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INTEROFFICE MEMORANDUM

MEMORANDUM INTERIEUR

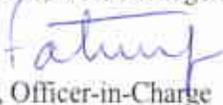
OFFICE OF INTERNAL OVERSIGHT SERVICES - BUREAU DES SERVICES DE CONTRÔLE INTERNE

INTERNAL AUDIT DIVISION - DIVISION DE L'AUDIT INTERNE

TO: Ms. Angela Kane  
A: Under-Secretary-General for Management

DATE: 9 January 2009

REFERENCE: IAD: 09-02099

  
FROM: Fatoumata Ndiaye, Officer-in-Charge  
DE: Internal Audit Division, OIOS

SUBJECT: **Assignment No. AC2008/514/04 – Audit of Capital Master Plan Project Budgeting and Financial Control**  
OBJET: **Control**

1. I am pleased to present the report on the above-mentioned audit.
2. Based on your comments, we are pleased to inform you that we will close recommendation 4 in the OIOS recommendations database as indicated in Annex 1. We are also pleased to acknowledge the positive responses to recommendations 1, 2 and 3 and the associated actions that are planned.
3. Please note that OIOS will report on the progress made to implement its recommendations in its annual report to the General Assembly and semi-annual report to the Secretary-General.

cc:

Mr Michael Adlerstein, Assistant Secretary-General and Executive Director, Capital Master Plan  
Mr. Swatantra Goolsarran, Executive Secretary, UN Board of Auditors  
Ms. Maria Gomez Troncoso, Officer-in-Charge, Joint Inspection Unit Secretariat  
Mr. Moses Bamuwanye, Chief, Oversight Support Unit, Department of Management  
Mr. Byung-Kun Min, Programme Officer, OIOS  
Mr. William Petersen, Chief, New York Audit Service, OIOS

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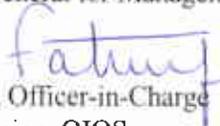
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~~Ms. Maria Elena Munoz, Programme Officer, OIOS~~  
Mr. William Petersen, Chief, New York Audit Service, OIOS



**OIOS**

Office of Internal Oversight Services

## **INTERNAL AUDIT DIVISION**

# **AUDIT REPORT**

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### **Audit of Capital Master Plan Project Budgeting and Financial Control**

**Controls over payments have been effective, but opportunities exist for improving management information.**

**9 January 2009**

**Assignment No. AC2008/514/04**

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## INTERNAL AUDIT DIVISION

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### **FUNCTION**

*“The Office shall, in accordance with the relevant provisions of the Financial Regulations and Rules of the United Nations examine, review and appraise the use of financial resources of the United Nations in order to guarantee the implementation of programmes and legislative mandates, ascertain compliance of programme managers with the financial and administrative regulations and rules, as well as with the approved recommendations of external oversight bodies, undertake management audits, reviews and surveys to improve the structure of the Organization and its responsiveness to the requirements of programmes and legislative mandates, and monitor the effectiveness of the systems of internal control of the Organization” (General Assembly Resolution 48/218 B).*

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## **EXECUTIVE SUMMARY**

### **Audit of Capital Master Plan Project Budgeting and Financial Control**

OIOS conducted an audit of Capital Master Plan Project Budgeting and Financial Control. The overall objective of the audit was to assess the adequacy of budgetary control, management information, financial planning, and payments as they relate to the capital master plan. The audit was conducted in accordance with the International Standards for the Professional Practice of Internal Auditing.

The capital master plan budget currently faces a projected over-expenditure of \$97.471 million. It will be a major challenge to bring the capital master plan back within budget even though mitigating actions have been taken, and will continue to be taken. In OIOS' opinion, the monitoring of 'earned value' would improve project information and control.

As a result of this audit, OIOS concludes the Office of the Capital Master Plan is applying effective financial controls. Controls relating to the payment of invoices have been robust, and this is evidenced by the withholding of payments in instances when design deliverables had not been received.

Recommendations are made with the objective of improving the usefulness of management information.

