Metro

Administrative Services Department

InfoLink Review Update

METRO

Alexis Dow, CPA
Metro Auditor

2000-10519-AUD

METRO

Office of the Auditor

January 13, 2000

To the Metro Council and Executive Officer:

The accompanying report is an update of the independent reviews of Metro's InfoLink project and its internal controls performed under contract by Pacific Consulting Group (PCG). They reviewed the status of their previous recommendations for the InfoLink project.

PCG found that Metro achieved significant progress implementing many of the recommendations made in their previous reports. Examples of this progress include:
- using more formal and much improved project management methodology for implementation and upgrades
- making significant progress in implementing and upgrading components of InfoLink
- reviewing and updating user security access
- conducting formal training classes.

Despite the admirable progress staff made this year, the report reiterates previously stated concerns about the funding and staffing support for the InfoLink system. As a result of this follow-up review PCG made two additional recommendations:
- conduct a strategic planning session for the remaining four modules of InfoLink not yet implemented to develop a detailed project plan
- reevaluate the adequacy of functional and technical staff support for the system.

We reviewed this report with the Executive Officer and Chief Financial Officer. The written response of Executive Officer Burton follows the Pacific Consulting Group report.

We appreciate the cooperation and assistance provided by Metro staff as we conducted this review, particularly the staff from the Administrative Services Department.

Very truly yours,

Alexis Dow, CPA
Metro Auditor

Contractor: Pacific Consulting Group

InfoLink Review Update

Report presented to Metro Auditor Alexis Dow, CPA

Pacific Consulting Group, Inc.

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November 29, 1999

Ms. Alexis Dow, CPA
Metro Auditor
600 Northeast Grand Avenue
Portland, Oregon 97232

Dear Ms. Dow:

Pacific Consulting Group, Inc. (PCG) is pleased to submit this follow-up report to our December 1998 InfoLink Project Review and Internal Controls Review. This report summarizes Metro's progress implementing the recommendations presented in our 1998 review reports. Our assessment of Metro's progress is based on documents provided by Metro staff and on-site interviews with key personnel responsible for the InfoLink Project and associated internal control systems.

We appreciate the cooperation we received from Metro's staff during our review. As mentioned above, significant work has been accomplished this year. The staff should be commended for their accomplishments. Metro management must continue to evaluate InfoLink. If financial management information is to become an integral part of Metro's day-to-day operations, additional staffing and financial support will be required to support InfoLink.

Sincerely,

PACIFIC CONSULTING GROUP, INC.

Timothy C. Easton, CMC
President

Contents

Executive Summary

We are pleased to report that Metro has made significant progress over the last twelve months in implementing many of the recommendations made in our previous reports. Our review focused on five major areas summarized below:

- **Project Management** – Metro utilized a more formal and much improved project management methodology in 1999 to implement the accounts receivable and billing modules and upgrades to the PeopleSoft financial modules. Formal project plans, task assignments, project notes and deliverables were used for the version 6.0 upgrade this year. Formal testing documentation was developed for the accounts receivable, billing and payroll/human resource upgrades. The upgrade to version 7.5 of the payroll and human resource modules appears to be well managed and on schedule for a December 1999 implementation. We encourage Metro to continue using a structured approach to implementing software.

- **Progress in Implementing InfoLink** – Metro made significant progress in implementing components of InfoLink in 1999. The general ledger, accounts payable and purchasing modules of the PeopleSoft system were upgraded from version 5.12 to version 6.0. The accounts receivable and billing modules of the PeopleSoft system were also implemented. These two modules had not previously been implemented and were dependent on the upgrade of other financial modules to version 6.0. The PeopleSoft human resources and payroll modules are scheduled to be upgraded from version 6.0 to version 7.5. This upgrade project appears to be well managed and on schedule for a December 1999 implementation.

  However, we remain concerned that there are insufficient staff resources committed to maintaining and operating the InfoLink System. Metro will need to commit additional user and IMS resources to the application to maintain modules already implemented and should reassess the mix of staff and consultants necessary to implement the four remaining InfoLink modules.

- **InfoLink System Security** – Metro has implemented 11 of the 15 recommendations in our December 1998 report, "Internal Controls Review." Three recommendations are in progress, and one has been deferred by IMS due to lack of funding. With the recent upgrade to version 6.0 of the PeopleSoft financial modules, all user security access was reviewed and updated. Controls have been improved, related to managing changes to computer programs, by limiting access to the production software.

- **Progress in Implementing 1998 InfoLink Recommendations** – Metro has implemented 5 of the 17 recommendations regarding InfoLink in our December 1998 report, "InfoLink Project Review", 8 are in progress and 4 recommendations are scheduled for 2000.

  Formal training classes were conducted during the year to educate Metro staff on the use of the PeopleSoft applications. While more training needs to occur, this is a significant first step.

  New reports have been designed and are undergoing final testing. Users of the InfoLink System are scheduled to begin receiving formal "navigator" training on reports in December 1999, with nVision report development training scheduled for the first half of 2000.

  New procedures have been implemented to distribute the entry of purchase requisitions to Metro's departments.

- **New Recommendations** – Based on our follow-up review, we have made two additional recommendations concerning the InfoLink Project.

  1) Metro should conduct a strategic planning session related to the remaining four modules of InfoLink not yet implemented. Based on the results of this planning, a detailed project plan, including resource requirements and schedules, should be developed.

