USER GUIDE

WHOLE-OF-LIFE COSTING TOOL

For elected officials and staff

SECURING QUEENSLAND'S FINANCIAL SUCCESS // EST. 1988

Queensland Treasury Corporation's Whole-of-Life Costing Tool is an easy-to-use model designed to provide local government decision makers the indicative whole-of-life costs associated with proposed or forecast capital projects.

Based on a set of default or custom user inputs, key features of the model will provide access to:

- Annual costs over the life of an asset (figure 1)
- Breakdown of total upfront capital, maintenance, operating, other (renewal) and disposal costs (figure 2)
- Nominal and discounted whole-of-life costs (figure 3)
- Whole-of-life cost multiple based on up-front capital costs of an asset (figure 3), and
- Impact on materials and services for the purpose of long-term financial forecasting (figure 4)

Figure 1. Annual costs over the life of an asset

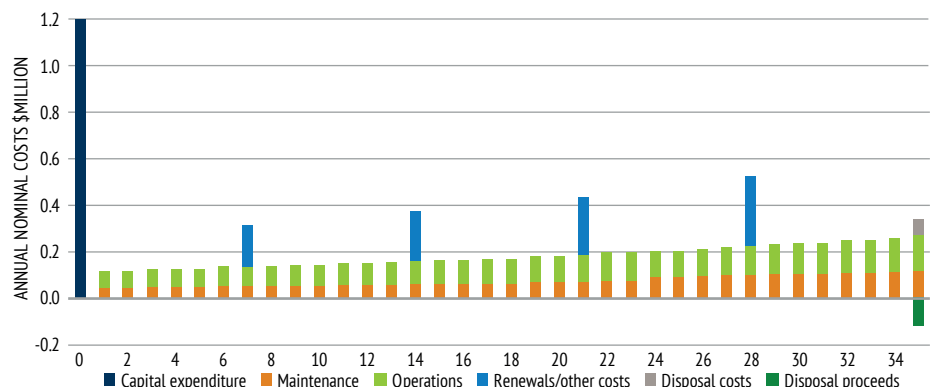| Whole-of-life cost & Capex Multiple		
Nominal whole-of-life cost	$8,185,275	6.8x
Discounted whole-of-life cost	$3,984,959	3.3x

Figure 3. Whole-of-life costs (nominal and discounted)
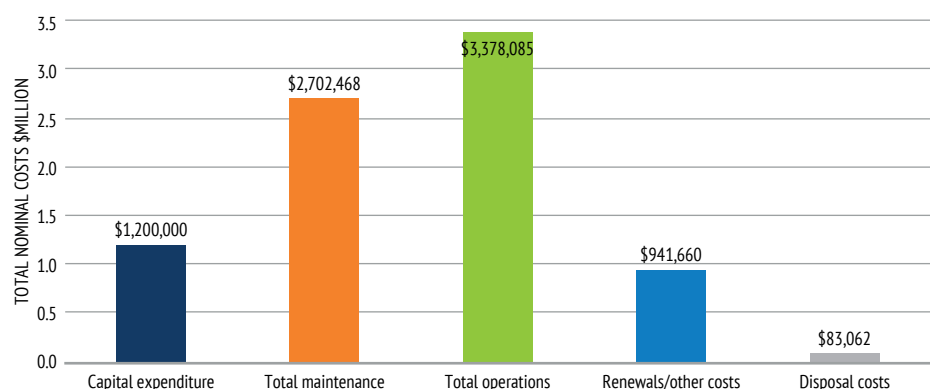
Figure 2. Breakdown of total costs

Item	Year 0 (purchase)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year...
Maintenance	-	$49,200	$50,430	$51,691	$52,983	$54,308	$55,665	$57,057	$58,483	…
Operations	-	$61,500	$63,038	$64,613	$66,229	$67,884	$69,582	$71,321	$73,104	…
Renewals/other costs	-	-	-	-	-	-	-	$178,303	-	…
Disposal costs	-	-	-	-	-	-	-	-	-	…
Total	-	$110,700	$113,468	$116,304	$119,212	$122,192	$125,247	$306,681	$131,588	…

Figure 4. Impact on materials and services for the purpose of long-term financial forecasting

Local governments can use the whole-of-life costing tool to help:

- Form part of their decision-making process around selecting projects that deliver the best value to council and the community
- Develop a business case to support an investment decision
- Compare options that have different costs and useful lives
- Understand the primary cost drivers of an asset
- Evaluate different operating models on a cost basis, and
- Evaluate replace versus refurbish scenarios.

