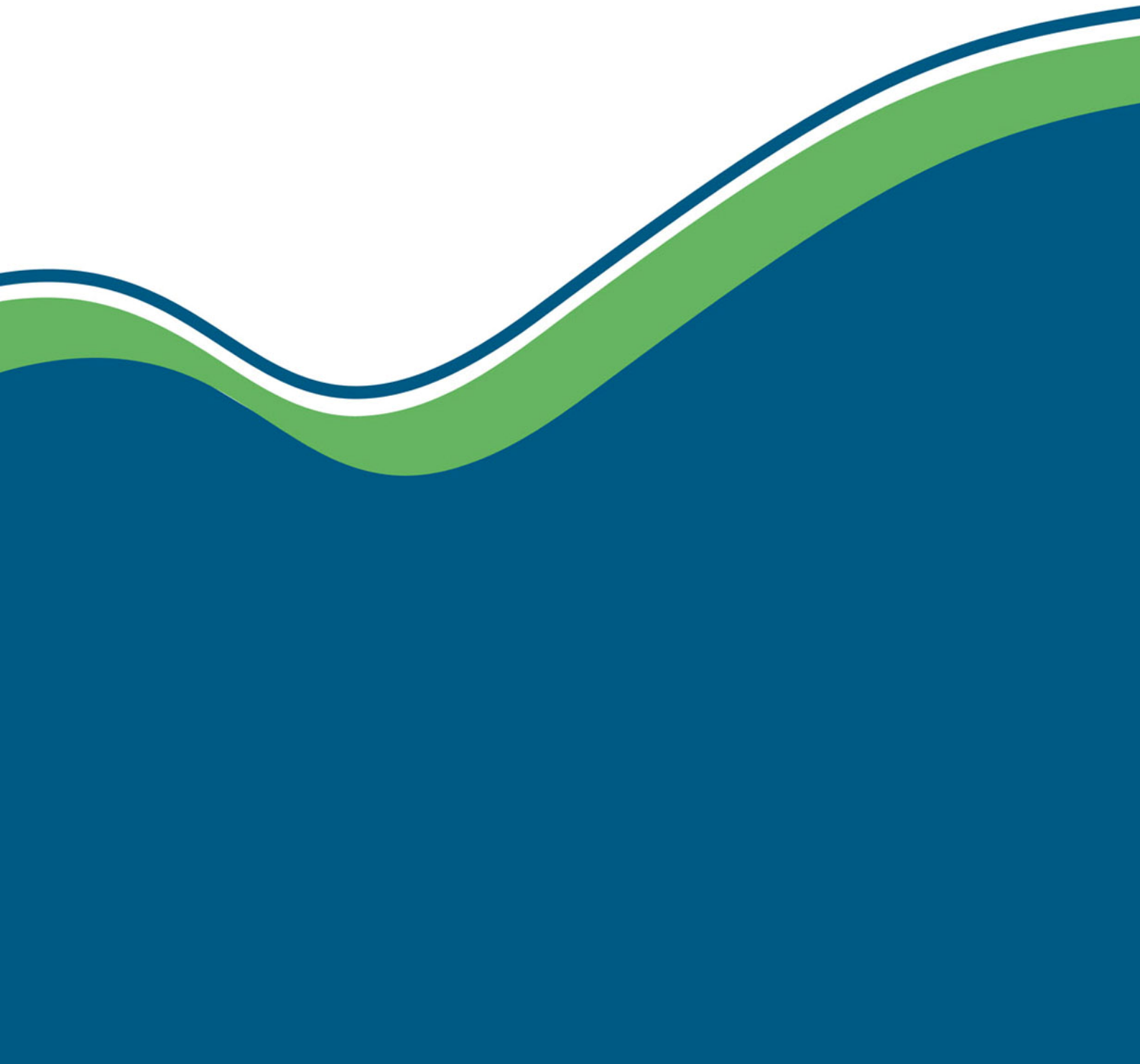
Review of SEPA's Waste Data Strategy

(May 2008)



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Executive Summary

A review of SEPA's Waste Data Strategy has been carried out at the request of the Scottish Government. The aim of the review was to ensure that the continually increasing Scottish, UK and European scope of wastes information requirements are met for the foreseeable future.

The Waste Data Strategy was introduced in 2000 with the purpose of ensuring a consistent approach at a national level to the collection, validation, recording and reporting of waste data.

For the review information on SEPA's waste data collection and reporting was carried out using questionnaires sent to appropriate staff. These indicate that:

- All data collections are either statutory or, if non-statutory, collected for statutory reporting.
- Much of the reporting carried out is non-statutory. However, in many cases the non-statutory reporting is done to meet the requirements of internal and external stakeholders.
- There is little overlap between most of the data returns.

Discussions were held with a number of internal and external stakeholders.

The review considered five main areas to identify weakness or scope for improvement and makes recommendations on developments. The areas considered were:

- the aims of the strategy;
- municipal waste;
- business waste;
- data reporting;
- internal and external liaison.

