DG46: Asset Assessment Spreadsheet Guideline

Story: Asset Assessment

Theme: Programme Management

A design guideline which provides information about how to use the SCIRT Asset Assessment Spreadsheet.

This document has been provided as an example of a tool that might be useful for other organisations undertaking complex disaster recovery or infrastructure rebuild programmes.

For more information about this document, visit www.scirtlearninglegacy.org.nz

DESIGNERS GUIDELINE

Stronger Christchurch Infrastructure Rebuild Team

Number: 46
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x Wastewater   x Stormwater   □ ~~Geotechnical~~
□ ~~Structures~~   □ ~~Roading~~   □ ~~Water Reticulation~~

Subject: Asset Assessment Spreadsheet Guideline
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Original: Ryan Orr / Tessa Flaws   Approved: Paula Lock

Updated by:

Keywords: Wastewater, stormwater, condition assessment

1. Purpose of guideline

This guideline provides some background and initial training in the use of the Asset Assessment Spreadsheet for the design process within SCIRT.

2. Background

The Asset Assessment Spreadsheet is designed to be a standardised one-stop location for asset assessment data for wastewater and stormwater assets. The spreadsheet updates from several asset assessment data sources which provides significant time savings and ensures Designers are working with the most up-to-date data. The sheet is designed to make requesting and tracking of asset assessment information easier and more consistent.

The sheet is also a location that design decisions, based on the assessment data, can be recorded which provides significant benefit when going from Concept Design to Detailed Design and when answering requests for information when projects are in construction.

Reports can be generated using the data in the sheet to report on anything from catchment condition to project asset assessment progress.

The sheet can be actively used for design from project scoping stage through to the end of Detailed Design (Gates 0 - 3).

3. Recommendation

The Asset Assessment Spreadsheet should be adopted by all Designers as a standard approach for condition assessment of wastewater and stormwater assets for all design phases.

Asset Assessment Spreadsheet

User Guide and Associated Notes

Revision: 1

2013

Contents

Revision History

Revision	Date	Written	Checked	Brief Description of Change
D 1	23/08/12	Ryan Orr	Tessa Flaws	Draft - training document
D 2	28/11/12	Ryan Orr	Tessa Flaws	Draft - training document
Final v1	26/02/2013	Ryan Orr	Tessa Flaws	Final

1. Quick Start Guide

1.1. Introduction

This quick start guide is intended to provide sufficient information to open and set up a project in the Asset Assessment Spreadsheet and to get a basic understanding of the condition of assets in a project area. Further information on the procedures detailed here (including screenshots) is located further on in the guide.

1.2. Open the Spreadsheet

- The template is located here: H:\General\Asset Assessment Spreadsheet

- Open the sheet and select either WW or SW data for the three inputs when the windows appear

- Read and understand the "Notes" Tab

- Open the "Asset Assessment" Tab

1.3. Import Asset IDs

- Log on to SCIRT GIS

- Select assets in the project area

  Search -> Advanced Search ->select by Attributes -> Target Layer = SCIRT Projects -> Fields = ScirtProjectNumber (double click)

  SQL = "ScirtProjectNumber = (your project number)

  Select -> Select by Location

  Choose the layer required (Wastewater Pipes or Stormwater Pipes only)

  Search for features that are: "partially or completely within"

  Source Layer = SCIRT Projects (1)

  Select ID -> Selection Results -> Select Layer (Wastewater Pipes or Stormwater Pipes) -> Export as txt

  Note: The Advanced Search in GIS will select a maximum of 2000 assets. Larger catchments will need to be split into areas and the polygon selection tool will need to be used.

- Open the export and paste the data into a blank spreadsheet

- Copy and paste only the Asset IDs (Column A) into the Asset ID column in the spreadsheet

1.4. Import Survey

- Open the relevant 12d Master Project

- Create a copy of the existing survey model

- Add the new model to plan view and remove any other models

- Open the drainage network editor and select the new model

- Select import/export and correct any issues that prevent the export from taking place

- In the preset output box, select "Customised list file". Browse to the "Asset Assessment Spreadsheet Output List v1.3" at this location: H:\General\Asset Assessment Spreadsheet

- Click 'Run'. The file will now be on the clipboard.

- Paste the export into Cell B3 in the 12d Export tab in the spreadsheet.

2. Glossary

2.1.1. CEMS

Client Event Management System - the database City Care use to program, track, score and display CCTV undertaken.

2.1.2. Infonet

Infonet is an Infrastructure Management System for water distribution, wastewater collection and stormwater. SCIRT use this system to store asset assessment data.

2.1.3. PDAT

Pipe Damage Assessment Tool – a statistical tool developed and used by SCIRT to predict pipe damage.

3. Introduction

3.1. Guideline Purpose

This guideline will provide some background and initial training in the use of the Asset Assessment Spreadsheet for the design process within SCIRT.

Section 14 identifies changes/improvements yet to be made to the spreadsheet and guideline; these will be addressed when appropriate. Any further questions/improvements should be directed to the Business Systems Manager.

It is assumed that all users will be able to use GIS, excel and 12d packages to at least a basic level.

3.2. Background

The spreadsheet was developed for the purpose of reducing time spent on CCTV related work for Designers and to improve project tracking. The spreadsheet and its overall concept were detailed in a value register entry dated 24/07/2012 and titled Asset Assessment Spreadsheet.

3.3. Spreadsheet Purpose

The Asset Assessment Spreadsheet is designed to be a standardised one-stop location for asset assessment data for wastewater and stormwater assets. The spreadsheet updates from several asset assessment data sources which provides significant time savings and ensures Designers are working with the most up-to-date data.

The sheet is also a location that design decisions, based on the assessment data, can be recorded which provides significant benefit when going from Concept Design to Detailed Design and when answering requests for information when projects are in construction.

Reports can be generated using the data in the sheet to report on anything from catchment condition to project asset assessment progress.

The sheet can be actively used for design from project scoping stage through to the end of Detailed Design (Gates 0 - 3).

4. Data

The Asset Assessment Spreadsheet relies on data that is either automatically updated by way of links to customised outputs or manually updated from project specific data sources.

The data sources referenced by the spreadsheet are fixed templates and should not be modified.

4.1. Automatic Data Inputs

Automatic data inputs are live data sources that are updated frequently and referenced by the spreadsheet (the red tabs).The inputs are summarised below:

Name	Update Frequency	Comments	File Location
GIS Data	Every weekend	Customised GIS output with asset attributes.	G:\General\CCTV\GIS data
CCTV Catalogue	2 Weeks	City Care CCTV Catalogue manually split into WW and SW and saved as.csv files by Mike Tate	G:\General\CCTV\Catalogue
Infonet Outputs	Daily	Customised Infonet output (WW and SW) containing CCTV,PDAT and Polecam results	G:\General\CCTV\Infonet Outputs

Table 1 - Automatic Data Inputs

4.2. Manual Data Inputs

The table below shows the externally generated data the Designer is required to manually input into the spreadsheet:

Name	Update Frequency	Comments	Method Location
Project Asset IDs	User determined	Advanced GIS search and export of assets inside project boundary	Section 5.2 - Importing IDs
12d Export	User determined	12d export using a custom output file	Section 5.3 - Importing 12d Survey Data
CCTV Logsheets	User determined	Infonet export "Designer Report"	Section 5.1

Table 2 - Externally Generated Data

5. Using the Spreadsheet - Project Set Up

The Asset Assessment Spreadsheet is project based and requires setting up for each project.

