



**N A O**  
**National Audit Office**  
Malta

# Progress Report

## Improving the Management of Road Projects



This report has been prepared under sub-paragraph 9(a) of the First Schedule of the Auditor General and National Audit Office Act, 1997 for presentation to the House of Representatives in accordance with sub-paragraph 9(b) of the said Act.

**J. G. Galea**  
**Auditor General**

**National Audit Office**  
**September 2005**

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## **Progress Report**

### **Improving the Management of Road Projects**

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*September 2005*



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## Abbreviations

<b>ADT</b>	Awtorita Maltija dwar it-Trasport / Malta Transport Authority
<b>BOQ</b>	Bill(s) of Quantities
<b>CEO</b>	Chief Executive Officer
<b>CSD</b>	Corporate Services Directorate
<b>DAS</b>	Departmental Accounting System
<b>DoC</b>	Department of Contracts
<b>ERDF</b>	European Regional Development Fund
<b>EU</b>	European Union
<b>FBOQ</b>	Final Bill(s) of Quantities
<b>FIDIC</b>	Federation Internationale Des Ingenieurs Conseils
<b>GCC</b>	General Contracts Committee
<b>NAO</b>	National Audit Office
<b>NID</b>	Network Infrastructure Directorate
<b>PPCD</b>	Planning and Priorities Coordination Directorate
<b>PAC</b>	Public Accounts Committee
<b>RD</b>	Roads Department / Roads Directorate
<b>TMD</b>	Traffic Management Directorate
<b>UK</b>	United Kingdom
<b>VAT</b>	Value Added Tax

# Executive Summary

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## Executive Summary

### Executive Summary

1. On June 30, 2004 the National Audit Office (NAO) was requested by the Public Accounts Committee (PAC) to carry out, within a year from then, a follow-up study on the progress made by the Malta Transport Authority (ADT) in implementing measures that improve the method by which road construction and maintenance projects are planned and managed. This request was made in the wake of an NAO report tabled in the House of Representatives by the Auditor General in January 2004.
2. In brief, the report of January 2004 had focused on eleven road projects undertaken by the then Department of Roads (RD) between 1998 and 2002. The report had found:
  - critical inadequacies in the planning and design of road projects;
  - limitations by the utilities to submit sufficient information to RD about their infrastructure;
  - inaccurate bills of quantities in the tender documentation;
  - shortcomings and inconsistencies in the tender evaluation process;
  - weaknesses in project management and RD's internal control processes;
  - high incidences of unjustified time and cost variations; as well as
  - non-abidance by RD with established public procurement procedures.
3. This report addresses progress made by ADT to date in these areas and is structured in four main parts, namely issues related



to planning and design, tender documentation, technical evaluation and project management.

4. NAO observed that a number of improvements have been made by the Authority in the past year in terms of organisational restructuring, the application of adequate financial controls and the planning and management of major projects. However, limitations remain with respect to in-house verification of submitted quality tests, overall handling of smaller-scale projects, and the on-site abidance by contractors to traffic management regulations. NAO appreciates that some improvements are difficult to implement effectively within one year and that the Authority is undergoing a process of change likely to require additional time.
5. NAO confirmed that ADT has not yet formalised the proposed policy documents on project management and procurement respectively. These documents were the backbone of the proposed action plan highlighted in the Authority's letter to the PAC in July 2004. However, the said letter failed to provide clear, specific and measurable targets and timescales on the issue of these documents and the implementation of required changes. That said, a number of new practices concerning project management are gradually being introduced. These changes are highlighted in Parts 3 and 6 of the report.
6. The main findings of the study are:
  - a. *Restructuring of the Directorate:* Since July 2004, ADT's renamed Network Infrastructure Directorate (NID) has been re-organised and responsibility for the planning, coordination, implementation and monitoring of groups of projects has been assigned to individual managers and assistant managers. NID is also outsourcing considerable project management duties for large projects to external engineers, thus supplementing its capacity to manage several projects concurrently.
  - b. *Quality assurance:* NAO confirmed that the Directorate still lacks its own in-house laboratory and it was noted that the procured laboratory equipment has been stowed away. Although quality tests are being regularly submitted by contractors, the Authority is constrained by its limited resources on how far it can independently verify the submitted results. This critical concern was also highlighted

in June 2004 in a report drawn up by the Authority's external consultants.

- c. Documented procedures:* NAO noted that a number of the current practices and new measures are not adequately supported by formal documented procedures and checklists in order to ensure that all the required steps and administrative practices are applied consistently in every project. This is leading to an inconsistent application of certain measures, thereby increasing risks of omissions, delays, variations and inconveniences. The internal monitoring and enforcement of these new practices also needs to be strengthened in order to ensure that any launched improvements are consistently and effectively implemented by staff, external supervisors and contractors during the course of the projects.
- d. Planning and design activities:* The Directorate is evidently assigning more resources and importance to the larger projects and is adopting a minimalist approach with the minor ones. Management attributes this approach to the need to address the higher risk of large scale projects first. The project planning process for large-scale projects has been strengthened, with a number of key measures being applied. It is, however, important that the Authority continues to build on these foundations and apply the appropriate practices in a consistent manner, including projects financed through the Consolidated Fund. In the case of small scale projects, NAO noted that the main documents required for the tendering stage are being compiled and project managers are being appointed from the outset. However, certain limitations and inconsistencies remain in the preparation for these projects and NAO found few records in the reviewed files on the planning activities carried out.
- e. Coordination with utilities:* NAO noted that problems with utilities still exist in relation to timely response to ADT's notifications, the provision of accurate information on the location and requirements, and sufficient supplies. NID's management has indicated that relations with utilities have improved and that these problems, although they still persist, are being handled in a more collective manner. It was also reported that the concurrent implementation of numerous

road projects is stretching some of the utilities' capacity and that this can also be leading to delays.

- f. Abidance to all tender conditions:* Efforts are being made by the Authority to enforce contract conditions by compelling contractors to re-do unsatisfactory works and by withholding payments until quality assurance conditions are met. Contracts have also been dissolved in two observed cases. However, the system needs to be formalised and any action taken is adequately recorded and consistently carried out.
- g. Authority's technical evaluation of tenders:* NAO observed that insufficient progress has been achieved in the evaluation of smaller scale projects. New practices are however being introduced by the Authority for the evaluation of EU-funded tenders. These provide the opportunity for the establishment of a more robust and transparent evaluation process.
- h. Appointment of external project supervisors for major road projects:* NAO is concerned that the current arrangements regarding the engagement of external project supervisors may be leading to unnecessary risks arising from potential conflict of interest. These engineers, nominated by the contractors, are delegated responsibility for project management on behalf of ADT. Furthermore ADT has had problems in ensuring that some of these supervisors fulfil all their expected duties.
- i. Project management:* There have been improvements, since the last report, in areas related to the overall management of major projects, although a number of shortcomings related to the enforcement of contract conditions, quality assurance and coordination amongst stakeholders remain. The management of smaller projects is still characterised by inconsistencies in overall supervision, with some projects being better coordinated and organised than others. Efforts are however being made by the Authority to address these issues.
- j. Traffic management:* Although traffic management plans are being drawn up in the case of projects that have an impact on major thoroughfares, the Authority is failing to ensure that the external supervisors and contractors

consistently abide to traffic management and safety regulations and guidelines. There have been several instances of persistent infringement of traffic regulations and safety hazards not being dealt with effectively, despite regular inspections and notifications by the Traffic Management Directorate (TMD) and warnings by the Authority.

- k. Adequate attention to third-party interests:* Communication and meetings with the local community, such as affected neighbouring localities and businesses are only being carried out in exceptional instances. It was noted in the reviewed projects that in many cases contact was being established when the issues at hand escalated.
- l. Payment procedures:* Controls over the verification and payment for works carried out have been strengthened by the Authority through the enforcement of certification and authorisation procedures.
- m. Approval of cost variations:* The required involvement of the Department of Contracts (DoC) in the approval of variations (additional works, quantities or rates) beyond the regulatory five per cent threshold is still not a fully established practice within the Authority. ADT has cited the nature and urgency of works as one of the main reasons why approvals were being sought after physical works had been carried out. It was also noted that the Authority has made progress in ensuring that cost variations are kept within reasonable levels. Our check was restricted to projects funded through the National Budget, as the projects financed through the Fifth Italo-Maltese Protocol were found to be outside the scrutiny of the DoC. These contracts were evaluated by an Adjudicating Board appointed by the then Ministry of Finance and Economic Affairs.
- n. Time variations:* Project delays are still being experienced in some projects. However, it is important to point out that there has been an improvement in delivery periods.

## Key recommendations

8. NAO recommends that:

### *Overall system and culture*

- a.* The policy documents on project management and procurement procedures are finalised and fully integrated

into ADT's systems as soon as practically possible. Clear, specific and measurable targets and timescales should be set for the finalisation of required documentation and the implementation of revised processes. The procedures should address all the shortcomings and concerns identified in this report.

- b.* The approaches that have been introduced over the past year, partly dictated by the pressure of financing arrangements and to new initiatives taken by senior management, are formalised and applied uniformly. Continuous improvements and greater professionalism are essential for the development of a Directorate. There should also be greater emphasis on improving ADT's response to social and environmental issues.
- c.* The maintenance of records and working papers is improved, in order to ensure greater accountability and a better audit trail of actions and decisions taken.

