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PARLIAMENT OF TASMANIA

AUDITOR-GENERAL SPECIAL REPORT NO 25

The Year 2000 - Are We Ready?

No. 1 of 1998 – March 1998

*Presented to both Houses of Parliament in accordance with the provisions of Section 57 of the
Financial Management and Audit Act 1990*

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25 March 1998

President
Legislative Council
HOBART

Speaker
House of Assembly
HOBART

Dear Mr President
Dear Mr Speaker

PERFORMANCE AUDIT NO 25 - THE YEAR 2000 - ARE WE READY?

This report has been prepared consequent to examinations conducted under section 44 of the Financial Management and Audit Act 1990, for submission to Parliament under the provisions of section 57 of the Act.

Performance audits seek to provide Parliament with assessments of the effectiveness and efficiency of public sector programs and activities, thereby identifying opportunities for improved performance.

The information provided through this approach will, I am sure, assist Parliament in better evaluating agency performance and enhance Parliamentary decision making to the benefit of all Tasmanians.

Yours sincerely

A handwritten signature in black ink, appearing to read 'A J McHugh'.

A J McHugh
AUDITOR-GENERAL

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Foreword

The Year 2000 problem has been the subject of considerable publicity - much of it being unduly alarmist in nature. There is no intention in this report to add to this element. On the other hand, there is an undeniable risk that some government applications will be affected.

Until a formal risk assessment has been completed, we will not know with confidence whether the risk is real or imaginary, minimal or material.

This report provides a summary of the extent to which the public sector has commenced to assess the extent of any risks and to devise appropriate responses. It is fair to say that the public sector was not well advanced at the time of the survey in late 1997.

Subsequent to the survey, Heads of Agencies have adopted a strategy that should result in a timely evaluation of mission critical systems and public reporting of the outcomes.

The Audit Office will monitor the outcome over the next year.



Arthur McHugh
Auditor-General

INTRODUCTION

Under the provisions of Section 44(b) of the Financial Management and Audit Act 1990 the Auditor-General may

"carry out examinations of the economy, efficiency and effectiveness of Government departments, public bodies or parts of Government departments or public bodies"

The conduct of such audits is often referred to as performance auditing.

This report relates to a performance audit conducted by the Tasmanian Audit Office during the period July 1997 to January 1998 relating to the Year 2000 problem.

THE YEAR 2000 PROBLEM

The Government, like the private sector, depends on information technology (IT) as a means of service delivery and to support day to day operations. The Year 2000 problem threatens these systems¹.

It has been a common practice since the 1960s among computing professionals to represent a year by a two digit code. Under this practice the year 1998 will be typically represented as 98. If left unchecked upon reaching the year 2000 a system could interpret 00 to represent the year 1900. In addition, a system could revert to other beginning of time dates such as 1980 or the date on which the system was first implemented.

In its report *Information Technology, Preparedness for Year 2000*, the Canadian Office of the Auditor-General described the nature of the problem and its possible impact on governments as follows:

The date code, including the year, is used extensively in systems. In many applications, the date value is used in labeling, sorting, updating and other data manipulation functions. As a result, an incorrect interpretation of the date can play havoc with system outputs and results.

Misinterpretation of dates could generate undefined outcomes, causing transactions to be rejected as errors, or processing to be aborted. It is also possible for the Year 2000 effect to be felt in advance, applications that generate expiry dates could fail well before the year 2000.

Overall, the consequences of the Year 2000 problem could range from something as minor as an incorrect date display on a screen or computer listing to a situation much more serious, such as processing being aborted or erroneous outputs that may not be readily detected by users. Input forms used to collect information such as application forms also need to be Year 2000 compliant.²

The Year 2000 problem is not limited to large scale, mainframe or older systems. Other systems could also be affected, including personal computers, workstations and micro-processors such as medical monitoring equipment, elevators, etc.³

POSSIBLE EFFECT ON GOVERNMENT SERVICES AND OPERATIONS

Many of the systems supporting government programs and applications are older systems and have used two digit coding for the year. Moreover, these systems often operate in a decentralised environment with numerous interfaces inside departments, across government or with external partners. Decentralisation of system interfaces adds another complex dimension to overcoming the Year 2000 problem.⁴

Potential risks for the Government include health and safety concerns, financial implications and disruptions to services.⁵

These risks require evaluation within a tight time frame and in accordance with the Federal Government national strategy to have Australia a Year 2000 compliant country.

AUDIT OPINION

Report Title	The Year 2000 - Are we Ready?
Nature of the Audit	The objective of this performance audit was to report on public sector entities' awareness of and preparedness for the effects of the Year 2000 problem.
Responsible Party	The Secretary, Chief Executive Officer, General Manager or equivalent in each public sector entity is responsible for managing any risks associated with the Year 2000 Rollover within a general Corporate Governance framework.
Mandate	<p>This audit has been carried out under the provisions of Section 44(b) of the Financial Management and Audit Act 1990 which provides that:</p> <p><i>"The Auditor-General may carry out examinations of the economy, efficiency and effectiveness of Government departments, public bodies or parts of Government department or public bodies."</i></p>
Applicable Standards	<p>This audit has been performed in accordance with Australian Auditing Standard AUS 806 "Performance Auditing" which states that:</p> <p><i>"The objective of a performance audit is to enable the auditor to express an opinion whether, in all material respects, all or part of an entity's activities have been carried out economically, and/or efficiently and/or effectively."</i></p>
Limitation on Audit Assurance	Audit procedures were restricted to a review of documentary evidence provided by the survey approach adopted in conducting the audit, and analytical procedures, and provide less evidence than would be available by applying more extensive and comprehensive procedures. The evidence provided by these procedures restricts the audit assurance to a moderate level, as the evidence is persuasive rather than conclusive in nature.
Audit Criteria	<p>The preparedness of public sector organisations was assessed in four key areas:</p> <p>RISK ASSESSMENT AND ANALYSIS</p> <p><i>Has the organisation determined whether the Year 2000 problem will have an impact on its customers and stakeholders?</i></p>

Has the organisation determined whether the Year 2000 problem will have an impact on its production of products and services?

PROJECT MANAGEMENT AND RESOURCES

Does the organisation have an experienced team working on the Year 2000 problem?

Is the Year 2000 problem being addressed by the correct level within the organisation?

IMPACT ON BUSINESS PROCESSES

Has the organisation determined whether all of its business processes will be able to function through the turn of the century and beyond?

Has the organisation determined whether any of the technological infrastructure that supports its business processes will be affected by the Year 2000 problem?

WHOLE OF BUSINESS APPROACH

Is the organisation adopting a "Whole of Business" approach in assessing the impact of the Year 2000 problem?

Reservations

While the survey questionnaire approach used in this audit produced a high response rate, I am concerned that a number of organisations that did not respond, together with some of those that responded that the Year 2000 problem was not a significant risk, have failed to adequately address the business risks associated with the Year 2000 issue. The general level of preparedness may in fact be lower than that identified from the survey questionnaire responses.

Conclusion

Based on the evidence collected, I conclude that while a small number of organisations are making good progress towards resolution of the Year 2000 problem, the public sector generally was not well advanced, at the time of the survey, in preparations to deal effectively with the business risks associated with the Year 2000 problem.

EXECUTIVE SUMMARY

BACKGROUND

The Year 2000 problem is a global phenomenon. It refers to the potential for system errors, malfunction and failure as a result of the past practice by computer professionals and the information technology community of representing the year as a two digit code. The Year 2000 problem can threaten the functioning of Government systems that support the delivery of programs and services to the public, as well as internal operations.

The cost of dealing with the Year 2000 issues is significant.

KEY ISSUES

The Tasmanian Audit Office conducted a survey of all public sector organisations to assess the level of preparedness for the Year 2000 rollover. The preparedness of public sector organisations was assessed in four key areas:

RISK ASSESSMENT AND ANALYSIS

- Has the organisation determined whether the Year 2000 problem will have an impact on its customers and stakeholders?
- Has the organisation determined whether the Year 2000 problem will have an impact on its production of products and services?

PROJECT MANAGEMENT AND RESOURCES

- Does the organisation have an experienced team working on the Year 2000 problem?
- Is the Year 2000 problem being addressed by the correct level within the organisation?

IMPACT ON BUSINESS PROCESSES

- Has the organisation determined whether all of its business processes will be able to function through the turn of the century and beyond?
- Has the organisation determined whether any of the technological infrastructure which supports its business processes will be affected by the Year 2000 problem?

WHOLE OF BUSINESS APPROACH

- Is the organisation adopting a "Whole of Business" approach in assessing the impact of the Year 2000 problem?

FINDINGS

Two-thirds of respondents believe that the Year 2000 rollover will have an impact on their organisation's customers, stakeholders, products and services.

Most entities have not completed formal risk identification processes and no assessments of potential impacts have been completed.

Only 14% of respondents were assessed by the Audit Office as moderately prepared, while 57% are somewhat prepared and 29% are unprepared.

CONCLUSION

Overall, the public sector has a considerable risk to manage over the next two years, and while a small number of organisations are making good progress towards resolution of the Year 2000 problem, the public sector generally is not well advanced in preparations to deal effectively with the associated business risks.

RECOMMENDATIONS

A whole of Government approach should be adopted to coordinate the public sector response to the Year 2000 problem, with the establishment of a steering committee at a senior level.

A public sector wide working party should be established to share information and resources at an operational level.

Responsible Ministers should be kept informed of progress towards resolution of the Year 2000 problem.

The Year 2000 problem should be managed as a business risk issue, and given adequate priority to ensure early resolution.

All public sector entities should prepare formal Year 2000 risk management plans.

Early attention should be given to finalising the identification of exposures, assessment of risk, and implementation of solutions.

Consideration should be given to the impact of inter-entity dependencies and interactions.

Risk management plans should adopt a project management approach to resolution of the Year 2000 problem.

Public sector entities should disclose risk management activities, including year 2000 responses, in their Annual Reports.

RESPONSES TO RECOMMENDATIONS

This report was provided to a number of organisations on the 24th December 1997 requesting a response by the 31st January 1998 for inclusion in the final report. Comments are as follows:

Department of Premier and Cabinet

The response from the Secretary was dated 12th March 1998, and his comments follow:

“Thank you for the opportunity to comment on your draft report on the assessment of progress by public sector entities towards resolution of the Year 2000 problem.

I have appreciated your willingness to discuss your findings from last year’s survey and to consider recent developments in the approach being taken by the Tasmanian public sector. A comprehensive response to the draft is attached and you are welcome to incorporate material from that response in your final report as appropriate.