The aims of the strategy were considered and it is recommended that they are amended to be:

- aid national policy development by Scottish Government;
- support policy development in organisations such as local authorities, enterprise agencies and others;
- monitor change and policy impact;
- assist regulatory activity and Better Waste Regulation;
- support the National Waste Plan;
- meet internal and external reporting requirements;
- ensure that relevant SEPA corporate systems developments are informed to meet the needs of the Waste Data Strategy;
- ensure information that is collected is readily available and understandable to all, subject to data confidentiality.

Municipal waste data collection is done through the WasteDataFlow system and this is expected to remain for the foreseeable future. The main recommendations in this area deal with:

- proposed improvements to the WasteDataFlow system;
- streamlining processes;
- clarifying issues surrounding commercial and industrial waste collected by local authorities.

With the changing requirements the Waste Data Strategy will move towards focussing more on the collection and reporting of commercial and industrial waste. In particular there was identified a need to review the collection of commercial and industrial waste data to ensure the availability of good quality data. Additionally the review of the National Waste Plan is likely to generate work for the Waste Data Team in setting targets. The principal recommendations in this area are:

- The Waste Data Team carry out a review of the various options for collecting data on commercial and industrial waste arisings and give consideration to systems used in other parts of the UK and in other EU countries and that a report is submitted to SEPA and the Scottish Government with recommendations for consideration during the review of the National Waste Plan.
- The Waste Data Team supports the process of reviewing the National Waste Plan in setting suitable targets for commercial and industrial waste.

The need to make information more readily available in an understandable and accessible way was identified as an area for development. In particular the use of tools to improve the analysis and presentation of data and the future format of the Waste Data Digest were considered. The following main recommendations were made:

- The use of SEPA-supported tools to analyse and present data is explored by the Waste Data Team and the Environmental Assessment Unit.

- The revised Waste Data Digest format is accepted and that the detailed tables are made available on the SEPA website.

The need for the Waste Data Team to liaise with internal and external stakeholders was identified to ensure that the Strategy continues to develop to meet their needs.

Overall the recommendations contained in the report will move the Waste Data Strategy forward. They will improve the handling of the municipal waste data, alter the focus of the team more towards the developing area on commercial and industrial waste and improve data availability and presentation.

No additional staffing will be needed to meet the recommendations contained in the report.

Review of SEPA's Waste Data Strategy

1. Introduction

There is an ongoing need for accurate data on wastes arising in Scotland. In particular there is a need to improve the quality of data on commercial and industrial wastes as the ongoing delivery of the National Waste Plan begins to focus more on these wastes. The growing attention on resource recovery and climate change means that the information needs on materials and waste biomass arisings is increasing. Ongoing development of data systems to ensure a good degree of confidence in developing new policies and systems to manage waste in Scotland is a continuing need.

This report presents a review of SEPA's Waste Data Strategy carried out in autumn 2007 at the request of the Scottish Government. It includes recommendations on the future development of the Waste Data Strategy. The aim of the review is to ensure that the continually increasing Scottish, UK and European scope of waste information requirements are met for the foreseeable future.

The review will also identify areas where there is unnecessary waste data gathering and/or interpretation, areas for increased business efficiency and potential resource requirements.

2. Background

SEPA implemented the Waste Data Strategy in 2000 to ensure a consistent approach at a national level to the collection, validation, recording and reporting of waste data.

The aim of the strategy was to provide accurate, up-to-date waste data for SEPA to:

- aid policy development;
- monitor change and policy impact;
- monitor regulatory activity;
- support the National Waste Strategy;
- meet internal and external reporting requirements.

The range of data that was available initially on waste was fairly limited and consisted primarily of quarterly data from licensed sites, annual data from local authorities and data on a small number of specific commercial and industrial waste streams.

Over the past seven years significant developments have occurred in both the quality and range of data collected as a result of new legislation. SEPA now produces comprehensive data on a wide range of different wastes and is able to report on the total controlled waste arisings for Scotland. Much of the data is reported to the European Union on an annual or biennial basis.

Currently, ten SEPA staff are directly involved in the collection, analysis and reporting of waste data linked to the Waste Data Strategy. Seven are based in the Environmental Quality function in the Environmental Science Directorate and three in the Environmental Partnership Unit in the Environmental Protection and Improvement Directorate. A chart showing the SEPA functions linked to the Waste Data Strategy is shown in Appendix 1.

3. Scope

Certain specific areas have been excluded from consideration in this report.

SEPA is carrying out two projects concerned with the collection and reporting of data and therefore these areas will not be considered in detail as part of this project. The projects are the Operator Data Returns and the Environmental Information Repository.

No consideration has been given to staff restructuring outside the Waste Data Team.

4. Information gathering

Initially information was gathered on the main waste data collection and reporting carried out by SEPA. This was done by circulating Excel questionnaires to relevant staff within SEPA. Summaries of the returns are shown in Table 1 Main waste data collections (see page 9) and Table 2 Main waste data reporting (see page 10).

