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# Performance Audit of the Development Services Department's Project Tracking System

CONTROL DEFICIENCIES LEAD TO SYSTEM SECURITY RISKS,  
OPERATIONAL INEFFICIENCIES, AND ERRORS CHARGING  
CUSTOMERS

JUNE 2012

**Audit Report**  
Office of the City Auditor  
City of San Diego



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## THE CITY OF SAN DIEGO

June 29, 2012

Honorable Mayor, City Council, and Audit Committee Members  
City of San Diego, California

Transmitted herewith is an audit report on the Development Services Department's (DSD) Project Tracking System. We have completed this report in accordance with the City Auditor's Fiscal Year 2011 Audit Work Plan. This report is presented in accordance with City Charter Section 39.2. The Results in Brief is presented on page 1, and our Objectives, Scope, and Methodology are located in Appendix A. On June 21, 2012, we received DSD management's response to the audit report, which can be found after page 64 of the report. After reviewing the information provided in the response, we found that the department did not provide any technical information and appropriate evidence which requires changes to our audit report. As such, we find the response without merit.

If you need any further information please let me know. We would like to thank DSD's staff for their assistance and cooperation during this audit. All of their valuable time and efforts spent providing us information is greatly appreciated. The audit staff responsible for this audit report are Stephen Gomez, Andy Hanau, Sara Glick, and Chris Constantin.

Respectfully submitted,

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## Results in Brief

Our audit found that DSD has not established an adequate control environment to ensure the reliability and integrity of its core information system—Project Tracking System (PTS)—or that permitting fees and deposits are charged accurately and consistently. While we did not identify any specific instances of improper activity; doing so would be extremely difficult due to the serious monitoring and detection control deficiencies we identified.

### **Information System Controls are Deficient**

DSD has implemented certain standard controls over PTS; however, significant weaknesses provide IT staff numerous opportunities to improperly modify the PTS application software and critical system data with little chance of detection. Triggers that log system activity do not capture critical information necessary for effective monitoring and can be turned-off by IT staff.

DSD has relied heavily on the historical knowledge of PTS' architect, who is the department's current IT Program Manager, to manage and maintain the system. This, combined with insufficient documentation of system processes, puts PTS at risk of becoming unstable and, potentially unusable, if the IT Program Manager were to vacate the position.

We also found that employees have greater access to PTS' capabilities than they likely need, and that numerous employees have access to a combination of user roles that present Separation of Duty issues.

### **Staff Incorrectly Assess Fees and Deposits**

DSD staff make a significant number of errors assessing deposits and fees in PTS. We noted projects that had been undercharged by as much as \$37,000 and overcharged by as much as \$345,000. It appears that multiple factors contribute to these errors, including:

- Varying staff skill levels;
- Staffing assignments that do not compensate for DSD's inherently complex development process and fee schedule;

- Limited supervision;
- High staff workloads; and
- PTS' unintuitive and cumbersome system design and lack of logic-checking and automation features.

By not assessing accurate fees and deposits, DSD ultimately hinders the effectiveness of programs and activities that rely on these assessments. In addition, customers cannot be assured that their projects are charged accurate fees and deposits.

**PTS Does not Adequately Support Effective Operational Management**

We found that standard PTS-generated reports lack critical information to support effective and efficient management of client departments' permitting functions. In addition, DSD only provides reports in hard-copy format, creating unnecessary and time-consuming manual data-entry.

DSD has not developed a strategic plan to ensure PTS fully supports its business operations in a cost-effective manner over the long-term. Without a strategic plan, DSD is at greater risk of using its limited IT resources inefficiently. As a result, PTS may become outdated and less effective at helping DSD achieve its operational goals and more expensive to maintain.

**Summary of Recommendations**

Our audit makes 13 recommendations to improve information system controls, staff's accuracy in assessing fees and deposits, operational efficiency, and the likelihood that PTS supports long-term business operations cost-effectively. DSD agrees with two recommendations, partially agrees with four, and disagrees with seven.



# Background

**Department Overview** The Development Services Department (DSD) is charged with regulating land use and building development within the City of San Diego through the following interrelated activities:

- Developing long-range urban plans;
- Reviewing and approving land use and building projects to ensure compliance with the long-range plans and state and local laws;
- Inspecting building projects to ensure they are constructed safely and in accordance with the approved scope of work; and
- Enforcing compliance with building codes by identifying unpermitted and hazardous structures.

DSD also serves as the administrative agent, i.e., reviews and approves applications, issues permits and collects fees, for several other departments that play a role in the City's development and permitting process. Some of these departments include Transportation and Storm Water, Public Works, and Environmental Services.

**Budget and Staffing** DSD carries out its responsibilities through a labor force of 525 employees and a budget of \$60 million.<sup>1</sup> DSD's activities are largely supported by revenue generated from fees paid by customers; these fees support the Development Services Fund, DSD's primary funding source. In addition, certain activities are funded from the City's General Fund, as well as the Facilities Financing Fund and the Local Enforcement Agency Fund. **Exhibit 1** shows the breakdown of DSD's fiscal year 2012 budgeted expenditures by funding source, as well the specific activities supported by each.

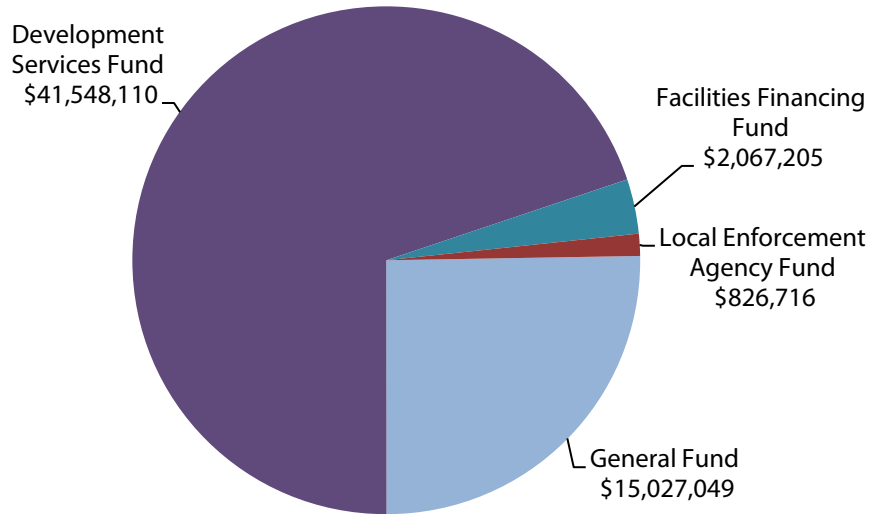
Our audit focused on permitting activities funded by the Development Services Fund and, more specifically, how those activities are supported by DSD's core information system, the Project Tracking System (PTS).

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<sup>1</sup> Figures reflect DSD's budgeted expenditures and staff positions reported in the fiscal year 2012 budget.

**Exhibit 1**

**Breakdown of DSD's Fiscal Year 2012 Budgeted Expenditures by Funding Source and Description of each Fund**



	Activities Supported by Fund	Source of Revenue
<b>Development Services Fund</b>	<ul style="list-style-type: none"> <li>Plan check</li> <li>Permitting</li> <li>Records maintenance</li> <li>Building inspections</li> </ul>	<ul style="list-style-type: none"> <li>Fees paid by customers to obtain land-use approvals and building permits</li> </ul>
<b>Facilities Financing Fund</b>	<ul style="list-style-type: none"> <li>Preparing and updating plans for communities' public facilities</li> </ul>	<ul style="list-style-type: none"> <li>Assessments on properties and land being developed in the San Diego</li> </ul>
<b>Local Enforcement Agency Fund</b>	<ul style="list-style-type: none"> <li>Oversees regulatory compliance at solid waste facilities, composting sites and transfer/processing facilities</li> </ul>	<ul style="list-style-type: none"> <li>Fees collected from operators of a solid waste facilities or anyone who conducts solid waste handling</li> </ul>
<b>General Fund</b>	<ul style="list-style-type: none"> <li>Neighborhood code compliance</li> <li>City planning</li> </ul>	<ul style="list-style-type: none"> <li>Property tax, sales tax, service charges, franchise fees, property revenue, etc</li> </ul>

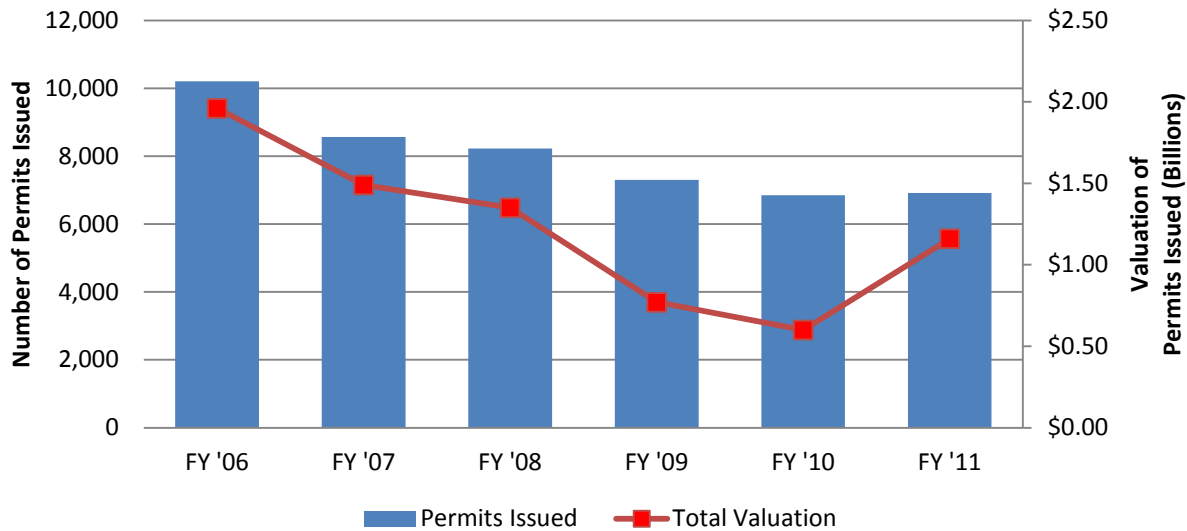
Source: OCA generated based on the City of San Diego's fiscal year 2012 budget, Municipal Code, and DSD's website.

**Construction Activity and the Impact on the Development Services Fund**

The recent economic and construction downturn resulted in a significant decline in DSD’s business. As **Exhibit 2** illustrates, the number of building permits DSD issued declined significantly—33 percent—between fiscal years 2006 and 2010. The total valuation of permitted construction declined by nearly 70 percent, from \$1.96 billion to \$600 million, during the same time period.<sup>2</sup> Consequently, Development Services Fund revenue declined sharply, yet expenditures did not follow at the same rate.

**Exhibit 2**

**Total Number and Valuation of Permits Issued, Fiscal Years 2006 through 2011**



Source: OCA generated based on DSD annual budgets and permit activity reports.

DSD’s costs began exceeding revenue in fiscal year 2006 and the Development Services Fund fell into deficit between fiscal years 2008 and 2011, as shown in **Exhibit 3**. To address the deficit, DSD reduced staffing and adopted a new fee schedule that more closely aligned fees with actual costs.<sup>3</sup>

Since fiscal year 2010, Development Services Fund revenue has exceeded expenditures and, according to the fiscal year 2012 adopted budget, the fund is projected to have a positive balance by year-end. In addition, in fiscal year 2011 the

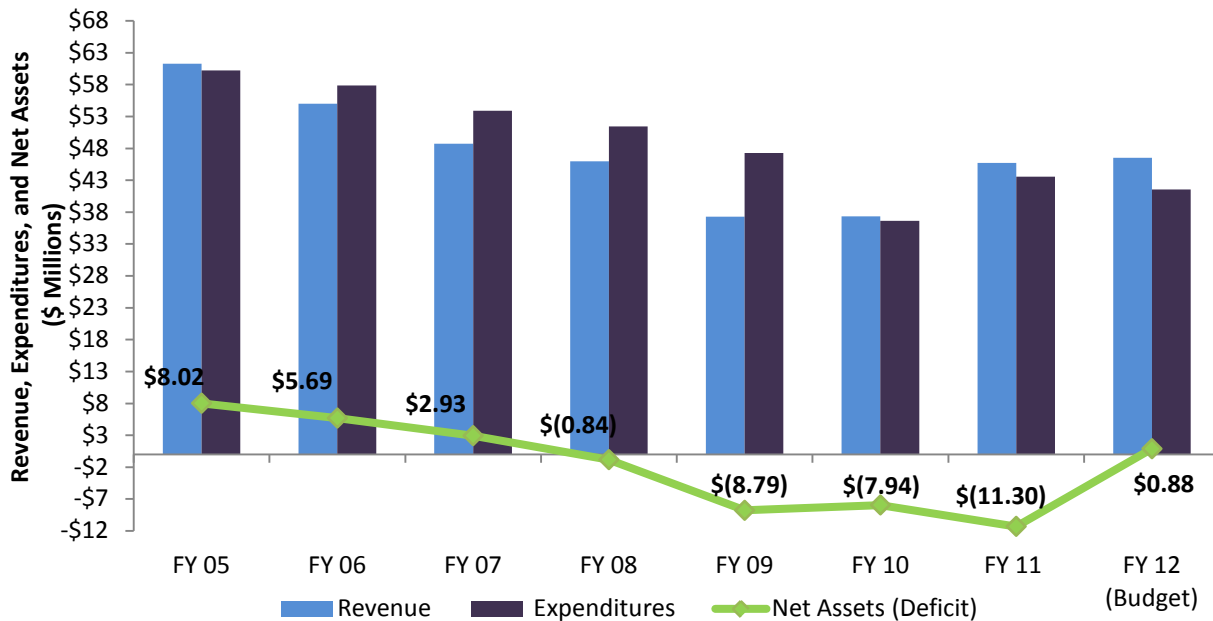
<sup>2</sup> The valuation of construction permitted is calculated based on the type and square footage of construction and is an indicator of DSD’s workload.

<sup>3</sup> The City Council approved the fee increase on October 27, 2009.

valuation of permits issued increased to \$1.16 billion, the highest level since fiscal year 2008, indicating that DSD’s workload is increasing.

**Exhibit 3**

**Development Services Fund - Revenue, Expenses, and Net Assets for Fiscal Years 2005 through 2012**



Note: The deficit increase in fiscal year 2011 was, in part, due to the inclusion of the Subdivision Deposit Trust Fund, which was previously classified as a Special Revenue fund, in the Development Services Fund.

Source: OCA generated based on the City of San Diego’s Comprehensive Annual Financial Report and adopted budgets.

**Construction Permit Fee Assessment Process**

DSD assesses approximately 500 different fees. This represents a significant reduction and simplification from the 1,400 different fees DSD assessed prior to the adoption of a new fee schedule in 2009.<sup>4</sup> While certain fees are assessed at a flat rate, the most financially significant fees are variable and based on the scope of work, including the use and square footage of the project.

As **Exhibit 4** illustrates, building permit fees can be assessed at different points in the permitting process but, generally

<sup>4</sup>DSD hired a consulting firm to conduct a study of its fees and costs to provide services. The study determined that DSD only recovered approximately 86% of its costs and recommended that they adopt a new fee schedule that more closely aligned fees with costs.

speaking, DSD collects fees at two key stages: project submittal and permit issuance. Customers pay submittal fees at the time they are ready to submit their project plans for review. These fees include certain applicable fees and the plan check fee, which is determined by a Plan Review Specialist (PRS) based on information provided by the customer about the project scope. Plan check fees are designed to cover DSD's costs to review and approve building projects.<sup>5</sup>

After intake, the project is routed to the discipline reviewers, who verify the information entered and may modify the submittal fees if they determine the actual scope of work is different than that determined by the PRS. While the PRSs also assess the building permit fee and other applicable issuance fees at the time of submittal, it is the responsibility of the discipline reviewers to verify the accuracy of these fees. The building permit fee is designed to cover DSD's costs to inspect construction projects. The customer must pay all issuance fees before DSD issues a building permit or schedules inspections.

For certain larger or non-standard projects, DSD charges customers for the actual hours spent to review the project, rather than a fixed amount based on the type and scope of the project. For these projects, DSD collects an initial deposit from the customer and establishes a Trust Fund account. As DSD performs work on the project, it draws down the account to pay for costs. Customers may need to replenish the account if necessary and DSD returns any funds remaining in the account at the end of the project.

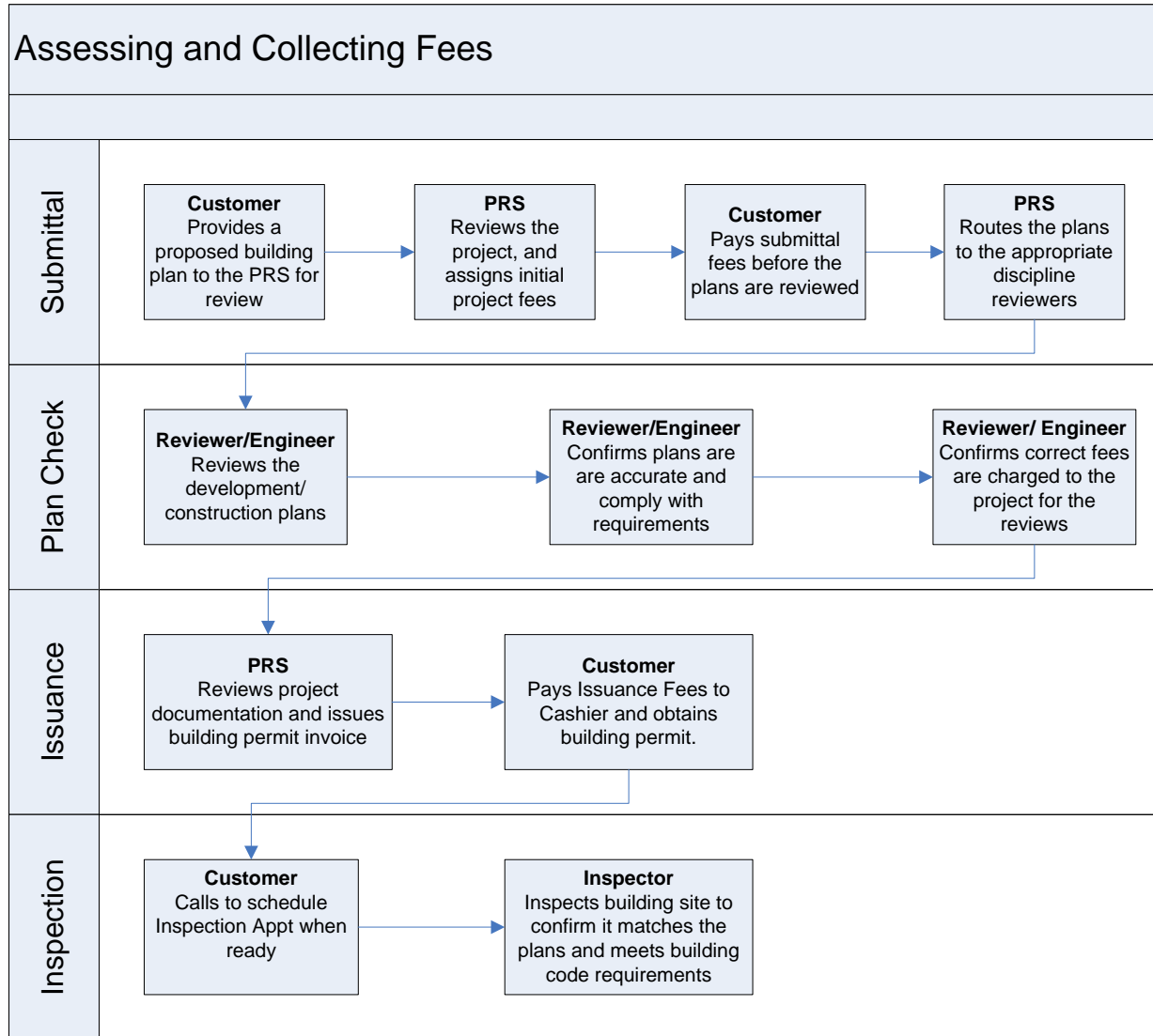
DSD also collects fees and deposits for other City departments, including the Environmental Services Department, Transportation and Storm Water Department, and Public Works Department, as well as for the state, county, and other government agencies.

