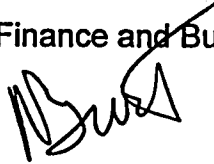# M E M O R A N D U M

METRO

Date: December 8, 1998

To: Patricia McCaig, Chair, Council Finance and Budget Committee

From: Mike Burton, Executive Officer

Re: Substantive Adjustments to the FY 1999-00 through 2003-04 Proposed Capital Improvement Plan

Since the publication of the proposed FY 1999-00 through 2003-04 Capital Improvement Plan, three substantive changes have been requested. These are explained in detail below.

MERC

1. Given the defeat of the bond measure in November, the Oregon Convention Center Expansion/Completion project has been replaced with the Expo Hall D in the amount of $19,046,000. In addition, given the inclusion of this project, the following projects at Expo can also be deleted because they are included in the Hall D cost estimates:

   Expo - Landscaping - $750,000 in FY 2002-03
   Expo - Remodel Administrative Office Space - $85,000 in FY 1999-00
   Expo - Storage Area Paving Project - $150,000 in FY 2000-01

2. The OCC – Replacement of Condenser Pipe project in the amount of $340,000 has been deleted from the proposed capital plan.

3. A Kiosk project at the Oregon Convention Center has been added to the plan in FY 1999-00 in the amount of $176,500 to provide additional display screens at the facility for advertising capability and "way-finding" to visitors.

MB:Tl:rs
Attc.

I\CIP99-00\Correspo\Adjust.Doc

Project Detail
Project Title: Expo Center – Hall D

Project Number:	Department/Division: MERC		Type of Request: ☑ Initial		Dept. Priority:	Date: 12-8-98
Type of Project:	Expo Center		☐ Continuation ☐ Revision		1	
☐ New	Source of Estimate:			Project:		Prepared By:
☐ Expansion	☑ Preliminary		Start Date:		Completion Date:	
☑ Replacement	☐ Based on Design ☐ Actual Bid Documents		FY 98-99			

Project Estimates	Prior Years	1999-2000	2000-01	2001-02	2002-03	2003-04	Beyond 2004	Total
Capital Cost:								
Plans & Studies		$162,500						$162,500
Land & Right-of-Way								
Design & Engineering	$1,200,000							1,200,000
Construction		14,000,000						14,000,000
Equipment/Furnishings								
Project Contingency								
1% for Art		140,000						140,000
Other	3,452,000	91,500						3,543,500
Total	$4,652,000	$14,394,000						$19,046,000
Funding Source:								
Fund Balance	$2,066,000							$2,066,000
Grants								
G.O. Bonds								
Revenue Bonds & Interest	2,586,000	14,394,000						16,980,000
Other								
Total	$4,652,000	$14,394,000						$19,046,000

Project Description/Justification:

The project is to build a new 112,000 square foot building adjacent to Hall E. The new hall will replace the existing Hall D, a 60,000 square foot building. The new building will contain a divisible exhibition hall, conference and lounge facilities, office facilities, lobby and support areas, a commercial kitchen, a connection to Hall C, and storage, service and loading areas. In addition, the project includes landscaping existing parking lot, as required by the City's conditional use permit issued for Hall E, and stabilization of an on-site wetland area and installation of walking paths connecting to Force Lake.

The actual funding mechanisms for this project could change after funding proposals have been analyzed.

Annual Operating Budget Impact:	
Annual Revenues:	
Annual Expenditures:	
Personal Services costs	
Materials & Services Costs	
Capital Outlay Costs	
Other Costs	
Sub-total, Expenditures:	
Net Operating Impact:	To be determined
Estimated Useful Life (years)	
First Full Fiscal Year of Operation:	
Fund(s): MERC Operating Fund (Expo)	

ADDED
Project Detail
Project Title: OCC – Kiosk

Project Number:	Department/Division: MERC		Type of Request:		Dept. Priority:	Date:
	Oregon Convention Center		☑ Initial			11-10-98
Type of Project:			☐ Continuation ☐ Revision		5	
☑ New	Source of Estimate:			Project:		Prepared By:
☐ Expansion	☐ Preliminary		Start Date:		Completion Date:	J. Blosser
☐ Replacement	☑ Based on Design ☐ Actual Bid Documents		1-1-00		4/1/00	

Project Estimates	Prior Years	1999-2000	2000-01	2001-02	2002-03	2003-04	Beyond 2004	Total
Capital Cost:								
Plans & Studies								
Land & Right-of-Way								
Design & Engineering		$15,000						$15,000
Construction		50,000						50,000
Equipment/Furnishings		111,500						111,500
Project Contingency								
1% for Art								
Other								
Total		$176,500						$176,500
Funding Source:								
Fund Balance		$176,500						$176,500
Grants								
G.O. Bonds								
Revenue Bonds								
Other								
Total		$176,500						$176,500

Project Description/Justification:	Annual Operating Budget Impact	
	Annual Revenues:	$85,000
The Kiosk will consist of six 40" clarity 4020-v high resolution display screens that will produce facility information, advertising capability and way-finding to OCC visitors. There will be a very high finish to match existing OCC facility finishes and will generate projected gross revenues of $85,000 in advertising income with estimated related expenditures of $25,000, resulting in $60,000 of projected net revenue to the facility. This will compliment the existing Kiosk that was installed in 1998-99.	**Annual Expenditures:**	
	Personal Services costs	
	Materials & Services Costs	25,000
	Capital Outlay Costs	
	Other Costs	
	Sub-total, Expenditures:	25,000
	Net Operating Impact:	($60,000)
	Estimated Useful Life (years)	
	First Full Fiscal Year of Operation:	2000-2001
	Fund(s): MERC Operating Fund (OCC)	

-1-

Project Detail
Project Title: Expo Center – Landscaping

Project Number:	Department/Division: MERC		Type of Request:	Dept. Priority:	Date:
	Expo Center/Administration		☐ Initial	1	8-23-98
Type of Project:			☑ Continuation ☐ Revision		
☑ New	Source of Estimate:		Project:		Prepared By:
☐ Expansion	☑ Preliminary		Start Date:	Completion Date:	F. Brown/C. Bailey
☐ Replacement	☐ Based on Design ☐ Actual Bid Documents		Spring 2003	June 2003	

Project Estimates	Prior Years	1999-2000	2000-01	2001-02	2002-03	2003-04	Beyond 2004	Total
Capital Cost:								
Plans & Studies								
Land & Right-of-Way								
Design & Engineering								
Construction					$750,000			$750,000
Equipment/Furnishings								
Project Contingency								
1% for Art								
Other								
Total					$750,000			$750,000
Funding Source:								
Fund Balance					$750,000			$750,000
Grants								
G.O. Bonds								
Revenue Bonds								
Other								
Total					$750,000			$750,000

Project Description/Justification:

The Conditional Use permit issued by the City of Portland for the construction of the new exhibit hall states: "The applicant will complete the additional 5.5 percent of the current project budget required landscape improvements, plus any additional landscaping required by future permits, within seven years of the effective date of this Conditional Use approval. To accomplish that goal, the applicant will dedicate 25 percent of each project budget that exceeds $10,000 to an "Expo Conformance Fund." No building permits will be issued after seven years from the effective date of this decision unless all the landscaping deferred by this decision has been provided."

Funds for this project will be accumulated in the fund balance of the Expo Division of the MERC Operating Fund until the year 2002-03, the proposed date for project completion.

Annual Operating Budget Impact:	
Annual Revenues:	
Annual Expenditures:	
Personal Services costs	
Materials & Services Costs	$3,860
Capital Outlay Costs	
Other Costs	
Sub-total, Expenditures:	3,860
Net Operating Impact:	$3,860
Estimated Useful Life (years)	50
First Full Fiscal Year of Operation:	2003-04
Fund(s): MERC Operating Fund (Expo)	

DELETED

Project Detail
Project Title: Expo Center – Remodel Administrative Office Space

Project Number: 57010	Department/Division: MERC		Type of Request: ☑ Initial ☐ Continuation ☐ Revision		Dept. Priority: 5	Date: 8-23-98	
Type of Project: ☐ New ☐ Expansion ☑ Replacement	Expo Center						
	Source of Estimate: ☐ Preliminary ☐ Based on Design ☐ Actual Bid Documents		Project:			Prepared By: F. Brown/C. Bailey	
			Start Date: Fall 1999		Completion Date: Fall 1999		

Project Estimates	Prior Years	1999-2000	2000-01	2001-02	2002-03	2003-04	Beyond 2004	Total
Capital Cost:								
Plans & Studies								
Land & Right-of-Way								
Design & Engineering								
Construction		$85,000						$85,000
Equipment/Furnishings								
Project Contingency								
1% for Art								
Other								
Total		$85,000						$85,000
Funding Source:								
Fund Balance		$85,000						$85,000
Grants								
G.O. Bonds								
Revenue Bonds								
Other								
Total		$85,000						$85,000

Project Description/Justification:

As was anticipated with the addition of Hall E, Expo Center has experienced an increase in event bookings. Due to this increased business, Expo has expanded its staff by 1 FTE necessitating this remodel of the administrative office space to accommodate the position.

Annual Operating Budget Impact:	
Annual Revenues:	
Annual Expenditures:	
Personal Services costs	
Materials & Services Costs	
Capital Outlay Costs	
Other Costs	
Sub-total, Expenditures:	
Net Operating Impact:	
Estimated Useful Life (years)	20
First Full Fiscal Year of Operation:	2000-01
Fund(s): MERC Operating Fund (Expo)	

Project Detail
Project Title: Expo Center – Storage Area Paving Project

Project Number:	Department/Division: MERC		Type of Request:		Dept.	Date:
	Expo Center		☑ Initial		Priority:	8-23-98
Type of Project:			☐ Continuation ☐ Revision		6	
☐ New	Source of Estimate:			Project:		Prepared By:
☐ Expansion	☑ Preliminary		Start Date:	Completion Date:		F. Brown/C. Bailey
☑ Replacement	☐ Based on Design ☐ Actual Bid Documents		Fall 2000	Fall 2000		

Project Estimates	Prior Years	1999-2000	2000-01	2001-02	2002-03	2003-04	Beyond 2004	Total
Capital Cost:								
Plans & Studies								
Land & Right-of-Way								
Design & Engineering								
Construction			$150,000					$150,000
Equipment/Furnishings								
Project Contingency								
1% for Art								
Other								
Total			$150,000					$150,000
Funding Source:								
Fund Balance			$150,000					$150,000
Grants								
G.O. Bonds								
Revenue Bonds								
Other								
Total			$150,000					$150,000

Project Description/Justification:

The area in the soutwest corner of the Expo Center property is currently a graveled area used for storage. Due to inclement weather, this area needs to be asphalted to facilitate year-round use.

Annual Operating Budget Impact:	
Annual Revenues:	
Annual Expenditures:	
Personal Services costs	
Materials & Services Costs	
Capital Outlay Costs	
Other Costs	
Sub-total, Expenditures:	
Net Operating Impact:	
Estimated Useful Life (years)	15
First Full Fiscal Year of Operation:	2001-02
Fund(s): MERC Operating Fund (Expo)	

Project Detail
Project Title: Oregon Convention Center – Expansion/Completion

Project Number: 57600	Department/Division: MERC	Type of Request: ☐ Initial	Dept. Priority:	Date: 8-23-98
Type of Project: ☐ New ☑ Expansion ☐ Replacement	Oregon Convention Center Source of Estimate: ☑ Preliminary * ☐ Based on Design ☐ Actual Bid Documents	☑ Continuation ☐ Revision Project: Start Date: Completion Date: Jan. - Feb., 1999 Late 2001 - Early 2002	1	Prepared By: F. Brown/J. Blosser

Project Estimates	Prior Years	1999-2000	2000-01	2001-02	2002-03	2003-04	Beyond 2004	Total
Capital Cost:								
Plans & Studies								
Land & Right-of-Way								
Design & Engineering	$5,150,000	$4,000,000	$1,000,000					$10,150,000
Construction	1,000,000	28,400,000	45,600,000					75,000,000
Equipment/Furnishings			3,100,000	2,000,000				5,100,000
Project Contingency		3,000,000	3,000,000					6,000,000
1% for Art		750,000						750,000
Other (Bond issuance costs)	1,030,000							$1,030,000
Total	$7,180,000	$36,150,000	$52,700,000	$2,000,000				$98,030,000
Funding Source:								
Fund Balance			$4,000,000	$2,000,000				$6,000,000
Grants - PDC	$ 2,000,000	$3,000,000						5,000,000
G.O. Bonds	3,780,000	30,150,000	48,100,000					82,030,000
Revenue Bonds								
Other - Interest	1,400,000	3,000,000	600,000					5,000,000
Total	$7,180,000	$36,150,000	$52,700,000	$2,000,000				$98,030,000

Project Description/Justification:

Add to existing exhibit hall space, meeting rooms, and ballroom space, with parking for 1,350 cars, loading docks and lobby/prefunction space. Project will be constructed over three fiscal years. New facility will provide for expanded event schedule and much needed meeting room/ballroom space for local groups also. This project provides facility with competitive edge for attracting convention business to the region. Completion of this project is contingent upon the success of a ballot measure election in November 1998.

* Source of estimate-preliminary from ZGF (original architects of the building), updated with revised assumptions for additional parking

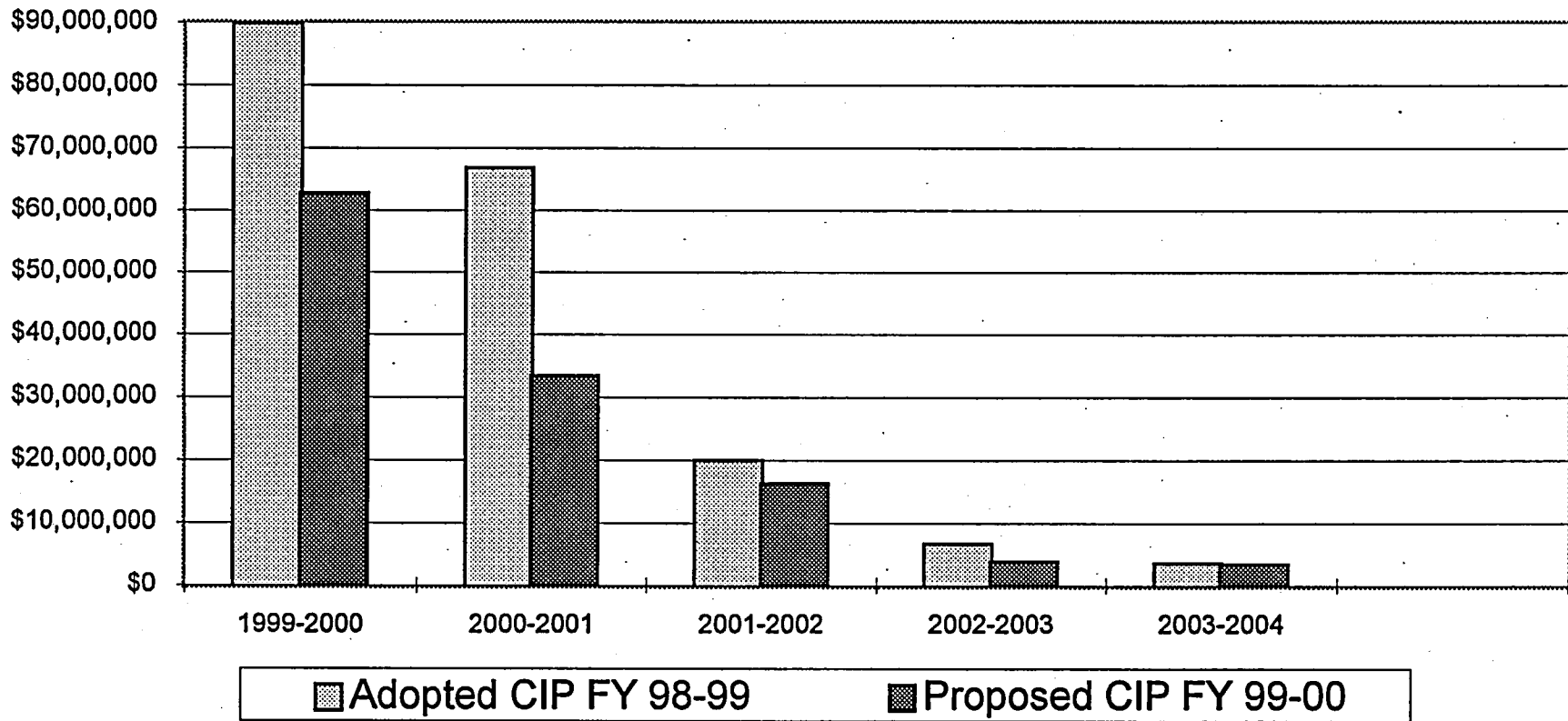| Annual Operating Budget Impact:	
Annual Revenues:	$4,847,850
Annual Expenditures:	
Personal Services costs	$2,020,500
Materials & Services Costs	2,794,559
Capital Outlay Costs	
Other Costs	
Sub-total, Expenditures:	4,815,059
Net Operating Impact:	($32,791)
Estimated Useful Life (years)	50
First Full Fiscal Year of Operation:	2002-2003
Fund(s): Convention Center Project Capital Fund	

Project Detail
Project Title: OCC – Replacement of Condenser Pipe

Project Number: 57720	Department/Division: MERC Oregon Convention Center	Type of Request: ☐ Initial ☑ Continuation ☐ Revision	Dept. Priority: 6	Date: 8-23-98
Type of Project: ☐ New ☐ Expansion ☑ Replacement	Source of Estimate: ☑ Preliminary ☐ Based on Design ☐ Actual Bid Documents	Project: Start Date: July 1999 / Completion Date: February 2000		Prepared By: J. Blosser

Project Estimates	Prior Years	1999-2000	2000-01	2001-02	2002-03	2003-04	Beyond 2004	Total
Capital Cost:								
Plans & Studies								
Land & Right-of-Way								
Design & Engineering		$45,000						$45,000
Construction		100,000						100,000
Equipment/Furnishings		195,000						195,000
Project Contingency								
1% for Art								
Other								
Total		$340,000						$340,000
Funding Source:								
Fund Balance		$340,000						$340,000
Grants								
G.O. Bonds								
Revenue Bonds								
Other								
Total		$340,000						$340,000

Project Description/Justification:

Replacement of 3" and 2" condenser pipe for refrigeration throughout the building – pipes that carry chilled water for refrigeration are experiencing major deterioration and possibly some failure. Two approaches are being studied by staff: 1) replace current pipe with plastic pipe throughout facility; or 2) purchase a smaller system to handle necessary refrigeration needs. Staff will provide further information, including a cost breakdown, on two alternatives being studied.

* Replacement would be in 15 years @ $600,000.

Annual Operating Budget Impact:

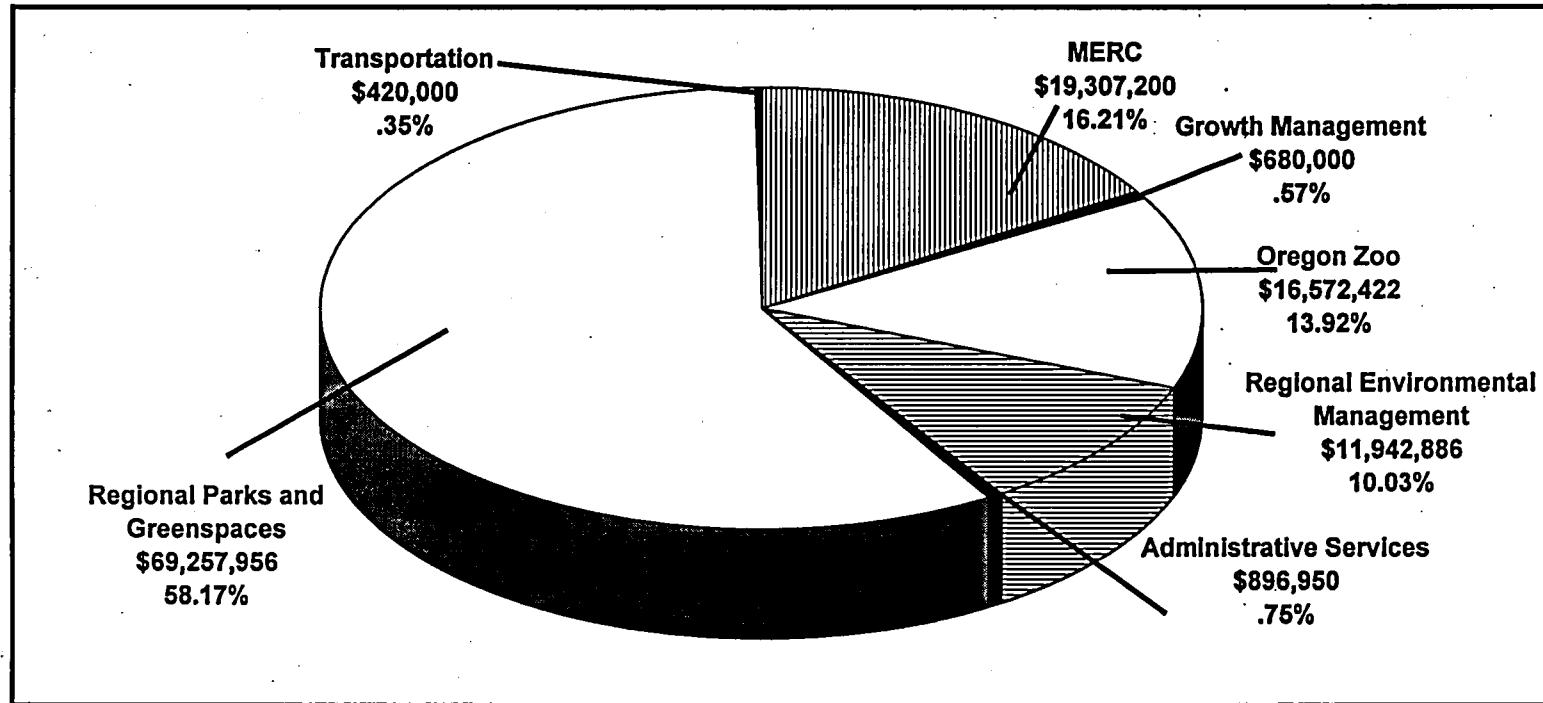| Annual Revenues:	
Annual Expenditures:	
Personal Services costs	
Materials & Services Costs	
Capital Outlay Costs	
Other Costs	
Sub-total, Expenditures:	
Net Operating Impact:	
Estimated Useful Life (years)	15
First Full Fiscal Year of Operation:	2000-2001
Fund(s): MERC Operating Fund (OCC)	