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## I. INTRODUCTION

1. The Office of Internal Oversight Services (OIOS) conducted an audit of Capital Master Plan Project Budgeting and Financial Control. The audit was conducted in accordance with the International Standards for the Professional Practice of Internal Auditing.
2. The General Assembly, in its resolution 62/87, requested OIOS to submit to the General Assembly all of its reports related to the implementation of the capital master plan.
3. The current budget of \$1,876.7 million for the capital master plan was approved by the General Assembly by resolution 61/251 on 22 December 2006. This budget has remained the same although the strategy has changed and is proceeding with 'accelerated strategy IV' in accordance with Resolution 62/87 of 10 December 2007. Under this strategy, most United Nations employees who are currently in the Secretariat building will have to move to off site swing space until renovation works are completed in 2013.
4. Comments made by the Office of the Capital Master Plan are shown in *italics*.

## II. AUDIT OBJECTIVES

5. The main objectives of the audit were to:
  - (a) Determine whether budgetary provision is adequate, and whether remedial action has been taken to bring the budget back on track, if necessary;
  - (b) Assess the adequacy of financial planning as it applies to the capital master plan and the system for monitoring costs against budget;
  - (c) Ascertain whether management information has been adequate and acted on if necessary; and
  - (d) Ascertain if payments have been authorised, correct and timely.

## III. AUDIT SCOPE AND METHODOLOGY

6. A risk-based audit approach was adopted in the examination of capital master plan financial systems. This conforms with the general approach taken for audits conducted by the Internal Audit Division of OIOS.
  7. In the course of this audit, OIOS scrutinised documentation available in the Office of the Capital Master Plan. This included budgets, cashflows, monthly status reports, correspondence and payment documents. Senior members of the capital master plan team were interviewed and the organization and governance processes were reviewed.
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## IV. AUDIT FINDINGS AND RECOMMENDATIONS

### A. The capital master plan budget

8. The sixth annual progress report of the Secretary-General on the implementation of the capital master plan dated 9 October 2008 gives the following projected costs for accelerated strategy IV (see Table 1). OIOS has determined the variances for the period from August 2007 to September 2008 in the right hand column.

**Table 1: Capital master plan projected costs as at August 2007 and September 2008.**

(Millions of United States Dollars)

	<u>Projected Costs</u>		<i>Variance</i>
	<i>As at August 2007 (1)</i>	<i>As at September 2008 (2)</i>	
Construction	964.625	1 032.900	68.275
Professional fees, management costs	234.508	280.340	45.832
<b>Subtotal, renovation</b>	<b>1 199.133</b>	<b>1 313.240</b>	<b>114.107</b>
Office swing space	254.534	273.441	18.907
Library swing space	16.636	2.714	(13.922)
Conference swing space	118.688	149.540	30.852
<b>Subtotal, swing space estimate</b>	<b>389.858</b>	<b>425.695</b>	<b>35.837</b>
<b>Total cost for renovation and swing space</b>	<b>1 588.991</b>	<b>1 738.935</b>	<b>149.944</b>
Contingency/escalation	477.819	235.236	(242.583)
<b>Total project</b>	<b>2 066.810</b>	<b>1 974.171</b>	<b>(92.639)</b>
<b>Approved budget</b>	<b>1 876.700</b>	<b>1 876.700</b>	
<b>Variance against approved budget</b>	<b>190.110</b>	<b>97.471</b>	<b>(92.639)</b>

9. The overall cost projection at the time of the audit (September 2008) was for an over-expenditure of \$97.47 million, and this represented a \$92.64 million reduction from the \$190.11 million over-expenditure that was forecast in the previous year.

10. The reasons for the variances were discussed with the consultant programme manager and the following explanations were received:

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a) Pricing had been subject to construction cost inflation for the period under review. For example, the cost of some metals had risen substantially. (It is hoped that some prices may now stabilize or fall back, given the current volatility of the market).

b) There had been some changes in scope necessitating redesign. For example, the size of the North Lawn Conference Building had been increased. Also, some of the redesign work had been required because of the adoption of the accelerated strategy, and some resulted from the value engineering exercise.

c) The cost savings related to library swing space were achieved by retaining the library on campus, instead of renting and fitting out alternative accommodation.

