:

- Simplified reporting on small projects and re-locatable classrooms.
- Modified procedures for DSA's review and approval of only DSA regulated change documents.
- Copies of verified records must be submitted to the Inspector of Record (IOR).

11. Project Submittal Checklist Form Revision

DSA is in the process of revising the Project Submittal Checklist (DSA 3). Some design firms indicated the form is too detailed and focuses on non-critical items causing the most critical items to be missed among the less significant items needed for adequate plan submittal. Revising the form will help clarify DSA's expectations, reduce the back and forth communication between DSA and design firms to resolve issues, improve the number of complete plans submitted, and ultimately reduce the plan intake processing time.

12. Cross-Training of DSA Plan Reviewers

Architects that review plans for accessibility are also trained to review small projects for fire and life safety. This enables fire and life safety staff to focus on other backlogs (e.g.

change orders) when necessary. It also streamlines the back check[1] meeting process because design professionals can address both accessibility and fire and life safety issues with one plan reviewer.

13. Automatic Fire Sprinkler Systems

As of July 2010, automatic fire sprinkler system (AFSS) plans were no longer accepted by DSA as deferred approvals and AFSS plans are required to be submitted with the initial project submittal. Regional offices indicated that many AFSS plans submitted as deferred approvals were incomplete and contained several building code errors causing delays in their approval. Requiring AFSS plans to be submitted with the original plans should improve the quality and timeliness of AFSS submittals, reduce the number of projects closed without certification, and decrease the amount of plan review and back check time.

14. Program Review Expert Group

DSA recently participated in a California Public School Construction Process Review Group (Group) that was formed so state agencies and their customers could work together to improve the overall school construction process. Other state agencies that participated included the California Department of Finance, the California Department of Education, and the Office of Public School Construction. The Group identified critical issues in the school construction process, developed suggested solutions, and identified short, medium, and long-term implementation strategies. Although the Group was initially established to complete a short-term review, members decided to continue meeting on a modified schedule.

[1] The back check meeting process refers to a meeting between the design professionals and DSA staff to address outstanding issues identified during the plan review process which must be resolved to finalize approval of the plans.

WORKLOAD TRENDS AND PERFORMANCE

The economy and building code revisions significantly impact DSA's workload. In December 2007, major revisions to Title 24 of the California Building Standards Code (building code) significantly increased the number of plans received by DSA due to clients submitting plans before the new code revision effective dates. However, the current decline in the economy has resulted in fewer and smaller projects submitted.

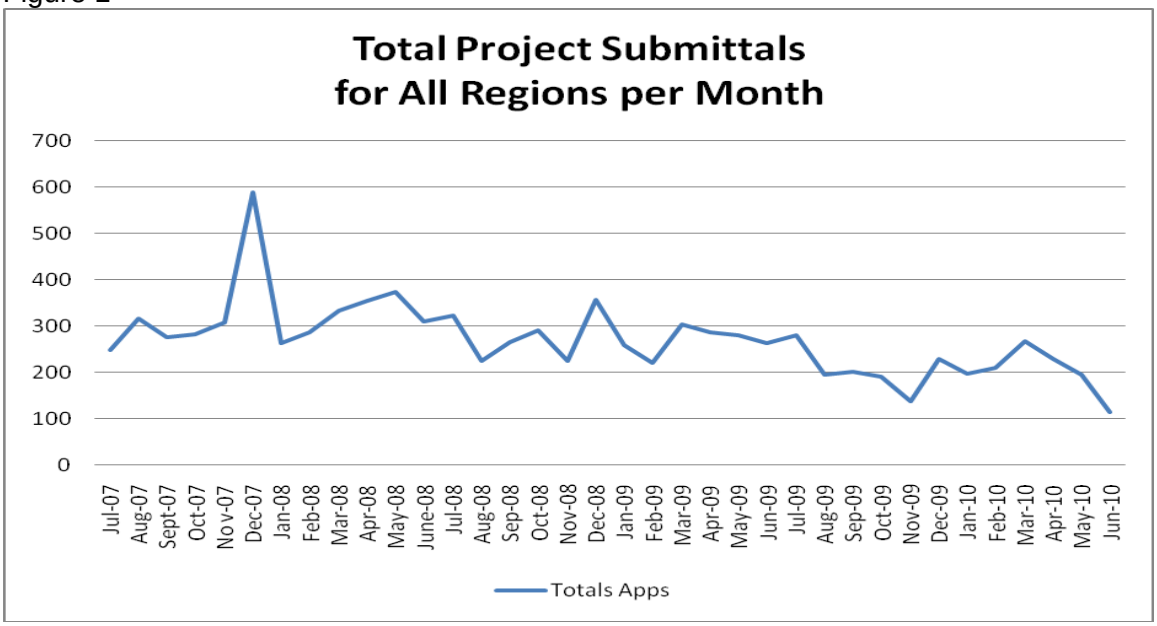
Based on a trend analysis of project submittals for fiscal year 2007-08 through 2009-10, the volume and size of the projects submitted has declined as indicated in Table 1 below.

