Government of **Western Australia**
Public Sector Commission

Maximising Data Quality

Quality Assurance for *Human Resource Minimum Obligatory Information Requirements* (HR MOIR) Workforce Information

Maximising Data Quality

1. Purpose

The purpose of this publication is to provide an overview of the Quality Assurance (QA) process that is applied to the Public Sector Commission's (PSC) *Human Resource Minimum Obligatory Information Requirements* (HR MOIR) workforce reporting process. Whilst PSC assesses and reviews the quality of workforce data from public sector agencies on an ongoing basis, this publication outlines the key stages that are undertaken on a quarterly basis.

2. Scope

The target audience for this publication is Western Australian public sector agencies that participate in the HR MOIR process. It is of particular relevance for officers in the areas of Strategic Human Resource management and/or Workforce Planning.

This publication provides an overview of the QA process that is applied to HR MOIR data; the reasons for performing QA; and the roles and responsibilities of public sector agencies and PSC in managing this process. Detailed operational information on how HR MOIR data is submitted to PSC is not included in this publication, but is available in the *Workforce Analysis and Comparison Application (WACA) User Guide* on PSC's website at www.publicsector.wa.gov.au.

3. Description of the HR MOIR process

The HR MOIR process was developed in 1993 to ensure that government has access to information that is required for the strategic management of the Western Australian public sector workforce.

As at June 2009, PSC collects and reports HR MOIR workforce data from 126 public sector agencies on a quarterly basis. The HR MOIR data is collected in accordance with the *Public Sector Commissioner's Circular 2009-09, Workforce Data Reporting: Human Resource Minimum Obligatory Information Requirements*. The HR MOIR process aims to provide high quality data for agency and whole-of-government workforce monitoring, analysis, planning, reporting and decision-making purposes.

HR MOIR data is based on definitions that are issued by PSC. These definitions can be found in the *Human Resource Minimum Obligatory Information Requirements (HR MOIR) Data Definitions User Guide Version 1.4 (December 2008)*, available on PSC's website. The adoption of standardised definitions across public sector agencies is a critical aspect that ensures that the data collection methodology is consistently applied across all participating agencies.

4. Quality Assurance

4.1   What is QA?

Quality Assurance refers to the process that is used by PSC to ensure the quality and integrity of HR MOIR workforce data. This process involves applying statistically rigorous checks and validations on incoming data from each public sector agency, with the aim of improving data reliability and consistency. Whilst QA is built into the WACA system itself, further analysis is undertaken by PSC once the data has been submitted.

4.2   Why is QA important?

High quality workforce data results in high quality planning and decision-making at a whole-of-sector level. With a robust QA process in place, the quality of workforce information is consequently greatly improved. Workforce data is used to provide advice to Government; inform strategic workforce planning and also contributes to the reporting of workforce information that enables a high level of public sector transparency to be achieved.

As part of the QA process, PSC may identify agency data that requires clarification or investigation. In conjunction with each agency, the source data may need to be checked and, where appropriate, amended in the agency's human resource system. By working jointly with public sector agencies, there is a mutual benefit of improved data at both an agency and sector level.

4.3   QA of the HR MOIR process

The QA process comprises of three main stages of data testing:

- Initial automated checks using the WACA system

- A 'Primary Check' of agency data once it is submitted to PSC

- A 'Secondary Check' of data at a sector level, once all agency data has been submitted to PSC.

A diagram of the HR MOIR QA process is provided at Attachment 1. Section 4.3.1, 4.3.2 and 4.3.3 (below) explain the three key stages in more depth. Sections 4.3.4, 4.3.5 and 4.3.6 provide additional information on other QA controls that have been implemented to maximise public sector workforce data quality.

4.3.1 Automated Checks Using the WACA System

The WACA system is a secure online automated data collection application that can be accessed by registered agency users at https://www.waca.org.au/. For PSC, WACA is not only a data collection system; it is also the frontline tool in the QA process as it has the capability to detect anomalies in workforce information datasets. Once an agency has loaded HR MOIR data into the WACA system, various on-line 'messages/errors' are automatically generated to advise agencies that there is an anomaly in the data that has been submitted. Each agency is then able to view these errors to double-check the accuracy of the data that has been submitted. Errors are referred to as "Fatal Errors" or "Warning Errors". Fatal Errors must be amended, or an explanation supplied before the data can be accepted by PSC. Warning Errors refer to data that are 'outliers'. Whilst a plausible explanation may exist for the data outliers, these errors should nonetheless be investigated by the agency prior to submission.