The initial set up will provide the Designer with all assets located in the project area, their attributes and all available CCTV and level survey information.

Following the completion of this set up the Designer can produce reports from the data to get an understanding of the catchment condition and any additional asset assessment requirements.

5.1. Opening Spreadsheet

- The template is located here: H:\General\Asset Assessment Spreadsheet

- Open the sheet and select either WW or SW data for the three inputs when the windows appear

- Read and understand the "Notes" tab

- Open the "Asset Assessment" tab

5.2. Importing Asset IDs

- Log on to SCIRT GIS

- Select assets in the project area:

- Search -> Advanced Search -> select by Attributes -> Target Layer = SCIRT Projects -> Fields = ScirtProjectNumber (double click)

- In the SQL textbox enter: "ScirtProjectNumber = (your project number)" and press select.
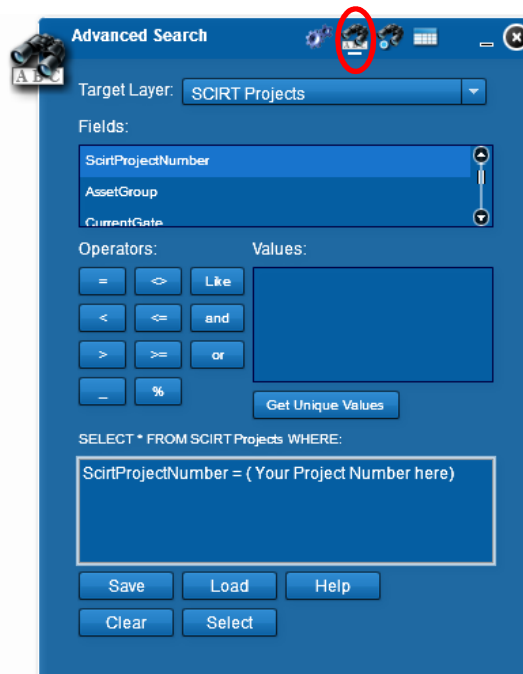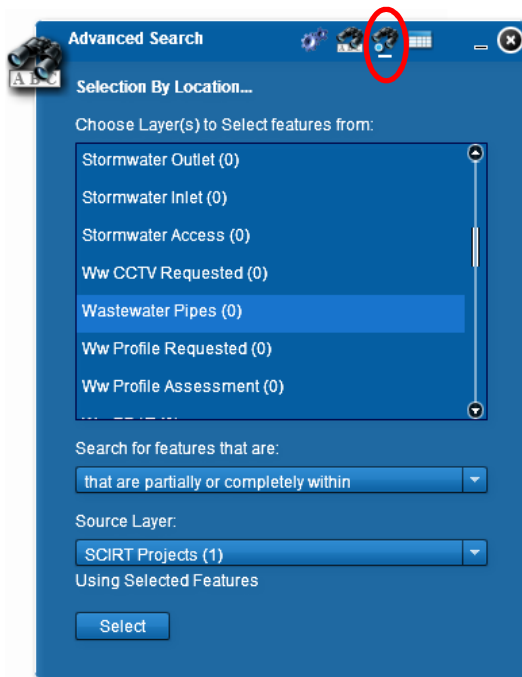

Figure 1 - SCIRT GIS Advanced Search 1

Figure 2- SCIRT GIS Advanced Search 2

- Click 'Selection By Location'

- Choose the layer required (either Wastewater Pipes or Stormwater Pipes)

- Search for features that are: "partially or completely within"

- Choose SCIRT Projects as your source layer and press select

- Click 'Selection Results' -> Select Layer (Wastewater Pipes or Stormwater Pipes) -> Export

- Open the export and paste only the Asset IDs (Column A) into the Asset ID column in the Asset Assessment worksheet.

Note: The Advanced Search in GIS will select a maximum of 2000 assets. Larger catchments will need to be split into areas and the polygon selection tool will need to be used.

5.3. Importing 12d Survey Data

- Request that the 12d Team update the Master Project with the latest survey information

- Open the projects 12d Master Project

- Create a copy of the network -> Utilities -> A-G -> Change -> Select the WW or SW survey model, press the copy to many models button, enter "copy of" into copy to model box, press change then finish. A screenshot of this process is located in Figure 3 and Figure 4 below.
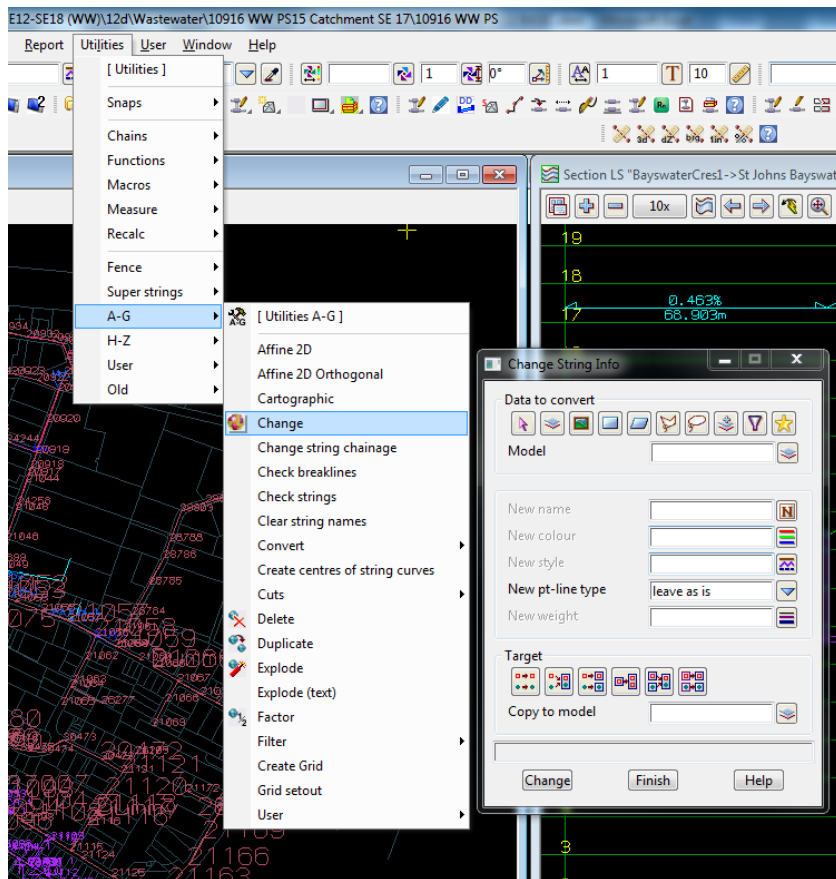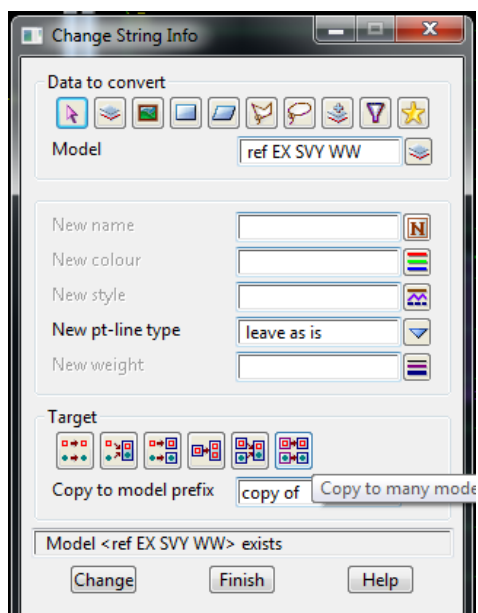
Figure 3 - 12d Screenshot 1