Table 1: Number and Costs of Projects Submitted

Fiscal Year	Total Projects Submitted	Annual Estimated Project Costs	Average Cost Per Project
2007-08	3,938	$10,566,590,913	$2,683,238
2008-09	3,301	$ 9,015,343,813	$2,731,095
2009-10	2,449	$ 5,554,721,327	$2,268,159

Based on the monthly analysis presented in Figure 1 below, project submittals vary by month with the most severe spike in December 2007, the month prior to the last building code revision. Overall, plan submittals declined 37.8 percent from 2007-08 to 2009-10.

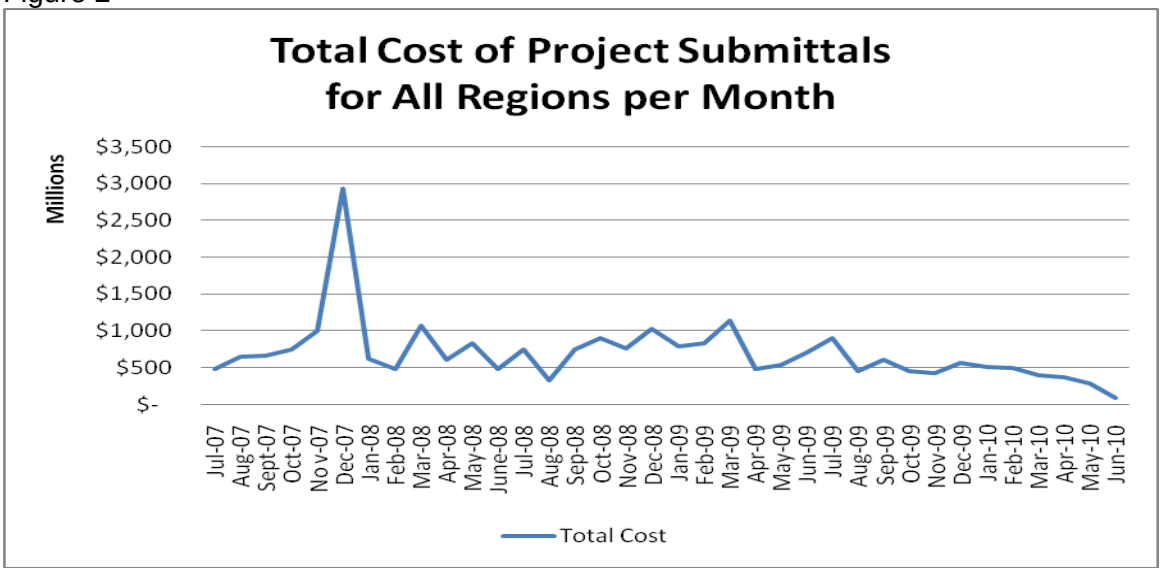
Figure 1



Source: DSA's e-Tracker System

Figure 2 illustrates that from 2007-08 to 2009-10, the total estimated costs for projects submitted declined by 47.4 percent. In addition to fewer projects being submitted, the estimated cost of the individual projects declined by 15.5 percent during this period.

Figure 2



Source: DSA's e-Tracker System

DSA demonstrated during its Bin Time Reduction Project[2] that it has the flexibility to redirect staff to address temporary increases in workload. However, if the workload significantly increases on an ongoing basis, DSA may need to reassess staffing needs, consider utilizing plan review contractors, or allow overtime for plan reviewers to maintain their bin time goals.

For the period 2007-08 through 2009-10, DSA's bin time, plan review time, and back check completion to plan approval time for access only, schools (K-12), and community colleges averaged as follows. This data represents timeframes where DSA is the responsible party. The data presented below does not include projects that were processed over the counter.[3]

Fiscal Year	Bin Time (days)	Plan Review Time (days)	Back Check Finish to Plan Approval Date (days)
2007-08	42	18	31
2008-09	41	19	16
2009-10	35	15	4
Three Year Average[4]	40	18	19

Source: DSA's e-Tracker System

[2] See the Current Efficiency Measures section of this report for a description of the Bin Time Reduction Project.

[3] Over the counter projects are smaller, less complicated plans that do not go through the intake process and are not placed in a bin. Instead, design firms schedule a face to face appointment with DSA to have their plans reviewed.

[4] The three year average was calculated with each item equally weighted over the entire three year period.

RECOMMENDATIONS

Based on information provided by the Division of the State Architect (DSA) staff, stakeholders, other entities that conduct plan reviews, and analytical procedures performed, the following recommendations, if implemented, will assist DSA management in continuing their efforts to further improve DSA's plan review and construction oversight processes.