#### *Quality Assurance*

- d.* Immediate action is taken to review the robustness of the quality assurance system being adopted by the Authority. The option of utilising existing in-house laboratory facilities should also be fully explored.

#### *Coordination with utilities*

- e.* The level of coordination between the Authority and the utilities is maintained and strengthened in order to further facilitate the identification of solutions to some of the more pressing problems such as inaccurate information on the location of underground services, supply shortages and delays arising from capacity limitations.

#### *Enforcement*

- f.* All applicable sanctions, such as penalties, withholding of payments and blacklisting, are to be consistently resorted to by ADT and the DoC. A strong approach needs to be maintained in order to compel defaulting parties to comply at first instance with all contract conditions.

### *Planning and management of projects*

- g.* The key improvements that have been adopted in the planning and management of major projects are adopted appropriately and consistently to all the projects undertaken by the Authority. Inconsistencies and shortcomings related to small scale projects should be immediately addressed through the establishment of structured administrative and supervisory processes.

### *Tender documentation*

- h.* Improvements made to the tender documentation of major projects are also applied to the tender documents of smaller scale projects.

### *Evaluation of Tenders*

- i.* The undocumented procedures and assessment criteria for the evaluation of works tenders are immediately reviewed to address the weaknesses identified in this report.

### *Traffic Management*

- j.* The monitoring being carried out by the TMD should be maintained and further strengthened. Stiff penalties and other corrective measures should be imposed to deal effectively with persistent infringements.

### *Internal audits and review*

- k.* The internal audit function within the Authority plays a more active role in the monitoring and review of project management and procurement policies of the Authority.

### *Human Resourcing*

- l.* A comprehensive audit is undertaken by the Authority's Human Resources function to assess the manpower needs of the NID, as well as the skills and competencies required to fulfill current and future commitments.

# Introduction

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## Part 1 - Introduction

### Background

- 1.1 The National Audit Office (NAO) conducted a performance audit during 2002 and 2003 to assess the robustness of the public procurement system for substantial contracts, taking eleven road construction and restoration contracts issued over a five-year period (between 1998 and 2002) as case studies. A report on the findings and conclusions of this audit was tabled in the House of Representatives by the Auditor General in January 2004. The audit had addressed various aspects of road projects, including planning, the tendering process, contract management and control. A summary of the main conclusions of this report is presented in **Part 2**.
- 1.2 Between April and June 2004, the Public Accounts Committee (PAC) convened four meetings to discuss the contents of the report. In the meeting of 30 June, 2004 the Auditor General was instructed by the PAC to prepare a report on the progress made by the Malta Transport Authority (ADT) within a year from then. ADT was to implement measures that improve the method by which road construction and maintenance projects are managed. The Chief Executive Officer (CEO) of the Authority also sent a letter dated July 14, 2004 to the Chairman of the PAC, outlining the actions already taken and those being taken to improve the systems.
- 1.3 The letter, produced in **Part 2** of this report, mentioned the formalisation of two policy documents on project management and procurement respectively. These documents were considered the backbone of a proposed action plan. However, the letter failed to provide clear, specific and measurable targets and timescales on the issue of these documents and implementation of required changes. The document on procurement has been finalised and is awaiting approval from the Authority's Board of Directors. No timeframes have however been set for the drafting of the document on project management. In the meantime, a number of new practices concerning project management are gradually being introduced as will be highlighted throughout the report.



## Scope and Methodology

- 1.4 During the period April to June 2005, the NAO assessed the progress achieved by ADT, in the wake of the NAO report published in January 2004 and the PAC meetings held between April and June 2004. As in the case of the first report, the follow-up study focused on the management of road projects estimated to cost Lm20,000 or over.
- 1.5 The basis of NAO's analysis was the measures highlighted in the letter of the Authority to the PAC of July 14, 2004 and the wider conclusions and recommendations outlined in the NAO Report of January 2004.
- 1.6 NAO's examination was limited to activities carried out by ADT between July 2004 and April 2005 although, where applicable, due consideration was given to any new developments before or after this period.
- 1.7 The practices examined in this study are:
- The planning and design processes
  - The tender documentation for road projects
  - The technical evaluation of tenders carried out by ADT
  - The project and contract management activities undertaken during works
- 1.8 Further details of the methodology adopted are described in **Appendix A**.
- 1.9 During the reviewed period three different types of road projects were being handled by ADT, namely:
- Road projects funded under the Fifth Italo-Maltese Protocol;<sup>1</sup>
  - Road projects funded through the Consolidated Fund of the National Budget; and
  - Road projects that will be co-financed through the European Regional Development Fund and the Cohesion Fund.<sup>2</sup>

## Types of road projects

<sup>1</sup> The total value of the Italian Protocol projects, initiated in 2004 and scheduled to be finalised by September 2005, is of €30 million.

<sup>2</sup> The value of the projects to be co-financed through the European Union (Budget 2000-2006) is of €21.8 million

## Network Infrastructure Directorate

- 1.10 The section within the Authority responsible for road construction and maintenance projects is the Network Infrastructure Directorate (NID). This Directorate is accountable for the establishment and application of national design and construction standards and specifications for all works in roads; the further development, upgrading and restoration of the country's road network to such standards; and the provision of the adequate maintenance of the network. In 2004, NID replaced the Roads Directorate which had in turn succeeded the Department of Roads (RD), when ADT was formally established in 2003.
- 1.11 Since July 2004, NID has continued to improve its internal structures and management. Over the past year, the Directorate has been re-organised and a new post of Assistant Manager was created in February 2005 to support the Managers. Both posts are occupied by qualified architects. Moreover, a number of ADT's architects are also qualified with a Masters degree in road engineering.
- 1.12 Each manager and assistant manager has been assigned groups of projects for which they are responsible to ensure that planning, coordination, implementation, monitoring and achievement of delivery dates. The number of architects engaged with the NID has increased since July 2004, from eight in July 2004 to eleven in June 2005, apart from the Director. A further four architects are to be recruited. Another important development has been the increase in the number of Quantity Surveyors. The lack of Quantity Surveyors to carry out surveying works, field and drafting tasks related to the development and construction of road works was a key concern in 2004. Through secondments or recruitment, the number of Quantity Surveyors / Field Officers has increased from three in July 2004 to six in July 2005. A further call for applications for an additional five officers has also been issued.
- 1.13 The Authority has embarked on a long-term plan to work more closely with the University of Malta so that future graduates will be given the opportunity to gain experience (with the Authority). This is expected to enhance the current staff complement.
- 1.14 The Directorate also outsources considerable project management duties for large projects to external engineers, thus supplementing its capacity to manage several projects concurrently. These engineers act as project supervisors as per FIDIC (*Federation Internationale Des Ingenieurs-Conseils*) rules and conditions.

1.15 A key concern however remains. It was noted that NID's Road Testing Laboratory that was procured and set up in 2001 (but was never utilised) is still unmanned. The equipment has been stowed away and management has expressed concerns on its operability due to long period of idleness.

1.16 Other Directorates within the Authority directly or indirectly linked to the planning and management of road projects are the CEO's Office, the Corporate Services Directorate(CSD), the Traffic Management Directorate (TMD) and the Internal Audit function.

(a) The role of the CSD is still being developed. The recent recruitment of an Accountant to focus on capital projects has been undertaken in order to strengthen administrative and financial control processes. Additionally, NAO noted that more administrative support can be provided by this Directorate in order to relieve NID's technical staff from essential administrative duties.

(b) The TMD advises, monitors and notifies the parties concerned on traffic management arrangements, but does not have the legal mandate to enforce traffic management regulations. Recently, a new post of Officer was created within the Directorate to visit sites and check whether traffic arrangements are being implemented and notify involved parties accordingly.

(c) Since July 2004, the Internal Audit function has not carried out any audits or checks on the operations of NID. It was, however, involved in the drafting of a corporate document that lays down the policies and procedures to be observed during the procurement process. The approved Internal Audit plan also envisages compliance audits on capital payments and project management in late 2005 and 2006.

1.17 The current organisational structure of ADT and the staff complement of NID are presented in **Appendix B**.

1.18 The rest of the report is structured as follows:

**Part 2** NAO's Conclusions (January 2004 Report) and ADT's letter to the Public Accounts Committee (July 2004)

**Part 3** Planning and Design

## Other Directorates within the Malta Transport Authority linked with road projects

## Structure of the Report

<b>Part 4</b>	Tender Documentation
<b>Part 5</b>	Technical Evaluation of Tenders
<b>Part 6</b>	Project and Contract Management
<b>Appendix A</b>	Methodology
<b>Appendix B</b>	Organisational Chart - Malta Transport Authority

**NAO's Conclusions of the  
January 2004 Report and  
ADT's letter to the Public  
Accounts Committee  
(July 2004)**

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## Part 2 – NAO’s Conclusions of the January 2004 Report and ADT’s letter to the Public Accounts Committee (July 2004)

### NAO’s conclusions January 2004 Report

- 2.1 The report of January 2004 on the eleven road projects, carried out by the then Department of Roads (RD) between 1998 and 2002, had identified the following shortcomings:

#### *Planning and design*

- RD had failed to undertake the required planning and design for the contracted road projects in the most effective and timely manner. The audit had concluded that many important decisions were postponed till after the award of tenders or during works. In some of the studied cases, RD had opted to leave out complete parts of the project planning process, some of which were critical for effective contract management and control. There were also cases of site investigations and preparatory work being left out in order to accelerate the publication of the call for tenders. Moreover, initial proposals and estimates presented by the Department for authorisation were inaccurate, leading to revisions during adjudication and work-in-progress to incorporate changes in demand and construction methodologies. In this study it was found that the incoherent planning and design processes that had been applied by RD at that time had led to time and cost variations during the lifetime of the individual projects.
- The utilities were often unable to submit to the RD critical information of their infrastructure, thus leading to frequent changes during works and significant cost and time delays. These shortcomings had a greater impact on projects where the utilities had significant involvement in the works being undertaken.