Figure 4 - 12d Screenshot 2

- Add the new model to plan view and remove any other models
- Open the drainage network editor and pick the new model

- Select import/export and correct any issues that prevent the export from taking place. These are likely to be adding tins, selecting manhole type and selecting pipe type. Use unknown for the manhole and pipe type as this information is already in the spreadsheet from GIS.

- In the preset output box, select "Customised list file". Browse to the "Asset Assessment Spreadsheet Output List v1.3" at this location: H:\General\Asset Assessment Spreadsheet

- Select 'Run'
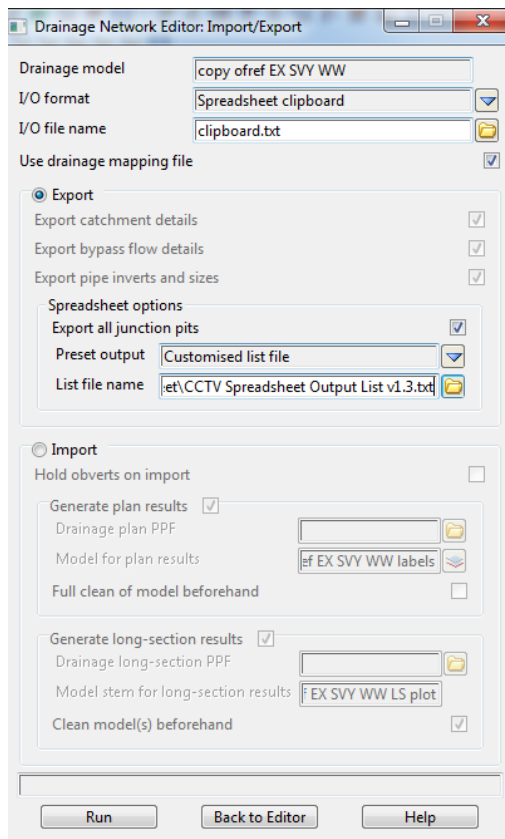

Figure 5 - 12d Screenshot 3

- The file will now be on the clipboard. Paste the export into the 12d Export tab in the spreadsheet (Cell B3).

6. Using the Spreadsheet – Importing Further Information

6.1. CCTV Logsheets

There are two types of logsheet exports which can be used together to review CCTV surveys. The excel format logsheet is manually imported into the Asset Assessment Spreadsheet and can be used to record design decisions against individual defects. The word document format provides a logsheet to the New Zealand Pipe Inspection Manual (NZPIM) which includes defect photos.

Refer to Section 3.7 of the CCC CCTV Specification (Rev. 4) for which defects require a photo to be attached to the logsheet.

6.1.1. Exporting Excel Logsheets

1. Define assets for which logsheets are required.

2. Create an SQL search:

   a. Paste the Asset IDs into the Infonet SQL Template located here: H:\General\Asset Assessment Spreadsheet

   b. Copy Column C into Notepad

3. Recopy all from notepad.

4. Open Infonet and update the network.

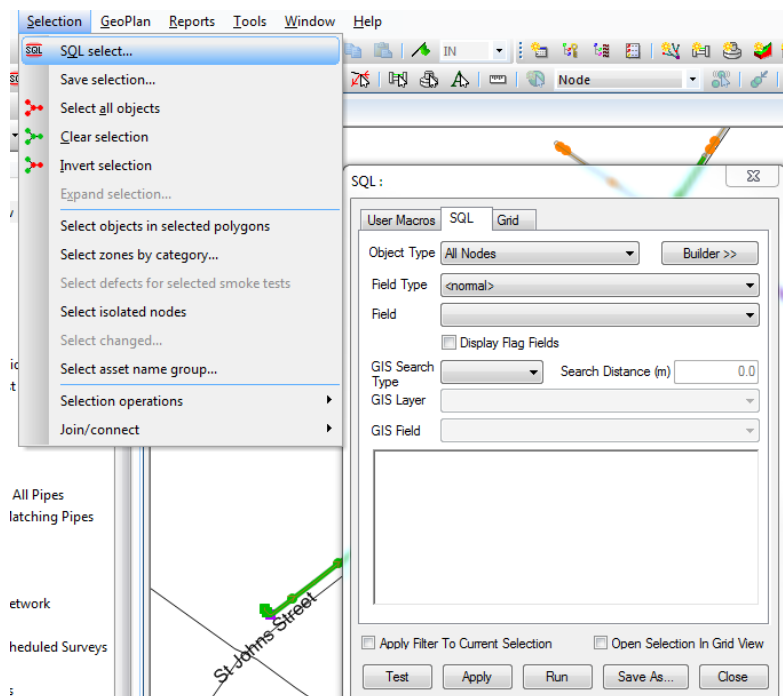5. Selection -> SQL Select. See Figure 6 below.