Recommendation 1: Promote Regional Consistency through Information Sharing and Training

Although the general procedures were similar among the regional offices, some inconsistencies exist regarding application of the procedures. For example, if plans are deemed incomplete during the intake process, they are returned to the design firms. However, during the period January 21, 2010 through May, 26, 2010, the rate of plans deemed incomplete among the regions varied significantly from 4.8 percent to 34.1 percent. Additionally, the design firms indicated some reviewers follow Title 24 of the California Building Standards Code (building code) exactly, while others are more subjective and follow the intent of the building code.

Consistent and timely communication of policy decisions, regulation interpretations, guidance on applying the building code, and intake requirements will improve regional consistency, reduce staff research time, and potentially improve the design firm's compliance with the building code. Furthermore, periodic staff training can supplement staff's understanding and support consistent application of the requirements.

Information Sharing

A. Headquarters should more timely disseminate the Statewide Team's interpretation of regulations, building codes, and decisions on policy to facilitate timely and consistent implementation.

B. Enhance staff accessibility to all regional offices' Code Interpretations, Reporting, and Tracking (Form 60) decisions, including the basis for decisions. Allowing staff access to this information will reduce the time required for staff to research building code interpretations that have already been contemplated by other regional offices and improve consistency. Furthermore, any differing code interpretations can be resolved by the Statewide Team.

C. When a new Interpretation of Regulations (IRs) is issued, update the website immediately.

D. Ensure intake requirements are clearly communicated and available to design firms and other parties involved in project development.

Training

E. Provide periodic training to plan reviewers. Currently, new plan reviewers receive training from the DSA Academy. To promote consistency among staff, DSA should develop a periodic training curriculum for seasoned plan reviewers that covers new building code and policy changes, and serves as a reminder of plan review nuances.

F. Provide periodic training to construction oversight staff. This training should include aspects of accessibility and fire and life safety to ensure these disciplines are adequately represented in DSA's construction oversight role.

G. The Statewide Team for Project Services should develop standard intake guidelines. Training should be provided to staff performing this process to ensure consistency in the application of the intake guidelines.

Challenges

Staff resources may be required to improve the information sharing and develop and provide the recommended training. However, the benefits received will improve consistency in applying procedures and ultimately reduce the time required for plan reviews and construction oversight.

Recommendation 2: Engage Clients Early in Project Design and Construction

Meeting with clients in the early stages of project design and construction communicates expectations and requirements, facilitates reduced plan review time, supports successful project certification, and reduces the back and forth cycle of corrections. Regional plan reviewers, school districts, and design firms have indicated both the informal and formal pre-application meetings work well when conducted. However, some indicated pre-application meeting decisions were not always binding. DSA can build on the current pre-application meeting processes as follows:

A. Establish criteria that would trigger a mandatory pre-application meeting for certain projects. When possible, these pre-application meetings should involve the same intake, plan review, and field engineer staff that will eventually be assigned to the project so that agreed upon decisions can be carried forward.

B. Establish criteria that would trigger mandatory pre-construction meetings for certain projects. Pre-construction meetings should involve all relevant parties including the school district, contractor, Inspector of Record, and DSA field engineers to communicate expectations and facilitate successful project certification.

Challenges

DSA does not usually know about projects until plans are submitted. To overcome this challenge, DSA could do the following:

C. Inform school districts and design firms that pre-application meetings are required for projects meeting a certain criteria, and be available on request for others. Post the established criteria on DSA's website.

D. Periodically survey school districts for upcoming projects and identify those that require or could benefit from a pre-application meeting. Information regarding upcoming projects could assist DSA in predicting workload.

E. DSA should review the state budget to identify upcoming Community College projects and identify those that require or could benefit from a pre-application meeting.

Recommendation 3: Increase Efficiencies through Technology

Use of available technology could facilitate more efficient filing and processing of plan review, construction oversight, and close-out documents; and provide management with information regarding project costs from plan review through the close-out activities. Furthermore, improvements to e-tracker will promote reliability and transparency of project information. To achieve these objectives, DSA should consider the following:

A. Currently, DSA conducts most of its plan reviews and post-approval document reviews through a paper-based system. The current paper-based method requires a significant amount of storage space and additional resources to scan plans into an electronic form. Additionally, several of the school districts and community colleges contacted stated DSA takes too long to process post approval documents and frequently loses or misplaces them. One regional office estimated that approximately 8 hours a week are spent filing and tracking down post approval documents.

   The Electronic Plan Review Statewide Team should conduct a cost/benefit analysis that compares the cost of the current manual processes with the costs of electronic plan review, including the costs to upgrade electronic plan review equipment. The electronic review of plans would reduce the staff resources required to scan plans into an electronic format. Additionally, the design firm and plan reviewer would have the capability to simultaneously view the annotated set of plans, making resolving questions or concerns easier. Storage and shipping costs would also be reduced.