11. OIOS observes that the ability to keep expenditures within budget will depend greatly on the adequacy of the contingency/escalation provision. The basis for estimating the contingency/escalation provision as at September 2008 is by adding 20 per cent of future expenditures to 5 per cent of costs that have already been committed. OIOS discussed this with the consultant programme manager and considers it reasonable at this stage of the project, but it will need to be kept under review as the project proceeds. This will enable the basis for calculating this provision to be further refined with the benefit of experience gained.

12. OIOS considers that the financial information presented in the annual progress reports to the General Assembly on the implementation of the capital master plan would benefit by a brief explanation of cost variances (along the lines of paragraphs 9 and 10 above).

#### **Recommendation 1**

**(1) The Office of the Capital Master Plan should include a brief explanation of cost variances in the Secretary-General's annual progress reports to the General Assembly on the implementation of the capital master plan.**

13. *The Office of the Capital Master Plan accepted recommendation 1 and stated that a brief explanation of cost variances would be included in the Secretary-General's next annual progress report to the General Assembly. Recommendation 1 remains open pending OIOS review of the annual progress report submission to the 64<sup>th</sup> session of the General Assembly.*

#### **Actions taken to bring the capital master plan back within budget**

##### Value engineering

14. In the fifth annual progress report on the implementation of the capital master plan (A/62/364) it was stated that efforts would be made to identify changes in the design work that would provide opportunities to reduce costs in a

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way that does not compromise quality or functionality, the process known as value engineering.

15. A value engineering exercise was commenced in December 2007 and extended over a three-month period. The resultant opportunities for value engineering are being incorporated into the design and it is estimated that savings will be approximately \$100 million. These savings have been incorporated into the projected costs as at September 2008 in Table 1 above. Other opportunities for reducing costs will be identified as the capital master plan proceeds, but there will be a limit to the cost reductions that can be achieved by value engineering. There is also a risk that applying value engineering too rigorously could impact adversely on the planned functionality or whole life costs of the building. Value engineering will be the subject of another OIOS internal audit assignment to be conducted in the near future.

#### Voluntary donations from Member States

16. Some Member States have expressed an interest in providing donations beyond their assessed contribution to the capital master plan budget. The Office of the Capital Master Plan is well advanced in preparing a policy in consultation with the Office of Legal Affairs. The basic concept is that a donor country could contribute to the design of rooms or 'donor areas', and the donation would be recognized on a plaque. Alternatively, a donor country may wish to contribute to support a 'green' or sustainable feature. The proposed policy has been brought to OIOS' attention and it is considered a very positive initiative. The Office of the Capital Master Plan proposes to seek the Secretary-General's approval and to send invitations to all Permanent Missions. Early implementation of the proposed action would assist the Office of the Capital Master Plan with scheduling and financial planning.

#### **Recommendation 2**

**(2) The policy related to voluntary donations from Member States should be fast-tracked by the Office of the Capital Master Plan and the Under-Secretary-General for Management so that the Secretary-General's approval can be sought as soon as possible. Invitations should thereafter be sent to all Permanent Missions expeditiously.**

17. *The Office of the Capital Master Plan accepted recommendation 2 and stated that the Permanent Missions will be informed as soon as the donation policy is approved by the Office of Legal Affairs and the Controller. Planned implementation is March 2009.* Recommendation 2 remains open pending OIOS review of the progress made.

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### Voluntary donations from other organisations

18. The possibility of raising voluntary donations from other organizations was also explored. However, the Office of Legal Affairs has advised of concerns regarding the possible use of the United Nations name and emblem for commercial purposes, and this option has not been pursued.

### **The climate of uncertainty**

19. Construction will be accomplished through the use of around 30 guaranteed maximum price contracts between the United Nations and the construction manager. As at October 2008, there were still a number of these contracts where bids had not been received. Therefore, there is still uncertainty as to whether the remaining bids will be over or below budget. The Office of the Capital Master Plan advised that the bids so far received had not exceeded the predetermined estimates, and that it is hoped that this will remain the case. There is also a possibility that the capital master plan may benefit from the current downturn in the market. Prevailing conditions are such that trade contractors have an incentive to be competitive in their bidding, and the United Nations may also benefit from being seen by trade contractors as a low risk in terms of settling its obligations.