Comparison of Capital Improvement Plans
FY 98-99 to FY 99-00
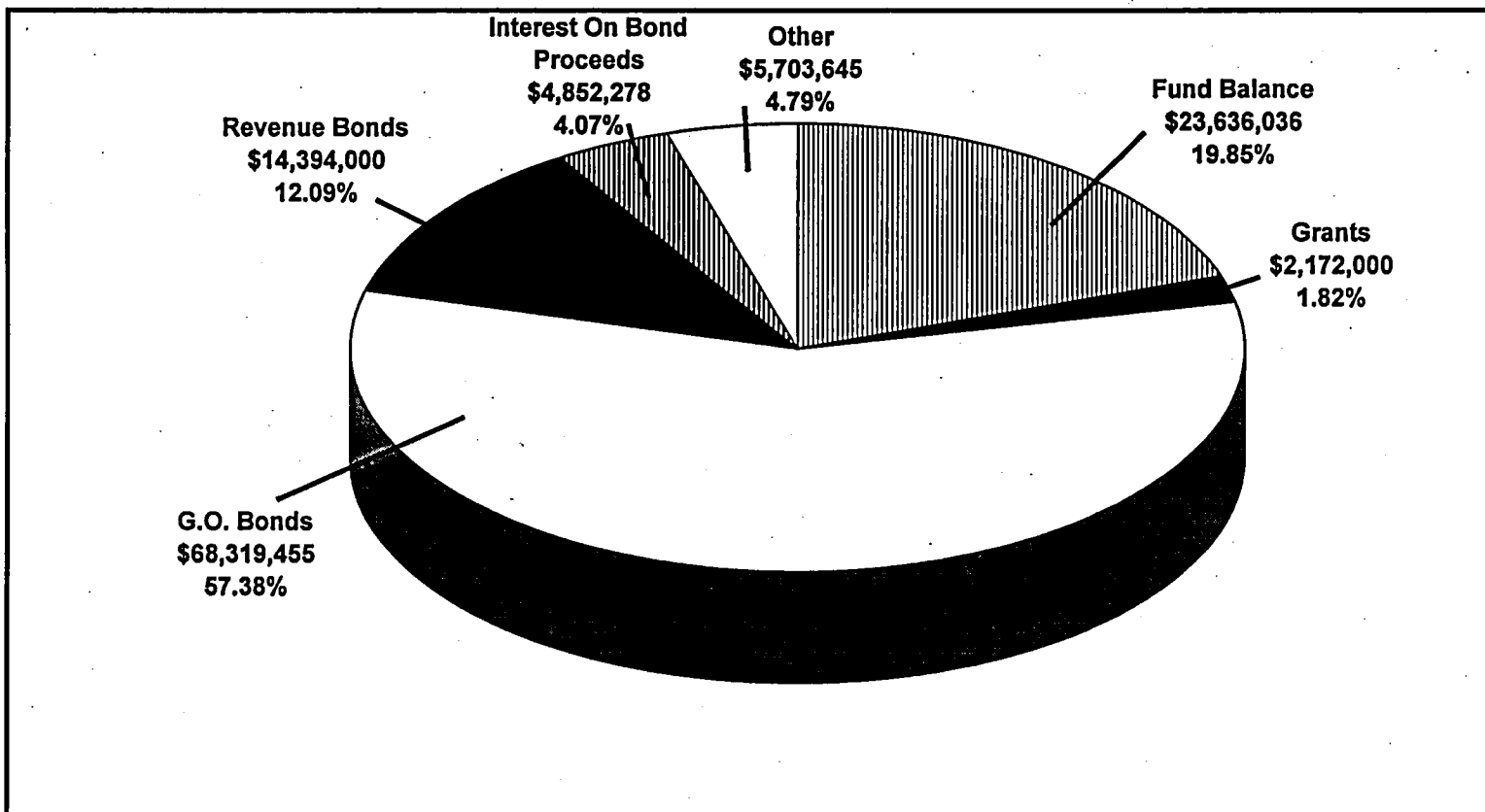

Legend: Adopted CIP FY 98-99 | Proposed CIP FY 99-00

Capital Improvement Plan Summary
Project Cost Summary by Department/All Funds

■ Total FY 1999-00 through FY 2003-04: $119,077,414 ■

Transportation
$420,000
.35%

MERC
$19,307,200
16.21%

Growth Management
$680,000
.57%

Oregon Zoo
$16,572,422
13.92%

Regional Environmental
Management
$11,942,886
10.03%

Administrative Services
$896,950
.75%

Regional Parks and
Greenspaces
$69,257,956
58.17%

Capital Improvement Plan Summary
Major Funding Source Summary
All Funds
■ Total FY 1999-00 through FY 2003-04: $119,077,414 ■

Interest On Bond Proceeds
$4,852,278
4.07%

Other
$5,703,645
4.79%

Fund Balance
$23,636,036
19.85%

Revenue Bonds
$14,394,000
12.09%

Grants
$2,172,000
1.82%

G.O. Bonds
$68,319,455
57.38%

Capital Improvement Plan Summary
Summary by Project Type
■ Total FY 1999-00 through FY 2003-04 ■

New	$81,776,878
Expansion	6,369,550
Replacement	30,930,986
	$119,077,414

Replacement 26.0%

New 68.7%

Expansion 5.3%
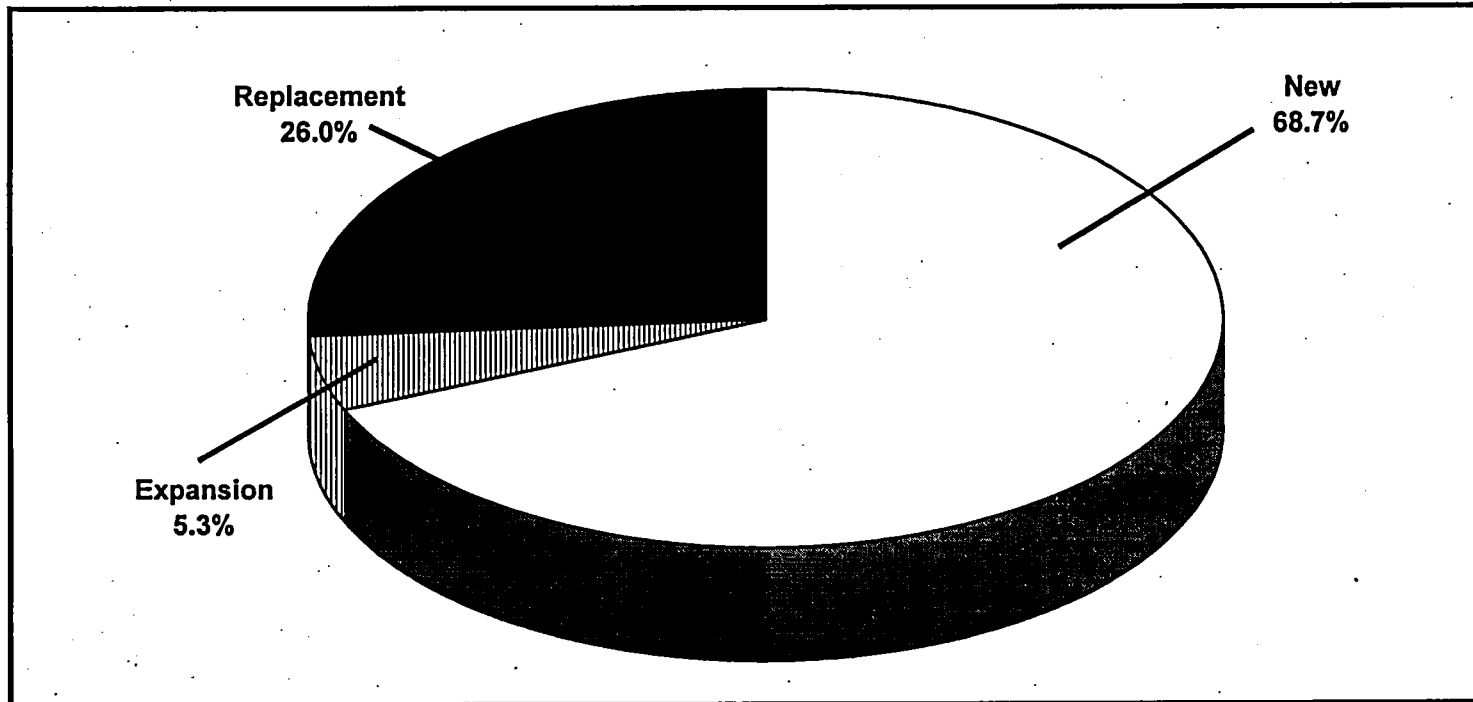
Councilor Monroe motion to Amend Ordinance No. 98-781C
December 10, 1998

I move to amend Ordinance No. 98-781C to replace 235 acres south of the Clackamas/Multnomah County line in urban reserve area #5. This area was removed by action of the Council last week, Dec.3, 1998. However it was in Urban reserve area 5 at the beginning of the Metro Council process to consider amending the UGB, was noticed properly, and was subject to productivity analysis and required staff analysis. This motion includes amending the map for ordinance 98-781, and the findings, to be consistent with the ordinance, as amended.

Powell Butte
Nature Park

Creek

Johnson
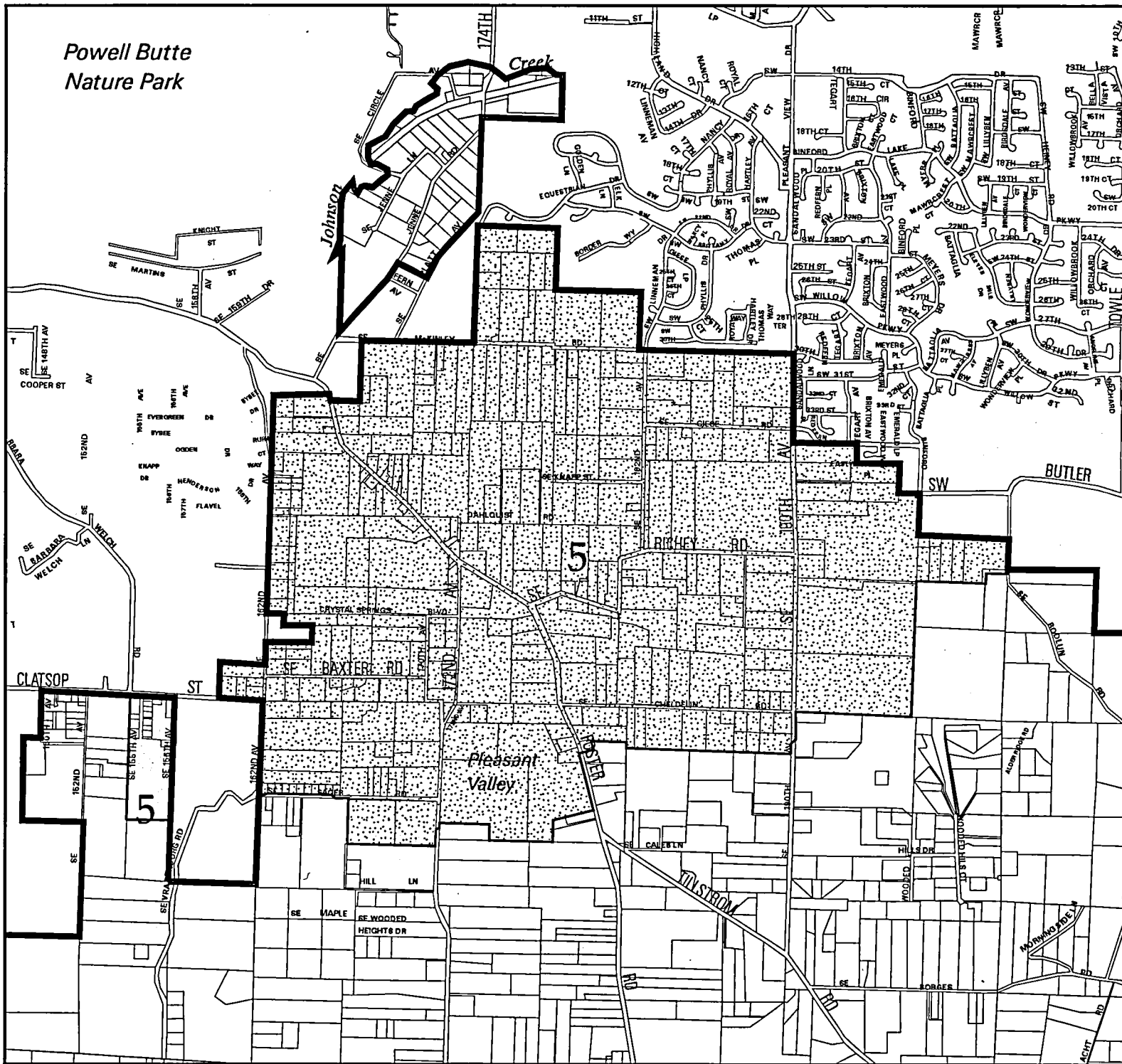
Ordinance #98-781
Urban Reserve #5

First Tier
Within Metro Boundary

☐ Area Considered by Council
▨ First Tier Urban Reserve

N Urban Growth Boundary

KNIGHT ST
SE MARTINS
COOPER ST
EVERGREEN DR
BYBEE
OGDEN
KNAPP
HENDERSON
FLAVEL
WELCH
BARBARA
WELCH
CLATSOP ST

5

RICHEY RD

5

CRYSTAL SPRINGS BLVD

SE BAXTER RD

Pleasant Valley

FOSTER

RICHEY RD

BUTLER
SW
RODLUN RD
ALDER BROOK RD
HILLS DR
MORNING RIDE LN

SE CALEB LN

TILSTROM

HILL LN

SE MAPLE
SE WOODED
HEIGHTS DR

The information on this map was derived from digital databases on Metro's GIS. Care was taken in the creation of this map. Metro cannot accept any responsibility for errors, omissions, or positional accuracy. There are no warranties, expressed or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.

Scale: 1" = 2000'

0   500 1000 1500
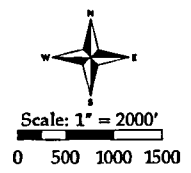
METRO

600 NE Grand Ave.
Portland, OR 97232-2736
Voice 503 797-1742
FAX 503 797-1909
Email drc@metro.dst.or.us

ORDINANCE 98-2728B

AMENDING THE METRO URBAN GROWTH BOUNDARY

Councilor McLain Amendment No. 2   December 10, 1998

I move to amend Resolution No. 98-2728B on Urban Reserve Areas 51-55 to change
Exhibit "B" "findings" to "staff report and process."

> 1.   That the Metro Council, based on the ~~findings indicated~~
> staff report and process in Exhibit B, attached herein, hereby expresses its
> intent to adopt an ordinance amending the Urban Growth Boundary to add
> land in Urban Reserve Areas 51, 52, 53, 54, and the portion of 55 outside
> the Metro jurisdictional boundary as shown on Exhibit A, within 30
> calendar days of receiving notification that the property outside the
> jurisdictional boundary has been annexed to Metro, provided such
> notification is received within six (6) months of the date on which the
> resolution is adopted.

The use of "findings" in this Resolution was requested by property owners in the initial
draft. However, findings are used to explain the final UGB amendment decisions in the
five ordinances we have prepared. The use of "findings" is inappropriate with this
Resolution of Intent that is not a final UGB amendment decision.

I am concerned that using findings with this Resolution of Intent will send the wrong
message to the courts that review this action. Our acknowledged Metro Code clearly states
that this action is a step in the process for a UGB amendment. Our process to this point
indicates that enough evidence has been presented to indicate that a UGB amendment will
occur and that Metro's jurisdictional boundary should be amended.

However, the final action to approve the UGB amendment occurs when the ordinance
adopting it is approved. That happens after Metro has land use jurisdiction after Metro's
district boundary is moved. That is when findings are appropriate.

We have been promised an appeal of this Resolution. I make this motion to keep the
words of this Resolution fully and clearly consistent with the process in the Metro Code
and state law.

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(12/10/98)

ORDINANCE 98-779D

AMENDING THE METRO URBAN GROWTH BOUNDARY

Councilor Monroe Amendment No. 1   December 10, 1998

I move to substitute the D version of Ordinance 98-779 for version C to add the first tier areas of urban reserves 33 and 34 to that ordinance.

This motion adds URAs 33 and 34 to the ordinance currently covering URAs 43 and 47. The motion will allow the first tier portions of URAs 33 and 34 to be amended into the UGB. The areas are relatively small in size with services nearby. Lake Oswego has committed to complete conceptual planning for both areas.

COUNCILOR MONROE'S MOTION FOR URAS 31-33

I move that Ordinance No. 98-782B be amended to add Exhibit C, the findings prepared by the Office of General Counsel, and conditions F through H, attached to your copy of this motion.

Attachment

F.   Prior to urban development, an urban service agreement consistent with ORS 195.065 and based on the Rosemont Village Concept Plan shall be entered into among the units of local government and special districts that provide service to this area and that are identified as appropriate parties by a cooperative agreement under ORS 195.020.

G.   Prior to urban development, an enhanced sheriff patrol or other service agreement with a city police agency shall be approved to provide an urban level of police service to this area.

H.   Prior to the conversion of the urbanizable land created by this ordinance to urban land available for development, the appropriate city or county indicated in the urban services agreement for this area shall amend its comprehensive plan to include the following provisions: -

1.   Land use designations and zoning shall be adopted consistent with Exhibit A of this ordinance and this concept plan as it may be further described in the urban services agreement prior to its adoption into the appropriate comprehensive plans under Metro Code 3.07.1130.

2.   The functional classification of the streets and roads serving this area added to the UGB by this ordinance shall be changed to be consistent with the Regional Motor Vehicles System Map (1997) of the Regional Framework Plan.

3.   The transportation element of the comprehensive plan of the governing cities and Clackamas County shall be amended to adopt the alternative Level of Service provision for the area added to the UGB by this ordinance authorized by Title 6 of Metro's Urban Growth Management Functional Plan at Metro Code 3.07.640.

4.   The transportation element of the comprehensive plan of the governing cities and county shall be amended to require 10-16 local street connections per mile as required by Title 6 of Metro's Urban Growth Management Functional Plan at Metro Code 3.07.630.

5.   The transportation element of the comprehensive plan of the governing cities and county shall require the City to coordinate transit service with Tri-Met to phase in increased transit service as this area is developed.

6.   The Public Facilities Plan shall be amended to add rough cost estimates for each of the on-site transportation facilities in Exhibit "D" (Table 2A) and off-site transportation facilities Exhibit "D" (Table 3A) needed for this area to address existing and future needed road improvements which were identified in the approved urban reserve plan.

7. A school site plan consistent with ORS 195.110 that addressees the future needed school sites identified in the urban reserve plan.

8. Funding strategies and planning requirements for the acquisition and protection of adequate land to meet or exceed locally adopted level of service standards for provision of public parks, natural areas, trails, and recreational facilities. Lands which are undeveloped due to natural hazards or environmental protection purposes (i.e., steep slopes, floodways, riparian corridors, wetlands, etc.) shall only be considered to meet the natural area level of service standards if the land will be preserved in perpetuity for public benefit.

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COUNCILOR MCLAIN'S MOTION FOR URA 55

I move that Ordinance No. 98-788B be amended to add Exhibit C, the findings prepared by the Office of General Counsel, and conditions F. 1 through 10, attached to your copy of this motion.

Attachment

F.   Prior to the conversion of the urbanizable land created by this ordinance to urban land available for development, the City's comprehensive plan shall be amended to include the following provisions:

(1.)   The functional classification of the Tualatin Valley Highway shall be changed to "principal arterial" consistent with the Regional Motor Vehicles System Map (1997) of the Regional Framework Plan.

(2.)   The transportation element of the comprehensive plan shall be amended to require the Access Management Strategies in the August 25, 1998 Draft Hillsboro TSP, or substantially equivalent policies.

(3.)   The transportation element of the comprehensive plan shall be amended to adopt the alternative Level of Service provision authorized by Title 6 of Metro's Urban Growth Management Functional Plan at Metro Code 3.07.640.

(4.)   The transportation element of the comprehensive plan shall be amended to require 10-16 local street connections per mile as required by Title 6 of Metro's Urban Growth Management Functional Plan at Metro Code 3.07.630.

(5.)   The transportation element of the comprehensive plan shall require the City to coordinate transit service with Tri-Met to phase in increased transit service as this area is developed.

(6.)   Amendments to the Public Facilities Plan shall be made with rough cost estimates for each of the following on-site transportation facilities needed for this area to address existing and future needed road improvements identified in the approved urban reserve plan:

- Davis Road from River Road to Gordon Creek neighborhood/mainstreet center: new two lane community street.

- Davis Road through the Gordon Creek neighborhood/mainstreet center: new three lane community boulevard.

- Davis Road through the Gordon Creek neighborhood/mainstreet center to Century Blvd.: new two lane community street.

- Davis Road from Century Blvd. to 229th: new two lane community street.

- Brookwood Ave. from TV Highway to Gordon Creek neighborhood/mainstreet center: new two lane community street.

- Brookwood to Gordon Creek neighborhood/mainstreet center: new three lane community boulevard.

- Century Blvd. from TV Highway to Davis Road: new two lane community street.

- Alexander St. from Brookwood Ave. to 229th: new two lane collector.

- 229th Avenue from TV Highway to McInnis Lane: new two lane collector.

- River Road from Witch Hazel to Gordon Creek: new three lane arterial.

(7.)   Amendments to the Public Facilities Plan shall be made with rough cost estimates for each of the following off-site transportation facilities

needed for this area to address existing and future needed road improvements identified in the approved urban reserve plan:

- River Road from Gordon Creek to Rosedale Road: reconstruct to two lanes.

- River Road at Witch Hazel: left turn lane, signalization.

- Brookwood/Witch Hazel at TV Highway: realignment, added lanes, new traffic and RR signalization.

- Brookwood from TV Highway to Baseline: reconstruct to 3 lanes, and rebuild curves at Ash St. and Golden Road.

- Brookwood Ave. from Baseline to Cornell: construct to three lanes.

- Century Blvd. from Baseline to Century High School: new three lane roadway extension.

- Century Blvd. from Baseline to Cornell Road: reconstruct to three lanes.

- 229th from 2,000 feet north of Butternut Creek to Rosedale Road: reconstruct two lanes.

- Brookwood at Cedar Street: channelization and signalization.

- Brookwood at Bently: channelization and signalization.

- Brookwood at Golden: channelization and signalization.

(8.) The transportation element of the comprehensive plan shall be amended to provide for a corridor study of the Tualatin Valley Highway prior to development approvals to provide additional means of maintaining the through traffic capacity while providing acceptable access to and across the highway from Beaverton to Hillsboro.

(9.) A school site plan consistent with ORS 195.110 that addresses the future needed school sites identified in the urban reserve plan.

(10.) Funding strategies and planning requirements shall be adopted for the acquisition and protection of adequate land to meet or exceed locally adopted level of service standards for provision of public parks, natural areas, trails, and recreational facilities. Lands which are undeveloped due to natural hazards or environmental protection purposes (i.e., steep slopes, floodways, riparian corridors, wetlands, etc.) shall only be considered to meet the natural area level of service standards if the land will be preserved in perpetuity for public benefit.