Additionally there were a number of meetings held with internal and external stakeholders. These were:

Internal

- Waste Policy
- National Waste Strategy
- Environmental Protection and Improvement
- Pollution Prevention and Control

External

- Scottish Government
- SESA
- ReMade
- Envirowise
- Business Environment Partnership

5. Data collection

A summary of the main waste data collection carried out by SEPA is given in Table 1 Main waste data collection (see page 9). All data collections are either statutory or, if non-statutory, collected for statutory reporting. For example there is no statutory basis for collecting data on agricultural waste but this information is required for the Waste Statistics Regulations, a statutory return. Statutory, as used in Tables 1 and 2, means that there is a statutory driver for the data collection and reporting; non-statutory means that there is a requirement to collect and report information to an external body but this is not based in statute.

Data gathering is the responsibility of a number of different groups within SEPA including some outwith the Waste Data Team: National Administration, the Central Advisory Unit, the Scottish Pollutants Release Inventory support team and the Waste Data Officers in the Environmental Partnership Units.

No detailed consideration of the data collection systems has been made as it is expected that these will be dealt with by the Operator Data Returns project. However it has been identified that considerable time could be saved for certain data collections if on-line reporting by operators was available. At present only three of the returns are reported on-line (see Table 1 Main waste data collection). It is vital that the needs of the waste strategy are made known to the Operator Data Returns project team.

It is recommended that a member of the Waste Data Team is a permanent member of the Operator Data Returns project steering group.

Additionally no detailed consideration has been given to the quality of data reported through the different systems apart from those coming under the direct remit of the Waste Data Strategy; those dealt with by the Waste Data Officers and the Waste Data Team. In these cases the quality is good and systems are in place to ensure this. These systems are under constant review and possible improvements are dealt with later in this report. However, during the course of normal work, it has been noticed that the quality of the data recorded in the Special Waste database needs improvement. This has been raised with the relevant staff.

It is recommended that the Waste Data Team work with other teams in SEPA to ensure the quality of special waste data is improved and maintained.

As detailed in Table 1 Main waste data collection (see page 9) all waste data collected by SEPA has either a direct statutory basis or is required to provide information for a statutory return. There is little overlap between most of the returns. However, there is some between the Licensed/Permitted Site Quarterly Waste Returns and the Special Waste Consignment Notes. Both require data to be reported on the types and quantities of waste moved and the identity of the site receiving waste is reported. There is a limited overlap between the two returns and it is important that these are identified as it may be possible in the Operator Data Returns to ensure the operator only needs to return the common data to SEPA once.

6. Data Reporting

A summary of the main waste data reporting carried out by SEPA is given in Table 2 Main waste data reporting (see page 10). Much of the reporting carried out is non-statutory. In many cases the non-statutory reporting is done to meet the needs of internal and external stakeholders. Both the Waste Data Digest and the Waste Statistics Regulations report rely on data from a wide range of sources and are the most labour intensive of all the outputs. Whilst the Waste Data Team and the Waste Data Officers are responsible for most of the reporting some is done by other SEPA staff (see Table 2 Main waste data reporting on page 10).

In addition to the reports identified above many ad-hoc data enquiries are received. It is understood that the Environmental Information Repository will be the main reporting focus for SEPA data. In order to ensure consistence in reporting with the Scottish Government it would be useful to use common data sets.

It is recommended that all validated waste data is placed in the repository and ad-hoc reporting is developed by the Waste Data Team using Oracle Discoverer.

It is recommended that these validated data sets are made available to the Scottish Government for their use to ensure consistency in reporting. The preferred method is to allow read only access to the Environmental Information Repository by designated Scottish Government staff.

Table 1: Main waste data collection

Collection name	Waste type	Status	Type of return	How is it recorded
SEPA				
Agricultural Waste Generation Model	Agricultural waste	Non-statutory*	Electronic	Excel
Commercial and industrial waste arisings	Commercial and industrial waste	Non-statutory*	Survey; online or paper	Spreadsheet and database
Exempt Site Annual Returns	Certain controlled waste	Statutory	Paper	Database
Fishing Waste Generation Model	Fisheries waste	Non-statutory*	Electronic	Excel
Flycapture	Fly tipped waste	Non-statutory	Electronic	Database
Licensed/Permitted Site Quarterly Waste Returns	All controlled waste	Statutory†	Paper	Database
Packaging Waste Reprocessed/ Exported for Reprocessing	Packaging and packaging waste	Statutory	Online	Online
Scottish Pollutant Release Inventory (E-PRTR reporting)	Non-hazardous waste and hazardous waste	Statutory	Online	Online
Sewage Sludge Generation Data	Sewage sludge	Non-statutory*	Electronic	Excel
Special Waste Consignment Notes	Special waste	Statutory	Paper	Database
Transfrontier Shipment of Waste, Application, Movement//tracking information, Annex VII information (post 12 July 2007)	Red, amber and green list wastes	Statutory	Paper	Excel
WEEE received by ATFs and Exporters Approved by SEPA	WEEE	Statutory	Paper	Database
WasteDataFlow	Municipal waste	Statutory	Online	Online
Non SEPA				
Dredging Spoils (dumped at sea)	Dredging spoil	Statutory	Electronic	Excel
ELVs Generation Model	End of life vehicles	Non-statutory*	Electronic	Excel
Forestry Waste Generation	Forestry waste	Non-statutory*	Electronic	Excel
Mines and Quarries Generation Model	Mines and quarries waste	Non-statutory*	Electronic	Excel

* Used for statutory return.
† Not for certain Pollution Prevention and Control authorised waste management sites.