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<sup>5</sup> In some instances, an hourly review fee might be charged in addition to or in lieu of the plan check fee.

**Exhibit 4**

**Construction Permit Review and Fee Assessment Process**



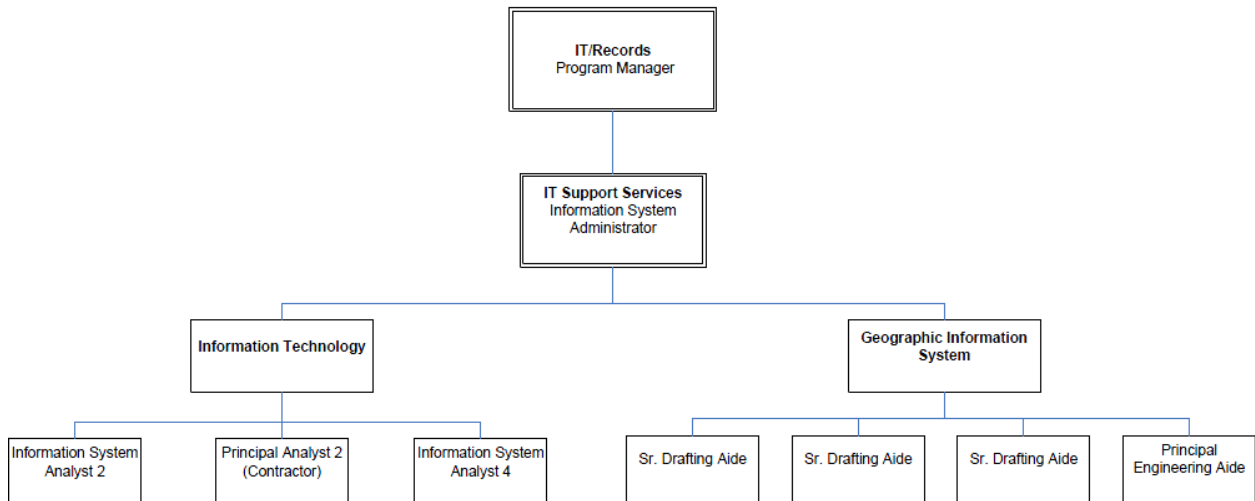
Source: OCA generated based on DSD's permitting process.

**Project Tracking System** DSD relies on one core information system—the Project Tracking System (PTS)—to manage its permitting and development functions. PTS is an in-house system, which DSD IT staff began developing in 1998. PTS first went into production in 2001 but DSD has added several additional modules since then to enhance the system's capabilities.

The group maintaining the system's functionality within DSD currently consists of the DSD IT Program Manager, who oversees the Systems Administrator, and two System Analysts. The IT Support Services group also includes the Geographic Information Systems (mapping) group. **Exhibit 5** illustrates the IT Support Services group below.

**Exhibit 5**

**Organizational Chart of DSD's IT Support Services Group**



Source: OCA generated from the City's SAP Personnel Data

DSD did not initially design PTS to be a financial system; however, PTS manages fee collection data, which it transfers to the City's financial system, SAP, through a nightly interface. PTS is a project management system that DSD staff use to:

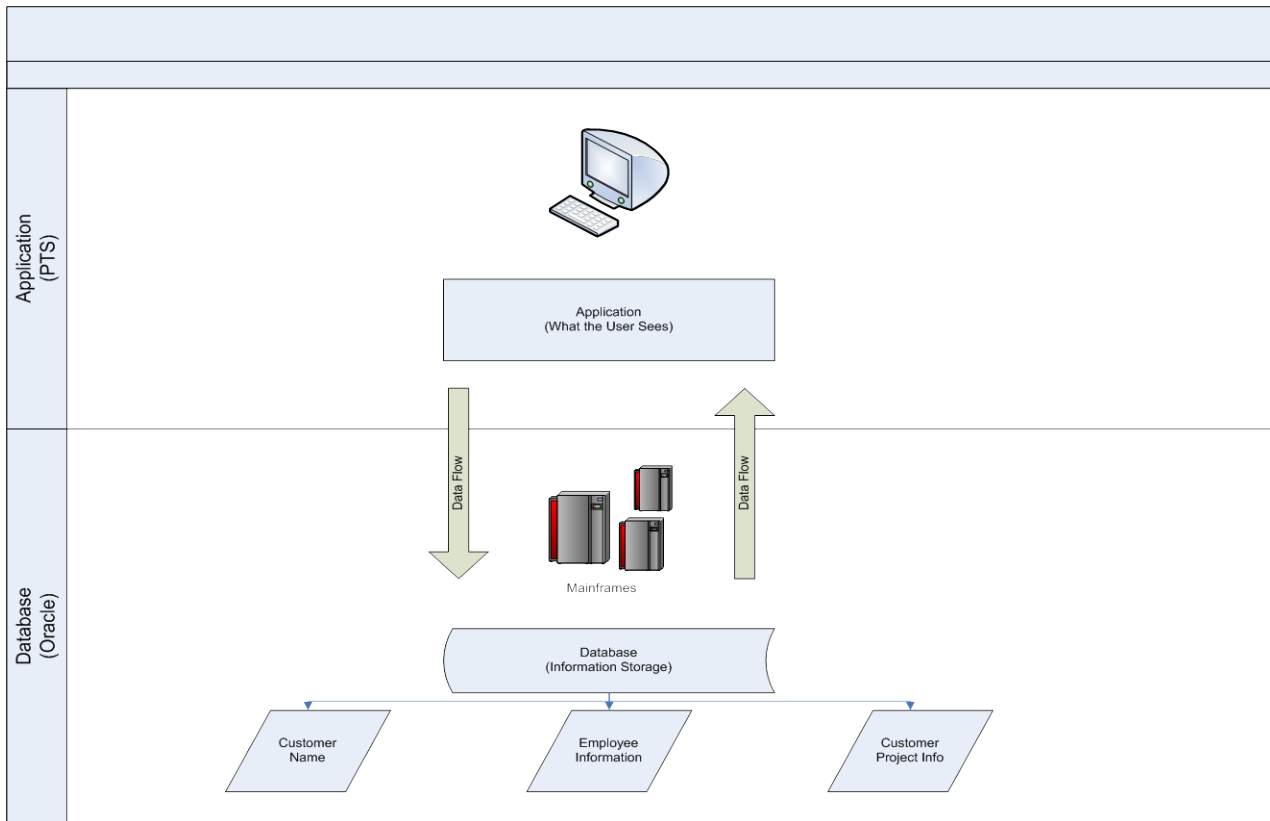
- Track and coordinate each stage of the permitting and development process, including necessary reviews, inspections, and approvals;
- Calculate fees and invoice customers;

- Manage public counter operations, including scheduling appointments and monitoring customer queues;
- Generate reports on permit activity;
- Monitor staff efficiency and workloads;
- Track code enforcement activities;
- Record project and customer information; and
- Identify the site conditions for development.

PTS, as with most information systems, is comprised of two key components: the *application*—the portion of the system that users see and use to retrieve and enter information, and the *database*—where all data that users enter or retrieve through the application is stored and maintained. An illustration of this concept is presented as **Exhibit 6**.

**Exhibit 6**

**Illustration of the Relationship between the Key Components of an Information System: Application and Database**



Source: OCA generated based on a typical application and database relationship.



*System Access* DSD restricts PTS access to City staff who have a business need to use the system and all users are required to log-in with a valid username and password. However, DSD does allow the public to have read-only access through computer terminals located at the DSD public counter. As with most information systems, DSD further restricts access to PTS by assigning each user a set of "access rights" or "user roles," which limits what functions they can use and what information they can see and/or edit.

## Audit Results

### ***Finding 1: DSD has not Implemented Sufficient Controls over its Project Tracking System to Adequately Mitigate the Risk of Improper Activity***

While DSD has implemented certain standard controls over its Project Tracking System (PTS), we identified significant control weaknesses that provide IT management and staff numerous opportunities to improperly modify the PTS application software and critical system data. While we did not identify any specific instances of improper activity, doing so would be extremely difficult, if not impossible, due to the serious monitoring and detection control deficiencies we identified.

We also found that employees have greater access to PTS' capabilities than they likely need and that numerous employees have access to a combination of user roles that present Separation of Duty issues. We further noted that DSD has relied heavily on the historical knowledge of PTS' architect, who is also the current DSD IT Program Manager, to manage and maintain the system. Additionally, it has not adequately documented system processes, which could lead to system breakdowns and instability if the DSD IT Program Manager were to terminate employment with the City.

#### **DSD's IT Staff Can Circumvent Controls and Make Unauthorized and Undetected System Modifications**

We found that DSD has not implemented sufficient controls to prevent or detect unauthorized modifications to PTS or its data. To mitigate the risk of unauthorized and/or improper changes to information systems, the City's Department of Information Technology requires departments to establish and follow a formal Software Change Management (SCM) process. SCM is a standard IT process for managing and controlling system modifications. We provide a diagram of a typical SCM process in **Appendix C** for reference.

While organizations implement specific SCM programs differently, certain core principles should be followed, including:

- Establishing and enforcing a formal documented process for reviewing and approving system modification requests;
- Using three separate "staging environments" to create, test, and execute system modifications, and restricting user access to each environment based on operational need;
- Monitoring system modifications to detect unauthorized activity; and
- Establishing formal comprehensive policies and procedures.

DSD has incorporated some of these standard controls in its SCM process, such as using a three-stage environment and standard programming software to manage code changes. However, DSD's SCM process is deficient in several critical areas—detailed in the next four sections.

*SCM Approval Process is Ineffective*

The DSD IT Program Manager position reviews and approves requests to modify PTS but, at the same time, has access to make changes directly to the system's database. This represents a Separation of Duties weakness that undermines the purpose of the SCM approval control—to prevent individuals from making system modifications without appropriate review and authorization, and to prevent the "approver" from approving work that he or she performs.

This control weakness is further exacerbated by the fact that no one with supervisory authority over DSD's IT Program Manager position has the time or IT proficiency to monitor the position's activities and detect modifications. Consequently, DSD's IT Program Manager position could easily make inappropriate modifications to PTS data that would likely go undetected.

It is not uncommon for organizations with small IT divisions, such as DSD, to have challenges implementing Separation of Duty controls because there are a limited number of staff with whom responsibilities can be split. However, the fact that DSD's IT Program Manager position authorizes changes to PTS, yet

also has access to directly make changes, conflicts with the purpose of the SCM approval process. DSD should immediately remediate this SCM control weakness by removing the IT Program Manager position's programmer account and direct login access to the system's database.

*SCM Access Controls do not Adequately Prevent Unauthorized Modifications*

While DSD designed PTS so that modifications can be made using the three standard SCM staging environments (illustrated in **Appendix C**), we found that IT staff can easily circumvent this control. Programmers should only be allowed to modify the system when it is in the "Development Environment" and then request the System or Database Administrator to move the changes to the "Test Environment," and subsequently to the "Production Environment." We found that most DSD IT analysts have access to directly modify the system database in the Production Environment, and two users have access through multiple accounts.

Allowing IT staff to circumvent the SCM three-stage control is problematic for two reasons. First, it defeats the purpose of the three-stage environment—to have a systematic and controlled process for approving and implementing modifications. Second, it puts DSD at risk because programmers can make unauthorized modifications to PTS' database that might impair its normal functioning. Such an occurrence would impact both DSD's daily business operations, as well as building and development activity within the City.

Additionally, DSD IT analysts should not have access to make PTS programming changes through multiple accounts. It is difficult to detect inappropriate changes when users make modifications using different log-in identification credentials. Moreover, modifications made using each individual account may look harmless but, when combined, could be damaging to the system.

Programmers also have access to an unmonitored account that has several database administrator privileges.<sup>6</sup> We found that one programmer regularly logs into this account to modify the PTS database. While it appears that these changes are related to

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<sup>6</sup> The unmonitored privileged account labeled "CHRISTIANSTEVEN" does not belong to any City user and appears to be a third-party reporting account.

routine system maintenance, we could not determine the full extent to which this account is used because PTS does not retain comprehensive logs of user activity—a separate issue that we discuss in more detail later in this report.

We also found that this account has access to the encrypted password file for all PTS users. This is a control weakness because any skilled programmer with access to this file could obtain all PTS usernames and passwords, and in turn, log into the database as anyone. For example, a programmer can modify information related to a building project, including the fees charged, using someone else's log-in information. In doing so, the change could never be traced back to the programmer.

Allowing IT programmers to have extensive privileged access to the Production Environment presents a serious risk to DSD and the City by providing access to make unapproved changes to the live system. Consequently, DSD should ensure it follows standard SCM protocols and immediately restrict IT programmer access to the Development Environment. There may be emergency situations in which a programmer needs to make changes directly to the Production Environment; however, DSD should limit programmer access through a restricted number of highly monitored accounts designated for this purpose. In addition, the permissible use of these accounts should be governed through formal policies.

*SCM Detection Controls  
can be Disabled by IT  
Staff*

Exacerbating DSD's poor SCM approval and access controls—discussed above—is the fact that DSD has not established adequate controls to monitor and detect system modifications. While PTS does automatically record certain activities through database triggers, the level of information tracked is not sufficient to serve as an effective security feature. Most triggers only record the name and timestamp of the first and last person to modify the data. The triggers do not record other critical information necessary for effective monitoring, including how the data was altered or an audit trail of all changes made over time.

City Administrative Regulation (AR) 90.63<sup>7</sup> requires applications to generate logs showing every addition, modification, and deletion of financial or sensitive information and provide sufficient data to audit the effectiveness of, and compliance with, security measures.

Moreover, DSD programmers also have the ability to disable several system triggers through both their own accounts and unmonitored privileged accounts. These triggers include those intended to monitor activity on deposit accounts and building permit fee tables. Standard IT security protocols recommend that no user other than the database administrator, currently an employee of San Diego Data Processing Center, have access to modify trigger entries, or prevent a system trigger from recording system activity.

We identified five instances in which a programmer disabled system triggers between March and November 2010. In three of these instances, the programmer disabled accounting table triggers while logged on as the Accounting User, which has ownership of accounting tables. While we could not determine what activity the programmer was performing, allowing staff to disable system triggers only further hinders DSD's limited monitoring capabilities. Disabling triggers enables programmers to make modifications without a way to identify what they changed and when they made the change.

However, even if triggers are not disabled, the risk of unauthorized changes to data still exists because PTS does not record a complete history of changes for many types of data. Once someone updates the record in PTS, there is no longer a trace that it had been previously changed. These detection control weaknesses create an unacceptable risk that programmers can make database changes to building project or financial data without a way to identify who made the change or that a change had been made.

DSD must ensure that programmers do not have access to disable system triggers in the live (Production) environment through their accounts or other privileged accounts. This can be

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<sup>7</sup> Administrative Regulation 90.63, "Information Security Policy," was adopted on June 30, 2011.

accomplished by removing programmer access to the Production Environment and locking access to privileged accounts. Further, all passwords for privileged system accounts should be changed once the programmer access has been removed. Finally, DSD should ensure PTS records a detailed audit trail of key information, including the prior data entries, the username of the individual who changed the data, and the timestamp.

*SCM Policies and  
Procedures are  
Poorly Documented*

Because of the inherent risk around the SCM process, the City's Information Security Guidelines & Standards require departments to formally document their SCM procedures. DSD has a very brief guideline for its SCM procedures related to the PTS application but the document does not address modifications to the database. In addition, the document only discusses a fraction of elements that we would expect to see in a comprehensive SCM policy. For example, DSD's guidelines do not include the following standard elements:

- A detailed description of the procedures for each environment to ensure system modifications run as expected in the Production Environment.
- A description of permissible user access and rights within each environment.
- An explanation of how the system administrator moves system changes between the Development, Test, and Production (live) Environments, and a description of the controls over this process to prevent unauthorized changes from being moved between each environment.

Formal documentation of any critical business process is important because it promotes standardization, efficiency, and transparency. Moreover, it is particularly important for management to ensure appropriate controls over the SCM process because programmers are generally sufficiently knowledgeable to execute programs in the live environment outside or around the change control process. Comprehensive SCM documentation is important to help DSD management identify control weaknesses and correct deficiencies that may compromise the functionality and security of PTS. Consequently, DSD must comprehensively document its SCM process, including the associated risks and controls for each environment.

**Recommendation #1** The Development Services Department (DSD) must immediately implement controls in the Project Tracking System (PTS) Production Environment to prevent inappropriate modifications to PTS. Specifically, DSD should instruct the Database Administrator to:

- a) Remove the IT Program Manager position's programmer account and ability to directly log into the system's database.
- b) Remove programmer access to the Production Environment.
- c) Remove programmer access to privileged accounts, except those used by the database administrators and for emergency fixes, by locking the accounts and changing the passwords. Where privileged accounts are required for emergency fixes, DSD should limit programmer access through a restricted number of highly monitored accounts. In addition, the permissible use of these accounts should be governed through formal policies.
- d) Ensure that programmers do not have access to modify or disable system triggers in the Production Environment.
- e) Ensure PTS records a detailed audit trail of key information, including the prior data entries, the username of the person who changed the data and the timestamp noting when the change occurred.