Your assessment in Tasmania was consistent with similar audits in other states and indicates that the technology-focussed methodologies in common use around the world do not suit the public sector environment, which requires careful application of public funds and management of a variety of risks.

Rather than working to an inappropriate methodology which does not ensure that key risks will be averted, public sector agencies have agreed to adopt a more business-focussed approach which emphasises maintaining continuity of key government services through the millennium change. This is an important direction of government resources to a solution which suits Tasmania.

Implementation of this approach in agencies will be supported by the ISU. I hope that your office will be able to continue to monitor progress and to assist with compliance and quality assurance.”

The attachment referred to in the Secretary’s response follows:

“**Comment on survey**

The survey of agencies on which this report is based reflects similar studies carried out by other Audit offices. It contains a mixture of ‘process’ questions - to determine actions being taken by agencies - and business awareness questions - to establish the level of concern in the agencies and involvement of agency executives.

During preparation of the survey advice was obtained from a number of sources, including the Information Strategy Unit within the Department of Premier and Cabinet. The questionnaire has a strong focus on business risk assessment. It also examines the extent to which Year 2000 preparation is being undertaken by specifically trained staff, using formal methodologies and reporting regularly and formally to senior management.

The balance of the questionnaire reflects general understanding during 1997 of ‘best practice’ in Year 2000 preparation. It is important to acknowledge the background.

Early awareness of the possibility of technology failures arose among technology providers around the world, especially in fields where large and often quite old mainframe computer systems represented a large proportion of infrastructure. As technology managers began to assess and address the problem it became apparent that often the projects and costs of remedies were very large and required senior management approval and endorsement.

In this situation it became important for technologists to demonstrate that the potential costs and impact of doing nothing were so significant that the Year 2000 remediation projects were justified and would be properly resourced and supported by business managers.

Raising awareness and concern among business managers has not been a simple task. For some time media coverage was restricted to technology magazines and newspapers. Lack of senior management understanding of technology processes is still quite common. Technologists have struggled to resource preliminary research within their organisations in order to obtain enough hard evidence of business risk to ensure ongoing resourcing. This dilemma has been common in both the public and private sectors.

Support by State and National Audit Offices has been an important part of business awareness raising in the public sector. Concern with business risk management has encouraged Audit review of business awareness and risk mitigation (through resourcing and supporting comprehensive assessment and testing programs). This has been widely accepted as a mechanism in its own right for enhancing business awareness and encouraging a risk management strategy. The emphasis on risk management is entirely supported by the Department of Premier and Cabinet.

Comment on overall findings

The overall finding of the Audit Office survey of Tasmanian state agencies and public bodies has been that by October 1997 the majority of agencies did not have fully resourced and comprehensive Year 2000 remediation programs. This is a useful finding and confirmed the anecdotal evidence of agency project managers and the ISU.

The questionnaire's detailed review of process and of business awareness has further validated the overall concern of lack of rigour and limited resourcing. (The first being to a significant extent an effect of the second.) While technologists within agencies have taken a generally conservative and pessimistic view of agency Year 2000 preparation, the Audit Office questionnaire is sufficiently comprehensive to support their less formal reporting.

The Department of Premier and Cabinet supports the risk management focus of the Audit Office. The report presents an important baseline against which future progress can be measured. Whatever methodologies and consultancies might be employed by state agencies, the desired results are that

- understanding of real potential business impact on the agencies of Year 2000 problems will increase,
- appropriate preventative measures will be implemented, and
- effective contingency planning will be put in place

to ensure that public safety is protected, services continue with minimal disruption and key Government business will continue through the change of millennium.

Balance of Report

In a formal sense the draft report sets out status as at a particular point in time, against an ideal status, and does not attempt to speculate on the history and causal relationships behind that status. While this formal and objective review is supportable as an audit output, there are some matters which could receive greater recognition to enhance the balance and interpretation of the report.

Chronology

The questionnaire returns were collected in October/November of 1997. Significant awareness raising activities in the Tasmanian public sector were only initiated a few months earlier and agencies were allocating resources based on 1997/98 budgets established before business issues received much publicity.

The survey captured this status. The report mentions that many Year 2000 projects had only been initiated a short time before the questionnaire was distributed. It should be acknowledged that high levels of support for the survey and participation in the process indicated a commitment to addressing Year 2000 issues. The report should also locate the survey within the timeframe of increasing public awareness and understanding of Year 2000 risks.

Comparative reviews

Similar surveys have been conducted in other parts of Australia (and in New Zealand). In the longer term an appreciation of the effectiveness of Year 2000 approaches will require some comparison of relative progress, as well as absolute levels of preparedness.

An ANAO survey of Commonwealth government agencies in June 1997 found a similar pattern of responses to the Tasmanian review, even though many started their planning when the Commonwealth Office of Government Information Technology (OGIT) raised the issue with them in 1996. In effect, although awareness-raising activities in Tasmania started later than in Canberra, Commonwealth agencies were not significantly ahead of Tasmania - particularly in the area of risk management and contingency planning.

Audits have also been carried out in NSW and in WA, and each has reported a requirement for greater business awareness and increased focus on risk management. The survey in Tasmania therefore indicates that in this state the same problems were being encountered, and the same difficulties in establishing Year 2000 as a business risk issue were occurring.

Given the common basis of Year 2000 work, the technology focus for awareness, and the exchange of information and strategies between state governments, this consistency between states and the Commonwealth is understandable.

The main issue from this point will be the effectiveness of the measures being taken to address the common concerns.

Analysis

The report does not attempt to address **why** the level of business awareness and risk management activity in agencies is relatively low. While this could be regarded as speculation, it is our contention that the historical origins outlined in the first section of this response are important to understanding causes and predicting success for future actions. This will be discussed in more

detail below.

From the point of view of report balance it is important to note that the survey does not necessarily support various interpretations that might be made. For example, the survey does not 'prove' that agency executives were denying the possibility of risk or are failing to respond to demonstrated risks. The agency risks were largely undetermined and certainly unquantified, and judgement still had to be exercised about the need to assign significant resourcing to possible risk areas¹.

If the report is silent in this area it remains open to misinterpretation, and it should include appropriate disclaimers.

Future activities

It is our position that the difficulty in establishing business-focussed risk management, which has been established in the Audit Office survey, results from

- an historical technology focus (described above),
- methodologies which do not place business managers in a position to drive the Year 2000 review, and
- lack of definition of and support for the process of business management involvement.

Focus of methodology

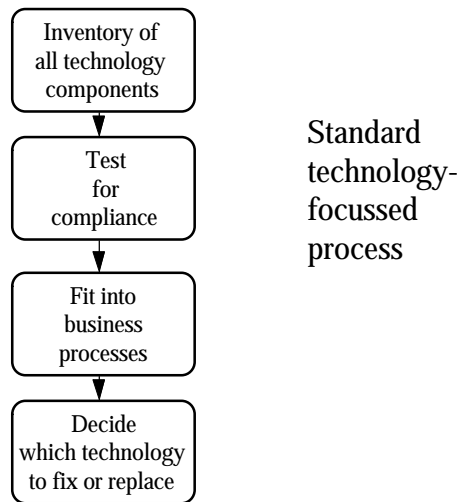
Conventional advice and methodologies which have been forcefully presented to Information Technology managers by Year 2000 'practitioners' have proposed a process

of

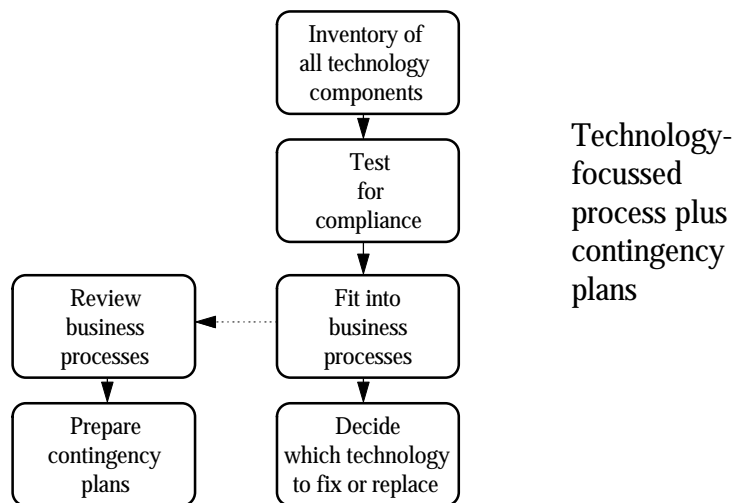
- developing a comprehensive inventory of every possible point of Year 2000 failure i.e. each item of computer hardware and software and embedded chips in equipment and, in the more sophisticated projects, each point of interaction with suppliers and customers
- testing each of these items for compliance with Year 2000 standards (and/or requiring that suppliers warrant compliance)
- prioritising the repair or replacement activities according to cost, time to completion, business impact

This process is essentially a task for technologists, and the only executive involvement is a requirement for allocation of resources and overall review of the technologists' process and prognosis.

¹ "This point may be challenged by some Year 2000 specialists, who regard the documented cases and generic risks as sufficient evidence of great risks which will require the highest priority in agency activities. However, agency resources are not unlimited and need to be managed effectively. Assignment of resources beyond what is justified by the risk to the community and the agency is also undesirable, since it will detract from the agency's capacity to deliver other services to the public."

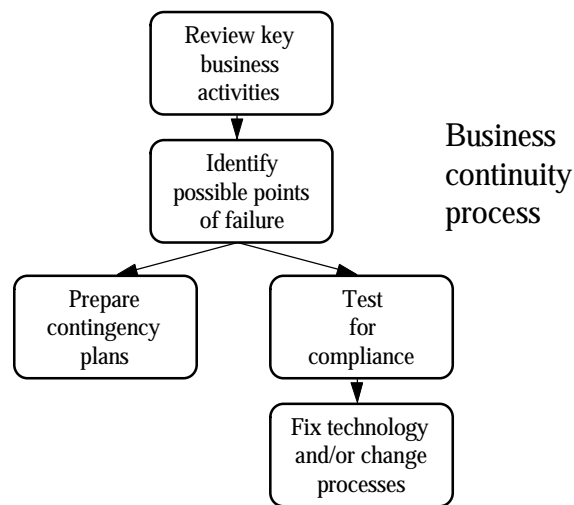


More recently, this approach has been modified to acknowledge that not all possible points of failure will necessarily be identified, let alone repaired. The necessity for contingency planning has been identified, but in general is being grafted onto the existing technology focussed methodology. Little contingency planning takes the form of business unit activities and review of alternative business processes.