Figure 6 - Infonet Screenshot 1

6. Select CCTV surveys in Object Type. See Figure 7.

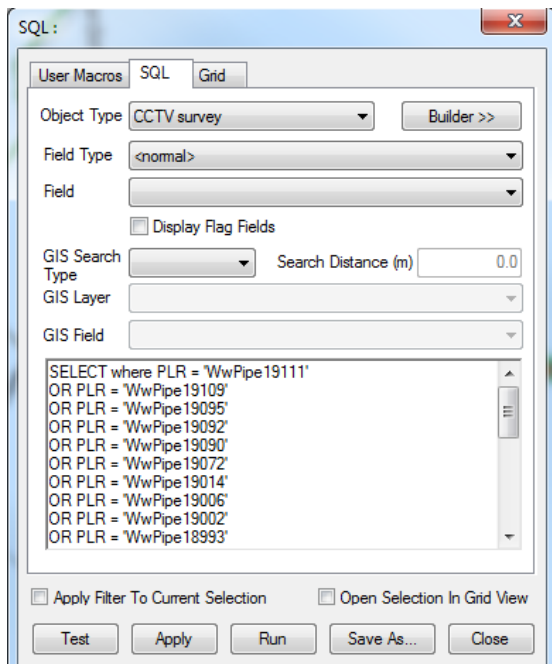7. Paste SQL search into box -> select. See Figure 7.

Figure 7 - Infonet Screenshot 2

8. Select run (wait for the SQL to run and do not click anything otherwise the selection will be lost).

9. Hold the control key and select grid view 'New Surveys Window' to check that the correct assets have been selected. See Figure 8.
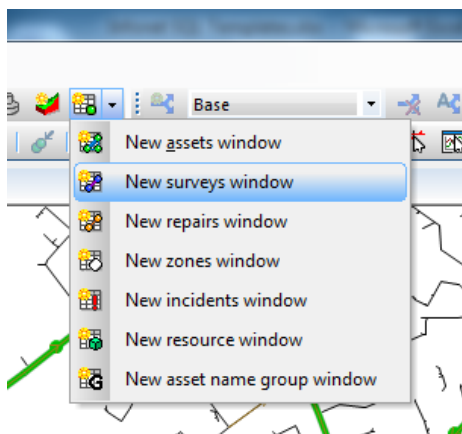

Figure 8 - Infonet Screenshot 3

10. Select the 'CCTV survey' tab (at the bottom of the page). See Figure 9.

11. If only current logsheets are required, sort the 'current' column by ascending and reselect only current surveys. See Figure 9.
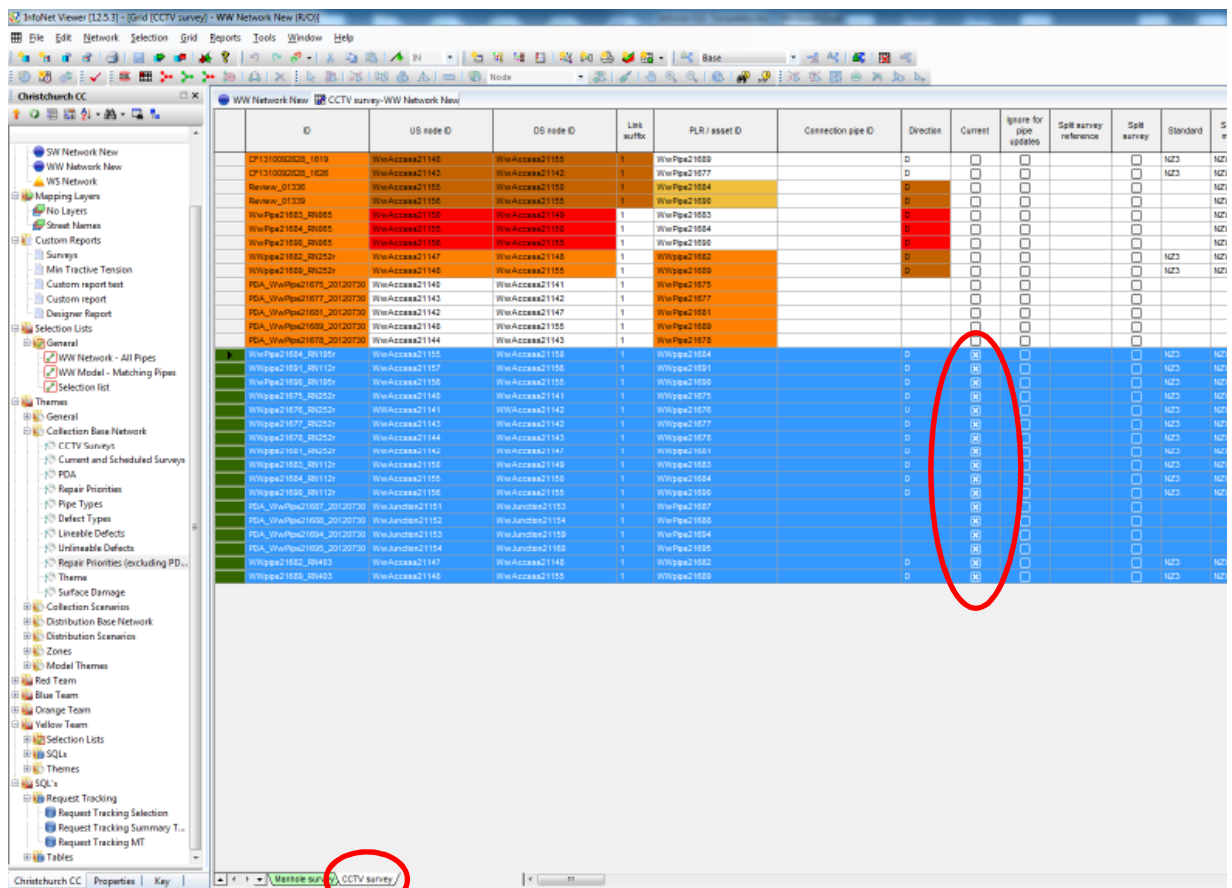
Figure 9 - Infonet Screenshot 4

12. Return to the network plan view.

13. Drag and drop "Designer Report" on to the plan view (under the Custom Reports tab). See Figure 10.
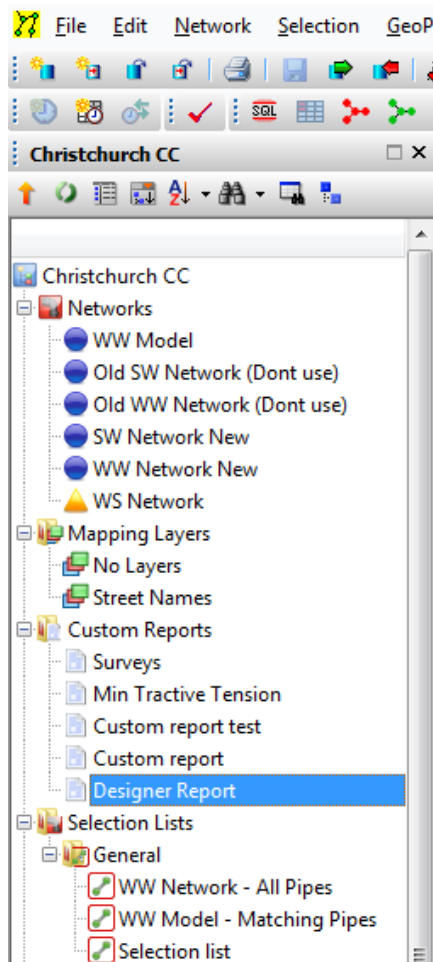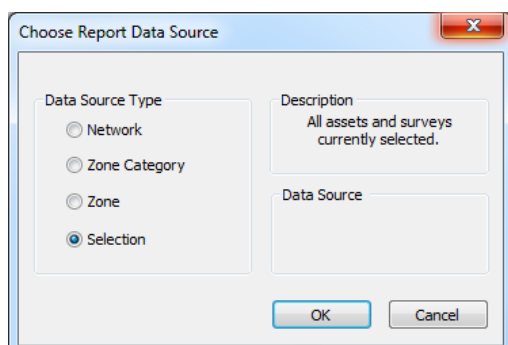
Figure 10 - Infonet Screenshot 5