DSD should also direct the System Administrator to comprehensively document the Software Change Management processes, and associated risks and controls for each environment. (Priority 1)

**DSD does not Sufficiently Restrict Employee Access to PTS or Enforce Separation of Duty Controls**

We found that DSD does not adequately restrict user access within PTS, allowing employees to do more in the system than is likely necessary for their position. We also found that DSD does not comply with its own Separation of Duty policy and allows a number of employees to have user roles that may present a conflict of interest. Lastly, we noted that the DSD IT Program Manager position oversees two operational divisions in addition to the IT function, creating a potential conflict of interest through this unusual organizational arrangement.



*Principle of Least Privilege* In any organization, employees are typically assigned certain responsibilities and, if their job requires use of an information system, they are given access to the computer functions that are necessary to accomplish their responsibilities. A standard IT access control, called the Principle of Least Privilege, dictates that employees be given no more access to a computer system's functions than is necessary to perform his or her job. Moreover, compliance with this principle is now a requirement of City Administrative Regulation (AR) 90.63.

Contrary to the Principle of Least Privilege and City AR 90.63, DSD grants its employees more access to PTS than is likely operationally necessary for their position.

First, we noted that PTS user roles allow a broad range of access. For example, we noted that the "fee charger" role allows users to add, remove, or modify fees for any project in the system. The role is not restricted based on the type(s) of projects an employee is responsible for reviewing, the fees they assess, or the actual projects to which they are assigned. In other words, staff with the 'fee charger' role in PTS have the ability to modify fees on project types that they are not reviewing.

Second, we found that DSD grants supervisors and managers broader access to PTS than operations staff. Typically, in a well-controlled environment, the reverse is true. For example, we noted that DSD's Director position has access to more PTS user roles than almost any other employee, giving DSD's executive almost universal access to the system. Some of these roles include "plan reviewer," "fee charger," "job site inspector," "submittal counter," and "customer administrator."

Because of the Director position's authority and the fact that no one oversees the Director's work, it is not appropriate for this position to have such extensive capabilities, particularly charging fees and signing-off on inspections. This level of access, combined with DSD's poor system monitoring and detection controls, creates the potential for fraud and abuse and therefore, the Director position's access should be restricted primarily to viewing necessary project information.

We also found that supervisors are assigned both "approver"

and "doer" roles within PTS. Typically, supervisors should not have system access to perform the work they oversee; rather, access should be restricted to approving work completed by their staff. DSD has indicated that its supervisors need to have "doer" and "approver" roles since staff shortages necessitate that they perform operational functions.

To ensure compliance with AR 90.63, DSD should review all system roles and user access and limit the capabilities, as necessary. If broad access is required for operational needs, DSD should ensure it establishes appropriate compensating controls, such as assigning a senior manager to review projects completed by supervisors.

*Separation of Duties  
Conflicts*

DSD's security policy identifies two user role combinations that result in a Separation of Duties conflict: 1) "Cashier" with "Fee Charger" and 2) "Global Sign-off" with "Document Overrider." We identified 27 users whose privileges were in conflict with this policy. We also identified a number of employees who have user role combinations that were not identified as a conflict in DSD's security policy, but may present a potential conflict. For example, we noted that 169 users have the ability to charge fees and assign inspectors, and 108 users can charge fees and sign off on inspections. Allowing access to these role combinations presents an opportunity for fraud and abuse. For example, an employee could potentially charge a customer a discounted fee by intentionally assigning a scope of work that is smaller than the actual size of the project and then sign-off on the building inspection so that the discrepancy between the actual scope of work and PTS documentation would not be detected.

We also found that DSD has not adequately documented user roles, including identifying the exact capabilities of the each role and any associated controls. Consequently, it is difficult for anyone not familiar with the system to identify role combinations that may result in an insufficient Separation of Duties.

DSD should review current user roles, document the rights and access of each, identify all possible combinations that present a potential conflict of interest or Separation of Duty issue and immediately remove any conflicting role combinations. DSD

should also revise its security policy, as necessary.

We also noted that two operational divisions—the Cashiers Group and Records Management—report to the DSD IT Program Manager position. The DSD IT Program Manager position also oversees the nightly interface of all of DSD's financial data to SAP. While we did not identify any improper activity, it is not appropriate for DSD's IT Program Manager position to supervise the individuals who collect and reconcile DSD's fees and transmit that information to City Treasurer's and Comptroller's Offices. This organizational arrangement presents an increased risk of fraud through customer billings or the reconciliation of money received with the City's core financial system. DSD should immediately restructure its operations to ensure proper separation between the IT function and operations.

- Recommendation #2** In order to reduce the risk of inappropriate system use by an employee, DSD should perform a Separation of Duties (SOD) assessment to ensure that employees only have the access they need to perform their functions, complying with the principle of least privilege. Specifically, DSD should:
- a) Review all PTS user roles and limit the capabilities for roles that provide broad access to PTS' functions.
  - b) Review current user access to PTS' roles and restrict access to only those roles necessary and appropriate for each user's function. This includes restricting the DSD Director's access to a more appropriate level, such as "read-only."
  - c) Review current role combinations to ensure that no combination grants excessive or inappropriate access, and immediately remove any conflicting combinations.
  - d) Create a comprehensive policy that identifies all prohibited role combinations and documents compensating controls to mitigate any risk when a segregation of duty conflict must exist for business purposes. (Priority 1)

**Recommendation #3** DSD should restructure its organizational arrangement so that the DSD IT Program Manager position no longer oversees both the IT function and the individuals who collect and reconcile fees and transmit that information to the City Treasurer and Comptroller's Office. (Priority 1)

**DSD is Vulnerable to a System Failure due to Over-Reliance on the IT Program Manager and Lack of Documentation**

DSD is exposed to an operational disruption because it has relied on one position to manage its most critical system and has not adequately prepared for the possibility that this role may need to be unexpectedly transitioned to another person.

DSD's IT staffing is lean for a system that regularly undergoes updates and improvements. While one of DSD's contracted IT analysts appears to be knowledgeable about PTS, the department primarily relies on the expertise of DSD's IT Program Manager—PTS' original designer and architect—to ensure the daily operability of PTS. Reliance on one individual for a critical business function poses a significant amount of operational risk for any organization. This risk can be mitigated if processes are adequately documented so that the function can be transitioned quickly and easily to another manager, if necessary. However, we found that DSD has not comprehensively documented system processes, and as a result DSD is at risk of a system failure.

In addition, lack of documentation can create operational inefficiencies because any new staff will likely require significant time to learn the system. Comprehensive documentation reduces the amount of "downtime" required for new IT staff to learn the system and allows them to quickly take over necessary responsibilities.

The PTS documentation that DSD does maintain is based on the system's original design specifications from more than a decade ago. The documentation does not reflect any of the numerous updates and improvements that have taken place since that time. Further, this outdated documentation is not sufficiently detailed to help someone unfamiliar with PTS learn the system quickly. Documentation should outline current key processes, detail role access, and specify controls surrounding business processes to help prevent permitting mistakes and incorrect

billings.

It appears that DSD has not comprehensively documented the system due to a combination of factors, including competing operational priorities, limited staff resources, and no urgency because they have always relied on the knowledge and expertise of the system designer. However, investing in documentation is important to avoid the risk of potential system breakdowns associated with unexpected knowledge loss.

It is particularly critical for DSD to maintain comprehensive system documentation because PTS is not in a mature state, which means it is frequently updated and enhanced rather than only requiring simple routine maintenance. Consequently, managing PTS requires a certain level of expertise that is not necessary for a mature system. If the system's functions and processes are not adequately documented, it will be more difficult for someone unfamiliar with PTS to make the necessary enhancements and updates to ensure it continues to meet DSD's business needs.

Because DSD has heavily relied on the knowledge and expertise of its IT Program Manager without adequately documenting the system, it is exposed to operational risks ranging from business inefficiencies and increased IT costs to critical system and business disruption. As such, DSD should take immediate action, including documenting critical PTS processes, to mitigate any potentially significant operational impacts of an unexpected management/staffing change.

*City's IT Sourcing  
Strategy*

In fiscal year 2011, the City hired a consulting firm to assess the City's IT environment and develop a strategy for outsourcing IT services. The overall purpose of the "IT Sourcing Strategy" was to reduce the City's costs for supporting IT services. Additional objectives included eliminating obsolete technologies and bringing the City's IT services in line with industry standards.

Ultimately, the consultant recommended that the City outsource five primary IT functions, including Application Development and Maintenance (ADM), which in the case of PTS is currently performed by DSD IT staff. The City is in the process of finalizing its contract with the ADM service provider. According to the Department of Information Technology

management, DSD's ADM functions will be transferred to the vendor; however, the timeline for completing the transfer has not yet been defined.

When PTS is managed by the vendor, over-reliance on one individual will no longer be a concern. In addition, the vendor will require comprehensive documentation of PTS, including documentation of all future modifications, to meet standard IT improvement requirements. Outsourcing PTS maintenance should also help ensure that many of the other issues we identified in Finding 1 are permanently resolved, including standardizing DSD's SCM process with the rest of the City and mitigating the IT SOD conflicts by organizationally separating IT staff and management. Consequently, DSD should facilitate outsourcing PTS maintenance to the selected vendor as soon as feasible after the contract has been finalized.

**Recommendation #4** The Development Services Department (DSD) should immediately begin comprehensively documenting PTS and facilitate the transition of Application Development and Maintenance (ADM) functions to the ADM vendor as soon as feasible. Further, DSD must ensure that the vendor takes over management and monitoring of all privileged accounts in the production environment. (Priority 2)

***Finding 2: DSD Staff do not Consistently Charge Accurate Permit Fees and Deposits due to Multiple Issues Including Deficiencies in PTS***

Our audit found that Development Services Department (DSD) staff make a significant number of errors assessing deposits and fees<sup>8</sup> in the Project Tracking System (PTS), and we noted projects that had been undercharged by as much as \$37,000 and overcharged by as much as \$345,000.<sup>9</sup> Consequently, customers cannot be assured that they are charged accurate fees in accordance with DSD's published fee schedules. We found that the errors appear to be due to a number of factors, including:

- Varying staff skill levels;
- Staffing assignments that do not compensate for DSD's inherently complex development process and fee schedule;
- Limited supervision;
- High staff workloads; and
- PTS' unintuitive and cumbersome system design and lack of logic-checking and automation features.<sup>10</sup>

DSD's fees are designed to recover costs for reviewing and processing permit applications and inspecting construction projects. As a result, charging and collecting accurate fees is essential to safeguard the financial health of the Development Services Enterprise Fund and ensure that customers are charged fairly.

**DSD Staff Do not Consistently Charge Accurate Permit Fees**

In May 2011, DSD began "auditing" the accuracy of project information, including fees, entered into PTS by the Plan Review Specialists (PRS) at the first stage of the permitting process.<sup>11</sup>

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<sup>8</sup> We identified errors charging both permit fees and deposits, specifically the Construction and Demolition Debris Recycling (C&D) deposit. For purposes of simplicity, the term 'fees' as used in this section refers to both permit fees and the C&D deposit.

<sup>9</sup> The Environmental Services Department noticed the overcharge 11 days after the transaction occurred and refunded the overpaid amount.

<sup>10</sup> Logic checks are features of a system which ensure data is entered accurately and alert the user when data entered may be erroneous and in need of correction.

<sup>11</sup> Plan Review Specialist supervisors audit staff work setting up projects and charging fees during the project submittal process. We reviewed the results of 197 audits of projects that were performed between May and

After weighting the results to account for differences in audit frequency and staff workloads, we estimate that approximately 20 percent of projects submitted during the period covered by the audits were assessed at least one fee incorrectly during project setup.<sup>12</sup> Because this is the first point in the permitting process, and DSD staff assess and collect fees at multiple stages, many of these initial errors may be corrected before the customer pays the final invoice and obtains a building permit.

However, we also reviewed a random sample of 32 projects that were issued building permits between January 2010 and May 2011 and found that seven (22 percent) were charged fees that were inconsistent with DSD's published fee schedules.<sup>13,14</sup> This indicates that errors initially made by the PRSs are not always identified and corrected by the discipline reviewers, such as structural engineers, or other staff as the project moves through the various review and approval cycles. In addition, we noted that discipline reviewers make additional mistakes assessing fees during their review.

While we cannot project the estimated dollar value of the fee errors for the period we reviewed,<sup>15</sup> the high incidence of errors identified in both DSD's internal audits and our random sample of issued building permits indicates that DSD's customers are not consistently charged accurate permit fees.

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September 2011. The Program Manager for the Submittal group stated that DSD plans to continue conducting audits during the submittal process.

<sup>12</sup> Overall, 28 percent of the audited projects had at least one error. Some staff were audited more than others, and some staff have higher workloads than others. Weighting the results based on these factors, we estimate that PRS staff made fee charging errors on approximately 20 percent of projects they processed during project submittal. While this weighting approximates a statistical random sample, it does not allow us to assign a confidence interval to our results. This estimate is reflective of staff errors only. In some instances supervisors also process project submittals. Supervisors' project submittals were not audited for fee accuracy.

<sup>13</sup> We selected a population of 3,768 building permits that were issued between January 2010 and May 2011. This population was limited to projects that included less than five permit approvals and that were charged fees based on the square footage of the project.

<sup>14</sup> We reviewed a sample of 32 projects, and found that seven were charged incorrect fees. Based on the size of the sample and the number of errors found, we estimate with 95% confidence that the actual error rate for the total population of 3,768 projects is between 9.3 percent and 39.9 percent. While our sample was sufficient to estimate the percentage of projects that were mischarged fees, we were not able to estimate the total dollar value of fees that DSD either over- or under-charged on the final invoices customers paid at issuance.

<sup>15</sup> Our assessment of fees charged during submittal by Plan Review Specialists is based on DSD's own "audits" of projects (project submittal audits) conducted by supervisors. Because these audits did not consistently document what fees were mischarged or by how much they were mischarged, we could not estimate a dollar value of fees that DSD either over or under charged at the submittal phase.<sup>16</sup> The City Council approved the C&D deposit program on December 18, 2007 (O-19694); however, the City did not begin collecting deposits until July 1, 2008.



We found that staff incorrectly assessed many different types of fees, including: plan check fees; building permit fees; state seismic and green building fees; lead hazard fees; mapping and general plan maintenance fees; and the City's Construction and Demolition Debris Recycling deposit (C&D).. However, the C&D deposit was the most frequently mischarged item that we identified.

*DSD Makes Significant Errors Assessing the Construction and Demolition Debris Recycling Deposit*

The City implemented the C&D deposit program in 2008<sup>16</sup> to encourage residents to recycle construction debris in order to extend the useful life of the Miramar Landfill and improve compliance with state recycling laws. Under the program, most customers obtaining a building permit are required to pay the C&D deposit, which is refunded if they provide evidence that at least 50 percent of the project debris was diverted away from landfills. The average C&D deposit from fiscal year 2009 to fiscal year 2011 was \$2,309.

While the Environmental Services Department (ESD) is responsible for administering the C&D program, DSD calculates the deposit, which is based on the type of project and the square footage of work proposed. DSD also collects payment from customers, then transfers the funds to ESD. Having already identified that the C&D deposit was the item most frequently mischarged by DSD, we reviewed a judgmental sample of C&D deposits collected in fiscal year 2011<sup>17</sup> and identified a number of projects where DSD significantly over- or undercharged the C&D deposit. We provide a table of specific cases in **Exhibit 6**, but a summary of the most significant examples include:

- A large multi-family housing project that was ***overcharged by \$345,000***;<sup>18</sup>
- An office building remodel project that was ***undercharged by \$35,000***; and
- A grocery store remodel project that ***was not assessed any of the required \$37,000 deposit***.

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<sup>16</sup> The City Council approved the C&D deposit program on December 18, 2007 (O-19694); however, the City did not begin collecting deposits until July 1, 2008.

<sup>17</sup> Our judgmental sample was selected based on information provided by ESD identifying projects that were likely mischarged for the C&D deposit.

<sup>18</sup> The Environmental Services Department noticed the overcharge 11 days after the transaction occurred and refunded the overpaid amount.

**Exhibit 7**

**Selected Projects Mischarged the C&D Deposit During Fiscal Year 2011**

DSD Assessment			Correct Assessment			TOTAL AMOUNT OVER/ (UNDER) CHARGED
C&D Type	Square Footage	Deposit Amount	C&D Type	Square Footage	Deposit Amount	
Res New SDU / DUP	1,087,955	\$385,182	Res New MDU	-	\$40,000	<b>\$345,182</b>
Non-Res Alteration	74,587	\$52,211	-	35,000	\$24,500	<b>\$27,711</b>
Res New MDU	72,000	\$28,800	Ind'l New Const	-	\$14,400	<b>\$14,400</b>
Res New MDU	51,929	\$20,772	Ind'l New Const	-	\$10,386	<b>\$10,386</b>
Res New MDU	34,147	\$13,659	Comm. New Const	33,609	\$5,000	<b>\$8,659</b>
Not Charged	None	\$0	Comm. New Const	81,467	\$5,000	<b>(\$5,000)</b>
Not Charged	None	\$0	Non-Res Alterations	15,405	\$10,703	<b>(\$10,703)</b>
Res New SDU	37,659	\$15,064	Non-Res Alterations	-	\$26,361	<b>(\$11,298)</b>
Non-Res Alterations	5,898	\$4,129	-	37,501	\$26,251	<b>(\$22,122)</b>
Not Charged	None	\$0	Non-Res Alterations	49,986	\$34,990	<b>(\$34,990)</b>
Comm. New Const	57,567	\$5,000	Non-Res Alterations		\$40,297	<b>(\$35,297)</b>
Not Charged	None	\$0	Non-Res Alterations	53,820	\$37,674	<b>(\$37,674)</b>

Note: Shaded areas indicate staff data entry errors that resulted in incorrect fees.

Source: OCA generated using data from ESD and PTS.

The City Council adopted the C&D deposit program to improve construction debris recycling rates, and ESD asserts that the C&D program was a driving factor in increasing the City's waste diversion rate to a record 68 percent in calendar year 2010.<sup>19</sup> For the program to work as intended, DSD must collect the correct Council-approved deposit amount. When DSD undercharges or fails to charge the deposit, customers have less incentive to recycle their construction waste since the recycling cost might exceed their expected deposit refund.

<sup>19</sup> The City's waste diversion rate for calendar year 2011 will not be available until mid-2012.

In addition, ESD uses any un-refunded deposits to administer the program and support other programs that reduce landfill waste. According to ESD management, un-refunded deposits generated approximately \$1.7 million in revenue between fiscal year 2009 and fiscal year 2011. Undercharging or failing to collect the deposit, therefore, also results in a loss of revenue for City recycling programs.