Council Worksheet
Urban Growth Boundary Deliberations
Dec 3, 1998

Site #	Ordinance	Resolution	1st tier	Metro Boundary	Acres	Dwelling Units	Jobs	Submission of Urban Res. Plan or Letter of Commitment	Amendments	Notes
4 Jenne Road	O. 98-781C		yes	yes	123	375	125	Commitment/Portland		
5 Pleasant Valley	O. 98-781C		yes	yes	1,173	4,616	2,143	Commitment/Gresham	27 acre Happy Valley Mobile Home Park area in. 325 acre S. of Mult./Clack. line out.	
sub total					1,296	4,991	2,268			
14 Sunnyside Road	O. 98-786C		yes	yes	307	1,062	347	Commitment/Clackamas Co.		
15 Sunnyside Road	O. 98-786C		yes	yes	358	2,085	561	Commitment/Clackamas Co.	39 acre amendment in.	
sub total					665	3,147	908			
43 Tualatin	O. 98-779C		yes	yes	10	45	15	Commitment/Tualatin		
47 Beef Bend Road	O. 98-779C		yes	yes	90	361	120	Commitment/King City	Correct Flood Plain	
sub total					100	406	135			
31 Stafford	O.98-782B		no	yes	671	3,392	1,450	Rosemont Village Plan	Rosemont plan area	
32 Stafford	O.98-782B		no	yes	85	431	144	Rosemont Village Plan	Rosemont plan area	
33 Stafford	O.98-782B		yes/no	yes	84	340	109	Rosemont Village Plan	Rosemont plan area	
sub total					840	4,163	1,703			
55 Hillsboro (inside Metro Boundary)	O.98-788B		yes	part	353	1,310	484	South Hillsboro Plan.		
subtotal					353	1,310	484			

39 Wilsonville		R. 98-2729C	yes	no	20	0	0	Commitment/Wilsnville	7 acre amendment in	
41 Wilsonville/ Dammasch (part)		R. 98-2729C	yes (only)	no	279	1,277	426	Plan submitted		
42 Wilsonville/ Day Road		R. 98-2729C	no	part	326	0	4,267	Plan submitted		
sub total					625	1,277	4,693			

51 Hillsboro		R 98-2728B	no	no	94	323	108	South Hillsboro Plan	site added to resolution	
52 Hillsboro		R 98-2728B	no	no	99	421	140	South Hillsboro Plan	site added to resolution	
53 Hillsboro		R 98-2728B	no	no	204	997	385	South Hillsboro Plan		
54 Hillsboro		R.98-2728B	no	no	191	1,108	369	South Hillsboro Plan		
55 (outside Metro boundary)		R.98-2728B	yes/no	no	473	2,380	1,706	South Hillsboro Plan		
sub total					1061	5,229	2,708			

62 Hillsboro (part)		R. 98-2726B	no	no	19	76	41	Plan Submitted		
63 Hillsboro		R. 98-2726B	no	no	11	71	38	Plan Submitted		
65 Beaverton (part)		R. 98-2726B	no	no	116	620	159	Plan Submitted		
sub total					146	767	238			

total under consideration					5,087	21,290	13,137			
mm/12/9/98										

CHAPTER 3.09

LOCAL GOVERNMENT BOUNDARY CHANGES

3.09.010 Purpose and Applicability

The purpose of this chapter is to carry out the provisions of
ORS 268.354. This chapter applies to all boundary changes
within the boundaries of Metro or any urban reserve designated
by Metro prior to June 30, 1997. Nothing in this chapter
affects the jurisdiction of the Metro Council to amend the
region's Urban Growth Boundary.

3.09.020 Definitions

As used in this chapter, unless the context requires otherwise:

(a) "Affected entity" means a city, city-county, or
special district for which a boundary change is proposed or is
ordered.

(b) "Affected territory" means territory described in a
petition.

(c) "Approving entity" means the governing body of a city, county, city-county or district authorized to make a decision on a boundary change, or its designee.

(d) "Boundary change" means a major or minor boundary change, involving affected territory lying within the jurisdictional boundaries of Metro and the urban reserves designated by Metro prior to June 30, 1997.

(e) "Contested case" means a boundary change decision by a city, county or district that is contested or otherwise challenged by a necessary party.

(f) "District" means a district defined by ORS 198.710 or any district subject to the district boundary procedure act under state law.

(g) "Final decision" means an adopted resolution or ordinance of an approving entity that is the final action of the approving entity on the boundary change, including a resolution or ordinance that declares the result of an election to which a boundary change decision has been referred.

(h) "Major boundary change" means the formation, merger, consolidation or dissolution of a city or district.

(i) "Minor boundary change" means an annexation or withdrawal of territory to or from a city or district or from a city-county to a city. "Minor boundary change" also means an extra-territorial extension of water or sewer service by a city or district.

(j) "Necessary party" means: any county, city or district whose jurisdictional boundary or adopted urban service area includes any part of the affected territory or who provides any urban service to any portion of the affected territory, Metro, and any other unit of local government, as defined in ORS 190.003, that is a party to any agreement for provision of an urban service to the affected territory.

(k) "Petition" means a petition, resolution or other form of initiatory action for a boundary change.

(l)　"Uncontested case" means a boundary change decision by an approving entity that is not challenged by a necessary party to that decision.

(m)　"Urban services" means sanitary sewers, water, fire protection, parks, open space, recreation and streets, roads and mass transit.

3.09.030　Uniform Notice Requirements for Final Decisions

(a)　The following minimum requirements apply to all boundary change decisions by an approving entity. These procedures are in addition to and do not supersede the requirements of ORS chapters 198, 221 and 222 and any city or county charter for boundary changes. Each approving entity shall provide for the manner of notice of boundary change decisions to affected persons.

(b)　An approving entity shall set a time for deliberations on a boundary change within 30 days after the petition is completed. The approving entity shall give notice of its proposed deliberations by mailing notice to all necessary parties, by weatherproof posting of the notice in the general vicinity of the affected territory, and by publishing notice in a newspaper of general circulation in the affected territory. Notice shall be mailed and posted at least 45 days prior to the date of decision for major boundary changes and for those minor boundary changes which are not within the scope of adopted urban service provider agreements and for which a shorter notice period has not been agreed to by all necessary parties. Notice shall be published as required by state law.

(c)　The notice of the date of deliberations shall: describe the affected territory in a manner that allows certainty; state the date, time and place where the approving entity will consider the boundary change; and state the means by which any interested person may obtain a copy of the approving entity's report on the proposal. The notice shall state whether the approving entity intends to decide the boundary change without a public hearing unless a necessary party requests a public hearing.

(d)　An approving entity may adjourn or continue its final decision on a proposed boundary change to another time. For a continuance later than 31 days after the time stated in the

original notice, notice shall be reissued in the form required by subsection (b) of this section at least 15 days prior to the continued date of decision. For a continuance scheduled within 31 days of the previous date for decision, notice shall be adequate if it contains the date, time and place of the continued date of decision.

(e) An approving entity's final decision shall be reduced to writing and authenticated as its official act within 30 days following the decision and mailed to Metro and to all necessary parties to the decision. The mailing to Metro shall include payment to Metro of the filing fee required pursuant to section 3.09.120. The date of mailing shall constitute the date from which the time for appeal runs for appeal of the decision to the Metro Boundary Appeals Commission.

(f) Each county shall maintain a current map and list showing all necessary parties entitled to receive notice of proposed boundary changes. A county shall provide copies of the map, list, and any changes thereto, to Metro.

3.09.040 <u>Minimum Requirements for Petitions</u>

(a) A petition for a boundary change shall be deemed complete if it includes the following information:

   (1) The jurisdiction of the approving entity to act on the petition;

   (2) A narrative, legal and graphical description of the affected territory in the form prescribed by the Metro Executive Officer;

   (3) For minor boundary changes, the names and mailing addresses of all persons owning property and all electors within the affected territory as shown in the records of the tax assessor and county clerk;

   (4) A listing of the present providers of urban services to the affected territory;

   (5) A listing of the proposed providers or urban services to the affected territory following the proposed boundary change;

(6)   The current tax assessed value of the affected
       territory; and

(7)   any other information required by state or local law.

(b) A city or county may charge a fee to recover its
reasonable costs to carry out its duties and responsibilities
under this chapter.

3.09.050   Uniform Hearing Requirements for Final Decisions

(a) The following minimum requirements for hearings on
boundary change decisions operate in addition to all procedural
requirements for boundary changes provided for under ORS
chapters 198, 221 and 222. Nothing in this chapter allows an
approving entity to dispense with a public hearing on a
proposed boundary change when the public hearing is required by
those statutes or is required by the approving entity's
charter, ordinances or resolutions.

(b) Except when a public hearing is requested by a
necessary party, an approving entity may make a final decision
on a completed petition for an annexation of territory without
a public hearing when a decision without public hearing is
allowed by state and local law, when the affected territory is
surrounded by a city as described in ORS 222.750 ("island
annexations") or when the petition is accompanied by the
written consent of one hundred percent (100%) of the property
owners and at least fifty percent (50%) of the electors within
the affected territory ("100% owner annexations").

(c) An approving entity shall conduct a public hearing on
the proposed boundary change if a necessary party requests a
hearing in a writing delivered to the approving entity not
later than 15 days prior to the date set for the decision. The
request for public hearing shall state reasons why the party
believes the boundary change is inconsistent with the approval
criteria. At any public hearing, the persons or entities
proposing the boundary change shall have the burden to prove
that the petition meets the criteria for a boundary change.

(d) Not later than 30 days prior to the date set for a
boundary change decision, the approving entity shall make
available to the public a report that includes at a minimum the
following:

(1) The extent to which urban services presently are available to serve the affected territory;

(2) The extent to which urban services serving the affected territory result from extraterritorial extensions of service outside the service provider's legal boundary;

(3) A description of how the proposed boundary change complies with any urban service provider agreements adopted pursuant to ORS 195.065 between the affected entity and all necessary parties;

(4) A description of how the proposed boundary change is consistent with the comprehensive land use plans, public facility plans, regional framework and functional plans, regional urban growth goals and objectives, urban planning agreements and similar agreements of the affected entity and of all necessary parties;

(5) Whether the proposed boundary change will result in the withdrawal of the affected territory from the legal boundary of any necessary party; and

(6) The proposed effective date of the decision.

(e) An approving entity's final decision shall be reduced to writing and authenticated. A final decision that is subject to a public hearing shall be based on substantial evidence in the record of that hearing. All boundary change decisions whether made with or without a public hearing shall include findings of fact and conclusions from those findings as to address the following minimum criteria for decision:

(1) The decision complies with urban service provider agreements adopted pursuant to ORS 195.065 between the affected entity and all necessary parties;

(2) The decision is consistent with specific directly applicable standards or criteria for boundary changes contained in comprehensive land use plans, public facility plans, regional framework and functional plans, urban planning agreements and similar

agreements of the affected entity and of all
necessary parties;

(3) The affected entity can assure that urban services
are now or can be made available to serve the
affected territory, by its own forces or by contract
with others.

(4) If the proposed boundary change is for annexation of
territory to Metro, a determination by the Metro
Council that the territory should be included in the
Urban Growth Boundary shall be the primary criteria
for approval.

f) In addition to the criteria for decision set out in
subsection (e) of this section, in those cases where the
agreements required by ORS 195.065 are not yet adopted and a
proposed provider of an urban service to the affected territory
is disputed by a necessary party, a final decision by a city or
county made after public hearing shall address and consider, as
to the proposed providers of urban services to the affected
territory:

(1) Financial, operational and managerial capacity to
provide the service;

(2) The effect on the cost of the urban service to the
users of the service, the quality and quantity of the
service provided and the ability of urban service
users to identify and contact service providers, and
to determine their accountability with ease;

(3) Physical factors related to the provision of the
urban service;

(4) The feasibility of creating a new entity for the
provision of the urban service;

(5) The elimination or avoidance of unnecessary
duplication of facilities;

(6) Economic, demographic and sociological trends and
projections relevant to the provision of the urban
service;

(7) The allocation of charges among urban service users in a manner that reflects differences in the costs of providing services to the users;

(8) Matching the recipients of tax supported urban services with the payers of the tax;

(9) The equitable allocation of costs between new development and prior development; and

(10) Economies of scale.

(11) Where a proposed decision is inconsistent with adopted intergovernmental agreements by or among any necessary parties, the city or county making the final decision shall include factual findings that the decision better fulfills the criteria of subsections (1) through (10) of this section.

(g) A final boundary change decision by an approving entity shall state the effective date, which date shall be no earlier than 30 days following the date that the decision is reduced to writing, and mailed to all necessary parties. However, a decision that has not been contested by any necessary party may become effective upon adoption.

(h) Only territory already within the defined Metro Urban Growth Boundary at the time a petition is complete may be annexed to a city or included in territory proposed for incorporation into a new city. However, cities may annex individual tax lots partially within and without the Urban Growth Boundary.

3.09.060 Creation of Boundary Appeals Commission

(a) The Metro Boundary Appeals Commission is created to decide contested cases of final boundary change decisions made by approving entities. The Metro Council shall appoint the Commission which shall consist of three citizen members, one each to be appointed from a list of nominees provided to the Metro Executive Officer at least 30 days prior to the commencement of each term by Clackamas, Multnomah and Washington counties, respectively. The Council shall appoint two of the members for a initial four-year term and one for a nominal two-year term, the initial terms to be decided by

chance; thereafter, each commissioner shall serve a four year term. Each Commission member shall continue to serve in that position until replaced. Commission members may not hold any elective public office.

(b) The Metro Executive Officer shall provide staff assistance to the Commission and shall prepare the Commission's annual budget for approval by the Metro Council.

(c) At its first meeting and again in its first meeting of each successive calendar year, the Commission shall adopt rules of procedure that address, among other things, the means by which a position is declared vacant and the means of filling a vacant position; and, the Commission at that first meeting shall elect a chairperson from among its membership, who shall serve in that position until a successor is elected and who shall preside over all proceedings before the Commission.

3.09.070 How Contested Case Filed

(a) A necessary party to a final decision that has appeared in person or in writing as a party in the hearing before the approving entity decision may contest the decision before the Metro Boundary Appeals Commission. A contest shall be allowed only if notice of appeal is served on the approving entity no later than the close of business on the 10th day following the date that the decision is reduced to writing, authenticated and mailed to necessary parties. A copy of the notice of appeal shall be served on the same day on Metro together with proof of service on the approving entity, the affected entity and all necessary parties. The notice of appeal shall be accompanied by payment of Metro's prescribed appeal fee. Service of notice of appeal on the approving entity, the affected entity and all necessary parties by mail within the required time and payment of the prescribed appeal fee shall be jurisdictional as to Metro's consideration of the appeal.

(b) An approving entity shall prepare and certify to Metro, no later than 20 days following the date the notice of appeal is served upon it, the record of the boundary change proceedings.

3.09.080   Alternate Resolution

(a)   On stipulation of all parties to a contested case made at any time before the close of the hearing before the Commission, the Commission shall stay further proceedings before it for a reasonable time to allow the parties to attempt to resolve the contest by other means.

(b)   A contested case that is not resolved by alternate means during the time allowed by the Commission shall be rescheduled for hearing in the normal course.

(c)   A contested case is a remedy available by right to a necessary party. When a notice of appeal is filed, a boundary change decision shall not be final until resolution of the contested case by the Commission.

3.09.090   Conduct of Hearing

(a)   The Commission shall schedule and conduct a hearing on a contested case no later than 30 days after certification of the record of the boundary change proceedings.

(b)   The Commission shall hear and decide a contested case only on the certified record of the boundary change proceeding. No new evidence shall be allowed. The party bringing the appeal shall have the burden of persuasion.

(c)   The Commission shall hear, in the following order, the Metro staff report, if any; argument by the approving entity and the affected entity; argument of the party that contests the decision below; and rebuttal argument by the approving entity and the affected entity. The Commission may question any person appearing before it. Metro staff shall not make a recommendation to the Commission on the disposition of a contested case.

(d)   The deliberations of the Commission may be continued for a reasonable period not to exceed 30 days.

(e)   The Chairperson may set reasonable time limits for oral presentation and may exclude or limit cumulative, repetitious or immaterial testimony. The Chairperson shall cause to be kept a verbatim oral, written, or mechanical record of all proceedings before the Commission.

(f)   No later than 30 days following the close of a hearing before the Commission on a contested case, the Commission shall consider its proposed written final order and shall adopt the order by majority vote. The order shall include findings and conclusions on the criteria for decision listed in section 3.09.050 of this Code. The order shall be deemed final when reduced to writing in the form adopted, and served by mailing on all parties to the hearing.

(g)   The Commission shall affirm or deny a final decision made below based on substantial evidence in the whole record. The Commission shall have no authority to remand a decision made below for further proceedings before the approving entity, and may only stay its proceedings to allow for alternate resolution as provided for in this chapter.

3.09.100   Ex Parte Communications to the Boundary Appeals Commission

Commission members shall place in the record a statement of the substance of any written or oral ex parte communication on a fact in issue made to them during the pendency of the proceeding on a contested case. A party to the proceeding at its request shall be allowed a reasonable opportunity to rebut the substance of the communication.

3.09.110   Ministerial Functions of Metro

(a)   Metro shall create and keep current maps of all service provider service areas and the jurisdictional boundaries of all cities, counties and special districts within Metro. The maps shall be made available to the public at a price that reimburses Metro for its costs. Additional information requested of Metro related to boundary changes shall be provided subject to applicable fees.

(b)   The Metro Executive shall cause notice of all final boundary change decisions to be sent to the appropriate county assessor(s) and elections officer(s), the Secretary of State and the Oregon Department of Revenue.

(c)   The Metro Executive Officer shall establish a fee structure for establishing the amounts to be paid upon filing notice of city or county adoption of boundary changes appeals

to the Boundary Appeals Commission and for related services.
The fee schedule shall be filed with the Council Clerk and
distributed to all cities, counties and special districts
within the Metro region.

Metro

Administrative Services Department

InfoLink Project Review

December 1998
A Report by Pacific Consulting Group
Issued by the Office of the Auditor

METRO

1998-10137-AUD

Alexis Dow, CPA
Metro Auditor

Metro

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METRO

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METRO

OFFICE OF THE AUDITOR

December 10, 1998

To the Metro Council and Executive Officer:

The accompanying report covers an independent review of Metro's InfoLink project performed under contract by Pacific Consulting Group. They focused their work on four aspects of the InfoLink project:
- Project planning and management
- System selection
- Project implementation, and
- Internal controls over human resources and purchasing applications.

This report addresses the first three areas. Another report issued under separate cover addresses internal controls.

Pacific Consulting Group's report finds that Metro's staff did an outstanding job setting up InfoLink. Project staff overcame several technical problems and worked hard on InfoLink for more than two years while still performing their regular jobs.

Although staff have done an exceptional job to date, much work remains to be done:
- Only five of eleven planned PeopleSoft applications are installed. The others are significantly behind schedule.
- Delays in training many end users limits the ability of these employees to obtain information from InfoLink that would help them do their jobs. This lack of training contributed to low satisfaction ratings in recent focus groups.
- Processes need to be reengineered to eliminate duplicate data entry and records.
- PeopleSoft upgrades each application approximately once a year. These upgrades require an adequate number of staff with appropriate skills.

Pacific Consulting Group estimates that Metro will need to spend $460,000 to $610,000 to develop InfoLink so it will provide Metro with a reasonable level of benefits and achieve most goals that were identified in 1996 when InfoLink was approved. At the time Pacific Consulting Group made this estimate, Metro had

approximately $240,000 remaining of its original $2.4 million budget. If this amount remains today, an additional $220,000 to $370,000 would be needed. This estimate excludes implementation of two of the originally planned modules: asset management, and time and labor.

The report further states that Metro will require additional resources for ongoing system maintenance and upgrades. Pacific Consulting Group estimates that Metro will require five to seven total internal staff and $25,000 to $50,000 in external consulting assistance annually to adequately support the five implemented PeopleSoft applications. When all eleven PeopleSoft applications are implemented, they estimate Metro will require seven to ten total internal staff and $50,000 to $100,000 in external consulting assistance annually to adequately support operation of the InfoLink system.

Specific recommendations developed by Pacific Consulting Group are organized in three broad categories: future steps to complete the InfoLink project, steps for maintaining the InfoLink system and recommendations for future information system projects.

Metro's Executive Officer and Chief Financial Officer received a copy of the report on November 19, 1998 and are in general agreement with the information presented. This written response is attached.

We appreciate the cooperation and assistance provided to both the Pacific Consulting Group and my office by members of the Administrative Services Division. It is their dedicated efforts that enabled Metro to achieve the level of success it enjoys today.

Yours very truly,

Alexis Dow, CPA
Metro Auditor

Auditor: Doug U'Ren

Metro Auditor

InfoLink Project Review

FINAL REPORT

DECEMBER 1998

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I.   EXECUTIVE SUMMARY

Since early 1996, Metro has been converting to a new financial management system known as InfoLink. Metro's Administrative Services Department began the InfoLink project in order to replace a more than 10-year-old mainframe-based computer system that ran on obsolete software and was not expected to process dates correctly after December 31, 1999. The new InfoLink system uses client-server technology and operates software applications developed by PeopleSoft, Inc. Metro purchased 11 PeopleSoft financial and human resource applications in 1996 and has installed five of them. Metro plans to implement additional PeopleSoft applications in the future. The budget for the InfoLink project, which covers the purchase of hardware, software, data base system, and implementation consulting, is about $2.4 million.

Pacific Consulting Group, Inc. (PCG) was engaged by the Metro Auditor to evaluate three aspects of the InfoLink project: the process used to implement the PeopleSoft applications, the overall status of the project, and the internal controls over the Human Resources and Purchasing applications. Our fieldwork began in July 1998 and ended in October 1998. We carried out our work by focusing on four major areas: project planning and management, the procurement process, project implementation, and internal controls. This report addresses the first three areas. We have provided a separate report to the Metro Auditor on InfoLink's internal controls.

We found that Metro's staff has done an outstanding job of setting up the InfoLink system and overcoming a number of thorny technical problems that arose during the implementation of the PeopleSoft applications. Project staff have worked hard on the InfoLink project for more than two years while also performing their regular jobs. The software vendor selected by Metro, PeopleSoft Inc., is one of the leading vendors with very good application software for human resource and financial management information systems for the public sector. The new system provides Metro staff with much better capability to obtain and analyze financial information than was possible with the system it replaced. It also gives Metro a much better opportunity to keep pace with the rapidly changing world of computer technology.

However, much work remains to be done.   Metro has implemented five PeopleSoft applications to date, but six others have not been installed and are behind schedule. We met with Metro employees who have been using the new system and found that they are generally not satisfied with it. Many employees have not received adequate training and are unable to obtain information from the system that would help them do their jobs. Little progress has been made toward eliminating duplicate data entry processes and records. PeopleSoft upgrades each of their applications approximately once a year, but it does not appear that Metro has a plan or adequate number of staff with the appropriate skills to keep up with the upgrades.

The InfoLink project suffered in part because a number of significant activities were not incorporated into the project. Based on Metro's experience with the InfoLink project, we recommend the following activities be performed on future information systems projects:

- Perform adequate pre-purchase testing to determine if the information system functions properly before Metro accepts and pays for them. In the case of InfoLink it should be noted that PeopleSoft is a relatively new provider of software applications for the public sector. Some of the applications Metro purchased contained "bugs" that either prevented Metro from using the applications or forced Metro to fix the problems before the software could be used.

- Prepare a feasibility study identifying the advantages, disadvantages, risks and costs when considering significant changes to the basic technology infrastructure. For example, all of the costs to implement and support a new technology should be considered in the feasibility study. Metro's transition from a mainframe computer environment to a client/server environment should have been assessed in a feasibility study. We believe the transition to client/server technology has strained the resources of the Information Management Services division, which is part of the Administrative Services Department.

