



QERMF User Guide No. 2

Microsoft Excel Risk Assessment Workbook

Hazard and Risk Unit
Community Resilience and Risk Mitigation Branch



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Introduction

The QERMF Risk Assessment Workbook is a Microsoft Excel workbook. The workbook will only work properly on Windows PC's with Microsoft Office 2007 or later installed. The workbook sheets are protected from direct data-entry and all data-entry is via pop-up forms.

This guide was prepared on a Windows 10 system with Microsoft Office 2016 installed. If your system configuration is different, screen shots used in this guide may not look exactly same as what you see on your computer.

The workbook includes an ArcGIS mapping feature. Please refer to the QERMF Risk Assessment Workbook - ArcGIS Mapping Guide for instructions on how to implement the mapping feature.

Opening the Workbook

For the workbook to work efficiently, it should always be opened from the user's local drive, rather from a shared network or cloud drive.



TIP: Create a folder on your C drive specifically for Risk Assessment workbooks. For example, C:\Risk Assessment Workbooks

You can open the workbook the same way you open any Excel workbook:

- From the desktop, if you have created a desktop shortcut, or
- Browse to the workbook and double-click the file, or
- Start Excel and go File/Open, and browse to the file.

IMPORTANT NOTE:

Using any of the methods above to open a Risk Assessment workbook will mean you will be unable to copy and paste data into the Risk Assessment workbook pop-up forms from other Excel workbooks, because a pop-up form restricts Excel user functions to the form while it is open.

By default, multiple open Excel workbooks will all use the same "instance" of Excel. If you wish to copy and paste data into a Risk Assessment workbook pop-up form, you will need to open the Risk Assessment workbook in a separate "instance" of Excel.

How to open a second 'instance' of Microsoft Excel

Method A – Via the Windows Task Bar

1. If Excel is in your Windows Task Bar, right-click on the Excel Task Bar icon to see a control menu.
2. Then, hold down the ALT key and left-click on "Excel" (Figure 1).

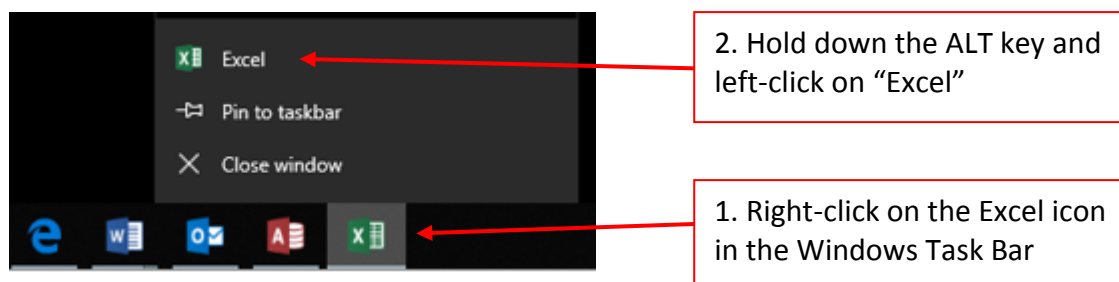


Figure 1: How to start a new instance of Excel – Method 1

3. Then you will be asked "Do you want to start a new instance of Excel?". Click OK and when Excel starts, go File/Open and browse to the Risk Assessment workbook you want to open.

Method B – Create a desktop shortcut that opens a new instance of Excel

1. Ensure you have all open applications minimised and you are looking at your desktop, and then left-click on the Windows start button in the bottom left corner of the screen
2. Scroll through the applications until you find "Excel", then click and drag the "Excel" icon from the list and drop it on your desktop. This will create a shortcut icon
3. Right-click on the new "Excel" desktop shortcut and select "Properties" from the pop-out menu to open the "Excel Properties" dialog box.
4. Select the "Shortcut" tab and add "/x" to the end of the Target and click OK (Figure 2). You may wish to rename the shortcut (in the General tab of the "Excel Properties" dialog box) to "EXCEL EXCL".

