

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of **PROPOSED PLAN CHANGE 1** to the Waikato Regional Plan – hearing of **BLOCK 1** topics

AND

IN THE MATTER of the hearing of the further submission by **WAIKATO REGIONAL TERRITORIAL LOCAL AUTHORITIES COMPRISING THE WARTA GROUP** in relation to **BLOCK 1** topics

STATEMENT OF EVIDENCE OF PHILIP BRENT WHEELER

1. INTRODUCTION

Qualifications and experience

- 1.1 My name is Philip Brent Wheeler. I hold a degree of B.A. (1975) and have a Post Grad Diploma in Arts (1st Class Hons.) (1976) and a Ph.D (1980) in economic geography from the University of Otago. I have worked in local and regional government and for central government in the NZ Treasury. For the last 29 years I have run an economics and financial advisory company.
- 1.2 I was a member of the 1991 Review Group for the Resource Management Act 1991 and have provided expert evidence over many years to local government hearing committees, the Environment Court and its predecessor, the Planning Tribunal, as well as the High Court across a range of matters involving local government and the Resource Management Act 1991 and its amendments, several of which focused on water resource issues.
- 1.3 Experience I have which is of particular relevance to these proceedings includes work as Deputy City Planner at the Palmerston North City Corporation, Deputy Regional Planner for the Manawatu United Council and as a director of Watercare Services Limited.
- 1.4 Over the past 20 years, I have undertaken a large number of economic impact studies in industries ranging from gold mining and like natural resource sectors to casinos and the retail industry. I have appeared before the Environment Court in respect of such studies on several occasions and

have undertaken economic analyses in respect of the Thames-Coromandel area, both for Newmont Waihi Gold and in respect of District Plan matters in the area.

Involvement in Proposed Plan Change 1

- 1.5 I was engaged to prepare evidence for the Waikato Region Territorial Authorities in relation to economic matters relevant to PC1.

Purpose and scope of evidence

- 1.6 The purpose of this evidence is to explain and illustrate the ways in which elements of PC1 and, in particular, its approach and insensitivity to geographical differences in seeking to achieve its objectives are unnecessarily costly and inflexible. Contrasts with alternative approaches are made.

- 1.7 My evidence is structured as follows:

- (a) Fundamental point summarised (Section 3).
- (b) Reliance on command and control approach (Section 4).
- (c) Difficulties with input based regulation (Section 5).
- (d) Criticisms of outcomes based approaches (Section 6).
- (e) Preferred approaches (Section 7).
- (f) Effects at an aggregate level (Section 8).
- (g) Costs of inflexibility through "one size fits all" approach to all districts (Section 9).
- (h) Comment on the Officers' Report (Section 10).
- (i) Conclusions (Section 11).

- 1.8 A summary of my evidence is contained in Section 2.

Expert Witness Code of Conduct

- 1.9 I have read the Code of Conduct for Expert Witnesses, contained in the Environment Court Consolidated Practice Note (2014) and I agree to comply with it. I can confirm that the issues addressed in this statement are within my area of expertise and that in preparing my evidence I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

2. SUMMARY OF EVIDENCE

- 2.1 The adverse economic impacts of PC1 as proposed are stark, material, and largely unnecessary. The losses of a minimum of \$193m in value added, New Zealand exports of \$120m and New Zealand-wide 1,800 jobs are unacceptable.

Command and control input regulation

- 2.2 PC1 relies almost exclusively on command and control input regulation as opposed to outcome based regulation, which focusses on performance and results arrived at through flexible means.
- 2.3 The heavy reliance on input control through command and control regulation results in a blunt and unnecessarily costly approach to a problem which is nuanced and complex.
- 2.4 This issue is exacerbated by not recognising the significant intra-regional differences across several dimensions, resulting in various equity principles being likely to be breached. Spatial differences in impact of PC1 and ability to respond and adapt are not taken adequate account of.
- 2.5 Command and control input regulation:
- (a) Suffers from centrally based administration, which “averages” complexity and creates rigidity;
 - (b) Results in “one size fits all” regulation administered by “non participant” regulators who have less “skin in the game” than owners and operator/workers; and
 - (c) Results in inconsistencies, which arise, for example, in dealing with wastewater treatment to “one standard” which is not appropriate in all cases¹.
- 2.6 The impacts of “one size fits all” regulation across the entire region are likely to be severely deleterious. Negative impacts are likely to arise through:
- (a) Administrative differences between districts with overlapping regimes already in existence;
 - (b) Lack of recognition of existing regimes and the community investment already committed to these under existing legislative mandates (such as the requirements of the RMA);
 - (c) Differing levels of physical capacity in different districts meaning that reaching uniform standards is likely to involve different types of issue and differing resolution costs to be addressed; and
 - (d) Differing levels of social capacity in different districts, meaning that reaching uniform standards is likely to involve different types of issue and differing resolution costs to be addressed.