- Use consultants experienced in the subject technology and business processes and contract with them, whenever possible, on a "deliverable basis" rather than on an open-ended "time and material" basis. Compared to other local governments we surveyed, Metro has spent far less on outside consultants to help it carry out the InfoLink Project. While other governments relied more heavily on consultants, they were also able to complete their projects in less time and implemented more applications.

- Prepare a project work plan and detailed schedule at the beginning of the project and update them on a regular basis throughout the project. A comprehensive implementation methodology should be employed to guide the activities of the project team. In the case of InfoLink, a work plan was developed at the beginning of the project but not maintained on a regular basis or used as an ongoing management tool. Metro does not have a formal methodology for the selection and implementation of purchased software.

- Estimate project staffing and assign qualified individuals on a full-time basis to the project. Temporary staff should be used to "back-fill" project team members in their regular jobs. The majority of InfoLink project team members were assigned to the project in addition to their regular job responsibilities.

- Define, document and communicate the roles of all project team members, including the executive sponsor and the project manager. The role of all project team members was not documented and distributed to InfoLink project team members and users.

- Include adequate user reporting tools and information retrieval capabilities in the

implementation plan for a new system. Departments' user staffs have not been provided transaction-level reports that would help them determine if data have been correctly entered into the InfoLink system. Consequently, many employees have not developed confidence in the information they obtained from the system.

- Incorporate business process redesign as a critical step in implementing any new information system to take full advantage of capabilities built into the software. Adequate training and written procedures should also be incorporated in the project implementation.

- Develop an employee retention strategy for employees who possess highly sought after information technology skills. Staff turnover has hindered Metro's ability to adhere to InfoLink project implementation schedules.

This report presents the findings, conclusions and recommendations of our review of InfoLink. The report is organized in the following major topics.

- Project Background
- Procurement Process
- Project Planning and Management
- Project Implementation
- Future Steps
- Summary of Recommendations

We have developed a number of detailed recommendations to address the problems identified during our review. Some of our recommendations focus on the InfoLink project specifically, while others are aimed at improving Metro's performance in future information technology projects.

Metro has spent all but approximately $240,000 of the $2.4 million InfoLink project budget that was authorized by the Metro Council in 1996. We estimate that Metro needs to spend a total of $460,000 to $610,000 to further develop the InfoLink system so that it will provide Metro with a reasonable level of benefits and achieve most of the goals that were identified for this new system in 1996.

In addition, Metro will likely need to hire more technical staff to provide ongoing support and upgrades for the system. We estimate Metro will require 5 to 7 internal staff and $25,000 - $50,000 in external consulting assistance annually to adequately support the 5 PeopleSoft applications now in production. When all 11 PeopleSoft applications are implemented, Metro will require 7 to 10 internal staff and $50,000 - $100,000 in external consulting assistance to adequately support operation of the InfoLink system.

II. PROJECT BACKGROUND

Introduction

This section of the report provides a history of the InfoLink project beginning with the funding justification in 1994, the project milestones, and the current budget status. The study objectives and methodology are also described.

Project History

In late 1994, Metro began work on replacing its Management Information System (MIS). On September 28, 1994, Resolution 94-2033 declared Metro's "...intent to include in its budget for fiscal Year 1995-96 monies 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 Data Systems in the early 1980s. Systems and Computer Technology (SCT) subsequently acquired Moore and in the early 1990s and informed Metro that they would no longer be supporting the Moore applications. In addition, Metro believed the applications could not be economically and satisfactorily modified to operate correctly in the year 2000.

The effort to replace the applications was justified in October 1994, using both direct or tangible benefits and intangible benefits. At that time, the total cost of implementing a new MIS (also referred to as InfoLink) was estimated at $2.345 million, financed over five years, which included the system cost of $1.275 million and $200,000 in one-time expenses[1]. The cost comparison for retaining and "fixing" the existing system versus a replacement project was developed by Metro and is summarized below in Exhibit II-1.

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.

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[1]Letter October 12, 1994, from Jennifer Sims to Councilor George Van Bergen.

Exhibit II-1
1994 Projected Cost for New MIS

Cost Component	Cost to Fix SCT System	Cost of New System
System Cost	$0	$1,275,000
Lease @ 5.75%	0	195,000
Project Cost (one-time)	0	175,000
Applicant Tracking	25,000	0
Account Receivable (Solid Waste)	100,000	0
Miscellaneous Receivables	50,000	0
Additional Computer Hardware	12,000	0
Interface Programming	16,000	0
Software Maintenance	131,000	0
Training	4,000	0
Annual Maintenance	440,000	500,000
Interim Maintenance of Existing System	0	200,000
Additional Staff on Loss of Vendor Support	336,000	0
Systems Analyst for Accounts Receivable (Solid Waste)	56,000	0
Cost of Duplicate Record Keeping in Operating Departments	290,000	0
TOTAL COST	$1,460,000	$2,345,000

The following improvements in Metro operations were also envisioned from a new MIS:

- 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 a 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. The proposals were reviewed by Metro staff in accordance with the general evaluation schedule outlined in the RFP.

The proposals being considered were narrowed to three finalists: J.D. Edwards, Solutions for Government, and PeopleSoft. Following vendor demonstrations, Metro selected PeopleSoft as the application vendor. 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, identified the key project milestones outlined in Exhibit II-2. Actual implementation dates are also shown for the five modules that have been implemented. The detailed project work plan submitted by PeopleSoft in their proposal is provided in Appendix A.

Exhibit II-2
Original Project Milestone Dates

Project Milestone	Planned Date	Actual Date
Financial Systems		
Requirements Integration Assessment	Oct 96	Nov 96
Project Plan Completed	Nov 96	Nov 96
General Ledger - Design/Develop/Integrate/Test	Jan 97	Aug 97
Budget - Design/Develop/Integrate/Test	Mar 97	Future
Project Costing - Design/Develop/Integrate/Test	Apr 97	Future
Accounts Payable - Design/Develop/Integrate/Test	Jun 97	Aug 97
Purchasing - Design/Develop/Integrate/Test	Aug 97	Aug 97
Asset Management - Design/Develop/Integrate/Test	Sep 97	Future
Inventory - Design/Develop/Integrate/Test	Nov 97	Not purchased
Billing - Design/Develop/Integrate/Test	Jan 98	Future
Accounts Receivable - Design/Develop/Integrate/Test	Jan 98	Future
Interfaces - Design/Develop/Integrate/Test	Jan 98	Aug 97
Go Live	Feb 98	Aug 97 (GL, AP, Purchasing); Future (Budget, Project Costing, Asset Management, Billing, A/R, and Time & Labor)
Human Resource Systems		
Requirements Integration Assessment	Sep 97	Not done
Project Plan Completed	Sep 97	Not maintained
Human Resources - Integrate/Develop/Test	Nov 97	Mar 98
Benefits - Integrate/Develop/Test	Nov 97	Mar 98
Payroll - Integrate/Develop/Test	Feb 98	Mar 98
Go Live	May 98	Mar 98

The project budget, as of July 31, 1998[2], is summarized in Exhibit II-3:

Exhibit II-3
InfoLink Budget Report No. 9

Category	Budget	Adjusted Budget	Expenses	Obligated Funds	Remaining Balance
Computer Hardware	$325,260	$260,680	$257,861	$0	$2,819
Software	841,429	758,504	751,042	0	7,462
Training	208,019	208,019	162,219	0	45,800
Implementation	774,125	1,088,017	943,042	10,333	134,642
Contingency	214,883	48,495	0	0	48,495
TOTAL	$2,363,716	$2,363,715	$2,114,164	$10,333	$239,218

Project Review Objectives

In July 1998, the Metro Auditor retained our firm, Pacific Consulting Group, Inc. (PCG), to evaluate the implementation of the new MIS. Specifically, the Auditor requested PCG to:

- Determine if Metro developed and followed an adequate implementation plan for the five PeopleSoft modules that have been installed to date.

  - An adequate implementation plan was developed, documented and followed
  - User responsibilities are clearly defined and documented
  - Users received appropriate training
  - Users were able to extract needed data and obtain accurate, reliable financial and management reports
  - The benefits and functionality of each module were achieved as planned
  - An adequate process exists for tracking and correcting problems that may be identified by users
  - Opportunities exist to streamline data input.

- Evaluate the InfoLink implementation with respect to the project budget, schedule and objectives and, if applicable, recommend options and alternatives for completing the project, including risks and benefits of each alternative.

  - Identify and evaluate Metro's plan for completing the Infolink project
  - Recommend changes in approaches, methods and resources that would help ensure the project objectives are achieved
  - Identify the benefits, drawbacks and risks of delaying the implementation of selected modules, reducing planned functionality, or not implementing modules, if this appears necessary to remain within the current project budget

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[2] InfoLink Budget Report #9, July 31, 1998, from Pam Juett to Jennifer Sims, Steve Heck, and Jeff Booth.

- Determine if users are satisfied with system response time, system capabilities and functionality, the ease of inputting and extracting information, and the accuracy, timeliness and completeness of management reports.

A separate report, "Internal Controls Review of PeopleSoft Purchasing and Human Resource Applications", covering our review of the two modules of the PeopleSoft system has been issued concurrent with this report.

Study Methodology

To achieve the above study objectives, from August 1998 to October 1998, PCG:

- Reviewed available project documentation including pertinent project documentation from initial startup and requirements phase in 1994, through current project status.

- Reviewed relevant contract files, such as files related to the purchase of goods and services for the new MIS.

- Interviewed project staff and participants.

- Interviewed key staff in user departments through focus group sessions with staff from Growth Management Services, Regional Environmental Management, Regional Parks and Greenspaces, Transportation Planning, Metropolitan Exposition-Recreation Commission (MERC), and the Oregon Zoo.

- Contacted other public sector PeopleSoft users.

Report Organization

The remainder of our report is organized into the following sections, which correspond to the chronological sequence of InfoLink project events:

- Procurement Process – discusses the initial software procurement process, the transition from a mainframe to client-server computing environment, the critical success factors of the project, and the cost-benefit analysis.

- Project Planning and Management – discusses the overall management of the InfoLink project and the methodologies used to complete activities and deliverables.

- Project Implementation – discusses the status of the implementation for both user departments and the Administrative Services and Human Resources Departments.

- Future Steps – discusses alternative approaches to complete the project and our recommended action plan.

- Summary of Recommendations – summarizes all recommendations in the report.

Throughout the report, we provide discussion related to critical issues along with our specific findings or observations, their significance and our recommendations for improvement.

III. PROCUREMENT PROCESS

Introduction

This section of the report covers the project start-up and procurement phases. We have evaluated:

*   Software procurement
*   Metro Information Technology Strategy
*   PeopleSoft Software Contract
*   Project Critical Success Factors
*   InfoLink Cost/Benefit Analysis.

Software Procurement

In September 1995, Metro issued a comprehensive Request for Proposal (RFP) to acquire application software and implementation services for a new MIS. It was anticipated that a second RFP would be issued for computer hardware, system software, and database. The RFP indicated a preference for a single vendor response for both the application software and implementation services.

Metro's RFP was a very comprehensive document, which included detailed functional requirements for 13 accounting areas. Based on a review of the documentation, it is evident that Metro had been working on developing the requirements for many months before Pringle Company was retained in July 1995 to review the process. The RFP, we believe, provided an adequate representation of Metro's requirements from which software vendors could prepare a proposal.

Metro received 12 responses to the September 1995 RFP for application software and implementation services. Based on a review of the project minutes, it appears that Metro followed a typical and acceptable evaluation process, which included:

*   Review of proposals by a representative group of Metro staff from accounting, information services, and user departments.
*   Scoring of proposals.
*   Vendor presentations.
*   Reference checks with other government agencies.

However, no comprehensive report summarizing the evaluation process was prepared. Our analysis, therefore, was limited to interviews with participants and a review of the project team minutes.

<u>Software Evaluation Report</u>

▶ **Observation:** A formal comprehensive report summarizing the software evaluation and vendor selection process was not developed as part of the project.

Significance: While it appears that Metro followed customary procedures in evaluating the selection of PeopleSoft financial software, including site visits and reference checks, a written summary of the process was not prepared. The process of formally documenting the evaluation process serves several purposes including confirming for the project team and senior management that a careful, prudent approach has been followed. The Selection Report would typically include the following information:

- Implementation Sequence Strategy
- Software Package Evaluation Summary
- Cost, Benefit, and Risk Analysis
- Software Package Recommendation
- Resource Requirements Document
- Organization Issues Document
- Contract (Draft)
- Vendor and Package Evaluation
- Requirements Document

Recommendation: In the future, major software selections should include a written report documenting the above areas. The report should be reviewed with Metro's Information Technology Steering Committee and senior management before making a final software selection.

Metro's Information Technology Strategy

Before the implementation of the PeopleSoft financial applications, Metro utilized a mainframe computer to operate the SCT financial applications. The SCT software operated on a Unisys A-series (i.e., A-6FX) computer. Metro users could access the SCT software via an Ethernet network that connected personal computers on the Novell network using a terminal emulation system provided by Upstanding Systems. Limited access was also available for Macintosh and UNIX workstations. Approximately 100 users, over half of who were in the Administrative Services Department (formerly Finance and Management Information), could access and update the database. Other users had inquiry access only to the system including remote sites such as the Zoo and the Convention Center. On average, approximately 25 users would be connected to the financial system on a typical workday.

The decision to procure a new MIS provided Metro the opportunity to evaluate alternative computing environments. Many of the newer financial systems developed in

the early 1990s have been developed to operate in a "*client/server*" computing environment. Many claims have been made by both computer manufacturers and software companies that *client/server* computing would eliminate application development backlogs, reduce software maintenance costs, increase application portability to multiple computer manufacturers, improve systems and network performance, and even eliminate the need for mainframe computers. Few, if any, of these vendor claims have been realized by implementing organizations including Metro.

The mainframe, or host-based, processing environment used with the SCT software is performed on one computer system with attached "dumb" terminals. The terminals simply display character-based information that is stored and processed on the mainframe.

The *client/server* environment requires PCs attached to a network and a system device that allows these PCs to share common resources – application software, data files and shared printers are typical examples. The system devices that allow this sharing are called *servers*. The servers receive requests from the PCs to process information. The results are then returned to the PCs. Both the computer hardware and the skills to maintain them are different in the client/server environment compared to a mainframe computer environment. The client/server environment involves personal computers, networks and data communications, distributed transaction processing, and computer programs that operate across the different types of computers.

The differences between the host-based computing environment and the client/server environment are shown in Exhibit III-1. Metro's computing environment in 1995 and the anticipated environment after InfoLink is implemented are included as Figures III-1 and III-2.

Feasibility Study

▶ ***Observation:*** A detailed feasibility analysis was not prepared by Metro in conjunction with the move from a mainframe to client/server computing environment. No comprehensive study documenting the advantages, disadvantages, benefits, risks, and costs for changing the computing environment was prepared.

Significance: Many organizations entered the client/server-computing environment with the mistaken impression that they would save money. Others believed that their information technology staff would be much more productive. Reality has been much different. The move to client/server computing requires a different skill set than mainframe computing. The cost of obtaining these new resources or re-training existing staff are significant and should be included in a major computing architecture change in order to provide a "*total cost of ownership*" for the new technology.

Recommendation: Metro should implement a policy whereby significant changes in IT policy, such as a move from mainframe to client/server computing, will require a feasibility study covering the advantages, disadvantages, benefits, risks, and costs of the change. The study should be reviewed and approved by both the IT Steering Committee and senior management.

Exhibit III-1
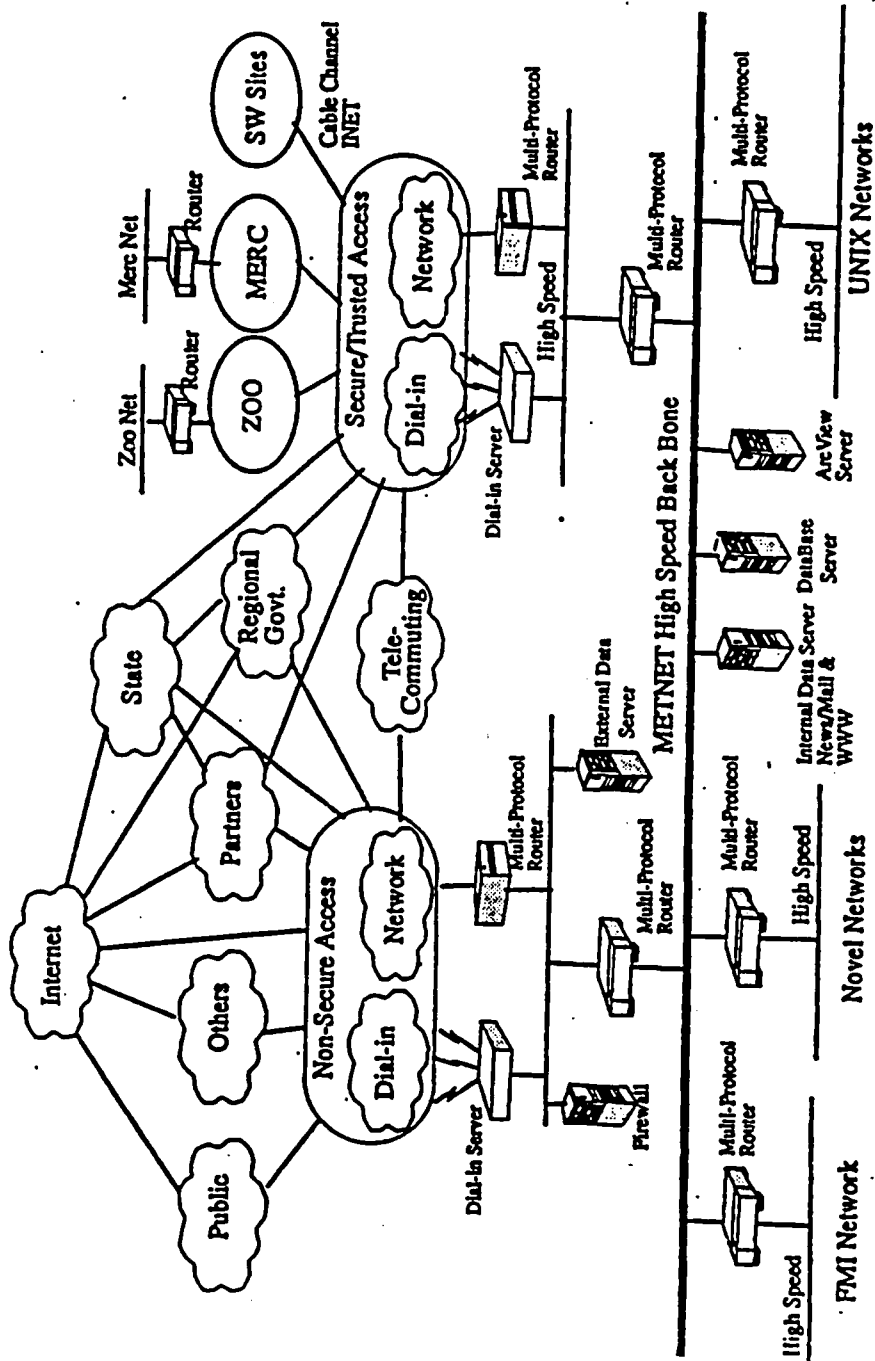**Differences Between Host-Based and Client/Server Computing Environments**

Component	Host-Based Processing	Client/Server Processing
Application Computer Programs	All programs reside on single host (mainframe or minicomputer) computer	Programs reside on both the client and server computers
Presentation of Information	Information normally presented in character mode.	Information normally presented in graphical mode.
Terminals	May be either character-based terminals or personal computers.	Personal computers.
Databases	Reside on host computer.	Typically reside on server computer. May be separate from server maintaining computer programs. Databases may reside on multiple, distributed servers.
Software Development Tools	COBOL is the dominant programming language with many supporting proprietary development languages.	Many proprietary software development tools. Most development supports structured query language (SQL).
Hardware Architecture	Single processing unit (CPU), typically a mainframe or minicomputer. All processing is performed on the host computer. Terminals and batch input devices (e.g., key to disk, punch cards, etc.) provide data input capability.	Distributed processing capabilities with specific functions allocated between client workstations and servers. Multiple personal computers serve as primary input devices and perform allocated processing functions. Servers can process application programs, maintain databases, and reporting functions.
Operating Systems	Large, complex proprietary operating systems dominate.	The primary operating system is UNIX, which is used by most computer hardware vendors.
Networks	Support a variety of network operating systems	Support a variety of network operating systems

Figure III-1
Metro's 1995 Computing Environment[3]

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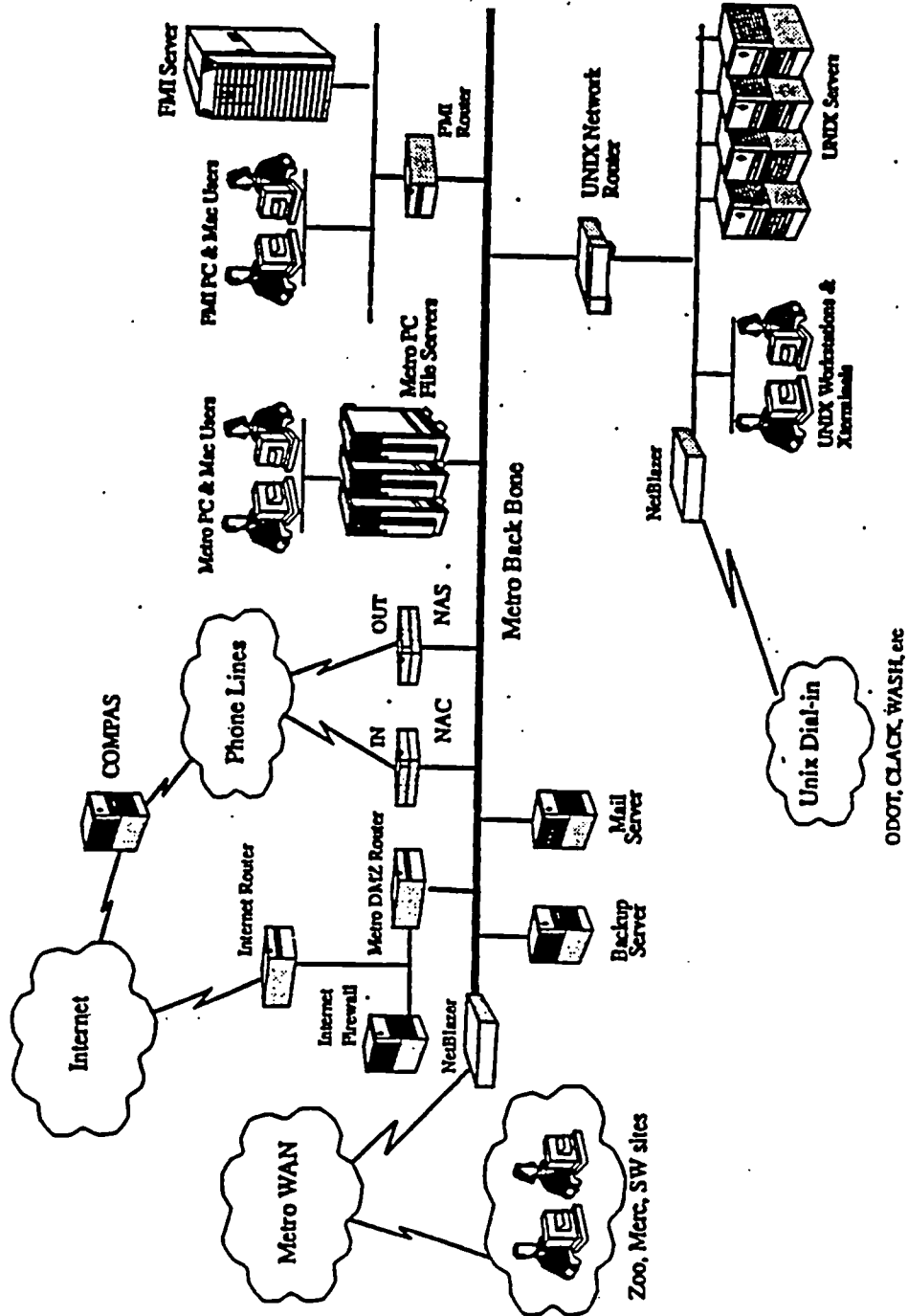
[3] Metro Management Information System Request for Proposal. September 1995. Appendix Four.