B. Create a web portal for electronic submission of DSA documents including applications, other DSA forms, and post approval documents. Having a web portal would eliminate the risk of lost documents and increase accountability. Specific post approval documents could be easily located and reviewed by multiple disciplines concurrently. Additionally, the use of a web portal would reduce storage needs and would eventually allow easier retrieval of archived documents. If a web portal cannot be created, DSA should consider using the tracking component in e-Tracker, other technology such as a bar code system to track post approval documents, or a dedicated e-mail address to submit certain documents electronically.

C. Continue to strengthen system controls for e-Tracker to improve data reliability. In September 2010, the Performance Metric Unit (PMU) identified e-Tracker challenges and proposed solutions. Examples of proposed solutions include developing consistent categorical naming conventions, building an alert to prompt users to save changes, and setting up a daily automatic reporting system that captures missing data.

   Improving e-Tracker system controls enhances data integrity, increases credibility with clients, and improves the accuracy of information presented on DSA's public website by the PMU. Information posted to the website allows transparency to DSA stakeholders

and helps DSA management make informed policy decisions. Additionally, it is important to educate stakeholders on the many uses and tools available in e-Tracker.

D. DSA should track staff time by project and activity. Tracking hours spent on construction oversight activities will allow the PMU to provide management with information necessary to make informed policy and staffing decisions. Tracking construction oversight activities by project would enable DSA to determine the average project costs and whether fees are appropriate to cover costs. Tracking expenditures by project to identify average project costs and significant cost overruns was a recommendation in Finance's January 2010 review of DSA's Public School Planning, Design, and Construction Review Revolving Fund.

Challenges

Interviews at regional offices suggested electronic plan reviews currently take longer than the paper-based plan reviews because the current equipment available to DSA staff is insufficient to efficiently perform electronic plan review. Additionally, DSA's executive management suggested that some small design firms were not set up to submit plans electronically; and that electronic plan review is problematic as not all DSA staff have the training, skills, and experience required.

To overcome this challenge, DSA may consider establishing a separate unit within each discipline and region that specializes in electronic plan review. With a separate electronic plan review unit, DSA could limit the amount of upgraded equipment needed and design firms that have the capability to submit plans electronically could be encouraged to do so. Additionally, plan review staff unaccustomed to electronic plan review could continue to work with paper plans while they develop the skills necessary for electronic plan review.

DSA staff indicated implementing the web portal would be very costly to set up, imposes security concerns, and requires technical expertise to bridge technology to the user. To overcome this challenge, DSA may consider hiring a service provider to handle the web portal or identify other less costly technology that could assist in the electronic submission and tracking of documents.

One DSA staff member estimated field engineers may review up to 100 to 150 post-approval documents per month, sometimes in 15 minute increments. Tracking time by project could be labor intensive.

Recommendation 4: Other Plan Review and Construction Oversight Process Efficiencies

The following suggestions related to project coordination, cross-training of staff, and other construction oversight processes will increase efficiencies.

A. Identify one person as the single point of contract to coordinate and monitor project progress. This individual would coordinate the various disciplines involved in the plan review and serve as a liaison. This would improve customer service and may reduce total plan review time through coordination and monitoring efforts. Currently, clients work with multiple DSA staff throughout the course of the project which sometimes results in inconsistent guidance provided.

B. Assign staff to coordinate the receipt of California Geological Survey (CGS) reports. This will minimize delays in the final approval of plans due to the CGS report not being received timely.

C. Expand cross-discipline training where applicable and allowed by unions. Cross training will provide DSA the flexibility to redirect staff resources to better manage backlogs. Cross training could also increase the efficiency of processing post approval documents, as disciplines do not review them concurrently.

D. Require a back check for plan revisions, deferred approvals, and addendums that are a certain size or complexity. This would reduce the unwarranted back and forth exchange that occurs in some instances and reduce the time required to approve these documents.

E. The San Diego regional office assigns specialist architects to perform intake on change orders. Evaluate whether the change order triage process in San Diego is successful. Determine if this would help streamline the change order process in other regions. If triaging change orders is efficient, formalize the process for all regions.

F. The PMU should establish performance metrics related to timeframes for post approval documents. Once performance metrics are established, monitor construction oversight staff's performance.

Challenges

Unions may be resistant to cross-training different disciplines. It may also be difficult for staff to become experts in multiple disciplines.

APPENDIX A

Plan Review and Construction Oversight Processes

The Division of the State Architect (DSA) reviews plans for three disciplines: structural safety, fire and life safety, and accessibility. The current plan review and construction oversight process is divided into the following critical phases: Project Intake, Plan Review, Field Oversight, Post Approval Document Review, and Project Close-Out and Certification. See Appendix B for a flowchart of these processes.