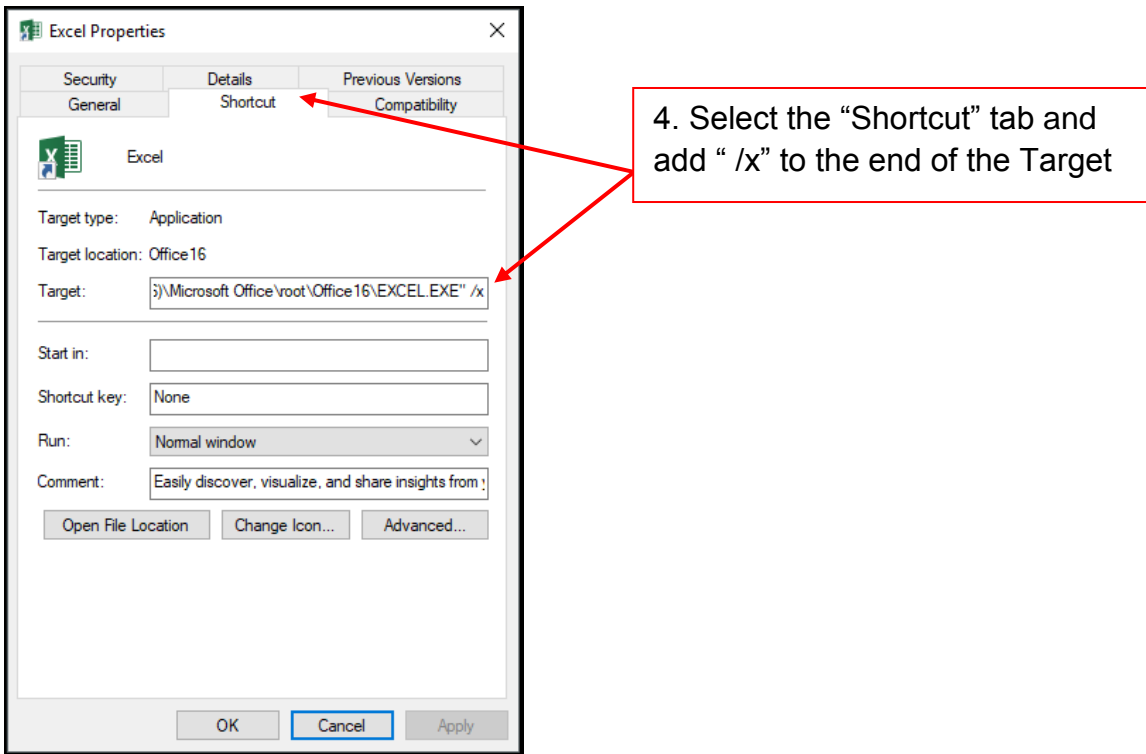


Figure 2: Start a new instance of Excel – where to insert '/x' in the Excel properties dialogue box

5. Double-click on the new desktop shortcut to start a separate “instance” of Excel, then go File/Open and browse to the Risk Assessment workbook you want to open.

Once you have the Risk Assessment workbook opened in its own “instance” of Excel, you can open other Excel workbooks as normal, except not from File/Open of the Risk Assessment “instance” of Excel.

When a Risk Assessment workbook is opened for the first time on a computer, you may be prompted by Excel to “Enable Content” (Figure 3). Click on the “Enable Content” button to enable macros in the workbook.

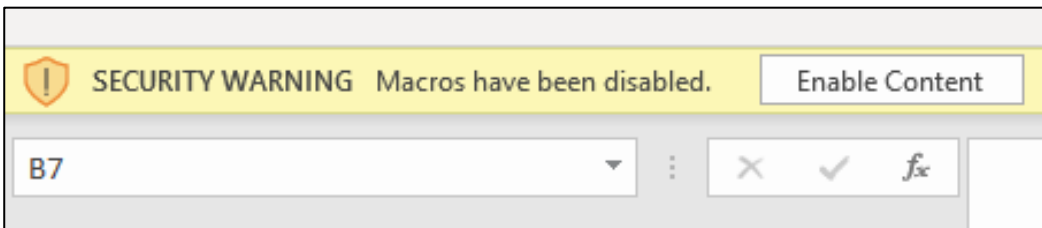


Figure 3: Windows security warning. Click on Enable Content for the workbook to function properly

IMPORTANT NOTE:

A separate workbook should be started from the “QERMF Risk Assessment Master Template.xlsx” workbook for each Risk being assessed.



Using the QERMF Menu

Summary

The Risk Assessment Workbook has a custom ribbon with buttons for users to access the various functions of the workbook. The custom ribbon is accessed by clicking on the “QERMF” menu option (Figure 5).

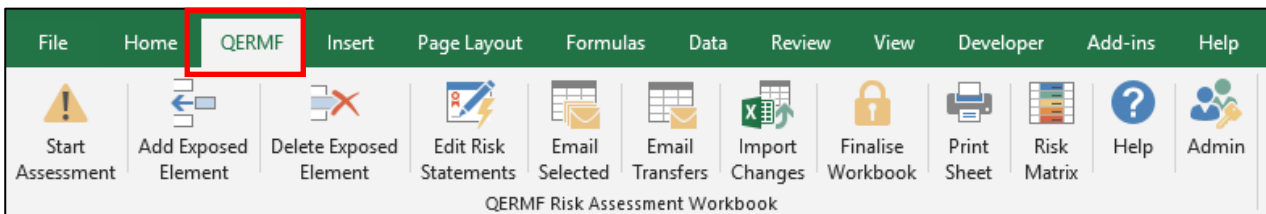


Figure 4: QERMF Custom Ribbon

Help button

Click on the Help ribbon button to get general help with the workbook. Most of the pop-up forms will also have a Help button, which will assist you with that particular form.

Start Assessment/Edit Risk

Click on the Start Assessment ribbon button to open the Add/Edit Risk pop-up form and enter the details of the Risk being assessed (Figure 5). You can click on this button again later to change the details.

Enter the LDMG/DDMG and Event/Scenario. Select a Hazard and Likelihood. The Author defaults to the current Windows user name, but you can change that if you wish.

Click on the “AEP Calculator” tab (Figure 6) to enter the Number of years of recorded data and Number of Events within X Years for this Risk. The AEP%, Annual Exceedance Probability and Average Recurrence Interval will be automatically calculated.