Figure 11 - Infonet Screenshot 6

14. A box will open, choose selection and click OK and provide save location. See Figure 11.

15. Open the report -> copy columns A to O of the 'AutoLogsheet' tab (excluding headers) and paste values into cell B4 in the "Logsheets" tab.

Figure 12 – Logsheet Export

Conditional formatting will automatically break up the logsheets.

Caution is required as there may be more than one logsheet per asset if it has been surveyed or reviewed more than once. Check the 'Current' column to ensure you're using the correct logsheet for your purpose.

6.1.2. Exporting Word Logsheets

1. Repeat steps 1 to 12 in Section 6.1.1.

2. In Infonet, select Reports > Survey reports > CCTV survey report.
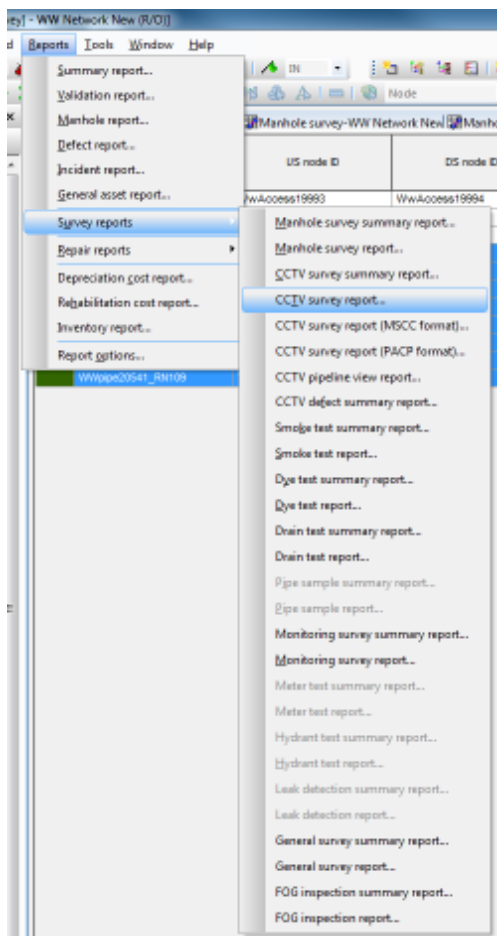
Figure 13 – Infonet Screenshot 7

3. Choose 'Selection' and provide a save location.

4. Use the photos available in the word document in conjunction with the Asset Assessment Spreadsheet to assess the pipes in your project.

7. Using the Spreadsheet – Data Checks

7.1. GIS Data

Assets can be added/updated in GIS without the knowledge of the Designer. It is recommended that project Asset IDs are exported frequently from GIS (process in Section 5.2 on page 9) and that checks are done to ensure all IDs are captured.

If the project is to be split up (or is over multiple catchments) into subcatchments/streets, assets can be assigned to a catchment – enter this in the 'Catchment' column. The easiest way to spit into sub catchments is to use the polygon tool in GIS and export the assets within each subcatchment and use Excel's 'vlookup' function to bring the subcatchments into the spreadsheet.

7.2. Survey Data

It is essential that checks are performed to ensure that the data in the spreadsheet is fit for purpose. The spreadsheet relies on the 12d model to be created as per the GIS as it pulls through pipe information based on a match between the upstream and downstream nodes in GIS. If the connectivity in the data is incorrect in 12d, the grade will not be available in the spreadsheet. Below is a recommended process for wastewater survey data:

1. Filter the grade assessment column by 'As-Built Grade Required'

As no pre-IDS grade has been specified for pipes greater than 300mm, research into as-built grades is required. It is recommended that as-built grades are obtained from the Council as-built database, however, as-built grades under the 'GIS Grade' column may be used with caution.

2. Filter Grade Assessment column by 'No Survey Information'

Check whether there is data available by looking at the long sections in 12d. If there is grade data available either talk to the SCIRT Survey Team to have the surveyors tidy up the network to match GIS or manually enter the grade by typing over the grade in the Post-Quake Grade column - this should be done with caution. If there is no information, decide whether manhole survey is required. Note all decisions in the 'Survey Comments' column.

If the invert levels = 0, look into attributes to see why invert could not be surveyed. Note this in the 'Survey Comments' column.

3. Filter Grade Assessment column by 'Possible Relay'

It is recommended that the long section be inspected for every asset with a negative grade to check its validity. It is possible that the model has been created with the wrong flow direction and subsequently the grades are inadvertently negative in the model. See the SCIRT Survey Team to resolve.

4. Before manually updating the spreadsheet with any new survey data – make copy and paste values of the Asset IDs, grades and assessment

A comparison should be done and any unexpected differences should be followed up with the 12d data contact.

Note - Grade assessments are for wastewater only and are in accordance with the IRTSG (version 3.0) Section 6.14, with the exception of the grade acceptance tolerance. The tolerance has been created to eliminate spending additional money on surveying for adding very little value - for example, the data in Table 3 shows more accurate survey required when no grade acceptance tolerance is applied. Applying a grade acceptance tolerance of 0.02 allows the grade to become "acceptable within tolerance" as it is within 2% of the minimum acceptable grade. It is up to the user to use their engineering judgement to set the tolerance.

Grade Acceptance Tolerance	Flattest Possible Grade	Steepest Possible Grade	Minimum Acceptable Grade	Grade Assessment
0	0.137	0.263	0.143	More accurate survey required
0.02	0.137	0.263	0.143	Acceptable within tolerance

Table 3 - Grade Acceptance Tolerance

7.3. CCTV Data

The CCTV data that is brought through from Infonet requires checking to confirm whether the quality is acceptable for design or whether CCTV will have to be requested; there are a number of ways these checks could be undertaken. Throughout this process, it is important to record decisions (a good location is the 'CCTV to be requested' column), this will allow you to easy identify which assets require survey/review/following up. The CCTV Status and Phase provide a good overview of what CCTV/polecam is available in your project, however, it is recommended that all logsheets are inspected to confirm the status of each asset is correct.