Project Intake

Design firms submit the application, fees, and plans to one of four regional offices. The plans may include a copy of the plans for each of the three disciplines depending on the type of project and client. Once received, a DSA application number is assigned to the project for tracking purposes. The Project Submittal Checklist (DSA 3) provides a comprehensive list of documents required to be submitted with the application.

Upon submittal, an intake staff performs a preliminary review for completeness. If a project is determined to be incomplete, the design firm and school district are notified by letter. After intake staff verifies the plans are complete, the plans are placed in bins until they are assigned to plan reviewers.

Plan Review

To expedite plan reviews for projects that are “shovel ready,” projects are assigned to one of the four priority categories based on estimated start of construction and funding source. For projects that are not considered “shovel ready,” plan review supervisors assign projects to plan reviewers on a first in/first out basis.

Plans are reviewed for compliance with Title 24 of the California Building Standards Code (building code) concurrently in the applicable disciplines. Necessary corrections are marked on the plans and then returned to the design firms to make the requested changes. After the design firms address corrections, they schedule a meeting between the design firm and plan reviewer. During the back check meeting, the plan reviewer ensures all changes have been addressed. If there are any disagreements with the building code interpretation, a DSA supervisor is consulted. If the issue cannot be resolved with the DSA supervisor, the issue can be elevated to the Regional Manager and then to the discipline’s Statewide Team.

Once all changes and corrections have been addressed, plan reviewers initial the plan pages and the plans are stamped approved. Plans are scanned and maintained as electronic records.

Field Oversight

After plans are approved, DSA is notified by the design professional or proposed Inspector of Record (IOR) of the start of construction. Based on a review of the proposed IOR's qualifications, DSA approves the proposed IOR for the project. The IOR's primary role is to inspect construction, ensure DSA requirements are met, and submit semi-monthly reports to DSA documenting construction work accomplished and any problems or concerns.

DSA field engineers schedule visits to verify compliance with the building code and to evaluate the IOR's performance. During these construction site visits, DSA staff work closely with the IOR to assure the intent of the plans and specifications are achieved at the construction site. Field engineers create field trip notes to document their site visits.

DSA field engineers review and approve all field change documents, review all inspector and lab reports, and make recommendations regarding the close-out and certification of construction. DSA has authority to stop construction if the project does not meet the building code requirements.

Post Approval Document Review

Construction oversight staff process construction change documents. After approval of plans, the client may submit changes to the plans through plan revisions, addendums, or change orders. In addition, clients may submit a portion of construction for deferred approval due to variations in product design and manufacture. Approvals for the design of these portions may be deferred until suppliers are selected. Change orders are generally routed to the field engineer. Changes that affect fire and life safety or accessibility are generally processed by the respective plan review sections. Upon approval of the changes, the IOR incorporates the changes into the approved construction plans. Previously, DSA received all change orders. However, in January 2011, the Building Standards Commission required DSA to review only the construction change documents related to structural safety, fire and life safety, and disability access. DSA is revising its processes based on these new regulatory changes.