Once data is loaded into WACA, agencies are able to view their HR MOIR data via an on-line '*Agency Summary Report*'. This report includes details regarding FTE, headcount, employee work locations and occupations, whilst also comparing these data items with information that was reported in the previous quarter. Viewing aggregated data, in comparison with previous quarter's data, is a highly useful QA tool that can highlight areas that may require closer scrutiny. The *Agency Summary Report* is also able to be emailed to other officers within the agency, including Executive staff. Obtaining a 'sign-off' of agency data from Executive staff prior to its submission to PSC is strongly encouraged.

The WACA is an important part of the HR MOIR QA process and should be used by agencies and PSC for this purpose. As a result, PSC is continually looking to enhance the capabilities within WACA in order to detect data anomalies and continually improve public sector workforce data.

Subject to available resources, PSC is able to provide training for agency staff who are not familiar with the HR MOIR reporting process and the use of the WACA system.

4.3.2 The Primary Check of Agency Data

The 'Primary Check' occurs immediately after HR MOIR data is loaded into the WACA. This stage of the QA process is a set of logic tests that are designed to detect data inconsistencies at an agency and/or employee level.

Once an agency has submitted its data, and it has been reviewed by PSC, significant anomalies are referred back to the agency with a request to amend the queried data, or to provide an explanation. Once all queries have been resolved, the HR MOIR dataset is formally accepted by PSC and the agency is advised of this. Whilst this process occurs on a quarterly basis, PSC is continuously reviewing agency data and consequently may contact agencies at any time. This notwithstanding, for most agencies, the successful completion of the Primary Check typically signals the end of the HR MOIR process for each quarter.

An important part of the Primary Check also involves a reconciliation of HR MOIR information with other internal and external workforce information sources. This part of the QA process is undertaken by PSC and further ensures a consistency and accuracy in reporting.

4.3.3 The 'Secondary Check' of Data at a Sector Level

PSC also conducts a second stage of quality testing on HR MOIR data known as the 'Secondary Check'. Similarly to the Primary Check, this stage of the QA process aims to improve the overall quality of the HR MOIR data set. The aim of this check is to test workforce data at a whole-of-sector level. The examination of data at this level highlights data anomalies that are often obscured at an agency level. The Secondary Check is performed on all data that is submitted at the end of each quarter once the Primary Check has been completed.

Comparisons of data with data from previous quarters and years form a major element of the second check process. This process also allows for the easy identification of seasonal variations in data.

Some tests that are undertaken include an analysis of:

- public sector workforce growth/decline at a state-wide, metropolitan and regional level

- demographic changes at a sector level

- changes in the number of employees in key occupations

- consistency in the use of occupational codes across agencies

- gender profile at a whole of sector and executive level

- salary (by gender, occupation, location, classification etc)

- full-time/part-time/contract employment arrangements

- public sector employment commencements and exits

- agreements and awards

- senior executive service (by age, gender, etc).

4.3.4 Documentation

A key component of any QA process is accurate and informative documentation. As such, PSC has made available various 'User Guide' publications to ensure a common understanding of the entire HR MOIR process, as well as what is required for each data item. A consistency in the approach of all agencies increases the quality of workforce data and ensures that planning and decision-making are based on accurate information. The key documents for the HR MOIR process are available on PSC's website and are listed at *Section 6: Useful Links* of this publication.

4.3.5 Communication with agencies

A positive relationship between PSC and public sector agencies is a crucial aspect of making continual improvements to the quality of HR MOIR data. As such, in the context of the HR MOIR process, PSC has adopted an 'agency portfolio model' for liaising with agencies whereby one PSC officer is responsible for liaising with a specific group of agencies on an ongoing basis. This enables PSC to be more responsive to the needs of agencies and to gain a better understanding of each agency's data and needs. A record of communication with agencies for each reporting period is also kept. This communication log ensures that there is a timely follow-up to agency queries, and also ensures that in the event of a change in PSC officers, that agency information is successfully transferred to a new officer.

PSC has also developed a close working relationship with other Western Australian public sector agencies that have an inherent interest in public sector workforce data. These agencies include the Australian Bureau of Statistics, the Office of Equal Employment Opportunity, RiskCover, the Department of Treasury and Finance, and other central public sector agencies. By liaising closely with these agencies, further data analysis is undertaken in order to continually improve the quality of public sector workforce information and the subsequent planning and decision-making that results from its use.