Figure III-2
Metro's Planned Client/Server Computing Environment[4]

PeopleSoft Software Contract

PeopleSoft was selected to provide computer software, installation services, training, and documentation. The basic provisions of the PeopleSoft contract are summarized in Exhibit III-2:

Exhibit III-2
Initial PeopleSoft Contract Provisions

Category	Item	Amount
Software	Human Resources	$116,000
	Payroll	116,000
	General Ledger	110,000
	Accounts Receivable	77,000
	Accounts Payable	77,000
	Asset Management	66,000
	Purchasing	99,000
	Project Costing	88,000
	Billing	66,000
	Workstation Access (Crystal, nVision, etc.)	25,000
	File Server	7,000
	Workflow Manager, Import manager, Application Upgrader	0
	Software Discount	(296,450)
	Time and Labor	93,000
	Discount for Time and Labor	(32,550)
	Budgeting	66,000
	Discount for Budgeting	(23,100)
Training & Support	Training Units (135)	0
	On-Site Support Days (17)	0
Documentation	Documentation (2)	0
TOTAL COST		$653,900

Subsequent contract amendments have been issued by Metro to increase the consulting services provided by PeopleSoft to a total contract amount of $1,163,900.

The decision to select PeopleSoft as the application vendor for the new MIS in 1996 also contemplated using the services of Business Information Technology (BIT), a consulting company specializing in implementing PeopleSoft. Metro entered into a contract with BIT in 1996 (Contract No. 905060) for $472,700. The contract specifies that BIT provide approximately 3,260 hours of assistance "...of an advisory nature" and provide a set of automated tools to increase the productivity of the Metro project team. To date, approximately $290,000 of the $472,700 in the BIT contract has been expended.

Software Acceptance

▶ ***Observation:*** Payment to PeopleSoft for the software license was not subject to specific demonstration ("out-of-box testing") and acceptance of the software. An out-of-box test involves the vendor fully testing the modules of the system using standard data to ensure that all modules process and report data correctly and that the modules correctly interface with each other. An out-of-box test would have allowed Metro to verify that all modules worked in accordance with both vendor representations (i.e., proposal, documentation, pre-contract demonstrations, etc.) and Metro requirements (i.e., RFP).

Significance: Metro has paid in advance for a significant amount of software, some of which has not been implemented and is not "usable and useful." Metro has also spent a substantial amount of internal resources to identify integration problems in early releases of the PeopleSoft software. For example, Metro has worked for over two years to implement the *Accounts Receivable* and *Billing* modules. This implementation was put "on hold" during the implementation of the *General Ledger, Accounts Payable, and Purchasing* modules in large part because the *Accounts Receivable* and *Billing* modules did not perform in accordance with Metro's requirements. Basic software logic problems could have been identified early in the implementation using out-of-box testing techniques.

Recommendation: Future major software acquisitions should include payment terms that allow Metro to exercise control over the payment process such as 1) partial payment after the vendor performs an out-of-box test of the delivered software to ensure it performs as specified, and 2) final payment for the software license after final acceptance by Metro.

Consulting Contracts

▶ ***Observation:*** BIT has been paid approximately $290,000 of their original contract amount of $472,700. BIT's contract provided only limited deliverables and placed primary responsibility for software implementation with Metro. BIT's role was to provide "guidance and assistance" on the project. Payments to BIT were not based on specific deliverables. BIT did not provide the support required by Metro and did not participate fully on the project.

Significance: The implementation of a new, complex, information system is not an activity that Metro staff is trained to perform. Employees often implement a new system, like PeopleSoft, only once or twice in their careers. Qualified consultants are trained and experienced in both PeopleSoft and system implementation services. Organizations have routinely placed consultants under deliverable-based contracts for software implementations. This helps ensure that the consultant has a "vested interest" in completing the project successfully.

Recommendation: Future consulting contracts for software implementation services should be "deliverable-based." Final payments to the consultant should be based on the successful completion of the project by Metro and the consultant.

Project Critical Success Factors

Early in the project, Metro identified the following 17 critical success factors "...that will be used to judge satisfaction with the system at completion of the project."[5] PCG's overall "*score card*" for the InfoLink project, based on Metro's original success factors, is shown in Exhibit III-3.

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[5] Management Information System Request for Proposal, September 1995. Pg. I-1.2

Exhibit III-3
InfoLink Score Card

Metro InfoLink Success Factor	Score	Comment
The system improves the way we do business.	**	Departments are not taking advantage of system capabilities.
The system serves Metro instead of Metro serving the system.	****	System has significant capabilities over old system.
We use the system with little modification.	****	Metro made few changes to basic PeopleSoft code.
The functionality of the old system is equaled or exceeded.	****	Functions of system superior to old system.
Operating departments have access to data on-line, in real time and in the format and medium of their choice.	**	While data can be accessed on-line, little training has been provided to end-users.
Users report that the system is easy to use.	**	User training has not been adequate.
Manual input is efficient.	****	Screen design is efficient for data entry.
Duplication of records, record keeping and data entry is reduced.	*	Departments continue old "check books" to track expenditures.
Data entry is decentralized.	*	Departments continue using paper Purchase Orders and keep manual records.
Metro's authorization processes are automated by the system where appropriate.	**	Metro is making limited use of workflow capabilities in system
Paper consumption and forms printing expense is reduced.	****	Paper documentation has been reduced in Administrative Services Department (ASD); manual purchase orders and time sheets continue.
We have reduced the cost of storing and improved access to documents such as completed forms and solid waste tickets.	Incomplete	Accounts Receivable and Billing scheduled to be implemented in first quarter of 1999.
Systems and modules are integrated.	****	PeopleSoft modules are integrated; Payroll to General Ledger interface is cumbersome.
Data maintained by the MIS is easily accessible by applications on personal computers such as spreadsheets, databases and word processors.	***	While data is accessible, most departments have not been given access or training.
The MIS minimizes obsolescence and maximizes use of personal computers and networks.	****	System uses current network and personal computer technology.
We recognize a cost benefit due to the management information system.	Incomplete	Cost/benefit of new system has not been determined.
Users are trained and know how to access and effectively and efficiently use the system.	*	User training has been inadequate.

Success Scoring Scale:
- ***** Excellent
- **** Good
- *** Adequate
- ** Poor
- * Unacceptable

<u>*Periodic Project Reviews*</u>

▶ ***Observation:*** Metro has not routinely or periodically measured their progress against their stated success factors for the MIS project.

Significance: One of the purposes of identifying the project's success factors at the beginning of a project is to provide a benchmark by which to gauge progress and performance. The early identification of the success factors was a positive step for which the project team should be complimented. However, no evidence exists that these factors were used after they were first documented. In particular, user departments should be involved in both the project implementation and periodic assessments of progress to provide input to senior management on *"continue or stop"* checkpoint for large projects.

Recommendation: All projects should have comprehensive reviews on a continual or at least an annual basis to determine if they continue to meet Metro's overall objectives. These reviews should include input from both sponsoring organizations, such as Administrative Services, as well as end-user departments. The reviews should be used as a vehicle to determine if changes in project scope, funding, or schedule need to be made.

InfoLink Cost/Benefit Analysis

In November 1995, a summary cost/benefit analysis was prepared detailing a five-year forecast of the costs and benefits of the new system (see Appendix B). This analysis, prepared before the contract with PeopleSoft for software and implementation services or the computer hardware and database contracts, is provided in Exhibit III-4:

Exhibit III-4
1995 InfoLink Projected Cost/Benefit Summary

Component	Initial Cost	Years 1-5	Total
Personal Services		($180,000)	($180,000)
Materials & Services	($175,000)	(645,000)	(820,000)
Capital Lease	(1,275,000)	(1,250,000)	(2,525,000)
Training		(14,000)	(14,000)
Total Cost	($1,450,000)	($2,089,000)	($3,539,000)
Tangible Cost Savings		$463,000	$463,000
Intangible Cost Savings		524,500	524,500
Total Savings		$987,500	$987,500
Net Savings or (Cost)	($1,450,000)	($1,101,500)	($2,551,500)

Of the anticipated tangible cost savings, two specific components – Solid Waste account reconciliation and separate entry of data – have not been achieved. The Solid Waste savings will not occur until the Accounts Receivable and Billing modules of PeopleSoft are implemented. The entry of data savings has not occurred since departments are still

relying primarily on paper purchase orders, which must be entered in the Purchasing Division of ASD. The tangible savings would be reduced by approximately $41,000 per year until these two components are fully implemented.

Two intangible cost-saving components – purchase order preparation and timesheet preparation – have not been implemented. Automated purchase order preparation is done primarily in the REM department; other large departments continue to submit paper documents. This component was projected to be a $40,000 annual savings. Timesheets continue to be submitted as in the past. This component was projected to be a $16,000 annual savings.

Other projected savings involving reduction in forms, paper, document storage have not been fully achieved due to the incomplete implementation, as noted above.

Exhibit III-5 summarizes our analysis of the updated project costs and benefits, based on Metro's experience to date.

Exhibit III-5
Updated InfoLink Projected Cost/Benefit Summary
(As of July 31, 1998)

Component	Initial Cost	Years 1-5	Total
Project Costs (as of 7/31/98)	($2,124,497)		($2,124,497)
Personal Services		($180,000)	(180,000)
Materials & Services		(645,000)	(645,000)
Capital Lease		(1,250,000)	(1,250,000)
Training		(14,000)	(14,000)
Total Cost	($2,124,497)	($2,089,000)	($4,213,497)
Tangible Cost Savings		$463,000	$463,000
Intangible Cost Savings		524,500	524,500
Total Savings		$987,500	$987,500
Net Savings or (Cost)	($2,124,497)	($1,101,500)	($3,225,997)

Cost/Benefit Analysis

▶ *Observation:* Based on the original 1995 Cost/Benefit Analysis, the InfoLink project had an extended payback period of well over five years. Intangible cost savings were quantified in the original analysis contributing over half of the total savings. In addition, the Cost/Benefit Analysis failed to adequately address the critical need to replace the system. The need for Metro to have an accounting system that would correctly process data after December 31, 1999, and to receive vendor support for the system were overriding reasons to replace the software.

Significance: We believe, based on the information we reviewed, that Metro needed to replace its aging accounting system. The system, which was no longer

maintained by the vendor and was not Year 2000 compliant, needed to be replaced regardless of the tangible cost savings. However, placing a dollar value on intangible cost savings, by definition, is not typically done on cost/benefit analyses. Intangible benefits usually refer to benefits that cannot be easily quantified—such as "improved customer service."

Recommendation: Feasibility studies for future information systems projects should be prepared and include a detailed analysis of both quantifiable and non-quantifiable benefits. Projected benefits should be periodically reviewed during the project to assist in evaluating the overall need to continue the project or modify the project as necessary to address current circumstances.

IV. PROJECT PLANNING AND MANAGEMENT

Introduction

This section discusses the overall planning and management of the InfoLink implementation. The following areas are reviewed:

- Project Organization
- Work Plans and Schedules
- Project Methodology and Documentation.

Project Organization

Selecting and organizing the right staff to implement a new MIS is a critical step in successfully completing a project. Without the right skills, the project will never get off the ground or meet its goals. Metro assigned several key individuals to the new MIS project and established a team of information technology, accounting, financial, and human resource staff.

Project Leader

The most critical position on the project team is the project leader or project manager. Historically, project managers were selected based on their technical engineering abilities. More recently, project management experts have stressed the management and behavioral issues associated with projects. Leadership is the key attribute required of a project leader. The project leader is responsible for communicating the formal project plan as well as performing the traditional management tasks of directing and controlling staff and resources.

Team Members

The team members are the "arms and legs" of the project team. The individuals must be experienced in their specific skill area and have the ability to work well together in a group. Metro did not have the luxury of assigning team members solely to the new MIS project. Many of the team members also had their regular jobs to do as well. This has resulted in significant and lengthy overtime by many of the team members. In addition, several of the original team members resigned from Metro during the course of the project. This resulted in both a loss of institutional knowledge as well as a loss of specific PeopleSoft implementation knowledge.

Executive Sponsor

Another key role is that of the executive sponsor. Typically, this person is the driving force behind the decision to implement a new system. It is important that the executive sponsor not usurp the role of the project leader. Day-to-day management of the project should fall on the shoulders of the project leader, not the executive sponsor. Normally, this is not a problem as the executive sponsor is too busy to manage the project. The executive sponsor needs to have a personal stake in the project's outcomes and the clout to make tough decisions. It is important for the executive sponsor to commit the time required to attend project meetings and to communicate issues and decisions within the organization. The executive sponsor must also work closely with the project leader to develop strategies and set priorities for the project.
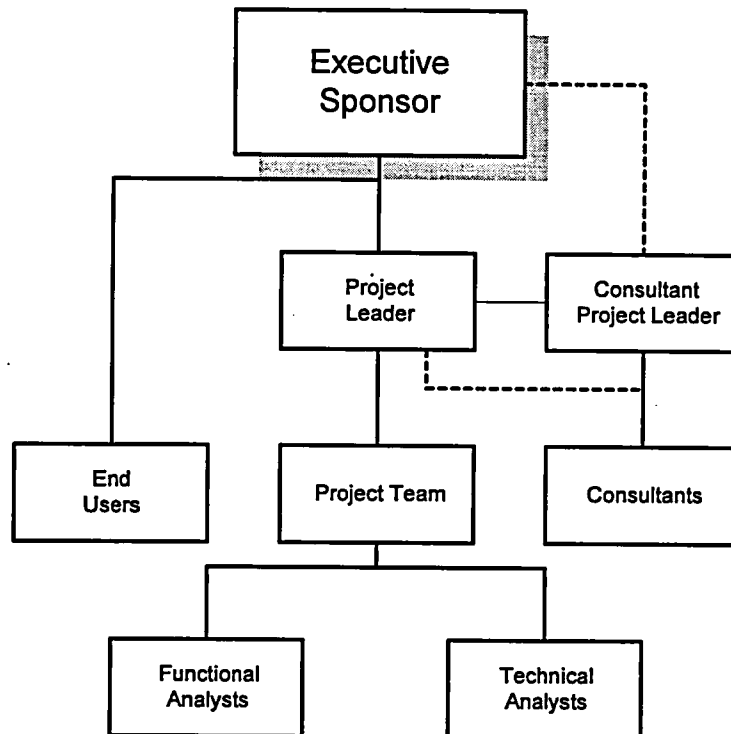
End-users

The final success or failure of any new system rests with the users of the system. In this case, both ASD staff as well as other departments within Metro are the end-users of the system. These individuals need to be involved in various aspects of the implementation to ensure that their needs and requirements are communicated to the project team. Business questions need to be addressed to ensure that decisions regarding how the PeopleSoft system will operate are answered correctly. End-users typically are involved in the entry of data and the reporting of data. They need to understand what is expected of them and how the system will "change their job."

Technical Staff

The technical staff is composed of systems analysts, programmers, network specialists, and database administrators. The time these individuals, particularly the database administrator and network specialist, spend on the project will ebb and flow as the project progresses. The systems analysts and programmers should be familiar with client/server, Microsoft Windows development, graphical user interfaces (GUI), and relational database systems.

A typical project organization, similar to that used by Metro, is shown as Exhibit IV-1.

Exhibit IV-1
Typical IT Project Organization Chart

```
              ┌──────────────┐
              │  Executive   │╳
              │   Sponsor    │  ┆
              └──────────────┘  ┆
               │         │      ┆
               │    ┌─────────┐ ┆ ┌──────────────┐
               │    │ Project │─┆─│  Consultant  │
               │    │ Leader  │ ┆ │Project Leader│
               │    └─────────┘ └─└──────────────┘
               │      │   └──────────┐      │
          ┌────────┐ ┌──────────┐ ┌──────────────┐
          │  End   │ │ Project  │ │ Consultants  │
          │ Users  │ │  Team    │ │              │
          └────────┘ └──────────┘ └──────────────┘
                     │          │
              ┌────────────┐ ┌────────────┐
              │ Functional │ │ Technical  │
              │  Analysts  │ │  Analysts  │
              └────────────┘ └────────────┘
```

Project Roles and Responsibilities

▶ ***Observation:*** The roles of the InfoLink project leader and executive sponsor have not been clearly defined. This has resulted in confusion as to responsibility for the preparation of an implementation plan for the Version 6.0 upgrade of the General Ledger, Purchasing, and Accounts Payable modules. In reviewing minutes of team meetings and interviewing team members, the two roles are not clearly defined with respect to ongoing and future module implementations. There is not a clear definition of roles with respect to the responsibility for the Accounts Receivable and Billing implementation and its relationship to both the upgrade of existing modules (e.g., General Ledger, Payroll, etc.) and the planning for future modules (e.g., Project Costing, Budget, etc.).

Significance: The lack of clearly defined roles and responsibilities will result in confusion. Work may be duplicated, activities missed and contradictions may develop regarding the management and direction of the project.

Recommendation: Clearly define and document the roles of all project team members and distribute to all InfoLink users and members of the project team. This will help ensure that clear communications continue both within the project team and with the user departments.

Staffing Levels

▶ **Observation:** Based on our review, we believe Metro has assigned competent employees to the project. They all displayed commitment and dedication to the success of the project. However, there are too few employees to adequately complete both the InfoLink project and perform their normal job responsibilities. We observed signs of "staff burnout" with the project.

Metro has also experienced significant project staff turnover during the four years. While this turnover may be expected, it still comes with a large cost both in terms of training dollars and loss of project knowledge. Several key project team members have resigned in the last 12 to 18 months.

Significance: The InfoLink project has continued for almost four years, with the PeopleSoft implementation beginning in mid 1996. While not all project team members have been full-time for the four years, many have been involved for over two years. They have worked on the project while attempting to maintain their normal work activities. This has resulted in both significant overtime, almost all unpaid, and general burnout. Metro still has considerable work to fully complete the InfoLink project. In addition, PeopleSoft will continue to issue new releases. These new releases can be nearly as complex to implement as the original application. Staff will continue to be extensively involved in these new releases. This has resulted in additional work for the remaining team members.

Recommendation: Metro should conduct a staffing review of both the Accounting and Information Management Services divisions. The review should assess the staff needs both for ongoing operations given the new PeopleSoft applications and the need for continuing project implementations.

IT Employee Retention

▶ **Observation:** During the implementation of the new MIS, Metro has spent a considerable amount to train staff in both the PeopleSoft applications and in the client/server computing technology. Several employees have left Metro after receiving this valuable technical training. There is no policy on staff retention after training. In several cases, Metro provided expensive training courses that increased employees' market value in technology skills.

Significance: Many organizations have implemented policies requiring staff to remain with the agency for a specified period following external training courses. If the employee leaves the agency before the period is completed, they must repay the agency for some or all of the cost of the training course. The purpose of such policies is to help prevent the agency from becoming a "training ground" for other employers. The cost of training employees, particularly in new technology, is expensive and the costs continue to increase.

Recommendation: Metro should consider establishing a policy that provides employees an incentive to stay after receiving specialized training. Metro should

consider requiring employees to reimburse Metro for training costs if they resign within a specified period after the training. This will help minimize the impact of Metro being used as an employee training ground.

Work Plans and Schedules

Metro originally planned for all modules of the new MIS to be implemented by June 30, 1998[6]. The PeopleSoft proposal also contained an estimate of the resource requirements of Metro staff resources to implement the proposed modules. The magnitude of the resources estimated by PeopleSoft in their proposal was significant. Exhibit IV-2 summarizes PeopleSoft's estimate of the number of hours of staff time that Metro would need to implement the five modules that have been installed.

Exhibit IV-2
PeopleSoft Estimated Project Hours by Resource

Metro Staff Resource	PeopleSoft's Estimate of Project Hours
Project Leader	4,120
Clerical Support	1,030
Database Analyst	844
System/Program Analyst (GL, Budget, Proj. Cost)	1,504
System/Program Analyst (AP, PO)	2,288
System/Program Analyst (AR, Billing)	1,382
System/Program Analyst (HR, Benefits, Payroll)	2,890
Functional Analyst (GL, Budget, Proj. Cost)	696
Functional Analyst (AP)	416
Functional Analyst (PO)	416
Functional Analyst (AR, Billing)	754
Functional Analyst (HR)	332
Functional Analyst (Benefits)	332
Functional Analyst (Payroll)	362
System/Program Analyst (Interfaces)	1,780
Other (Trainer, System Administrator, etc.)	1,180
TOTAL HOURS	20,326
Full Time Equivalent (2,088 Hr/Yr)	9.7

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[6] Management Information System request for Proposal, September 1995. Pg. I-1.4

<u>*Project Work Plans*</u>

▶ ***Observation:*** Project work plans and staff resource requirements were not updated after the first several months of the project. Metro staff time spent on the project was not recorded in any formal record-keeping system. Therefore, we were unable to compare the actual Metro hours spent on the project with the original estimate provided by PeopleSoft in their proposal.

Significance: As shown in the above chart, InfoLink is a major information technology project requiring sophisticated tools to manage resources, tasks, and schedules. Project scheduling has been maintained on large charts in the project room. This method of project tracking provides visibility to participants working directly on the project. However, it is not a preferred method for communicating with interested parties (e.g., end-users, senior management, etc.) who are not directly involved in day-to-day project activities. Project team members expressed reservations about maintaining automated project scheduling software to track the project due to the administrative overhead required and the fact that PeopleSoft software problems encountered resulted in major project schedule delays. We agree that there is overhead related to maintaining project plans and schedules. However, project resource and schedule tracking can be very useful in managing staff and consultant costs. Sound project plans are realistic, up-to-date, and reviewed frequently[7]. Work should be broken into manageable chunks, with extra time and budget for contingencies. Project milestones allow senior management to make a "continue or stop" decision. Good project plans assist project leaders to identify resources, schedule and progress problems early.