  2) Metro should reevaluate the functional and technical staff assigned to support the system. We do not believe adequate resources have been assigned to provide adequate long-term support. We remain concerned that Metro continues to be understaffed in key areas responsible for the ongoing operations, maintenance and support of InfoLink. The PeopleSoft applications will require constant attention, as will the implementation of major new upgrades on an almost annual basis. Metro has implemented 7 of the original 11 modules. As more modules are implemented, the staffing problem will be exacerbated.

Project Background

In late 1994, Metro began work on replacing its Management Information System (MIS). Funds were approved for fiscal Year 1995-96 for the purchase, installation and implementation of an automated management information system. The existing systems, including both financial and payroll applications, had originally been purchased from Moore Governmental Systems, Inc. (MGSI) in the early 1980s. Systems and Computer Technology (SCT) subsequently acquired MGSI. In the early 1990s, SCT informed Metro that they would no longer be supporting the MGSI applications. In addition, Metro believed the applications could not be economically and satisfactorily modified to operate correctly in the year 2000.

The total cost of implementing InfoLink was estimated at $2.364 million, financed over five years, which included:

Category	Estimated Amount
Computer Hardware	$ 261,000
Computer Software	759,000
Training	208,000
Implementation Costs	1,088,000
Contingency	48,000
Total	**$2,364,000**

In June 1996, the Metro Council granted authority to the Executive Officer to enter into contracts associated with the Management Information System (InfoLink) project (Resolution No. 96-2346). The accompanying staff report identified the project budget of $2,363,716.

The following improvements in Metro operations were envisioned from InfoLink:
• re-engineered business processes
• remote data entry and automated document routing
• access to on-line reports
• access to data directly from personal computer applications
• integration of modules and single vendor support.

In June 1995, Metro issued a Request for Proposal (RFP) for consulting assistance to review work on the MIS project to date and help in completing the procurement of both application and database software and computer hardware.

In July 1995, Pringle Company was retained to provide advisory and review services for Metro's acquisition of a MIS.

In September 1995, Metro issued an RFP for a MIS covering computer software and implementation services. The RFP included detailed technical requirements for the following functional areas:
- General Ledger and Financial Reporting
- Budget Preparation and Management
- Recruitment Tracking
- Payroll/Personnel
- Purchasing/Contract Management
- Accounts Payable
- Accounts Receivable
- Solid Waste Accounts Receivable
- Grant Billing
- Check Reconciliation
- Fixed Assets
- Inventory
- Project Management
- Information Access

Proposals were received from twelve vendors. Metro staff in accordance with the general evaluation schedule outlined in the RFP reviewed the proposals. In June 1996, the Metro Council approved a software contract with PeopleSoft for $653,900 (Resolution No. 96-2346).

The original implementation schedule for the MIS, as outlined by PeopleSoft in their proposal, called for all modules to be implemented by May 1998.

In July 1998, the Metro Auditor retained Pacific Consulting Group, Inc. to evaluate the implementation of the new MIS. Our reports on the InfoLink Project and internal controls over the purchasing and human resource modules of the system, issued in December 1998, noted that Metro staff overcame significant technical problems in implementing 5 of the original 11 PeopleSoft modules while still performing their regular jobs. However, much work remained to be completed.
- Implementation of the remaining modules was substantially behind schedule.

- Delays in training end-users limited the ability of these employees to obtain information from InfoLink that would help them do their jobs. Lack of training contributed to low satisfaction ratings in focus group interviews.
- Business processes needed to be re-engineered to eliminate duplicate data entry and records.
- Upgrades to PeopleSoft applications already implemented needed to be made in order to continue to receive software warranty support.
- Improvements in controls over changes to computer programs by limiting access to programs were needed.
- New procedures and policies were needed to prevent duplicate data entry and improve data validation.
- Password structures needed to be improved and system updates needed to be installed in a timely fashion.

In November 1999, we reviewed the status of our recommendations and the actions Metro had taken over the prior twelve months to implement the changes. We interviewed key Metro staff involved with the InfoLink Project and reviewed pertinent documentation.

Status of InfoLink Project Recommendations

Overall, Metro has made very good progress in the past twelve months implementing upgrades to the five PeopleSoft modules. Two new modules, accounts receivable and billing, went into full production on November 9, 1999. Over 70 Metro staff attended training sessions during the year on "how to use" the system. Additional training on new InfoLink reports and report development tools is in final planning with sessions scheduled to start in December 1999.

We assessed Metro's progress in three categories of recommendations presented in our 1998 InfoLink Project Review report. The progress on these categories is summarized below:

- *Recommendations for future information technology projects* – Metro staff agrees with the nine recommendations and intends to follow the recommendations on future projects.
- *Recommendations for operational improvements* – Four of the twelve recommendations have been completed and eight are in progress.
- *Recommendations for InfoLink Project completion* – One of the five recommendations has been completed and four continue to remain scheduled for mid-2000.

The progress on individual recommendations is included in Appendix A – Progress on InfoLink Project Recommendations.

