County Executive Office

Memorandum

February 18, 2010

To: Steve Danley, Director Office of the Performance Auditor

From: Satish Ajmani, Deputy CEO and Chief Information Officer

Subject: Response to Final Draft Report: Performance Audit of CEO/IT, Task II Report

Attached please find a copy of the Response to the Final Draft Report: Performance Audit of CEO/IT, Task II Report.

Thank you for the opportunity to provide feedback to your report.

cc: Thomas G. Mauk, County Executive Officer
        Rob Richardson, Assistant CEO

Introduction
The development of a Countywide IT Strategic plan was sponsored by the IT Working Group (ITWG). The direction, approach and methodology was reviewed by the ITWG and the final plan was endorsed by the ITWG, IT Managers and the Business Communities that participated in the project.

The development of the CEO/IT Strategic Plan began with a fundamental premise that County IT services were provided in a Federated or decentralized model where agencies were responsible for IT in their organizations. Given the challenges related to organizational culture, any proposed change to the Federated model would have hindered agency cooperation in developing the plan. The focus then was on a business driven IT Strategic Plan that recognized the co-existence between agency and CEO-IT as realized in a governance plan that included business and agency IT stakeholders.

IT specific drivers and trends were discussed with outside experts (Gartner) in the Domain Architecture workshops resulting in technical roadmaps and standards for Applications, Data and Information, and Technology. The most critical factor for the roadmap and standards is to maintain currency as technical and business needs change. This is the fundamental principal behind establishment of architectural working groups (Technology, Security, Applications and Data, and Business Continuity) as well as the Technology Council.

The plan itself is structured for an audience that has a business focus and so it first directs the reader's attention to business drivers, followed by shared informational needs and governance. Technical plans that are germane to IT leaders are in sections following the business sections. As such, the working documents are included as part of the plan.

Development of the IT Strategic Plan represents several firsts for the County:

- First time development of a comprehensive County wide IT Strategic Plan
- Introduction of Enterprise Architecture County wide
- Introduction of Domain Architecture County wide
- Introduction of Decision Support County wide
- A strong business driven focus and not implementing IT for the sake of IT
- Introduction of a collaborative Governance model in a highly decentralized environment that includes business stakeholders

Response to Findings and Recommendations

Finding 1A: The methodology used to develop the Plan does not follow a logical process.
(p. 10) **Response:** The plan follows a logical process ensuring alignment of information technology strategies, technology blueprints and a portfolio of tactical projects with business needs. This approach was deliberate in that any IT Strategic Plan should be business driven and not based on technology for the sake of technology.

(p. 12) The Performance Auditor's report proposes an alternative approach that is technology driven and not business driven and assumes the existence in the County of an Enterprise Architecture, Decision Support, and IT Governance from which IT Strategic Goals are developed. This simply was not the case and therefore, the key imperative of the Strategic Plan was to first establish conceptual Enterprise Architecture, Decision Support and Governance frameworks to develop around these areas. Based on business need, key tactical projects would then be identified and proposed for execution based on the funding and prioritization. This "bottom up" approach for implementation is appropriate in that development of specific elements, be they for Enterprise Architecture, Decision Support or the like, are cost justified based on business need and not developed just for their own sake.

The technical blueprints developed and documented in the IT Strategic Plan follows the framework developed by John Zachman encompassing four domains: Business, Technology, Applications and Data. John Zachman is the originator of the "Framework for Enterprise Architecture" which has received broad acceptance around the world as an integrative framework for Enterprise Architecture.

Recommendation 1A: Revise the strategic planning methodology to include important logical steps that ensure proper alignment and clarity.
(p. 12) **Response:** Do not concur. A logical methodology has been followed and encompasses the activities in the alternative approach proposed in the Performance Auditor's report including an assessment of the current state and the development of IT Strategic Goals.

(p.12) Concerning the development of an IT Mission and Vision Statement, given a business focus, the plan is aligned with the County's Mission and Vision Statement. Furthermore, the decentralized nature of IT in County necessitates the development of overarching governance structure through which a common County wide mission and vision can be collaboratively developed.

CEO-IT's own Mission and Vision statements are articulated in its Operating Plan as follows:

Mission Statement: "Working together as a team to utilize technology to improve the quality of life for the communities we serve by delivering quality, innovative, and fiscally responsible products and services.