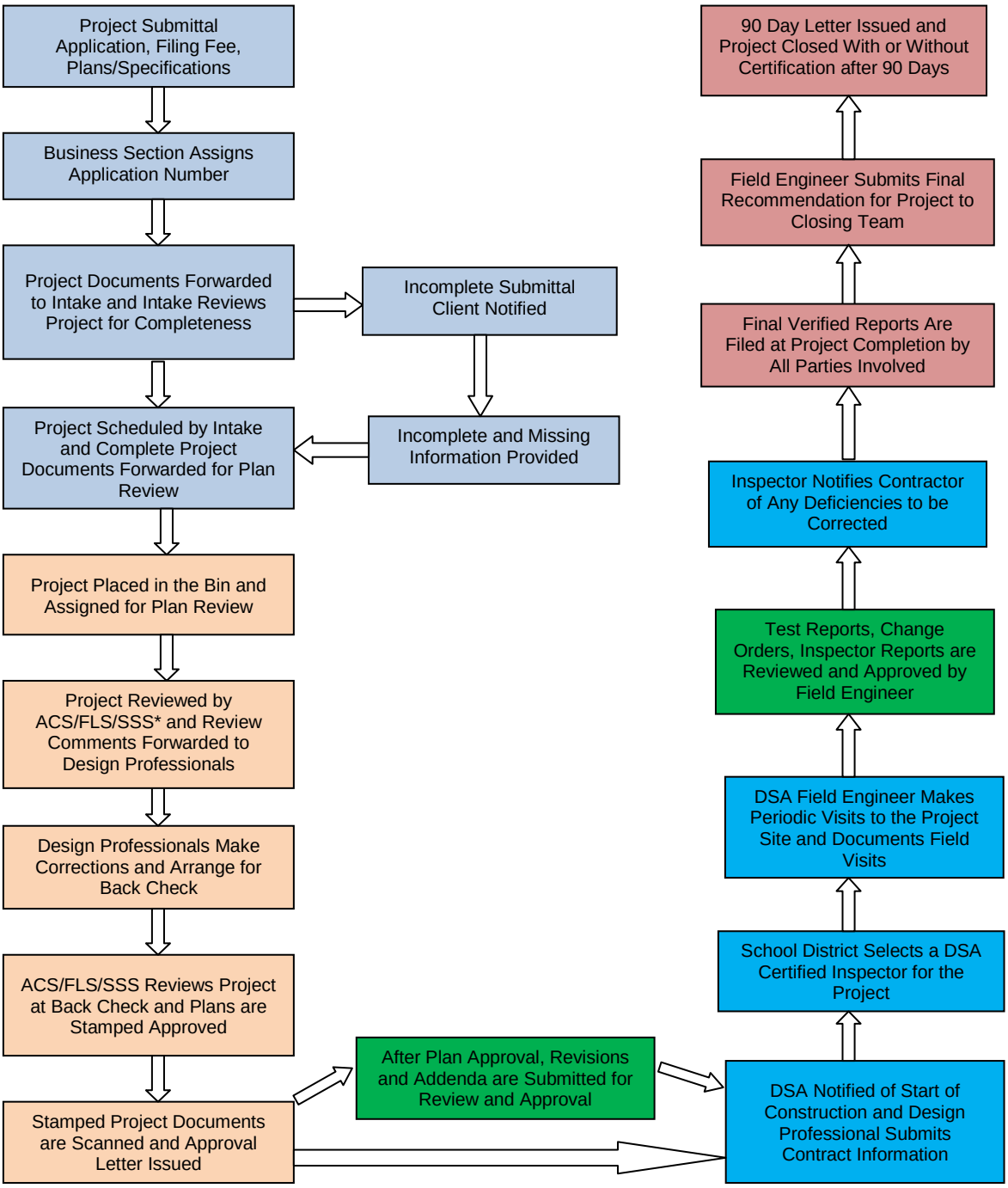
Project Close-Out and Certification

Upon completion of the project, construction related documents are reviewed. These documents verify all work was done in accordance with building code requirements.

DSA sends a 90 Day Letter to the project architect or engineer requesting any missing documents. If these are not received within 90 days, the project is closed without certification. Future new projects involving buildings with previously uncertified projects cannot be reviewed or approved by DSA until the original project is certified. DSA may assist districts to close and certify past projects.

For projects closed with certification, DSA issues a Letter of Certification to the school district as evidence that construction conforms to the applicable requirements of the building code.

Plan Review and Construction Oversight Processes



* ACS = Accessibility
FLS = Fire and Life Safety
SSS = Seismic Safety

COLOR LEGEND: PROJECT INTAKE | PLAN REVIEW | POST APPROVAL DOCUMENT REVIEW | FIELD OVERSIGHT | PROJECT CLOSEOUT

DGS
GENERAL SERVICES

MEMORANDUM

Date: March 24, 2011

To: David Botelho, CPA, Chief
Department of Finance
Office of State Audits and Evaluations
300 Capitol Mall, Suite 801
Sacramento, CA 95814

From: **Department of General Services**
Division of the State Architect

Subject: **RESPONSE TO REVIEW OF PLAN REVIEW AND CONSTRUCTION OVERSIGHT PROCESSES**

Thank you for the opportunity to respond to the Office of State Audits and Evaluations' (OSAE) review of the Division of the State Architect's (DSA) plan review and construction oversight processes. The following response addresses each of OSAE's recommendations.

OVERVIEW OF THE REPORT

The DSA appreciates OSAE's in-depth and professional review of its plan verification and construction oversight processes. In summary, OSAE found that the DSA has implemented many procedures and tools to ensure timely, consistent and cost effective operations. We are pleased that OSAE's inquiries of various stakeholders reported positive results related to the fourteen measures summarized in the *Current Efficiency Measures* section of the report. These results favorably reflect on the DSA's ongoing efforts to find efficiencies and improve operating processes.

Based on the results of its fieldwork, the OSAE developed the following recommendations to further improve the plan review and construction oversight processes. In general, the OSAE's recommendations have merit and will be promptly addressed.

RECOMMENDATIONS

Recommendation 1: Promote Regional Consistency through Information Sharing and Training

RECOMMENDATION A: ***Headquarters should more timely disseminate the Statewide Team's interpretation of regulations, building codes, and decisions on policy to facilitate timely and consistent implementation.***

RESPONSE A:

The DSA continually strives to ensure consistency among its four regional offices with a focus on continuous improvement. Toward this end, the Division's Accessibility Statewide Team is piloting refinements to the process established to ensure the timely sharing of information with regional office managers, supervisors and plan reviewers. The refinements include the Team lead initiating regularly scheduled briefings with all staff involved in plan reviews to discuss recent accessibility program issues and outcomes.