Add Risk [Close]

Risk Details | **AEP Calculator**

LDMG/DDMG:

Event/Scenario:

Hazard:

Likelihood:

Author:

[Help](#) [Save](#) [Cancel](#)

Figure 5: Add/Edit Risk pop-up form – Risk Details tab

Add Risk [Close]

Risk Details | **AEP Calculator**

Number of years of recorded data (X):

Number of Events within X Years:

Calculated AEP%:

Annual Exceedance Probability (AEP):

Average Recurrence Interval (ARI):

[Help](#) [Save](#) [Cancel](#)

Figure 6: Add/Edit Risk pop-up form – Risk AEP Calculator tab

Click on the Save button to save the Risk data to the workbook and close the form. Click on the Cancel button to close the form without saving. If you are adding a Risk for the first time, the workbook will automatically save itself with a new name. The format of the file name is:

[YYYYMMDD]_[LDMG/DDMG]_[EVENT/SCENARIO]_[AUTHOR].xlsm



The new file will be located in the same folder as the Master Template is located. Hazards are colour coded and the background colour of Row 2 in each sheet will be set to the colour associated with the Hazard selected when entering the Risk (Figure 8).

QERMF RISK ASSESSMENT WORKBOOK		
Hazard: Geophysical - Earthquake		
Event/Scenario: Earthquake		
Likelihood: [AEP 3%] Possible		
ID	Exposed Elements	Vulnerability Notes

Figure 7: Example of a sheet header area for Hazard “Geophysical – Earthquake”

Add/Edit Exposed Element

Click on the Add Exposed Element ribbon button to open the Add Exposed Element pop-up form and enter the details of the Exposed Element being assessed. The Add/Edit Exposed Element form fields are dynamically generated based on the Exposed Element Type selected. After selecting the Exposed Element Type, the fields necessary to enter information for that Exposed Element Type will be displayed (Figure 8).

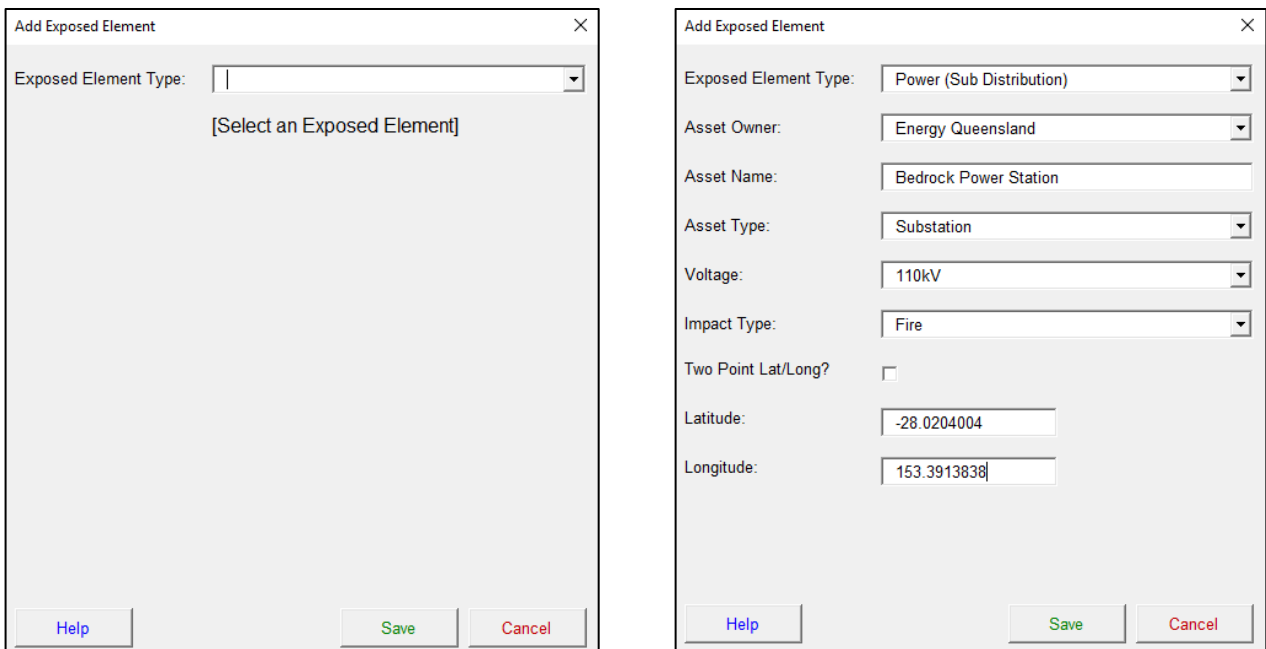


Figure 8: Add Exposed Element pop-up form – before and after an Exposed Element Type is selected

All Exposed Elements can have Latitude and Longitude entered, which is used by the ArcGIS Mapping component. You can optionally indicate that this Exposed Element has a



“Two-Point Lat/Long”, and if selected, you will be prompted to enter a second set of latitude/longitude co-ordinates.