1. Identify assets that do not require CCTV

Any assets that have been already identified as needing to be relayed or abandoned or where an alternative system is to be installed should not require CCTV. Any assets that fail on grade and require relay also do not require CCTV.

2. Identify acceptable data

Post June surveys with Task Status = REVIEWED and Task Phase = CEMS can be deemed as good data. It is recommended that all logsheets are reviewed to ensure these statuses are correct.

3. Identify questionable CCTV data and decide whether quality is acceptable or further CCTV is required

Data with questionable quality include surveys with Task Phase = RQREVIEW, UIREVIEW or UNVERIFIED. It is recommended that the logsheets are inspected for these surveys to determine the extent of reduced quality/abandoned survey. Subsequently, a decision can be made on which assets to resurvey.

If the logsheet and photos are not enough to base a decision on, the footage can be requested.

Note - Surveys with a Task Phase of SURVEY or REVIEW have not been through City Care's quality review process, and therefore have a Task Status of UNVERIFIED. These can be requested for review if the video is available (see Video Availability column).

4. Identify assets with PDAT assessments and determine whether CCTV is required

It is recommended to discuss this with the Asset Assessment Team.

5. Identify assets with unacceptable or no data

Unacceptable surveys may include pre-June data, PDAT assessments, abandoned surveys or polecam surveys.

Decide whether you require survey for these assets.

6. Identify acceptable polecam data

Polecam surveys with a Task Status of REVIEW and an outcome of either No Action or Renewal can be deemed acceptable.

7. Review uncertain polecam data and decide whether quality is acceptable

Polecam surveys with a Task Status of Unverified require the Designer to inspect the polecam footage to confirm whether CCTV is required.

8. Other checks

The Static CCTV Assessment will be highlighted red if it does not match the Live CCTV Assessment. It is recommended that the CCTV logsheet is inspected for the assets to determine why the change has occurred. If the changes do not appear correct, discuss this with your Design Team's CCTV Coordinator or the Asset Assessment Team.

Compare surveyed length against GIS length. This can highlight a variety of issues - GIS lengths may be wrong or survey may be incomplete and have an incorrect status.

9. Prepare CCTV review request (refer to Section 8.1)

If footage is available in the City Care catalogue for an asset, a review request can be made. Check the date of the catalogue survey against the date in Infonet. Check that you are not re-requesting an already abandoned/incomplete inspection.

Copy the Asset IDs into the CCTV Request Template and follow the process described in Section 8.1

10. Prepare CCTV survey request (refer to Section 8.2)

Check that footage is not available in the City Care catalogue. If it is, then a review request can be made.

Copy the Asset IDs into the CCTV Request Template and follow the process described in Section 8.2.

Visually check your survey request on GIS to confirm that CCTV for these assets is definitely required for design.

8. Requesting Further Data

For most projects additional data will have to be requested to complete the Concept Design and Detailed Design. These requests are an asset assessment process for which the outputs from the spreadsheet help to streamline.

8.1. CCTV Review

CCTV review requests are required where "Post June" survey footage is available in the CCTV catalogue for an asset but this footage has either not been reviewed or not reviewed to the required standard. The CCTV review requesting process is set out below:

- Select assets to be requested using the Asset Assessment Spreadsheet

- Record the request in the Asset Assessment Spreadsheet as detailed in Section 9

- Copy the Asset IDs and paste into Asset ID column in the CCTV Request Template located here: G:\General\CCTV\CCTV Request Templates

- Send the request spreadsheet along with the CCTV Request Proforma to your Design Team's CCTV Coordinator.

8.2. CCTV Survey

CCTV survey requests are required where there is no CCTV for an asset or where the CCTV is pre-June or reduced quality. The CCTV requesting process is set out below:

- Select assets to be requested using the Asset Assessment Spreadsheet

- Record the request in the Asset Assessment Spreadsheet as detailed in Section 9

- Copy the Asset IDs and paste into Asset ID column in the cell the CCTV Request Template located here: G:\General\CCTV\CCTV Request Templates

- Send the request spreadsheet along with the CCTV Request Proforma to your Design Team's CCTV Coordinator.

8.3. Level Survey

Level survey requests are required where the 12d Master Project does not contain survey for pipes located within the project boundary.

- Select assets to be requested using the Asset Assessment Spreadsheet.

- Record the request in the Asset Assessment Spreadsheet as detailed in Section 9.2.

- Copy the Asset IDs into the survey request template located here: G:\General\Survey Team\Manhole Survey Request Template

- Enter the accuracy required and press 'Create Survey Request'.

- Create a GIS expression file:

   o Enter the pipe IDs into the advanced GIS search in the format shown in Figure 14. Ensure the correct target layer is selected (SW or WW).
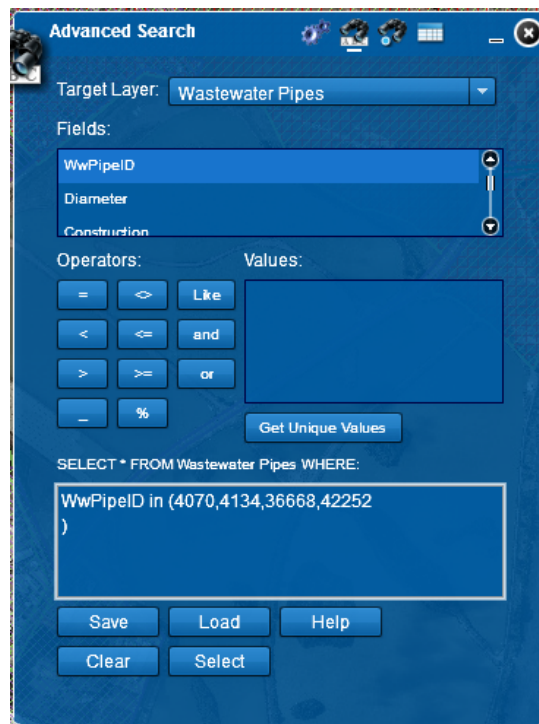
Figure 14 - GIS Advanced Search

- o Press 'save' and choose location. Ensure the file extension is .exp
- o Send the request spreadsheet along with the expression file to the Design Team's Survey Coordinator

9. Using the Spreadsheet – Tracking Assessment Requests

9.1. Recording and Tracking CCTV Requests

Keeping track of CCTV requests and the associated results was the original purpose of the sheet and continues to be a focus to enable timely delivery of projects. CCTV survey requests are recorded in the "CCTV Requests" tab using the process below:

1. Receive confirmation of the request number (RN) from the Design Team's CCTV Coordinator once the request has been processed by the Asset Assessment Team.

2. Check that all assets required have made it into the request. This can be done by recording the original request in the CCTV Request tab. This information is pulled through into the main Asset Assessment tab which allows comparison with the 'Original CCTV Request #' column.