RECOMMENDATION B: ***Enhance staff accessibility to all regional offices' Code Interpretations, Reporting, and Tracking (Form 60) decisions, including the basis for decisions.***

RESPONSE B:

DSA will take action to further improve the tracking of documents and decisions to allow staff better access to available documents through queries of information available on the Intranet. DSA is also considering changes to internal templates in an effort to use existing forms in documenting decision making paths.

RECOMMENDATION C: ***When new Interpretation of Regulations (IRs) is issued, update the website immediately.***

RESPONSE C:

DSA has implemented a process to ensure the timely vetting and dissemination of new and updated policy documents. As part of this process, IRs are posted within two days of final document approval along with a notification sent to an e-mail list of both stakeholders and staff, and an announcement presented on DSA's website.

RECOMMENDATION D: ***Ensure intake requirements are clearly communicated and available to design firms and other parties involved in project development.***

RESPONSE D:

DSA has long standing and well established guidelines for application intake that have been documented and disseminated to users. To ensure clear communication of intake requirements, DSA continually gathers feedback on the intake process and makes revisions to existing practices as deemed necessary. As part of this process, DSA is planning training events on the intake process, which will provide an opportunity for further information sharing with stackeholders.

RECOMMENDATION E: ***Provide periodic training to plan reviewers. Currently, new plan reviewers receive training from the DSA Academy. To promote consistency among staff, DSA should develop a periodic training curriculum for seasoned plan reviewers***

that covers new building code and policy changes, and serves as a reminder of plan review nuances.

RESPONSE E:

The DSA is committed to having its plan review function performed by trained staff. As part of its efforts, in November 2010, prior to the January 1, 2011 effective date of the 2010 California Building Code (CBC), DSA conducted internal training for Accessibility, Fire & Life Safety, and Structural Safety plan review staff. As future significant CBC or procedural changes occur, DSA intends to continue its training efforts. DSA is also exploring other cost effective methods of providing ongoing training to its plan review staff such as maintaining a library of training videos to be available to new staff or, as a refresher, to seasoned staff.

RECOMMENDATION F: ***Provide periodic training to construction oversight staff. This training should include aspects of accessibility and fire and life safety to ensure these disciplines are adequately represented in DSA's construction oversight role.***

RESPONSE F:

For the areas of staff responsibility related to construction oversight, DSA will evaluate current training methods and consider possible improvements.

RECOMMENDATION G: ***The Statewide Team for Project Services should develop standard intake guidelines. Training should be provided to staff performing this process to ensure consistency in the application of the intake guidelines.***

RESPONSE G:

DSA will task the appropriate Statewide Team to review the existing standard intake guidelines and recommend training to improve consistency.

Recommendation 2: Engage Clients Early in Project Design and Construction

RECOMMENDATION A: ***Establish criteria that would trigger a mandatory pre-application meeting for certain projects. When possible, these pre-application meetings should involve the same intake, plan review, and field engineer staff that will eventually be assigned to the project so that agreed upon decisions can be carried forward.***

RESPONSE A:

Currently, DSA encourages pre-meetings on large and structurally complex projects. The DSA will review the feasibility of making the pre-application meetings mandatory, including cost

implications, staffing requirements and statutory changes that may be necessary for implementation.

RECOMMENDATION B: ***Establish criteria that would trigger mandatory pre-construction meetings for certain projects. Pre-construction meetings should involve all relevant parties including the school district, contractor, Inspector of Record, and DSA field engineers to communicate expectations and facilitate successful project certification.***

RESPONSE B:

DSA is committed to implementing best practices that will facilitate a more efficient construction process. Consequently, DSA will review the feasibility of mandatory pre-construction meetings including cost implications, staffing requirements and statutory changes that may be necessary for implementation.

RECOMMENDATION C: ***Inform school districts and design firms that pre-application meetings are required for projects meeting a certain criteria, and be available on request for others. Post the established criteria on DSA's website.***

RESPONSE C:

As noted above, DSA will review the feasibility of making the pre-application meetings mandatory, including cost implications, staffing requirements and statutory changes that may be necessary for implementation. The DSA's stakeholders will be informed of any new operating policies and procedures pertaining to pre-application meetings.

RECOMMENDATION D: ***Periodically survey school districts for upcoming projects and identify those that require or could benefit from a pre-application meeting.***

RESPONSE D:

The DSA will determine the feasibility of developing a reporting process for large school districts to identify upcoming projects that would benefit from pre-application meetings.