ESD periodically reviews reports on permits issued that are provided by DSD in order to monitor C&D deposit activity and ensure that DSD is charging the deposit accurately. ESD does not seek to collect underpaid deposit amounts from customers because the deposit cannot be collected after permit issuance. However, when ESD notices that DSD has overcharged a customer for the deposit, they issue a refund of the overpaid amount to the customer. In some cases, ESD does not notice overpayments for several months, in part because reviewing and analyzing the reports provided by DSD is very time consuming. The shortcomings of the reports provided by DSD are discussed in greater detail later in this report.

*Fee Errors Result From Multiple Issues, Including Deficiencies in PTS*

We found that DSD's fee errors are likely attributable to the combined effect of several factors, including a complex fee structure, varying staff skills, increased workloads, insufficient supervision and lack of controls within PTS to facilitate accurate and consistent fee assessment.

We recommend that DSD make multiple improvements to PTS, increase supervisor oversight of staff work charging fees, and make adjustments to staff assignments to reduce errors charging fees. The following sections discuss each of the factors that lead to inaccurate fee assessment in greater detail.

*Staffing Constraints and High Workloads Present Challenges in Assessing Accurate Fees*

We reviewed DSD's own submittal "audits"<sup>20</sup> and found that most Plan Review Specialists (PRSs) made significant errors charging fees at project setup. However, the error rates varied widely by individual staff member—even amongst those who have held their positions for a number of years.

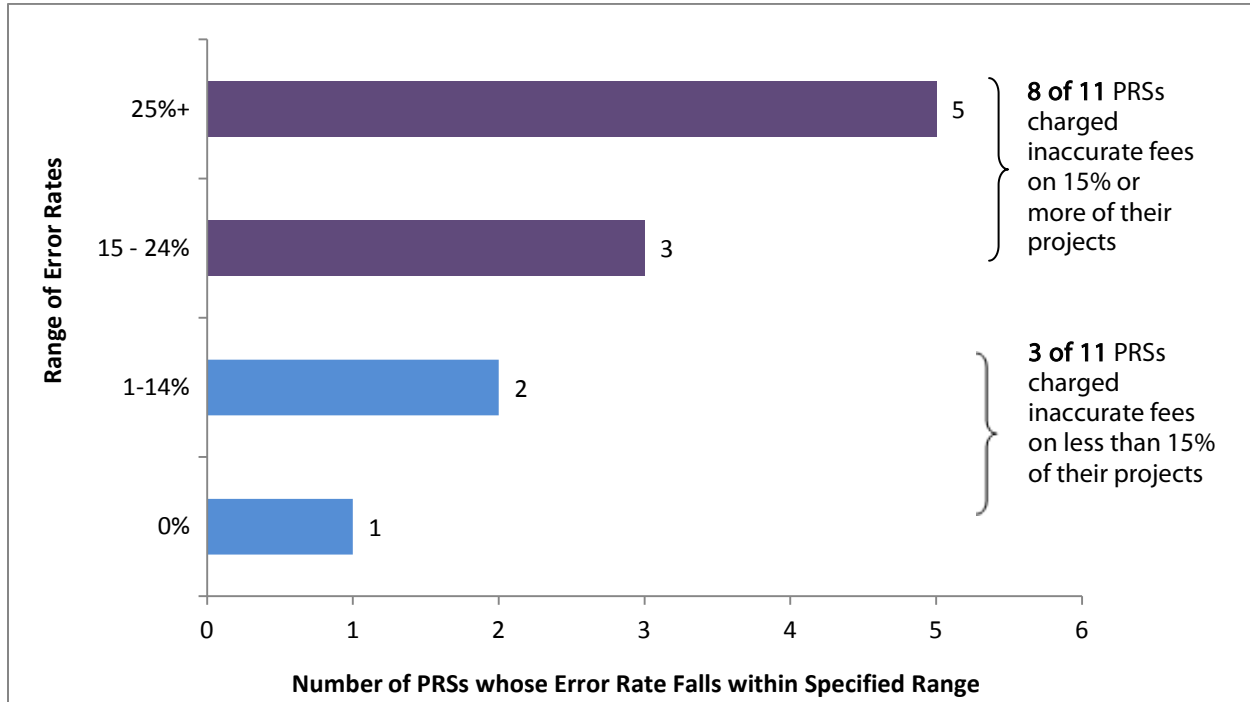
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<sup>20</sup> PRS supervisors audit staffs work charging fees during the project submittal process. We reviewed the results of 197 audits of projects that were performed between May and September 2011.

As **Exhibit 8** shows, only three of 11 PRSs made errors on less than 15 percent of their audited projects, while five staff members made errors on 25 percent or more of their audited projects. In addition, only one PRS made no errors charging fees, while another PRS' error rate was 52 percent.

**Exhibit 8**

**Total Number of PRSs with Error Rates Falling within Specified Ranges**

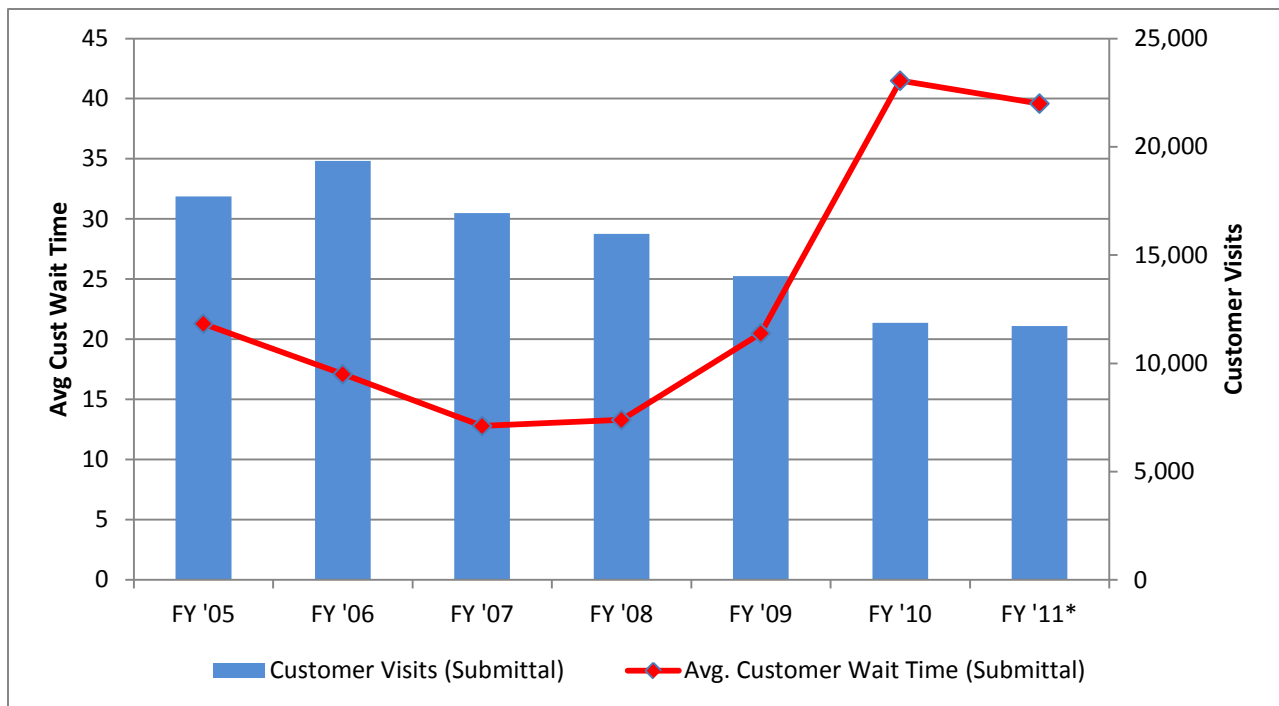


Source: OCA generated based on analysis of submittal audits completed by PRS supervisors between May 1, 2011 and September 30, 2011.

We found that increased workloads may contribute to fee errors. As shown in **Exhibit 9**, customer wait times have increased significantly despite an overall decline in permit activity since 2006—likely due to staffing reductions. PRSs stated that they often feel rushed when setting-up projects in PTS because so many customers are waiting to be served. Consequently, they indicated that it is easy to make mistakes.

**Exhibit 9**

**Customer Visits and Wait Times for Project Submittal Counters**



\*Note: DSD’s methodology for reporting submittal counter wait times changed in fiscal year 2011. We calculated overall submittal wait times by averaging wait times from all submittal groups.

Source: OCA generated based on reports provided by DSD

PRS also stated that changes in staffing assignments due to reductions in force may contribute to errors charging fees. Prior to staffing cuts in fiscal years 2009 and 2010 that reduced DSD’s staff by more than 50 percent,<sup>21</sup> PRS staff were assigned to groups that specialized in specific project types. This arrangement limited the total number of project types that PRS staff were responsible for processing—allowing them to become more familiar with certain project types and the associated fees.

According to DSD staff, when staffing reductions occurred, these groups no longer had sufficient coverage to effectively serve customers. In response, DSD restructured the Submittal/Issuance Group, and PRSs are now expected to be generalists—responsible for all types of building projects. DSD

<sup>21</sup> The number of filled positions funded by the Development Services Enterprise Fund declined from 535 positions in fiscal year 2005 to 264 positions in fiscal year 2012.

charges approximately 500 fees, and PRS staff said that it is difficult to be proficient in all of these fees and the corresponding project types.

The PRSs stated that DSD provides regular training on reviewing projects and assessing fees, yet as our testwork shows, staff continue to make significant errors. DSD management indicated that they are also addressing staff performance through the City's formal personnel review process. Consequently, we recommend that DSD also review current PRS workloads and the "generalist" staffing model, and determine if it can redeploy staff resources in a manner that more effectively meets its operational needs.

**Recommendation #5 The Development Services Department should:**

- a) Review its current staffing model for the Submittal and Issuance Groups;
- b) Determine if the "generalist" approach is the most effective option to meet operational needs and accommodate staff skills; and if not,
- c) Identify and implement an alternative staffing structure. (Priority 2)

**Recommendation #6 The Development Services Department should consider available options to reduce workloads in the submittal and issuance groups, including re-allocating staff resources to this function. (Priority 2)**

*Supervisor Review is not Sufficient to Minimize Errors Charging Fees*

Based on our testwork and interviews, it appears that supervisory oversight to compensate for staffing and organizational challenges is limited because the supervisors themselves are busy performing the work of the PRSs and processing projects. We reviewed workload reports provided by DSD and found that, between June and September 2011, the two supervising PRSs each spent, on average, over two hours per day<sup>22</sup> assisting customers at the counter, a task which is typically handled by staff PRSs. In addition, the acting Program Manager overseeing the Submittal Group spent

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<sup>22</sup> This is based on the 68 business days that DSD was open to the public between June and September 2011. DSD is closed to the public on Fridays, and was also closed for the Fourth of July and Labor Day holidays. Because we did not account for any vacation days that may have been taken by PRS supervisors during this time period, the average amount of time they spent at the counter per work day may be higher than we estimate.

approximately 40 minutes a day assisting customers at the counter during the same time period.

The Acting Program Manager stated that, prior to the staffing cuts described above, supervisors conducted regular audits of project set-up and fees at both the submittal and issuance stages. However, due to staffing shortages, supervisors could no longer routinely audit staff work because they were needed at the counter to assist customers. In May 2011, DSD resumed conducting audits of staff work at the submittal stage. Between June 2011 and September 2011 they audited approximately six percent of the projects that were submitted.<sup>23</sup> However, they still have not resumed audits at the issuance stage.

While we cannot say with certainty due to the short time frame covered by DSD's internal audits, it appears that these audits may be effective in increasing staff accuracy in charging fees. For example, PRSs who were regularly audited made fee mistakes on approximately 31 percent of their audited projects in July. In September, error rates for these same employees declined to an average of seven percent.

Supervisors in DSD's Structural Engineering section, which is responsible for adding some fees and verifying many of the fees entered by the PRSs, have also discontinued their audits of staff work in charging fees. These supervisors stated that the audits were discontinued when staff accuracy in charging fees improved.

We recommend that supervisors continue to conduct regular audits of staff work charging fees at the submittal stage and resume conducting regular audits of fees charged during structural engineering review and at project issuance in order to improve oversight of the fee charging process. In addition, DSD should develop a written policy that establishes a methodology for selecting projects, including the minimum level of projects to be audited each month.

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<sup>23</sup> We excluded May from this analysis because only two audits were conducted in that month.

**Recommendation # 7** The Development Services Department should continue to conduct and document regular audits of fees at project submittal and resume conducting and documenting audits of fees during structural engineering review and at permit issuance. DSD should develop a written policy that establishes a methodology for selecting projects, including the minimum level of projects to be audited each month. (Priority 2)

*PTS Does not Generate Reports to Assist Supervisors in Monitoring Fees Charged by Staff*

PTS does not generate reports to help its supervisors review the accuracy of fees charged by staff. Given that supervisors appear to have limited time to monitor staff work charging fees and that PTS lacks adequate controls to prevent errors—discussed in the next section—reports intended to help quickly detect errors would improve their ability to manage operations.

For example, the Program Manager for the Submittal Group stated that a common fee error made by staff is to leave the square footage used to charge a fee set at “1” (the default amount) instead of entering the correct square footage. The Program Manager said that if they were able to generate a comprehensive report from PTS that identified the square footage used to charge each fee, she would be able to sort the list and quickly identify those projects which were charged for only “1” square foot of work. Without reports, the only means for supervisors to verify that fees are accurate is through the time-consuming submittal audits.

**Recommendation # 8** DSD's IT staff should work with supervisors in charge of the Submittal Group and Structural Engineering to identify and create reports that would help them review fees charged by staff. (Priority 2)

*PTS is Complex and Lacks Functionality, Making Accurate Fee Assessment Difficult*

We found that staffing challenges are exacerbated by shortcomings in PTS. We found that PTS provides a basic system to track and manage permitting projects, but lacks many important features to help facilitate project set-up and minimize staff error. For example, PTS lacks logic check controls to identify errors in charging fees, auto-populating features to minimize duplicate data entry, and predictive controls to narrow data entry options based on previously entered



information. These features are common in modern software systems, and PTS' lack of these error-reducing mechanisms increases opportunities for customers to be over- or under-charged for their permits.

*PTS Lacks Standard IT Error-Reducing Features*

PTS does not perform logic checks that would help users identify when they have forgotten to charge an applicable fee or if they have entered an incorrect fee. For example, we identified a project which was charged the C&D deposit for "new multi-unit residential" construction, even though the building code entered into PTS identified the project as an industrial building. In addition, the other permit fees added to this project indicated that it was an industrial construction project. "New multi-unit residential" construction is assessed the C&D deposit at a higher rate than new industrial construction, and so the use of the wrong C&D fee type resulted in this project being overcharged by \$14,400. If PTS had logic checks that alerted staff when fee types do not match, errors of this kind could be avoided.

See **Appendix D** for examples and screenshots demonstrating how PTS fails to identify and prevent fee charging errors,.

Logic checks are a primary mechanism used to prevent human data entry errors and are recommended by COBIT to immediately detect and prevent data entry errors. The County of San Diego is currently implementing a commercial off-the-shelf permitting system which was selected, in part, because it contains features to ensure that fees are accurately charged. While the system was chosen for a variety of reasons, the county's selection requirements included features and functionality that would ensure fee accuracy.

*PTS Lacks Time-Saving Features*

In addition to lacking critical error-checking features, PTS also lacks time-saving and error-reducing features, such as auto-populating and predictive controls. As such, we found that the process to set up a project and charge fees is more time-consuming and confusing than necessary. We interviewed a number of DSD staff who rely on PTS to perform their daily responsibilities, including the Program Manager over the project Submittal Group and PRS staff, who demonstrated setting-up projects and assessing fees in PTS. Most DSD staff

we interviewed have used PTS since its inception and are very familiar with its functions. However, staff indicated that setting up a project and charging fees in PTS is cumbersome and time-consuming.

For example, staff must enter project data such as the square footage multiple times because PTS lacks auto-populating features. In addition, PTS lacks predictive controls that reduce choices based on previously-entered information. As a result, staff must choose fees one-by-one from a long list, instead of choosing from a list that has been narrowed down based on previously-entered project characteristics. Based on our interviews; staff demonstrations of PTS; reviews of permitting systems used by other jurisdictions; and our fee testwork, it appears that the lack of these features increases data entry times and the possibility of human error.

**Appendix E** shows the process to set-up review cycles in PTS. For related examples showing PTS' lack of predictive controls and auto-populating features, see **Appendices F, G, and H**.

We found that other large jurisdictions use permitting systems that have more robust auto-populating and predictive features than PTS, helping them to streamline their operations and reduce human error by minimizing repetitive data entry and making selection choices simpler. For example, the County of San Diego is in the process of implementing a commercial off-the-shelf permitting system that adds and calculates fees based on a single entry of the project type, square footage, and valuation. The City of Los Angeles' Plan Check and Information System (PCIS), an in-house system first implemented in 1995, also automatically adds and calculates most fees based on a single entry of the project type, square footage, and valuation. In addition, PCIS reduces additional fee choices based on previously-entered project information, making it easier for staff to locate and add any required fees that are not added automatically by the system.

*PTS Incorrectly Calculates  
at Least One Fee Type*

As reported earlier, the C&D deposit was the most commonly mischarged item that we identified. While most of the cases of C&D mischarges we found were due to data entry errors, we also found that in one case PTS did not calculate the C&D

deposit for residential single-family or duplex construction correctly, which led to an overcharge of more than \$300,000 on the project. DSD's fee guidelines state that the deposit is charged at a rate of \$0.40 per square foot, up to a maximum of \$50,000. PTS calculated a C&D deposit of \$385,182 for the large housing project, which is more than 1 million square feet. The customer paid the amount charged, but was refunded the overpaid amount after the Environmental Services Department noticed the overcharge 11 days later. According to ESD, DSD has corrected this calculation error in PTS; however, complexities in the way PTS calculates fees, combined with DSD's extensive fee schedule, did not allow us to conduct a comprehensive review of all fees calculated to determine if there are other fees that are calculated incorrectly by PTS. We recommend that DSD conduct a review of all fee calculations in PTS to ensure that fees are accurately assessed by the system.

*Improvements in PTS and  
Supervisor Oversight  
Would Increase Accuracy  
Charging Fees*

As described above, errors charging fees are not caused by any one deficiency within DSD; as such, control improvements in any one area may increase fee charging accuracy, but improvements in multiple areas are needed to assure customers that they will be charged fees fairly and consistently. For example, we noted one building permit for a new single-family home that was charged several different fees incorrectly, demonstrating how improvements to both PTS as well as management oversight are needed to ensure fee accuracy.

As shown in **Exhibit 10**, the PRS and Structural Engineer did not enter the correct square footage of the project into PTS for both the plan check and building permit fees.

