



Departmental Statement on the Castalia Report for Whangārei District Council

Purpose of this document

The Department has been requested by councils to provide commentary on the Castalia Report for Whangārei District Council (WDC). This Department has issued this statement in the context of several other councils having commissioned similar reports from Castalia, which may also attract public comment and media coverage.

The Department considers the Castalia report for WDC misrepresents the evidence base and analysis supporting the reform proposals, and reaches conclusions that are not well supported by the available empirical evidence from similar reforms undertaken in other jurisdictions.

The evidence base for the Three Waters service delivery reform proposals has been developed with oversight of the joint Central-Local Government Three Waters Steering Committee, comprising Mayors, council chief executives, Local Government New Zealand, Taituarā and senior government officials. The analysis has been subject to significant independent expert peer review.

The Chair of the Steering Committee, Brian Hanna, wishes to note that:

‘We’re very familiar with Castalia’s perspective on the WICS analysis, which is why the committee commissioned two further companies, Farrierswier and Beca New Zealand, to conduct independent reviews of the WICS approach. Within the bounds of some inevitable uncertainty when modelling out over 30 years, these peer reviews confirmed the general reliability of the WICS approach. Reform in Australia, Europe and the United Kingdom has clearly shown the benefits that come from aggregating small water suppliers into large entities.’

Previous Castalia reports on Three Waters Reform

Castalia prepared an earlier report for LGNZ on the extent to which there are economies of scale in New Zealand water services. The report concluded there is limited potential for efficiency gains from amalgamation. However, based on its own review of the evidence and independent expert advice, the Department considers that Castalia’s conclusions in this report are not well supported by the available empirical evidence from similar reforms undertaken in other jurisdictions. The Castalia report lacks balance, in that it focuses in particular on the question of whether there are scale economies in joining-up physical networks and downplays the scope for efficiency gains through more specialist asset management, procurement and innovation. See the previous Castalia report here: <https://www.lgnz.co.nz/assets/LGNZ-release-of-Castalia-reports-context-and-response-v2.pdf>

Castalia has previously advised the Department that many New Zealand councils lack sophisticated asset management practices, and that this is due to their small scale, which contrasts with the conclusions in the report for WDC. Indeed, Castalia previously recommended amalgamating three-waters management across a number of local councils as the most effective way to improve asset management maturity. [https://www.dia.govt.nz/diawebsite.nsf/Files/Three-waters-documents/\\$file/Castalia-ThreeWaters-Asset-Management-Maturity-in-NZ-\(final-report\)-Oct-2017.pdf](https://www.dia.govt.nz/diawebsite.nsf/Files/Three-waters-documents/$file/Castalia-ThreeWaters-Asset-Management-Maturity-in-NZ-(final-report)-Oct-2017.pdf)



Following concerns raised by the Three Waters Steering Committee when it considered Castalia's earlier report into economies of scale, the Department commissioned an independent expert opinion on the report from FarrierSwier. A copy of the letter is embedded below



(Attachment) Letter
to DIA FSC comment

The Steering Committee also requested two independent reviews of the WICS modelling, including a review by Farrierswier of WICS assumptions and methodology and a review by Beca New Zealand to ensure the analysis is sensitive to, and recognises differences in, the three waters regulatory regime and industry practices between Scotland and New Zealand.

FarrierSwier's fuller review of the modelling the Water Industry Commission for Scotland (WICS) concluded that the overall approach that WICS takes to its analysis should give reasonable estimates of the potential impacts of reform in terms of direction and order of magnitude. That review can be found here - [https://www.dia.govt.nz/diawebsite.nsf/Files/Three-waters-reform-programme/\\$file/farrierswier-three-waters-reform-programme-review-of-wics-methodology-and-assumptions-underpinning-economic-analysis-of-aggregation-released-june-2021.pdf](https://www.dia.govt.nz/diawebsite.nsf/Files/Three-waters-reform-programme/$file/farrierswier-three-waters-reform-programme-review-of-wics-methodology-and-assumptions-underpinning-economic-analysis-of-aggregation-released-june-2021.pdf)

Beca New Zealand's report concluded that, on balance, the forecasts from WICS modelling may underestimate the future investment requirements and timeframes, suggesting that WICS modelling of future investment may be conservative. That report can be found [Beca report – DIA Three Waters Reform – WICS Modelling Phase 2 – 2 June 2021](#).

Castalia's report for Whangarei District Council

It is important to note that the WICS modelling compares a scenario in which reform goes ahead with a scenario where reform does not occur. In contrast, Castalia's report implicitly compares the outcomes for Whangarei District Council (WDC) under a reform scenario against a scenario where reform goes ahead but WDC chooses to opt out of amalgamation into Entity A.