#### *Tender Documentation*

- Due to inadequacies in RD’s planning and design processes, the tender documentation had included inaccuracies or insufficient information. Moreover, some of the contract clauses were ineffective

as it was found that in some cases the RD had not taken action to enforce contract conditions and had waived prescribed sanctions when payments were made for delivered works.

### **Technical Evaluation**

- The Technical reports of the then RD had not delved deeply into the strengths and weaknesses of each bid and did not present effective technical assessments on the submitted offers. Moreover, the audit had found limitations and inconsistencies in the procedures followed.

### **Project and Contract Management**

- The RD did not have an effective project management approach based on sound quality assurance and internal control practices. Furthermore, the Department did not have the resources to monitor and enforce the contract conditions and the Road Testing Laboratory set up in 2001 was unmanned due to an alleged shortage of suitably qualified personnel. The RD had managed each project in an unstructured and informal manner, leading to inconsistencies in approach. A number of recurring problems were observed including lack of designs and drawings; delays in instructions during works; lack of timetables; inadequate project management documentation; development permits being requested during works; unstructured coordination between the architect-in-charge, the contractor and the utilities; frequent and improper handovers from one project manager to another; scarce evidence of regular surveillance of contractors by RD; the files did not contain all the required tests that were expected from contractors; and as-built design drawings were not being compiled. Moreover, no evidence was found that penalties had been levied for late delivery of works.
- There were significant weaknesses in the internal controls at the RD regarding the approval of invoices and payments. These had included inconsistencies in the documentation and authorisations required; weak segregation of duties; retention money had not been withheld; payments had been made prior to the approval of variation requests; and there was failure on the part of RD to request the mandatory fiscal receipt once the payments have been effected.
- There were a considerable number of cases of variations in time and cost that were not necessarily caused by unexpected conditions or approved additional works, but rather by RD's inability

## **NAO's conclusions January 2004 Report (continued)**

## NAO's conclusions January 2004 Report (continued)

to successfully minimise and prevent the risks that led to these variations. The audit had found that variations were being caused by inadequate planning, design changes, late instructions and weak project management. The most significant effects were delays in the commissioning of the projects, higher costs, community dissatisfaction with protracted traffic delays and litigation.

- The RD on several occasions had also not abided with the procedures on requests for variations that are established by national legislation and presented final bills of variations to the Department of Contracts (DoC) as a *fait accompli*.
- End-users had also indicated that the overall projects' effectiveness was still being undermined by reported inconveniences, such as incomplete embellishment works, road surface imperfections, foul smell from ineffective drains and flooding after heavy rainfall, as well as persistent problems pertaining to street levels, road safety and traffic accidents.

- 2.2 The letter sent by ADT to the Chairman of the Public Accounts Committee (PAC) in July 2004 is being reproduced on the following pages.



Copy of ADT's letter to the Public Accounts Committee dated 14 July 2004



**Malta Transport Authority**

Dr Charles Mangion  
Chairman  
Public Accounts Committee

14<sup>th</sup> July 2004

Dear Sir,

**RE: Performance audit on the Management of Procurement  
Report on recommendations and actions**

As discussed in the last Public Accounts Committee meeting, please find below the actions that we have already taken, together with those actions that we are currently taking to improve the method by which we manage our roads construction and maintenance projects.

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Further to the recent introduction of the Malta Transport Authority, we have set up the Corporate Services Directorate (CSD) to manage all Financial, Administrative, Human Resources, IT, and Legal matters including the management of procurement. The idea is for the Roads Directorate (RD) to be able to focus on its core activities (i.e. regulating the development and maintenance of the arterial and distributor road network) rather than on administrative and financial issues.

Since January 2003, we have taken the following initiatives to strengthen our technical expertise within the Authority:

**Chairman**  
Mark Portelli  
ACCA, B.Sc. Econ. (Hons.)

**Dep. Chairman**  
Philip Inconave

**Board Members**  
Paul Cardona  
Dip. Eng., C. Eng., M. Inst. E.

Ivan Foadri  
B.A. (Hons.) Accountancy F.I.A., M.I.M., C.P.A.

Angela Gullano  
B.Sc.

**Secretary**  
Duncan Borg Myer  
B.A., LL.D. Adv. Trib. Mell. Soc. A. Mus. L.C.M.

- Recruitment of a Financial Controller, a Human Resources Manager and an Administration Manager within the CSD to take over all related activities from the RD and other Directorates;
- Appointment of a Roads Construction Manager, a Roads Maintenance & Improvements Manager, two Projects Managers, and a Planning & Design Manager within the RD to improve the efficiency of the management of our projects;
- Recruitment of another two Architects / Civil Engineers to complement our manpower;

From the office of the chief executive

public transport · traffic management · licensing & testing

Copy of ADT's letter to the Public Accounts Committee dated 14 July 2004 (continued)



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- Supporting our Architects / Civil Engineers through the completion of their specialised Masters in Roads Engineering;
- Recruitment of an Internal Controller whose main role with regards to the RD is to strengthen the internal controls and assist with the formalisation of project management and procurement policies, whilst also conducting future audits to ensure compliance with these policies.

We have also commissioned *PriceWaterhouseCoopers*, who in conjunction with our Internal Controller, have conducted a review of the procedures currently in place regarding the capital expenditure cycle of the RD from both an operational and a financial perspective. The recommendations reported by *PriceWaterhouseCoopers* and our Internal Controller, together with those made by the *National Audit Office* in their report, have been consolidated into an action plan that is currently being implemented.

This action plan includes two main areas;

- The formalisation of a Project Management Policy;
- The amendment of the Procurement Policy to suit the requirements of the RD.

#### **PROJECT MANAGEMENT POLICY**

The aim of the Project Management Policy is to standardise all procedures from the initiation of the project up to the time when the project is completed and all testing has been carried out. These procedures will take the following criteria into consideration:

- Stakeholder requirements and early consultation with third parties on long term project plans;
- Assignment of a project manager for every project with periodical reporting requirements;
- Contracting directly with independent Engineers acting as Project Supervisors as per FIDIC (Federation Internationale Des Ingenieurs-Conseils) rules and conditions;
- Contractors providing more detailed programmes of works and cash flow projections at project initiation stage;

Copy of ADT's letter to the Public Accounts Committee dated 14 July 2004 (continued)



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- Accounting for every day of delay through the requirement for adequate approvals for time variations and more realistic commencement and completion dates;
- The strict enforcement of penalties and fines;
- Seeking adequate approvals for cost variations;
- Post contract evaluations and testing. The quality assurance is also being improved through the recent development of the detailed specifications and increased site inspections.

#### **PROCUREMENT POLICY**

The Finance Unit within the CSD is amending the current procurement procedures to suit the requirements of the RD based on the recommendations made in the reports presented by the various Auditors. This involves:

- Centralising all purchases by processing them through the CSD. This includes the tendering process;
- Implementing tighter controls on the authorisation of bills of quantities, invoices, progress payments, final payments and retention payments;
- Implementing tighter controls on the collection of fiscal VAT receipts;
- Implementation of various checklists throughout the process (tender issue checklist, payment checklist, time and cost variation checklist, retention payment checklist);
- Implementation of various reports (project progress report, budget vs. actual report) to increase the financial control over this expenditure;
- Using the Departmental Accounting System (DAS) to monitor all projects from soft commitment stage (issue of tender) rather than from payment stage;
- Formation of an expenditure committee within the Authority to review all projects costing more than Lm3,000 before approval is sought.

Copy of ADT's letter to the Public Accounts Committee dated 14 July 2004 (continued)



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Apart from the above two policies, the RD is also:

- Looking into the possibility of using period contracts for maintenance works to increase the efficiency by which these projects are carried out;
- Reviewing the rates used to compile estimates through discussions with the contractors' federation. This is being done to be able to estimate projects more accurately;
- Ensuring compliance with all EU regulations that govern the management of projects funded under the structural and cohesion funds;
- Recruitment of four quantity surveyors to assist the architects with their day to day operations.

We hope that the above initiatives backed by our management's commitment, will improve the future performance of the Roads Directorate as a regulatory body responsible for the development and maintenance of the arterial and distributor road network.