Table 2: Main waste data reporting

Name	Status	Reported to	Frequency	Format
Construction and Demolition Waste Study	Non-statutory*	Scottish Government and Defra	Annually	Electronic
Commercial and industrial waste produced in Scotland	Non-statutory*	Scottish Government and Defra	Other	Electronic
Hazardous waste management sites	Statutory	Defra	Annually	Electronic
Incineration Data	Non-statutory*	Scottish Government and Defra	Annually	Electronic
Landfill Allowance Scheme	Statutory	Scottish Government and Defra	Quarterly / Annual	Electronic/paper
Licensed/Permitted Site Return Registry Report	Statutory	SEPA's Registry Department	Quarterly	Paper
Licensed/Permitted Site Return Rolling Year Report for EPI Staff	Non-statutory	SEPA's Environmental Protection and Improvement Directorate	Quarterly	Electronic
Producer Responsibility Annual Monitoring Strategy (Packaging Waste)	Non-statutory	Scottish Ministers, SEPA Website	Annually	Electronic
Scottish Recycling rates	Statutory	Scottish Government, SEPA's National Waste Strategy	Quarterly	Electronic
Strategic Waste Management Review	Non-statutory	National Waste Strategy / Environmental Partnership Unit / Scottish Government / Local authorities / Web EPU / SG / LAs / Web	Other	Other
Summary Data Reports for Individual Local Authorities and for Scotland (Municipal waste)	Non-statutory	Web	Annually	Electronic
To provide information on UK basis for flytipping	Non-statutory	Environment Agency	Monthly	Electronic
Waste Data Digest	Non-statutory	Web/printed	Annually	Electronic
Waste Statistics Regulations	Statutory	Scottish Government and Defra	Biennially	Electronic

* Used for statutory return

7. Analysis by area

The report now considers various areas of the Waste Data Strategy, to identify weakness or scope for improvement and makes recommendations on developments. The areas to be considered are the aims of the strategy, municipal waste, business waste, data reporting and internal and external liaison.

Aims of the Waste Data Strategy

The strategy was set up in 2000 with the purpose of ensuring a consistent approach at a national level to the collection, validation, recording and reporting of waste data. Whilst it is considered that the overall purpose of the Waste Data Strategy should remain unchanged certain changes need to be made to amend the aims to reflect the current situation. First, it is proposed that the aims are changed to make more explicit the support provided to the Scottish Government and other organisations in policy development. Second, references to the Better Waste Regulation and the National Waste Plan are included. Third, additional aims are proposed (1) to reflect the need for relevant SEPA corporate systems developments such as the Environmental Information Repository and the Operator Data Returns to be informed of the needs of the Waste Data Strategy and (2) to identify the need to have meaningful information readily available for customers.

It is recommended that the revised aims of the strategy are:

- **Aid national policy development by Scottish Government.**
- **Support policy development in organisations such as local authorities, enterprise agencies and others.**
- **Monitor change and policy impact.**
- **Assist regulatory activity and Better Waste Regulation.**
- **Support the National Waste Plan.**
- **Meet internal and external reporting requirements.**
- **Ensure that relevant SEPA corporate systems developments are informed to meet the needs of the Waste Data Strategy.**
- **Ensure information that is collected is readily available and understandable to all, subject to data confidentiality.**

Municipal Waste

Municipal waste data are collected using the WasteDataFlow database. This is a web-based system for municipal waste data reporting by all UK local authorities. Scottish local authorities started using WasteDataFlow on 1 April 2006 to report data on their waste arisings, recycling and disposal. Local authorities enter their data either monthly or quarterly; if monthly then the data are combined to produce quarterly returns that are processed by SEPA. When a local authority has entered and checked its data it "rolls up" the data to SEPA. If changes have to be made to the return then it is "rolled down" to the local authority to make the changes. This process is repeated until the data is correct and agreed by the local authority and SEPA. The WasteDataFlow database is owned by Defra, managed on a day to day basis by an environmental consultancy and controlled jointly by a group of which SEPA and the Scottish Government are members.

Local authorities have a statutory duty to report data to SEPA quarterly. It was agreed that they return their data to SEPA within 42 days of the end of the relevant quarter and SEPA has 3 months to publish headline figures from the returns. Additionally SEPA has a statutory duty to complete an annual draft reconciliation for the Landfill Allowance Scheme by the 31 August each year.

The data reported are verified by SEPA on a quarterly basis following procedures that assess their consistency and accuracy. The detailed information provided with WasteDataFlow not only fulfils the requirements of the Landfill Allowance Scheme, but also provides comprehensive information on the municipal waste management carried out by local authorities.

There are a number of areas associated with municipal waste data collection that have been reviewed:

- Data entry into WasteDataFlow by local authorities.
- Verification of quarterly returns.
- Development of standard reports
- Development of ad hoc data reporting and analysis.
- Compositional analysis of municipal waste.
- Reporting of commercial waste as part of a local authority's return.
- Reporting of industrial waste as part of a local authority's returns.