In addition, **Exhibit 10** shows that the PRS and the Structural Engineer also charged separate plan check (PC) and building permit (BP) fees for various components of the new home, including the main residence, garage, and deck. Charging the fees for these components separately results in higher fees that exceed DSD's costs for reviewing and permitting the project. Because of this, DSD's policy is to combine fees for multiple project components into one fee to avoid over-charging the customer. In this case, the square footage of each project component should have been combined into the Residential – Single Dwelling Unit / Duplex fee, which would have resulted in

lower fees for the project.

While these errors may have been caught by a supervisor audit, if the PTS system had modern logic-checking capabilities the reviewer could have been alerted automatically that these fees should not be charged separately. Combined, these two errors resulted in the customer being overcharged by more than \$1,300 for their building permit. We brought this error to DSD's attention and the customer was issued a refund.

**Exhibit 10**

**Building Permit for a New Home Was Overcharged by \$1,300 for Permit Fees**

**Plan Check Fees Overcharged by \$464**

Fee Type	Actual Fees Charged		Correct Fees		
	Quantity (Sq. Ft.)	Amount	Quantity (Sq. Ft.)	Amount	
Garage <3,000 Sqft PC	837	\$591.00	0	\$0.00	
Deck-Residential PC	249	\$220.00	0	\$0.00	
Res-SDU/DUP PC <sup>24</sup>	3,702	\$3,379.66	4,701	\$3,726.42	
<b>Total:</b>		<b>\$4,190.66</b>	<b>Total:</b>	<b>\$3,726.42</b>	
				<b>Overcharge:</b>	<b>\$464.24</b>

**Building Permit Fees Overcharged by \$854**

Fee Type	Actual Fees Charged		Correct Fees		
	Quantity (Sq. Ft.)	Amount	Quantity (Sq. Ft.)	Amount	
Garage <3,000 Sqft BP	767	\$602.00	0	\$0.00	
Deck-Residential BP	232	\$344.00	0	\$0.00	
Res-SDU/DUP BP <sup>17</sup>	4,217	\$2,387.35	4,701	\$2,479.36	
<b>Total:</b>		<b>\$3,333.35</b>	<b>Total:</b>	<b>\$2,479.36</b>	
				<b>Overcharge:</b>	<b>\$853.99</b>
				<b>TOTAL OVERCHARGE:</b>	<b>\$1,318.23</b>

Source: OCA generated using information from PTS and DSD

In addition, as shown in **Exhibit 11**, the project was not charged at all for the C&D deposit, even though the project was subject to the deposit for a total of \$1,880. Once again, a supervisor audit may have caught this error, but a more effective control would be to integrate modern logic-checking capabilities into PTS to alert reviewers to probable errors made in charging fees.

<sup>24</sup> The Res-SDU/DUP fee is applied to Residential-Single Dwelling Unit and Duplex projects.

**Exhibit 11**

**Building Permit for a New Home Was Not Charged \$1,880 C&D Deposit**

**C&D Deposit Undercharged by \$1,880**

Fee Type	Actual Fees Charged		Correct Fees	
	Quantity (Sq. Ft.)	Amount	Quantity (Sq. Ft.)	Amount
C&D Deposit	0 (Failed to charge)	\$0.00	4,701	\$1,880.40
<b>Total:</b>		<b>\$0.00</b>	<b>Total:</b>	<b>\$1,880.40</b>

Source: OCA generated using information from PTS and DSD

We recommend that DSD modernize multiple aspects of PTS to facilitate accurate fee assessment, improve efficiency, and reduce customer wait times.

**Recommendation # 9** The Development Services Department (DSD) should strengthen Project Tracking System (PTS) controls over assessing fees by implementing:

- a) Logic checks to ensure that fees are entered accurately and alert reviewers when apparent errors have been made in charging fees. For example, logic checks should alert reviewers if the square footage used to charge the Building Permit and the Construction and Demolition Debris Deposit fees does not match; if separate fees are charged for different project components when they should be combined; or if the type of construction used to charge different fees does not match.
- b) Auto-populating features to reduce the necessity for repetitive data entry by staff. For example, if the project is being charged a Building Permit fee for 4,000 square feet of new single-family construction, the Project Tracking System should automatically add the Construction and Demolition Debris Recycling Deposit fee for a new 4,000 square foot single-family home.
- c) Predictive controls to reduce staff fee choices based on prior data input, making accurate fee selection easier and quicker and reducing customer waiting times. For example, if the reviewer indicates that the

project is for new single-family construction, the list of available fees should be limited to only those fees that may apply to a new single-family construction project. (Priority 3)

**Recommendation # 10** The Development Services Department (DSD) should ensure that the Project Tracking System (PTS) caps the Construction and Demolition Debris Recycling Deposit at the maximum level established by the City Council. DSD should also ensure that PTS limits all fees to the correct maximum amounts to prevent overcharging customers. (Priority 1)

***Finding 3: PTS' Current Reporting Capabilities do not Facilitate Effective Operational Management for Client Departments***

During the audit, we interviewed managers from three DSD client departments, the Transportation and Storm Water Department (TSWD), the Field Division of the Public Works Department (Field Division), and the Environmental Services Department (ESD), to obtain their input on the adequacy of PTS-generated reports provided by DSD. Based on our discussions with these managers and our independent review, we found that the standard PTS-generated reports lack critical information to support effective and efficient management of client departments' permitting functions, and that DSD only provides reports in hard-copy format.

DSD states that there are several challenges to generating meaningful reports for client departments. For example, DSD asserts that because PTS' database is complex and the functionality of its current reporting system is limited, any custom and ad-hoc report must be created by DSD IT staff. However, creating these reports is time-consuming and DSD stated that, given other priorities and demands, IT staff have limited time to devote to report creation.

In addition, without access to comprehensive electronic reports, DSD's client departments report that they have limited ability to monitor and track their development-related activities and the fees collected by DSD on their behalf. In addition, some of these departments expend a significant amount of staff time re-entering data from hard-copy reports into useful electronic spreadsheets, a task that would be unnecessary if PTS were equipped with electronic reporting capabilities.

*Environmental Services  
Department*

DSD provides three separate hard-copy reports to ESD on a weekly basis. These reports list all building permit applications received, issued, and completed (i.e., inspections signed-off) during the weekly reporting period. ESD primarily uses the "Permits Issued" report, and we provide an excerpt of this report in **Appendix I**.

Because DSD only provides the information as a hard-copy report, ESD must manually re-enter the information into an Excel spreadsheet, which it uses to track and manage the C&D program. However, the hard-copy report does not identify critical information that is necessary for ESD to manage the C&D program, such as the square footage of the project, or whether DSD collected the C&D deposit and for what amount. Consequently, ESD must look up each project individually in PTS to identify this information and manually enter it into their tracking spreadsheet.

Because the number of permits listed on the report can be extensive—and exceeded 150 for weekly reporting period we reviewed, which covered October 17 to October 23, 2011—this is a very time-intensive task. In fact, ESD estimates that one-half of a staff position is dedicated to looking up project information in PTS, creating a spreadsheet, and reviewing deposits charged for accuracy—all tasks that would require significantly less time if ESD managers could generate electronic reports directly from PTS.

ESD stated that because the process is so time-intensive, they often have a backlog of data that needs to be entered into their tracking spreadsheet. In our fee testwork, we noted several cases where DSD overcharged customers for the C&D deposit, but ESD did not notice the overcharges for several months after the deposit was collected.

*Transportation and Storm  
Water*

The Transportation and Storm Water Department (TSWD) does not currently receive any reports from DSD on a regular basis. According to TSWD, they have been working with DSD to develop a report that lists all projects that were granted an exception to the City's trenching moratorium. The draft report is in hard-copy format and does not identify fees paid or provide a description of the scope of work—information that is necessary for TSWD management to track exceptions to the City's trenching moratorium, ensure the exceptions are appropriate, and verify that DSD is collecting and transferring the correct fee amounts. According to TSWD, in order to obtain that information, they need to look up each individual project in PTS.



According to TSWD, DSD also provides it with a hard-copy printout for each approved Right of Way project.<sup>25</sup> TSWD management indicated that these stand-alone print-outs are not very helpful as a tool to track Right of Way projects, and they are considering assigning a staff member to manually re-enter the information into a master spreadsheet—a task that would be unnecessary if an electronic report was available directly from PTS. TSWD management stated that they have discussed obtaining PTS reports that would better suit their needs with DSD and were told that it would be very difficult to configure PTS to create these reports.

*Public Works  
Department's Field  
Division*

The Field Division of the Public Works Department (formerly of the Engineering and Capital Projects Department) inspects work performed in the Right of Way. The Field Division relies on DSD to provide information on permits issued for work in the Right of Way and collect inspection fees. Similar to Transportation and Storm Water, DSD sends a print-out from PTS of each approved Right of Way project. Clerical staff then manually re-enters the permit information into a database, which is used to coordinate inspections.

In addition, the Field Division does not receive any reports from PTS or DSD on permit fees collected so they have no way to know whether DSD is accurately assessing and collecting fees on their behalf. DSD deposits money from permit fees into the Subdivision Deposit Trust account, which the Field Division charges against when performing inspections, but the Field Division does not receive any reports detailing permits issued and fees paid.

According to the Field Division, it has requested upgrades to PTS' reporting capabilities to include customized electronic reports, but was informed by DSD that this would be a difficult process and that it does not have the IT resources to complete the request. The Public Works Department currently has a Memorandum of Understanding (MOU) with DSD that states that Public Works may request custom reports from DSD's Information Systems Administrator, but the MOU does not

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<sup>25</sup> The Public Right of Way is defined in the SDMC as "A public easement for streets, alleys, or other uses." (SDMC §113.0103)

specify a timeframe for DSD to create these reports or provide Public Works with cost estimates for the report.

*Reporting Deficiencies  
Waste Staff Resources in  
DSD's Client Departments*

As discussed above, DSD's current PTS-generated reports do not adequately support client departments' needs to effectively monitor and track their development-related functions. As a result, efficiency in these departments suffers as staff resources must be allocated to re-entering data, a task which DSD's client departments state would be unnecessary if PTS were equipped with modern electronic reporting capabilities.

DSD should work with client departments to identify ways to efficiently meet their reporting needs. All three of the client departments that we interviewed even indicated a willingness to reimburse DSD for its costs related to generating reports. DSD should consider establishing formal agreements with its client departments that outline reporting expectations, responsibilities, and funding source.

DSD should explore options to find the most cost-effective way to provide the reports needed. The Los Angeles Department of Building and Safety, for example, stated that it has set up reports in Business Objects so that its client departments can run their reports as needed. In addition, Los Angeles' more IT-savvy departments can create and run their own customized reports in Business Objects. We asked DSD if they had considered using Business Objects to create custom reports, and DSD responded that they did not want to use Business Objects because they did not want inexperienced users pulling data from the system. However, because this information is essential to other departments, DSD should investigate the most cost-effective way to generate custom, electronic reports and provide clients with expertise and the ability to generate reports on their own.

**Recommendation # 11** The Development Services Department should work with all departments that require custom reports to identify their reporting requirements and the most cost-effective way to generate all necessary reports. This recommendation pertains to the reporting requirements of the Transportation and Storm Water Department, the Environmental Services Department, and the Public Works Department, as well as any other City departments that require custom reports to increase productivity and efficiency. (Priority 2)

**Recommendation # 12** The Development Services Department should establish formal agreements, such as Service Level Agreements, with each of its client departments that require custom reports, including the Transportation and Storm Water Department, the Environmental Services Department, and the Public Works Department, as well as any other City departments that require custom reports to increase productivity and efficiency. These agreements should establish clear responsibilities for report generation, including:

- a) Specific procedures for client departments to request custom reports from the Project Tracking System, including the information required in the report and the format of the report (electronic or hard-copy);
- b) Timelines for the Development Services Department to respond to report requests with an estimated cost and completion date;
- c) Funding sources that will be used to pay for the creation of the report; and
- d) Procedures that allow client departments to generate reports on demand from the Project Tracking System. (Priority 2)

***Finding 4: DSD has not Developed a Long-Term Information Technology Strategy to Meet Business and Customer Needs Cost-Effectively***

One of the primary purposes of any information system is to improve the efficiency and effectiveness of an organization's key functions. In addition, the U.S. Government Accountability Office reported that information systems offer government agencies unprecedented opportunities to provide higher quality services tailored to the public's changing needs, delivered more effectively, faster, and at lower cost. PTS, as DSD's most critical information system, could certainly do more to this end.

One of the key ways that an organization can help ensure that its core information systems meet current and anticipated needs of management, staff, and customers is through strategic planning. However, DSD has not developed a strategic plan to ensure PTS fully supports its business operations in a cost-effective manner over the long-term. Without a strategic plan, DSD is at greater risk of using its limited IT resources inefficiently and as a result, PTS will become outdated, less effective at helping DSD achieve its operational goals, and more expensive to maintain.

As detailed in Findings 1, 2, and 3, PTS—as currently designed and implemented—lacks many critical controls and features, such as reporting, to facilitate effective operations. PTS also lacks modern, user-friendly features found in other systems, such as online customer access.

Currently, DSD's customers can only access PTS through the computer terminals physically located at the public counter. This is likely an inconvenience, particularly given that individuals are becoming more and more accustomed to conducting business online without having to leave their home or office.

DSD does accept applications for simple permits, such as for water heaters, electrical outlets, gas lines, and minor plumbing work, via the internet, which DSD staff must then manually key

into PTS. While having limited online permitting options does not appear to be uncommon for local governments, we found that other municipalities' development and permitting functions provide their customers with a range of online capabilities not provided by DSD. For example, customers in other municipalities can track the status of projects, estimate fees, manage their deposit account balances, and obtain permit history on a property via systems available online. In addition, other municipalities, such as Los Angeles and Orange County, are thinking forward and planning strategically to expand online permitting services in order to accommodate customers' needs.

As we report in Finding 2, both DSD's staff workload and customer wait times have increased significantly over the past several years. DSD may reduce in-person customer traffic and demands on staff if it implemented online system features. In addition, stakeholders have expressed a desire for the City to expand online permitting at recent Council meetings, and DSD recognizes the public's interest in having online access to PTS.

However, a bigger question that DSD and City management should consider is whether it is more cost-effective over the long run to continue to build on and enhance PTS, which DSD began developing in 1998, or to replace the system altogether. In-house systems can be more expensive to maintain in the long run, and DSD will likely face increasing maintenance costs over time if it chooses to continue to rely on PTS as its core information system. Alternatively, if DSD does not invest in necessary maintenance and upgrades, including those identified in Findings 1 and 2, PTS' capabilities will fall even further behind those of systems used by other jurisdictions. We found PTS has numerous shortcomings in facilitating the effectiveness of certain critical functions, including assessing fees.

These considerations are exactly why it is so important for DSD to develop comprehensive strategic plan. Strategic planning is also critical because it allows an organization to anticipate and plan for necessary system maintenance, updates, and replacements—and identify funding for associated expenses.

One essential component of a strategic plan includes performing a business needs assessment to determine the best method of aligning available technologies with DSD's business needs. This assessment includes reviewing potential business efficiencies and enhanced services gained through utilizing modern technical resources, such as automating services through the internet. The business needs assessment should reach out to all primary groups of people who rely on DSD's services, including internal and external customers as well as the employees who will use this technology on a daily basis to ensure DSD has identified the primary needs.

**Recommendation #13** The Development Services Department should develop a formal, written five-year information technology strategic plan. This plan should include, but not be limited to, an analysis and identification of:

- a) Current and anticipated business needs;
- b) Internal and external customer requirements;
- c) Current trends in system functionalities and security, including services that can be offered via the internet;
- d) Options to meet business and customer requirements cost-effectively, including a cost-benefit analysis of retaining PTS over the long term or replacing it with a new system—either developed in-house or a customized commercial software system; and
- e) Anticipated funding needs and source of funds.  
(Priority 2)

## Conclusion

DSD created the Project Tracking System (PTS) in-house and has relied on it to manage Citywide permitting and development activities since it was implemented in 2001. Unfortunately, DSD has not maintained an adequate control environment, and PTS now lacks many of the controls and error-reducing features that are considered fundamental by current industry standards. As a result, a high potential for system-related fraud and abuse exists, and PTS is at risk of becoming ineffective in supporting the operations over the long-term.

We also found that DSD staff make a significant number of errors assessing fees and deposits in PTS due to several factors, including varying staff skill levels; inefficient staffing assignments; high staff workloads; limited supervision; and PTS deficiencies.

We believe our findings and recommendations present an important opportunity for DSD to make positive operational changes by strengthening controls over PTS. Taking steps now to implement the report's recommendations is critical to mitigate the unnecessary potential for fraud and abuse. We hope DSD reconsiders and gives the findings and recommendations the level of attention they deserve.

# Recommendations

**Recommendation #1** The Development Services Department (DSD) must immediately implement controls in the Project Tracking System (PTS) Production Environment to prevent inappropriate modifications to PTS. Specifically, DSD should instruct the Database Administrator to:

- a) Remove the IT Program Manager position's programmer account and ability to directly log into the system's database.
- b) Remove programmer access to the Production Environment.
- c) Remove programmer access to privileged accounts, except those used by the database administrators and for emergency fixes, by locking the accounts and changing the passwords. Where privileged accounts are required for emergency fixes, DSD should limit programmer access through a restricted number of highly monitored accounts. In addition, the permissible use of these accounts should be governed through formal policies.
- d) Ensure that programmers do not have access to modify or disable system triggers in the Production Environment.
- e) Ensure PTS records a detailed audit trail of key information, including the prior data entries, the username of the person who changed the data and the timestamp noting when the change occurred.