Yours sincerely,

Mario Falzon  
Chief Executive Officer

# Planning and Design

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## Part 3 - Planning and Design

- 3.1 Depending on the nature and size of the proposed road project, a number of planning and design activities should be carried out by the Authority prior to the publication of tenders. The preparatory process is critical as during this stage management and technical staff should collect sufficient information to make a reliable assessment of the requirements of the project and prepare the necessary documentation and estimates.
- 3.2 Key applicable measures of the preparatory stage include:
- i. Prioritisation and identification of road projects;
  - ii. Approval for the initiation of the road project;
  - iii. Appointment of a project manager within the Network Infrastructure Directorate (NID);
  - iv. Site visits, traffic counts, site investigations, as well as the carrying out of tests and surveying works;
  - v. Decisions on the construction methodologies to be adopted;
  - vi. The formulation of designs and drawings;
  - vii. The establishment of underground services works to be carried out in and around the targeted area;
  - viii. Decisions on traffic management arrangements;
  - ix. Timely and due consideration of affected third party interests, including expropriation of land and compensation to affected parties;
  - x. The preparation of bills of quantities and estimated costs;
  - xi. Liaison with the planning authorities and the approval of development permits; and
  - xii. The estimation of project duration and timetables.

- 3.3 In the follow-up exercise of 2005<sup>3</sup>, NAO found adequate indications to demonstrate that a number of these key practices have been introduced by the Authority to address previously reported shortcomings, especially in the planning and design of major projects.
- 3.4 However these changes are not being supported by formal documented procedures and checklists in order to ensure that all the required steps and administrative practices are applied consistently in every project. This is leading to an inconsistent application of certain measures, thereby increasing risks of omissions, delays, variations and inconveniences. **Table 3.1** gives more details on ADT's current practices and elicits differences in the approach being deployed for large and small scale projects.
- 3.5 With regards to technical specifications and standards to be applied during the preparation of road designs and drawings, the Directorate has been in a better position since the publication of legal notice LN364/2003 – Road Works (Design and Construction Standards).<sup>4</sup> The audit team observed that some aspects of these standard specifications are still being compiled. In addition, new standards introduced progressively after November 2003 have still to be incorporated in these documents. Management indicated that this is an essential but time-consuming exercise that is currently not being carried out due to staff limitations.
- 3.6 From the above, NAO concluded that:
- (a) The project planning process for large scale projects has been strengthened, with a number of key measures being applied in the case of projects financed by the Fifth Italo-Maltese Protocol, the European Regional Development Fund (ERDF) and EU's Cohesion Fund. It is, however, important that the Authority continues to build on these foundations and apply the appropriate practices in a consistent manner, including projects financed through the Consolidated Fund.

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<sup>3</sup> **Appendix A** provides more details on the methodology and projects reviewed in NAO's assessment.

<sup>4</sup> LN364/2003 includes specifications and guidelines concerning:

- Road construction details, including specimen technical drawings of elements pertaining to construction (such as, drainage, ducts, earthworks, pavements, kerbs, footways, paved areas, signs, road markings, road lighting and walls);
- Principles of geometric design for roads and bridges;
- Standard preparation of design documents;
- Definitions and terminologies; and
- Methods for measurement for road works (that is, the compilation of a Bill/s of Quantity).

- (b) In the case of small scale projects, the documents required for the tendering stage, namely the endorsement of the Chief Executive Officer (CEO), Tender Originator's Form, Ministerial Authorisation, site map and the estimated Bill of Quantities (BOQ) are being compiled. Project managers are also appointed from the outset. However, there are still shortcomings in the recording of planning activities carried out and limitations in the preparation for these projects.
- (c) Problems with utilities still exist in relation to timely response to ADT's notifications and the provision of accurate information on the location and requirements.
- (d) The Directorate is evidently assigning more resources and importance to the larger projects but is adopting a minimalist approach with the minor ones. Management attributes this approach to the need to address the higher risk of large scale projects first.



Table 3.1 ADT's current planning and design practices, including differences in the approach being deployed for large and small scale projects.

<b>Measure</b>	<b>Large scale projects</b>	<b>Small scale projects</b>
<b>Prioritisation and identification of road projects</b>	There are direct links between the selection of these projects and the studies or priorities set by the Road Network Master Plan, as finalised in 2000. The Master Plan has, however, not been updated since. Feasibility studies on the envisaged works have also been conducted, some of which were outsourced to external professional firms.	Prioritisation of road projects to be financed through the National Budget is being worked out on the basis of age, percentage of built-up areas, and existing conditions of the road.
<b>Approval for the initiation of a road project</b>	Projects were endorsed by NID's Director, ADT's CEO, ADT's Board of Directors and/or the Ministry as required.	Projects were endorsed by NID's Director, ADT's CEO, ADT's Board of Directors and/or the Ministry as required.
<b>Appointment of a project manager within the NID</b>	Project managers were allocated once a decision had been taken by the Authority to initiate the planning process. In many cases the same architect remained responsible for the works during implementation.	Project managers were allocated once a decision had been taken by the Authority to initiate the planning process. In many cases the same architect remained responsible for the works during implementation.
<b>Site visits, traffic counts, site investigations, as well as the carrying out of tests and surveying works</b>	NAO found documented evidence of traffic counts and topographic surveying works, including coordination with the planning authorities for scheme alignments, proposed layouts and development permits.	According to management, site inspections were always carried out. However, NAO found inadequate documentation in relation to these site visits, except for the final outcome, that is the estimated BOQs.
<b>Decisions on the construction methodologies to be adopted</b> <b>The formulation of designs and drawings</b>	The applicable construction methodology based on supplementary technical work, including geo-technical investigations, tests and soil investigations, was identified during the planning stage.	The reviewed files contained scarce information, workings and drawings on the construction methodology to be applied. Management however contends that the seven-volume road works' design and construction standards, published in the legal notice LN364/2003, as well as other internal standards and specifications, serve as an adequate substitute.
<b>The preparation of bill of quantities and estimated costs.</b>	Multiple detailed designs, drawings and BOQs were formulated to reflect proposed layouts, levels, road sections, underground services, storm water layout and street furniture. Additional drawings, traffic management plans and programming of works were delegated to the winning contractor and had to be presented as part of the bidding documentation.	In the reviewed files, the key documents found were a site plan and an estimated BOQ.  Agreement has also been reached with the Federation of Industry, the contractors' representatives and the DoC on established rates and this can potentially minimise the occurrence of miscalculations of projects' cost estimates.

Measure	Large scale projects	Small scale projects
<p>The establishment of underground services works to be carried out in and around the targeted area</p>	<p>These are being determined prior to the call for tenders and specific and detailed information on the utilities' buried plant is being included in the tender documentation.</p> <p>However, there are still problems with the accuracy of the information submitted by the utilities.</p>	<p>Utilities are, in the main, being notified early in the project planning process, although NAO came across instances whereby utilities were contacted after the call for tenders.</p> <p>Problems with utilities still exist in relation to timely response to ADT's notifications and the provision of accurate information on the location and requirements. To circumvent these problems, ADT is allocating a "lump sum" for water utility works to cover any contingencies and minimise eventual cost variations.</p>
<p>Decisions on traffic management arrangements</p>	<p>Consultations were held during investigations with the Authority's Traffic Management Directorate (TMD).</p>	<p>There are documents that show that traffic management measures, in major thoroughfares, were taken into consideration. In the other minor projects, however, NAO did not find traffic management plans, although management contends that in some projects such detailed plans are not strictly necessary.</p>
<p>Timely and due consideration of affected third party interests, including expropriation of land and compensation to affected parties</p>	<p>Land expropriation arrangements and development permits are being sought before the tender is issued. Although there have been cases of the Authority working in liaison with the local community, there is no standard practice on how this should be carried and to what extent. In fact, in many projects, no contact was established with affected third parties during the planning and design stages. Public consultations may also have to be carried out as one of the conditions of a development permit.</p>	<p>Applications are being submitted during the planning stage.</p>
<p>Liaison with the planning authorities and the approval of development permits</p>	<p>Applications are being submitted during the planning stage.</p>	<p>Applications are being submitted during the planning stage.</p>
<p>The estimation of project duration and timetables</p>	<p>Estimated project duration is being stipulated for every project and included in the estimates. However, the workings for each project are not available in the file. Management contends that these are calculated on the basis of established internal standards, the experience gained by ADT's technical personnel from previous projects, the nature of the activities to be undertaken, the communicated requirements of utilities, as well as the timeframes set for financing and reimbursement. Gantt charts and programming schedules are being produced for large scale projects and exceptionally in the case of small scale works.</p>	<p>Estimated project duration is being stipulated for every project and included in the estimates. However, the workings for each project are not available in the file. Management contends that these are calculated on the basis of established internal standards, the experience gained by ADT's technical personnel from previous projects, the nature of the activities to be undertaken, the communicated requirements of utilities, as well as the timeframes set for financing and reimbursement. Gantt charts and programming schedules are being produced for large scale projects and exceptionally in the case of small scale works.</p>

# Tender Documentation

## Part 4 - Tender Documentation

- 4.1 ADT is responsible for compiling and incorporating all the necessary information and documentation in the draft tender documentation of a road project. This includes responsibility for preparing sufficient designs, as well as clear and accurate specifications of the project requirements, namely an estimate of the quantities required, expected quality standards and the expected duration of the project. Moreover, the Authority is responsible for drafting the appropriate tender conditions, including the contractual rights and obligations, penalties and sanctions, expected deliverables and quality standards. In the case of projects worth Lm20,000 or over, approval of the tender documentation is required from the Department of Contracts (DoC) prior to release. DoC officials carry out further checks on the submitted documentation and can decide to amend or add further conditions prior to publication.
- 4.2 Approved standard templates are used to compile the required documentation for the tendering process. It was noted, however, that the Authority does not have any documented standard procedures or checklists to guide and ensure that all the required prerequisites (for each type of project) are included in the documentation prior to dispatch to the DoC. The absence of such controls can potentially lead to costly or serious omissions and oversights in the tender documentation forwarded to the DoC.
- 4.3 Tender documentation of smaller scale road projects (less than Lm250,000) typically include the following conditions:
- (a) The objectives of the call for tenders and details of the works to be covered by the tender; the drawings related to the works (normally a site plan); as well as the Bill of Quantities (BOQ) on which the bidder is expected to quote his rate and sign. The BOQ also gives an indication of the nature of the works, the type of supplies required and quantities involved and a lump sum allocation for the water utilities' civil engineering works;