A methodology which seeks to establish business planning, and specifically **business continuity planning**, is recommended as the Year 2000 strategy for this state. This approach acknowledges that resources need to be applied effectively rather than in an undifferentiated 'catch everything' manner.

Without setting aside the work which has already been carried out by agency technology groups, the drivers for Year 2000 preparation need to be turned around to be business priorities. Agency senior management will be involved from the selection of the business processes which will be examined (for possible causes and impact of failure) through to planning for alternative arrangements which will ensure that business activities continue even if there is technology failure - and through the period of time required to rectify problems.



This approach has been presented to heads of Tasmanian state agencies, who have endorsed it in principle and are reviewing their agency programs accordingly. They have accepted that a focus on business risk and risk management is required.

Support for agency processes

Business continuity planning is widely understood in general terms, but the processes which may be employed by agencies to carry out such planning are not in common use. To expedite the process across the public sector some whole of government facilitation and support will be required.

This is an aspect which has not been well addressed by those analysts and reviewers who are starting to identify risk management as the core requirement. The NSW Government released a 'Year 2000 Business Analysis Handbook' in September 1997, based largely on the Coopers & Lybrand Year 2000 Assessment Methodology. This is a valuable analysis on which the Tasmanian public sector can draw, although it focuses more on the collection of data from business managers than on their having a central role.

The ISU receives some limited funding from agencies to provide Year 2000 planning and assistance. Following the endorsement of general methodology by the agencies the ISU is developing, in conjunction with local facilitators, workshop material to establish business continuity planning. This is not theoretical training material but practical workshops to take agency executives through the initial planning and establish ongoing responsibilities.

The application of this approach will be an ongoing process and lessons learnt in one agency will need to be shared with others. This facilitation and support will be made available to all agencies, regardless of their own assessment of preparedness or risk.

The methodology and support proposals have also generated interest in the Local Government Association and ongoing liaison and cooperation will be established.

Opportunities for review

There is an opportunity in the Year 2000 preparation for ongoing review by the Audit Office. Audit Office knowledge of best practice risk management will be valuable in assessing the outputs of business continuity workshops and reviews within agencies. This could be done comprehensively or by sampling. The questionnaire used in the first survey could be adapted to further performance audits.

Ongoing periodical review, in whatever form the Audit Office may deem effective, will be valuable to monitor progress from this point.

Summary of Outcomes

The questionnaire distributed to agencies summarised the objectives of the review as being to

- reinforce awareness in entities of the imperative to achieve Year 2000 compliance;
- outline the risks to the State of any failure by auditees to achieve compliance; and
- encourage entities to implement effective and timely strategies to achieve compliance and minimise risks.

The first objective has been achieved and agency executives in particular are more aware of the issues. The risks are still difficult to quantify, and the review has reinforced the need for realistic and business-focussed assessment of risk, and consequential business preparations. This will be the focus of the ongoing work in state agencies.”

Department of Treasury and Finance

The response from the Secretary was dated 31st January 1998, and his comments follow:

"I refer to your draft report on the above issue dated 24 December 1997 and your request for comments. It is of some concern that the survey indicates that there is an apparent lack of regard for the financial implications to those organisations which have major system failures as a result of insufficient effort to ensure compliance. I presume the purpose of the report is to warn senior management and the Government so that this project is given the urgency and resources that it warrants.

On this basis some quantification of the potential losses is warranted and an estimate, given the current level of in-activity by organisations, of the likelihood that some failures will occur. For example, if it was assumed that the total potential loss was \$1 billion and that it was likely that at least 5% of problems will not be identified or corrected by the due date, then the cost to Tasmania in 1999-2000 would be \$50 million. The State Government's current financial position cannot sustain such an impost.

The Executive Summary findings identify the problems faced by this project such as apparent complacency and inadequate resourcing. Unless addressed these problems will result in a continued reduction in what can be achieved as the deadline approaches. To encourage organisations to act, greater emphasis should be placed on the potential cost to them of failure to do so.

The Audit Opinion expressed on Page 5 of the report defines the "Responsible Party" for managing the risks associated with the Year 2000 Rollover. The lack of extensive risk assessments performed to-date means that in many cases the 'Responsible Party' can have little or no idea of the possible costs associated with compliance or correction of problems. This can result in unexpected costs in the financial year 1999-2000. It is essential that agencies understand their financial obligations to meet costs associated with the Year 2000 problem from within their global budget allocation and that Government will not simply "bail them out". It would seem appropriate to include a clause to the effect that the "Responsible Party" is also responsible for having in place contingency plans to fund any losses which may occur as a result of problems caused by the Year 2000 Rollover.

Treasury supports your recommendations that:-

- senior management of agencies and other organisations have a more pro-active role on the Whole of Government Year 2000 Steering Committee, and
- a public sector working party be established to share information and resources at an operational level.

On the basis of your report, Treasury will bring this matter to the attention of the Budget Committee with the intention of the Budget Committee requesting agencies to address the impact of the Year 2000 problem in their 1998-99 Budget submissions."

Department of Health and Community Services

The response from the Secretary was dated 21st January 1998, and his comments follow:

“I refer to your memorandum of 24 December 1997 The Agency’s comments on the draft report are as follows:

Legal Implications of the Year 2000 Problem

It is noted that the NSW Audit Office and the Western Australian Office of the Auditor-General have raised concerns about medical equipment and building service infrastructure. At the outset of the Agency’s Year 2000 project, the potential threat to public safety from malfunctioning of equipment containing microprocessors was recognised. Accordingly, the Inventory Survey that is being used in this Agency to identify systems at risk has a section specifically designed to capture information on equipment of any nature that is controlled by microprocessors. This is being used to record details of medical equipment, building systems and other relevant items.

Overall Preparedness

This Agency’s current level of preparedness is “somewhat prepared”. The data collection of an inventory of systems and equipment potentially at risk from the Year 2000 problem is well underway, and the assessment phase will commence shortly.

This Agency is endeavouring to substantially reduce the risks of the Year 2000 Problem in the time remaining until the turn of the century. The methodology we are following provides for a Business Impact Audit in which the impact, criticality, priority, and resource estimation will be determined, and recommendations and implementation plans developed. The Business Divisions of the Agency are required to consider resource requirements in developing divisional budgets to ensure Year 2000 compliance, but concern has been expressed across the Agency that no additional funding is available for this purpose. This will place a high level of pressure on current staff and financial resources. The level of funding applied to Year 2000 Projects in other business environments should be noted for comparison, eg, British Telecom.

Summary of Findings

[In relation to the Audit Office’s concern regarding entities’ apparent focus on information technology at the expense of non-IT areas such as medical equipment,] the questionnaire response submitted by this Agency does not contain any information to substantiate a concern in respect of medical equipment. The answers relating to IT systems and non-IT equipment in the questionnaire response were identical, ie we have commenced documenting the inventory. The Agency recognises the risk in these areas and will ensure that they are included in the risk management strategies and contingency planning.

[In all other respects] the recommendations are generally supported.

Impact on Business Processes

[As to whether each component of IT and non-IT equipment has been tested to ensure that it is compliant or non-compliant], the implication is that each item needs to be tested by the Agency itself. It should be noted that it is the intention of this Agency that, where items have been supplied under contract, vendors will be requested to conduct testing and provide certification of Year 2000 compliance within this Agency's definition of the term.

Whole-of-Business Approach

This Agency considers, that with limited resources available, it is unlikely that *all* matters will be *resolved* by [31 December 1998], rather that solutions will either be in place or underway for systems or equipment ranked as high priority.

General Remarks

In conclusion, the content of the report is generally supported with the exception of references to 'medical equipment' which imply that the Agency has not addressed the issue.

Nevertheless, heed will be taken of the concerns expressed to ensure that medical equipment is adequately addressed, as the potential risk to public safety is most definitely understood and duly noted.

Thank you for the opportunity to comment."

AUDIT OBJECTIVES, APPROACH AND COST

AUDIT OBJECTIVE

The Audit Office set out to gauge the preparedness and awareness of Government agencies, local government authorities, government business enterprises, and other statutory bodies of the Year 2000 problem. Our examination was carried out by a survey of these entities using a self-assessment questionnaire.

The purpose of the audit was to provide information to Parliament regarding the Year 2000 problem and to prompt appropriate action to address critical systems and those that concern the interest of the Crown and the public. The audit sought to identify and highlight issues and areas that require further attention from management in agencies, local government authorities, government business enterprises, and statutory bodies.

SCOPE OF THE AUDIT

Appendix 1 lists all government agencies, local government authorities, government business enterprises, and other statutory bodies that were forwarded a questionnaire, together with an indication of those that returned the questionnaire to the Office. See Appendix 2 for a copy of the questionnaire.

AUDIT METHODOLOGY

Organisations were requested to respond to a questionnaire entitled:

"A Review of State Agencies and Public Bodies Awareness and Preparedness for the Year 2000 Problem".

The questionnaire was substantially the same as the questionnaire kindly supplied by the Australian National Audit Office and I wish to record my thanks to that Office for its assistance and permission to use its material. The Tasmanian Audit Office attempted to assess the preparedness of public sector entities for the Year 2000 problem. Responses to the questionnaires were evaluated in four key areas:

RISK ASSESSMENT AND ANALYSIS

- Has the organisation determined whether the Year 2000 problem will have an impact on its customers and stakeholders?
- Has the organisation determined whether the Year 2000 problem will have an impact on its production of products and services?

PROJECT MANAGEMENT AND RESOURCES

- Does the entity have an experienced team working on the Year 2000 problem?
- Is the Year 2000 problem being addressed by the correct level within the entity?

IMPACT ON BUSINESS PROCESSES

- Has the organisation determined whether all of its business processes will be able to function throughout the turn of the century and beyond?
- Has the organisation determined whether any of the technological infrastructure which supports its business processes will be affected by the Year 2000 problem? and

WHOLE OF BUSINESS APPROACH

- Is the organisation adopting a "Whole of Business" approach in assessing the impact of the Year 2000 problem?

FORM OF ANALYSIS

The responses were analysed to derive an overall measure of preparedness in relation to management of the Year 2000 problem.

The analysis of the questionnaires used a scoring technique which assigned a value to the responses to each question or part question.

The values for groups of questions were then aggregated to provide an overall 'score' for major aspects of preparedness. The score for each organisation was calculated as a percentage of the maximum score to determine a level of preparedness. For example the score for Whole of Business approach might have been 5 out of a possible 9 giving a rating of 55%.