DSD should also direct the System Administrator to comprehensively document the Software Change Management processes, and associated risks and controls for each environment. (Priority 1)



- Recommendation #2** In order to reduce the risk of inappropriate system use by an employee, DSD should perform a Separation of Duties (SOD) assessment to ensure that employees only have the access they need to perform their functions, complying with the principle of least privilege. Specifically, DSD should:
- a) Review all PTS user roles and limit the capabilities for roles that provide broad access to PTS' functions.
  - b) Review current user access to PTS' roles and restrict access to only those roles necessary and appropriate for each user's function. This includes restricting the DSD Director's access to a more appropriate level, such as "read-only."
  - c) Review current role combinations to ensure that no combination grants excessive or inappropriate access, and immediately remove any conflicting combinations.
  - d) Create a comprehensive policy that identifies all prohibited role combinations and documents compensating controls to mitigate any risk when a segregation of duty conflict must exist for business purposes. (Priority 1)
- Recommendation #3** DSD should restructure its organizational arrangement so that the DSD IT Program Manager position no longer oversees both the IT function and the individuals who collect and reconcile fees and transmit that information to the City Treasurer and Comptroller's Office. (Priority 1)
- Recommendation #4** The Development Services Department (DSD) should immediately begin comprehensively documenting PTS and facilitate the transition of Application Development and Maintenance (ADM) functions to the ADM vendor as soon as feasible. Further, DSD must ensure that the vendor takes over management and monitoring of all privileged accounts in the production environment. (Priority 2)
- Recommendation #5** The Development Services Department should:
- a) Review its current staffing model for the Submittal and Issuance Groups;
  - b) Determine if the "generalist" approach is the most effective option to meet operational needs and accommodate staff skills; and if not,

- c) Identify and implement an alternative staffing structure. (Priority 2)

**Recommendation #6** The Development Services Department should consider available options to reduce workloads in the submittal and issuance groups, including re-allocating staff resources to this function. (Priority 2)

**Recommendation #7** The Development Services Department should continue to conduct and document regular audits of fees at project submittal and resume conducting and documenting audits of fees during structural engineering review and at permit issuance. DSD should develop a written policy that establishes a methodology for selecting projects, including the minimum level of projects to be audited each month. (Priority 2)

**Recommendation #8** DSD's IT staff should work with supervisors in charge of the Submittal Group and Structural Engineering to identify and create reports that would help them review fees charged by staff. (Priority 2)

**Recommendation #9** The Development Services Department (DSD) should strengthen Project Tracking System (PTS) controls over assessing fees by implementing:

- a) Logic checks to ensure that fees are entered accurately and alert reviewers when apparent errors have been made in charging fees. For example, logic checks should alert reviewers if the square footage used to charge the Building Permit and the Construction and Demolition Debris Deposit fees does not match; if separate fees are charged for different project components when they should be combined; or if the type of construction used to charge different fees does not match.
- b) Auto-populating features to reduce the necessity for repetitive data entry by staff. For example, if the project is being charged a Building Permit fee for 4,000 square feet of new single-family construction, the Project Tracking System should automatically add the Construction and Demolition Debris Recycling Deposit fee for a new 4,000 square foot single-family home.

- c) Predictive controls to reduce staff fee choices based on prior data input, making accurate fee selection easier and quicker and reducing customer waiting times. For example, if the reviewer indicates that the project is for new single-family construction, the list of available fees should be limited to only those fees that may apply to a new single-family construction project. (Priority 3)

**Recommendation #10** The Development Services Department (DSD) should ensure that the Project Tracking System (PTS) caps the Construction and Demolition Debris Recycling Deposit at the maximum level established by the City Council. DSD should also ensure that PTS limits all fees to the correct maximum amounts to prevent overcharging customers. (Priority 1)

**Recommendation #11** The Development Services Department should work with all departments that require custom reports to identify their reporting requirements and the most cost-effective way to generate all necessary reports. This recommendation pertains to the reporting requirements of the Transportation and Storm Water Department, the Environmental Services Department, and the Public Works Department, as well as any other City departments that require custom reports to increase productivity and efficiency. (Priority 2)

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- a) Specific procedures for client departments to request custom reports from the Project Tracking System, including the information required in the report and the format of the report (electronic or hard-copy);
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- c) Funding sources that will be used to pay for the creation of the report; and
- d) Procedures that allow client departments to generate reports on demand from the Project Tracking System. (Priority 2)

**Recommendation #13** The Development Services Department should develop a formal, written five-year information technology strategic plan. This plan should include, but not be limited to, an analysis and identification of:

- a) Current and anticipated business needs;
- b) Internal and external customer requirements;
- c) Current trends in system functionalities and security, including services that can be offered via the internet;
- d) Options to meet business and customer requirements cost-effectively, including a cost-benefit analysis of retaining PTS over the long term or replacing it with a new system—either developed in-house or a customized commercial software system; and
- e) Anticipated funding needs and source of funds. (Priority 2)

# Appendix A: Objectives, Scope, and Methodology

The OCA conducted this audit of DSD's Project Tracking System (PTS) to determine whether controls are sufficient to safeguard the reliability and integrity of the application and the database, to assess the degree to which PTS meets the City's current operational needs, and to ensure building permit fees are assessed accurately.

We conducted this 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.

**Determine whether Controls Are Sufficient to Safeguard the Reliability and Integrity of PTS**

To assess whether controls over PTS are sufficient, we tested local and remote user access, monitoring processes, and general system security. In addition, we reviewed DSD's Software Configuration Management (SCM) and system lifecycle management processes to evaluate whether these processes ensure that PTS is aligned with DSD's future business needs. We also evaluated the mechanisms through which PTS interfaces with SAP, the Citywide financial management system. We applied the Information Systems Audit and Control Association's (ISACA) COBIT Governance Framework, Auditing Procedures, and Guidelines where applicable during our IT security review of PTS.

**Determine whether Controls Are Sufficient to Ensure Building Permit Fees are Assessed Accurately**

To assess whether PTS facilitates accurate fee assessments, we reviewed the fees charged on a judgmental sample of building permits issued in fiscal years 2010 and 2011, as well as a random sample of 32 building permits issued between January 2010 and May 2011. We also reviewed documentation of DSD's own internal audits of staff performance, which include information on the accuracy of

fees charged by staff. DSD began completing these audits in May 2011. We reviewed documentation for all 197 projects that were audited between May and September 2011.

To identify factors that may lead to fees being mischarged, we interviewed staff and supervisors from DSD's Submittal/Issuance and Structural Engineering sections, which together are responsible for determining most fees and entering them into PTS. Staff demonstrated the process to set-up projects and assess fees in PTS. DSD staff and supervisors also provided their perspectives on why errors charging fees occur.

**Determine Whether PTS Meets Current Operational Needs**

We also assessed the degree to which PTS meets DSD's current operational needs, as well as those of its clients and customers. We met with client departments and supervisors to determine the adequacy of PTS' management reporting capabilities and evaluated PTS-generated management reports. We reviewed various characteristics of each report including the report format, the information and data contained, and the ease with which supervisors and managers can generate and obtain the report.

We also obtained information on permitting systems used by other local jurisdictions. The systems included in our comparison included the City of Los Angeles Department of Building and Safety's Plan Check and Information System, the Orange County (CA) Development Services Department's Automated Permitting Process System, and the Accela Land Management System currently being implemented by several County of San Diego departments, including the Planning and Land Use Department and the Public Works Department.

# Appendix B: Definition of Audit Recommendation Priorities

## DEFINITIONS OF PRIORITY 1, 2, AND 3 AUDIT RECOMMENDATIONS

The Office of the City Auditor maintains a classification scheme applicable to audit recommendations and the appropriate corrective actions as follows:

Priority Class <sup>26</sup>	Description <sup>27</sup>	Implementation Action <sup>28</sup>
1	Fraud or serious violations are being committed, significant fiscal or equivalent non-fiscal losses are occurring.	Immediate
2	A potential for incurring significant or equivalent fiscal and/or non-fiscal losses exist.	Six months
3	Operation or administrative process will be improved.	Six months to one year

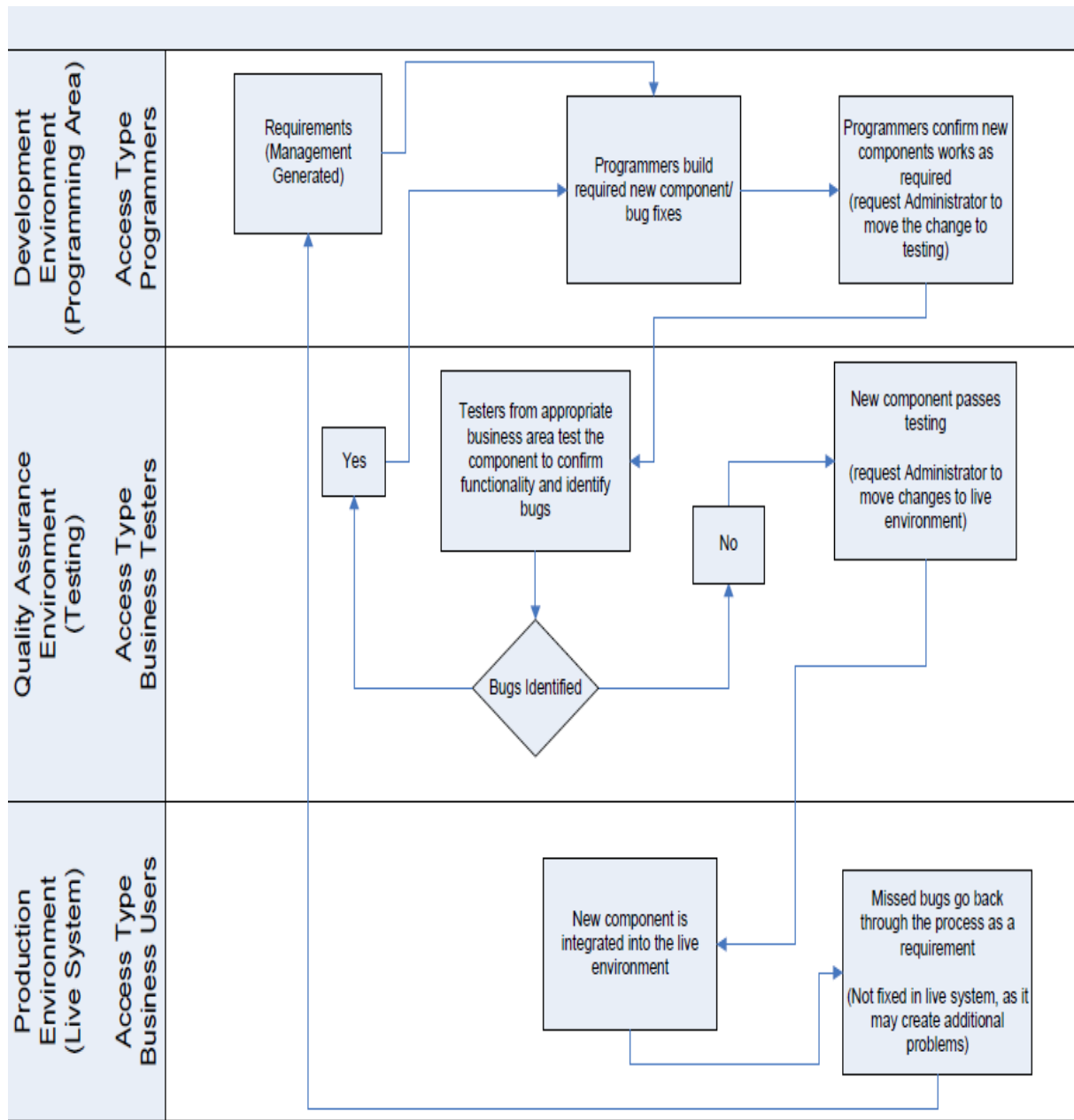
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<sup>26</sup> The City Auditor is responsible for assigning audit recommendation priority class numbers. A recommendation which clearly fits the description for more than one priority class shall be assigned the higher number.

<sup>27</sup> For an audit recommendation to be considered related to a significant fiscal loss, it will usually be necessary for an actual loss of \$50,000 or more to be involved or for a potential loss (including unrealized revenue increases) of \$100,000 to be involved. Equivalent non-fiscal losses would include, but not be limited to, omission or commission of acts by or on behalf of the City which would be likely to expose the City to adverse criticism in the eyes of its residents.

<sup>28</sup> The implementation time frame indicated for each priority class is intended as a guideline for establishing implementation target dates. While prioritizing recommendations is the responsibility of the City Auditor, determining implementation dates is the responsibility of the City Administration.

# Appendix C: Standard Three Tier Software Configuration Management Process



Source: OCA generated from established SCM standards.



# Appendix D: PTS Screenshot – Lack of Logic Checks

The user entered a Construction and Demolition Deposit based on 1,200,000 square feet [1] of construction even though the user had already specified that the project was 1,000 square feet [2]. PTS accepted this square footage “mismatch.” [3]

The screenshot displays the PTS software interface. On the left is a project tree with folders for Alerts, Project Locations, Project Packages, Jobs, Locations, Approvals, Fees, SAP Fees, Valuation Estimator, and Surcharges. The 'Fees' folder is expanded, showing a list of fees including 'BuildStand Surcharge SB1473', 'C&D Deposit-Res Alteration', 'Issuance-With Plans', 'LeadHaz Prevention & Control', 'Records-Com/MDU(Calcs&Std)', 'Records-Com/MDU(No Calcs &Std)', 'Res-MDU Remodel (FR) BP', 'Res-MDU Remodel (FR) PC', 'Seismic Fee (Bldg Permit)', and 'State Fee (Bldg Permit)'. On the right is a table with columns 'Description', 'Needed Qty', and 'Unit'. The table lists the same fees as the project tree. A dialog box titled 'Approval Fee Worksheet Maintenance' is open, showing 'Fee Type: C&D Deposit-Res Alteration', 'Qty Needed: 1200000.0000', and 'Based On: Square Feet'. A second table at the bottom shows the same fees with an additional column 'Qty' and 'Qty Last Updated By'. The 'Qty' for 'C&D Deposit-Res Alteration' is 1200000 Square Feet.

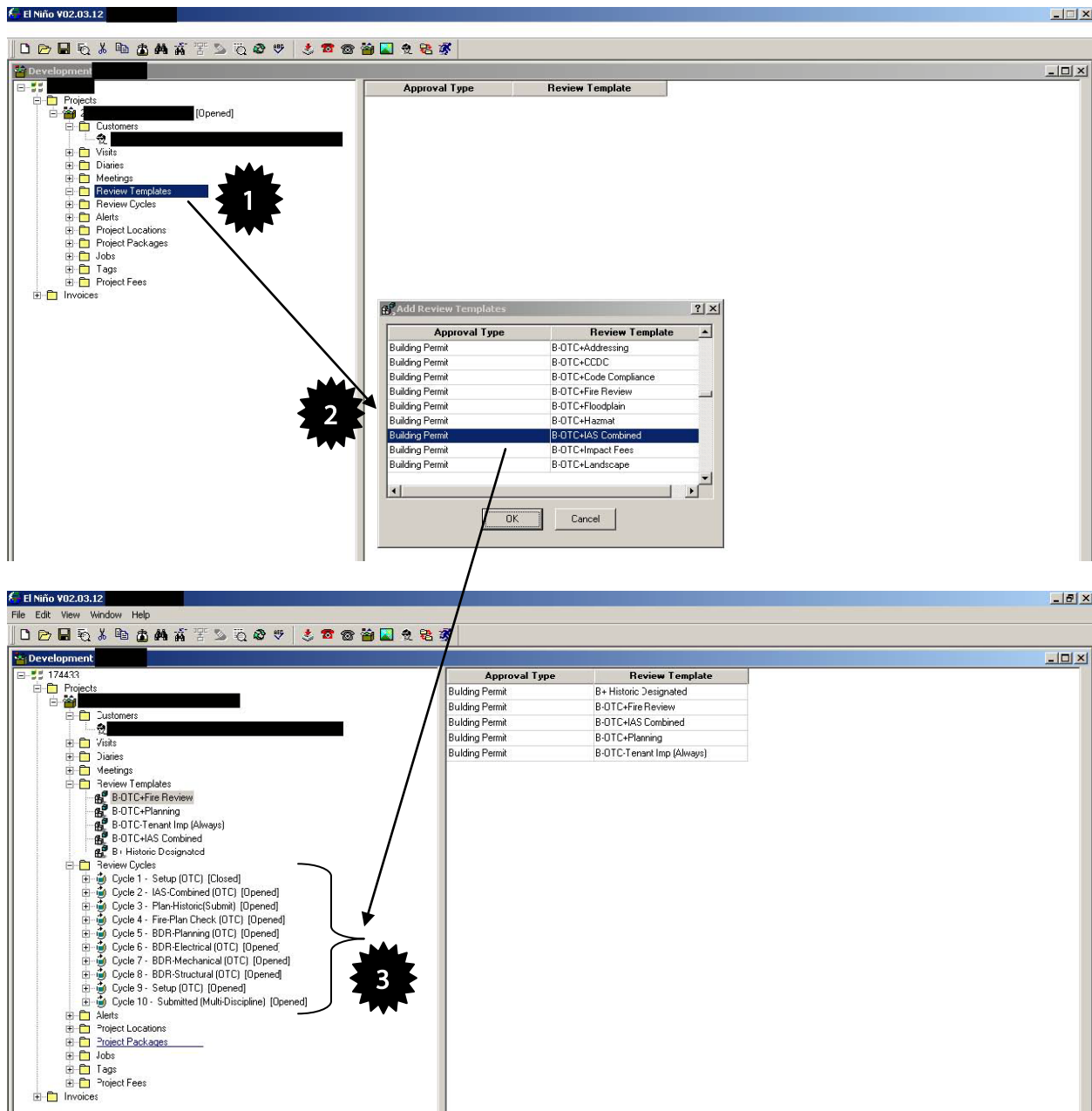
Description	Needed Qty	Unit
BuildStand Surcharge SB1	1	Valuation -CBC
C&D Deposit-Res Alteration	1200	Square Feet
Issuance-With Plans	1	Each
LeadHaz Prevention & Conti	1	Each
Records-Com/MDU(Calcs&S	1	Each
Records-Com/MDU(No Calc	1	Each
Res-MDU Remodel (FR) BP	1000	Square Feet (New
Res-MDU Remodel (FR) PC	1000	Square Feet (New
Seismic Fee (Bldg Permit)	1	Valuation -CBC
State Fee (Bldg Permit)	1	Valuation -CBC

Description	Needed Qty	Unit	Invoice Requested	Fee Category	Qty Last Updated By	Qty Last
BuildStand Surcharge SB1	1	Valuation -CBC	<input checked="" type="checkbox"/>	Issuance Fees		12/14/
C&D Deposit-Res Alteration	1200000	Square Feet	<input checked="" type="checkbox"/>	Issuance Fees		12/14/
Issuance-With Plans	1	Each	<input checked="" type="checkbox"/>	Issuance Fees		12/14/
LeadHaz Prevention & Conti	1	Each	<input checked="" type="checkbox"/>	Issuance Fees		12/14/
Records-Com/MDU(Calcs&S	1	Each	<input checked="" type="checkbox"/>	Issuance Fees		12/14/
Records-Com/MDU(No Calc	1	Each	<input checked="" type="checkbox"/>	Issuance Fees		12/14/
Res-MDU Remodel (FR) BP	1000	Square Feet (New	<input checked="" type="checkbox"/>	Issuance Fees		12/14/
Res-MDU Remodel (FR) PC	1000	Square Feet (New	<input checked="" type="checkbox"/>	Submittal Fees		12/14/
Seismic Fee (Bldg Permit)	1	Valuation -CBC	<input checked="" type="checkbox"/>	Issuance Fees		12/14/
State Fee (Bldg Permit)	1	Valuation -CBC	<input checked="" type="checkbox"/>	Issuance Fees		12/14/