### Documentation

- (b) Instructions to Tenderers, including the procedure concerning the bid bond; details on the Employment and Training Corporation certificate indicating the number and details of the employees of the bidder and of sub-contractors; pricing and the conditions of the adjudication process.
- (c) The Statutory Conditions, including the general conditions of contract; details on required insurance policies; the procedure for the execution of work; the clauses governing variations; the procedures governing quality assurance; delivery conditions; as well as the causes and consequences for dissolution of the contract.
- (d) The General Conditions, including employment conditions of full-time employees; VAT registration; arbitration hearing procedures; and Appeals Board procedure.
- (e) The Special Conditions, including the standards and specifications to be applied; the required quality assurance and quality control measures; the measurement of works; the duration of the contract; the required presentation of a programme of works by the appointed contractor; penalties for delays; the payment procedure; proper conduct of works on site; and details on present commitments.
- (f) Reference to:
  - The national standards and specifications to be applied during the road design and construction (legal notice LN364/2003 Design and Construction Standards governing all road works in Malta).
  - The Code of Practice set out in the Traffic Sign Manual published by the UK Ministry of Transport. This clause obliges the contractor is to be familiar with this Code. <sup>5</sup>

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<sup>5</sup> The Code of Practice in the Traffic Sign Manual published by the UK Ministry of Transport is primarily directed at supervisors, operatives and managers on site and seeks to ensure that ongoing works are safe and secure for the benefit of workers and users alike. Specifically, the Code tackles practices such as site layouts; sequence of signage; lighting; safe routes; securing of roundabouts junctions and carriage ways; as well as traffic and speed control.

- 4.4 In addition to these clauses, ADT has compiled more comprehensive tendering documentation for large scale projects (Lm250,000 and over), which during the period under review concerned works financed by the Fifth Italo-Maltese Protocol, the European Regional Development Fund (ERDF) and the EU Cohesion Fund.<sup>6</sup> However, NAO noted that relevant improvements are not being applied to the tenders of smaller scale road projects (costing less than Lm250,000). It would be beneficial to Government if the relevant enhancements are used for all tenders of road projects.
- 4.5 The noted improvements in the tendering documentation of large scale projects include:
- (a) Greater transparency on the evaluation process, including information on the evaluation grid to be applied;
  - (b) More detailed and specific information about the works, traffic management requirements and utilities' requisites and underground systems;
  - (c) Requests to the bidder to submit supplementary information (e.g. details on resources, past performance, financial situation, programme of works, and traffic diversion plans) for consideration in the evaluation process; and
  - (d) The recent introduction of a penalty clause should the contractor fail to comply with the approved traffic management setup.
- 4.6 For the major projects, the Authority is also including binding conditions with qualified external engineers, who act as project supervisors and are nominated by the contractors. These engineers report directly to the Authority and are responsible for the fulfilment of the project as per contract conditions, as well as overseeing and approving all works carried out by the contractors. NAO is, however, concerned that these arrangements for major contracts may lead to unnecessary risks arising from potential conflict of interest. It is pertinent, nonetheless, to highlight that these contracted engineers are bound by their professional and ethical standards, as well as FIDIC conditions. Furthermore, recently published tenders have addressed this concern, with

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<sup>6</sup> There have been no recent cases of tenders of road projects financed through the National Budget and costing Lm250,000 and over.

separate tenders being released for contractors and engaged supervisors.

- 4.7 As pointed out in the first audit report, much of the effectiveness of the Authority's comprehensive technical standards, regulations, penalties and contract conditions specified in the tender documentation depends on how well these are monitored and enforced during the lifespan of the project and the guarantee period. This is further discussed in Part 6 of the Report.
- 4.8 Moreover, it was noted in some of the reviewed tenders for smaller scale projects bidders still fail to present all the requested documentation when submitting their bids, leading to subsequent exchange of correspondence and clarifications.

## **Overall comment**





# Technical Evaluation of Tenders

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## Part 5 - Technical Evaluation of Tenders

- 5.1 Once a call for tenders is published and bids are received, ADT is responsible for compiling a comparative schedule of all the valid tenders and for the setting up of a Technical Committee for the preparation of a Technical Report. The Technical Report should present appropriate conclusions and recommendations on the submitted bids. The Technical Report is then forwarded to the General Contracts Committee (GCC), which is the national body entrusted with deciding which bid should be accepted.
- 5.2 None of the evaluations of tenders concerning major road works projects had been concluded during the reference period used as the basis of the follow-up exercise of 2005. These tenders concerned projects to be co-financed through European Union(EU) funds.
- 5.3 In the case of tenders concerning smaller scale projects<sup>7</sup>, a number of evaluations were carried out during the period under review. NAO found that the level of assessment undertaken by the Authority's appointed technical committees has remained practically the same as that observed in the first audit report. NAO noted that the technical assessments of the submitted offers were limited in scope and brief, with the main emphasis being mainly to determine the lowest bid. Also, in the studied cases, there were no minutes or details of the evaluation proceedings, except a note in the file through which the Evaluation Committee was officially set up by the CEO, a brief technical report and a final endorsement before the report is sent to the GCC by the Director and the Chief Executive Officer (CEO).
- 5.4 Some of these concerns were also mentioned in February 2004 in the Internal Controls Review document compiled by the Authority's then Internal Controls Officer. Management has indicated during fieldwork that a manual of procedures is being compiled on the evaluation proceedings.

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<sup>7</sup> With a contract value of Lm20,000 and over but less than Lm250,000.

5.5 That said, NAO identified improvements in the procedure concerning the official appointment of the committees and the composition of these committees. Other observed good practices included the use of an administrative checklist as a record of the received documentation from the bidders and evidence of official communication encouraging prospective contractors to reduce their offers.

5.6 Furthermore, NAO noted that a series of good practices were applied in the case of a recent adjudication of a tender for the provision of technical and professional services concerning road works. This project is to be co-financed through European Union funds. It was noted, for example, that:

- (a) Clear roles and functions (i.e. chairman, secretary and evaluators) were accorded to the appointed members of the technical committee, ahead of the commencement of the proceedings.
- (b) A declaration of impartiality and confidentiality was signed by all participants.
- (c) There was increased evidence of transparency in the evaluation process with all the bidders being awarded an overall score according to award criteria established in the tendering documentation and this score was communicated to all the bidders in the final correspondence, together with the score of the awarded bid.
- (d) Records of the meetings held were kept. Details included elements such as date, time, venue, evaluation committee members present, any observers, and minutes of the proceedings. These details were also included in the signed evaluation report.
- (e) Details of any additional proceedings such as requests for clarifications from the bidders, decision on the administrative non-compliance of (any) bids, interviews with experts associated with the bidder were also included.
- (f) A complete breakdown of the administrative compliance of each bid (completed administrative grid) was also compiled.
- (g) Details on the technical evaluation, including a breakdown of the scores awarded and additional comments of each

evaluator were recorded, in order to ensure greater transparency and accountability.

- (h) Details on the financial evaluation and the respective scores were also included.
- (i) Overall comparisons and summations were made and the final score and conclusions were drawn up.

**5.7** NAO concluded from the reviewed documentation:

- (a) That insufficient progress has been achieved in the evaluation of smaller scale projects.
- (b) No evaluations of major road works projects had been completed during the reference period and hence NAO was unable to assess the level of progress achieved.
- (c) New practices being introduced by the Authority for the evaluation of EU-funded tenders provide the opportunity for the establishment of a more robust and transparent evaluation process.

**5.8** Against this background, NAO encourages the ADT to expedite the release of comprehensive procedures that would adequately govern the conduct of the Authority's tender evaluation proceedings and assessment criteria.

# Project and Contract Management

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## Part 6 – Project and Contract Management

- 6.1 Prior to the commencement of a road project, several preliminary activities can be undertaken by the ADT and the contractor in order to ensure that there is better organisation and coordination. During the course of works, ADT is then responsible for the supervision and direction of road projects in line with set specifications, regulations and timeframes. ADT is also accountable for ensuring that contract conditions are respected by the contractors and the external supervisors.
- 6.2 In the follow-up assessment of 2005, NAO checked from a sample of projects<sup>8</sup>:
- i. Whether ADT and contractors / external supervisors had the required project plans, tests, site observations, alignments, designs, drawings, instructions on the methodologies to be applied, development permits, works permits, and approved traffic management programmes prior to the start of works;
  - ii. Whether a sufficient number of initial meetings were held with the contractors / external supervisors during which critical information was exchanged, all parties were aware of their respective contractual obligations, and additional queries were addressed;
  - iii. Whether exhaustive meetings were held with all utilities and the nature, requirements and timeframes of works were agreed before the order to start works is issued;
  - iv. Whether due consideration was given to potential requirements of third parties, such as the neighbouring community (e.g. residents and businesses) and users of the affected roads;

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<sup>8</sup> Appendix A provides more details on the methodology and projects reviewed in NAO's assessment.