The method of analysis did not allow consideration of any qualifying statements made by entities to particular questions.

The quantitative assessment for each group (Government Agencies, Local Government Authority, etc) is based on four aspects. These are:

Risk Assessment and Analysis

Based on the responses to Questions 2 (a) - (e), 2 (h) - (j), and 4 (a) - (d) this section attempts to measure the degree to which the organisation has assessed and analysed the risk that the Year 2000 problem may have for its customers and stakeholders, and its products and services.

Project Management and Resources

Based on the responses to Questions 3, 8, 9, 10, and 11 this section attempts to measure the level of commitment that the organisation has demonstrated in providing experienced staff with appropriate senior support within the organisation.

Impact on Business Processes

Based on the responses to Questions 2 (f) - (g), 4 (e) - (i), 12, 13, 14, 15, and 16 this section attempts to assess the organisation's progress in determining whether its business processes will be able to continue to function and whether the technological infrastructure will continue to operate into the next century.

Whole of Business Approach

Based on the responses to Questions 1, 4, 5, 6, 7, 17, 18, 19, and 20 this section assesses the degree to which the organisation has adopted a "Whole of Business" approach to the Year 2000 problem.

Overall Preparedness

A rating for overall preparedness was derived for each organisation by averaging the individual ratings for each area as discussed above.

LEVELS OF PREPAREDNESS

'Preparedness' is a measure of the adequacy and appropriateness of the entity's on-going management of the Year 2000 problem. Preparedness provides an indication of the 'maturity' of an entity's Year 2000 projects and suggests a level of confidence that entities will be able to deliver its Year 2000 projects in time to avert major failure to business systems and processes.

The categories according to which questionnaire responses were scored can be grouped as follows:-

- **input issues**, in relation to: the project management; organisational factors; continued viability of business processes; and continued viability of technological infrastructure; and
- **output issues**, in relation to: customers and stakeholders; products and services; and whole-of-business issues.

The Audit Office assessed each entity according to four levels of preparedness, namely:

- **unprepared** - entities have not adequately assessed their Year 2000 risks and are likely to be *unprepared* in most respects. An entity was assessed as unprepared if its score was in the range of 0 to 25% of the maximum score;
- **somewhat prepared** - entities have undertaken some level of assessment but are likely to be *unprepared* in relation to a number of key exposures. An entity was assessed as somewhat prepared if its score was in the range of 25% to 50% of the maximum score;
- **moderately prepared** - entities are well advanced with some aspects of assessment, but their preparedness is likely to be uneven. An entity was assessed as moderately prepared if its score was in the range of 50% to 75% of the maximum score; and
- **reasonably prepared** - entities have made reasonable progress in most aspects of their Year 2000 projects and are likely to be positioned to achieve compliance in the time remaining. An entity was assessed as reasonably prepared if its score was in the range of 75% to 100% of the maximum score.

To be *fully* prepared would imply that entities have successfully eliminated all sources of controllable risk and minimised foreseeable sources of uncontrollable risks. With two years to go until the year 2000, entities would not be expected to claim that they are fully prepared, owing to the possibility that new sources of controllable and uncontrollable risk could emerge. However, it would be expected that entities should be in a position to demonstrate relatively high levels of preparedness.

The term *reasonably prepared* does not mean that entities are fully Year 2000 compliant or that the entities are not presently subject to Year 2000 risk. It does mean that auditees Year 2000 projects are sufficiently advanced to provide a reasonable level of confidence that they will achieve compliance. Entities which are assessed as *moderately prepared* are also likely to be well advanced in most aspects of their Year 2000 projects and, as with entities which are *reasonably prepared*, are likely to be well placed to substantially reduce their Year 2000 risks in the two years remaining to the year 2000.

Of course the size and complexity of the Year 2000 problem will not be the same for all entities. The size of the problem, and therefore, the time and resources required to eliminate or minimise Year 2000 exposures, will vary in relation to a number of factors, including the entity's size, operational complexity, the nature of its key functions and the configuration of its IT environment.

Large entities which are reliant on mainframe computing systems for the administration and delivery of complex functions (such as the collection of revenue or making payments) may require far greater lead time than smaller entities that are reliant on mid-range or LAN (local-area network) based computing systems. All entities, particularly those which are reliant on mainframe and mid-range computing systems, will need to ensure that once the Year 2000 problem has been treated, sufficient time is available to rectify any errors that might be identified through compliance testing.

AUDIT RESOURCES AND TIMING

The Performance Audit was commenced in July 1997. Questionnaires were sent to entities in September 1997 with replies due in early October 1997. The report was finalised in March 1998.

The total cost of the Report including the cost of Tasmanian Audit Office staff is estimated as \$ 20 000 .

BACKGROUND

EXTENT OF THE YEAR 2000 PROBLEM

The Year 2000 problem stems from the fact that many computer systems were developed to minimise data storage and memory requirements, and so stored dates using two digits for the year. This means that calculations or formulas which use date comparisons may not function correctly after 1 January 2000. Incorrect interpretation of dates or an inability to process dates could lead to incorrect results or failure of systems that may be critical to a business.

The risk poses a threat to operations. In addition, as the risk is foreseeable, organisations may be liable for any incidents or losses that are caused by the problem.

Much of the publicity has related to computer systems that are involved in the commercial information processing side of a business, such as financial and payroll systems. However, any equipment containing a microchip and dealing with dates or times is potentially at risk. This includes software, hardware, data storage systems as well as embedded systems, which are used to control, monitor or assist the operation of equipment, machinery or plant. Other potentially affected systems include environmental control systems, lifts, security systems, medical equipment and small appliances, such as video recorders.

NOT JUST A YEAR 2000 PROBLEM

The problem is not restricted to the change of date from 31 December 1999 to 1 January 2000. The Tasmanian Information Strategy Unit has determined that a number of other date problems may occur:

- *Applications which project or estimate data may be affected earlier than 1 January 2000. Those that project to the 1999/2000 financial year may be among the first to come across date change problems.*
- *The date 9 September 1999 (9/9/99) was often used by programmers as a special code in order to represent "null", "infinite" or an end point. Rollovers to this date may cause errors in some systems.*
- *Day of the week ambiguity, due to the fact that 1 January 1900 was a Monday, but 1 January 2000 is a Saturday.*
- *Some GPS systems may fail as GPS System Time rolls over at midnight on 22 August 1999. Those that fail may reset the date to 6 June 1980, and give incorrect position data.*
- *Finally, 2000 is a leap year, while 1900 was not. Errors may occur if systems are not configured to take 29 February or the extra day in the year into account⁶.*

THE LEGAL IMPLICATIONS OF THE YEAR 2000 PROBLEM

Entities without a project 2000 team in place are facing a serious risk management problem. If some services are not operational because of a failure to adequately address the Year 2000 problem, there is a risk of possible law suits from customers or suppliers. This was acknowledged in several responses to the questionnaire. Reports by the NSW Audit Office and the Canadian Office of the Auditor-General state the risks of litigation fall into the following classes:

- errors in Government services and information upon which businesses or the public rely;
- interruption in services that result in delays, causing loss of business;
- malfunction of products or devices certified by the Government; and
- defects, errors, interruption or failure of goods or services regulated by the Government⁷.

In reviews carried out on Year 2000 risk by the NSW Audit Office and the Western Australian Office of the Auditor-General, both found exposures which may pose threats to safety due to malfunctioning or failure of computerised equipment. Two main types of such equipment are medical equipment and building service infrastructure. The following kinds of medical equipment were noted as being possible risks, either because of their date-dependent nature, or complex computerised controls:

- critical care patient management systems;
- medical imaging systems;
- laboratory instrumentation (especially those linked to PCs);
- radiotherapy systems; and
- paging systems⁸.

Building service infrastructure that may be subject to Year 2000 problems include:

- lift controls;
- building automation;
- security and fire systems; and
- air-conditioning systems⁹.

Several of the above items of equipment do not fall into the traditional IT category, yet they represent a risk to an organisation. The Audit Office found that few public sector entities have included non-IT areas in their risk assessments and inventories, let alone 'live' testing.

As well as addressing the above computerised areas for existing assets, public sector entities also need to ensure that future purchases of products and services are Year 2000 compliant¹⁰. To this end, the Audit Office understands that the Information Strategy Unit is currently examining this area with a view to developing a standard clause to be included in all procurement contracts.

In the NSW Audit Office's report "1999-2000 Millenium Date Rollover: Preparedness of the NSW Public Sector" a chapter was dedicated to "Building Services and Medical Equipment".

In relation to building services the report identified strategies to address building service issues. These issues need to be managed differently according to whether buildings are:

- owned and managed by Government;
- owned by Government but managed by subcontractors;
- leased¹¹.

This Office endorses the NSW Audit Office's view that:-

- "where the State is the direct owner and landlord an audit needs to be conducted of buildings to determine whether they have systems that expose the State to risk;
- where the State has contracted the landlord function to a managing agent, there needs to be in the contract with the agent a clear responsibility for identifying and resolving any Year 2000 problems; and
- where the State leases property, leases need to contain arrangements for taking responsibility for an resolving Year 2000 problems"¹².

SCOPE OF THE YEAR 2000 PROBLEM

According to the NSW Department of Public Works and Services and the Commonwealth Office of Government Information Technology ,

information resources that need checking for Year 2000 compliance cover all automated information processing equipment instructions. These include:

- *computer hardware and computerised devices,*
- *computer firmware (microcode),*
- *computer applications, including purchased software applications,*
- *purchased software development packages,*
- *project management, data base managers, editors and compilers etc,*
- *custom developed applications software,*
- *computer system software, including operating systems, database systems and job control language, and*
- *data, such as:*
 - ◆ *DBMS structures (data based definitions) and data bases,*

- ◆ *stored data,*
- ◆ *incoming data, (received from other applications or organisations),*
- ◆ *outgoing data (being sent to other organisations)¹³.*

The Australian Information Industry Association (AIIA) made the following comments regarding the extent of the Year 2000 problems for organisations in both the public and private sectors:

US Morgan Stanley suggests that nearly 50% of the applications requiring conversion sit on PC's, workstations, mini-computers and other devices. Any program or system that uses only 2 digits to represent the year may have problems. Data from the United States and United Kingdom suggests that only about 15% of conversions involve rewriting code. Most of the conversion work is upgrading, migration, reengineering.

It is expected that companies in the United States will spend up to 30% of their annual IT budgets on correcting their IT problems¹⁴.