Recommendation: Future projects, including the completion of the PeopleSoft Version 6.0 upgrade, should have detailed work plans that include resource assignments. The work plans should be reviewed and updated on at least a monthly basis. Significant changes in schedule or resources should be communicated to the executive sponsor and senior management immediately.

<u>*Internal Project Costs*</u>

▶ ***Observation:*** The Metro budget for the project did not include the cost of Metro staff assigned to the project. PeopleSoft's work plan included the estimated time of IMS technical analysts and ASD and HRD functional analysts, but did not project the additional time end-user departments would be required to spend on the project.

Significance: The InfoLink project was a major undertaking for Metro. By PeopleSoft's estimate, Metro was to assign over 20,000 staff hours to the system implementation. This was a significant amount of staff resources required from the ASD organization. Estimating the costs of internal project staff is also important when evaluating the tradeoffs of the use and cost of external consultants.

Recommendation: Future information technology projects should include in the project estimate the quantity and cost of internal resources assigned to the project in

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[7] Inside GartnerGroup This Week. July 29, 1998. Pg. 1.

Project Methodology and Documentation

The project has generally followed the recommended PeopleSoft approach to implement their software. Early in the project a "Requirements Integration Assessment" (RIA) was prepared by Business Information Technology (BIT) for the three financial modules — General Ledger, Purchasing, and Accounts Payable. The purpose of the RIA was to document required modifications to either the PeopleSoft software or Metro business procedures. Following the RIA, few formal project documents were prepared. Much of the project documentation is in the form of notes to weekly project team meetings. Other typical project documents, such as system test plans, test results, conversion plans, or implementation plans were not prepared.

End-users were contacted during the project to assess their requirements, primarily for new reports. However, no formal records documenting these requirements were prepared.

Project Deliverables and Documentation

▶ **Observation:** Few formal project deliverables were prepared. Decisions made during the project dealing with test plans, end-user reporting requirements, key software "customization" decisions, business re-engineering decisions, and milestone reviews were not documented.

Significance: The lack of documentation makes it very difficult to identify and document what decisions were made during the life of the project. While the system is in operation and is performing essential operations, it is not known what aspects of the system were overlooked, how decisions were made, or the disposition of project issues.

Recommendation: Future MIS projects should clearly define project deliverables, maintain formal project work papers, and clearly identify key project reviews and decisions. A formal system development methodology which can be used for both custom developed and packaged software, such as PeopleSoft, should be considered by ASD to provide a framework for completing activities and documenting project decisions.

V. PROJECT IMPLEMENTATION

Introduction

This section describes the status of the project implementation as it has impacted both end-user departments and the Administrative Services Department. The experience of other PeopleSoft public sector agencies is also compared with the experience of Metro.
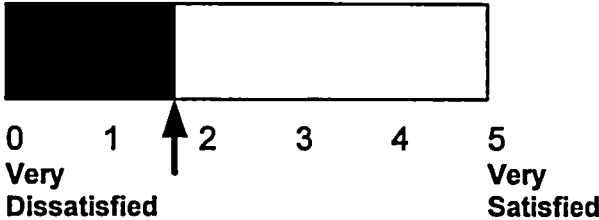
User Departments

To better gauge the status of the implementation of the PeopleSoft applications in the user departments of Metro, we held two focus group meetings with key users of the InfoLink system. The users were asked to review Metro's "success factors," developed at the beginning of the InfoLink project in preparation for the focus group meetings. Their primary concerns were "lack of training" in the new system and the inability to access needed information. The vast majority of users continue to use "check books" to track budgets, expenditures, and encumbrances. These check books are simply spreadsheets used to track department budgets. This is a significant duplication of effort, which should be eliminated through the implementation of timely, accurate, and meaningful InfoLink reports.

Overall, user department satisfaction with the system is extremely low. When we asked users of InfoLink "What is your overall satisfaction with the new system?" – we received a surprising low rating of 1.6 on a scale of 0 to 5 as shown on Exhibit V-1.

Exhibit V-1

End User Satisfaction with Infolink

0	1	2	3	4	5
Very Dissatisfied					Very Satisfied

Metro departments, with the primary exception of REM, are also not using the system to enter purchase requisitions on-line. Instead, most departments are continuing to

prepare paper purchase orders and submitting the forms to Purchasing where they are entered into the system. This is also a duplication of effort and should be eliminated.

Reports

► *Observation:* Currently, reports are generated using both Crystal and nVision (specific reporting tools delivered with the PeopleSoft applications). The primary reports users receive are nVision reports, which display in a spreadsheet format, current year budgets, actuals (expenditures) and variance. Both current month and year-to-date balances are shown. Transaction detail is not generally available without requesting a special report from ASD. Encumbrance data is also not shown on user reports since Metro is not required to report encumbrances in their financial reports.

Significance: Users, in all departments except REM, are dissatisfied with reports they are receiving from the new system. REM has developed a set of monthly reports for their internal use, which provide needed information for their management. These special REM reports, coupled with a management decision to use the on-line features of PeopleSoft, have resulted in a much higher satisfaction level with the new system than has been experienced by other departments.

Recommendation: Metro should develop a set of standard reports for all departments at three levels – summary level, operating level (e.g., overtime, office supplies, etc.), and at a transaction level (e.g., requisition, PO, check number, etc.). The reports should be distributed electronically as are the current reports. Representatives of the user departments should actively participate in the design of the reports.

Purchase Orders

► *Observation:* Metro allows most departments to prepare paper purchase orders for submission to Purchasing. The documents are then entered into the PeopleSoft system by Purchasing staff. Those departments that do enter requisitions on-line, primarily REM, do not perform on-line budget checks to verify funds. Purchasing performs all on-line budget checks because security access has not been granted to departments.

Significance: There is significant duplication of effort in both preparing paper purchase orders and then entering the information to the on-line system. A basic premise of on-line, graphical user interface (GUI) systems is that the data be entered directly without the need to first prepare a paper document. Budget checks also are most effective when the verification is placed as close as possible to the transaction origin.

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

process, with the exception of the budget checking, is already performed successfully by REM.

Customer Service

▶ *Observation:* Monthly meetings are conducted between ASD and user departments to discuss issues and problems with the new system. These meetings have not been successful in increasing user satisfaction with the system because data entry errors continue, reports do not meet department needs, and training has been inadequate. There appears to be little verification of input before updating system records. This has resulted in both additional work by user departments and distrust in the system.

Significance: The Purchasing, Accounts Payable, and General Ledger modules of the new system have been in use for over one year. By now, we would expect a much higher user satisfaction rating with the new system. If users are not satisfied with the operation of the system, they will be very reluctant to attempt new procedures or participate in the development of new reports.

Recommendation: ASD should undertake a concerted effort to improve both customer service related to the new system and satisfying specific user needs – such as responding to service requests and developing new and better reports. Errors in data entry made by ASD should be promptly researched and corrected.

User Procedures

▶ *Observation:* User manuals prepared by Metro focus primarily on how to enter information into PeopleSoft. Little or no documentation is available for user departments identifying the workflow and procedures for using the PeopleSoft applications and for the use of reports generated from the system.

Significance: Business processes have changed with the implementation of the new system. Documentation should be prepared identifying how user departments are to process information with the new system; not solely how the screens are used. Reports are a critical component for user financial management. Documentation should cover who receives the reports, what data is shown on the reports, and what is to be done with the information. Formal documentation is also a key training aid for both current and new employees.

Recommendation: Metro should prepare user manuals covering workflow processes for the new systems and a reports manual explaining the content and use of the reports. The Human Resource Department is in the process of preparing a reports manual. This effort should be coordinated with ASD to ensure a common "look and feel" to all documentation for users.

Administrative Services and Human Resource Departments

The Administrative Services Department (ASD) and Human Resource Department (HRD) staff have worked extremely hard to successfully implement the new system. The staffs have put in very long hours – trying to do both their regular job and working on the new system – for many months. They should be commended for their efforts.

However, the job is not finished. Although five of the PeopleSoft modules are in production (they are used to perform regular accounting and human resource operations), there continues to be both operational problems and high user dissatisfaction. In addition, Metro faces the added task of upgrading to a more current version of the software.

Individual divisions within ASD and HRD have prepared guides for operating the new system. These guides are essential if the very limited staffs are to understand how to both do their jobs and how to use the new system. These desktop manuals are critical to success where there are too few employees who understand the system.

Staffing Requirements

▶ **Observation:** There are few employees familiar with the PeopleSoft modules. We found that Metro departments typically had one, and in a limited number of cases, two employees who understood the operations of the PeopleSoft modules. This has been particularly true in the Information Management Services (IMS) Division. Within the Accounting Division and Human Resource Department, there is typically one individual who fully understands how Metro uses the PeopleSoft modules.

▶ **Significance:** Metro is at significant risk if key employees resign, because the cost and time to train a new employee in the PeopleSoft system is expensive and lengthy. Loss of key employees will place Metro at a significant disadvantage and may, in extreme cases, encumber or even prevent daily operations of InfoLink.

Recommendation: Staffing requirements for PeopleSoft operations must be carefully reviewed to determine if Metro is capable of hiring and retaining staff to successfully operate the system on an ongoing basis. Metro should explore alternative staffing options in critical shortage areas, such as IMS. In these areas, options would include outsourcing all or a portion of the operations of the PeopleSoft applications.

Software Maintenance Documentation

▶ **Observation:** IMS staff have done a very good job of informally documenting PeopleSoft customization and the status of PeopleSoft "patches" received related to Metro's installed modules. However, formal policies and procedures have not been developed to document and monitor the ongoing status of system modifications.

Significance: It is important to maintain accurate and detailed documentation of modifications made to the standard PeopleSoft computer programs. This greatly assists in analyzing future upgrades and identifying exactly what Metro must change

in the programs to correctly operate based on unique requirements. Likewise, maintaining accurate documentation on which PeopleSoft patches have been implemented and which have not is critical in the overall upgrade process.

Recommendation: Metro should develop operating procedures for formally documenting both custom modifications and software patches to the PeopleSoft applications to help ensure accurate records continue to be maintained in a high-turnover employee area.

Experience of Other PeopleSoft Users

We contacted several other public sector PeopleSoft users to gather information concerning their efforts to implement the system. While not all agencies chose to respond, we did receive information from six government agencies. Exhibit V-2 provides an outline of the agencies and the software they are using.

Exhibit V-2
Public Sector PeopleSoft Users

Agency	Staff	Financial System Version	No. Financial System Modules Installed	Date Installed	HR/Payroll System Version	Date Installed
Costa Mesa, CA	500	6.01	7	Jun 97	6.01	Jun 98
Napa County, CA	1,000	5.0	6	Jul 96	5.12	Dec 96
Pasadena, CA	1,200	5.1	7	Jul 97	N/A	N/A
San Bernardino County, CA	15,000	N/A	N/A	N/A	7.0	In process
San Diego Water, CA Authority	350	5.1	4	Sep 96	6.0	Jan 97
Seattle, WA	14,000	6.0	4	Jul 99 (Est.)	ADP version	Sep 95
Metro	830	5.1	3	Aug 97	6.0/6.1	Mar 98

We reviewed the reported costs to implement the PeopleSoft system in terms of internal resources – financial, accounting, human resources (*users*) and information technology staff – and the use of outside consultants. The information is presented in Exhibit V-3 for the six agencies. We are intentionally not identifying the agencies in this chart.

Exhibit V-3
Implementation Cost of Other Public Sector PeopleSoft Agencies

Agency	Internal User Team	Internal IT Team	External Consulting Staff	External Consulting Cost	Modules
A	28	15	25	$12,000,000	Financials
A	15	8	8	3,000,000	HR/PR
B	7	5	8	2,150,000	Financials
C	8	5	3.5	1,750,000	HR/PR
D	6	4	6	2,200,000	Financials/HR/PR
E	12	5	11	2,500,000	Financials/HR/PR
F	4	5	Unknown	Unknown	Financials/HR/PR
Metro	5	4	Various Advisory	943,000	Financials/HR/PR

The important aspect of this information, we believe, is to evaluate the work performed by Metro staff in implementing comparable applications. Based on our review of the project cost data, interviews with project staff, and our experience with similar projects, we believe, overall, Metro prudently spent funds to implement the system.

To date, Metro has assigned over 20 different PeopleSoft consultants intermittently to the project. We are not aware of any PeopleSoft consultants who have been assigned full time for the life of the project. The other agencies we surveyed spent considerably more funds, primarily on consultants, than Metro in implementing the PeopleSoft applications. However, these agencies often implemented the software in a shorter period and included more modules than Metro has implemented to date. We believe this indicates that the appropriate use of outside consultants can shorten the overall implementation process -- but at a significant price. Overall, it appears that the InfoLink implementation schedule has been delayed, at least in part, by the limited number of both internal staff and consultant resources assigned to the project. This, in turn, has delayed the realization of the projected InfoLink cost savings.

In addition to implementing the PeopleSoft modules, Metro must continue to maintain and upgrade the software as new versions are released. We asked the same agencies to summarize their operations and support budgets for PeopleSoft. The results are summarized in Exhibit V-4.

Exhibit V-4
Operational Cost of Other Public Sector PeopleSoft Agencies

Agency	Internal Functional Analysts	Internal IT Analysts	External Consulting Staff	External Consulting Cost	Modules
A	*	*	*	*	Financials
A	Contracted Out	Contracted Out	Unknown	Unknown	HR/PR
B	4	4	Unknown	$100,000	Financials
C	Unknown	Unknown	Unknown	Unknown	HR/PR
D	4	4	Unknown	$150,000	Financials/HR/PR
E	Unknown	5	2	Unknown	Financials/HR/PR
F	Unknown	2	0	0	Financials/HR/PR
Metro	0	3-part time	0	0	Financials/HR/PR

* Total operations budget is $4,000,000/year

Based on the above information, and our experience, we believe the staff assigned to support the PeopleSoft modules, both for functional users (e.g., accounting, purchasing, etc.) and IMS staff is low. In addition, some of agencies use external consulting staff to assist in maintaining the modules.

Operational Support

▶ **Observation:** Metro does not have adequate staff assigned to support the PeopleSoft system. A detailed operational support plan does not exist which projects the resource requirements necessary to support current or future PeopleSoft applications. InfoLink project staff have been assigned to the project to implement specific modules. Once the modules were implemented, functional staff in the ASD and Human Resource departments returned to their prior positions. Staff in IMS has been assigned to provide ongoing technical support for the software. The operational support plan would identify the type of support to be provided to user departments, problem severity levels, response times to address user problems, and staff levels required to support a "service level agreement." The ongoing operation of the PeopleSoft system requires both information systems professionals and functional experts familiar with both system operations and Metro policies and procedures. User support has been assigned to ASD and Human Resource staff to complete as time permits with other job responsibilities.

Significance: The lack of adequate operational support will inhibit the acceptance and usefulness of the new applications by user departments. The support, maintenance and version upgrade activities associated with a complex software package, such as PeopleSoft, require substantial dedicated resources.

Recommendation: A service level support plan should be developed documenting the ongoing support that will be provided to user departments as discussed above. Adequate full-time staff should be assigned to provide ongoing operational support for the system. Consulting support should be considered for specialized activities such as software version upgrades. Based on the experience of other public sector agencies and our experience, we believe Metro should consider the staffing levels and consulting support to support the InfoLink system shown in Exhibit V-5.

Exhibit V-5
Annual Support Costs for InfoLink

Category	Annual Support of Current PeopleSoft Applications	Annual Support of All 11 PeopleSoft Applications
Internal Functional Analysts	2 – 3	3 – 4
Internal IMS Technical Analysts	3 – 4	4 – 6
External Consulting Costs	$25,000 – 50,000	$50,000 – 100,000

VI. FUTURE STEPS

Introduction

This section addresses the remaining PeopleSoft modules, which have not yet been installed, and their impact on Metro operations. Alternatives for completing the InfoLink project, their relative advantages, disadvantages, and costs are also presented.

PeopleSoft Upgrades

A significant long-term advantage of purchasing a software package, such as PeopleSoft, is that the vendor continues to make enhancements and improvements in the product. Metro, as part of its annual maintenance fee, is entitled to these upgrades as well as software warranty support. However, Metro must implement these upgrades in a timely fashion or lose the right to ongoing software support from PeopleSoft. Currently, Metro is planning to implement Version 6.0 of the Public Sector Financial modules. Support by PeopleSoft for the current version of the modules (Version 5.1) is scheduled to be discontinued in late 1998 or early 1999. Metro is already finding it difficult to schedule training for staff on Version 5.1 of the modules. PeopleSoft Version 7.0 of the Public Sector Financial modules has now been released. Support, by PeopleSoft, for Version 6.0 will be discontinued in approximately 18 months. PeopleSoft is planning to release Version 7.5 of the Public Sector Financial modules in the second quarter of 1999 (although this date has already slipped several times).

The interrelationship of the 11 PeopleSoft modules acquired by Metro is shown in Figure VI-1. The interfaces between the modules are complex, requiring extensive testing prior to implementation and constant maintenance.

Work Plan for Version 6.0 Upgrade

▶ *Observation:* A comprehensive work plan and a clear definition of project roles and responsibilities to support the 6.0 upgrade have not been prepared. Staff outside of IMS is not clearly organized and dedicated to the upgrade effort. Many of the key Accounting Division staff are assigned to year-end closing assignments.

Significance: The move from Version 5.1 to 6.0 is a major undertaking. IMS and ASD staff will need to ensure the upgrade is done correctly. The system will need to be thoroughly retested. Interfaces to both external systems and to the PeopleSoft Human Resource and Payroll modules will need to be retested. The implementation of the Accounts Receivable and Billing modules is dependent on the completion of the 6.0 upgrade.

A structured plan with dedicated resources will be necessary to successfully upgrade to the 6.0 release of PeopleSoft.

Recommendation: Complete a formal implementation plan, including assignment of all required resources for the 6.0 upgrade. Clearly document roles and responsibilities for completing this project.

<u>Software Upgrade Staff Planning</u>

▶ **Observation:** PeopleSoft will generally release new upgrades on an annual basis. Metro does not have a long-range plan for staffing these upgrade projects. These projects will require approximately three calendar months to perform, assuming Metro has remained current with all interim patches. Metro needs to plan for and include staffing and funding for PeopleSoft upgrades in both their long-range information technology plan and their budget process.

Significance: Metro internal staff, or outside resources, will need to be assigned to implement periodic PeopleSoft upgrades. If Metro chooses not to implement an upgrade(s), they will run the risk of long-term obsolescence of the PeopleSoft applications. Bypassing an upgrade will make the next upgrade much more difficult and expensive.

Recommendation: Funds to staff and implement PeopleSoft upgrades should be included in the annual budget as well as the long-range information technology plan.

Figure VI-1
Integration of the 11 PeopleSoft Modules Licensed by Metro
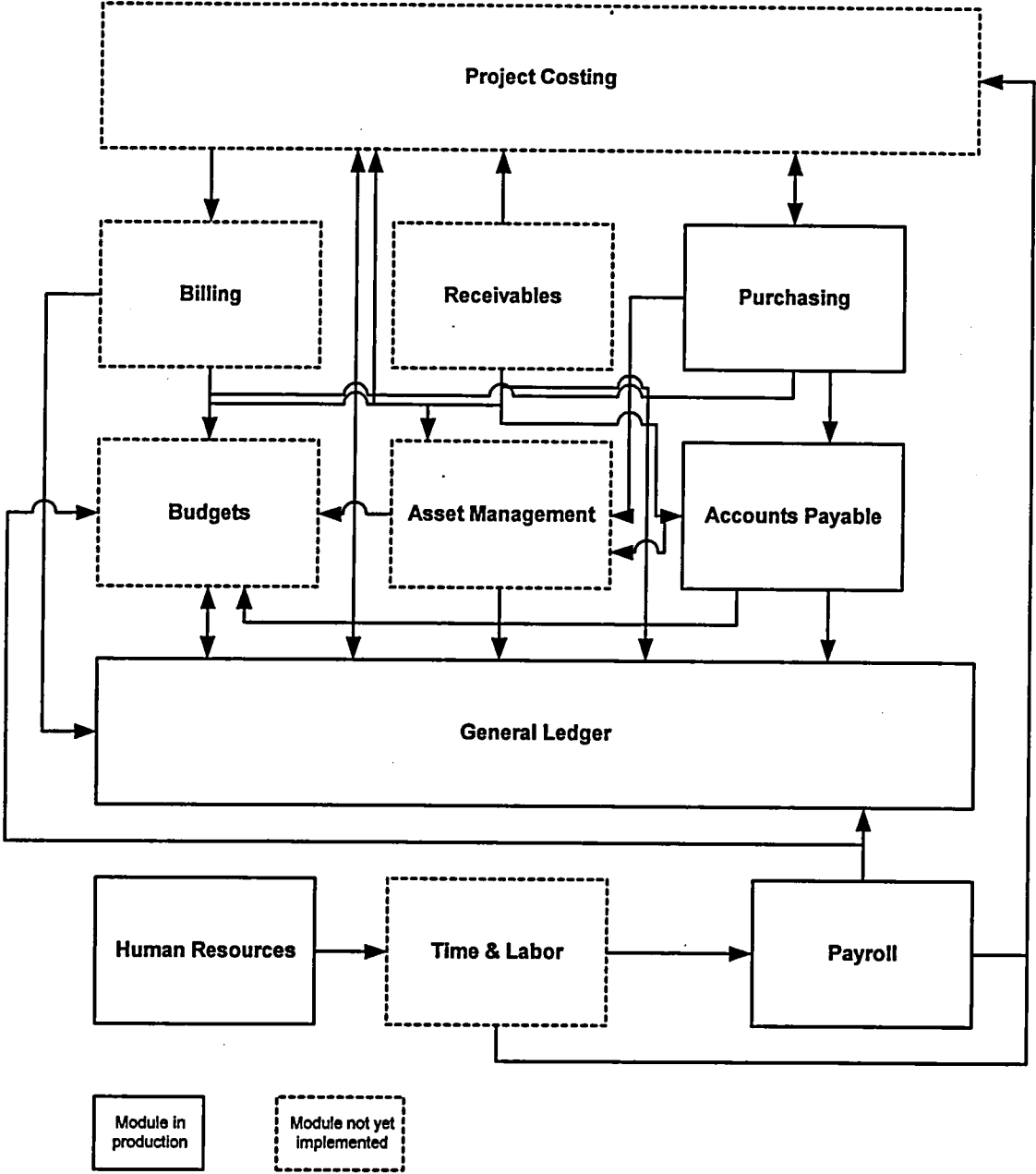
Remaining PeopleSoft Modules

Metro has not implemented six of the eleven PeopleSoft modules purchased in 1996: Asset Management, Accounts Receivable, Billing, Budget, Project Costing, and Time and Labor. Each of the modules is discussed below.

Asset Management Module

This module provides capital appropriation planning and budgeting, projected depreciation on assets not yet purchased, customizable depreciation options, inventory and physical tracking functions, and maintenance, warranty, registration, and license tracking. It supports many business unit organization options and multiple depreciation books, allowing Metro to comply with varying accounting rules (e.g., federal grant, external reporting, etc.). The module is integrated with the Purchasing, Budget, Accounts Payable, and General Ledger modules.

▶ *Observation:* The requirements for this module, like the other modules not yet implemented, were developed several years ago. There has been little or no recent update of the requirements.