Click on the Save button to save the Exposed Element, which will then appear in the Risk Assessment Data sheet of the workbook. Click on the Cancel button to close the form without saving. Each Exposed Element Type belongs to one of six “Registers”. Each Register has its own sheet in the workbook. The six Registers are:

- Infrastructure
- Access & Resupply
- Community & Social
- Medical
- Significant Industry
- Environmental

When you add an Exposed Element, it will also appear in its assigned Register sheet (Figure 9).

Each Exposed Element is automatically assigned a unique ID. The ID is formatted as:

[Register Number].[Workbook Version].[Sequence Number (within Register)]

For example, the first Exposed Element added for Register 1 will have Register ID “1.0.1”.

QERMF RISK ASSESSMENT WORKBOOK				
Hazard: Geophysical - Earthquake				
Event/Scenario: Earthquake				
Likelihood: [AEP 3%] Possible				
ID	Exposed Elements	Vulnerability Notes	Vulnerability	Likelihood
1.0.1	Power (Sub Distribution) Asset Owner: Energy Queensland Asset Name: Bedrock Power Station Asset Type: Substation Voltage: 110kV Impact Type: Fire			POSSIBLE

Figure 9: An Exposed Element in the Risk Assessment Data sheet

To edit an Exposed Element, double-click on either the ID or the Exposed Element in the Risk Assessment Data sheet or in its Register sheet, to open the Edit Exposed Element pop-up form.



Delete Exposed Element

To delete an Exposed Element, click anywhere on an Exposed Element row in the Risk Assessment Data sheet, then click on the Delete Exposed Element ribbon button. You will be prompted to confirm the deletion, and if you proceed, the Exposed Element will be removed from the Risk Assessment Data sheet and from its Register sheet.

Edit Vulnerability and Likelihood

Once an Exposed Element has been added to the workbook, you can edit its Vulnerability and Likelihood data by double-clicking in the Exposed Element's Vulnerability Notes, Vulnerability or Likelihood cells on the Risk Assessment Data sheet or in the Exposed Element's Vulnerability Notes or Inherent Risk cells on its Register sheet to open the Edit Vulnerability pop-up form (Figure 10).

Edit Vulnerability

Vulnerability Notes: - 100kVa connect from Bedrock exposed through State Forest outside of the Bedrock District.
- Key civic infrastructure such as hospitals, water treatment plants and pump stations etc are reliant on power and will be affected over a significant period of time.
- Grassfires in highly prone areas will result in ash tripping powerlines which will cause widespread network outages.
- Interconnections to substations (which feed high populated areas of the district) are vulnerable which will lead to outages

Vulnerability: Low ■

Likelihood: Possible ■

Help Save Cancel

Figure 10: Edit Vulnerability pop-up form

The Exposed Element's Vulnerability is colour coded in the form and the Risk Assessment Data sheet.

Click on the Save button to save the Vulnerability data, which will then appear in the Risk Assessment Data sheet of the workbook and the relevant Register sheet. Click on the Cancel button to close the form without saving.

NOTE: Inherent Risk Rating is calculated from Likelihood Level, Vulnerability Level & Consequence Level. So, the Inherent Risk will not show on the Risk Assessment Data sheet or the Register sheets until all three of those levels have been set.

Add/Edit/Delete Existing Risk Treatments or Controls

Each Exposed Element can have multiple Existing Risk Treatments or Controls. To add, edit or delete Existing Risk Treatments or Controls for an Exposed Element from Risk Assessment Data sheet, double-click on the first Existing Risk Treatments or Controls cell on the row for the Exposed Element you want to work with, which will open the Risk Treatments or Controls List pop-up form (Figure 11). Here you will see a list of all of the Existing Risk Treatments or Controls already entered for the Exposed Element.

Type	Agency/Org/Business	Details
Other	Energy Queensland	Action Required: Liaise with Energy Australia to discuss mitigation measures
Other	Civil Aviation Authority,	Action required: Liaise with Civil Aviation Authority, Telstra NBN etc to discuss

Figure 11: Risk Treatments or Controls List pop-up form

To add a new Existing Risk Treatment or Control, click on the Add button in the form to open the Add Risk Treatment or Control pop-up form (Figure 12). To edit an Existing Risk Treatment or Control, click on it in the list and then click on the Edit button in the form, or double-click on the Existing Risk Treatment or Control in the list to open the Edit Risk Treatment or Control pop-up form.

Edit Risk Treatment or Control X

Treatment or Control Type:

Agency/Organisation/Business Name:

Treatment or Control Details:

Capability:

Capacity:

Capacity Gaps:

Effectiveness: Residual Risk Rating:

Action:

Figure 12: Edit Risk Treatment or Control pop-up form

If Action is set to anything other than “To be confirmed”, Decision Log row will be created on the Decision Log sheet. The Decision Log record will be linked to the Existing Risk Treatment or control being added/edited.

Click on the Save button to save the Risk Treatment or Control data, which will then appear in the Risk Assessment Data sheet of the workbook and the relevant Register sheet. Click on the Cancel button to close the form without saving.

To delete an Existing Risk Treatment or Control, click on it in the list and then click on the Delete button in the form. If you delete an Existing Risk Treatment or Control, the linked Decision Log row in the Decision Log sheet will also be deleted.