Vision Statement: Making IT easy to get GREAT service from the County

In addition, each of the domain architecture groups has developed charters that speak to goals and objectives. The groups include the Technology Council, Technology Architecture, Security Working Group, Applications and Data Architecture.

(p. 12) Concerning the need to identify IT specific needs, gaps and deficiencies, the Strategic Plan includes a gap analysis. See link below. (http://intra2k3.ocgov.com/strategic_plan/documents/13.%20Gap%20Analysis%20Summary.pdf) Further analysis of gaps and deficiencies was conducted through workshops. Related documents can be found at http://intra2k3.ocgov.com/strategic_plan/, specifically as they relate to Configuration Analysis, Organizational Analysis and Budget Analysis.

(p. 12) For Enterprise Architecture, Domain Architecture and Decision Support, appropriate guiding principles were developed based on technology industry trends and best practices and are included in the appropriate Domain Architecture documents. The architectural frameworks include standards to guide the use of technology in the County. Viable projects associated with building the architectural components are included in the Tactical Plan.

(p. 12) Finally, with regard to the development of a prioritization framework, such a framework has been in existence since 2007 as part of the annual Information Systems Request (ISR) process and includes the Project Review Board comprised of the County Budget Director, Agency/Department IT Directors, Agency/ Department business management and CEO-IT management. They review all IT project budget requests over $150,000 and recommend those that meet specific criteria for consideration in the next Fiscal Year's budget. The Project Review Board was a direct result of the governance framework established in the IT Strategic plan. Previously, only CEO-IT staff were on the review committee.

Finding 1B: From the perspective of a significant number of agency/department stakeholders, the Plan does not achieve its objectives of 1) adequately including their input and 2) serving as an actionable roadmap to guide their IT operations.

(p. 13) **Response:** It is difficult to assess the significance of this survey as it does not break down the findings by type of respondent (IT, Business User, etc.), each of whom has a different perspective on the report.

(pp. 42 – 44) Nonetheless, based on the data in Appendix C of the Performance Auditor's report, our analysis shows the following results:

Question (Scoring 1 to 5)	% Scoring 2 or lower	% Scoring 3 or Higher	% Scoring 4 or Higher
How would you rate the overall quality of the IT Strategic Plan?	19%	81%	35%
How would you rate the IT Strategic Plan's usefulness as a roadmap to guide IT operations for your agency/department?	37%	63%	32%
How well do you think the IT Strategic Plan includes your agency/department's input?	40%	59%	31%
In your opinion, does the IT Strategic Plan clearly describe how CEO/IT will support your agency/department in the delivery of core services?	49%	51%	31%
How would you rate the clarity of the plan regarding the roles and responsibilities of CEO/IT compared to the IT functions of agencies/departments?	43%	57%	29%

Finding 2: The Plan does not include an adequate discussion of external technology trends that can practically assist the County in foreseeing and adequately planning for major IT changes on the horizon.

(p 14.) **Response:** IT industry technology trends and best practices were heavily considered in the development of Enterprise and Domain Architectures, resulting in Guiding Principles for each domain. This was accomplished through the engagement of thought leaders in these areas from Gartner, Inc.

Architectural Blueprints and other documents included discussion of industry trends. The resulting Guiding Principles are documented and in the body of the Plan.

Furthermore, the roadmaps establish clear standards for technical trends that are mainstream and what the County should do with them in 2 year and 5 years.

With respect to the three trends specifically cited in the Performance Auditor's report:

- Outsourcing has been a de facto model for CEO/IT for over 30 years and is not expected to change. Management exploration of the ACS contract deficiencies was the initial effort related to development of a sourcing strategy. The sourcing strategy is now under way with

Board approval to proceed with an RFP for managed services related to both data center services and VOIP.

- Virtualization was well under way at the time of the development of the strategic plan and is the standard service offering unless not supported by the application provider or client for new servers at the Data Center.
- Cloud computing was discussed in the Enterprise Architecture sections. A July 2009 report on Cloud Computing from Gartner indicates that "many cloud technologies and concepts will see mainstream adoption in two to five years". The IT Sourcing RFP currently under development will seek out vendors that are establishing cloud technologies that meet the specific needs of government clients.