20. A risk register is maintained and kept under review within the Office of the Capital Master Plan in an attempt to minimize the possibility of risks becoming events. Nevertheless, the complexity and lengthy duration of the capital master plan increase the risk that it could be impacted by unforeseen events. Such events could cause increased costs and so counter the efforts made to deliver the project within the approved budget.

21. OIOS recognizes the efforts made by the Office of the Capital Master Plan, but maintains its opinion given in the report on the comprehensive audit of the capital master plan (A/63/266) that to bring the capital master plan back within budget will be a major challenge.

### **B. Monitoring and controlling the capital master plan budget.**

22. The consultant programme managers produce a monthly technical report that presents more detailed CMP budget status and projections in graphical and tabular formats. These reports:

- (a) Identify cost variances.
- (b) Display schedule information and variances from the baseline schedule, including Gantt charts.
- (c) Outline project reports for the individual contracts.
- (d) State forthcoming goals.

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(e) Detail procurement actions.

23. However, the monthly reports provide no clear comparison between budgeted costs and actual costs over time, and projected into the future. As presented, the format of the monthly status reports does not readily allow for a quick assessment of overall project performance. However, the Office of the Capital Master Plan does have all the data that is required for such an assessment to be made. 'Earned Value Analysis' is a method used to measure and communicate project performance by taking into account the work completed, the time taken, the budget, and the costs incurred to complete that work. Information produced as a result of this technique can be displayed graphically and projected to the planned completion date of the project. This enables project progress to be easily reviewed, and aids control and decision-making by senior management. OIOS is aware of a number of projects where the use of earned value analysis has been used effectively, and believes it should be applied to help monitor and control the capital master plan. More information regarding earned value analysis is presented in Annex 2.

**Recommendation 3**

**(3) The Office of the Capital Master Plan should supplement existing management information by monitoring project progress against 'earned value.' Graphical information in the form of 'earned value analysis' could assist in control and decision-making, as well as informing all levels of management of project progress.**

24. *The Office of the Capital Master Plan accepted recommendation 3 and stated that the consultant programme managers will include variances between the budget and actual expenditure in terms of value and schedule in their monthly report. Planned implementation is March 2009. Recommendation 3 remains open pending OIOS review of the planned revisions to the monthly reports.*

**C. Financial Planning as it applies to the capital master plan.**

25. The Office of the Capital Master Plan employs consultant programme managers, Gardiner and Theobald Inc. who prepare the overall project cost estimates and programmes that are revised annually. The consultant programme managers' project cost estimates for the forthcoming biennium are incorporated into a comprehensive biennial budget proposal that is prepared by the CMP's Finance and Budget Officer. This budget includes all costs for contractual services, operating expenses, staffing and other costs, and is submitted to the Office of Programme Planning, Budget and Accounts to support the CMP's request for the budget allotment.

26. Projected expenditure year-by-year up to the end of the project is estimated annually and entered into a spreadsheet format. This supports the higher level information given in the annual progress reports of the Secretary-

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General to the General Assembly. As previously stated, there are still a number of the guaranteed maximum price contracts where bids have not yet been received and this adds to the uncertainty inherent in the financial planning process. In OIOS' opinion, the graphical presentation of earned value advocated in recommendation 3 will assist in project monitoring and will highlight events that impact the project significantly.

**D. Payments have been accurate and well controlled.**

27. Invoices are routed to delegated staff members for review, clearance and approval. Invoices with a technical or contractual content are subject to scrutiny by the consultant programme managers before being certified for payment by the Chief, Design and Construction and Chief, Administration and Communication. Controls include adequate separation of duties and detailed checks prior to invoices being authorized and passed to the Office of Programme Planning, Budget and Accounts for payment. OIOS found the procedures for making payments to be adequately documented and well understood by the staff.