There are two primary lines of criticism of the WICS modelling in this report:

- Investment projections are overstated
- Efficiency gains are unlikely to be realised to the extent assumed in the modelling

Accuracy of investment projections

The Castalia report claims that the WICS modelling assumes that WDC (and by implication New Zealand as a whole) needs to invest to match Scottish levels of water sector capital stock per resident. This is incorrect and is a significant misrepresentation of the WICS modelling approach.

The investment estimates are not based on Scottish levels of investment. The WICS modelling takes WDC asset values and asset lives (reported to DIA through the Request for Information process) and projects future renewals investment based on the applicable rates of economic depreciation. It also uses WDC provided population growth estimates to estimate the cost of providing for growth.

In assessing the likely costs of meeting water quality and environmental standards, WICS use WDC population density, topography and geographic variables to model the likely scale of investment required, based on what water services providers that operate across the United Kingdom, and which share similar population and geographic characteristics, have made to achieve current levels of compliance with EU standards (note in some cases these providers are non-compliant as well). The



modelling includes adjustments to reflect differences in New Zealand input costs relative to the UK. The models used were originally developed by OFWAT (the English water economic regulator) and have been used and applied by WICS and other economic regulators throughout Europe.

In estimating future investment levels, past (or planned) capital expenditure by councils does not necessarily represent a good estimate of required future investment for at least three reasons:

- First, the future will see greater enforcement of drinking water standards and higher standards for environmental discharges. Water suppliers will be held to higher standards than they have in the past, and this will have implications for asset quality and investment requirements. Note also, that under provisions in the Water Services Bill, councils will face a duty to ensure safe drinking water within their districts, including in relation to communities and households serviced by private and community supplies. Given variable compliance with standards, and the relatively high proportion of unconnected properties in Northland, this represents a potential contingent liability for these councils once the Bill is passed and requirements enforced.
- Second, with economic regulation, it will no longer be acceptable for councils, including WDC, to maintain assets at a rate below the economic rate of depreciation (effectively borrowing from future generations). Data gathered by DIA indicates that Whangarei District Council's current investment in its renewals programme represents ~40% of the rate of depreciation over the period 2017 to 2020. This is not dissimilar to what we see with many councils across New Zealand and is why, over a period of decades, we now face a nationwide infrastructure deficit.
- Third, while not included in the WICS modelling, climate change will likely push investment requirements higher again, particularly in areas such as Northland that are prone to drought. In some parts of the country, seismic risk is significant and has not been factored into the modelling.

On the applicability of EU standards that underpin WICS modelling to meet water quality and environmental standards, Beca NZ has provided an independent review that finds these to be similar to the future direction of New Zealand regulations but are likely to underestimate the likely requirements in New Zealand as they do not account for the aspirations of iwi/Māori or seismic resilience requirements. Beca concludes that, if anything, the WICS investment projections may be understated.

Castalia's report does not make any investment projections of its own (i.e., it does not present a counterfactual investment scenario for WDC). By comparing WICS projections with WDC's own LTP, it can be interpreted as implying that WDC's projections are a good representation of the level of investment required. What the WICS modelling implies is that this level of investment is not backed-up by standard regulatory approaches to determining economic depreciation (a function of replacement asset costs, asset age and industry standards on useful asset lives) or technical analysis of the applicable drinking water quality and environmental standards (Beca NZ).

WICS and the independent reviewers of their report acknowledge there is significant uncertainty associated with projecting investment over 30 years. Projecting investment requirements with a high degree of accuracy requires better information on assets than is available in New Zealand. While the RFI exercise that informed the modelling was thorough, many councils (including WDC) have poor quality information when compared with what would be required by an economic regulator.

Some of the information provided through the RFI process came with a significant 'health warning'. The WICS analysis accounts for this uncertainty by using sophisticated simulation methodologies to stress-test the modelling results to a wide range of investment scenarios. This includes running scenarios where the investment projections are constrained to half that estimated by their models.



The conclusion that households are better off with reform - in terms of net present costs and average household costs in 2051 - hold-up under this sensitivity testing.

In WDC's case, the analysis shows that the chance of a scenario under which average household costs for Whangarei households would be less than the worst possible outcome under the amalgamated entity is remote. Page 30 of the Whangarei slidepack contains the sensitivity analysis showing the robustness of the finding to changes in investment projections. [Whangarei slide pack – WICS report](#)

A similar pack has been prepared for each council and can be found here: [Individual council models and slide packs page](#)

Efficiencies from reform

The Castalia report claims that WICS' analysis assumes that the amalgamated entity will be able to halve its opex and capex relative to existing opt-out entities. In the report, Castalia explores reasons why the efficiency gains may not materialise but has not considered reasons why they may.