Recommendation 2: Revise the Plan to include a discussion of significant IT industry trends that would be directly relevant to improving the County of Orange IT environment.
(p. 15) **Response:** The technical blueprint that is part of the Strategic Plan already addresses industry trends. These are further elaborated upon in the documents related to Enterprise Architecture and Domain Architecture.

Finding 3: The Plan discusses some but not all major frameworks relevant to Orange County IT that are referenced in the Plan document.
(p. 15) **Response:** The Performance Auditor's report recognizes the introduction of some important IT industry frameworks such as Decision Support and Enterprise Architecture to the County, but goes on to say that they were not further elaborated upon in a context specific to the County. A review of the section on Information Requirements and Decision Support indicates that Information Processing Schemas and a Conceptual Data Model have been developed for:

- Children, Senior, and Family Services
- Cultural and Recreational Services
- Governance and Compliance
- Health Care Services
- Law and Justice Services
- Property and Land Use
- Public Infrastructure
- Shared Services

(p. 15) Architectural blueprints have been elaborated to the point of standards and roadmaps for each domain. Given the potential cost of implementing each of these frameworks, the plan's intent was to allow for prioritization of these frameworks based on business drivers and related funding that would call out the value of implementing specific solutions.

(p. 15) Information technology Infrastructure Library (ITIL) is considered as being operational in nature. Nonetheless, ITIL training had been provided to IT Employees Countywide and five specific ITIL Process Frameworks have been implemented in CEO/IT

Recommendation 3: Revise the Plan to include all major IT frameworks that are currently being used, or could be useful, in the Orange County IT environment.

(p. 15) **Response:** The Plan already considered major IT Frameworks from Zachman as well Decision Support / Data Modeling framework which were used in developing Enterprise Architecture, Domain Architecture, and a high level enterprise data model for Decision Support.

Finding 4: The Plan does not articulate an IT-specific mission or vision for the County of Orange.

(p. 16) **Response:** Given a business focus, the plan is aligned with the County's Mission and Vision Statement. Furthermore, the decentralized nature of IT in County necessitates the development of overarching governance frameworks through which the County wide common vision and mission can be collaboratively developed.

CEO-IT's own Mission and Vision statements are articulated in its Operating Plan as follows:

> Mission Statement: "Working together as a team to utilize technology to improve the quality of life for the communities we serve by delivering quality, innovative, and fiscally responsible products and services.

> Vision Statement: Making IT easy to get GREAT service from the County

In addition, each of the domain architecture groups has developed charters that speak to goals and objectives. The groups include the Technology Council, Technology Architecture Group, Security Working Group, Applications and Data Architecture Group.

Recommendation 4: Include a Countywide IT-specific vision and mission statement in the Plan. Use these statements as foundational elements in the development of IT Strategic Goals, Strategies and individuals Initiatives/Projects.

(p. 18) **Response:** Please see response above and to Recommendation 1A.

Finding 5: The Plan does not include a thorough discussion of the County's "Federated IT system" and does not clearly define the role of CEO/IT in this system.

(p. 18) **Response:** Development of the plan assumed at the outset that a Federated or Decentralized model would be the de facto model. Recent assessments on centralization including a study on server co-location at the County Data Center as well as the development of an IT sourcing strategy have validated that assumption. Given this, it was critical that focus be placed on a Governance Model that includes a process based CIO with collaboration being the key element of the model.

Recommendation 5: Working with County agencies/departments, define roles and responsibilities for CEO/IT and agency/departments IT operations, seek approval of these roles from the Board of Supervisors, and clearly communicate these roles to all IT stakeholders.

(p. 19) **Response:** As stated above in the response to Finding 5, the CIO determined that a Federated model would be most effective with highly decentralized, autonomous agencies. Specific division of responsibilities are defined depending on the specific needs of an agency. The specific roles are defined in a number of ways depending on the circumstance. For operational support of servers, specific services are defined through Memoranda of Understanding between agencies and CEO/IT. Other specific services are defined through the

quarterly client demand meetings where changes in service needs are addressed. Finally, for large projects, specific responsibility matrices are developed which define the roles for CEO-IT, the Agency/Department, and any vendors on the project.

Should the County's organizational business model change, the CIO will respond accordingly.