Data entry by local authorities

At present Scottish local authorities enter their data into WasteDataFlow. This can be time consuming and lead to transcription errors. The environmental consultancy which is the day-to-day manager of the database has developed a system, dealing with fixed length questions, to auto-upload data (via an XML generator) for local authorities. A second phase, dealing with variable length questions is expected to be completed in March 2008. The system has been tested by SEPA and is now available as a development pack for local authorities on the WasteDataFlow website. By creating links from their source files to the XML generator, users will be able to upload their data directly into WasteDataFlow. The normal checking and verification procedures will then apply. It is the local authorities' responsibility to organise IT support to implement and maintain the XML generator and use of the system will not be compulsory.

It is recommended that the SEPA Waste Data Team encourage local authorities to test the system and adopt it for the 2008/2009 data-year, as it will save time and reduce data entry errors.

Verification by SEPA

SEPA's Waste Data Team verifies the quarterly data submitted by local authorities.

SEPA has developed an on-line summary, available in WasteDataFlow, so that local authorities can view the totals from their data inputs. SEPA has also prepared for the local authorities a checklist flowchart that they can use with the on-line summary data to ensure that their reported data meet the standard required. Local authorities should not return their data to SEPA until these criteria are met.

Each return is checked to ensure that it has been completed correctly using the verification tool. If not, then the data are rejected and the local authority contacted and asked to make any corrections necessary. This process has to be repeated until the data reported meet the criteria set out in the procedure.

Once the data reported meet the criteria, they are compared with the corresponding data from the previous quarters, in order to identify significant increases/decreases that have to be checked. Any potential anomalies identified by the tool are resolved with the local authority and if necessary the data are rejected and the local authority asked to revise the data.

At present the verification stages are carried out using a CSV download into an Excel workbook. Some work has already taken place to replace this system with one based on S-plus. S-plus is an advanced data analysis and statistical programming package currently used by SEPA to analyse environmental data, undertake Water Framework Directive classification and produce Web based tools such as DAVE (Data Analysis and Visualisation of the Environment).

Currently, there are only limited data checking options available in WasteDataFlow for local authorities to use when inputting data. Ideally, the integration of data verification into WasteDataFlow would allow them to identify issues with their data and allow them to rectify these before they submit the data to SEPA. This would result in time savings for SEPA staff who currently verify the data.

It is recommended that the use of S-plus is investigated and developed further by the Waste Data Team and the Environmental Assessment Unit to simplify and speed up the verification process and result in time savings and improved data quality for the team.

It is recommended that the Waste Data Team investigate the possibility of integrating the data verification checks into WasteDataFlow to allow the checking of returns before they are submitted to SEPA.

Standard Reports

An on-line summary provides most of the information needed by SEPA and local authorities on a quarterly basis, however, there is a need for Annual Reports and other reports that local authorities and selected viewers can use for benchmarking and for trend analysis. In addition to the Crystal reports (Crystal Reports is a business intelligence application used to design and generate reports from a wide range of data sources.) already available, the company managing the database has produced a number of standard reports for England, Wales and Northern Ireland. These are based on C-variables (C-variables are variables that are calculated and stored on the database) and are available in Excel. Unfortunately, because of differing definitions of waste, Scotland cannot make full use of these C-variable reports and the Crystal reports. Four reports, based on C-variables have been identified by the Waste Data Team covering municipal waste recycled, composted, landfilled, and recovered that would be useful to have available. From these, it will be possible to calculate total municipal waste according to Scottish definitions and use the reporting facilities available for trends. The Waste Data Team has defined the C-variables for these reports and the company managing the database is currently developing these reports.

The managing and development of the database is subject to a three yearly tendering process so the present company is not guaranteed to remain as manager. In view of this, it is important that SEPA retains skills in the area of report development. Additionally there is a cost associated with developing external reports on WasteDataFlow.

It is recommended that SEPA uses the database managers to develop any reports that will be made available on the WasteDataFlow website and that any other reports required are developed within SEPA by the Waste Data Team.

Scottish Government staff also have access to the verified data in WasteDataFlow. In order to avoid duplication of work and to ensure the use of correct definitions it would be beneficial to liaise with them on the development of reports and to share reports developed internally by SEPA with them.

It is recommended that the Waste Data Team liaise with Scottish Government staff on the development of reports and that SEPA share internally developed reports with them.

Development of ad hoc data reporting and analysis

Currently, internal reports can be produced from WasteDataFlow using the CSV downloads. However, this can be a time consuming and complex process and it is considered necessary to develop a simpler method for producing ad-hoc reports and to allow data analysis to be carried out. Currently Defra download data from WasteDataFlow into an Access database and manipulate them there. With the development of the Environmental Information Repository it could be possible to download the verified data in WasteDataFlow into an Oracle table on the corporate database which could act as the primary source of the data for the Environmental Information Repository. Data could then be extracted, analysed and reported using Oracle Discoverer, a reporting tool for Oracle databases. It would also allow data from WasteDataFlow to be combined with waste data from other areas to produce combined reports.