WICS' assumptions about potential efficiency gains are based on international precedent in the UK. Similar gains have also been observed in several Australian states that have undergone reform. The evidence for these efficiency gains have been well documented.

For an accessible study, see the Frontier Economics study of efficiency and service level improvements in England following reform, which found that "Cumulative TFP growth over the period of analysis has increased by 64% over the period of analysis on a quality adjusted basis, and 27% on the most conservative basis without quality adjustment. Figure 3 in that report shows the cumulative improvement in total factor productivity (with and without service quality adjustments) in England following reform - <https://www.water.org.uk/wp-content/uploads/2018/11/Water-UK-Frontier-Productivity.pdf>.

Scottish Water more than halved its operating and capital efficiency following the water reforms there, and this is well documented by WICS in its analysis. WICS also shows that many of the UK water companies have achieved similar levels of efficiency improvement so the Scottish Water experience is not unique.

The efficiency assumptions in the WICS report are large when considered over a 30-year timeframe, but Castalia's analysis neglects several key considerations:

- a 45% improvement in operating efficiency equates to ~2-4% per annum depending on whether the efficiency gains are made over 30 or 15 years
- New Zealand councils have been assessed through the RFI process as significantly below industry-standard benchmarks for service efficiency – there is significant potential for 'catch up' efficiency in New Zealand, not dissimilar to other jurisdictions at the beginning of their reform journey
- The Board of Watercare, which is by far NZ's most efficient provider of water services, has accepted that separation from Auckland Council and relaxation of debt constraints would allow it to make 4.5% per annum improvements in efficiency for 10 years. This is equivalent to a 37% level shift in efficiency over 10 years.
- Australian water utilities are typically set targets for efficiency improvement of between 2-4% per annum. This is in a more mature sector with less opportunity for catch-up efficiency. For example, the Western Australian Water Corporation has been set an efficiency challenge of more than 12% over the 5 years to 2025/26.



Castalia omit some important considerations when it comes to capex savings, including discounting the potential for procurement savings. In their analysis they do not comment on:

- The potential for procurement efficiencies due to:
 - a larger and more certain pipeline for each entity with which to engage with the construction sector
 - the potential for procurement efficiencies for capital investment to flow into lower costs of network and production services in water provision
- WICS analysis of Scottish Water that shows better procurement was the single largest source of capital expenditure efficiency gains observed in the Scottish water industry for the 2002–06 regulatory control period, reducing the proposed investment programme by around 11% in just one regulatory period.
- Given the large investment programme – even small savings (1%) on half the projected \$120bn investment estimate would equate to savings of \$600m.

As noted in the letter from FarrierSwier, Castalia appear to downplay opportunities for improved governance and management, asset level optimisation, procurement efficiencies and technological innovation. The letter from FarrierSwier provides some counterpoints to these perspectives.

Even if one makes the argument that efficiency gains might be smaller in New Zealand than in the UK, for example due to smaller market size / less competition or other factors, the conclusions that communities are likely to be better off with reform holds up with much lower levels of assumed efficiency improvement. As with the investment projections, there are a wide range of possible outcomes in terms of what efficiency benefits could be realized. Again, WICS has been conservative in its modelling and has run a wide range of scenarios. The conclusions that households would face lower costs without reform do not hinge on achieving 45% efficiency gains. There would be sufficient justification for reform even if the actual efficiency gains were only half that level.

In WDC's case, the arguments for reform are not reliant on efficiency gains at all. Rather, Whangarei residents would benefit from reform through having access to lower cost structures for the water services entity serving the much larger customer base across the Auckland and Northland regions, even if the entity was no more efficient than councils currently. Sensitivity analysis conducted by WICS varied the efficiency assumptions underpinning the modelling and illustrates that the conclusions that Whangarei would be better off under reform are not sensitive to the efficiency assumptions – see Page 21 of the Whangarei slide pack. [Whangarei slide pack – WICS report.](#)

Alternatives to reform considered by the Department

The Department considered a number of alternatives to the reforms, including sector-led reforms, regulatory reform only, and funding solutions through central government or similar to the transport FAR rate.

The regulatory impact analysis undertaken by the Department considered these alternatives, including the 'regulation-only' scenario, as recommended in the Castalia report, but this was not favoured on cost-benefit grounds. You can read this report here: [Department of Internal Affairs - Regulatory Impact Analysis - Decision on the reform of three waters service delivery arrangement – 30 June 2021](#)