Finding 6: The Plan does not mention the County's significant use of IT contractors as part of its description of the current or proposed IT system/environment.
(p. 20) Response: Outsourcing has been a de facto model for the County for over 30 years and the re-bid of the current contract is being addressed in a separate initiative. Indeed, the architectural roadmaps and frameworks developed in the Strategic Plan will be articulated in the Scope of Work for the sourcing RFP.

Recommendation 6: Include a discussion of the County's use of IT contractors/outsourcing strategy in a revised version of the IT Strategic Plan.
(p. 20) Response: A discussion of current and future sourcing models will be incorporated into the the next version of the 3 Year Tactical Plan.

Finding 7: The Plan does not include a thorough assessment of the current County IT environment, including the identification of specific deficiencies or needs that would drive development of goals, strategies, and initial/projects.
(p.21) Response: An assessment of three specific areas is included in the supporting documentation:
- Configuration Analysis: Servers and Desktop PCs
- Organizational Analysis: Distribution of IT labor
- Summary Budget Analysis: IT Costs including labor, hardware and software
- Benchmark Survey of Municipal IT trends

(p. 21) With respect to the need for analysis for Portfolio Management and Application Lifecycle Management, Portfolio Management deployment was well under way and implemented in 2007, Applications Lifecycle Management is practiced day-to-day for major applications development projects such as PTMS and CAPS+, as are change and release management processes for applications maintenance.

Furthermore, the 3-year Tactical Plan identifies specific Application Architecture projects for implementing standards for applications development and for implementing core shared service applications. Specific line-of-business agency applications are also identified for the first time at a County-wide level.

(p. 21) With respect to a discussion of decisions made related to the CAPS+ upgrade, the project was well under way at the time the IT Strategic Plan was being developed, with its own Program Management team that was managing all aspects of the project including communications. Any other effort would have been redundant.

(p. 21) The Performance Auditor's Report suggests that a more detailed data model should have been part of the Strategic Plan. Given that this was the first time ever that an enterprise view of

data sharing was contemplated, the Plan provides an appropriate level of detail. Anything beyond this should be part of the implementation phase of decision support and would be a major undertaking requiring significant funding.

Recommendation 7: Conduct a thorough assessment of the current County of Orange IT environment with respect to Services, Organization, and Governance to identify both strengths and weaknesses. Use this assessment to build a target (desired) IT environment and as the basis for developing IT Strategic Goals, Strategies, and Initiatives/Projects.
(p. 23) Response: Do not concur. Specific detailed assessments were conducted for the Data Center and server management and Countywide Network and Voice Infrastructure outside of the Strategic Plan Development project. Other "holes" in the IT capability in the County were identified earlier and separate studies were initiated for Geographic Information Systems (GIS) and Electronic Document Management Systems (EDMS).

The recent IT Sourcing Strategy identified an approach for sourcing of "Utility" Services through a managed services model. The scope includes managed services for voice and data networks Countywide, including an uplift to a converged voice and data network, and managed services for data center services that are within the scope of services currently provided by CEO-IT to Agencies/Departments. This approach is consistent with a model that focuses on specific outcomes and service levels at a fixed price with the appropriate incentives to providers.

An appropriate Organizational Design which follows industry best practices will be further refined based on a managed services sourcing model.

Finding 8: The IT Strategic Goals in the Plan are general, incorrectly aligned with the overall County of Orange Mission Statement and Guiding Principles, and do not address the specific IT needs of the County.
(p. 24) Response: The IT Strategic Goals are deliberately aligned with County Business Goals in order to provide a business driven focus for the use of technology. It should be noted that many of the goals for the State of Washington that are cited in the Performance Auditor's report are addressed in the Enterprise Architecture section and in the Guiding Principles for Applications, Network, Security, Structured and Unstructured Data and Unified Communications.

Recommendation 8: Develop additional IT Strategic Goals that address the County's IT needs/deficiencies (including those of internal customers), consider consolidating existing external-facing Goals, and ensure that all Goals are aligned to an IT-specific Mission/Vision.
(p. 26) Response: Volume IV: Tactical Plan, provides specific Enterprise and Domain Architecture goals / plans to address these needs. Strategic Goals were further elaborated and resulted in Guiding Principles for Enterprise Architecture and Domain Architecture.