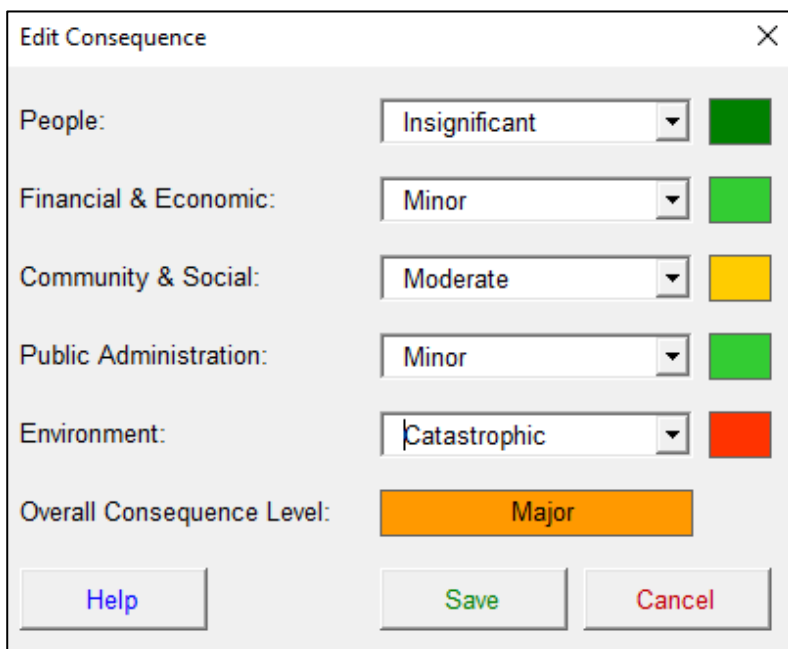
When you have finished working with Existing Risk Treatments or Controls, click on the Close button in the form to update the Risk Assessment Data sheet and the relevant Register sheet.

You can also edit an Existing Risk Treatment or Control by double-clicking on the Existing Risk Treatment or Control data cells in a Register sheet to open the Edit Existing Risk Treatment or Control pop-up form.

NOTE: Residual Risk Rating is calculated from Inherent Risk Rating and Effectiveness Level. So, the Residual Risk Rating will not show on the Add/Edit Existing Risk Treatment or Control form or the Register sheets until the Inherent Risk Rating has been calculated and the Effectiveness Level has been set.

Edit Consequence

Once an Exposed Element has been added to the workbook, you can edit its Consequence data by double-clicking in the Exposed Element's Consequences & Overall Risk Rating or Inherent Risk cells on the Risk Assessment Data sheet, which will open the Edit Consequence pop-up form (Figure 13).



People:	Insignificant	Dark Green
Financial & Economic:	Minor	Light Green
Community & Social:	Moderate	Yellow
Public Administration:	Minor	Light Green
Environment:	Catastrophic	Red
Overall Consequence Level:	Major	Orange

Figure 13: Edit Consequence pop-up form

Consequences are colour coded.

After the Consequence has been set across the six areas, the Overall Consequence Level will be calculated.

Click on the Save button to save the Consequence data, which will then appear in the Risk Assessment Data sheet of the workbook. Click on the Cancel button to close the form without saving.

Edit Risk Statements

Each Register can have its own Risk Statements, which are displayed on the Register sheets below the header area. You can edit the Risk Statements by clicking on the Edit Risk Statements ribbon button, or by double-clicking on the Risk Statements cell in each Register sheet, which will open the Edit Risk Statements pop-up form (Figure 14).