User guide

The Whole-of-Life Costing Tool gives you two input options:

Council	
Whole of Life Costing Tool - Default Inputs	Let me customise all inputs

Option 1: *Default Inputs*

Allows you to select from a list of commonly observed assets in local government. Default inputs utilises prepopulated data estimates[1] (with the ability to modify fields to suit your Council's desired level of service) relating to residual value, annual maintenance and operations.

Option 2: *Custom Inputs*

Provides you with the ability to completely customise all input data as well as the opportunity to include other periodic costs (eg, renewals, contingency or other costs).

Option 1: Default Inputs

When opening the Tool for the first time, click 'Adjust default data for my Council' button.

STEP 1: Select an Asset Type	
Swimming Pools ▼	Adjust default data for my Council

You will be directed to adjust the asset data to suit the desired levels of service for your Council, as shown in the table below[1].

Saved inputs	Useful life (years)	Residual value	Annual maintenance	Annual operations			
Swimming Pools	35	10.0%	3.0%	4.5%			
Community Centres	40	25.0%	1.0%	3.5%			
Major plant and equipment	10	25.0%	2.0%	1.5%			

Inputs for residual value, annual maintenance and annual operational costs should be entered as an estimated proportion (per cent) of the initial capital cost. Data in this table will form part of the inputs and calculations in the Default option. The Tool also allows you to input and save up to an additional 10 assets of your choice. Once this table has been populated with your Council's asset data, return to the input page and click 'Save as' to save the model as a new file.

You can now follow **steps 1 to 5** to complete the asset profile. The whole-of-life cost outputs will appear at the bottom of the page.

Step 1: Select the appropriate asset type from the list of predefined inputs

Step 2: Enter the name of your Council and a description of the project being assessed

Step 3: Input the up-front capital expenditure amount. This may include costs such as research, design, procurement, planning, construction, delivery, training and installation.

Step 4: Input the expected cost of disposing, decommissioning or rehabilitating the asset, as well as the number of years this is expected to take. This may include costs relating to restoration and rehabilitation, tendering, administration, relocation and handover.

Step 5: Enter the discount rate (opportunity cost/expected cost of funding the project) as well as the estimated CPI over the asset's useful life.

STEP 1: Select an Asset Type	
Swimming Pools ▼	

STEP 2: Input Council and Project Description	
Council name	Council
Asset description / location	Swimming Pool

STEP 3: Input Capital Expenditure	Inputs
Input the initial upfront cost to design, acquire and construct the asset	Total ($) 1,500,000

STEP 4: Input Disposal Costs	
This is the expected cost of selling, disposing or rehabilitating the asset	Total ($) 35,000
This is the expected time it would take to completely dispose of the asset (Total disposal cost will be allocated proportionately over the number of years it will take to sell)	Years over 1

STEP 5: Input Discount Rate & CPI	
Discount rate (p.a.)	5.50%
CPI (% p.a.)	2.50%

Please contact your QTC Account Manager for advice regarding the most recent estimate of Council's current discount rate

Option 2: Custom Inputs

Using the 'Custom Inputs' option allows greater flexibility and assists with analysing the sensitivity of operating an asset at varied capacity. To access the custom tool, select 'Let me customise all inputs', as illustrated on the previous page.

You can now follow **steps 1 to 7** to complete the asset profile[2]. The whole-of-life cost outputs will appear at the bottom of the page.

STEP 1: Input Council and Project Description

Council name	Council
Asset description / location	Community Centre

Copy across values from default sheet

STEP 2: Input Capital Expenditure — Inputs

Input the initial upfront cost to design, acquire and construct the asset	Total ($)	2,000,000

STEP 3: Input Useful Life & Residual Value

Input the expected useful life of a new asset of this description	Useful life (years)	60
This is the amount (in today's dollars) you expect to receive for the asset at the end of its useful life	Residual value ($)	500,000

STEP 4: Input Maintenance & Operating Expenses

Input the regular maintenance necessary to keep the asset at the desired condition level (expressed as a percentage of the assets initial cost)	Annual maintenance (% p.a)	2.50%
	Est. yearly maintenance expense	($) 50,000
Input the annual operational activities necessary to provide the service or operate the facility (expressed as a percentage of the assets initial cost)	Annual operations (% p.a.)	4.50%
	Est. yearly operating expense	($) 90,000