- v. Whether regular on-site supervision was carried out during the course of works;
  - vi. Whether ADT had the set-up that allowed it to liaise and coordinate (as necessary) with contractors, supervisors, utilities, and other stakeholders, and resolve day-to-day matters;
  - vii. Whether a system for the keeping of records and logs of site conditions, progress, correspondence, instructions, decisions taken and other emerging matters was maintained;
  - viii. Whether contract conditions were being observed and enforced;
  - ix. Whether reports and tests were conducted for the purposes of quality assurance;
  - x. Whether ADT and the external supervisors adhered to a consistent and reliable procedure designed to certify works and effect related payments; and
  - xi. Whether the prescribed procedures for the approval of modifications and cost variations were abided to by ADT.
- 6.3 During the course of the follow-up exercise, NAO could identify instances whereby progress has been achieved in the introduction and integration of better project management practices. However, a number of key concerns and shortcomings persist. These findings are presented in more detail in **Table 6.1**.
- 6.4 Overall, NAO concluded the following:
- (a) Comprehensive, formal documented procedures and templates have not been finalised. ADT's management has, however, introduced – on a project-by-project basis – new practices such as standard management reporting tools and checklists for inspections. As a result, NAO noted that some of the projects ended up being more coordinated than others. There is therefore the need for project management practices and additional enhancements to be documented, consolidated and applied consistently in all projects in order to overcome observed gaps and shortcomings. The internal monitoring and enforcement of these new practices also

needs to be strengthened in order to ensure that any launched improvements are consistently and effectively implemented by staff, external supervisors and contractors during the course of the projects.

(b) Improvements have been made in key areas related to the overall management of major projects, including:

- the carrying out of intensive preparations before the start of work;
- having systems in place for day-to-day coordination among the project supervisors, contractors, sub-contractors and utilities;
- increased presence on site by the project supervisors and quicker resolution of problems arising during works; and
- more frequent monitoring and recording of progress and targets.

(c) The management of smaller scale projects is still characterised by a number of weaknesses, although efforts are being done to enhance planning and project supervision activities. Observed limitations included:

- inconsistencies in the maintenance of records regarding, for example, site conditions, programmes of works, progress achieved, instructions and variation orders, details of site meetings / decisions taken, as well a full audit trail of activities;
- inconsistencies in the carrying out of planning activities and the use of project management tools; and
- shortcomings on the part of utilities and contractors leading to delays in the completion of some of the projects.

The current high volume of road works and limited resources are also having an impact on the Authority's ability to handle these projects more effectively.

(d) ADT is still facing problems related to utilities. These principally concern supplies, exact location of underground installations and timely response to ADT's requests.



- (e) The engagement of external supervisors has given the Authority the required capacity to undertake a number of major projects concurrently. These engineers are expected to fully supervise the projects on-site and ensure that all contract conditions are abided to. However, ADT has had problems in ensuring that some of these supervisors fulfil all their expected duties as intended in the contract of engagement. In one case, the work of an external supervisor was outsourced to others due to inability to meet requirements.
- (f) The quality assurance system, as currently practiced by ADT, carries inherent risks. Quality tests are being regularly submitted by the contractors. However, the Authority is constrained by its limited resources (such as no in-house laboratory facilities and own technical staff) on how far it can independently verify the submitted results. NAO's opinion is that the current practice is reducing the completeness and effectiveness of this critical control. This is even more concerning when one considers that the Authority's external consultants reported in the Capital Expenditure – Review of Procedures Report of June 2004 that "management has expressed doubt on the integrity of tests of quality submitted by contractors" and that "the Roads laboratory is an essential tool in monitoring of quality of works performed."
- (g) Although traffic management plans are being drawn up in the case of projects that have an impact on major thoroughfares, the Authority failed to ensure in a number of reviewed cases that the external supervisors and contractors consistently abided to traffic management and safety regulations and guidelines. As a result, there have been several instances of persistent infringement of traffic regulations and safety hazards not being dealt with effectively, despite regular inspections and notifications by the Traffic Management Directorate (TMD) and warnings by the Authority.
- (h) Communication and meetings with the local community, such as affected neighbouring localities and businesses, were exceptional with belated contact being established, in many cases, when the issues at hand escalated.

- (i) Controls over the verification and payment for works carried out have been strengthened by the Authority through the enforcement of certification and authorisation procedures.
- (j) The required involvement of the Department of Contracts (DoC) in the approval of variations (additional works, quantities or rates) beyond the regulatory five per cent threshold is still not a fully established practice within the Authority. ADT has cited the nature and urgency of works as one of the main reasons why approvals were being sought after physical works had been carried out. NAO noted that progress has been made in ensuring that cost variations are kept within reasonable limits. Also, in some cases attempts were being made by ADT architects, during the progress of works, to seek approval from DoC for any changes in rates or works. The check was restricted to projects funded through the National Budget, as the projects financed through the Fifth Italo-Maltese Protocol had still not been completed during fieldwork.
- (k) Project delays are still being experienced in some projects, with causes varying from changes in designs, work programmes, re-doing of unsatisfactory works, inclement weather conditions, delays by utilities to complete own works and limitations of contractors. However, it is important to point out that there has been an improvement in delivery periods.
- (l) There have been instances of payments being withheld until quality assurance requirements are met. There have also been incidences of contractors being ordered to re-do unsatisfactory works. In one observed case, a contract was terminated and management has indicated that the company involved will be blacklisted. In another instance work was taken away and given to other contractors.
- (m) In the reviewed files of completed projects, NAO did not find copies of “as built designs” of the works carried out, which could be used for future reference.

Table 6.1 ADT's project management practices, including differences in the approach being deployed for large and small scale projects.

Measure	Large scale projects	Small scale projects
<p><b>Initial preparations and preliminary coordination</b></p>	<p>NAO found that prior to the commencement of works:</p> <ul style="list-style-type: none"> <li>The required development permits had been obtained, site investigations and tests had been carried out, and designs and drawings, including those showing underground services of utilities had been finalised.</li> <li>Project plans and programme of works, including traffic management considerations were obtained, albeit with some delay on the part of the contractor and the external supervisor.</li> <li>A number of initial meetings were held with the external supervisor, utilities, contractors and sub-contractors during which requirements, mode of communication, type of supervision, financing issues, the role and the relative expectations of each party were clearly defined.</li> <li>Traffic management plans were presented by the contractor / external supervisor and progressively modified through the intervention of the TMD. The plans were judged as being adequate by the TMD, prior to the start of works.</li> <li>Communication and meetings with the local community, such as affected neighbouring localities and businesses (including farmers and schools) were lacking. Belated contact was eventually established well into the project.</li> </ul>	<p>From the reviewed documentation NAO found indications that:</p> <ul style="list-style-type: none"> <li>In some of the reviewed projects, key planning tasks and measurements were still being carried out after the call for tenders. These activities include the schedule of works of utilities, setting out of road levels and alignments, surveying works, added thickness, and details on the location of underground services.</li> <li>Few records detailing any preliminary coordination with utilities and contractors were kept, although management assures that sufficient preparations were undertaken in this regard.</li> </ul>

Measure	Large-scale projects	Small-scale projects
<p>Project Management during works</p>	<p>During fieldwork NAO found that :</p> <ul style="list-style-type: none"> <li>Comprehensive documentation were being kept on the overall progress being achieved and consultations held. This was achieved through daily and monthly reporting, as well as the maintenance of Gantt charts. However, NAO found a number of daily reports that were not in the designated files. This increases the risk of superficial vetting by ADT's project managers involved and raises concerns that not all the reports are being submitted and reviewed.</li> <li>On-site inspections by ADT, according to management, were being carried out on a daily basis. However there is scarce documentation in the project files that records or references these visits, the actions taken and the outcomes. As a result, there is the risk that not all the events and decisions are being adequately recorded for accountability and referral purposes.</li> <li>Regular meetings were being held with all the involved utilities, the external supervisor, the contractor, the sub-contractors and the Authority's officials, with minutes of all the proceedings being kept. Through these meetings, all parties concerned were discussing day-to-day issues. In parallel, monthly meetings were also held between the Ministry and the Authority.</li> <li>There were serious problems concerning traffic management issues and the Authority was not managing to consistently resolve these shortcomings (including the type of barriers, adequate signage and hazards) through the external supervisor.</li> <li>Quality tests were being submitted by the contractor. ADT is, however, constrained by its limited resources (such as no in-house laboratory facilities</li> </ul>	<p>The findings include the following:</p> <ul style="list-style-type: none"> <li>In most of the reviewed files there was an overall lack of project documentation and reporting. The absence of adequate information on the actions and decisions taken hindered NAO's ability to carry out a complete assessment of how the Authority is in practice handling and supervising its project management activities. Furthermore, there were instances when NAO could not trace, from the documentation in the files, any follow-up actions taken. In a small number of cases, project management tools, such as a Gantt chart or a detailed programme of works, were effectively applied during project management.</li> <li>On-site inspections, according to management, were being carried out on a regular basis. However these visits are only exceptionally recorded in the project files and there is limited documentation on the nature and outcome of these visits.</li> <li>The Authority experienced problems with some of the utilities and did not have a structured and preventive/corrective process to resolve these issues in a timely manner.</li> <li>There are detailed documents that show that in the case of major thoroughfares traffic management measures were being coordinated by the Authority during the project, although there were cases of persistent infringements not being rectified by the contractor despite ADT's directives. In the remaining files, however, NAO did not find traffic management plans (including traffic diversions), although management contends that in some projects such detailed plans are not strictly necessary.</li> <li>Quality tests were being submitted by the contractor, using his own laboratory or a laboratory of his choice.</li> </ul>