Significance: The need for this module, relative to other modules already purchased, is highly doubtful. Of all the modules Metro has purchased, this module is probably the most expendable because adequate accounting systems already exist for this function.

Recommendation: Review the need for this module given current project funding. Determine if there is a critical business need and benefit prior to proceeding with implementation. Discuss with PeopleSoft options for recovering some or all of the funds spent in acquiring the license for this module or alternatively credit to be used for additional PeopleSoft implementation support.

Accounts Receivable (AR) and Billing Modules

These modules provide both accounts receivable functionality and long-term credit management. These modules include typical features of customer maintenance, receivable entry, and payment applications. They also include extensive customer management capabilities, effective dating to track credit limits, risk classification, credit limit ranges, dispute status, and collection status.

The Billing module is designed to invoice customers. It can apply surcharges, taxes, and discounts. It provides many of the same customer management functions as the Accounts Receivable module.

▶ *Observation:* The implementation date for AR and Billing has slipped several times. It appears that a primary problem has been software bugs and integration problems with other PeopleSoft modules. The current implementation date of January 1999 is

in serious doubt because it is dependent upon the 6.0 upgrade for General Ledger, Accounts Payable, and Purchasing modules being completed first.

Significance: These are probably the most critical of the remaining modules. Metro currently uses a variety of billing systems that are not integrated. The PeopleSoft Accounts Receivable and Billing modules offer Metro the opportunity to have a fully integrated software system for processing all billings for both REM solid waste transfer billings and business licenses. These two functions processed over 10,000 invoices in 1995.

Recommendation: A thorough implementation plan coordinated with the active participation of the principal usersneeds to be established. The dependencies to the Version 6.0 upgrade of financial modules and staff resources need to be determined. Develop an integrated plan encompassing both the Version 6.0 upgrade and Accounts Receivable and Billing modules to ensure all required resources are available. PeopleSoft should review the plan and a commitment should be obtained for their assistance. The deficiencies in the originally delivered PeopleSoft modules should be reviewed with Metro's legal counsel to assess legal remedies.

Budget Module

The module allows for streamlined input of budget information using historical organization data. The module is closely integrated with the General Ledger and, in Version 6.0 with the Project Costing module. Formulas, using budget data, constants, statistics, and other formulas can be used to develop both dollar and statistical budgets.

▶ *Observation:* The PeopleSoft Budget module, in Version 6.0, offers few significant features that are not available in simple spreadsheet budgets. PeopleSoft has stated they have plans to make significant changes to the module for future releases, but there are no definite commitments at this time for the future budget functionality.

Significance: The effort to implement a new Budget module in 1999 would be significant. The currently available features and capabilities are not significant improvements over current Metro budget processes and procedures.

Recommendation: Defer implementation of the Budget module until major improvements are made. Discuss with PeopleSoft options for recovering some or all of the funds spent in acquiring the license for this module or obtain a credit to be used for additional PeopleSoft implementation support.

Project Costing Module

This module captures financial information concerning projects. It provides the ability to capture both committed (encumbrance and pre-encumbrance) and actual costs. The module provides for allocations both to and from the general Ledger. The module can define, maintain, and retire physical assets for full life-cycle property management.

▶ ***Observation:*** This module has significant opportunities for use at Metro assuming the software adequately meets the needs of the Transportation and REM departments. As is the case with several of the modules, however, the requirements were originally defined several years ago and have not been updated through a Requirements Integration Assessment process. The PeopleSoft module will probably require significant effort to customize to the needs of Metro.

Significance: This module is very complex and requires significant work to correctly integrate with the General Ledger module (much like the Payroll to General Ledger integration). The grant administration and project management requirements of the Transportation and REM departments are very complex. Transportation currently operates a separate grant reporting system that extracts data from the General Ledger module. Implementing this module will be complex and will require dedicated Metro staff. Metro currently plans to implement this module when Version 7.5 (now scheduled for late second quarter 1999) is available.

Recommendation: Delay this module until after the next versions of the Human Resources and Payroll modules are implemented in order to allow the scarce Metro staff familiar with the PeopleSoft applications to focus on the upgrade implementation. These modules are scheduled for availability in the second quarter of 1999. In the interim, update the business requirements of grant and project accounting during the second half of 1999.

Time and Labor Module

This module was designed principally for the private sector to allow employee time to be recorded, summarized, and presented to timekeepers.

▶ ***Observation:*** To our knowledge no public sector agencies in the U.S. are currently using this module. We are aware of difficulties experienced by several public sector agencies attempting to implement this module. These agencies have either discontinued implementation, renegotiated PeopleSoft implementation support or are attempting to modify the software to address deficiencies with the module. As noted with several of the modules, the requirements for this module have not been updated through the Requirements Integration Assessment process.

Significance: The fact that we are unaware of any public sector agencies who have implemented this module is noteworthy, because it indicates this module may not meet the majority of public sector requirements for time recording. In addition, the basic operation of this module has been found to be very time consuming and cumbersome during initial testing by several other public sector agencies. We are aware that several of these agencies have decided to build their own time entry subsystems using the PeopleSoft tools to allow for easier integration with the other modules.

Recommendation: Determine from PeopleSoft if any other public sector organization comparable to Metro has implemented this module and independently assess their success. Review Metro's requirements for this module. If there are no

current users and the need for the module has changed, review options with PeopleSoft to either recover or redirect the investment in this module.

Implementation Alternatives

Based on the work to-date to implement the five PeopleSoft modules, the planned upgrade for Version 6.0, the planned upgrade for Human Resource and Payroll to Version 7.5, and the remaining modules, we have prepared the following three basic alternative action plans for Metro's consideration.

We believe Metro has the following viable alternatives for proceeding with the InfoLink project. Our intent in presenting these alternatives is to help Metro to frame its decision on the next steps for InfoLink.

Alternative 1: **Cancel the project and continue using only the five modules implemented to date.** This option would use the software modules already implemented – General Ledger, Purchasing, Accounts Payable, Human Resources, and Payroll. Work would stop on all future modules.

Advantages: Metro staff currently assigned and planned for future modules could devote their full energies to their normal, full-time job responsibilities. Approximately $240,000 in unspent project monies could be saved.

Disadvantages: Any anticipated benefits from the remaining six modules would be potentially foregone. Metro would still need to develop an upgrade strategy and decide whether to utilize future upgrades from PeopleSoft. Metro may be at risk if certain current systems that would not be replaced by new PeopleSoft modules under this alternative (but were originally scheduled to be replaced) are not Year 2000 compliant.

Cost/Benefit: Approximately $240,000 in project cost could be avoided. Approximately $25,500 per year in tangible cost savings, as identified in 1995, would not be realized. Additional funds may be required to achieve Y2K compliance if these modules are not compliant and not replaced.

Alternative 2: **Proceed with implementation of remaining modules.** This alternative would have the bulk of the implementation performed by Metro staff, using the remaining $240,000 for specific implementation services from PeopleSoft Consulting Services.

Advantages: All previously licensed software modules would be implemented providing an integrated financial system. User department training costs (except for the time required by the users to attend training) is included in the cost estimates.

Disadvantages: We believe that it is highly unlikely that the remaining modules could be successfully implemented for the remaining $240,000. The implementation would continue into 2001. There is a significant likelihood of key staff resignations

during the project due to high demands from both the project and normal full-time work responsibilities over a long period.

Cost/Benefit: Based on the experience of other agencies in implementing the remaining six PeopleSoft modules, it is projected that the resources identified in Exhibit VI-1 will be required.

Exhibit VI-1
Anticipated Resources to Implement Remaining PeopleSoft Modules
(Alternative 2)

Module	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
Financial Modules 6.0 Upgrade	1Q1999	1 for 3 mo.	1 for 3 mo.	1 for 1 mo.	$25,000 – 40,000
Accounts Receivable and Billing	2Q1999	1 for 4 mo.	1 for 4 mo.	1 for 3 mo.	$80,000 – 100,000
Human Resources and Payroll 7.5 Upgrade*	4Q1999	1 for 3 mo.	1 for 3 mo.	1 for 1 mo.	$25,000 – 40,000
Financial Module 7.5 Upgrade*	1Q2000	1 for 3 mo.	1 for 3 mo.	1 for 1 mo.	$25,000 – 40,000
Budget Module	2Q2000	1 for 6 mo.	1 for 4 mo.	1 for 3 mo.	$80,000 – 100,000
Project Costing Module	3Q2000	2 for 6 mo.	1 for 6 mo.	2 for 4 mo.	$200,000 – 250,000
Time and Labor Module	3Q2000	Unknown	Unknown	Unknown	Unknown
Asset Management Module	1Q2001	1 for 3 mo.	1 for 3 mo.	1 for 2 mo.	$50,000 – 60,000
Total		36 mo.	27 mo.	20 mo.	$510,000 – 670,000

*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.

Alternative 3: ***Proceed with the project in a scaled back mode.*** The accounts receivable, billing, budget and project costing modules would be implemented. Improved reports for departments would be developed and currently implemented software would be version upgraded.

Advantages: The modules and upgrades identified in Exhibit VI-2 will be implemented. There is a critical, immediate need for useful end-user reports. This task should be immediately initiated. Other upgrades and new module implementations may proceed. There may be no immediate compelling business reason to implement the Asset Management or Time and Labor modules. We are not aware of any public sector implementations of the Time and Labor module, and we believe it would be a high-risk implementation. The Project Costing module will be very difficult to implement and will require significant integration with the General Ledger module, and could be deferred until PeopleSoft has released an improved version. User department training costs (except for the time required by the users to attend training) are included in the cost estimates.

Disadvantages: The proposed plan includes $75,000 to $120,000 in projected costs for future upgrades that should be considered as a part of the ongoing operational costs of InfoLink even if new modules are not added. There is also significant risk of ASD staff turnover with a long-term development project environment. Lastly, there is substantial question as to the anticipated benefits of both the Budget and Project Costing modules.

Cost/Benefit: As noted above, the cost of upgrading ($75,000 to $120,000 of the projected costs), while necessary for future development, is also important for ongoing operations. The remaining projected costs of $385,000 to $490,000 are well above the available project balance (as of July 31, 1998) of $240,000. The benefits from the Budget and Project Costing module are unknown and were not included in the 1995 cost/benefit analysis.

Exhibit VI-2
Proposed Upgrade and Additional Module Implementation Schedule
(Alternative 3)

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
Financial Modules 6.0 Upgrade	1Q1999	1 for 3 mo.	1 for 3 mo.	1 for 1 mo.	25,000 – 40,000
Accounts Receivable and Billing Module	2Q1999	1 for 4 mo.	1 for 4 mo.	1 for 3 mo.	80,000 – 100,000
Human Resources and Payroll 7.5 Upgrade*	4Q1999	1 for 3 mo.	1 for 3 mo.	1 for 1 mo.	25,000 – 40,000
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		33 staff months	24 staff months	18 staff months	$460,000 – 610,000

*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.

Recommendation

Based on our analysis of the InfoLink project implementation to date and the experience of other public sector agencies who have implemented the PeopleSoft system, we recommend Metro proceed with the following tasks for Alternative 3 as discussed above. We believe Alternative 3 offers Metro the greatest likelihood of a successful total implementation. It also allows Metro to use the software already licensed, providing there is a continuing need for the features provided by the various modules.

Alternative 1 does not provide Metro with the full benefit of the software capabilities as demonstrated by current experience. In addition, user departments will only use a very limited portion of the modules already implemented. Opportunities for improved business operations, available through greater use of the software will not be realized.

Alternative 2, while taking full advantage of all licensed modules, assumes that Metro has a continuing need for the functions without updating user department requirements.

Therefore, we recommend Metro proceed with Alternative 3 and begin developing a project plan that starts with the following tasks.

1. Identify critical staff resources in both IMS and user departments to assist on the various tasks. Resources should be dedicated full time to specific tasks where possible and temporary staff hired to fill positions usually filled by staff members assigned to the InfoLink project team.

2. Implement new reports for user departments in the first quarter of 1999.

3. Conduct comprehensive training for user departments in new reports and on-line entry of requisitions (including budget checking). This task should also be completed in the first quarter of 1999.

4. Upgrade the three financial modules to PeopleSoft Version 6.0. This task should be completed in parallel with the first two tasks in the first quarter of 1999.

5. Implement the Accounts Receivable and Billing modules in the second quarter of 1999 following the completion of Task 4.

6. Begin work in the third quarter of 1999 to reevaluate the requirements for the four other PeopleSoft modules (i.e., Budget, Project Costing, etc.) to determine if there is a current need for the applications and if they substantially meet Metro's requirements.

7. Implement upgrades to the PeopleSoft Human Resource and Payroll modules once the new releases are stabilized (usually 6 to 9 months after release). We project this task to be completed in the fourth quarter of 1999.

8. If there is a need for any of the four other PeopleSoft modules, proceed with a phased implementation in 2000.

9. Negotiate with PeopleSoft for a credit for licensed, but unused software modules. A portion of the license fee may be converted to implementation assistance. Metro should use PeopleSoft experienced consultants to be responsible for specific deliverables associated with module implementation.

The above tasks are intended to provide Metro with a starting point for the development of a comprehensive work plan for Alternative 3.

VII. SUMMARY OF RECOMMENDATIONS

The following is a list summarizing our recommendations to improve the on-going implementation of the InfoLink system as well as the selection and implementation of future information technology (IT) projects.

Future Steps for InfoLink Project Completion

- Proceed with our recommended Alternative 3 including the following tasks:

  ▶ Identify critical staff resources in both IMS and user departments to assist on the various tasks. Resources should be dedicated full time to specific tasks where possible and temporary staff hired to fill positions usually filled by staff members assigned to the InfoLink project team.

  ▶ Implement new reports for user departments in the first quarter of 1999.

  ▶ Conduct comprehensive training for user departments in new reports and on-line entry of requisitions (including budget checking). This task should also be completed in the first quarter of 1999.

  ▶ Upgrade the three financial modules to PeopleSoft Version 6.0. This task should be completed in parallel with the first two tasks in the first quarter of 1999.

  ▶ Implement the Accounts Receivable and Billing modules in the second quarter of 1999 following the completion of the above task.

  ▶ Begin work in the third quarter of 1999 to reevaluate the requirements for the four other PeopleSoft modules (i.e., Budget, Project Costing, etc.) to determine if there is a current need for the applications and if they substantially meet Metro's requirements.

  ▶ Implement upgrades to the PeopleSoft Human Resource and Payroll modules once the new releases are stabilized (usually 6 to 9 months after release). We project this task to be completed in the fourth quarter of 1999.

  ▶ If there is a need for any of the four other PeopleSoft modules, proceed with a phased implementation in 2000.

υ   Negotiate with PeopleSoft for a credit for licensed, but unused software modules. A portion of the license fee may be converted to implementation assistance. Metro should use PeopleSoft experienced consultants to be responsible for specific deliverables associated with module implementation.

- Clearly define, document and communicate project team member roles to both the project team and user departments.

- Develop a formal work plan for the implementation of the PeopleSoft 6.0 upgrade for the General Ledger, Purchasing and Accounts Payable modules.

- Reevaluate the requirements for the Asset Management, Project Costing, Budget, and Time and Labor modules of PeopleSoft, which have already been licensed, prior to proceeding with implementation.

- Develop a detailed work plan for the implementation of the Accounts Receivable and Billing modules coordinated with the PeopleSoft Version 6.0 financial module upgrade.

Maintaining the InfoLink System

- Conduct a staffing review of both the Accounting and Information Management Systems divisions in light of the implementation of the PeopleSoft system.

- Assess the staffing requirements to support the PeopleSoft applications within IMS to determine if Metro could support the applications in the future.

- Include funds to support future upgrades to the PeopleSoft modules in both the annual budget and the long-range IT plan.

- Implement a policy to provide employees an incentive to stay after receiving specialized training.

- Improve the Administrative Services Department customer service to the user departments of InfoLink by improving data entry error and problem resolution.

- Prepare user manuals covering the workflow process required with the InfoLink system. Manuals should have a common "look and feel."

- Develop operating procedures in IMS to document software modifications and vendor supplied software corrections.

Future Information Systems Projects

- Develop and maintain detailed project plans, including resource assignments, for all major IT projects including InfoLink.

- Include the cost of internal Metro staff in cost estimates to more accurately portray the "total cost of ownership" of IT projects.

- Adopt a formal system development and implementation methodology, with specified project deliverables, for all major IT projects.

- Prepare written reports summarizing the software evaluation and selection phase for review and approval by the IT Steering Committee and senior management.

- Prepare a feasibility study, including detailed cost-benefit analyses, for all major proposed changes in the IT infrastructure of Metro, such as the implementation of new computing architectures or software projects.

- Conduct formal certification tests prior to software license payments. Final software license payments should be dependent on final acceptance of the system by Metro.

- Require consulting contracts for software implementation services to be deliverable-based.

- Review all major IT projects at least annually to determine if they continue to meet Metro's overall objectives.

- Review projected benefits of IT projects on an ongoing basis to evaluate the overall need to continue the project or make necessary modifications.

The above are summary recommendations. The detailed recommendations can be found in Sections III through VI of this report.

APPENDIX A
PEOPLESOFT PROPOSAL WORK PLAN

PeopleSoft's Original Proposal Work Plan

ID	Task Name	Start	Finish	1997 Qtr 2	Qtr 3	Qtr 4	1997 Qtr 1	Qtr 2	Qtr 3	Qtr 4	1998 Qtr 1	Qtr 2
1	**PEOPLESOFT PROPOSAL WORKPLAN**	Mon 7/1/96	Mon 7/1/96									
2	Project Management	Mon 7/1/96	Fri 6/19/98									
3	Install Hardware/DB/Application Software	Wed 7/10/96	Tue 7/30/96									
4	PeopleSoft Training	Tue 7/23/96	Fri 9/6/96									
5	Rerquirements Integration Assessment (RIA)	Mon 8/19/96	Fri 10/11/96									
6	RIA Complete	Mon 6/24/96	Mon 6/24/96									
7	Project Planning	Wed 10/30/96	Fri 11/8/96									
8	Project Plan Complete	Mon 6/24/96	Mon 6/24/96									
9	Conversion	Wed 3/5/97	Fri 5/23/97									
10	Design/Develop/Integrate/test GL	Thu 1/2/97	Wed 2/5/97									
11	Design/Develop/Integrate/Test Budget	Thu 2/6/97	Wed 3/12/97									
12	Design/Develop/Integrate/Test Project Costing	Thu 4/3/97	Wed 4/30/97									
13	Design/Develop/Integrate/Test AP	Mon 6/9/97	Fri 7/25/97									
14	Design/Develop/Integrate/Test PO	Fri 7/4/97	Thu 8/21/97									
15	Design/Develop/Integrate/Test AM	Wed 8/20/97	Tue 9/30/97									
16	Design/Develop/Integrate/Test Inventory	Wed 10/15/97	Tue 11/25/97									
17	Design/Develop/Integrate/Test Billing	Tue 12/16/97	Mon 1/26/98									
18	Design/Develop/Integrate/Test AR	Tue 12/16/97	Mon 1/26/98									
19	Develop & Test System Interfaces	Thu 10/16/97	Wed 1/28/98									

Task		Rolled Up Task		External Tasks	
Progress		Rolled Up Milestone ◇		Project Summary	
Milestone ◆		Rolled Up Progress			
Summary		Split			

Project: PS Proposal Plan
Date: Tue 12/8/98

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PeopleSoft's Original Proposal Work Plan

ID	Task Name	Start	Finish	1997 Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	1998 Qtr 1	Qtr 2
20	Parallel Testing	Mon 1/26/98	Fri 2/13/98									
21	Go Live	Fri 2/13/98	Fri 2/13/98									
22	First Full production Processing	Mon 2/16/98	Fri 2/20/98									
23	Post Implementation	Mon 3/2/98	Fri 3/6/98									
24	PeopleSoft Training	Wed 7/16/97	Fri 8/8/97									
25	Requirements Integration Assessment (RIA)	Mon 8/11/97	Wed 9/10/97									
26	RIA Complete	Wed 9/10/97	Wed 9/10/97									
27	Project Planning	Mon 9/15/97	Fri 9/19/97									
28	Project Plan Complete	Fri 9/19/97	Fri 9/19/97									
29	Conversion	Mon 5/5/97	Fri 7/11/97									
30	Integrate/Develop/Test HR	Wed 10/15/97	Fri 11/28/97									
31	Integrate/Develop/Test Base Benefits	Mon 10/27/97	Fri 11/28/97									
32	Integrate/Develop/Test Payroll	Wed 1/21/98	Tue 3/10/98									
33	Develop & Test System Interfaces	Mon 3/30/98	Fri 5/22/98									
34	Parallel Testing	Mon 5/11/98	Fri 5/29/98									
35	Go Live	Fri 5/29/98	Fri 5/29/98									
36	First Full production processing	Mon 6/1/98	Fri 6/5/98									
37	Post Implementation	Mon 6/8/98	Fri 6/19/98									

Project: PS Proposal Plan
Date: Tue 12/8/98

Task		Rolled Up Task		External Tasks	
Progress		Rolled Up Milestone ◇		Project Summary	
Milestone ◆		Rolled Up Progress			
Summary ▼		Split			

APPENDIX B
INFOLINK COST/BENEFIT ANALYSIS

MIS2000! COST ANALYSIS - 5 YEARS November 1995						
MIS2000 - Project Cost	**Initial Cost**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Personal Services			$45,000	$45,000	$45,000	$45,000
Material & Service Cost (Initial System)	175,000					
Material & Service (On-going Costs)		108,500	133,500	133,500	133,500	133,500
Capital Lease	1,275,000					
Training			5,400	2,700	2,700	2,700
COST OF PROJECT - 5 YEARS	**$1,450,000**	**$108,500**	**$183,900**	**$181,200**	**$181,200**	**$181,200**
Tangible Cost Savings						
SW Account Reconciliation		($25,500)	($25,500)	($25,500)	($25,500)	($25,500)
Aged Trail Balance*		(25,400)	(25,400)	(25,400)	(25,400)	(25,400)
Separate Entry of Data (MERC, Parks)*		(15,300)	(15,300)	(15,300)	(15,300)	(15,300)
Reduced Boxes in Archive-Storage		(16,900)	(16,900)	(16,900)	(16,900)	(16,900)
Reduced Forms Cost		(7,600)	(7,600)	(7,600)	(7,600)	(7,600)
Reduced Paper Cost		(1,900)	(1,900)	(1,900)	(1,900)	(1,900)
TOTAL TANGIBLE COST SAVINGS		**(92,600)**	**(92,600)**	**(92,600)**	**(92,600)**	**(92,600)**
Intangible Cost Savings						
Purchase Order Preparation/Input		($40,300)	($40,300)	($40,300)	($40,300)	($40,300)
Timesheet Preparation/Input		(16,200)	(16,200)	(16,200)	(16,200)	(16,200)
Access to Paper File Information		(25,000)	(25,000)	(25,000)	(25,000)	(25,000)
Timely Delivery of Reports		(14,200)	(14,200)	(14,200)	(14,200)	(14,200)
Control Balancing		(4,500)	(4,500)	(4,500)	(4,500)	(4,500)
Prepare Monthly Contracts Report		(4,700)	(4,700)	(4,700)	(4,700)	(4,700)
TOTAL INTANGIBLE COST SAVINGS		**($104,900)**	**($104,900)**	**($104,900)**	**($104,900)**	**($104,900)**
COST ANALYSIS - 5 YEARS	**$1,450,000**	**$89,000**	**$13,600**	**$16,300**	**$16,300**	**$16,300**

Based on November 1995 Dollar Value
Rounded to Hundreds

Source: InfoLink Project Team Minutes, November 1995

Response to the Report

M E M O R A N D U M

METRO

Date: December 8, 1998

To: Alexis Dow, Metro Auditor

From: Mike Burton, Executive Officer

Re: Response to InfoLink Project Review

Thank you for the opportunity to review and comment on the audit by Pacific Consulting Group on the InfoLink Project Review.