STEP 5: Input Renewals / Any Other Cost Events

Input renewal costs or any other significant identifiable costs that may be incurred during the life of the asset (the calculation excludes any cost that occurs in the disposal year)	Cost ($)	350,000
	Every [X] Years	10

STEP 6: Input Disposal Costs

Input the expected cost of selling, disposing or rehabilitating the asset	Total ($)	35,000
Input the expected time it would take to completely dispose of the asset (Total disposal cost will be allocated proportionately over the number of years it will take to sell)	Years over	1

STEP 7: Input Discount Rate & CPI

Discount rate (p.a.)	5.50%	Please contact your QTC Account Manager for advice regarding the most recent estimate of Council's current discount rate
CPI (% p.a.)	2.50%	

Forecast Information

The *forecast info* icon [Forecast info (i)] is located above the Annual Nominal Costs chart in both the default and custom input areas. Clicking the icon will show the annual impacts to materials and services for long-term financial forecasting.

Note, it is important with any potential capital project to consider other financial impacts such as: annual depreciation expense, movements in asset values and any gains/losses from the sale of the asset.

[1] *The prepopulated inputs have been largely determined by survey data that has been provided to QTC by local governments. QTC has not in any way validated, endorsed or considered the appropriateness of the survey data provided to QTC. Please refer to the Tool's disclaimer for use of the model.*

[2] *Similar to the Default Inputs Tool, estimates for annual maintenance and annual operational costs should be entered as an estimated proportion (per cent) of the initial capital cost.*

Step 1: Enter the name of your Council and a description of the project.

For ease of use, clicking 'Copy across values from default sheet' will transfer over any data currently entered in the default inputs sheet.

Step 2: Input the up-front capital expenditure amount.

Step 3: Enter the period over which the asset is expected to be available for use.

Enter the amount you expect to receive for the asset at the end of its useful life – often only scrap value, or nil.

Step 4: Input the ongoing maintenance costs. This may include periodic inspections, adjustments, services, cleaning, repairs and replacement parts.

Input the ongoing operational costs. This may include consumables, energy or fuel, labour costs, licences, insurance and any third party support providers.

Step 5: Enter any other significant cost that may occur throughout the life of the asset as well as how frequently they will occur. Such items could include asset renewal, refurbishments or other contingency amounts.

Step 6: Input the expected cost of disposing, decommissioning or rehabilitating the asset, as well as the number of years this is expected to take. This may include costs relating to restoration and rehabilitation, tendering, administration, relocation and handover.

Step 7: Enter the discount rate (opportunity cost / expected cost of funding the project) as well as the estimated CPI over the asset's useful life.

Access

The Tool is now available via QTC Connect or your QTC Account Manager. More information is also available in the Quick Reference Guide. For further assistance using the Whole-of-Life Costing Tool, please contact your nominated Client Account Manager.
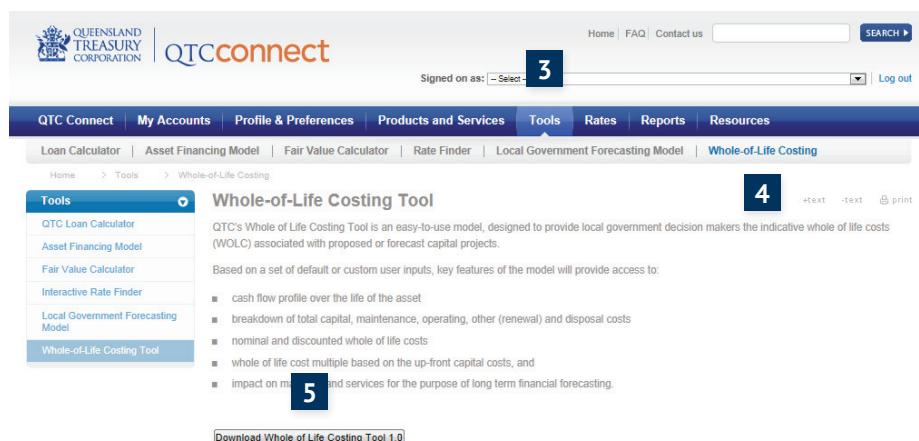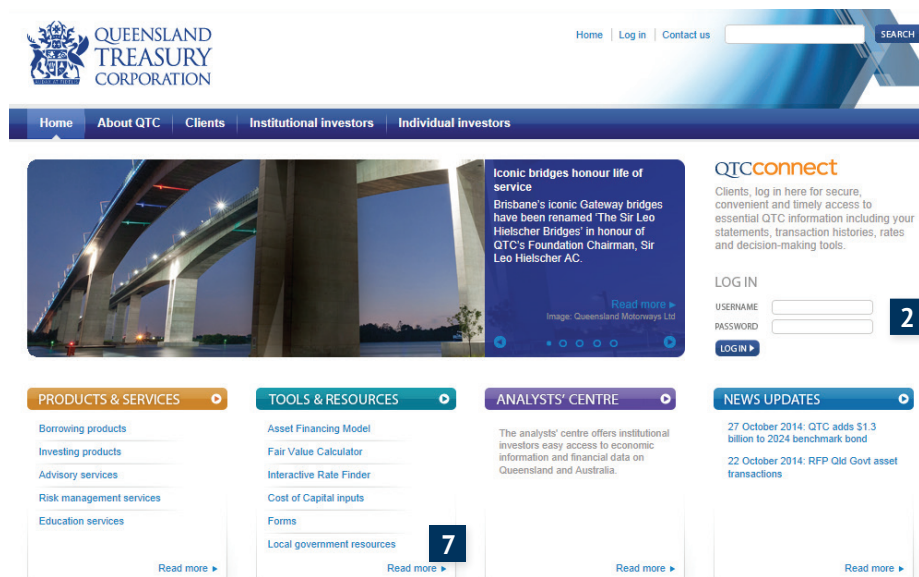
QTC Connect