We compared Metro's resources required to complete the upgrades and new module implementations during 1999 with the resource estimates we had provided in our 1998 report (see Exhibit 1). In summary, Metro has required approximately a 50% increase in user staff time and a more than 300% increase in IMS staff time compared to our 1998 estimates. Actual consultant costs in total have been in line with our estimates, although Metro has used consultants on only one of the four projects in 1999. We believe the substantial increase in IMS staffing required in 1999 is due, in part, to:

- IMS staff turnover in key positions including the Informix Database Administrator (DBA) position.
- Difficulty in finding a replacement DBA with Informix experience. Informix is not as widely used as, for example, the Oracle database system, which is used by the majority of PeopleSoft customers.
- Problems, reported by IMS staff, implementing PeopleSoft "patches" to correct bugs/problems in the Financial modules. According to IMS staff, these problems were due to differences between the Informix and Oracle versions of the PeopleSoft modules. IMS reported that the supplied patches were not thoroughly tested by PeopleSoft and in some cases did not work correctly.

The above issues led to insufficient resources and an unstable software implementation. Ultimately, new Metro staff resources were recruited, trained and assigned to stabilize the software installation.

We also understand from our interviews with IMS staff that Metro was hindered in its efficient and effective use of consultants. Because of Metro's staffing deficiencies and the unstable PeopleSoft installation, consultants were, according to IMS staff, unwilling to commit to a fixed deliverable-based contract.

As a result of these issues, Metro required substantially more staff resources to complete the projects and utilized consultants less (and on a time and material basis) than we estimated at the time of our 1998 report.

Exhibit 1 below displays a comparison of the resource estimates by project from our original report to the actual resources required through November 1999. Exhibit 2 displays the estimates from our original report for the remaining upgrade and module implementation.

Exhibit 1   1998 PCG Proposed Upgrade and Additional Module Implementation Schedule vs. Metro's Actual Staffing in 1999 (1999 Actuals in Bold Italics)

Module/ Upgrade	Date	Metro User Staff	Metro IMS Staff	External Consultants	External Consultant Cost
New Reports for Departments	1Q1999	4 for .5 mo.	1 for 1 mo.	1 for 1 mo.	$25,000 – $40,000
Actuals	*4Q1999*	*2 for 1 mo.*	*2 for 3 mo.*	*None*	*$0*
Financial Modules 6.0 Upgrade	1Q1999	1 for 3 mo.	1 for 3 mo.	1 for 1 mo.	$25,000 – $40,000
Actuals	*3Q1999*	*2 for 4 mo.*	*4.5 for 4 mo.*	*3 for 3 mo.*	*$152,000*
Accounts Receivable and Billing Module	2Q1999	1 for 4 mo.	1 for 4 mo.	1 for 3 mo.	$80,000 – $100,000
Actuals	*4Q1999*	*1 for 9 mo.*	*1.5 for 4 mo.*	*None*	*$0*
Human Resources and Payroll 7.5 Upgrade*	4Q1999	1 for 3 mo.	1 for 3 mo.	1 for 1 mo.	$25,000 – $40,000
Actuals	*4Q1999*	*3 for 3 mo.*	*3 for 3 mo.*	*2 for .5 mo.*	*$13,000*
Total Through 1999		12 staff mo.	11 staff mo.	6 staff mo.	$155,000 – $220,000
Actuals		*19 staff mo.*	*39 staff mo.*	*10 staff mo.*	*$165,000*

Exhibit 2   Remaining Upgrade and Modules Implementation

Module/ Upgrade	Date	Metro User Staff	Metro IMS Staff	External Consultants	External Consultant Cost
Budget Module	2Q2000	1 for 6 mo.	1 for 4 mo.	1 for 3 mo.	$80,000 – $100,000
Financial Modules 7.5 Upgrade*	3Q2000	1 for 3 mo.	1 for 3 mo.	1 for 1 mo.	$25,000 – $40,000
Project Costing Module	4Q2000	2 for 6 mo.	1 for 6 mo.	2 for 4 mo.	$200,000 – $250,000
Total Remaining Modules/Upgrades		21 staff months	13 staff months	12 staff months	$305,000 – $390,000

* The cost to upgrade to a new version could be considered an ongoing operational cost of the system rather than a specific InfoLink project cost.

Status of Internal Control Recommendations

We assessed Metro's progress in three categories of recommendations presented in our 1998 Internal Control Review report. The progress on these categories is summarized below:

- *Improving controls over changes in computer program code* – Six of the nine recommendations have been implemented. Work on one recommendation is now in process and is scheduled for completion by the end of the first quarter 2000. Written policies and procedures for one recommendation have not been completed. One recommendation has been deferred due to funding and a reassessment of its need by IMS.

- *Developing controls over processing in PeopleSoft applications* – All four of the recommendations have been implemented.

- *Enhancing data security* – One recommendation has been implemented, and one is in progress.

The status of individual recommendations is included in Appendix B – Progress on Internal Control Recommendations.

New Recommendations

During the course of this review of Metro's implementation of our 1998 report recommendations, we identified two additional recommendations related to Metro's implementation of InfoLink.

Project Planning

We strongly recommend that Metro conduct a strategic project planning session for the remaining three InfoLink projects. The participants in this session should include key business owners of the systems as well as the IMS Manager. The session should focus on:

- Metro's business needs for the remaining modules and version 7.5 upgrade. A decision as to whether to pursue these projects and their timing needs to be made.
- The user and technical skills required to successfully undertake the projects and an assessment of the availability of those resources within Metro.
- The mix of consultant and Metro staff resources required to undertake the projects.
- A detailed plan to recruit (internally or externally) Metro staff for assignment to the projects.
- A detailed plan to proactively attract and procure needed consultant resources on a deliverable-based project approach.

Based upon the results of this planning session, the IMS Manager should develop detailed project plans, resource requirements and schedules to support the three remaining projects.