Measure	Large-scale projects	Small-scale projects
<p>Project Management during works (continued)</p>	<p>and own technical staff) on how far it can independently verify the submitted results.</p> <ul style="list-style-type: none"> <li>Project delays vis-à-vis planned milestones were experienced due to a number of reasons, including additional works being undertaken; inadequate resourcing by the contractors; lack of sufficient information on the location of underground services; inclement weather conditions; delays in the delivery of supplies by utilities; and unforeseen situations, such as uncovering of archaeological findings and the repair of accidental damages. Throughout the project the Authority has adopted various approaches to try and mitigate such delays, including the cancellation of works to a defaulting contractor and regular on-site presence (albeit scarcely documented). Nonetheless management is contending that works are on course to finish on time.</li> <li>ADT's overall management of the projects was hampered by the inability of the external supervisors to handle all the duties assigned through the contract of engagement. For example, there were inconsistencies in the disclosure of full information regarding the request for modifications; traffic management infringements; and cases of inadequate supervision on site.</li> <li>Contact with affected parties was handled on an <i>ad hoc</i> basis and the actions of the Authority were mostly reactive. NAO found no documents indicating that there were preliminary meetings with the community to foresee and prevent possible inconvenience and address concerns. For example, contact with local councils was made six months through the project. Moreover, third-party interests were handled once complaints were received by affected farm owners, road users and a neighbouring school.</li> </ul>	<p>NAO also came across instances whereby a fraction of the payment to the contractor is withheld until the required tests are submitted. ADT is however constrained by its limited resources (such as no in-house laboratory facilities and own technical staff) on how far it can independently verify the submitted results.</p> <ul style="list-style-type: none"> <li>Delays were still experienced in some projects, at times considerably so. However, it is important to point out that there has been an improvement in delivery periods. NAO found only a few documented instances in the relevant files whereby an ADT's project manager was in contact with a contractor to express concerns on delays. NAO noted that there are no standard documented escalation procedures on how to address delays with contractors. Management indicated, however, that the NID's main deterrent is the undocumented daily site inspections by the architect-in-charge. Furthermore, NAO found no evidence that penalties were applied to unreasonable delays, except for one case that led to the termination of the contract.</li> <li>Although there have been cases of the Authority working in liaison with the community, there is no standard practice on how this should be carried and to what extent. In most instances, contact with affected parties was handled on an <i>ad hoc</i> basis and the actions of the Authority were mostly reactive.</li> <li>In the reviewed files of completed projects, NAO did not find copies of "as built designs" of the works carried out, which could be used for future reference.</li> </ul>

Measure	Large-scale projects	Small-scale projects
<p><b>Certification of works and the payment system</b></p>	<ul style="list-style-type: none"> <li>Management confirmed that ADT's Quantity Surveyor and/or Architect responsible for the respective project measured and checked the Bills of Quantities (BOQs) and the rates forwarded from the contractor or external supervisor (depending on the project). In some cases, the BOQs were compiled by ADT's personnel instead and used as the basis for any payment to a contractor. In the case of transactions related to projects financed through the Fifth Italo-Maltese Protocol, the BOQs and the Payment Request Form were created by the external supervisor.</li> <li>NAO found all the BOQs and the certificate of payments related to the sampled transactions in the respective files, duly signed by the responsible architect. A standard form is being used in this case. Apart from the BOQ, quality tests were also submitted by contractor and checked by the Authority. There is no standard checklist or procedure of how these tests are being examined. In the case of the projects financed through the Fifth Italo-Maltese Protocol, the external supervisor is also presenting progress reports with the BOQs.</li> <li>All these documents are then forwarded to the Project Manager who re-checks and endorses the Certificate of Payment or the Payment Request Form (depending on the type of project prepared and approved by ADT's architect or the engaged external supervisor). Standard forms are being used in both cases. In the case of final payments, the Project Manager also received the Final Bill of Quantities (FBOQ) approved by the Quantity Surveyor and / or the Architect responsible for the project. Recently, checklists (the Payment Claim Checklist and the Checklist for Final Inspection) have also been introduced as an added control before the final payment is released. These checklists are compiled by the Architect. All documents are then being passed on the Director, NID or directly to the Financial Controller, and endorsed by these officials.</li> </ul>	<ul style="list-style-type: none"> <li>The Financial Controller is endorsing all the received requests for payment and is subsequently issuing a payment voucher, which is attached with the contractors' invoices. It was also confirmed from the reviewed documentation that the stipulated retention money is being withheld. The payment voucher and the contractors' invoices are then being forwarded to the Ministry for the required approval, prior to despatch to the Treasury. The Authority, however, is still finding it difficult to collect all the required VAT receipts from the involved contractors, despite periodic chasing from the part of the Authority and the forwarding of a list of defaulting contractors to the VAT Department. NAO found a number of effected payments for which the Authority is still waiting for the VAT receipt from the contractors.</li> </ul>

Measure	Large-scale projects	Small-scale projects
<p><b>The management of cost variations and modifications</b><sup>9</sup></p>	<ul style="list-style-type: none"> <li>There have been cases whereby the value exceeded the five per cent margin, and the approval was requested after the physical works were completed. ADT has cited the urgency and nature of works as one of the main reasons why approvals were sought after physical works had been carried out. In some case, however, attempts were being made by ADT architects, during the progress of works, to seek prior approval from the DoC for any changes in rates or works.</li> <li>NAO noted that progress has been made in ensuring that cost variations are kept within reasonable levels. Out of nineteen reviewed projects, ADT forwarded ten FBOQs, seven interim bills and did not forward certified BOQs for the remaining two projects</li> </ul>	

<sup>9</sup> NAO's check was restricted to projects funded through the National Budget, as the projects financed through the Fifth Italo-Maltese Protocol were found to be outside the scrutiny of the DoC. In the latter case, any changes to the BOQs are being approved solely by ADT's architects and the main condition imposed by the Italian authorities is that the financing cannot exceed €30 million and modifications cannot be outside the proposed area of works. As these road works are still in progress, it was difficult for us to determine during fieldwork whether the ongoing works would exceed the €30 million ceiling, and hence be subject to local procurement procedures and DoC scrutiny.





## Appendices

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## Appendix A - Methodology

- A.1 NAO undertook a different approach for each stage in the project lifecycle in order to keep within the terms of reference. The level of detail and examination depended on the issues being reviewed.
- A.2 Most of the findings and conclusions are based on file and document examination, as well as interviews with ADT staff and other involved parties.
- A.3 NAO also consulted two reports, namely:
- The **Internal Controls Review** prepared by the Authority's Internal Controls Officer in February 2004
  - The **Capital Expenditure – Review of Procedures** created by ADT's external consultants in June 2004
- A.4 Figure A.1 presents a complete list of the project files consulted during NAO's study in order to assess the progress made by ADT since July 2004.
- Planning and Design**
- A.5 NAO examined files and documents of fourteen road projects funded through the Consolidated Fund of the National Budget. These included ten projects related to tenders issued between July 2004 and April 2005 and three new projects, assigned to a contractor *in lieu* of an awarded project that was postponed. The individual values of the projects varied from Lm20,522 to Lm154,528.
- A.6 In addition, NAO consulted documentation and designs related to the planning of projects that are (or will be) financed through the Fifth Italo-Maltese Protocol, the European Regional Development Fund (ERDF) and the EU Cohesion Fund.
- A.7 For all these projects NAO also interviewed ADT's management and technical personnel involved in this work.

Figure A.1: A complete list of consulted projects files used by NAO to assess progress made by ADT since July 2004