In addition to the above, PSC also participates in a national WACA consortium to share information and learn from representatives of other State and Territory governments and jurisdictions that undertake similar workforce data collection processes.

4.3.6 Workforce Reports

Various workforce reports are available to public sector agencies to monitor data quality. One key report (described above) is the *Agency Summary Report*. In addition to this, agencies can access other workforce reports in order to examine and monitor the quality of their agency's HR MOIR data. Two examples of these reports are the *Western Australian Public Sector Workforce Report* and the *Public Sector Workforce Profile*. The *Western Australian Public Sector Workforce Report* is published by PSC on a quarterly basis and contains FTE and Headcount information for all participating agencies. This report is published approximately four weeks after each September, December, March and June quarter. The *Public Sector Workforce Profile* is a more comprehensive annual publication that is based on June quarter HR MOIR data. This publication provides detailed information on the Western Australian public sector workforce and is available on PSC's website. Subject to the availability of resources, other tailored reports are available to agencies upon request.

5. Roles and Responsibilities

Achieving clarity of roles and responsibilities is an important aspect of maximising HR MOIR data quality. PSC and public sector agencies have shared responsibilities to ensure that workforce data is of the highest quality.

PSC is responsible for:

- ensuring that resources such as documentation relating to the HR MOIR process are available
- providing training to public sector agencies on the HR MOIR process and the use of the WACA
- performing QA on HR MOIR data submissions and liaising with public sector agencies to resolve any issues
- responding to public sector agency queries in a timely manner
- providing workforce reports in a reasonable timeframe following the close of each reporting period
- regularly reviewing the overall HR MOIR process to continuously identify areas for improvement.

Public sector agencies are responsible for:

- the quality of HR MOIR data that is submitted to PSC
- ensuring that an officer with the appropriate delegation approves the release of the agency's data prior to receipt of the data by PSC
- liaising with PSC to resolve any data quality or data submission issues
- consulting with their respective human resource software providers to ensure that workforce data is able to be accurately extracted and reported
- submitting quality tested HR MOIR data prior to the published quarterly deadline
- providing an explanation to PSC for any significant variations in workforce data from previous quarters.

Directors General and Chief Executive Officers have a key role in ensuring that their agency is committed to supplying valid and quality assured data.

6. Useful Links

Links to the following documents can be found on the Workforce Information System page,(*http://www.dpc.wa.gov.au/PSMD/WorkforcePlanning/Pages/WorkforceInformationSystem.aspx*)

- *The Public Sector Commissioner's Circular 2009-09, Workforce Data Reporting: Human Resource Minimum Obligatory Information Requirements*

- *Human Resource Minimum Obligatory Information Requirements (HR MOIR) Data Definitions (2008)*

- *WACA User Guide*

- *WACA Quick Start Guide.*

Links to the documents below can be found on the Workforce Information page, (http://www.dpc.wa.gov.au/PSMD/WorkforcePlanning/WorkforceInformation/Pages/Default.aspx)

- The current *Western Australian Public Sector Workforce Report* (updated quarterly)

- The current *Public Sector Workforce Profile* (updated annually).

Attachment A: HR MOIR Quality Assurance Process Flow Chart

PSC ensures that WACA is 'open' to accept new data at the commencement of each quarter and advises all agencies that the reporting period is starting.

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Agency uploads data into WACA

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Agency validates data. Are there any 'fatal errors' or 'warning errors'?

— Yes → Agency corrects fatal errors, and reviews warning errors. → Agency finalises data in WACA.

No ↓

Agency finalises data in WACA.

↓

Data is approved by PSC for entry into the PSC QA process.

— No → Agency corrects fatal errors, and reviews warning errors.

Yes ↓

Agency HR MOIR data is subjected to the 'Primary Check' of the QA process. Are there any data anomalies?

— Yes → Agency and PSC work together to ensure data anomalies are amended or explained

No ↓

Does the PSC Officer recommend the acceptance of data?

— No → Agency and PSC work together to ensure data anomalies are amended or explained

Yes ↓

Does PSC accept the data?

— No → Agency and PSC work together to ensure data anomalies are amended or explained

Yes ↓

PSC advises Agency that final HR MOIR data has been accepted

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Whole-of sector HR MOIR data is subjected to the 'Secondary Check' of the QA process.

Legend:
- Data quality testing
- Agency responsibility
- PSC responsibility

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