Maintenance Staff

We remain concerned that while Metro has made significant progress this year, adequate staff has not been assigned on a permanent basis to sustain InfoLink operations. We believe Metro must now transition its staffing approach from a project staff into a full-time maintenance staff as shown below. These estimates have been adjusted based on Metro's actual experience from those included in our December 1998 report.

Exhibit 3   Annual Support Costs for InfoLink Maintenance

Category	Annual Support of 7 Current PeopleSoft Applications	Annual Support of All 11 PeopleSoft Applications
Internal Functional Analysts	3 – 4	4 – 5
Internal IMS Technical Analysts	4 - 5	5 – 6
External Consulting Costs	$50,000 - $75,000	$75,000 – $100,000

Appendix A

Progress on InfoLink Project Recommendations

Appendix A

Progress on InfoLink Project Recommendations

The following presents our original report's recommendations (in bold), followed by Metro staff's agreement with recommendation, staff's proposed action plan and timetable and our assessment of the recommendations status. We have added numbers and headings that were not in the original Metro staff's response to aid in this document's clarity.[1]

<u>Recommendations for Future Information Technology Projects</u>

1. **In the future, a formal comprehensive report summarizing the software evaluation and vendor selection process should be prepared.**

2. **Future major software acquisition should include payment terms that provide control over the payment process such as 1) partial payment after out-of-box testing, and 2) final payment for the software license after final acceptance.**

3. **Future consulting contracts for software implementation services should be "delivery-based."**

4. **Implement a policy requiring a feasibility study for significant changes in IT policy.**

5. **Feasibility studies for future information systems projects should include quantifiable and non-quantifiable benefits.**

6. **Future projects should have detailed work plans that include resource assignments. Work plans should be reviewed and updated at least monthly. Significant changes should be reported.**

7. **Future IT projects should include "total cost of ownership" including the estimated quantity and cost of internal resources.**

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[1] Metro response from December 8, 1998, letter from Mike Burton, Executive Office, to Alexis Dow "Response to InfoLink Project Review."

8. **Future MIS projects should clearly define project deliverables, maintain formal project work papers, and clearly identify key project reviews and decisions.**

9. **Funds to staff and implement PeopleSoft upgrades should be included in the annual budget.**

Agreement with Recommendations:
We have learned much from the experience and agree with all of these recommendations.

Current Status:
We discussed the above recommendations with the IMS Manager who reconfirmed his intent to follow these recommendations on future information technology projects.

Recommendations for Operational Improvements

10. **All projects should have comprehensive reviews on a continual, at least annual, basis to determine if they continue to meet Metro's overall objective.**

Agreement with Recommendation:
Staff agrees with this recommendation and suggests that the annual budget process be used as a mechanism for annual project review.

Proposed Action Plan:
Consideration will be given to placing more of this responsibility with the IT Policy Team.

Proposed Timetable:
As needed by future projects.

Current Status: Completed
InfoLink was reviewed as part of the normal budget process. In addition, Metro Council Members were briefed on the project and the status of IMS in 1999.

11. **Clearly define and document the roles of all project team members and distribute to all InfoLink users.**

Agreement with Recommendation:
We disagree with the observation that project roles are not clear. As a reminder, the established roles will be forwarded to InfoLink Core Team members and users. Roles in future modules have not yet been established.

Proposed Action Plan:
Forward prepared list of roles/responsibilities to Core Team members and users.

Proposed Timetable:
Complete by end of the first quarter of 1999.

Current Status: Completed

12. **A staffing review should be conducted of Accounting and Information Management Services.**

    Agreement with Recommendation:
    A recent peer review and IT statistical comparison to other local governments in this region suggests that both areas are understaffed. These were cursory efforts, but they clearly highlight a problem. Funding for a full-scale study is not available.

    Proposed Action Plan:
    Both Accounting and IMS will participate in a benchmarking effort with the Auditor's Office beginning in April 1999. Further actions will be considered based on the outcome of that work.

    Proposed Timetable:
    Contingent upon Auditor's office benchmarking work plan.

    Current Status: In progress
    The Auditor's office is completing benchmark studies for IMS and Accounting staffing and operations. Staffing for Accounting and IMS is reviewed as part of the annual budget process.

13. **An employee retention program should be established.**

    Agreement with Recommendation:
    Agreed.

Proposed Action Plan:
IMS and Human Resources will prepare a retention program based on public sector practices current in this region. Council support and action may be required. Depending on the nature of the proposed actions, collective bargaining issues may also need to be negotiated.

Proposed Timetable:
Complete by end of the second quarter of 1999.

Current Status: In progress
The IMS Manager has developed a new employee career matrix that is now being reviewed by the Human Resource Department. Metro management realizes this will be a critical component of IMS operations in the future.

14. **Metro should develop standard reports for all departments at three levels -** **summary level, operating level, and transaction level.**

Agreement with Recommendation:
Accounting Services has developed a series of standard basic financial reports for department use. This reporting series includes:

- Balance Sheet by Fund (including sub-funds where required - a total of 22 funds)
- Statement of Revenues, Expenditures and Changes in Fund Balance - budget to actual - by Fund (including sub-funds where required for a total of 22 funds)
- Expenditures by Department - Budget to Actual (Appropriation Level reporting - for all appropriation levels)
- Expenditures by Division (Organization level reporting)
- Councilor Expenditures - (in total and by Councilor)
- Audit Trial Balance (for use internally by Accounting staff and used by Auditors for the audit process, including drill down access)

The above series of reports includes budget amounts at a high level. This budget information is to be provided upon upgrade to version 6.