Name	Locality	Date when works were initiated	Date when works were completed	Value of letter of acceptance	Comment
Surfacing works at p/o Triq Sant'Andrija	Kappara-Pembroke	-	-	-	Adjudication
Road works at Triq ix-Xwieni	Marsa	-	-	-	Adjudication
Road works at Triq Troubridge	Marsa	-	-	-	Adjudication
Road works at Triq il-Kurunell Mas	Tarxien	-	-	-	Adjudication
Road works at Triq Marjanu Gerada	Tarxien	-	-	-	Adjudication
Civil works at Triq is-Santwarju and Triq il-Qalb Imqaddsa	Zabbar	-	-	-	Adjudication
Construction of roundabout at Tal-Balal Junction *	Naxxar	-	-	-	Co-ordination
Road works at p/o Triq is-Sajf ta' San Martin, Bahrija	Rabat	03-May-05	-	Lm 21,584.17	Work in Progress
Road works at p/o Triq l-Ahmar	Marsascalea	Not provided by ADT	Not provided by ADT	Lm 23,954.65	Work in Progress
Reconstruction and upgrading of sections of the road network (Lot1)	Targa Gap / Tal-Qlejja	01-Jun-04	-	Lm 3,000,000.00	Work in Progress
Road works at Triq in-Nigem	Ghaxaq	02-Feb-05	25-May-05	Lm 26,058.45	Completed
Construction of Triq il-Melh	St.Paul's Bay	23-Aug-04	07-Dec-04	Lm 23,994.00	Completed
Road works at Triq Bebunga and Triq il-Kunsill ta' l-Ewropa	Mellieha	17-Nov-04	20-Jan-05	Lm 24,271.38	Completed
Construction of Triq il-Hamrija	Marsascalea	29-Nov-04	11-Feb-05	Lm 22,528.50	Completed
Road works at p/o Triq il-Fortizza	Mellieha	29-Nov-04	05-Feb-05	Lm 22,670.00	Completed
Road works at p/o Triq l-Ahdar	Marsascalea	29-Nov-04	09-Mar-05	Lm 24,693.64	Completed
Road works at Triq in-Nases	Mellieha	10-Jan-05	15-Mar-05	Lm 22,735.88	Completed
Construction of Triq ix-Xemx u l-Qamar	Fgura	01-Feb-05	01-Apr-05	Lm 25,037.00	Completed
Road works at Triq Marco Montebello	Qormi	01-Feb-05	28-Mar-05	Lm 21,577.00	Completed
Construction of n/s in Triq Mons. A. Caruana	Mqabba	07-Feb-05	15-Apr-05	Lm 21,002.49	Completed
Asphalt works at Toroq Barrada, Gazella, Fortizza, Bebunga & KE	Mellieha	08-Mar-05	10-Mar-05	Lm 20,867.00	Completed
Road works at Triq Carmelo Robinich	Paola	28-Mar-05	29-Apr-05	Lm 24,712.00	Completed
Road works at Triq A. Doublet	Marsa	02-Apr-05	23-Apr-05	Lm 20,522.00	Completed
Laying of wearing course at Mosta Ring Road	Mosta	11-Mar-05	17-May-05	Lm 38,154.00	Completed
Road works at Triq il-Mediterran *	Pembroke	07-Mar-03	19-May-05	Lm 113,313.00	Completed
Road works at Triq San Gorg *	St. Julians	21-Feb-05	26-Apr-05	Lm 102,880.00	Completed
Road works icw Park and Ride project – Junction C	Floriana	12-Jan-05	26-Apr-05	Lm 42,511.75	Completed
Signalised junction at Tal-Barrani jw 25 <sup>th</sup> November Street	Zejtun	08-Nov-04	05-Jan-05	Lm 60,667.76	Completed

\* Assigned to contractor in lieu of an awarded contract that was postponed

Source: ADT, May 2005

## Contract Documentation

A.8 As part of NAO's analysis of contract documentation, meetings were held with officials from ADT, the Department of Contracts (DoC) and the Planning and Priorities Coordination Directorate (PPCD) (within the Office of the Prime Minister). This was critical in order to understand the processes adopted in the case of tenders related to projects financed through the Consolidated Fund of the National Budget, the Fifth Italo-Maltese Protocol, the ERDF, and the EU Cohesion Fund.

A.9 Specimen contract documentation and legislation related to procurement and road construction were also consulted.

## Technical Evaluation of Tenders

A.10 The assessment included an examination of technical reports and other documentation related to the evaluation of submitted bids for five awarded tenders issued between July 2004 and April 2005. It was not possible to include additional tenders published during this period, as these were still being adjudicated by the competent authorities.

A.11 Tenders awarded through the Fifth Italo-Maltese Protocol structure were not examined as they were adjudicated early in 2004 and are hence outside the scope of this exercise.

A.12 Tenders of road projects to be co-financed through the ERDF and the EU Cohesion Fund were also not considered as the five projects currently in the pipeline are still at the tendering stage. Instead, in order to gain a better understanding of the procedures being applied, a recent tender evaluation report for technical and professional services (related to a road project funded through the same source) was consulted.

A.13 Overall interviews were also held with officials from ADT and DoC.

## Project and Contract Management

A.14 NAO examined files and documents related to twenty-one road projects funded through the Consolidated Fund of the National Budget<sup>10</sup>, as well as files concerning Lot 1<sup>11</sup> roadworks funded through the Fifth Italo-Maltese Protocol. Documentation and site inspection reports compiled by ADT's Traffic Management Directorate (TMD) were also consulted. Additionally, follow-up

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<sup>10</sup> These projects were initiated between July 2004 and April 2005 or were in progress during this period.

<sup>11</sup> The Lot 1 road works covered major arteries flowing from Targa Gap through Tal-Qlejja junction to Mtarfa junction.

interviews were held with the ADT officials concerned. In the assessment NAO could not take in consideration any EU-funded road projects as these are still at the tendering stage.

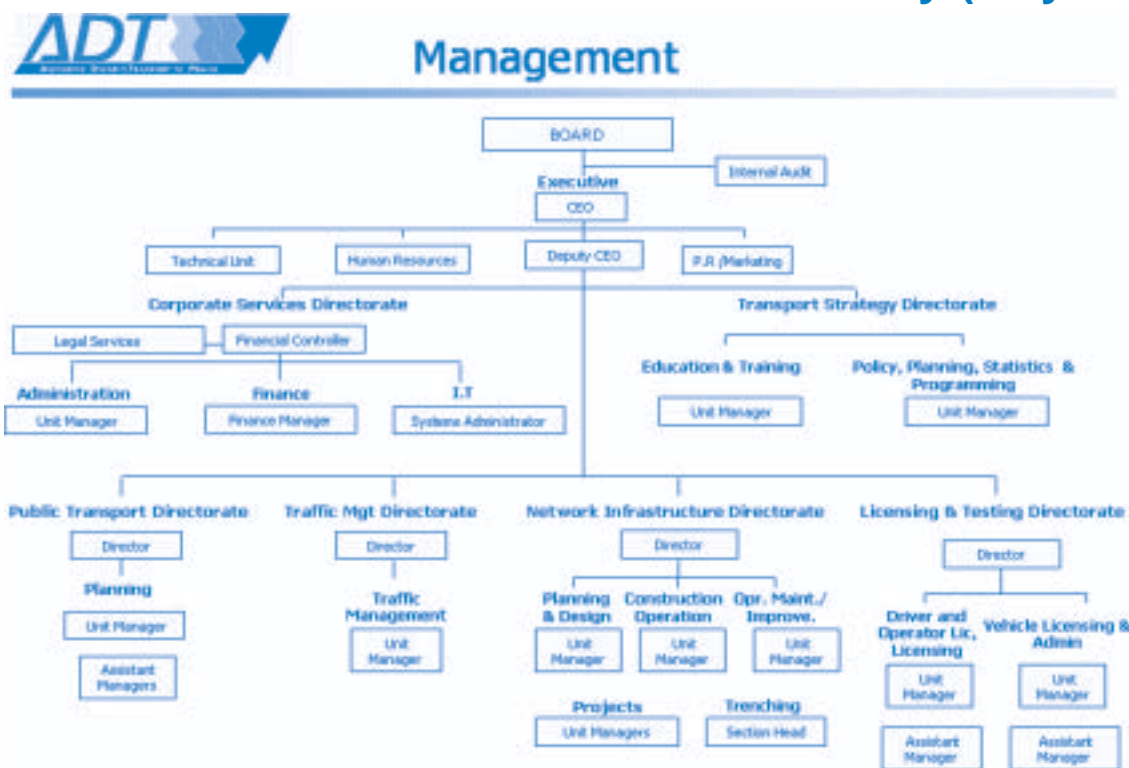
- A.15 Moreover, NAO also examined the procedures and controls adopted by ADT when certifying works and approving payments. **Figure A.2** presents a list of the sampled payments used as the basis of this assessment.

Figure A.2: A list of the sampled payments used as the basis of NAO's assessment

	LOT No / Project Name	Transaction Value
1	LOT 2 Fifth Italo-Maltese Protocol	Lm 383,544.00
2	LOT 1 Fifth Italo-Maltese Protocol	Lm 261,192.97
3	LOT 1 Fifth Italo-Maltese Protocol	Lm 205,281.83
4	LOT 2A Fifth Italo-Maltese Protocol	Lm153,982.13
5	LOT 1 Fifth Italo-Maltese Protocol	Lm 140,308.14
6	LOT 2 Fifth Italo-Maltese Protocol	Lm 108,303.08
7	Mosta North Ring Road	Lm 40,000.00
8	Road Works at Triq il-Hamrija M'Scala	Lm 13,076.24
9	Road Works at Triq I-Ahdar M'Scala	Lm 12,511.67
10	Road Works at Triq il-Fortizza Mellieha	Lm 10,000.00
11	Road Works at Triq il-Hamrija M'Scala	Lm 7,563.32
12	Triq Marco Montebello Qormi	Lm 4,326.36

Source: NAO working papers, June 2005

## Appendix B - Organisational Chart - Malta Transport Authority (May 2005)



Source: ADT, July 2005

NID Staff Complement as at July 2005

Grade	Architect / Engineer	Other
Director	1	
Project Manager		2
Road Maintenance Manager	1	
Road Construction Manager	1	
Planning and Design Manager		1
Assistant Manager	4	
Architect *	1	
Junior Architect *	1	
Draftsman		4
Quantity Surveyor / Land Surveyor		3
Field Officers *		3
Senior Technical Officers		2
Secretary / Clerks		4
<b>Total</b>	<b>11</b>	<b>17</b>

\* A call has been issued to recruit four architects and five field officers.

Source: Corporate Services Directorate, ADT, July 2005



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