Source: PTS

# Appendix E: PTS Screenshot – Setting-up Review Cycles

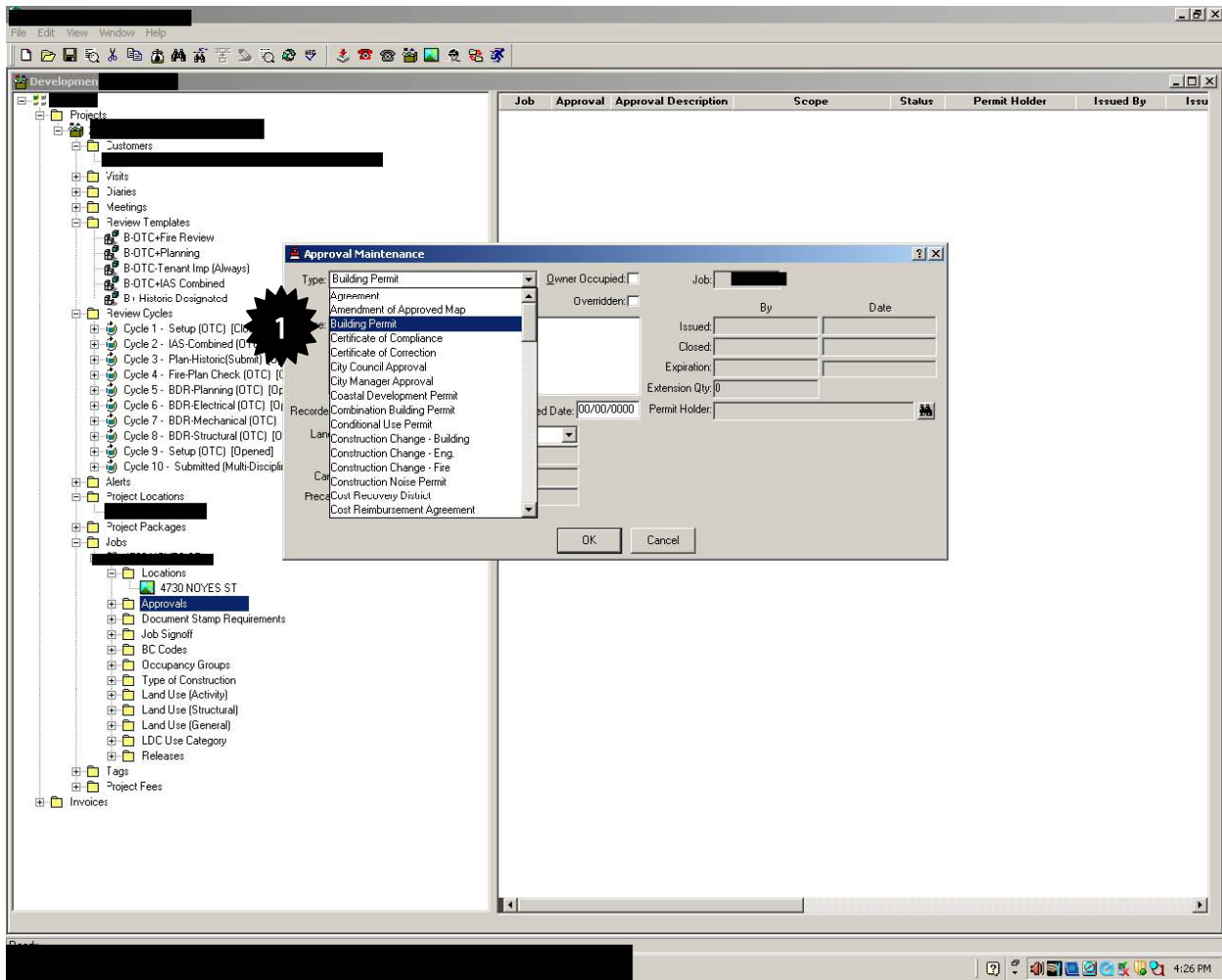
Based on project plans and information provided by the customer, the Plan Review Specialist determines the necessary discipline reviews. The PRS selects the “Review Templates” field on the tree [1], which opens a dialogue box listing all Review Templates [2]. After selecting all appropriate Review Templates from the list, PTS automatically sets up the review templates for each required reviewer [3].



Source: PTS

# Appendix F: Screenshot – PTS Does Not Predict Required Approvals

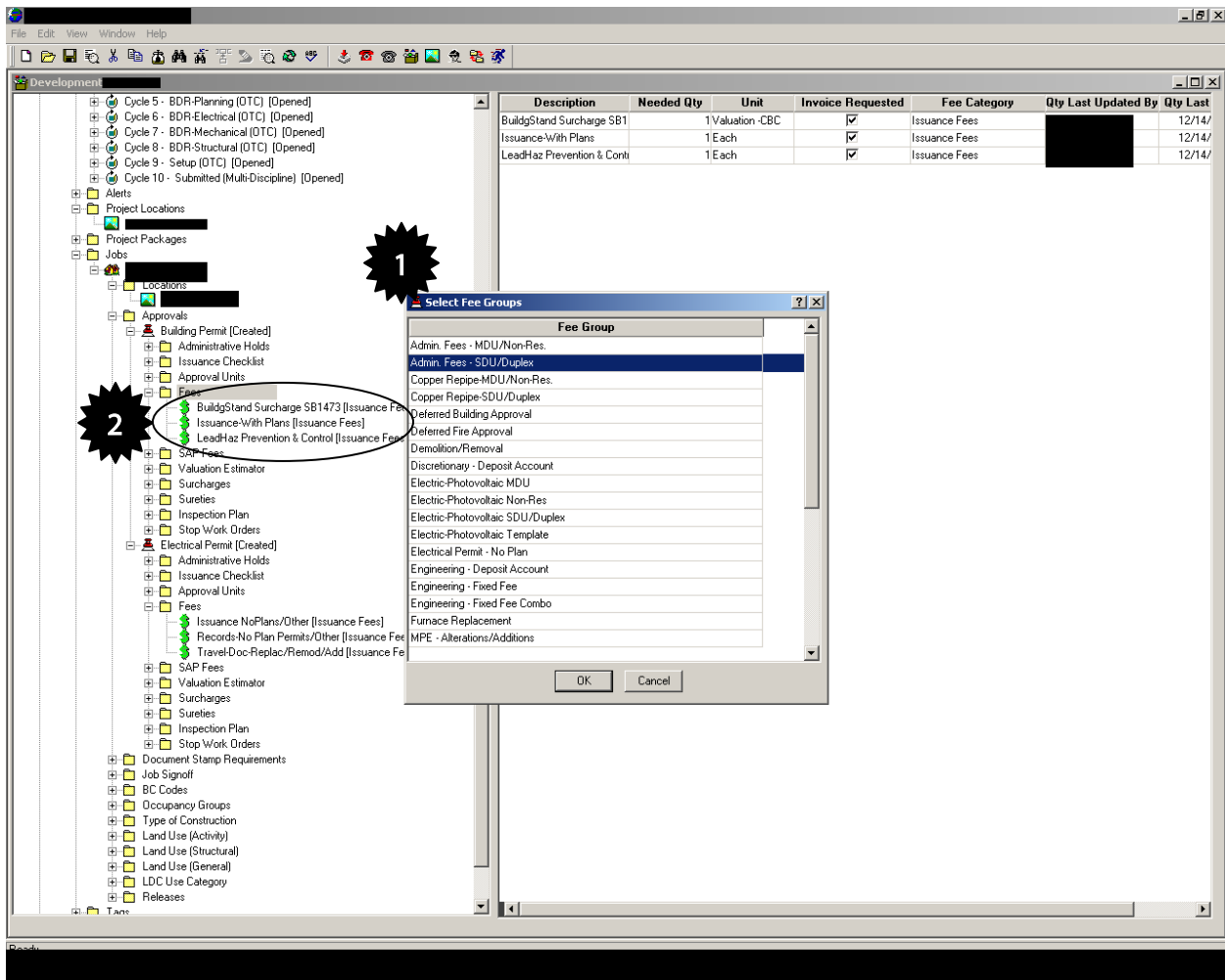
The Plan Review Specialist creates a permit approval from the drop-down menu [1]. PTS did not preselect “building permit” as an approval for the project, even though the Plan Review Specialist already indicated that the project required a building permit. See Appendix C.



Source: PTS

# Appendix G: Screenshot – PTS Does Not Automatically Add Some Common Fees

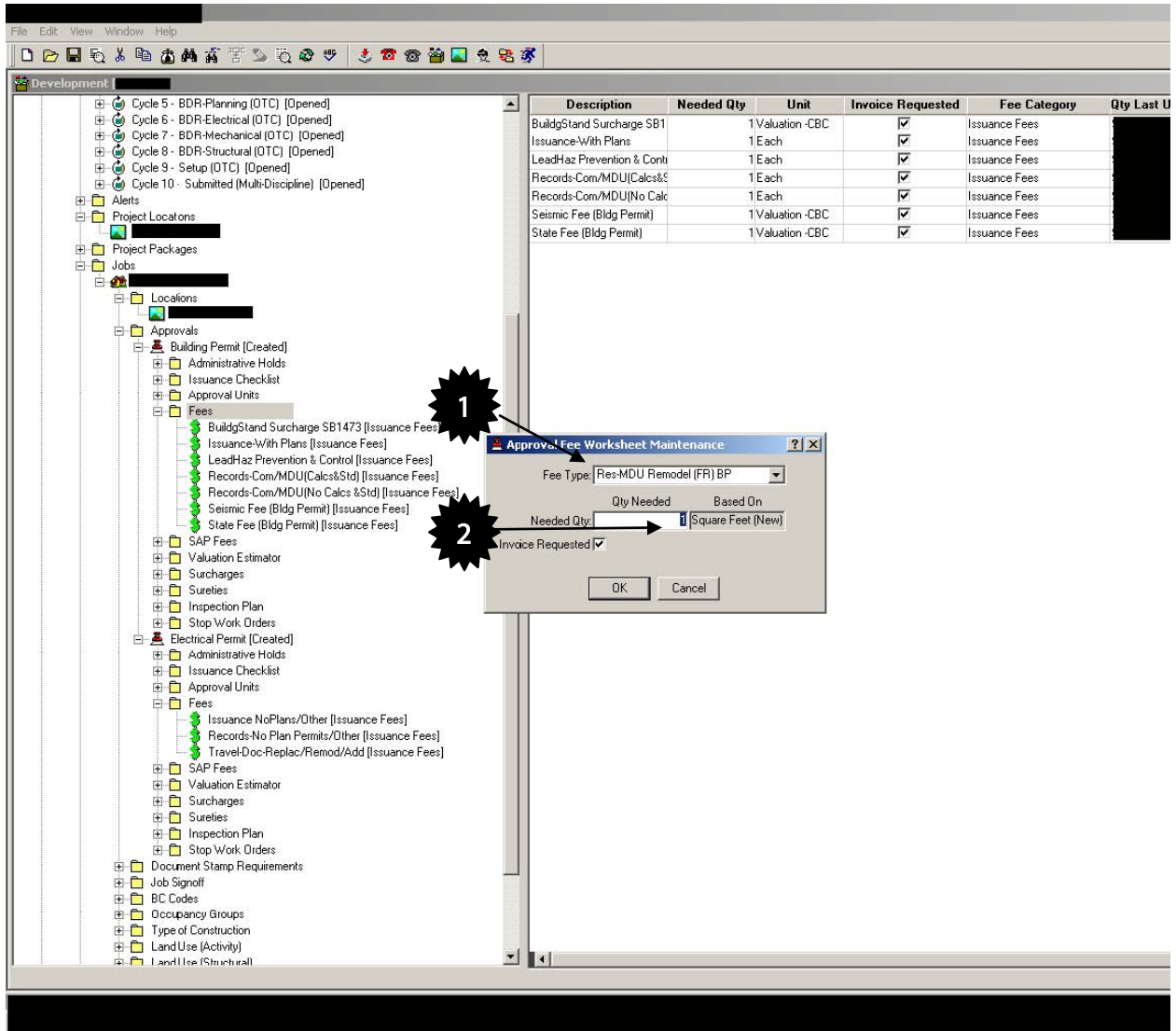
When adding fees, PTS allows users to select “fee groups” [1] that add multiple fees to the project based on the scope of work. However, fee groups do not add many of the most commonly required fees for that project type. For example, the fee group for a Single Dwelling Unit / Duplex project only adds three fees [2] and does not add several fees that would typically apply to a project of this type, including plan check fees, building permit fees, and the C&D deposit fee.



Source: PTS

# Appendix H: Screenshot – PTS Does Not Reduce Fee Choices or Auto-Populate Fee Quantities

Staff must add fees that are not automatically added by the “fee group” one-by-one from a drop-down menu [1]. PTS does not narrow down the list of fees based on previously-entered information, such as the type of construction. As a result, this drop-down menu contains nearly all of the fee types that DSD charges, making it confusing and time-consuming to find the correct fees for the project. For each fee selected, staff must then enter in the quantity of the fee needed [1]. PTS does not predict the quantity needed based on previously-entered information, such as the square footage used to calculate other fees, and instead simply uses a default value of ‘1’ for each fee.




Source: PTS



# Appendix I: PTS-Generated 'Permits Issued Report'

**Permits Issued**

650-C



THE CITY OF SAN DIEGO  
Development Services  
1222 First Avenue, San Diego, CA 92101-4154

Report consists of  
**34 pages**

10/22/11 9:31 pm  
Page 2 of 34

By BC Code for Permits Issued between 10/17/2011 - 10/23/2011

**1010 One Family Detached**

Approval: 8 77275	Issued: 10/20/2011	Close:	Project: 244194 7829	Thos.Bros.: 1189-A3
	Application: 08/02/2011	Stories: 0	Units: 1 Floor Area: 0.00	Valuation: \$335,320.02
Scope: to construct a new two story single dwelling unit.				
Role Description	Firm Name	Customer Name		
DA-DS 3242				
Owner				

Approval: 8 77276	Issued: 10/20/2011	Close:	Project: 244194 7801	Thos.Bros.: 1189-A3
	Application: 08/02/2011	Stories: 0	Units: 1 Floor Area: 0.00	Valuation: \$335,712.92
Scope: to construct a new two story single dwelling unit.				
Role Description	Firm Name	Customer Name		
DA-DS 3242				
Owner				

Approval: 8 77277	Issued: 10/20/2011	Close:	Project: 244194 7817	Thos.Bros.: 1189-A3
	Application: 08/02/2011	Stories: 0	Units: 1 Floor Area: 0.00	Valuation: \$335,712.92
Scope: to construct a new two story single dwelling unit.				
Role Description	Firm Name	Customer Name		
DA-DS 3242				
Owner				

Approval: 8 77278	Issued: 10/20/2011	Close:	Project: 244194 7836	Thos.Bros.: 1189-A3
	Application: 08/02/2011	Stories: 0	Units: 1 Floor Area: 0.00	Valuation: \$335,712.92
Scope: to construct a new two story single dwelling unit.				
Role Description	Firm Name	Customer Name		
DA-DS 3242				
Owner				

Approval: 8 77279	Issued: 10/20/2011	Close:	Project: 244194 7797	Thos.Bros.: 1189-A3
	Application: 08/02/2011	Stories: 0	Units: 1 Floor Area: 0.00	Valuation: \$354,158.81
Scope: to construct a new two story single dwelling unit.				
Role Description	Firm Name	Customer Name		
DA-DS 3242				
Owner				

Approval: 8 77280	Issued: 10/20/2011	Close:	Project: 244194 7854	Thos.Bros.: 1189-A3
	Application: 08/02/2011	Stories: 0	Units: 1 Floor Area: 0.00	Valuation: \$353,549.61
Scope: to construct a new two story single dwelling unit.				
Role Description	Firm Name	Customer Name		
DA-DS 3242				
Owner				

Approval: 8 77281	Issued: 10/20/2011	Close:	Project: 244194 7848	Thos.Bros.: 1189-A3
	Application: 08/02/2011	Stories: 0	Units: 1 Floor Area: 0.00	Valuation: \$353,549.61
Scope: to construct a new two story single dwelling unit.				
Role Description	Firm Name	Customer Name		
DA-DS 3242				
Owner				

Approval: 8 77282	Issued: 10/20/2011	Close:	Project: 244194 7830	Thos.Bros.: 1189-A3
	Application: 08/02/2011	Stories: 0	Units: 1 Floor Area: 0.00	Valuation: \$353,549.61
Scope: to construct a new two story single dwelling unit.				
Role Description	Firm Name	Customer Name		
DA-DS 3242				
Owner				

Source: Environmental Services Department



THE CITY OF SAN DIEGO

M E M O R A N D U M

Date: June 21, 2012

To: Eduardo Luna, City Auditor

From: Kelly Broughton, Director, Development Services Department

Subject: Management Response to the Draft Performance Audit  
Development Services Department's Project Tracking System

---

Development Services Department (DSD) appreciated the opportunity to have the auditor's staff review a key tool used by the department since it was implemented in 2001, the Project Tracking System (PTS). As the name implies, this tool is used to manage projects through the City's review and inspection process.

Following are the Departments responses to the findings and recommendations contained in the draft audit report:

**Finding 1:** DSD has not Implemented Sufficient Controls over its Project Tracking System to Adequately Mitigate the Risk of Improper Activity

**Response:** We do not agree with this finding.

PTS has users who perform their duties using software clients within the City's network and also through other public carrier networks. The Auditor reviewed how this security worked and noted no weaknesses which could be exploited by non employees in or outside the City network.

The Auditor then looked at employee access and DSD authorization forms since PTS was implemented in 2001. The Auditor had no issues as to whether or not staff had been authorized to use PTS or that processes to authorize access were a problem. We did, however, detect unauthorized access of an account during the audit that turned out to belong to an auditor. We followed City processes and suspended the account. Unfortunately employees and managers in three departments felt they were then accused of violating Municipal Code and Charter provisions by the City Auditor (email 05/25/2011 Alan Watkins - Attached).

*Recommendation No. 1:* The Development Services Department (DSD) must immediately implement controls in the Project Tracking System (PTS) Production Environment to prevent inappropriate modifications to PTS. Specifically, DSD should instruct the Database Administrator to:

- a) Remove the IT Program Manager position's programmer account and ability to directly log into the system's database.
- b) Remove programmer access to the Production Environment.
- c) Remove programmer access to privileged accounts, except those used by the database administrators and for emergency fixes, by locking the accounts and changing the passwords. Where privileged accounts are required for emergency fixes, DSD should limit programmer access through a restricted number of highly monitored accounts. In addition, the permissible use of these accounts should be governed through formal policies.
- d) Ensure that programmers do not have access to modify or disable system triggers in the Production Environment.
- e) Ensure PTS records a detailed audit trail of key information, including the prior data entries, the username of the person who changed the data and the timestamp noting when the change occurred.

DSD should also direct the System Administrator to comprehensively document the Software Change Management processes, and associated risks and controls for each environment.

**Response:** Disagree with this recommendation.

DSD disagrees with the auditor's opinion that adequate software change management processes are not being followed by the department. DSD follows appropriate access protocols; and documents and records changes in the system appropriately. We believe the authorities currently granted to employees are appropriate and proper.