In addition to the above standard reports, several additional "specialized" reports have been developed and are issued monthly to users.

REM, having received training, has developed many customized queries and financial reports in addition to the above on their own. This is the goal of the InfoLink project - to provide standard summary level reports centrally, and enable users to develop their own operational reports that are specific to their internal needs. The structure and needs of Metro's departments is very

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diverse, making "standards" difficult to achieve and resource intensive to maintain at more detailed levels of reporting.

Proposed Action Plan:
ASD will continue to implement the training program to provide query and nVision report writing access to users, allowing them to use powerful tools to access the data they need for management purposes. This is required for version 6.0, as the delivered inquiry panels have been significantly altered and require this knowledge base. Added funding will be requested for setting up budget detail reports similar to those provided in the past. ASD will continue to solicit feedback to determine if modifications to existing standard reports or additional standard reports are required.

Proposed Timetable:
Complete by end of the second quarter of 1999.

Current Status: In progress
Training on new on-line report capabilities is scheduled to begin in December 1999.

15. **ASD should conduct detailed training for end-users with the objective of user departments both entering on-line requisitions and performing budget checks prior to forwarding electronic documents to Purchasing.**

Agreement with Recommendation:
Agreed. Staff will use the implementation of version 6.0 as the opportunity for this training:
- Operating staff will be involved in the scripted testing of on-line purchase orders.
- ASD will adopt the policy that paper purchase orders will no longer be processed.
- Formal training in entering on-line requisitions will be provided to operating staff prior to the cut over to version 6.0

Proposed Action Plan:
Initial training to be completed with conversion to version 6.0 financials. Subsequent to going live with version 6.0, ASD will review the training material and provide training as required by staff turn over.

Proposed Timetable:
Training updates will begin in December 1998 with version 6.0 training to be completed in the second quarter of 1999.

Current Status: Completed

16. ASD should undertake a concerted effort to improve both customer services related to PeopleSoft and satisfying user needs - such as responding to service request and developing new and better reports.

Agreement with Recommendation:
Agreed. Customer service has always been ASD's highest priority. We did experience some instability with software and some departmental staff had problems accessing the system. While nearly all of those problems are solved, the perception of poor service lingers. With limited resources it has not been possible to meet the needs of each customer, which vary by customer. Training will resolve many of these issues.

Proposed Action Plan:
We will be requesting additional resources that should help. ASD will continue to meet with department representatives, individually and as a group, in an effort to understand and meet their needs and expectations.

Proposed Timetable:
Complete by end of the second quarter of 1999.

Current Status: In progress
Additional training of InfoLink users was completed in 1999. Training on new on-line report capabilities is scheduled to begin in December 1999.

17. Metro should develop user manuals covering workflow processes and available reports.

Agreement with Recommendation:
Agreed. The InfoLink User Manual includes much of this material. That manual will be reviewed and added to in conjunction with the standard reports and training.

Proposed Action Plan:
ASD and HR will supplement the InfoLink User Manual to include workflow processes, standard reports and public queries.

Proposed Timetable:
Complete by end of the second quarter of 1999 following PeopleSoft V.6
financials.

Current Status: In progress
Detailed procedure manuals have not been completed for the new version of
PeopleSoft financial applications – general ledger, accounts payable and
purchasing. A revised user manual is in development for the version 7.5
upgrade for the PeopleSoft human resources and payroll modules.

**18. Review IMS staffing requirements for operations of PeopleSoft. Explore
alternative staffing options, including outsourcing all or a portion of the
PeopleSoft applications.**

Agreement with Recommendation:
We agree to review requirements. Based on the unavailability of external
PeopleSoft talent for permanent hire due to our compensation structure and
the high rates for skilled PeopleSoft consultants, we have very limited
options in this area.

Proposed Action Plan:
We will be requesting one new FTE for IMS from the Council in January
1999, and will propose transferring an existing FTE to IMS in the FY 99-00
budget. We believe these additions will provide the minimum resources
needed to support existing PeopleSoft applications. In addition, we may
request further technical staff for IMS based on the outcomes of the Auditor's
benchmarking study.

Proposed Timetable:
Complete by end of the first quarter or the second quarter of 1999.

Current Status: In progress
The IT Steering Committee and the IMS Manager have recommended two
additional IMS positions for the FY 2000 – 2001 budget. As noted in our
report, we continue to believe that Metro is understaffed to effectively utilize
and maintain the PeopleSoft applications. We recommend a minimum of
four to five full-time IMS staff to maintain the current InfoLink modules.

**19. Operating procedures should be developed for documenting custom
modifications and software patches.**

Agreement with Recommendation:
Agreed. As noted IMS staff has done an excellent job of documenting changes and applied patches. As resources permit, a formal operating procedure will be prepared.

Proposed Action Plan:
Assign an IMS staff member to prepare a formal standard operating procedure for documenting changes and applied patches.

Proposed Timetable:
Complete by end of the third quarter of 1999.

Current Status: In progress
Scheduled to be completed by the end of the first quarter 2000.