We recognize the value of a professional, external review of Metro's InfoLink project and we appreciate their recommendations of options and alternatives for completing the project.

We appreciate the confirmation that PeopleSoft was a reasonable choice. We agree that Metro will benefit from the continued product enhancements that will be provided with the PeopleSoft package. Also, we are pleased to see the consultant's confirmation that project resources have been prudently spent to implement the system.

After reviewing this audit, we have identified the following recommendations as most critical to our success in completing implementation and in ongoing management of the project:

Resources - staffing and monetary

We agree with the recommendations for resources as outlined in the report and we agree with the assumption that the lack of dedicated technical and functional support will inhibit the acceptance and usefulness of the new system by user departments. Given the funding outlook at Metro, we may be unable to fully implement this recommendation. A funding plan and request for Council action will be filed in January.

InfoLink Staff Retention

We agree that Metro needs to address the issue of staff retention after training. One of the limiting factors we will face will be implementing such a policy given the fact that Metro operates in a collective bargaining environment. We will also need to carefully explore legal and other payroll-related issues.

End User Satisfaction and Training

The audit report states that end users are not satisfied with the reports generated from the PeopleSoft system. We agree that departments that have not become active participants with the new system may experience lower levels of satisfaction. One of the primary goals of the new system is to provide end users with the power to retrieve information on demand and to customize reports that specifically meet their information needs. This system provides the opportunity to achieve that goal. Departments who have dedicated time and resources to the new system are satisfied with the information and reports available to them.

J:\infolink\audit\InfoLinkProjectReview.doc

Financial Summary Reports/Transaction Detail Report

One of the primary goals of the new system is to reduce paper generation of information, and to provide end users with information in a form that they can use. This system provides the opportunity to achieve that goal. User training for report writing and on-line queries will be conducted over the next six months.

Response to Recommendations for Future IT Projects

Listed below are all of the recommendations included in the audit report with our comments, proposed action plan, and proposed timeline. However, several recommendations relate to actions that will be taken for similar projects in the future. We have learned much from the experience and agree with all of these recommendations. These future-oriented IT project recommendations are listed below:

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

- **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.**

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

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

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

- **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.**

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

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

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

Response to Recommendations for Operational Improvements

Another group of recommendations relates to operational improvements. To a great extent these will be possible only with additional financial and personnel resources. A funding plan and request for Council action will be prepared and submitted in January of 1999. These operational improvement recommendations are listed below:

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.

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.

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.

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.

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 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.

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.

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.

<u>Agreement with Recommendation:</u> 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.

<u>Proposed Action Plan:</u> 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.

<u>Proposed Timetable</u>: Complete by end of the second quarter of 1999.

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

<u>Agreement with Recommendation:</u> 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.

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

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

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

<u>Agreement with Recommendation</u>: 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.

<u>Proposed Action Plan</u>: 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.

<u>Proposed Timetable:</u> Complete by end of the first quarter or the second quarter of 1999.

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

<u>Agreement with Recommendation:</u> 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.

<u>Proposed Action Plan:</u> 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.

Develop a service level plan with user departments. Increase staffing and consulting levels to 2 - 3 dedicated internal functional staff & and 3 - 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. (See discussion under observations on page 1)

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.

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.

Response to Recommendations for InfoLink Project Completion

The final group of recommendations focuses on implementation of the final phase of the InfoLink project including Project Costing, Budget, Asset Management, and Time and Labor modules, as well as completing work nearly done to go live with Accounts Receivable and Billing. We have already planned to wait for PeopleSoft's version 7.5 before proceeding with any additional project work. Comments on these recommendations are as follows:

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.

Review the need for Asset Management given current funding.

<u>Agreement with Recommendation:</u> Agreed.

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

<u>Proposed Timetable:</u> Complete by end of the second quarter of 2000.

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

<u>Agreement with Recommendation:</u> Agreed.

<u>Proposed Action Plan:</u> 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.

<u>Proposed Timetable:</u> Complete review by the end of the second quarter of 2000.

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.

<u>Agreement with Recommendation:</u> Agreed.

<u>Proposed Action Plan:</u> 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.

<u>Proposed Timetable:</u> Complete review by the end of the second quarter of 2000.

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.

<u>Agreement with Recommendation:</u> Agreed.

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

<u>Proposed Timetable:</u> Complete review by the end of the second quarter of 2000.

The report lays out 3 alternatives for the future of the InfoLink project. We agree that Alternative 3 is probably the most prudent. Our current priorities are to upgrade to PeopleSoft's version 6.0; to implement accounts receivable and billing modules; to improve reports for the departments; to develop and deliver a user training program. When PeopleSoft's version 7.5 is available, we will conduct a feasibility analysis of the remaining 4 modules. While we agree there may be changed business needs and information leading us to not implement some modules, we have not yet ruled out full implementation. We will determine the resources needed to implement and fully support the modules selected for implementation.

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Thanks for taking the time to help us.

Fax: 797-1831
Mail: Metro Auditor, 600 NE Grand Avenue, Portland, OR 97232-2736
Call: Alexis Dow, CPA, Metro Auditor, 797-1891
Email: dowa@metro.dst.or.us

Metro

Administrative Services Department

Internal Controls Review

December 1998
A Report by Pacific Consulting Group
Issued by the Office of the Auditor

METRO

1998-10136-AUD

Alexis Dow, CPA
Metro Auditor

Metro

Administrative Services Department

Internal Controls Review

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Alexis Dow, CPA
Metro Auditor

METRO

OFFICE OF THE AUDITOR

December 10, 1998

To the Metro Council and Executive Officer:

As part of their evaluation of Metro's InfoLink project, Pacific Consulting Group studied Metro's internal controls over the PeopleSoft purchasing and human resource applications as well as its general controls over the InfoLink system.

This report describes the consultants' observations and recommendations regarding these internal controls. Another report issued under separate cover addresses InfoLink project planning and management, system selection and project implementation.

Pacific Consulting Group recommends changes in three areas of internal control:
- Improving controls over changes to computer programs by limiting access to programs
- Developing new procedures and policies to prevent data entry, data validation and other errors and to ensure proper tracking of system users, and
- Enhancing data security by improving passwords and ensuring timely installation of system updates.
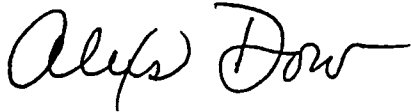
Metro staff responsible for implementing and operating the PeopleSoft modules and other systems have worked, and continue to work, diligently and intensely. Pacific Consulting Group's observations suggest that additional resources are necessary to adequately staff continuing implementation efforts and day-to-day operations of InfoLink.

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 staff in the Administrative Services Department.

Very truly yours,

Alexis Dow, CPA
Metro Auditor

Auditor: Doug U'Ren

METRO AUDITOR

INTERNAL CONTROLS REVIEW OF
PEOPLESOFT PURCHASING AND HUMAN RESOURCES
APPLICATIONS

FINAL REPORT

DECEMBER 1998

PACIFIC
CONSULTING
GROUP, INC.

TABLE OF CONTENTS

I.   EXECUTIVE SUMMARY

This report presents the results of Pacific Consulting Group, Inc.'s (PCG) review of internal controls over the PeopleSoft Purchasing and Human Resource applications, as well as general controls over the InfoLink system. A separate, higher level review of internal controls over the InfoLink system was performed by Deloitte & Touche LLP, Metro's current external financial auditor.

PCG's review focused on:

- Manual and automated controls restricting access to data on client workstations (or desktops) and the servers.
- Manual and automated controls related to changes in PeopleSoft application program code.
- Manual and automated controls related to protecting the system software, data and network security.
- Application processing controls and segregation of duties within each of the two PeopleSoft applications.

Metro began the implementation of the current Human Resource and Purchasing applications in 1996 with the selection of the PeopleSoft applications software. The Purchasing application was implemented in August 1997, and the Human Resource application was implemented in March 1998. More information regarding the InfoLink system can be found in our related report, "InfoLink Project Review" issued concurrent with this report.

We reviewed documentation, conducted interviews and made observations during our fieldwork for this project. We also reviewed the most recent management letter dated October 24, 1994, from KPMG Peat Marwick, Metro's former financial auditors.

Our evaluation was limited to the two applications – Purchasing and Human Resources. However, during the course of our work, we also evaluated general controls, which are included in this report. Fieldwork was completed between August 10 and September 4, 1998.

We recommended changes in three areas of internal controls:

1. Improving controls over changes to computer programs by limiting access to the programs used to operate the PeopleSoft applications and better controlling employee access to the computer system.

2. Developing controls over processing of the PeopleSoft applications by implementing new procedures and policies for operation of the new system.

3. Enhancing data security policies related to network and UNIX operating system passwords and ensuring updated computer operating system programs are installed in a timely fashion.

Each of these recommended changes is more fully discussed below in Sections II, III, and IV of this report. A summary of our recommendations is provided in Section V.

II.   IMPROVING CONTROLS OVER CHANGES IN COMPUTER PROGRAM CODE

Periodic changes to the underlying computer program code for the PeopleSoft software applications are necessary for a number of reasons. Examples include:

*   Updating software
*   Updating source data
*   Fixing problems with program functions
*   Correcting errors in source data.

Access to program code should be restricted because it allows an individual to alter both the underlying data and the way in which data is processed by the applications. Changes to programs must be properly documented and supervised to ensure that they are authorized and properly tested prior to implementation. Clearly defined policies and procedures, as well as clear lines of responsibility, guard against unintentional and intentional circumvention of controls.

Access to Computer Program Code

▶ ***Observation:*** Information Management Services (IMS) Division staff is responsible for making necessary changes to PeopleSoft computer program code. Current safeguards are inadequate. Policies and procedures have not been developed to limit capability to change program code. Separate environments for development, testing and production use have not been implemented.

Significance: The potential exists for damaging changes to PeopleSoft program code and the underlying data used by PeopleSoft. This could result in faulty data, IMS producing erroneous reports, as well as intentional circumvention of controls.

Recommendations:

1. We recommend that IMS limit access to program code and give read/write capability to production program directories only to designated system security administrators and their backup staff. This capability should be granted only to staff responsible for UNIX security and local area network (LAN) security.

2. IMS should install separate development, testing and production environments. This will allow full testing of program changes before they are moved into the production environment.

3. Policies and procedures for managing program code changes should be developed and put in place as soon as possible. They should include:

- Formal review, approval and sign-off of any PeopleSoft program code changes by user management before the changes are moved from the test to the production environment.

- Clearly defined roles and responsibilities for all members of the InfoLink project team and the IMS system administrator.

4. Metro should evaluate commercially available software "librarian" packages for managing program source code on the Hewlett-Packard server.

PeopleSoft Access – Superusers

▶ ***Observation:*** Metro currently has 13 individuals with superuser access to the PeopleSoft financial applications (e.g., Purchasing and Accounts Payable) and six individuals with superuser access to the Human Resource applications.

Significance: Superuser access allows individuals unlimited access to all functions within the PeopleSoft applications, including the ability to give access to other users for capabilities that they were not intended to have. Full access to all functions allows users to circumvent controls. For example, a superuser could both enter and approve payment for an invoice or change underlying system data such as employee pay rates.

Recommendations:

1. Reduce the number of Metro staff with superuser access to the security administrator for the Hewlett-Packard and LAN server, the database administrator and the system administrator.

2. Make access to PeopleSoft applications consistent with each individual's job responsibilities. Full access to all functions in the production system is not consistent with any one individual's job, except for those listed in the previous recommendation.

3. Develop written policies and procedures for granting superuser access rights in the system. The Administrative Services Department director should authorize all superusers in writing and should be excluded from superuser access.

PeopleSoft Access – Passwords

▶ ***Observation:*** The PeopleSoft applications do not require users to change their passwords on a 60-day basis as is required for the Novell network. It is common for a single password to be used by multiple staff and outside consultants working on projects like InfoLink during development. We were unable to confirm that passwords were changed when the InfoLink system moved from development to production.

Significance: It is important to ensure that proper controls to limit access to the system are implemented. This helps ensure that only authorized individuals have access to the system and that they perform functions related only to their job responsibilities. Inappropriate access allows users to intentionally or unintentionally alter program code and data.

Recommendation: Prior to implementing version 6.0 of the PeopleSoft financial applications, all user identifications and passwords should be revoked and replaced. This will ensure that appropriate levels of system access are established.

Security Classes

▶ *Observation:* Metro currently has 21 active security classes for the PeopleSoft financial applications and 10 active security classes for the Human Resource applications. Security classes define groups of individuals with the same access to screens within PeopleSoft applications. They provide capabilities to update and display, add and correct data shown in PeopleSoft.

Significance: The high number of security classes increases the effort required to monitor and maintain the classes, although it does not indicate a control weakness.

Recommendation: Metro should review the number of classes to determine if they can be reduced as part of the version 6.0 implementation.

III. Developing Controls Over Processing in PeopleSoft Applications

Clearly defined responsibilities and segregation of duties are needed during the transition to a new computer system to prevent the data entry, data validation and other errors that often occur. Written policies and procedures are especially useful with a small number of staff, where few individuals are familiar with day-to-day operations of the system. Formal procedures also help ensure proper tracking of those added and deleted as system users and of authorization of their access.

Policies and Procedures – Clear Definition of Responsibilities

▶ *Observation:* Written policies and procedures for the uses of the Human Resources and Purchasing applications have not been developed. Metro also lacks formal documentation describing the specific duties of user departments, Purchasing, and Human Resources staff for entering, reviewing and correcting information in the system.

Significance: Since much of the knowledge is vested in a limited number of Metro individuals, staff attrition can adversely affect system operations. The lack of clearly defined responsibilities during system implementation has resulted in errors at other clients, although we did not observe specific processing errors at Metro. While work has been initiated in some areas, such as Human Resources and Accounts Payable, formal procedures should be completed for all PeopleSoft applications. The lack of formal policies and procedures increases the time, cost, and risk of error in training new employees or assigning staff to temporarily work in another area.

Recommendation: Metro should facilitate the InfoLink implementation by defining organizational responsibilities for the PeopleSoft applications and making certain that users are trained and understand their roles. Written control procedures should be developed to ensure that:

- Appropriate personnel review output reports for completeness and accuracy
- Output reports are balanced routinely to relevant control totals
- Errors are corrected and resubmitted
- Day-to-day system operations are adequately documented.

Policies and Procedures – Tracking System Access

▶ *Observation:* Formal procedures have not been adequately documented to ensure those terminating employees or employees transferring to new job responsibilities

within Metro are denied access to the PeopleSoft system. Informal procedures have not been routinely followed to ensure the prompt removal or modification of Metro employees' system access due to termination or transfer. Outside contractors' system access has not been removed in a timely manner following contract completion.

Human Resources staff currently uses an e-mail distribution list to notify various Metro staff of an employee's resignation or termination. The e-mail is intended to inform IMS staff when to revoke system access for the separating employee.

Significance: Employees who have terminated from Metro should not be given access to Metro information systems. Continued access is inappropriate. Depending on the level of access, former employees could make inadvertent or intentional changes to data or program code, as well as obtain information to which they should no longer have access. The access level of employees who have transferred to different jobs within Metro needs to be evaluated to ensure it remains appropriate.

Recommendation: Human Resources staff should develop formal procedures to supplement the current e-mail distribution list. These procedures should include positive, written documentation to ensure that employee network and application access is revoked before or at employee separation or modified when an employee transfers to a new position. Outside contractor access to the system should be revoked upon contract completion. A checklist, maintained by Human Resources, verifying that system access has been revoked by IMS, would assist in this process.

Processing Controls – Access and Segregation of Duties

▶ *Observation:* There appear to be two Metro employees with inappropriate access to Purchasing and Accounts Payable applications.

Significance: Inappropriate access and inadequate segregation of duties allow inadvertent or intentional misuse of the system. It is important to separate the ability to add vendors from the ability to pay them within the financial system.

Recommendation: Access to Purchasing applications should be reviewed to ensure that access rights granted to individuals within security classes CLSS5GLP and CLASS5PO remain appropriate. The ability to add vendors should be restricted to Purchasing staff. The implementation of PeopleSoft version 6.0 will require reestablishing all system security accesses. Metro should review system access for all classes of users at that time to ensure that there is appropriate separation of duties.

Processing Controls – Authorization for Access

▶ *Observation:* Access to the PeopleSoft financial applications was granted without written authorization. In most cases, it was granted when the InfoLink system was first implemented. Although written authorizations were maintained for access to the

Human Resource applications, Metro has not developed formal policies and procedures for access to the system.

Significance: The lack of proper authorization can result in inappropriate access to PeopleSoft applications, which can result in unintentional or intentional alteration of data stored in the system.

Recommendation: IMS should continue efforts to develop procedures for authorizing and documenting access to PeopleSoft applications.

IV. ENHANCING DATA SECURITY

Security measures prevent unauthorized access to the system by those who may inadvertently or intentionally make changes to computer programs or data. They help ensure users have system access that matches their qualifications, training and job responsibilities.

Hewlett-Packard periodically issues security patches for the network server to correct identified problems or errors in the UNIX operating system. The patches normally identify the type of problem to be corrected and any prior patches that also must be installed. It is important to maintain a relatively current operating system to prevent known problems from occurring in Metro's computing environment.

Network Passwords

▶ *Observation:* Metro's Novell network servers require employees to change their passwords every 60 days. The system checks new passwords to ensure that they have not been used for at least eight consecutive times by their respective users. There are no restrictions on current passwords, which may include any combination of letters, numbers or special characters. Exhibit IV-1 provides examples of common, easily broken passwords.

Significance: Metro's policies do not require the use of a secure password configuration. The current password configuration may be easily broken using available software programs. There is a significant opportunity for unauthorized access to Metro's information systems because the network has access to external networks. As additional access to Metro's network is provided via the Internet, facsimile machines on the network, and dial-up modems, more secure access procedures should be implemented.

Recommendation: Metro should evaluate requiring employees to create passwords that are more complex to prevent employees from selecting passwords that can be easily broken.

Exhibit IV-1
Examples of Easily Deciphered Passwords

Password	Logic Problem
alec7	It is based on a user name
tteffum	It is based on a user name
gillian	Name is in a dictionary
naillig	Name is in a dictionary (backwards)
PORSCHE911	It is in a dictionary
12345678	It is in a dictionary and is easy to type
qwertyui	It is in a dictionary and is easy to type
abcxyz	It is in a dictionary and is easy to type
Oooooooo	It is in a dictionary and is easy to type
Computer	It is in a dictionary and is easy to type
wombat6	It is in a dictionary and is easy to type even with a random character
6wombat	It is in a dictionary and is easy to type even with a random character
merde3	Common French word with added character
zeolite	It is in a geological dictionary
ze01lte	It is in a geological dictionary
mr.spock	It is in a science fiction dictionary

Network Server Security

▶ ***Observation:*** We were unable to determine who has the root password to the Hewlett-Packard server or verify that all security patches for the server have been installed.

Significance: Inappropriate access to computer programs or data on Metro's UNIX server can result in significant problems in Metro's computing environment. Within the UNIX operating system on the server, the "root" is where all log and configuration files are kept. The root password allows access to all programs and data on the server. Failure to install security patches can also cause network problems.

Recommendation: The Chief Financial Officer should develop formal policies and procedures for root password access. The root password should be limited to a very select group of individuals required to maintain the system. The IMS Division Manager should maintain written authorization of individuals with root password access and review the following items on a quarterly basis:

- The list of individuals having the root password for the server. Access should be limited to only those system and UNIX administrators within IMS who operate the server.
- The installation status of all security patches issued by Hewlett-Packard for the server operating system.
- Maintenance or changes to the root password.

V. SUMMARY OF RECOMMENDATIONS

The following is a list summarizing our recommendations to improve internal controls over the PeopleSoft Purchasing and Human Resource applications as well as general system controls.

- Limit access to production computer programs of the PeopleSoft modules to the UNIX and local-area-network (LAN) security administrators.

- Implement separate computing environments for production, test, and development for use with the PeopleSoft modules.

- Develop and implement formal policies and procedures for managing program changes.

- Evaluate the purchase of commercial "librarian" software to manage the movement of programs from development, test, and production.

- Reduce the number of staff with "superuser" access to the PeopleSoft modules to the administrators for Hewlett-Packard and LAN security, the database, and the PeopleSoft system.

- Develop and implement written policies and procedures for system access.

- Update user identification and password codes in conjunction with the implementation of the PeopleSoft 6.0 upgrade.

- Reduce the number of security classes for the financial and human resource applications in conjunction with the PeopleSoft 6.0 upgrade.

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

- Develop written procedures for reviewing and verifying system reports, correcting errors, and operating the PeopleSoft applications.

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

- Review access rights to the Purchasing application to ensure that the rights granted to individuals remain appropriate.

- Require employees to create more complex passwords for access to PeopleSoft applications.

- Develop formal policies and procedures for UNIX root password access.

The above internal control recommendations should not only be implemented for the Purchasing and Human Resource applications, but should also be considered for relevance in other existing and future applications at Metro.

Response to the Report

METRO

Date: December 8, 1998

To: Alexis Dow, Metro Auditor

From: Mike Burton, Executive Officer

Re: **Response to Internal Controls Review**

Thank you for the opportunity to review and comment on the audit by Pacific Consulting Group on Internal Controls. We appreciate the professional review of Metro's internal controls on access to PeopleSoft applications.

It is significant to note that Metro has been in a continuous implementation mode for over two years, with financial and human resources modules that have stretched the available resources in both technical and functional areas.

Three important points must be taken into account regarding security:

1. PeopleSoft security is complex and time consuming. PeopleSoft, in its initial RFP response, did not suggest adding resources for this function. Metro expected to use a similar level of resources to those used in the old mainframe environment. To implement the controls and documentation recommended in the audit will require significant resources, perhaps as much as one full-time employee.

2. PeopleSoft has two "levels" of security: basic security and operator preferences. Even if an employee has access to a panel, they may not perform any changes if they do not have the correct operator preference.

3. Version 6.0 has completely different security than version 5.1. Management will review security demands as version 6.0 is implemented. It should be noted that IMS, as the result of an earlier Deloitte and Touche audit, has already committed to develop more comprehensive security policies for all IT systems. The implementation of version 6.0 is a critical part of this.

Regarding the *Internal Controls Review* recommendations:

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.

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

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 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 199 (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)

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.

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.

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.

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.

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.

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.

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.

10. Defining 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.

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.

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.

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.

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.

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.

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