	Asset Id	Request Number	Package Due Date	
5	18931	RN230	19/07/2012	Example
6	18931	RN230	19/07/2012	Example
7	18931	RN230	19/07/2012	Example
8	18931	RN230	19/07/2012	Example
9	18931	RN230	19/07/2012	Example
10	18931	RN230	19/07/2012	Example
11	18931	RN230	19/07/2012	Example
12	18931	RN230	19/07/2012	Example
13				
14				

Figure 15 - Spreadsheet CCTV Requests Tab

3. Once the CCTV request has been sent to City Care, it will appear on the CCTV Twice Weekly Report which is issued every Monday and Wednesday evening. See your Design Team's CCTV Coordinator for the latest report.

4. Open the report, find your request number and look at the target date for delivery to SCIRT.

9.2. Tracking Manhole Survey Requests

Record the Asset IDs of all assets requested, the request reference and other associated information on the tab named "Manhole Survey Requests". Tracking of manhole survey requests is done via Project Centre.

	Asset ID	Survey Request Date	Survey Due Date	Survey Reference	Accuracy Required	
4	15820	14/05/2012	15/06/2012	S169	+-10mm	Example
5	15821	14/05/2012	15/06/2012	S169	+-10mm	Example
6	16087	14/05/2012	15/06/2012	S169	+-10mm	Example
7	16090	14/05/2012	15/06/2012	S169	+-10mm	Example
8	16092	14/05/2012	15/06/2012	S169	+-10mm	Example
9	36326	14/05/2012	15/06/2012	S169	+-10mm	Example
10	36327	14/05/2012	15/06/2012	S169	+-10mm	Example
11	14093	18/05/2012	15/06/2012	S169	+-10mm	Example
12	14086	18/05/2012	15/06/2012	S169	+-10mm	Example
13	14085	18/05/2012	15/06/2012	S169	+-10mm	Example
14						

Figure 16 - Spreadsheet Manhole Survey Requests Tab

10.   Using the Spreadsheet - Design Record

At the end of Concept and Detailed Design a copy of the spreadsheet can be saved "frozen" as a record of decisions made on an asset by asset level to produce the design. Past experience has shown that these records are very valuable to answer requests for information during the Delivery phase.

To save the spreadsheet as a design record follow the steps below:

- Save a copy of the spreadsheet

- Open the copy that you want to freeze

- Data tab > Connections (shown in Figure 17)

- For each of the three workbook connections, click 'Remove'. This will stop the three workbooks from updating.
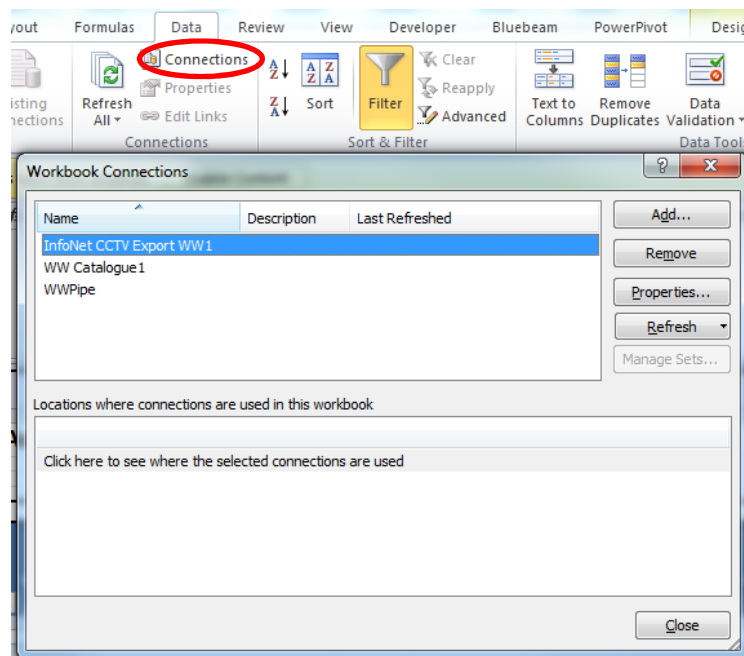
Figure 17 - Excel Workbook Connections

11.   User Assistance

Any issues with data that is imported from external sources should be referred to the owner of the data. The table below details who should be contacted to help resolve any issues with the spreadsheet. Contacts in your own team should be utilised as a first call.

Name/Role	Type of assistance
Asset Assessment Team	Infonet Outputs (automatic import)
12d/Survey Team	12d Export, Master Project issues, survey issues
GIS Team	GIS Data (automatic import)
CCTV Quality Manager	CCTV Catalogue (automatic import), CCTV quality issues
Design Team CCTV Coordinators	General assistance
All Infonet Users	Importing of logsheets to the spreadsheet
All 12d Users	Importing of survey data to the spreadsheet
Business Systems Manager	Advanced assistance and spreadsheet issues, guideline revisions and spreadsheet improvements

12.   Up Keep and Maintenance

The spreadsheet requires up keep to ensure it runs smoothly for users and to answer questions and troubleshoot issues with data. When there are any changes to standards and/or processes in the organisation however, significant time is required to make changes to keep the sheet working, update this guide and issue modified templates.

13.   Spreadsheet Risks and Limitations

13.1. Risks

- Assets added to GIS within project catchments without Designer knowledge

- Live links - the data in the spreadsheet will always be associated to what is in the data exports. If GIS/Infonet is updated/changed then this effects information in the spreadsheet

- Assessment standard changes - if amendments to pipe assessment standards are made, Infonet will be updated and assessments will automatically be updated in accordance with the new standards

13.2. Limitations

- Grade assessment only applies to wastewater

- Survey data relies on the surveyors creating the 12d network to match the GIS network

- Synchronisation of Infonet GIS – lag between synchronisation of SCIRT GIS and Infonet GIS systems

- Assesses individual pipes, not the network

14. Future Spreadsheet Improvements

A number of changes to the spreadsheet have been identified and work is underway to implement these. The table below details the proposed update to the Asset Assessment Spreadsheet.