Again, while the auditor could not find any unauthorized modifications and improper changes to PTS and points to potential risk, DSD does not believe changing the way it is implementing this critical information technology solution is warranted.

*Recommendation No. 2:* In order to reduce the risk of inappropriate system use by an employee, DSD should perform a Separation of Duties (SOD) assessment to ensure that employees only



Eduardo Luna, City Auditor  
June 21, 2012  
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have the access they need to perform their functions, complying with the principle of least privilege. Specifically, DSD should:

- a) Review all PTS user roles and limit the capabilities for roles that provide broad access to PTS' functions.
- b) Review current user access to PTS' roles and restrict access to only those roles necessary and appropriate for each user's function. This includes restricting the DSD Director's access to a more appropriate level, such as "read-only."
- c) Review current role combinations to ensure that no combination grants excessive or inappropriate access, and immediately remove any conflicting combinations.
- d) Create a comprehensive policy that identifies all prohibited role combinations and documents compensating controls to mitigate any risk when a segregation of duty conflict must exist for business

**Response:** Disagree with this recommendation.

The department already performs a separation of duties assessment and believes all roles and access within PTS is appropriately assigned.

*Recommendation No. 3:* DSD should restructure its organizational arrangement so that the DSD IT Program Manager position no longer oversees both the IT function and the individuals who collect and reconcile fees and transmit that information to the City Treasurer and Comptroller's Office.

**Response:** Disagree with this recommendation.

The auditor did not find any fraud as a result of the current functional arrangement of these staff and managers nor did the report give any clear example of how this arrangement could result in any incident of fraud.

*Recommendation No. 4:* The Development Services Department (DSD) should immediately begin comprehensively documenting PTS and facilitate the transition of Application Development and Maintenance (ADM) functions to the ADM vendor as soon as feasible. Further, DSD must ensure that the vendor takes over management and monitoring of all privileged accounts in the production environment.

**Response:** Partially agree with this recommendation. DSD does not agree that PTS needs additional documentation. DSD is assisting the San Diego Data Processing Corporation's (SDDPC) transition of the ADM functions from SDDPC staff to the new ADM vendor per the City/Vendor agreed upon schedule. ADM functions have never been in DSD.

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June 21, 2012  
Page 4

**Finding 2:** DSD Staff do not consistently Charge Accurate Permit Fees as a Result of Multiple Issues Including Deficiencies in PTS.

**Response:** We do not agree with this finding.

This section of the audit focuses as much if not more with fee complexity, staff performance, and organizational structure as opposed to a performance audit of PTS. When making recommendations in this section of the report regarding the deficiencies of the tracking system, the auditor still clearly does not understand the complexity of DSD and other agency fees and how staff interfaces with PTS as a project progresses through review, permitting, and inspection. The deficiencies that are incorrectly identified are then used by the auditor to suggest PTS solutions that would cause fee error risks rather than reduce them because of the lack of understanding of our fees and process.

The auditor states "...that Development Services Department (DSD) staff make a significant number of errors assessing fees ... and we identified projects that had been undercharged by as much as \$37,000 and overcharged by as much as \$345,000." This example given is a construction debris deposit, which is 100% refundable, and is not a fee. It even hides in a footnote that this large overcharge was corrected within days of it being charged and well before the project had been completed.

The report relies almost exclusively on 197 DSD staff performance audits conducted at project setup. Over half of those audits are from a limited number of staff members that were under disciplinary action for poor performance. The purpose of DSD audits is to see how well staff follows written procedures in setting up projects; to catch and correct issues early in the process; and determine where we need to focus training and/or revisit procedures or other tools staff use to perform their jobs. Quite simply, they are a management tool. We correct errors discovered in these audits 100% of the time. In fact, we informed the Auditor that utilization of staff performance audits is not a representative sample but rather biased and that it would be inappropriate to use it. It is not factual to state that DSD staff "... make a significant number of errors assessing fees..." based upon these DSD audits.

Deficiencies cited by the auditor in PTS demonstrate a lack of understanding of the complexity of DSD processes and fees and how staff uses PTS.

*Recommendation No. 5:* The Development Services Department should:

- a) Review its current staffing model for the Submittal and Issuance Groups;

- b) Determine if the “generalist” approach is the most effective option to meet operational needs and accommodate staff skills; and if not,
- c) Identify and implement an alternative staffing structure.

**Response:** See response to Recommendation No. 6 below.

*Recommendation No. 6:* The Development Services Department should consider available options to reduce workloads in the submittal and issuance groups, including re-allocating staff resources to this function.

**Response:** Partially agree with this recommendation.

DSD management had already begun working with labor on ideas to reassign and reorganize work in areas of the department that had largely been staffed by generalist classifications. Over the previous three years, a combination of reductions in staffing as a result of the economic downturn, increases in regulatory complexities, and a restructuring of department work load led us to these discussions. The first phase of the proposed changes were implemented prior to the beginning of this audit. The second phase is currently undergoing implementation and the next step requires meet and confer. This is currently being discussed with Human Relations. These changes are aimed at providing solutions to the underlying issues identified in these two recommendations.

*Recommendation No. 7:* The Development Services Department should continue to conduct and document regular audits of fees at project submittal and resume conducting and documenting audits of fees during structural engineering review and at permit issuance. DSD should develop a written policy that establishes a minimum level of projects to be audited each month.

**Response:** Agree.

While the audit incorrectly stated that DSD began auditing in May 2011 -- DSD developed and implemented minimum auditing performance measures as part of its 2003 fee study with a goal of 5% of all projects regularly audited -- DSD agrees that regular audits should continue.

*Recommendation No. 8:* DSD’s IT staff should work with supervisors over the Submittal Group and Structural Engineering to identify and create reports that would help them review fees charged by staff.

**Response:** Disagree with this recommendation.

DSD does not view this as the best methodology to help review fees charged. Instead we are proposing to continue to implement changes already begun or implemented that provide staff doing the actual data entry with indicators to question whether an appropriate fee has been charged, establishing minimum and

maximum fees that the system enforces, and limiting staff from proceeding with project completion when invalid or questionable entries are made.

*Recommendation No. 9:* The Development Services Department (DSD) should strengthen Project Tracking System (PTS) controls over assessing fees by implementing:

- a) Logic checks to ensure that fees are entered accurately and alert reviewers when apparent errors have been made in charging fees. For example, logic checks should alert reviewers if the square footage used to charge the Building Permit and the Construction and Demolition Debris Deposit fees does not match; if separate fees are charged for different project components when they should be combined; or if the type of construction used to charge different fees does not match.
- b) Auto-populating features to reduce the necessity for repetitive data entry by staff. For example, if the project is being charged a Building Permit fee for 4,000 square feet of new single-family construction, the Project Tracking System should automatically add the Construction and Demolition Debris Recycling Deposit fee for a new 4,000 square foot single-family home.
- c) Predictive controls to reduce staff fee choices based on prior data input, making accurate fee selection easier and quicker and reducing customer waiting times. For example, if the reviewer indicates that the project is for new single-family construction, the list of available fees should be limited to only those fees that may apply to a new single-family construction project.

**Response:** Disagree with this recommendation.

These recommendations were made with the auditor's assertion that there are deficiencies in PTS. We disagree with this and feel that the suggested solutions would add complexity to a program that would significantly increase Software Change Management costs; increase possibilities for new system errors being created that miscalculate fees and are harder to find; and are solutions that do not consider the constantly changing fee environment at the City.

*Recommendation No. 10:* The Development Services Department (DSD) should ensure that the Project Tracking System (PTS) caps the Construction and Demolition Debris Recycling Deposit at the maximum level established by the City Council. DSD should also ensure that PTS limits all fees to the correct maximum amounts to prevent overcharging customers.

**Response:** Agree with this recommendation.

During the audit his question was raised on fees that were determined by DSD to have already been capped. DSD evaluated all similar fees and added additional caps where appropriate.

Eduardo Luna, City Auditor  
June 21, 2012  
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**Finding 3:** PTS' Current Reporting Capabilities do not Facilitate Effective Operational Management for Client Departments

**Response:** Partially agree with this finding.

As this and prior audits of DSD by previous audit entities and the current City Auditor have pointed out, a large number of processes, fees, and requirements for many organizations lead in and out of DSD. This condition has evolved over many years as management and industry representatives have emphasized that DSD become a "one stop shop" for all development activity.

DSD collects fees, enforces business rules, supports processes, provides data, and regulates development on behalf of many groups. For example, just our list of outside City review entities is over 60. We also collect fees for others agencies and City organizations that are double the amount collected in support of enterprise fund activities. PTS was designed as a tool to manage projects through the City required review, approval, and inspection processes. At the same time, it is expected to prevent, enforce, and remind staff to implement these outside DSD agency and department requirements.

While City department senior management has not raised formal concerns with DSD's performance, it is not a surprise to receive an answer in the affirmative when the auditor asks any of these department or agency's line staff or middle management whether PTS data could be used to support their operations. DSD does not, however, believe a core business function of DSD is to generate such reports. Just the ever changing public records legal and security issues alone are beyond the scope of DSD's core function. This would be better left to a more central IT solution.

*Recommendation No. 11:* The Development Services Department should work with all departments that require custom reports to identify their reporting requirements and the most cost-effective way to generate all necessary reports. This recommendation pertains to the reporting requirements of the Transportation and Stormwater Department, the Environmental Services Department, and the Public Works Department, as well as any other City departments that require custom reports to increase productivity and efficiency.

**Response:** Disagree with recommendation. See response to Finding No. 3 above.

*Recommendation No. 12:* The Development Services Department should establish formal agreements, such as Service Level Agreements, with each of its client departments that require custom reports, including the Transportation and Stormwater Department, the Environmental

Services Department, and the Public Works Department, as well as any other City departments that require custom reports to increase productivity and efficiency. These agreements should establish clear responsibilities for report generation, including:

- a) Specific procedures for client departments to request custom reports from the Project Tracking System, including the information required in the report and the format of the report (electronic or hard-copy);
- b) Timelines for the Development Services Department to respond to report requests with an estimated cost and completion date;
- c) Funding sources that will be used to pay for the creation of the report; and
- d) Procedures that allow client departments to generate reports on demand from the Project Tracking System.

**Response:** Disagree with recommendation. See response to Finding 3 above.

Finding 4: DSD has not developed a Long-Term Information Technology Strategy to Meet Business and Customer Needs Cost Effectively

**Response:** Partially agree with finding.

DSD routinely refines and updates PTS in response to changing technology, changing work conditions, and changing processes, business needs, fees, etc. As part of each comprehensive fee study, DSD has revaluated PTS and the future of technology in its rate studies. In addition, DSD management consistently attends technology conferences, talk with industry peers, and meet with product vendors about the ever changing options for replacement of PTS. DSD has not committed this approach to writing as we have not had a business need nor seen a less expensive solution to its project tracking needs.

*Recommendation No. 13:* The Development Services Department and City management should develop a formal, written five-year information technology strategic plan. This plan should include, but not be limited to, an analysis and identification of:

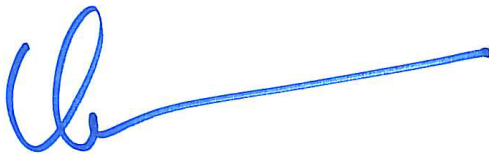
- a) Current and anticipated business needs;
- b) Internal and external customer requirements;
- c) Current trends in system functionalities and security, including services that can be offered via the internet;
- d) Options to meet business and customer requirements cost-effectively, including a cost benefit analysis of retaining PTS over the long term or replacing it with a new system—either developed in-house or a customized commercial software system; and

Eduardo Luna, City Auditor  
June 21, 2012  
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e) Anticipated funding needs and source of funds.

**Response:** Partially agree with recommendation.

DSD is beginning a request for proposal process for another comprehensive fee study that is conducted approximately every three years. As part of this process, DSD will again revisit IT needs for the next three years and will document their findings about the strategy for PTS and other IT initiatives. DSD will seek outside stakeholder input and recommendations for consideration in the rate study deliberations during this effort.

A handwritten signature in blue ink, consisting of a stylized initial 'K' followed by a long horizontal line.

Kelly Broughton  
Development Services Director

KGB/mtf

Attachment: E-mail dated May 25, 2011, Alan Watkins

## Myers, Jim

---

**From:** Watkins, Alan  
**Sent:** Wednesday, May 25, 2011 9:20 PM  
**To:** Constantin, Chris  
**Cc:** Lastomirsky, Steve; Lewis, Mary; Broughton, Kelly; Myers, Jim; Atkinson, Laura; Luna, Eduardo; Elser, Kyle; Hall, Barbara; Morgan, Larry; Gomez, Stephen; Glick, Sara; Bond, Debra; Stevens, Michael  
**Subject:** RE: City Auditor access to DSD Oracle Database  
**Attachments:** RE: Auditor Access to DSD's PTS Application Data

Chris,

I understand that telephone conversations have occurred between you and Debra Bond, and maybe others in your office, on this topic. As you know, Kyle setup a meeting next Tuesday to address this issue.

My role and responsibility is to manage and monitor both security and internal controls of the City's IT systems and data. By no means was SDDPC, DSD nor our office questioning the legal authority of the Office of the City Auditor to conduct your business in performing audits of City (or SDDPC) data pursuant to the City Charter or Municipal Code. DSD Management (Kelly Broughton and Jim Myers) and SDDPC (Barbara Hall, et.al.) were acting under the direction of my message sent to Eduardo on Monday, 05/23/2011 (which most of the recipients on this message also received). Based on your allegation below, I am the individual who should be held responsible for the temporary revocation of Stephen's access (see attached Email chain), although I am not personally aware of the SDDPC technical staff who would have executed the revocation. As a statement of fact, there has been no "*specific intent of obstructing*" the audit [emphasis added] and none of us have any issue with the fact that the Office of the City Auditor requires (and has legal standing) to obtain or access City data. While the Charter provides authority for Auditor access to data, it does not mandate the process or manner of such access. Our issue was only with the manner in which such access was requested and granted, not your authority. At issue was access to the live, production database versus alternate access to the necessary data to conduct your audit. One of the concerns is direct database-level access, as opposed to application-level access which includes security controls, and another concern was having queries or other data retrieval tasks running against the production database, where active transactions are occurring, may cause a performance issue to DSD's business operations.

To facilitate Stephen's required access to the necessary data, my internal controls requirement was that the request for such access comes from someone above his level to approve the access for a valid business purpose (an audit), and not to have SDDPC or any City department just rely solely on the request of the specific staff member. This provides a check-and-balance for future audits of such access. Your affirmative statement below, that Stephen "was operating with the authority of our office and approval of audit management," satisfies this requirement.

As far as the manner in which access is granted - to conduct an audit covering a particular past time period (as opposed to a potential investigation of ongoing fraud and abuse which your office may conduct), the preferred method of accessing or obtaining the data is for SDDPC to provide the authorized audit staff with a snapshot copy of the database in question. Access to the live, production database should not be necessary for an 'after-the-fact' audit. Separately, SDDPC has



asked our office about who should be charged for any of their billable services. That matter will still need to be resolved, but should not be allowed to cause any delay in the current audit that Stephen needs to complete [Larry, Laura, and Barbara – take note of this].

I hope this clarifies the issue and any verbal comments you may have heard. I am happy to further discuss this matter with you at the meeting next week.

-Alan.

~~~~~

*Alan B. Watkins*

**IT Operations & Security Manager**

City of San Diego, Department of Information Technology

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San Diego, CA 92101-4998

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(619) 533-3254 [Fax]

[[AWatkins@sandiego.gov](mailto:AWatkins@sandiego.gov)]

[<http://www.sandiego.gov/it/>]

~~~~~

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[Stay Safe Online.Org](#) - National Cyber Security Alliance

Please consider the environment before printing this message.

---

**From:** Bond, Debra  
**Sent:** Wednesday, May 25, 2011 05:08 PM  
**To:** Watkins, Alan  
**Subject:** FW: City Auditor access to DSD Oracle Database  
**Importance:** High

FYI

---

**From:** Constantin, Chris  
**Sent:** Wednesday, May 25, 2011 4:48 PM  
**To:** Morgan, Larry  
**Cc:** Hall, Barbara; Stevens, Michael; Bond, Debra; Luna, Eduardo; Elser, Kyle; Glick, Sara; Gomez, Stephen  
**Subject:** City Auditor access to DSD Oracle Database  
**Importance:** High

Larry,

Based on communications provided by audit staff, DPC was directed to cease City Auditor's Office read-only access to Development Service's Oracle database. Steve Gomez, an auditor from our office, requested and received access to this database in accordance with the City Charter. The information provided in the database is critical to objectives of our audit.

As has been provided to your office previously, Section 39.2 of the City Charter states:

“The City Auditor shall have access to, and authority to examine any and all records, documents, systems and files of the City and/or other property of any City department, office or agency, whether created by the Charter or

otherwise. It is the duty of any officer, employee or agent of the City having control of such records to permit access to, and examination thereof, upon the request of the City Auditor or his or her authorized representative. It is also the duty of any such officer, employee or agent to fully cooperate with the City Auditor, and to make full disclosure of all pertinent information.”

Mr. Gomez was operating with the authority of our office and approval of audit management to obtain access to the requested information. As such, DPC and DSD are required to comply with our office’s request. The issues leading to the revocation of access do not hold merit, run afoul of the City Charter section cited above, and appear to constitute a violation of San Diego Municipal Code Section 22.0711, the City’s Improper Influence Ordinance which specifies:

**“§22.0711 Improper Influence of Outside Professionals and Obstruction of the City Auditor**

(b) It shall be unlawful for any elected official, officer, or employee of the City, or anyone acting under their direction, to take any action to coerce or fraudulently influence, manipulate or mislead the City Auditor or any member of his or her staff in the conduct of an audit with the specific intent of obstructing such audit or rendering any report of such audit materially misleading.

(d) Any person who violates section 22.0711(a), 22.0711(b) or 22.0711(c), or who counsels, aids, abets, advises, or participates with another to commit such violation, is guilty of a misdemeanor and is subject to the penalties set forth in Chapter 1 of the Municipal Code.”

If access is revoked, our office must investigate this situation and consider proceeding with actions authorized under the Municipal Code Improper Influence Ordinance. This investigation would require DPC identify the specific individuals who directed the revocation of access to the database, a list of the individuals from DPC or any other department who facilitated the revocation of access, and the production of all emails, written communication, phone messages, and any other relevant evidence regarding the revocation action. Further, we would request DPC produce the written law or regulation granting authority to restrict a Charter level office from gaining access to City information where authority for access is specifically granted by the City Charter.

Let me know if you would like to discuss this further or have any questions.

Regards,  
Chris Constantin

***Chris Constantin*** MPA, CFE, CLEA  
***Assistant City Auditor***

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