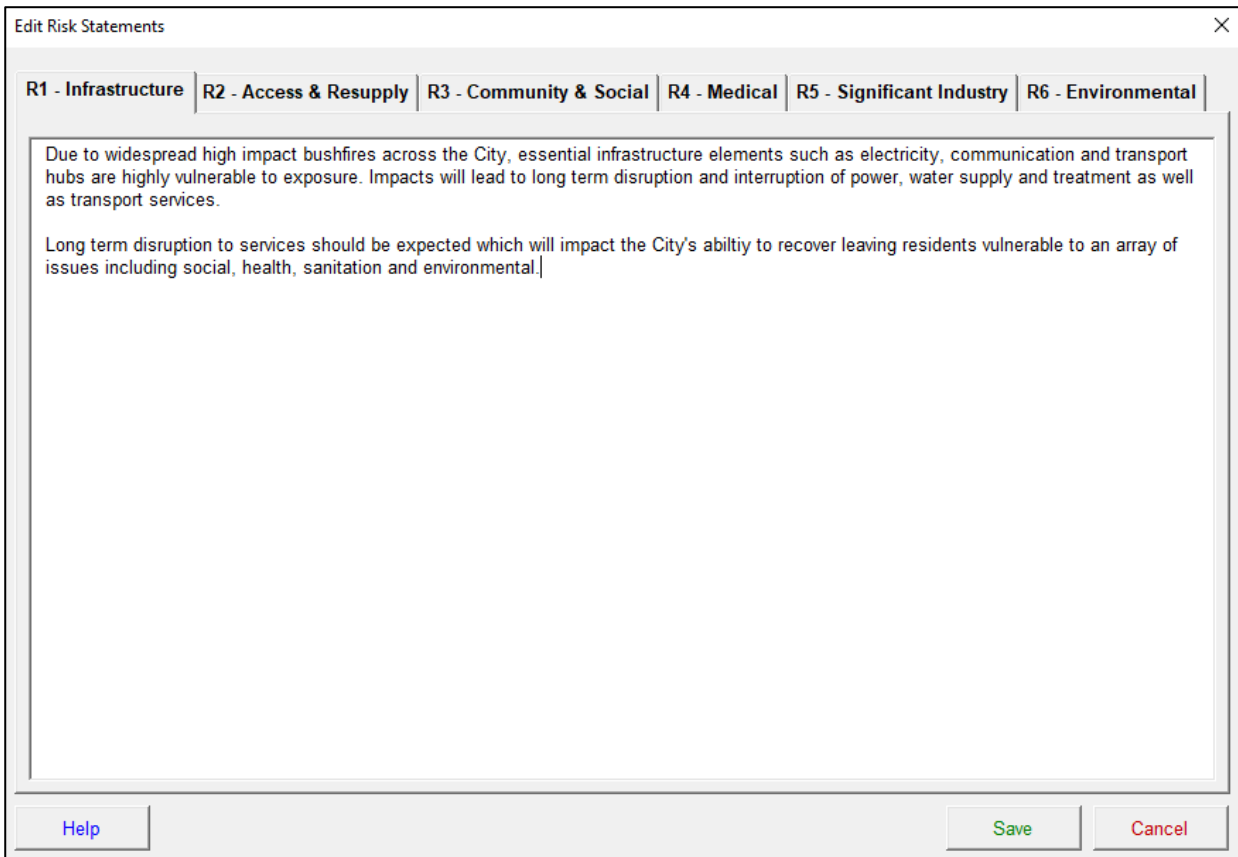


Figure 14: Edit Risk Statements pop-up form

The Edit Risk Statements pop-up form has tabs for each Register.

Click on the Save button to save the Risk Statements, which will then appear in the Register sheets. Click on the Cancel button to close the form without saving.

Edit Decision Log

You can edit Decision Log data by double-clicking on a row on the Decision Log sheet which will open the Edit Decision Log pop-up form (Figure 15).

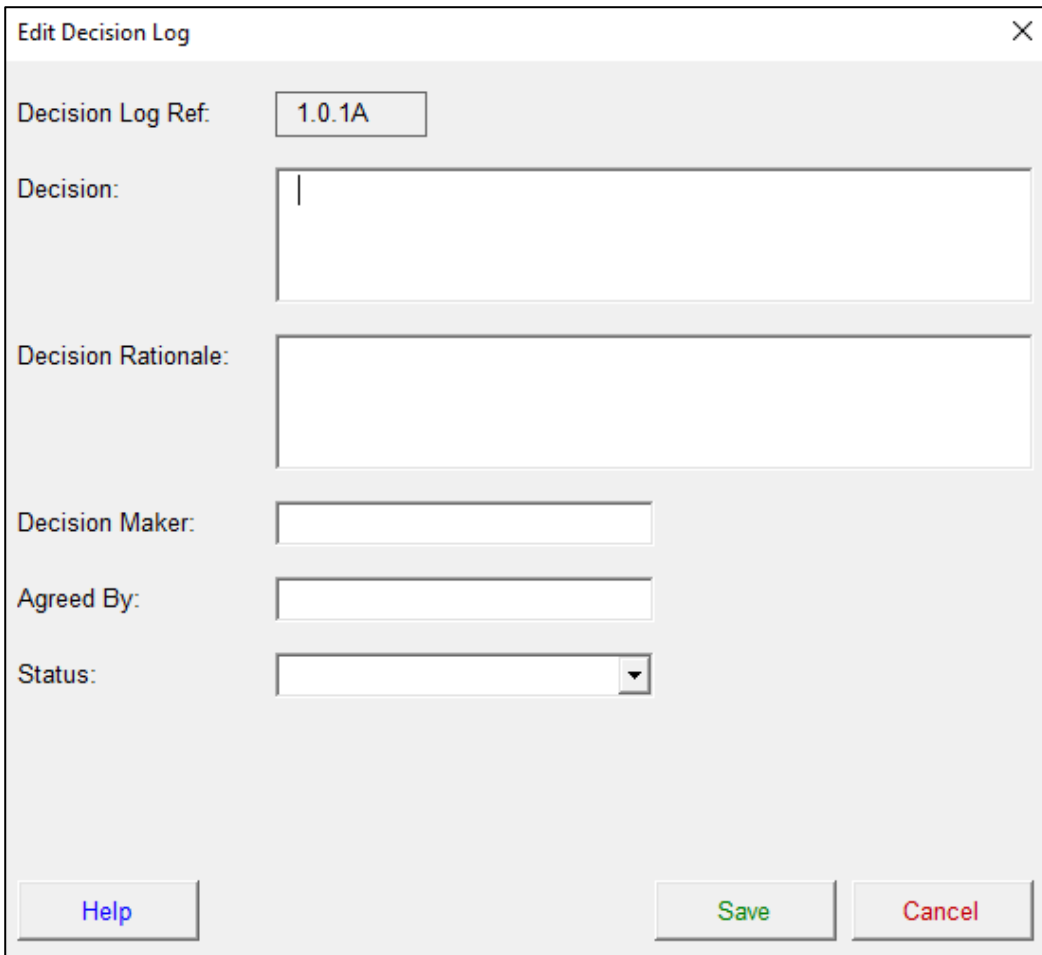


Figure 15: Edit Decision Log pop-up form

Click on the Save button to save the Decision Log data to the Decision Log sheet. Click on the Cancel button to close the form without saving.