20. **Develop a service level plan with user departments. Increase staffing and consulting levels to 2 to 3 dedicated internal functional staff and 3 to 4 dedicated IMS technical staff. In addition, have external consulting of $25,000 - $50,000.**

Agreement with Recommendation:
Staff agrees with the concept of service level plans. However, we believe stating resource and consulting increases in advance of forming the plan is premature. IMS has prepared one service level plan with REM relating to network support at satellite areas. This will be used as a model for other service level plans. As to the support, that is a policy issue to be determined by Council.

Proposed Action Plan:
IMS will continue to develop service level agreements, as appropriate, with other Metro departments. These service level agreements will include commitment by operating departments to support funding of additional resources if required to implement the service level agreement.

Proposed Timetable:
IMS will continue to develop service level agreements, as appropriate, with other Metro departments.

Current Status: In progress
Two service level agreements have been completed for the Oregon Zoo and Regional Environmental Management. These agreements cover primarily network management and desktop computer support. Additional dedicated staff in IMS and Accounting to support InfoLink on an ongoing basis has not

been assigned. Staff is assigned primarily to support specific project
activities or application upgrades.

21. Complete a formal implementation plan for the version 6 upgrade.

Agreement with Recommendation:
Agreed.

Proposed Action Plan:
Staff has worked with an outside consultant to define the upgrade project in
terms of its scope, schedule and cost. Obstacles to the project and strategies
for overcoming them were identified as well. Additional resources must be
approved by the Council to implement the upgrade plan.

Proposed Timetable:
Complete plan by December 31, 1998.

Current Status: Completed

Recommendations for InfoLink Project Completion

**22. Coordinate the implementation plan of Accounts Receivable and Billing
Modules with user departments. Develop an integrated plan between
version 6 upgrade and A/R and Billing implementation. PeopleSoft
should review the plan and commit to provide assistance. The deficiencies
should be reviewed with legal counsel.**

Agreement with Recommendation:
Agreed. Staff has been working with other departments impacted by the
conversion to PeopleSoft A/R. Staff has worked with PeopleSoft to correct
the problems in A/R and, with the assistance of legal, Metro has received
credits from PeopleSoft equal to the staff resource expended to date
implementing the inadequate version.

Proposed Action Plan:
Staff is currently working to coordinate the AR/Billing implementation with
the version 6.0 upgrade.

Proposed Timetable:
Complete by end of the fourth quarter of 1998.

Current Status: Completed

The implementation of the accounts receivable and billing modules was completed in November 1999. No further legal reviews concerning the two modules was conducted.

23. Review the need for Asset Management given current funding.

Agreement with Recommendation:
Agreed.

Proposed Action Plan:
It continues to be our plan to review the functionality of this module in version 7.5.

Proposed Timetable:
Complete by end of the second quarter of 2000.

Current Status: Currently scheduled for mid-2000.

24. Defer implementation of the Budget module until major improvements are made.

Agreement with Recommendation:
Agreed.

Proposed Action Plan:
It continues to be our plan to review the functionality of the module in version 7.5. We also will continue to monitor PeopleSoft's relationship with the firm Budget Technology, Inc., which appears to be developing an alternative budget module.

Proposed Timetable:
Complete review by the end of the Second quarter of 2000.

Current Status: Currently scheduled for mid-2000.

25. Delay Project Costing until after implementation of the next version of Human Resource and Payroll modules are implemented in order to allow scarce staff to focus on the upgrade implementation.

Agreement with Recommendation:
Agreed.

Proposed Action Plan:
An implementation plan for Project Costing will be developed after a review of version 7.5 and after the HR and Payroll upgrade. Successful implementation of this module requires commitment of staff time by the operating departments, and possibly additional ongoing technical support staff.

Proposed Timetable:
Complete review by the end of the second quarter of 2000.

Current Status: Currently scheduled for mid-2000.

26. **Determine if any other public sector comparable to Metro has implemented Time and Labor and assess their success. Review Metro's requirements for this module. If the functionality does not work for Metro, review options with PeopleSoft to either recover or redirect the investment in this module.**

Agreement with Recommendation:
Agreed.

Proposed Action PIan:
It continues to be our plan to review the functionality of this module in version 7.5.

Proposed Timetable:
Complete review by the end of the second quarter of 2000.

Current Status: Currently scheduled for mid-2000.

Appendix B

Progress on Internal Control Recommendations

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Progress on Internal Control Recommendations

The following presents our original report's recommendations (in bold), followed by Metro staff's agreement with recommendation, Metro staff's proposed action plan and timetable and our assessment of the recommendations status. We have inserted headings into Metro staff's original responses to aid in this document's clarity.[2]

Improving Controls Over Changes in Computer Program Code

1. **Limit access to production computer programs or the PeopleSoft code to the Unix and LAN security administrators.**

   Agreement with Recommendation:
   While we agree in principle, we are concerned that providing only staff responsible for Unix and network security with read/write access to production program directories could create a bottleneck in making changes to the system in emergency situations. We plan to use "split" passwords in which pairs of individuals, other than the Unix and network security administrators, hold half of a single password to the system.

   Proposed Action Plan:
   Staff will review program code security and options available in conjunction with a general update of IMS' Computer User's handbook.

   Proposed Timetable:
   We propose completing this by the end of the third quarter of 1999.