It is recommended that the verified data in the WasteDataFlow database are downloaded into an Oracle table on the current corporate database and uploaded into the Environmental Information Repository when it becomes available.

Compositional analysis of municipal waste

Prior to the introduction of WasteDataFlow the results of any municipal waste analysis carried out by local authorities was asked for in the Local Authority Waste Arising Survey (LAWAS). Unfortunately, this information is not required in WasteDataFlow. It is considered important that SEPA continue to gather this information SEPA is producing a national municipal waste analysis methodology in response to requests from a number of local authorities for guidance in conducting the analysis of municipal waste. This will be published on the SEPA website for local authorities to use on a voluntary basis.

It is recommended that that SEPA's national municipal waste analysis methodology will link directly to the development of a UK Waste Analysis Methodology to enable the comparison, benchmarking and aggregation of data at a Scottish or UK level.

It is recommended that the Waste Data Team investigate getting additional questions added to WasteDataFlow to allow the reporting of waste analysis results obtained by local authorities.

Reporting of commercial waste as part of a local authority's return

Some local authorities currently have difficulty in reporting accurately the quantity of commercial waste they collect. This is largely due to the fact that many local authorities collect commercial waste with household waste and there is a lack of adequate technology or mechanisms to capture and record accurate tonnages at source. SEPA has carried out a survey of commercial waste services provided by local authorities, which identifies different methods used by local authorities to estimate commercial waste.

It is recommended that a study is carried out by the Waste Data Team to investigate options to improve the accuracy of gathering and reporting commercial waste data by local authorities.

Reporting of industrial waste as part of a local authority's returns

As noted above, the definition of municipal waste differs between Scotland and the other home nations. One of the main differences is that, in Scotland, the definition used for the Landfill Allowance Scheme specifically excludes industrial waste collected by local authorities but taken for disposal or treatment separately from any other waste. Many of the challenges in WasteDataFlow have arisen from the need to exclude this waste when reporting municipal waste.

It is recommended that the Waste Data Team enter into discussions with the Scottish Government to determine whether Scottish local authorities need to continue to report industrial waste collected by them but taken for disposal or treatment separately from any other waste.

Commercial and Industrial Waste

Commercial and industrial waste covers a broad spectrum of waste types generated by individual producers, ranging from sole traders and small commercial businesses to large industrial complexes. Gathering data on commercial and industrial waste arisings in Scotland is difficult. There is currently no requirement for businesses to report information to SEPA on the waste they produce. In order to provide information on commercial and industrial waste arisings for the Waste Statistics Regulations it has been necessary to carry out voluntary national surveys.

Considerable information on commercial and industrial waste management can be obtained from the Licensed/Permitted Site Quarterly Waste Returns, the Exempt Site Annual Returns and the Special Waste Consignment Notes. Additional information has been gathered through a number of models for agricultural, fishing, mines and quarries and forestry wastes and for end of life vehicles.

The following areas were identified as needing review:

- Waste arisings
- Waste recycling and disposal
- Waste capacity
- Exemptions
- Agricultural waste
- Targets
- Complex data analysis, presentation and reporting

Waste arisings

SEPA is required to report data on commercial and industrial waste arisings for the Waste Statistics Regulation; these are split by Standard Industrial Classification code and waste type. Additionally information on waste produced by individual producers would be helpful to the National Waste Strategy to target actions. Unfortunately, none of the current data collections provide all this information. The Special Waste Consignment Notes should provide information on the producer of the special waste but often it is missing or of poor quality. The Scottish Pollutants Release Inventory returns will give limited information from producers but there is a *de minimus* under which they do not need to report: 2,000 tonnes for non-hazardous and two tonnes for hazardous waste and only total tonnages need to be reported.

In order to collect the information for the Waste Statistics Regulation two national business waste surveys have been carried out; one to collect data for 2004 and the second for 2006. Because of their nature, these surveys can only provide estimates of tonnages with large confidence intervals. Surveys targeted at specific industry sectors or carried out through trade associations may provide more accurate data.

The most comprehensive way of collecting the information on waste arisings would be to place a legal duty on producers to report this information to SEPA. It could be based on the current system of waste transfer notes. Each load of waste leaving a producer must be accompanied by a waste transfer note if the waste is being transferred to a different holder. Notes should record the quantity and types of each different waste being transferred using the appropriate European Waste Catalogue code. Whilst no estimate has been made on the number of notes for this review, previous information indicates that it is of the order of two million.

It might be possible to set up a system to deal with these notes but it would require substantial resources and would need legislative change. There could be concerns about the quality of the return in terms of quantity and type of waste. Additionally this system could not replace the Licensed/Permitted Site Quarterly Waste Returns as these gather a wider range of information.

At present, whilst we do not gather information on business waste arisings directly, we gather comprehensive information on how that waste is managed through, principally, the Licensed/Permitted Site Quarterly Waste Returns and the Special Waste Consignment Notes. Information is available on the quantity and type of waste received at a waste management site and the geographical origin of the waste. For most purposes this could be used as a surrogate for directly measured waste arisings. This data is available back to 2003 and so trends can be calculated.