RECOMMENDATION E: ***DSA should review the state budget to identify upcoming Community College projects and identify those that require or could benefit from a pre-application meeting.***

RESPONSE E:

DSA will engage with the Community Colleges Chancellor's Office to develop a further understanding of the facilities funding process and seek input for a method of planning future workload for community college projects. This will assist the DSA in identifying upcoming projects that would benefit from pre-application meetings.

Recommendation 3: Increase Efficiencies through Technology

RECOMMENDATION A: ***The Electronic Plan Review Statewide Team should conduct a cost/benefit analysis that compares the cost of the current manual processes with the costs of electronic plan review, including the costs to upgrade electronic plan review equipment.***

RESPONSE A:

DSA is committed to using information technology resources to improve its plan review process. As resources and priorities allow, a cost/benefit analysis will be conducted to evaluate the cost impact of electronic plan review as well as long-term sustainability.

RECOMMENDATION B: ***Create a web portal for electronic submission of DSA documents including applications, other DSA forms and post approval documents. If a web portal cannot be created, DSA should consider using the tracking component in e-Tracker, other technology such as a bar code system to track post approval documents, or a dedicated e-mail address to submit certain documents electronically.***

RESPONSE B:

DSA is studying the feasibility of using a web portal for document exchange and approval. Currently, as part of this process, a workgroup is reviewing the issue and will be bringing forward proposals/examples of such systems. DSA will fully consider the recommendation of the workgroup.

RECOMMENDATION C: ***Continue to strengthen systems controls for e-Tracker to improve data reliability. In September 2010, the Performance Metric Unit (PMU) identified e-Tracker challenges and proposed solutions. Examples of proposed solutions include developing consistent categorical naming conventions, building an alert to prompt users to save changes, and setting up a daily automatic reporting system that captures missing data.***

RESPONSE C:

DSA is committed to improving the reliability of its databases. As part of this process, DSA has identified numerous issues and solutions related to e-Tracker, such as those noted in this recommendation, that are being addressed as resources allow.

RECOMMENDATION D: ***DSA should track construction oversight staff time by project and activity.***

RESPONSE D:

In the past, DSA has explored the feasibility of tracking staff time for construction oversight on a project specific basis. This effort revealed that this level of tracking project costs would be inefficient due to the labor intensive effort involved in tracking staff time spent on numerous projects. DSA will explore alternative methods of evaluating the cost of its construction oversight activities.

Recommendation 4: Other Plan Review and Construction Oversight Process Efficiencies

RECOMMENDATION A: ***Identify one person as the single point of contact to coordinate and monitor project progress.***

RESPONSE A:

DSA will fully consider this recommendation. However, identifying one person as a single point of contact for each project may be impractical due to the number of projects processed by DSA which vary in size and complexity.

RECOMMENDATION B: ***Assign staff to coordinate the receipt of California Geological Survey (CGS) reports.***

RESPONSE B:

In the near future, DSA will determine the appropriate staff to coordinate the intake of CGS reports.

RECOMMENDATION C: ***Expand cross-discipline training where applicable and allowed by unions.***

RESPONSE C:

This recommendation represents the policy and practice of the DSA. As part of these efforts, the division implemented cross-training for its fire & life safety and accessibility plan reviewers. DSA is aware of the constraints of further cross-training and is taking those constraints into account in evaluating additional opportunities for cross training.

RECOMMENDATION D: ***Require a back check for plan revisions, deferred approvals, and addendums that are a certain size or complexity.***

RESPONSE D:

DSA will determine the feasibility of implementing a back check process for plan revisions, deferred approvals and addendums.

RECOMMENDATION E: ***The San Diego regional office assigns specialist architects to perform intake on change orders. Evaluate whether the change order triage process in San Diego is successful. Determine if this would help streamline the change order process in other regions. If triaging change orders is efficient, formalize the process for all regions.***

RESPONSE E:

Recent regulatory amendments address the cumbersome change order review process. These regulations went into effect on January 19, 2011 with approval by the California Building Standards Commission.

RECOMMENDATION F: ***The PMU should establish performance metrics related to timeframes for post approval documents. Once performance metrics are established, monitor construction oversight staff's performance.***

RESPONSE F:

The DSA will task the PMU with developing metrics for post approval documents as part of the implementation of the newly adopted regulations, which modified the post approval documents required to be approved by the division.

CONCLUSION

The DSA is firmly committed to effectively and efficiently conducting its plan review and construction oversight processes. As part of its continuing efforts to improve these processes, the DSA will take appropriate actions to address the issues presented in the report.

If you need further information or assistance on this report, please contact me at (916) 324-5799.

M. Lutsuk

MASHA LUTSUK, Policy Deputy
Division of the State Architect

cc: Scott Harvey, Acting Director, DGS
Howard Smith, Acting State Architect, DSA