FINDINGS, CONCLUSION AND RECOMMENDATIONS

SURVEY RESPONSE LEVELS

The Audit Office sent questionnaires to most public sector entities. A summary of the responses is provided below.

	Questionnaires Sent	Returned	Year 2000 Millenium Impact	
			Yes	No
Government Agencies and Divisions	21	19	17	2
Local Government Authorities	29	22	15	7
Government Business Enterprises	17	13	9	4
Other Statutory Bodies	24	14	8	6
Total	91	68	49	19
Percentages		75%	72%	28%

The number of responses was very pleasing; however, some of the reasons for the non-return of the questionnaire were disappointing. Those entities which returned the questionnaire with a response that the Year 2000 problem will not have an impact, are included in the response levels tabulated above but have not been included in the following analysis. However, even though no field testing has been performed to validate their claims, the Audit Office believes in some cases there is some doubt about the accuracy of those responses.

OVERALL PREPAREDNESS

The analysis of the entities that indicated the Year 2000 problem would be an issue, revealed overall that Tasmanian public sector entities are not very well prepared for the Year 2000. This result is not surprising given that nearly every audit performed on the Year 2000 problem in other jurisdictions, such as the United States, the United Kingdom, Commonwealth of Australia, New South Wales, and Western Australia, has revealed the same outcome. A summary of the level of preparedness for the State public sector by category is detailed below.

	Unprepared	Somewhat Prepared	Moderately Prepared	Reasonably Prepared
Government Agencies and Divisions	1	13	3	0
Local Government	6	8	1	0
Government Business Enterprises	3	4	2	0
Other Statutory Bodies	4	3	1	0
Total	14	28	7	0
	28.6%	57.1%	14.3%	0%

The above summary indicates that only 14% of the State public sector entities are well advanced with some aspects of assessment, but their preparedness is likely to be uneven. However they are likely to be well placed to substantially reduce the risks of the Year 2000 problem in the two years remaining to the turn of the century.

The remaining 86% are in a state of unpreparedness because the entities have not yet adequately assessed their Year 2000 risks, or the entities have undertaken some level of assessment but are likely to be unprepared in relation to a number of key exposures.

SUMMARY OF FINDINGS

The majority of State public sector entities have identified the Year 2000 problem as a significant risk for their entity. However, those entities have not completed a formal assessment to identify the relevant risks, and therefore no assessment of the potential impact has been completed. Given the remaining time to the Year 2000, which is an immovable deadline, consideration must be given to prioritising the risks as it is evident that most entities will fall short of being fully Year 2000 compliant in all aspects of business activities.

The survey responses showed that some of the risks already identified are:

- possible risks to public safety;
- risks to the collection of revenue and payment of expenses;
- risk to the carrying out of functions and the provision of services;
- adverse impact on the entities' customers and stakeholders
- risk of litigation;
- risk that non-resolution of the Year 2000 problem by other agencies will impact on their agency;

The majority of entities do not have project teams sufficiently well set up to tackle the Year 2000 problem. Some of the concerns are:

- appropriate managers of the Year 2000 Project;
- levels of expertise within the entities;
- lack of dedicated resources;
- lack of formal reporting mechanisms;
- lack of detailed inventory and asset management systems;
- focus on information technology at the expense of non-IT areas and
- lack of a formal project management methodology.

It is evident from the responses that many entities are not treating the Year 2000 problem as a business risk. The focus has been to treat the problem as an IT problem rather than as a business issue. Most entities do not use a risk management methodology. The entities do not have contingency plans; although significant risks have been identified, no workable solutions have been identified or tested in case the risk materialises.

CONCLUSION

Overall, the public sector has a considerable risk to manage over the next two years, and while a small number of organisations are making good progress towards resolution of the Year 2000 problem, the public sector generally is not well advanced in preparations to deal effectively with the associated business risks.

RECOMMENDATIONS

A whole of Government approach should be adopted to coordinate the public sector response to the Year 2000 problem, with the establishment of a steering committee at a senior level.

A public sector wide working party should be established to share information and resources at an operational level.

Responsible Ministers should be kept informed of progress towards resolution of the Year 2000 problem.

The Year 2000 problem should be managed as a business risk issue, and given adequate priority to ensure early resolution.

All public sector entities should prepare formal Year 2000 risk management plans.

Early attention should be given to finalising the identification of exposures, assessment of risk, and implementation of solutions.

Consideration should be given to the impact of inter-entity dependencies and interactions

Risk management plans should adopt a project management approach to resolution of the Year 2000 problem.

Public sector entities should disclose risk management activities, including year 2000 responses, in their Annual Reports.

GOVERNMENT DEPARTMENTS

INTRODUCTION

The Audit Office issued 21 questionnaires of which 19 were returned with 17 indicating that the Year 2000 problem will have an impact. See Appendix 1 for details of respondents.

Of the nineteen agencies that returned the questionnaire 11 were signed by the Head of Agency, or Deputy Head of Agency or equivalents. On this basis I am confident that the questionnaire responses are reliable.

The following comments and recommendations are based on an analysis of the questionnaires of the 17 entities that indicated the Year 2000 problem will have an impact.

RISK ASSESSMENT AND ANALYSIS

Eleven agencies have indicated that the Year 2000 problem is a significant risk and that the agencies could be sued by a third party and twelve could sue a third party as a result of the non-resolution of the Year 2000 problem. Twelve agencies have identified that there could be an adverse impact on the agencies' customers (the public) and stakeholders (the Ministers, Executive Government and Parliament) if the Year 2000 problem is not resolved..

Each agency identified that there is a risk that the non-resolution of the Year 2000 problem by other agencies poses a risk to their agency. This is a very significant response given that agencies exchange data regularly. The majority of agencies have indicated that the receipt of government revenue and the payment of expenditure could be affected by the Year 2000 problem.

Given the nature of the risks identified it is pleasing to note that sixteen of the agencies have commenced a risk assessment. However, not every risk has been considered, and an assessment has not been completed for each identified risk.

The agencies have in general identified significant risks, and in the main have commenced some form of risk assessment of the potential impact the Year 2000 problem on their customers and stakeholders and the production of products and services. The level of preparedness is rated from unprepared to reasonably prepared with eleven being somewhat prepared.

PROJECT MANAGEMENT AND RESOURCES

Only ten agencies have formally defined the roles of individuals who are responsible for resolving the agency's Year 2000 problem. However, thirteen agencies have a Year 2000 Project of which eleven have project managers, and twelve have senior management sponsors. Of these thirteen projects, six commenced in the last three months and four in the last six months.

Only six agencies are recording the costs associated with the Year 2000 problem. As at 30 June 1997, no agency was employing sufficient resources (includes agency staff, consultants and contractors) on their project teams to resolve the Year 2000 problem. This assessment is based on the following averages for departments:-

- the number of full-time equivalent personnel assigned to the project teams - .22 FTE average;
- Of those agencies(three) with an amount budgeted for the resolution of the Year 2000 Problem the average amount is \$28 000 p.a. ; and
- Of those agencies recording resolution costs for the Year 2000 problem the average amount spent to date is \$10 000 p.a.

Therefore the projects may be under resourced.

The reporting mechanisms adopted by the agencies are poor. Only four agencies present written reports and no agency prepares frequent reports on the status of the Year 2000 problem for internal use. Only five agencies present periodic status reports to the Head of Agency/Executive Board, and only one agency presents a written report. Given the nature of the risk there should be periodic written reports provided to the Head of Agency/Chief Executive Officer and the Minister responsible for the entity. Only two agencies have briefed their responsible Minister on the status of the agency's actions to resolve the Year 2000 problem.

It is not surprising that none of the agencies have estimated the total cost to the agency of becoming Year 2000 compliant. Of the thirteen projects, only four have a Project Team budget for the current financial year and only one has projected budgets for the next two financial years.

Only two agencies have adopted a formal project strategy or project methodology to address the Year 2000 problem and only four agencies have a Statement of Year 2000 Compliance.

It is significant that only three agencies have a risk management plan but only one includes the Year 2000 problem within the plan.

Based on these responses the level of preparedness for the Year 2000 problem in relation to the ownership of the problem and the processes in place to deal with the problem is rated as unprepared to somewhat prepared.

IMPACT ON BUSINESS PROCESSES

The agencies have identified that their employees and core business functions will be affected if the Year 2000 problem is not resolved. However, very few have performed an assessment of the impact on the agency if the risk eventuates especially in respect of the effect on employees, the agency's business functions, the agency's business service providers and the information technology (IT) and the non-IT equipment the agency utilises.

It is not possible to disregard the impact of the Year 2000 problem until it has been investigated. To this end all agencies must undertake a documentation of their inventory that is required for the delivery of mission critical applications to identify the equipment which could be affected by the Year 2000 problem, and then perform 'real life' testing to validate the equipment as being Year 2000 compliant.

Two-thirds of the agencies have commenced inventory documentation on information technology equipment (hardware and software) since April 1997 (50% since July 1997). At least half of the agencies have indicated that some of their IT equipment is affected by the Year 2000 problem, the other half cannot indicate a response at this stage. The majority of the IT equipment identified as

being affected by the Year 2000 problem will require assistance from third parties to resolve the problem. However, there is no definitive statement of commitment from the third parties to ensure all IT equipment will be Year 2000 compliant.

Only half of the agencies have commenced inventory documentation on non-IT equipment since April 1997. To date only two agencies have indicated that the Year 2000 problem will have an impact on non-IT areas while the others do not know at this stage. Non-IT equipment may also require assistance from third parties to resolve the problem. Again, there is no definitive statement of commitment from the third parties to ensure all non-IT equipment will be Year 2000 compliant.

When the documentation of the IT and non-IT equipment has been completed and analysed each component should be tested to ensure that it is compliant or non-compliant. This task could be performed concurrently with the documentation but it must occur. Only half the agencies have commenced 'real life' testing on IT equipment whether supplied externally or internally. However, essentially no agency has performed any 'real life' testing on non-IT equipment. The results of this testing are not being documented by the majority of agencies.

The level of preparedness for the Year 2000 problem in relation to identifying the problems and impacts of the Year 2000 problem so as to ensure the agency can perform its statutory responsibilities is rated as unprepared to moderately prepared.

WHOLE OF BUSINESS APPROACH

The issue is whether the agency is adopting a 'whole of business' approach to the impact of the Year 2000 problem. As mentioned earlier sixteen of the agencies have commenced a risk and impact assessment analysis with the majority commencing since May 1997. At November 1997 only four agencies have completed the analysis. Based on the agencies' efforts to date thirteen have identified their agency's critical date for the resolution of any Year 2000 problem. Four have indicated their critical date is prior to October 1998, and at least half identified their critical date as being after December 1998. It is suggested that all the issues and tasks related to the Year 2000 problem be resolved by 31 December 1998.