Changes / Additions	Comments
General tidy up of reference information and user notes located in the spreadsheet.	Update to meet new standards – if required update info tab. Make reference to the guideline.
Incorporate visibility of changes in GIS	Identify any removal of assets in GIS.
Static Infonet download of pipe assessments	The sheet currently allows for one static download of Infonet pipe assessments. There appears to be value in keeping multiple downloads with a date stamp so changes can be tracked and errors in Infonet picked up. This also provides visibility on the assessments that the design was based on.
Streamlining of manhole survey requesting (standard template) and improvement in data quality	This requires some changes to the spreadsheet, the creation/modification of a survey request template similar to the one we have made available for CCTV and further communication with the survey management team around improving the data provided.
Improve the quality and layout of the logsheet export	Communication with the Infonet team, providing a template of the required fields, modification of the spreadsheet to accept new export. Include pipe assessment and survey assessment along with new comment fields.
Tidy up grade tolerance formula	Basic change to remove conflicting advice provided by the sheet.
Modification of CCTV request tracking sheets	CCTV request tracking moved from separate sheet to on the main tab
Survey manual override column	Manual override column to override the 12d survey information.
Comparison between final design decision and Infonet assessment at time of design	If the spreadsheet is going to be used as a legacy document by SCIRT then this could be worthwhile
Include pipe depth bands. Firstly based on 12d survey and secondly GIS	Required now that the pipe condition assessments now have a depth component.
Structural mean score	Simple add column
Structural total score	Simple add column
Remove unnamed asset columns.	Unnamed assets are now dealt with by SCIRT Asset Assessment/City Care scoping team.
Stabilise and lock all formula	Reduce issues with spreadsheet maintenance.
Add profilometer request tracking to the spreadsheet	New requesting sheet plus modification to the spreadsheet including formula indicating when profile should be requested and request tracking.
Add profilometer data to the spreadsheet	Add new data download from Infonet and add to spreadsheet
Add Polecam data	Further investigation required
Remove tractive force, Infonet pipe data and data check sections	Simple removal
Tailor the spreadsheet for stormwater	Removal of some aspects specific to WW and addition of stormwater specific information.
Guideline update	Add section on profile requesting, provide and reference asset assessment process flow charts

15. Appendix 1 – Data Sorting

The automatic data inputs are required to be created, sorted and formatted in a prescribed manor to ensure that the correct data is brought through into the spreadsheet. The way the data is sorted is set out below as a record and should not be modified.

GIS Data

This export joins the historic pipe references, streets, locality, rebuild catchments and assigns upstream and downstream features to the current pipes. Updated pipes are compared with the previous week's dataset to see if there have been any changes in the geometry. Any changes to the pipe geometry are date stamped with the date the process was run as well as being assigned a Service Status of 'Historic'.

Pipe geometry can be changed due to the following:

a) Pipes that have been deleted from the data – the ID for this pipe is no longer in the data.

b) A pipe merged with another pipe – several prior IDs has been replaced with a single forward ID

c) A pipe split into several pipes - prior ID now replaced with two or more forward IDs.

Pipes are assigned a street, locality and rebuild catchment based on where the majority of the pipe lies.

The historic pipe references are joined to the existing pipes to form a complete list of unique pipe IDs with references to what the prior pipe has been replaced with. To avoid duplicate pipe IDs the forward IDs are concatenated.

Upstream and downstream features are assigned to the pipes based on the network configuration as opposed to pipe data (due to discrepancies within the pipe properties). Currently, upstream and downstream features are not amended for assets with an abandoned/removed status.

CCTV Catalogue

The City Care catalogue is split into SW and WW and is saved as two separate .csv files by the Asset Assessment Team. These are ordered as below:

1. ID
2. Camera date

Infonet Outputs

The export of the Infonet data is run when Infonet is updated. Due to the one to many relationship when looking up using Asset IDs the sorting of the Infonet data is crucial. The data must be sorted in this order:

1. Asset IDs are sorted alphabetically (1, 10, 100, 2, 20, 200)
2. Sort currency largest to smallest (i.e. 1s then 0s)
3. Date Scheduled newest to oldest
4. When surveyed newest to oldest

16.   Appendix 2 – Asset Assessment Tab – Column Definitions

Spreadsheet Column Name	Comments
Asset ID	Project Asset ID from GIS
Catchment	Manual input
Street	GIS data
Rebuild Catchment	GIS data
Diameter (mm)	GIS data
Construction	GIS data
Year Laid	GIS data
Service Status	GIS data
Pipe Type	GIS data
Depth (m)	GIS data
Maintenance	GIS data
Upstream Feat	GIS data
Upstream Feat ID	GIS data
Downstream Feat	GIS data
Downstream Feat ID	GIS data
Pipe Length (m)	GIS data
Upstream Invert	GIS data
Downstream Invert	GIS data
Unique Identifier	Calculated to join survey data
1	Intentionally left blank
GIS Grade % (Manhole inverts)	Grade calculated using manhole inverts from GIS
As-built Grade %	As built grade manually entered from council records
Pre-IDS Requirement %	Pre IDS grade
12d Upstream Invert	Upstream invert from 12d
12d Downstream Invert	Downstream invert from 12d
Post-Quake Grade % (+-25mm accuracy)	Post-quake grade using 12d +/-25mm survey
Post-Quake Grade % (+-10mm accuracy)	Post-quake grade using 12d +/-10mm survey
Flattest Possible Grade %	Flattest possible grade calculated using the survey accuracy
Steepest Possible Grade %	Steepest possible grade calculated using the survey accuracy
Minimum Acceptable Grade %	Based on Pre IDS and As Built Grade
Grade Assessment	Grade assessment based on 12d survey data
Survey Comments	User generated survey comments
Manhole Survey Request	Request date
Due Date	Request due date
2	Intentionally left blank
Original CCTV Request #	CCTV RN of the original request
CCTV Cat #	Catalogue number of the CCTV footage
Survey Date	CCTV survey date
Pre/Post June	Indication as to if the footage is pre or post the June 2011 earthquake
Video Availability	CCTV video availability

Result Pre/Post June	Indication as to if the review is pre or post the June 2011 earthquake
Task Status	Infonet task status
Task Phase	Infonet task phase
Static CCTV / PDAT Assessment	Fixed Infonet CCTV assessment
Live Update CCTV / PDAT Assessment	Live Infonet CCTV assessment
CCTV to be Requested	User generated comment
New CCTV Request #	Lookup from CCTV Request tab
Package Due Date	Lookup from CCTV Request tab
3	Intentionally left blank
Design Relay?	Enter 'Relay' if asset is required to be relayed
Do we have enough CCTV info?	CCTV quality check
Do we have enough grade info?	Survey quality check
4	Intentionally left blank
Estimated Asset Life	Based on material type
Year Laid2	Calculation based on GIS year laid
Life End Date	Calculated asset life end date
Remaining Asset Life	Years of remaining asset life
Less than 15 years remaining?	Yes or no based on the remaining asset life
5	Intentionally left blank
CCTV Logsheet Comments	User generated comment
CCTV Footage Comments	User generated comment
Lineable/unlineable defects?	User generated comment
Comments	User generated comment – note that any additional columns may be added to suit user requirements
DESIGN ACTION	User generated comment
6	Intentionally left blank
Tractive Force Design? (check # houses!)	Yes/No
# Houses Upstream (incl. pipe)	From Infonet
Minimum # Houses Upstream (Based on minimum peak flow of 1.5L/s)	Calculation
Min Grade Required (1 in…)	Calculation
Tractive Force Grade Required (%)	
Diameter (mm) full	Calculation
Diameter (mm) d/D	Calculation
Required Diameter	Calculation
Is current diameter okay?	Comparison between the GIS diameter and the tractive force diameter
7	Intentionally left blank