1. Go to **www.qtc.com.au**

2. To the right of your screen, enter your username and password into the fields (please talk to your QTC Account Manager if you do not have a login)

3. Once logged in, select 'Tools' from the main menu

4. Choose 'Whole-of-Life Costing' from the secondary menu

5. Scroll to the bottom of the page and click 'Download Whole-of-Life Costing Tool'

6. Save the program to your computer and run it!

Quick reference guide

7. Go to **www.qtc.com.au**, 'Tools & Resources' and click on 'Local government resources'

8. Click 'Quick reference guide to whole-of-life costing' at the bottom of the page

9. Download and save the file to your computer.

Quick reference guide key topics:

- Whole-of-life costing and your council
- Understanding whole-of-life costing
- Worked examples
- Major challenges for councils
- Role of whole-of-life costing in local government
- Common terms
- Risks of not taking a whole-of-life cost approach
- The way forward

Queensland Treasury Corporation

As the Queensland Government's central financing authority, Queensland Treasury Corporation (QTC) plays a pivotal role in securing the State's financial success.

With a focus on whole-of-State outcomes, QTC provides a range of financial services to the State and its public sector entities, including local governments. We assist clients by:

- sourcing and managing their debt funding in the most cost-effective manner and in a way that minimises liquidity risk and refinancing risk
- helping them invest their surplus cash balances within a conservative risk management framework
- offering a range of financial risk management advisory services, and
- providing a range of specialist education and training courses that complements our products and advisory services.

Contact us

For more information on this product or to discuss your investing needs, contact your QTC account manager directly or via Reception on 07 3842 4600.

For questions about your transactions, contact the Client Support Team on 07 3842 4753 or by emailing cst@qtc.com.au.

Access QTC Connect

Employees of client organisations can register for a username and password to access QTC Connect, the secure 'Clients' section of QTC's website (www.qtc.com.au).

QTC Connect provides access to essential QTC information including your organisation's account statements and transaction histories, the latest market rates, and useful decision-making tools. To apply for access:

- complete the 'QTC Connect Access Request Form', which can be downloaded from the QTC Connect log-in screen (click on 'Log in' at the top of the 'Home' or 'Clients' pages), and submit the signed form by email or fax as per the instructions provided (please note that to view your organisation's statements, your form must be approved by an authorised signatory), or
- contact your QTC account manager for assistance.

If you are having trouble logging in to QTC Connect, contact the Web Support Team on 1800 233 100 (business hours) or email websupport@qtc.com.au.

Provide feedback

QTC is committed to the continual improvement of its products and services, and appreciates all feedback from clients.

To provide feedback, please contact your account manager or email us via our website by clicking on the 'Contact us' link at the top of the 'Home' page.

Queensland Treasury Corporation

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