Charts Sheet

The Charts sheet displays a stacked bar chart of Migrated and Transferred Risk Treatments within each Register (Figure 16). The chart and its data table automatically update as changes are made to the Action for Existing Risk Treatments or Controls.

Register	Mitigate	Mitigate & Transfer	Transfer
Infrastructure	5	1	3
Access & Resupply	0	1	0
Community & Social	1	2	2
Medical	1	1	0
Significant Industry	1	0	0
Environmental	1	1	2
TOTALS	9	6	7

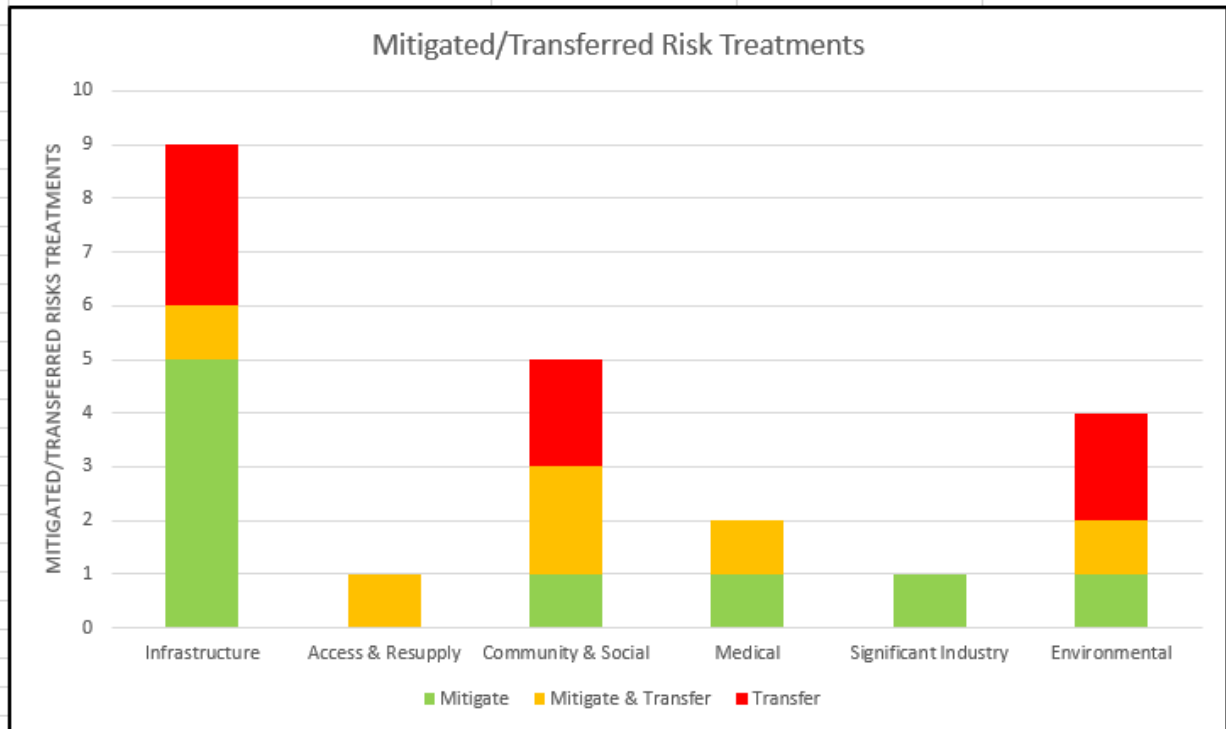


Figure 16: Charts sheet example

Email Selected

The system provides a facility to email selected Exposed Element data (including any related Existing Risk Treatment or Control and Decision Log data) to a colleague. Your colleague will receive a copy of the workbook, but it will only contain data for the selected Exposed Elements. Your colleague can then update the data in the workbook and return it to you via email. You can then import the changes made in the returned workbook to update the Exposed Element data in your master workbook (see Import Changes).

Click on the Email Selected ribbon button to open the Select Exposed Elements pop-up form (Figure 17). This form displays a list of all Exposed Elements in the workbook.

Select the Exposed Elements you wish to email by clicking the selector box. Then click on the Email Selected button. This will create a copy of the workbook, but the copied workbook will only contain data pertaining to the selected Exposed Elements, and then the copied workbook will be attached to a new email message.

Click on the Cancel button to abort the process and close the form.