Only four agencies have commenced documenting a Year 2000 Contingency Plan which provides workable alternatives in the event of the agency being impacted by the Year 2000 problem. This finding is not surprising given that at the time of my review of computer controls in Government Departments (April 1997) none of the agencies at that time had a complete disaster recovery plan. Only three of these contingency plans have been completed. However, only one plan is addressing the impacts specified earlier such as customers, stakeholders, business functions and services, IT and non-IT equipment.

Only four agencies have identified the date upon which the agency will achieve Year 2000 compliance. Most agencies have identified the most significant risks to their agency but do not have a contingency plan in place should the risk materialise.

The level of preparedness for the Year 2000 problem in relation to adopting a 'whole of business' approach is rated as unprepared to moderately prepared, with the majority being somewhat prepared.

CONCLUSION

Based on the responses to the questionnaire for the Government agencies that indicated the Year 2000 problem was an issue, the Audit Office assessed the level of preparedness of agencies as:

Levels of Preparedness	Unprepared	Somewhat Prepared	Moderately Prepared	Reasonably Prepared
	1	13	3	0

Agencies have identified the Year 2000 problem as a significant risk. However, agencies are not very well placed at this stage to deal with the issue.

The Audit Office has identified the following problems facing agencies:

- lack of awareness of the issue;
- reluctance to accept the Year 2000 problem as a significant business issue;
- lack of a business risk culture which recognises the Year 2000 problem as a business issue;
- ownership and management of risk within the agency;
- the need for asset management to allow IT and non-IT assets to be identified as possible risks in the year 2000 and beyond;
- need for recognition of agency inter-dependencies;
- difficulties in scoping the project;
- lack of dedicated resources.

The majority of agencies are only 'somewhat prepared'. Agencies need to focus on this issue urgently so that processes can be put in place to ensure any risks identified are minimised.

LOCAL GOVERNMENT AUTHORITIES

INTRODUCTION

The questionnaire was sent to all 29 councils, and of the 22 councils that responded, 12 were signed by the General Manager or Senior Management. However, seven of the completed questionnaires stated that the entity was not affected by the Year 2000 problem and the rest of the questions were left blank. This matter is discussed further below. The recipients of the questionnaire and those who responded are detailed in Appendix 1. The following analysis is based on the 15 councils that indicated that the Year 2000 problem will have an impact.

RISK ASSESSMENT AND ANALYSIS

Eleven councils noted a risk of not resolving the IT problem in terms of their key stakeholders and customers and twelve noted the possibility of suing another party. However, none of them considered that there was a risk in themselves being impacted by another council not resolving the Year 2000 problem.

Although ten of the councils had commenced an assessment of particular ways the Year 2000 problem could affect their entities, such assessments did not include strategic relations with the State, and only two councils examined the impact on stakeholders and key customers, as well as their products and services.

Fourteen councils considered such risks meant that public revenue may not be received, and that council expenditure would not be made or would be made incorrectly. However, respondents were divided on whether public safety could be compromised.

Overall the responses indicated that all of the 15 councils were 'unprepared'.

PROJECT MANAGEMENT AND RESOURCES

Commitment from an organisation's top management and the allocation of adequate resources are essential factors to ensuring that risks related to Year 2000 problem are identified and addressed. A frequent reporting system should also be in place so that the executive level is aware of issues and can make informed decisions as to whether more resources and efforts are required.

It was noted that:

- none of the councils had formally delegated individuals as being responsible for resolving their vulnerability to Year 2000 problem risk;
- only one council has a documented risk management plan;
- only three councils had set up a Year 2000 problem project, but they are not following a formal, documented methodology to ensure a strategic outcome is achieved.
- of those three councils, only two projects had a manager;

- two councils are preparing written updates on how they are addressing the Year 2000 problem but no council forwards reports to their executive boards; and
- only one council had estimated the total cost of being Year 2000 compliant set up a budget.

IMPACT ON BUSINESS PROCESSES

The questionnaire focused on how councils have identified and addressed Year 2000 problem risks that relate to their business functions and processes. Almost all councils considered that there is a risk that their employees would not be able to perform their duties and that their core business functions would be disrupted. However, only two councils have documented assessments on the extent to which officers' work will be affected, and five councils in relation to business function issues.

In relation to identifying the particular business functions which could be affected, seven councils have commenced documenting an inventory of functions the councils themselves carry out but only two are looking at services provided by others that councils use. Only one council has performed Year 2000 'real life' compliance testing on major business functions.

There were similar results with respect to risk assessment and inventory documentation for councils' information technology (IT) and other infrastructure, with only a few councils carrying out work in this area, and none of the compliance testing which they did was documented. Accordingly the responses for this area indicate that overall, councils are unprepared for the Year 2000 problem risk concerning their infrastructure.

WHOLE OF BUSINESS APPROACH

Fifteen councils stated that they were affected by the Year 2000 problem, with a further seven councils responding that it was not an area of concern. Some councils in the latter group gave future mergers with other councils as the rationale for their response. However, such problems will not cease to exist for merged councils. Past observations are that merged entities retain their infrastructure, at least until new business processes are put into place and old applications are later decommissioned.

In relation to those councils that stated that the Year 2000 problem issue did not apply to their organisation, it is considered that unless an inventory is carried out and an assessment made of all possible applications which could be affected, it would not be possible to categorically state that such risk does not apply.

For the councils which did state that they were affected, ten had commenced their risk assessments, with the majority having started in the last 12 months. In regard to the critical date by which the council must have resolved the impacts of the problem, eleven councils had established such dates, with the majority giving critical dates before October 1998. One council gave a critical date as December 1999. It is suggested that all issues and risks related to the Year 2000 problem be resolved by December 1998.

None of the councils have commenced documenting a Year 2000 problem contingency plan which would provide workable alternatives in the event that the council is affected by the problem, should their risk assessment and management work not address all software. Such a plan should be part of an organisation's overall disaster recovery/business continuity strategy.

Further, although most councils have identified the most important risks they face in relation to the Year 2000 problem, only one council has determined the date upon which compliance will be achieved.

CONCLUSION

Based on the responses to the questionnaire for council who indicated the Year 2000 problem was an issue, the Audit Office assessed the overall level of preparedness of councils as:

Levels of Preparedness	Unprepared	Somewhat Prepared	Moderately Prepared	Reasonably Prepared
	6	8	1	0

Councils have identified the Year 2000 problem as a significant risk. However, the councils are not very well placed at this stage to deal with the issue.

GOVERNMENT BUSINESS ENTERPRISES

INTRODUCTION

The Audit Office issued 17 questionnaires of which thirteen were returned with nine indicating that the Year 2000 problem will have an impact. See Appendix 1 for details of responses.

Of the thirteen GBEs that returned the questionnaire, ten were signed by the Chief Executive Officer, General Manager, or Secretary of the Board. On this basis, I am confident that the questionnaire responses are reliable.

The following analysis is based on the 9 responses indicating the Year 2000 problem will have an impact.

RISK ASSESSMENT AND ANALYSIS

As with government agencies and local government authorities, six GBEs recognised risks regarding possible litigation, and impacts on their key customers and stakeholders. However, seven GBEs also considered that there was a risk of being impacted by another GBE's non-resolution of the Year 2000 problem.

In regard to the extent of risk assessments carried out, all GBEs said that they had commenced such an assessment, but only three examined the impacts of the Year 2000 problem on key customers, stakeholders, and strategic relations with other State entities.

With respect to GBEs' production of products and service provision, two stated that there was a risk that public safety could be compromised. However, six considered that there was a risk that public revenue would not be received, as well as expenditure not being made or made incorrectly. Four GBEs have carried out an assessment of how the Year 2000 problem will affect their products and services.

PROJECT MANAGEMENT AND RESOURCES

Half the GBEs said that they formally defined the roles for persons responsible for resolving their Year 2000 problem, and most have set up a Year 2000 project, with most of these accountable as an activity of the IT unit. Only four GBEs have a project manager for their Year 2000 projects. None of the project managers had received any training specifically related to the Year 2000 problem. Most GBEs had sponsors for their Year 2000 projects.

Half the GBEs said that they produce written reports on their actions to date to resolve the Year 2000 problem, but most of these were not considered to be frequent enough. As to the extent of notifying their organisations' executive level of Year 2000 progress, while half the GBEs do have such reports, most are not in written form. None of the GBEs' stakeholder ministers have been briefed on the status of actions to resolve the Year 2000 problem.

Only one GBE has estimated the total cost to become Year 2000 compliant, with a budget for this purpose, and monitoring of actual-to-budget variances. Only one GBE is following a formal, documented, strategic methodology to address the Year 2000 problem.

Although half the GBEs had documented risk management plans, none of them had included actions to address Year 2000 problems. The Audit Office notes this deficiency as a considerable shortcoming in GBEs' risk management approaches.

IMPACT ON BUSINESS PROCESSES

Although most GBEs stated that risks existed of employees not being able to perform their duties, as well as disrupting their core business functions, only half the risk assessments carried out examined the impact on staff performing their work and their business functions. Half the GBEs also carried out risk assessments on the impacts of the Year 2000 problem on their business service providers, as well as IT and non-IT resources they use.

Half the GBEs have carried out a detailed inventory in relation to business functions which could be affected by the Year 2000 problem but most have not carried out an inventory on business services they use. Of the work carried out as part of the inventory, only one GBE has examined and contacted third parties involved in these processes. In relation to inventory identification for IT used, most GBEs had carried this out, and found that IT resources tested were affected. Several GBEs found that they had IT resources which relied on third parties and one GBE has been notified by a third party that the latter would not resolve the impact of the Year 2000 problem.

Consistent with results for agencies and councils, few GBEs carried out an inventory which documented non-IT services and products which are impacted by the Year 2000 problem. One such GBE found that such services were affected by the Year 2000 problem.

Only one GBE has performed Year 2000 'real life' compliance testing on major business functions, and externally- and internally-supplied IT products but did not document these results. No GBE had carried out 'real-life' compliance testing on non-IT products.

WHOLE OF BUSINESS APPROACH

Nine of the GBEs that responded stated that they were affected by the Year 2000 problem, and all nine had commenced an assessment of the impact of the issue on their organisation. Only two had completed their risk assessments at the time of the questionnaire. Most GBEs have established critical dates but the majority of such dates are after December 1998. It is suggested that to allow adequate time, a critical date prior to December 1998 is necessary.