An alternative approach to gathering the information on waste arisings directly from the producers would be to require waste management sites to report more comprehensive information on the producer of the waste such as their Standard Industry Classification code. This would require legislative change and would result in more data having to be processed. However it would be building on an established system and would be more suitable for converting to an on-line return. Additionally we would be dealing with a much smaller number of individual businesses and so it would be easier to manage. The one issue to be addressed is the reaction of the waste management industry to this proposal.

It is recommended that SEPA's Waste Data Team carry out a review of the various options for collecting data on commercial and industrial waste arisings and give consideration to systems used in other parts of the UK and in other EU countries and that a report is submitted to SEPA and the Scottish Government with recommendations for consideration during the review of the National Waste Plan.

Waste recycling and disposal

Comprehensive data on waste recycling and disposal are gathered through a number of the data collection systems. These data are critical for a number of reports produced by SEPA.

There is the possibility of a serious gap developing in the data collected by the Licensed/Permitted Site Quarterly Waste Returns. All licensed waste management sites have a condition to report waste data to SEPA using a standard form. Some of these sites, mainly landfills and treatment plants, are now regulated by the Pollution Prevention and Control regulations and they have been issued with permits. In the case of landfills the authorisation still contains a requirement to report information on the waste managed at the site. For the other types of site there is no requirement. This has been circumvented by continuing to send data requests to these sites and, as almost all sites have transferred over from a waste management licence, they have continued to make the return. If any sites decide not to complete the return then this would cause serious problems with the completeness of the data.

It is understood that no condition was put in the authorisations as there is nothing in the regulations to allow this. However, the Waste Framework Directive appears to require member states to gather information from waste management sites on the wastes they handle. It should be possible to seek changes to the legislation to require sites to report data on waste managed.

In addition, there are a number of Pollution Prevention and Control sites that do not fall under Chapter 5 (Waste Management) of the Pollution Prevention and Control Regulations but are still handling waste in their process. For example, glass manufacturers, paper mills, foundries and cement kilns, often use waste in their process and data are not currently available on waste inputs to these sites. Similarly, incineration plants, which do fall under Chapter 5, also have no specific reporting requirements.

It is recommended that SEPA seek the appropriate changes to Pollution Prevention and Control templates for permits to include the submission of quarterly waste data in the format of the waste data form where waste is being used in the process.

Waste capacity

Data on the capacity of waste management sites is essential for planning purposes and also is a reporting requirement for the Waste Statistics Regulations. SEPA has a commitment to provide capacity information for both landfill and energy from waste to the reviewed National Planning framework to enable a national strategic assessment of need for such facilities. The provision of annual data on remaining capacity by landfill operators is statutory. However, accurate data on the capacity of other types of sites is an issue. Information on site capacity is not a requirement for Pollution Prevention and Control sites, although it is generally a requirement of waste management licences. Therefore there is no data on capacities for many Pollution Prevention and Control and some waste management licensed sites. Where capacity information is available for multi-activity sites, allocating capacity for the different activities is also challenging and potentially time-consuming.

It is recommended that options for collecting and reporting real time information on the capacity of all Pollution Prevention and Control and Waste Management Licence sites are reviewed by the Waste Data Team.

The capacity of exempt activities is not defined and estimating capacity for all paragraphs is currently not possible.

It is recommended that a study is undertaken to assess the capacity of exempt activities by the Waste Data Team.

Exemptions

In October 2004, SEPA introduced a procedure to gather information on exempt activities registered under paragraphs 7, 9 and 19. This procedure was extended to include activities registered under paragraphs 8(2), 10, 12 and 46 in January 2006. Data are gathered annually from the site operators and include the waste type, quantity and geographical origin of the waste.

This data collection has proved extremely useful for certain waste streams. In 2005 nearly 5.5 million tonnes of waste were handled by exempt sites. This information could not be gathered in any other way. One of the outcomes of the Better Waste Regulations review is to allow SEPA to create exemptions through an Administrative Procedure. This will still retain the ability to collect data as at present and may allow data to be collected from additional exemptions.

There is a need to ensure that this data will continue to be collected under the new procedure and that consideration is given to any new requirements.

Agricultural waste

In January 2005, agricultural waste became controlled waste in Scotland under the Waste (Scotland) Regulations 2005. Agricultural waste is commercial waste and is defined as waste from premises used for agriculture. The waste arisings are estimated using the Agricultural Waste Estimates Model developed for the Environment Agency. Data from the June 2005 Scottish Agricultural Census were used to produce estimates of waste arisings from farms, based on parameters such as crop and livestock production.

Data from this sector are required for the Waste Statistics Regulations and need to be reasonably accurate. It is considered unrealistic to expect farmers to report this information directly.

It is recommended that the agricultural waste model is examined by the Waste Data Team to ensure that the assumptions made in the model reflect the situation in Scotland.

Targets

At present there are targets for municipal waste recycling and for the disposal to landfill of biodegradable municipal waste (and in addition Ministers have indicated a maximum percentage for the amount of municipal waste incinerated in Scotland): there are however no current recycling targets for commercial and industrial waste. The Environment Agency is presently developing a target based on the quantity of commercial and industrial waste landfilled. It is understood that the Scottish Government will, in the review of the National Waste Plan, evaluate the option for material specific landfill bans and at developing a landfill reduction target similar to the Environment Agency for commercial and industrial waste. The data collected by the Licensed/Permitted Site Quarterly Waste Returns would allow such targets to be quantified and for historical information to be produced.