Finding 9: The set of high-level IT strategies included in the Plan are generic and not aligned with IT-specific goals. In addition, this set of strategies fails to include important strategies suggested by CEO/IT's Plan consultant.
(p. 27) Response: As elaborated in Tables 3, 4 and 5 of Volume IV: Tactical Plan, there is alignment of Tactical Projects with IT Strategies. With respect to the examples of strategies that were identified by the Plan consultant, but were not incorporated in the plan:

- Implementation of a Performance Management ("Balanced Scorecard") system was under way and has now been rolled out in five agencies
- A framework for re-usability is inherent in the Enterprise Architecture.
- Leveraging of enterprise purchasing efforts has been under way in specific areas such as software licensing.

Finding 10: The Plan document does not identify strategies to address gaps and deficiencies in the County's various specific Applications and overall Application management.
(p. 28) **Response:** The 3-year Tactical Plan identifies specific Application Architecture projects for implementing standards for applications development and for implementing core shared service applications. Specific line-of-business, agency applications are also identified for the first time at a County wide level. These include the replacement of the Sheriff's mainframe system applications as well as the replacement of legacy IBM mainframe systems such as CAPS and ATS.

Recommendation 10: Develop specific Applications-related strategies that are aligned with IT Strategic Goals and address the County's Applications deficiencies/needs.
(p. 29) **Response:** This has already been addressed. Applications-related strategies are addressed at two levels. The first is related to the practice of Applications Development, Maintenance and Support. These are being addressed by the Applications and Data Architecture Group comprised of applications development staff from Agencies and CEO/IT. The second is related to development of strategies for specific line-of-business applications. These are governed by the business function and decisions related to them are generally left to Agencies/Departments based on business need and funding availability. Any initiative over $150,000 must be justified through the Information System Request (ISR) process and Annual Budget approval process. The ISR process could be further modified to address requirements for appropriate alignment.

Finding 11: While the Plan document includes some Data-related strategies, it is not clear how these strategies address specific Data deficiencies in the Orange County IT environment, nor is it demonstrated how these strategies align with the IT Strategic Goals in the Plan document.
(p. 29) **Response:** A key deficiency in the County was the lack of any model for data sharing. By advocating for Decision Support to address key business-related questions, and by defining Business Communities of Interest, the Plan goes on to describe Information Processing Schemas and a Conceptual Data Model specifically for:
- Children, Senior, and Family Services
- Cultural and Recreational Services
- Governance and Compliance
- Health Care Services
- Law and Justice Services
- Property and Land Use
- Public Infrastructure
- Shared Services

While foundational in nature, they provide for a business-driven approach to Decision Support.

Recommendation 11: Align Data-related strategies to the County's Data deficiencies and business needs. Modify the data model included in the Plan to be more specific to the County of Orange.

(p. 29) **Response:** This will be an ongoing process driven by the business needs of the Business Communities of Interest that have been established.

Finding 12: The Plan document does not identify strategies to address gaps and deficiencies related to the County's IT infrastructure.

(p. 30) **Response:** A separate analysis on the Data Center and server co-location was already under way at the time of the development of the Strategic Plan, as was an assessment of the voice and data networks. Deficiencies reported in those plans have been addressed on an ongoing basis. The Performance Auditor's report characterizes missed opportunities for VOIP, consolidation of County servers and disengagement from all county mainframe computers. There was an assessment already under way concerning voice and data networks (PlanNet Study) and a Data Center and Server Co-location Assessment was also under way (Unisys Study). Server virtualization is a standard offering at the County Data Center with 240 virtual instances having been deployed. Mainframe disengagement has been on ongoing strategy and CEO-IT has been working hand-in-hand with stakeholder departments (Auditor-Controller, Assessor, Treasurer-Tax Collector) to reduce mainframe costs by over 50 percent over four years and to lease a mainframe that allows for reduction in capacity (and cost) as systems migrate to other platforms.

Recommendation 12: Develop specific strategies to address important Countywide IT infrastructure issues.

(p. 30) **Response:** This is the current practice. See response to Finding 12 above. On an ongoing basis, CEO-IT evaluates the performance and capacity of infrastructure and takes the necessary action to upgrade or enhance capabilities. Such actions have included Wide Area Network upgrades, Storage system upgrades, and Data Center power upgrades.