REG ID	Exposed Element
<input type="checkbox"/>	1.0.1 Power (Transmission) Powerlink Greenbank Power Line 275kV Fire
<input type="checkbox"/>	1.0.2 Power (Sub Distribution) Energy Queensland Logan - Beenleigh Power Line 110kV Fire
<input checked="" type="checkbox"/>	1.0.3 Water (Reticulation) Various Pumping Station Fire
<input checked="" type="checkbox"/>	1.0.4 Communications (Telecommunications) Other Multiple towers and multiple providers Mobile Tower Fire
<input checked="" type="checkbox"/>	1.0.5 Communications (Emergency Services) Springbrook VHF Repeater - Repeater Station Road Other Fire
<input checked="" type="checkbox"/>	1.0.6 Transport Infrastructure (Road & Rail) Bus Exchange and DTMR Operations Centre Other Fire
<input checked="" type="checkbox"/>	1.0.7 Transport Infrastructure (Road & Rail) M1 Other Other
<input type="checkbox"/>	1.0.8 Transport Infrastructure (Road & Rail) Springbrook Road Other Fire
<input type="checkbox"/>	1.0.9 Transport Infrastructure (Road & Rail) Rail Rail Station Fire
<input type="checkbox"/>	1.0.10 Air (Airports/Aerodromes) Gold Coast Airport International Other
<input type="checkbox"/>	1.0.11 Air (Airports/Aerodromes) Local Airfields Landing Strip Other
<input type="checkbox"/>	1.0.12 Air (Helipads) Local LZs Designated Helipad Other
<input type="checkbox"/>	2.0.1 Roads (Bridges) Various Other Timber Fire
<input type="checkbox"/>	2.0.2 Roads (Local) Access to key tourism locations Local Road Other
<input type="checkbox"/>	3.0.1 Centres of Governance Coucil Offices at Nerang Other Fire
<input type="checkbox"/>	3.0.2 Emergency Shelters & Places of Refuge Evacuation Centre at Nerang Community Centre Fire
<input type="checkbox"/>	3.0.3 Community Infrastructure Nerang State School School Fire
<input type="checkbox"/>	3.0.4 Community Infrastructure Nerang High School School Fire
<input type="checkbox"/>	3.0.5 Community Infrastructure Springbrook State School School Fire
<input type="checkbox"/>	3.0.6 Population Centres Springbrook, Panorama Drive, Red Oak Drive, Burleigh Hills Urban Fire

Buttons: Help, Email Selected, Cancel

Figure 17: Select Exposed Elements form

Import Changes

The system can import changes made to a workbook that was previously created via the Email Selected process into your master workbook. The import process will only import new or updated Exposed Elements and their Existing Risk Treatments or Controls. Changes to other parts of the workbook such as Risk Statements and the Decision Log will not be imported.

Click on the Import Changes ribbon button to open the Import Changes pop-up form (Figure 18). Click on the Browse button on the form to open a browse window, then browse to the returned workbook that you want to import from.

Click on the Import button and the process will update your master workbook with the data in the returned workbook.

Click on the Cancel button to abort the process and close the form.

Import Changes		✕
Browse to a returned Risk Assessment workbook to update this workbook with the changes made in the returned workbook.		
Source file:	<input type="text"/>	Browse
		Import
		Cancel

Figure 18: Import Changes form



Email Transfers

This process will make a copy of the workbook and remove all the Existing Risk Treatments or Controls from the copied workbook that are not Actioned as 'Transfer' or "Mitigate and Transfer". Then the copied workbook will be attached to a new email message. You will be prompted to confirm the process. Click OK to proceed or Cancel to abort the process.

Finalise Workbook

Once the workbook is completed and all Exposed Elements, Existing Risk Treatments or Controls and Decision Log data has been entered, the workbook should be "Finalised". When a workbook is finalised, it will be locked from further changes until one year has elapsed since it was finalised, at which point the workbook will unlock. When a workbook is unlocked for review, the workbook version number will be incremented.

Click on the Finalise Workbook ribbon button to open the Finalise Workbook pop-up form (Figure 19). The Date finalised will default to the current date, but you can change the date by clicking on the date selector button.

Click on the Finalise button on the form to finalise the workbook or click on the Cancel button to abort the process.

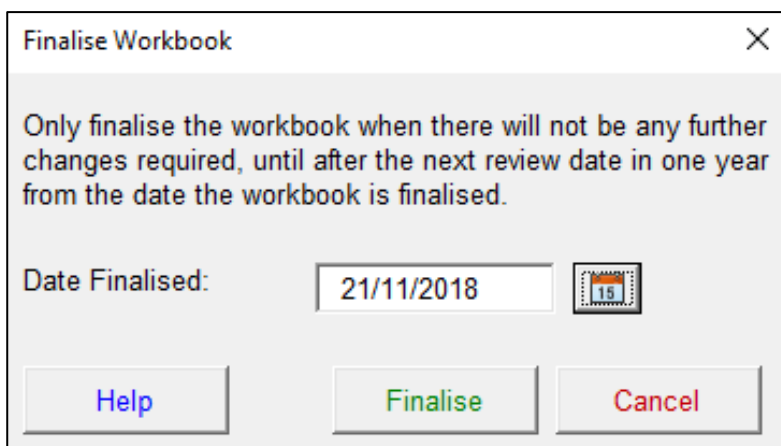


Figure 19: Finalise Workbook form

Print Sheet

Select the sheet you want to print, then click on the Print Sheet ribbon button to print the sheet.

Risk Matrix

Click on the Risk Matrix ribbon button to open a pop-up form showing the Risk Matrix.