It is recommended that the Waste Data Team support the process of reviewing the National Waste Plan in setting suitable targets for commercial and industrial waste.

Complex data analysis, presentation and reporting

As the breadth and quantity of data collected through the Waste Data Strategy increases, there will be a need to carry out more complex data analysis and to present and report this data in new ways. Trend analysis, in particular, will feature more prominently in the next Waste Data Digest, for example. SEPA-supported tools, such as the S-plus statistical package and the DAVE visualisation model, should be assessed for their potential to aid these developments.

It is recommended that the use of SEPA-supported tools to analyse and present data is explored by the Waste Data Team and the Environmental Assessment unit.

Data Reporting

With the development of the Environmental Information Repository it is expected that most routine and ad-hoc data reports will be produced from this database using Oracle Discoverer. However, there area number of other areas that need to be considered.

- Waste Data Digest
- Lists of Waste Management Sites
- Corporate Licence Administration System

Waste Data Digest

The Waste Data Digest has been produced by the Waste Data Team for the last seven years. It is the successor to the Scottish Office Bulletin. The digest has grown substantially in size as more information has become available; the first digest, covering two years was less than 40 pages long whilst the most recent had over 80. The time and cost of producing a document of this length are now too great.

Consideration has been given to producing a shorter document which deals with high level trends. The proposed format would be an A5 sized document of no more than 40 pages. The document would contain a section of key facts for the reporting year and about 25 pages of tables, graphs and text dealing with high level trends.

The Scottish Government has required that the digest contains a list of waste management sites and that these are physically published. Discussions with the Scottish Government indicate that it would be content to have these made available in another way. It has also indicated that it is in agreement with the revised format for the digest. Although there will be less detailed information in the digest, it will be supported by comprehensive data tables to be made available on the SEPA web-site. The Waste Data Team is currently working with other SEPA staff to produce a mock-up of the pages in the revised digest.

It is recommended that the revised digest format is accepted and that the detailed tables are made available on the web.

There are ever increasing requests for waste data from internal and external customers and there is the need to have this information readily available. This is particularly important with requests from the media and from the Scottish Government.

It is recommended that the Waste Data Team examine past data requests received, identify any deficiencies in data availability and produce information to fill these gaps. The information should be presented in such a way that it is understandable to all customers.

Lists of Waste Management Sites

The team is frequently asked for lists of waste management sites: these may be by site type, geographical area or waste handled. At present there is no definitive list of sites and there is clearly a need for this. From discussions, it would appear that SEPA's Corporate Licence Administration System database, which holds details of permits and licences issued by SEPA, could provide this from the information it stores.

One issue that needs to be addressed, however, is the definition of site types in the database. Legislation requires that sites are described by whether they are keeping, treating or disposing of waste (or a combination of these) and does not recognise generic terms such as landfill, treatment plant, transfer station, recycling centre, metal recycling site, that are more commonly used, particularly by external customers. In order to produce lists of sites from the Corporate Licence Administration System database in this way generic site types will have to be incorporated into the database based on standard definitions.

It is recommended that the Corporate Licence Administration System database is used as the definitive source of data to provide lists of waste sites and that standard definitions are developed for sites types. The possibility of publishing lists of waste sites on the website should also be investigated.

Corporate Licence Administration System database

The Corporate Licence Administration System database does not currently hold all of the information needed to satisfy the needs of the Waste Data Strategy. In addition, some of the data that it does hold are not in the main areas of the database that are accessible to the Environmental Information Repository. Capacity data and recovery and disposal codes for Waste Management Licences are examples of data that are not easily accessible but are needed for reporting purposes. Currently there are no fields in the Pollution Prevention and Control permit part of the database to hold information on capacity or recovery and disposal codes. If this work was to be carried out it would save about 20 days from the Waste Data Officers work.

It is recommended that work should be carried out to improve the structure and accessibility of certain data in the Corporate Licence Administration System database.

Internal and External liaison

It is essential that the Waste Data Strategy continues to meet the developing needs of both internal and external customers. Internally, team members meet regularly with National Waste Strategy staff, Waste Policy staff and other staff involved in waste data collection and reporting to discuss issues. Additionally there are regular meetings of the WasteDataFlow User Group involving local authority users of the database and the WasteDataFlow Steering Group with representatives from SEPA and the Scottish Government to discuss the development of the system.

The Scottish Waste Liaison Group is a group with representatives of the Scottish Government, SEPA, not for profit organisations and the waste industry and is a forum for the discussion of issues concerning waste.

It is recommended that the Waste Data Team place regular items on the agenda of this group to ensure the opportunity for internal and external stakeholders to comment on waste data issues.

8. Staffing

None of the recommendations considered in this report will require additional staff. The changes identified should result in improved efficiency in the collection, analysis and reporting of waste data.

Appendix 1: SEPA functions linked to the Waste Data Strategy