   Current Status: Completed

2. **Implement separate developing, testing and production environments.**

   Agreement with Recommendation:
   Staff has already created separate databases for development, testing and production that have been used throughout the implementation and production use of financials and HR/Payroll. Furthermore, all software modified by Metro is isolated in directories separate from those for standard PeopleSoft software. Settings in the Windows configuration manager are

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[2] Metro response from December 8, 1998, letter from Mike Burton, Executive Office, to Alexis Dow "Response to Internal Controls Review."

used to point PeopleSoft to the modified programs. We agree that this separation must be extended to encompass the software development lifecycle.

Proposed Action Plan:
Staff will continue to maintain and utilize separate database environments for development, testing and production. A separate environment for source programs will be implemented on a dedicated file server.

Proposed Timetable:
Financials: completion by end of the second quarter of 1999 (an element of the Financials version 6.0 Upgrade). HR/Payroll completion by end of the fourth quarter of 1999 (an element of the HRMS version 7.5 upgrade)

Current Status: Completed

3. **Develop and implement formal policies and procedures for managing program changes.**

Agreement with Recommendation:
Our past experience shows that formal policies and procedures for program code management can be extremely cumbersome and labor intensive if not sensitive to the size and workload of the organization. Clearly defined roles are in place for members of the project team, but with limited staff, roles are often shared to assure critical tasks are completed.

Proposed Action Plan:
Staff will review formal code management policies and revise as needed in conjunction with a general update of IMS' Computer User's Handbook that will begin in the first quarter of 1999.

Proposed Timetable:
We propose completing this by the end of the third quarter of 1999.

Current Status: In progress.
Roles and responsibilities of the InfoLink project team and the IMS system administrators have been developed and distributed. Formal procedures for approval and sign-off of PeopleSoft changes by user management have not been finalized. Completion planned by the end of the first quarter of 2000.

4. **Evaluate the purchase of commercial "librarian" software to manage the movement of program from development, test and production.**

Agreement with Recommendation:
Agreed. However, we feel this would add unneeded complexity and costs to an already understaffed environment. This recommendation will be given further consideration when the IMS division is fully staffed.

Proposed Action Plan:
Staff will review given budget and time.

Proposed Timetable:
Complete review when fully staffed.

Current Status: Deferred
This recommendation was not considered necessary by IMS due to the size and complexity of the operations. No funding is available to complete the recommendation. We continue to believe Metro should evaluate librarian software to determine if efficiencies may be found in IMS operations.

5. **Reduce the number of staff with "superuser" access to the PeopleSoft modules to the security administrators for HP and LAN, the database administrator and the system administrator.**

   Agreement with Recommendation:
   We agree with the recommendation. However, as discussed earlier in this response, this scheme must be augmented with split passwords so that single person reliance is avoided.

   Proposed Action Plan:
   No action is needed.

   Proposed Timetable:
   Not applicable

   Current Status: Completed
   Superuser access was reviewed and updated as part of the recent PeopleSoft version 6.0 upgrade.

6. **Make access to PeopleSoft applications consistent with each individual's job responsibilities.**

   Agreement with Recommendation:
   We have striven to tailor access to job requirements throughout the implementation. We agree with this recommendation.

Proposed Action Plan:
Staff will review the appropriate level of access when version 6 is implemented.

Proposed Timetable:
Complete version 6 review by end of the first quarter of 1999.

Current Status: Completed
User access was reviewed and updated in conjunction with the recent version 6.0 upgrade.

7. **Develop written policies and procedures for granting superuser access rights in the system. The ASD director should authorize all superusers in writing and should be excluded from superuser access.**

   Agreement with Recommendation:
   Agreed.

   Proposed Action Plan:
   The Director of Administrative Services will prepare policies consistent with practice and fiduciary responsibilities. The ASD Director will not have superuser access.

   Proposed Timetable:
   Complete by end of the first quarter of 1999.

   Current Status: In progress
   All superusers were reviewed as part of the recent PeopleSoft version 6.0 upgrade. Formal written policies and procedures were not developed due to the limited number of staff involved. The ASD Director does not have superuser access to the system. We continue to recommend formal written policies even though there are a small number of users.

8. **Prior to implementing version 6, all user identifications and passwords should be revoked and replaced.**

   Agreement with Recommendation:
   As a practical matter, version 6 requires a complete re-implementation because security will not convert from version 5.1.

   Proposed Action Plan:
   Performed with implementation of version 6.

Proposed Timetable:
Complete by end of the second quarter of 1999.

Current Status: Completed

9. **Reduce the number of classes of security.**

   Agreement with Recommendation:
   Security classes were installed to assure that staff had access to only what they needed to perform job duties as recommended under #6. We agree to reduce security classes where possible.

   Proposed Action Plan:
   Staff will review the number of classes needed as version 6 is implemented.

   Proposed Timetable:
   Complete by end of the first quarter of 1999.

   Current Status: Completed
   Security classes were reviewed as part of the recent PeopleSoft version 6.0 upgrade. We believe the current number of security classes is appropriate for current job duties and responsibilities.

Developing Controls Over Processing in PeopleSoft Applications

10. **Define organizational responsibilities for use of PeopleSoft applications and train users in the various roles and responsibilities associated with the system.**

    Agreement with Recommendation:
    Agreed. Most of the effort on written policies, procedures and training has focused on central service staff responsibilities. This work needs to be completed and department users need to be included.

    Proposed Action Plan:
    Staff will review and complete written policies and procedures for all PeopleSoft modules. These will serve as a basis for ongoing training for both central service and departmental users.

    Proposed Timetable:
    Complete by end of the second quarter of 1999.