28. OIOS tested invoices and payments to two major design firms, hereafter referred to as Supplier A and Supplier B. No instances of over-payment or inappropriate payment were detected. Examination of documentation (hard and soft copy) evidenced an effective level of checking and rigour on the part of the Office of the Capital Master Plan. The following observations are made:

**Supplier A**

29. The supplier (a designer) had submitted some invoices up to seven months late. This is poor performance from the supplier. The contracts do not specify a target submission date and 'chasing' invoices is not generally favoured by finance staff. However, OIOS recognizes that late invoices increase the risk of errors being made.

30. The supplier had submitted some invoices for deliverables that had not yet been received. The consultant programme manager advised OIOS that it was likely that the supplier's finance staff submitted invoices in accordance with the schedule, and sometimes failed to check with technical staff whether deliverables had actually been achieved. These payments were held back as a result of scrutiny and challenge by the consultant programme managers and members of the Office of the Capital Master Plan finance staff.

**Supplier B**

31. One invoice valued at \$12,101.59 had been held back as it was submitted prior to services being performed.

32. A duplicate billing of \$9,934.00 had also been detected and held back by Office of Capital Master Plan.

33. Appropriate action was taken by the Office of the Capital Master Plan for all the individual instances related to Suppliers A and B. In OIOS' view, a letter

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needs to be sent to Supplier A emphasizing that invoices should be timely and accurately reflect the services that have been rendered.

34. Payments is one of the areas that will be kept under regular review as a part of internal audit coverage of the capital master plan. OIOS highly values the interchange of information that has taken place between staff of the Internal Audit Division and the Board of Auditors. In this way OIOS has been able to complement, rather than duplicate the Board of Auditors' efforts.

**(4) Recommendation 4**

**The Office of the Capital Master Plan should write to Supplier A emphasizing that invoices should be timely and accurately reflect the services that have been rendered.**

35. *The Office of the Capital Master Plan accepted recommendation 4 and stated that these issues are highlighted and discussed with the Chief, Design and Construction and the consultant programme managers during weekly invoice meetings. The process of informing vendors of inaccuracies in billing are currently via email and/or part of vendor meetings. Based on this audit recommendation, the Office of the Capital Master Plan will formally inform vendors of any inaccuracies in their invoices, based on feedback from the consultant programme managers.*

36. Based on the action taken by the Office of the Capital Master Plan, recommendation 4 has been closed.

## **V. ACKNOWLEDGEMENT**

37. We wish to express our appreciation to the Management and staff of the Office of the Capital Master Plan for the assistance and cooperation extended to the auditors during this assignment.

## STATUS OF AUDIT RECOMMENDATIONS

Recom. no.	Recommendation	Risk category	Risk rating	C/O <sup>1</sup>	Actions needed to close recommendation	Implementation date <sup>2</sup>
1.	The Office of the Capital Master Plan should include a brief explanation of cost variances in the Secretary-General's annual progress reports to the General Assembly on the implementation of the capital master plan.	Financial	Medium	O	Explanation of cost variances to be included in the next annual progress report to be submitted to the 64 <sup>th</sup> session of the General Assembly.	December 2009
2.	The policy related to voluntary donations from Member States should be fast-tracked by the Office of the Capital Master Plan and the Under-Secretary-General for Management so that the Secretary-General's approval can be sought as soon as possible. Invitations should thereafter be sent to all Permanent Missions expeditiously.	Financial	Medium	O	Permanent Missions to be informed after the donation policy is approved by the Office of Legal Affairs and the Controller.	March 2009
3.	The Office of the Capital Master Plan should supplement existing management information by monitoring project progress against 'earned value.' Graphical information in the form of 'earned value analysis' could assist in control and decision-making, as well as informing all levels of management of project progress.	Financial	Medium	O	The consultant programme managers are to include variances between the budget and actual expenditure in terms of value and schedule in their monthly report.	March 2009
4.	The Office of the Capital Master Plan should write to Supplier A emphasizing that invoices should be timely and accurately reflect the services that have been rendered.	Financial	Medium	C		Implemented

1. C = closed, O = open

2. Date provided by [client] in response to recommendations. [Insert "Not provided" where date is not provided; "Implemented" where recommendation is closed; (date) given by the client.]