Finding 13: IT Governance strategies are clearly articulated in the Plan. However, strategies related to IT Services are incomplete, strategies related to IT Organization are missing, and strategies related to the IT Governance are not aligned with IT Strategic Goals.

(p. 30) **Response:** Given the County's decentralized IT model, it is wholly appropriate for the Plan to focus on Governance. Individual Agency/Departmental service delivery and organizational models would be within the scope of Agency/ Departmental plans. CEO-IT's service and organizational models are articulated in its Operating Plan.

Recommendation 13: Revise the Plan to include important strategies related to IT Services and Organization, and demonstrate how IT Governance strategies align with IT Strategic Goals.

(p. 31) **Response:** Do not concur. However, we will be assessing the Managed Services delivery model and changes to the role of CEO-IT and that of agencies vis-à-vis the service provider.

Finding 14: The discussion of EA in the Plan does not identify an explicit EA goal/vision for County of Orange IT, and there is only one unclear strategy for achieving this goal/vision in the Plan document.

(p. 32) **Response:** The concept of an Enterprise Architecture was introduced for the first time to the County during the development of the IT Strategic plan. Based on the Zachman framework for EA, specific Tactical Enterprise Architecture projects across four domains are described in Volume IV: Tactical Plan.

Recommendation 14: Articulate Enterprise Architecture as a goal for the County, discuss the current state of EA at the County, and include specific strategies for how the target EA will be implemented in Orange County.

(p. 32) **Response:** As stated above, the best way to describe EA at the County at the time of the development of the Plan was "non-existent". Development of a target EA can incur significant expense and CEO-IT's approach has been to leverage specific business driven projects for EA. One such example has been to enable the use of Team Foundations Server for managing source code for the PTMS and eFBN applications. Another example is for the Public facing infrastructure where a Portal, Search Engine and Content Management have been implemented.

Finding 15: The Plan's list of "Strategic Technology Initiatives" is not aligned with the IT-specific strategic goals or strategies, nor is there a methodology to prioritize these initiatives or the tactical/EA projects presented in the Plan.

(p. 33) **Response:** The Performance Auditor's report cites examples of initiatives such as 311 Customer Service Center, Emergency Mass Notification and Business Continuity as having no linkage to IT-specific mission, goals and strategies. The reason for this is quite clear in that they serve specific business purposes unlike other initiatives that may be more technology focused such as network upgrades or storage system replacements.

(p. 34) With respect to having a methodology for prioritizing initiatives, such a process has been in place since 2007 as part of the annual Information Systems Request (ISR) process and includes the Project Review Board comprised of the County Budget Director, Agency/Department IT Directors, Agency/ Department business management and CEO-IT management. They review all IT project budget requests over $150,000 and recommend those that meet specific criteria for consideration in the next Fiscal Year's budget. The Project Review Board was a direct result of the governance framework established in the IT Strategic plan. Previously, only CEO-IT staff were on the review committee.

Recommendation 15: Develop a methodology to guide and prioritize IT investment decisions and current IT resource allocations, leveraging the efforts of the existing Project Review Board.

(p. 15) **Response:** Such a process is in place. See response to Finding 15 above.

Finding 16: The Plan does not include a discussion of the next steps for how the overall IT Strategic Plan will be operationalized, who is responsible for ensuring that next steps are completed or how success or failure will be measured.

(p. 35) **Response:** The 3-Year Tactical Plan provides a proposed timeline for both Tactical Agency and Department IT Projects as well as for Tactical Enterprise Architecture Projects. Measurements for success or failure are required for the ISR process as business cases are detailed further for budget approval. Ongoing status is provide to the Board via the Quarterly IT Project Status Report.

Plan ownership clearly belongs to the CIO who will update and refresh the Plan working with stakeholders and using the Governance Process.

Recommendation 16: Include a section in the revised IT Strategic Plan that discusses implementation and next steps for the Plan and assigns ownership for the Plan; identify performance measurements for each IT Strategic Goal.
(p. 37) **Response:** See Response to Finding 16 above.

Next Steps

(p 38) **Response:** We welcome the participation of our key stakeholders including the Board Offices and look forward to sharing the tremendous strides that have been made in the development of the IT Strategic Plan. The Strategic Plan is a living document that has laid out key foundational principles for Governance, Enterprise Architecture, Domain Architecture for the first time in the County and which has provided visibility to key strategic and tactical initiatives.