    Current Status: Completed

11. Develop formal procedures to ensure that employee network and application access is revoked before or at employee separation.

Agreement with Recommendation:
Agreed.

Proposed Action Plan:
HR will develop, in consultation with IMS, formal procedures to notify PeopleSoft and network security administrators of employees who have:
- transferred and require security to be reestablished, or
- terminated and require security to be revoked.

Proposed Timetable:
Complete by end of the first quarter of 1999.

Current Status: Completed

12. Access to purchasing applications should be reviewed and restricted to assure segregation of duties.

Agreement with Recommendation:
Agreed. We believe current access properly segregates duties, but we will review system access for all classes of users.

Proposed Action Plan:
Security classes will be reviewed as part of the security review during the version 6 Implementation.

Proposed Timetable:
Security class review will be completed by end of the first quarter of 1999. User security for Purchasing will be re-established by end of the second quarter of 1999.

Current Status: Completed
User access was reviewed and updated in conjunction with the recent version 6.0 upgrade. We reviewed the new security tables and believe they are reasonable.

13. IMS should continue efforts to develop procedures for authorizing and documenting access to PeopleSoft Applications.

Agreement with Recommendation:
Agreed. Note that current security levels and access to PeopleSoft is based on security granted by written authorization under the old mainframe system.

Proposed Action Plan:
Security will be thoroughly reviewed as part of the version 6 implementation.

Proposed Timetable:
Complete by end of the first quarter of 1999.

Current Status: Completed
User access was reviewed and updated in conjunction with the recent version 6.0 upgrade. We reviewed the new security tables and believe they are reasonable.

Enhancing Data Security

14. **Require employees to create complex passwords.**

    Agreement with Recommendation:
    Agreed. However, because users create their own network passwords and passwords are secret and cannot be monitored it is difficult to enforce this recommendation.

    Proposed Action Plan:
    Staff will determine if Novell has the capability to analyze passwords for complexity or look them up in a dictionary. If available, this will be implemented. If not available, staff will undertake an informational campaign to raise awareness of the requirement for creating secure passwords.

    Proposed Timetable:
    Complete by end of the first quarter of 1999.

    Current Status: Completed
    In conjunction with the recent PeopleSoft version 6.0 upgrade, employees were counseled on the creation and maintenance of passwords.

15. **The CFO should develop formal policies and procedures for root password access with written authorization and quarterly review.**

Agreement with Recommendation:
Agreed.

Proposed Action Plan:
The Director of Administrative Services (also serving as the CFO) will
prepare policies consistent with practice and fiduciary responsibilities.

Proposed Timetable:
Complete by end of the first quarter of 1999.

Current Status: In progress
Root password access is restricted to a very limited number of employees.
We understand that this policy has not been formally documented. We
continue to recommend a written policy be developed documenting Metro's
procedures.

Response to the Report

METRO

Date: January 13, 2000

To: Alexis Dow, Metro Auditor

From: Mike Burton, Executive Officer

Re: Response to follow up review on InfoLink Project

Thank you for the opportunity to review and comment on the Pacific Consulting Group's follow-up audit to the initial InfoLink Project Review.   This current audit, completed in November 1999, reviewed 26 Infolink project recommendations and 15 internal control recommendations from the original audit. Metro audit staff had, prior to this follow-up audit, generally reviewed the progress on all 41 recommendations with IMS staff. Out of this total 14 remain in progress, and four of these, that relate to the implementation of additional PeopleSoft modules, have been permanently deferred.

1. **Strategic Planning Recommendation**: *"Metro should conduct a strategic planning session related to the remaining four modules of InfoLink not yet implemented. Based on the results of this planning, a detailed project plan, including resource requirements and schedules, should be developed."*

- Agreement with Recommendation: A strategic planning session would be appropriate if the modules were to be implemented. Detailed strategic planning is not required for the reasons stated below in the Action Plan.

- Proposed Action Plan: In the preparation of the FY 00-01 budget it has been determined that Metro does not have the fiscal and staff resources to successfully implement the remaining four modules (fixed assets, time and labor, budget and project costing). IMS has two vacancies in its PeopleSoft technical support team, and only one of these can be currently filled. The Accounting Division is also facing serious staff and fiscal resource constraints that would adversely impact the success of additional implementations. Furthermore, it is anticipated that additional modules would need more FTE for adequate support.

- Proposed Timetable: Installation of these four additional PeopleSoft modules will be deferred until such time as Metro has an appropriate level of funding and staff.

2. **Resource Support Recommendation**: *"Metro should reevaluate the functional and technical staff assigned to support the system. We do not believe adequate resources have been assigned to provide adequate long-term support. We remain concerned that Metro continues to be understaffed in key areas responsible for the ongoing operations, maintenance, and support of InfoLink. The PeopleSoft applications will require constant attention, as will the implementation of major new upgrades on an almost annual basis. Metro has implemented 7 of the original 11 modules. As more modules are implemented, the staffing problem will be exacerbated."*

- Agreement with Recommendation: Agreed.

- Proposed Action Plan: I recognize that Metro is understaffed in this area. This has been exacerbated by two recent resignations on the PeopleSoft technical support team. The means by which IT services are provided within Metro is currently being revamped through a reorganization of IMS that will include a transfer of staff from other parts of the Metro organization. However, this staff will not be assigned to support PeopleSoft so resource constraints will still exist.

- Proposed Timetable: When funds are available.

Metro Auditor
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Thanks for taking the time to help us.

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