Only one GBE had commenced a Year 2000 contingency plan, which would provide workable alternatives in the event that the organisation is affected by the Year 2000 problem. However, it has not yet been completed. As well, only one GBE has determined the dates by which Year 2000 compliance will be achieved. Overall, although half the GBEs believe they have identified the most important risks faced in relation to the Year 2000 problem, it is doubtful as to how well an organisation could become Year 2000 compliant within a comfortable timeframe without a detailed strategy. Accordingly, for this section of the questionnaire the Audit Office assessed three GBEs as being moderately prepared, four as somewhat prepared, and two as unprepared.

CONCLUSION

Based on the responses to the questionnaire for GBE's who indicated the Year 2000 problem was an issue, the Audit Office assessed the level of preparedness of GBE's as:

Levels of Preparedness	Unprepared	Somewhat Prepared	Moderately Prepared	Reasonably Prepared
	3	4	2	0

GBE's have identified the Year 2000 problem as a significant risk. However, as with agencies and local government authorities, the majority of GBEs are not very well placed at this stage to deal with the issue.

The survey indicated:

- a lack of an appropriate level of resources, trained staff and regular reporting to executive as to the progress of resolving Year 2000 problem matters.
- that several GBEs acknowledge a risk that the Year 2000 problem could affect their organisation, but do not acknowledge that risk analysis without a more detailed assessment, and inventory of particular applications and services is inadequate.
- that there appears to be a lack of appreciation that the Year 2000 problem can affect more than just computer software in an IT setting.

OTHER STATUTORY BODIES

INTRODUCTION

The questionnaire was sent out to all statutory authorities, Port Companies and other public bodies. The recipients of the questionnaire and those who responded are detailed in Appendix 1.

The Audit Office issued 24 questionnaires of which 14 were returned, with 8 indicating that the year 2000 problem will have an impact. Most of the questionnaires were signed by the executive management of the public body.

The following analysis is based on the eight entities that indicated the Year 2000 problem will have an impact.

RISK ASSESSMENT AND ANALYSIS

Five public bodies examined under this part considered that there was a risk of litigation as well as being affected by another public body's non-resolution of the Year 2000 problem. Half the public bodies believed that there was a risk of their own entity having adverse effects on their key customers and stakeholders.

Most had commenced risk assessment of the Year 2000 problem impact on their organisations which included effects on key customers and stakeholders. Only two public bodies looked at strategic relations with other State entities.

Another risk area concerns finances, and in particular whether government expenditure would not be made or made incorrectly or if public revenue would not be received, due to the Year 2000 problem. Six public bodies stated that there was a risk in relation to expenditure, and half said there was a risk that revenue would be affected. Five bodies also considered that there was a risk that their entity would not be able to fulfil its statutory obligations. However, only two public bodies included an analysis of the impact of the Year 2000 problem on their products and services.

As with other parts of the State public sector examined in this report, the finding that not all risks have been considered, and that not all assessments have been completed for all risks is a significant shortcoming in their approaches to managing the Year 2000 problem.

PROJECT MANAGEMENT AND RESOURCES

Only two public bodies formally defined the roles of those persons responsible for resolving their Year 2000 problem, having formally established a Year 2000 Project. Neither project had a sponsor.

Only one public body provides written reports on its progress. Although two public bodies stated that they provided their executive Board with period reports on the progress to-date on Year 2000 problem, neither of them was in writing. None of the public bodies have briefed their respective Ministers on the status of Year 2000 problem risk management.

Only one public body has established a budget for the next three years, as well as recording the costs to date on the project, enabling an actual-to-budget analysis.

None of the public bodies is following a formal, documented strategic methodology to address the Year 2000 problem and none had a documented risk management plan. One public body has a Statement of Year 2000 compliance.

IMPACT ON BUSINESS PROCESSES

Four public bodies responded that there were risks that their employees would not be able to perform their duties and five indicated that the entities' core business functions may be disrupted. However, not all of the risk assessments carried out covered these areas. The results for risk assessments on the impact of the Year 2000 problem on their business service providers, IT and non-IT areas were similar to agencies, GBEs and councils, with a several public bodies assessing the impact on IT matters but not many bodies examining business service providers or non-IT areas.

Six public bodies have carried out inventory documentation, with all six entities examining IT matters, but fewer having included third parties, business services and non-IT areas. Only one public body carried out 'real-life' compliance testing on major business functions and IT areas but none of the testing was documented.

WHOLE OF BUSINESS APPROACH

Eight public bodies stated that they were affected by the Year 2000 problem. Although six bodies commenced risk assessments, only one body has completed its study. In regard to critical dates, only two public bodies have dates prior to December 1998, and as stated in earlier parts of this report, the Audit Office considers that such a date should be no later than December 1998. Four bodies have identified what they believe are the most important risks in regard to the Year 2000 problem but only one has a contingency plan to address such a risk.

CONCLUSION

Based on the responses to the questionnaire for other statutory bodies who indicated the Year 2000 problem was an issue, the Audit Office assessed the level or preparedness of statutory bodies are:

Levels of Preparedness	Unprepared	Somewhat Prepared	Moderately Prepared	Reasonably Prepared
	4	3	1	0

The statutory bodies have identified the Year 2000 problem as a significant risk. However, the majority of the statutory bodies are not very well placed at this stage to deal with the issue.

APPENDIX 1: RECIPIENTS OF QUESTIONNAIRE

Entity's Name	Response Received	
	Yes	No
Government Agencies:		
Communications and Computing Division	✓	
Department of Community and Health Services	✓	
Department of Education, Community and Cultural Development	✓	
Department of Environment and Land Management	✓	
House of Assembly	✓	
Joint House Committee		✓
Department of Justice	✓	
Legislative Council	✓	
Legislature-General	✓	
Office of the Governor	✓	
Payroll/Personnel Consortium	✓	
Department of Police and Public Safety	✓	
Department of Premier and Cabinet	✓	
Department of Premier and Cabinet - SEIS	✓	
Department of Primary Industry and Fisheries	✓	
Tasmania Development and Resources	✓	
Tourism Tasmania	✓	
Department of Transport	✓	
Department of Treasury and Finance	✓	
Department of Vocational and Educational Training	✓	
Workplace Standards Authority		✓
Government Business Enterprises		
Civil Construction Corporation	✓	
Forestry Tasmania	✓	
HEC Enterprises Corporation	✓	
Hydro-Electric Corporation	✓	
Motor Accidents Insurance Board	✓	
Metropolitan Transport Trust	✓	
North West Regional Water Authority	✓	
Port Arthur Historic Site Management Authority	✓	
Printing Authority of Tasmania		✓
Public Trustee	✓	
Southern Regional Cemetery Trust	✓	
Stanley Cool Stores Board	✓	
Tasmanian Dairy Industry Authority		✓
Tasmanian Grain Elevators Board		✓

Entity's Name	Response Received	
	Yes	No
Tasmanian International Velodrome Management Authority		✓
Tasmanian Public Finance Corporation	✓	
Totalizator Agency Board	✓	
Local Government		
Break O' Day Council	✓	
Brighton Council		✓
Burnie City Council		✓
Central Coast Council	✓	
Central Highlands Council	✓	
Circular Head Council	✓	
Clarence City Council	✓	
Derwent Valley Council	✓	
Devonport City Council		✓
Dorset Council	✓	
Flinders Island Council		✓
George Town Council	✓	
Glamorgan-Spring Bay Council		✓
Glenorchy City Council	✓	
Hobart City Council	✓	
Huon Valley Council	✓	
Kentish Council	✓	
King Island Council	✓	
Kingborough Council	✓	
Latrobe Council	✓	
Launceston City Council	✓	
Meander Valley Council	✓	
Northern Midlands Council	✓	
Sorell Council	✓	
Southern Midlands Council	✓	
Tasman Council		✓
Waratah-Wynyard Council	✓	
West Coast Council		✓
West Tamar Council	✓	
Other Statutory Authorities and Public Bodies		
Aboriginal Land Council of Tasmania		✓
Ben Lomond Skifield Management Authority	✓	
Burnie Port Corporation Pty Ltd	✓	
Dulverton Regional Waste Management Authority	✓	

Entity's Name	Response Received	
	Yes	No
Esk Water Authority		✓
Flinders Island Ports Company Pty Ltd		✓
Hobart Ports Corporation Pty Ltd		✓
Hobart Regional Water Authority	✓	
Inland Fisheries Commission	✓	
King Island Ports Corporation Pty Ltd	✓	
Local Government Association of Tasmania	✓	
Marine and Safety Tasmania	✓	
Parliamentary Superannuation and Retiring Benefits Trust	✓	
Port of Devonport Corporation Pty Ltd		✓
Port of Launceston Pty Ltd		✓
Private Forests Tasmania	✓	
Retirement Benefits Fund Board	✓	
Royal Tasmanian Botanical Gardens		✓
St Giles Society		✓
State Fire Commission		✓
Tasmanian Building and Construction Industry Training Board	✓	
Tasmanian Retirement Living Management Pty Ltd	✓	
University of Tasmania	✓	
Valuers Registration Board		✓

APPENDIX 2 – Copy of Questionnaire



TASMANIAN AUDIT OFFICE

A Review of State Agencies and Public Bodies' Awareness and Preparedness for the Year 2000 Problem

PREAMBLE

In essence, the Year 2000 problem arises because most business processes and systems

developed over the past twenty years use only two digits to specify the year, rather than four. Therefore, from 1 January 2000 on, unless the problem is corrected, many processes and systems with time sensitive functions or programs will recognise the year as "00" and may assume that the year is 1900. This could force a business system or process to shut down, refuse to accept valid data or lead to incorrect calculations/operations. This situation has the potential to cause widespread disruption to the State's ability to carry out its operations.

Given the significance of this issue to State operations, the Tasmanian Audit Office is conducting a review of the Year 2000 problem to:

- reinforce awareness in entities of the imperative to achieve Year 2000 compliance;
- outline the risks to the State of any failure by auditees to achieve compliance; and
- encourage entities to implement effective and timely strategies to achieve compliance and minimise risks.

The purpose of this questionnaire is to elicit information concerning entities' preparedness to meet the challenges posed by the Year 2000 problem. The results of the questionnaires will be reported in the audit report to be tabled in Parliament in November 1997.