## EARNED VALUE ANALYSIS

1. Earned value analysis is a technique that can be used as the basis for performance measurement on a project. It is used to measure and communicate project performance by taking into account the work completed, the time taken and the costs incurred to complete that work. It measures 3 key elements of the project; planned cost, earned value and actual cost.

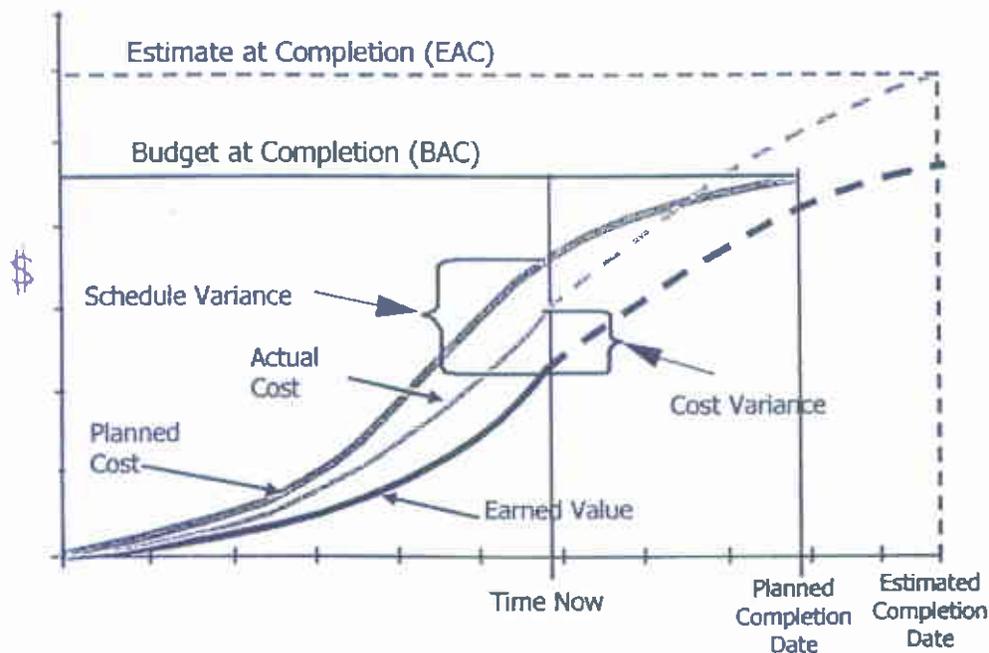
**Planned cost:** This is the value of work that was planned to have been completed at a given point in time. It indicates the budget for the cumulative scope at a given point in time.

**Earned value:** Earned value is calculated by multiplying the actual (physical) percentage complete by the original budget. This is the actual value of work done at a given point in time. It indicates the proportion of the budget that should have been spent on achieving it.

**Actual cost:** This is the actual cost of the work done and may vary from the budgeted amount.

2. These 3 different cost concepts can be represented graphically (\$/time) and typically follow the S-curve usually associated with projects. This format may assist the CMP team in project monitoring and control and would show graphical progress against a baseline schedule and budget. Variances against schedule and budget could readily be identified. Additionally, it would assist in explaining progress to the highest level of management and other interested parties. Also, it would necessitate the forecasting of costs over the whole duration of the project.

### Graphical Representation of earned value



(Real life graphs are unlikely to show the theoretically smooth curves illustrated in Annex 2).

**Footnote:** Information on Earned Value Analysis was extracted from training materials prepared by Project Management Professional Learning Limited, UK, with the kind permission of the Company Director.

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3. There are difficulties in producing earned value analysis and these include the accurate calculation of the 3 cost concepts that are outlined above. For example, suppliers submitting invoices late can complicate calculations and disputes can take a long time to resolve. In the case of a complex project such as the capital master plan it is to be expected that estimates will become firmer as time passes and a greater number of the guaranteed price contracts are signed. However, OIOS is aware of a number of projects where the use of earned value analysis has been used with great effect.

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