INSTRUCTIONS

1. **Authorisation of completed forms.** It is preferred that the questionnaire response be signed by the Head of Agency/Chief Executive as an authorised response from the entity. A contact officer should also be nominated.
2. Addressees are requested to complete all questions. The Audit Office would be pleased to provide assistance in completing any part of this questionnaire, and would welcome any written comments or explanations which should be attached to the completed form. A copy of the questionnaire can be downloaded from the Office's web site (<http://www.audit.tas.gov.au>). The Audit Office contact officer is David Strong, (03) 6233 3092.
3. The completed questionnaire should be returned by 10th October 1997 to:

Mr. David Strong
Tasmanian Audit Office
GPO Box 851
HOBART TAS 7001
Or Emailed to:
D.Strong@audit.tas.gov.au

<p>1. Is your entity affected by the Year 2000 problem? <i>If No, please sign at the end of the questionnaire and return to TASAUDIT. If Yes, please go to the next question.</i></p>	<p>Yes / No</p>
<p>2. Does the Year 2000 problem present any of the following risks to your entity:</p> <ul style="list-style-type: none"> a) the risk of your entity being sued as a result of your entity being unable to resolve the Year 2000 problem? b) the risk of your entity suing another party as a result of that party's non-resolution of the Year 2000 problem? c) the risk of public safety being compromised? d) the risk of public revenue not being received? e) the risk of expenditure not being made, or being made incorrectly? f) the risk of your entity's employees not being able to perform their duties? g) the risk of your entity's core business functions being disrupted? h) the risk of your entity causing adverse impacts on your key customers and stakeholders? i) the risk of your entity being impacted by another entity's non-resolution of the Year 2000 problem? j) the risk of your entity being incapable of fulfilling its statutory obligations? <p><i>Please go to the next Question .</i></p>	<p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p>

<p>8. Does your entity have a Statement of Year 2000 Compliance? (i.e. does your entity have a statement which states your commitment to Year 2000 compliance regardless of your entity's status towards Year 2000 certification) <i>Please go to the next Question.</i></p>	<p>Yes / No</p>
<p>9. Has your entity formally defined the roles of those individuals responsible for resolving your entity's Year 2000 problem? <i>If No, please go to Question 10.</i> <i>If Yes, please answer the following question:</i></p> <p>a) Does your entity's Head of Agency/CEO and/or Executive Board of Management receive periodic reports on the status of your entity's actions to resolve the Year 2000 problem? <i>If No, please go to Question 10.</i> <i>If Yes, please answer the following questions:</i></p> <p>i. Are the reports relating to the entity's actions to resolve the Year 2000 problem always oral? (If 'No', please provide file reference)</p> <p>ii. When was the last written report received on the status of the entity's actions to resolve the Year 2000 problem? (month and year)</p> <p>iii. When is the next written report due on the status of the entity's actions to resolve the Year 2000 problem? (month and year)</p> <p>iv. Has the Minister responsible for your entity been briefed on the status of your entity's actions to resolve the Year 2000 problem? <i>Please go to the next Question.</i></p>	<p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p> <p>Yes / No / NA</p>

<p>13. Has your entity commenced documenting the inventory of business services your entity uses, which are impacted by the Year 2000 problem? (e.g. buildings, electricity, water, banking services, telecommunications services)</p> <p><i>If No, please go to Question 14.</i></p> <p><i>If Yes, please answer the following questions:</i></p> <p>All of the following questions relate to your entity's inventory of business services:</p> <ul style="list-style-type: none"> a) When did your entity commence documenting this inventory? (month and year) b) What is the total number of business services documented on this inventory? c) How many of the documented business services are impacted by the Year 2000 problem? d) How many of the documented business services rely on third parties to assist in resolving the impact of the Year 2000 problem? e) Of these third parties upon whom your entity relies, how many has your entity contacted to determine the status of their efforts to resolve the impacts of the Year 2000 problem? f) Of these third parties your entity has contacted, how many has your entity confirmed the status of their efforts to resolve the impacts of the Year 2000 problem? g) Of these third parties your entity has confirmed the status of their Year 2000 problem resolution for, how many of these parties will not resolve the impacts of the Year 2000 problem? <p><i>Please go to the next Question .</i></p>	<p style="text-align: center;">Yes / No</p>
<p>14. Has your entity commenced documenting the inventory of the IT your entity uses, which are impacted by the Year 2000 problem?</p> <p><i>If No, please go to Question 15.</i></p> <p><i>If Yes, please answer the following questions:</i></p> <p>The following questions relate to your entity's inventory of IT referred to above:</p> <ul style="list-style-type: none"> a) When did your entity commence documenting this inventory? (month and year) b) What is the total number of IT products or items documented on this inventory? c) How many of the documented IT products or items are impacted by the Year 2000 problem? d) How many of the documented IT products or items rely on third parties to assist in resolving the impact of the Year 2000 problem? e) Of these third parties upon whom your entity relies, how many has your entity contacted to determine the status of their efforts to resolve the impacts of the Year 2000 problem? f) Of these third parties your entity has contacted, how many has your entity confirmed the status of their efforts to resolve the impacts of the Year 2000 problem? g) Of these third parties your entity has confirmed the status of their Year 2000 problem resolution for, how many of these parties will not resolve the impacts of the Year 2000 problem? <p><i>Please go to the next Question.</i></p>	<p style="text-align: center;">Yes / No</p>

<p>15. Has your entity commenced documenting the inventory of other non-IT services (e.g. vehicles, machinery, security/access systems, lifts, elevators, sewerage treatment plants, navigation equipment, other equipment and supplies) your entity uses which are impacted by the Year 2000 problem?</p> <p><i>If No, please go to Question 16.</i></p> <p><i>If Yes, please answer the following questions:</i></p> <p>The following questions relate to your entity's inventory of other non-IT services referred to above:</p> <p>a) When did your entity commence documenting this inventory? (month and year)</p> <p>b) What is the total number of other machinery and equipment documented on this inventory?</p> <p>c) How many of the documented other machinery and equipment are impacted by the Year 2000 problem?</p> <p>d) How many of the documented other machinery and equipment rely on third parties to assist in resolving the impact of the Year 2000 problem?</p> <p>e) Of these third parties upon whom your entity relies, how many has your entity contacted to determine the status of their efforts to resolve the impacts of the Year 2000 problem?</p> <p>f) Of these third parties your entity has contacted, how many has your entity confirmed the status of their efforts to resolve the impacts of the Year 2000 problem?</p> <p>g) Of these third parties your entity has confirmed the status of their Year 2000 problem resolution for, how many of these parties will not resolve the impacts of the Year 2000 problem? (If not known please state)</p> <p><i>Please go to the next Question.</i></p>	
<p>16. Has your entity performed Year 2000 'real life' compliance testing on:</p> <p>a) major business functions?</p> <p>b) Externally supplied IT products?</p> <p>c) internally supplied IT products?</p> <p>d) Externally supplied non-IT products?</p> <p>e) internally supplied non-IT products?</p> <p>f) are any of these results documented? (If 'Yes', please provide file reference)</p> <p><i>Please go to the next question</i></p>	<p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p>

iii.	Do you have a contingency plan in place should this risk materialise? Yes / No
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FOOTNOTES

¹ Office of the Auditor General (Canada) 1997, para 12.6.

² Office of the Auditor General (Canada) 1997, paras 12.8 – 12.11

³ Office of the Auditor General (Canada) 1997, para 12.12.

⁴ Office of the Auditor General (Canada) 1997, para 12.18.

⁵ Office of the Auditor General (Canada) 1997, para 12.16.

⁶ Information Strategy Unit 1997. 'The Year 2000: Problem: Background Paper' (draft), p 1.

⁷ Audit Office of NSW 1997, p 62; Office of the Auditor-General (Canada) 1997, para 12.150.

⁸ Audit Office of NSW 1997, p 31.

⁹ Audit Office of NSW 1997, pp 26-27.

¹⁰ Audit Office of NSW 1997, p 64.

¹¹ Audit Office of NSW 1997, p 28.

¹² Audit Office of NSW 1997, pp 28-30.

¹³ NSW Department of Public Works and Services and the Office of Government Information Technology (Commonwealth) 1997d.

¹⁴ AIIA 1997a.

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1992	SPECIAL REPORT NO. 2	STUDENT TRANSPORT
1993	SPECIAL REPORT NO. 3	EDUCATION INSTITUTIONS CLEANING SERVICES
1993	SPECIAL REPORT NO. 4	STANDARD OF ANNUAL REPORTING BY GOVERNMENT DEPARTMENTS
1993	SPECIAL REPORT NO. 5	MUNICIPAL SOLID WASTE MANAGEMENT
1994	SPECIAL REPORT NO. 6	ADMINISTRATION AND ACCOUNTABILITY OF GRANTS
1994	SPECIAL REPORT NO. 7	REGIONAL HEALTH MEDICAL REVIEW
1994	SPECIAL REPORT NO. 8	WASTEWATER MANAGEMENT IN LOCAL GOVERNMENT
1995	SPECIAL REPORT NO. 9	HERITAGE COLLECTION MANAGEMENT
1995	SPECIAL REPORT NO. 10	OFFICE ACCOMMODATION MANAGEMENT
1995	SPECIAL REPORT NO. 11	RECORDING AND REPORTING BY GOVERNMENT DEPARTMENTS OF THEIR NON-CURRENT PHYSICAL ASSETS
1995	SPECIAL REPORT NO. 12	TENDERED WORKS
1996	SPECIAL REPORT NO. 13	NURSING COSTS IN TASMANIA
1996	SPECIAL REPORT NO. 14	REVIEW OF PERFORMANCE INDICATORS IN GOVERNMENT DEPARTMENTS
1996	SPECIAL REPORT NO. 15	CASH MANAGEMENT IN LOCAL GOVERNMENT
1996	SPECIAL REPORT NO. 16	DEPARTMENTAL ACCOUNTING MANUALS AND COMPLIANCE WITH PROCEDURES
1997	SPECIAL REPORT NO. 17	AIR TRAVEL
1997	SPECIAL REPORT NO. 18	REVIEW OF LAND INFORMATION
1997	SPECIAL REPORT NO. 19	COMPLIANCE WITH SUPERANNUATION GUARANTEE ARRANGEMENTS
1997	SPECIAL REPORT NO. 20	REVIEW OF COMPUTER CONTROLS IN GOVERNMENT DEPARTMENTS
1997	SPECIAL REPORT NO. 21	SPECIAL INVESTIGATION INTO ADMINISTRATIVE PROCESSES ASSOCIATED WITH PRESERVATION AND MAINTENANCE OF THE PORT ARTHUR HISTORIC SITE
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