Significant negative effects of PC1

- 2.7 The effects noted are significant and are summarised in the following tables.

¹ See evidence of Mr Tim Harty.

Economic Effects	Value Added (\$m)	Employment (MEC)	International Exports from NZ \$m
Waikato Region	-106	-938	-78
NZ Wide Impact	-193	-1,880	-120

Council	Decrease in sector profit (\$m p.a.)	%	Decrease in value added (\$m)	%	Decrease in employment count	%
Hamilton City	0.2	1%	14.9 - 20.8	18%	138 - 184	19%
Otorohanga District	5.8	15%	6.9 - 11.8	10%	66 - 114	11%
South Waikato District	4.8	13%	7.2 - 12.6	9%	56 - 97	9%
Waikato District	13.7	36%	17.2 - 27	29%	158 - 248	25%
Waipa District	7.6	20%	15.1 - 24.8	25%	135 - 221	27%
Waitomo District	5.7	15%	6 - 8.9	8%	49 - 74	8%
TOTAL	37.8	100%	106	99%	938	99%

- 2.8 Levels of differing social capacity to absorb cost and adapt are acute in the South Waikato District, which is an area lying in the 4th (of 5) highest level of multiple deprivation in N.Z. The inter-regional differences are highlighted in the comparison of South Waikato (70% in the 5th quintile) while next most deprived is Hauraki (35% in the 5th quintile) on the deprivation index.
- 2.9 The inter-related nature of costs of PC1 is illustrated by the South Waikato District, where agriculture accounts for some 23% of employment (compared with 5.9% nationally). Alongside that, manufacturing, drawing from other primary sector activity, accounts for 17.6% of employment (national level 8.7%), so that some 40% of the South Waikato District's economic activity is directly affected to a greater or lesser extent by PC1.
- 2.10 In addition, these effects link as well to services in education and training activity.
- 2.11 Aggregate regional level approaches tend to mask these effects. More nuanced, customised approaches which harness local knowledge, skills, experience and capacity are essential to achieving the water quality outcomes sought while minimising economic costs to the greatest extent practicable.
- 2.12 Perhaps ironically, and leaving aside the human elements of job loss and business decline, the untrammelled imposition of costs in ways which ignore local and sub regional differences is likely to have the unintended consequence of diminishing water quality as the communities which might otherwise provide valuable contributions become poorer.

Outcome based approaches

- 2.13 Typical opposition to outcome based alternatives (the need for careful, strong enforcement and the potential for irreparable damage being caused) apply in equal measure to command and control central input regulation.
- 2.14 The preference should be for an outcome-based approach which specifies with clarity the outcomes to meet without prescribing the means for achieving such outcomes – since best means for achieving outcomes differs from effect to effect.

3. THE FUNDAMENTAL POINT OF MY EVIDENCE

- 3.1 PC1 seeks to achieve a 10% step over 10 years toward achieving target water quality states in 80 years.² The following table shows the losses estimated to result from the implementation of PC1 as presently proposed to achieve that 10% step.

Economic Effects	Value Added \$m	Employment (MEC)	International Exports from NZ \$m
Waikato Region	-106	-938	-78
NZ Wide Impact	-193	-1,880	-120

Source: McDonald and Doole (ibid)

- 3.2 These economic effects are negative, material, and unacceptable. The evidence set out below is that they are also unnecessary.
- 3.3 In particular, my evidence is that:
- (a) The heavy reliance in PC1 on input control through command and control regulation results in a blunt and unnecessarily costly approach to addressing a difficult problem which is characterised by a series of subtle complexities and nuances which demand a more devolved approach. In present form, PC1 therefore represents an inefficient means for seeking to achieve its objectives.
 - (b) This problem is exacerbated by the fact that PC1 does not recognise the spatial differences which characterise the region. Different districts have quite different characteristics as to the environment in which water quality problems arise, their physical capacity to adapt to new rules for behaviour and activity and in their social and economic character. Compliance is likely to result in breaches of equity principles, particularly where levels of differing deprivation are ignored.
- 3.4 Combined and cumulatively the result is that PC1 in its present form represents a proposal which fails to meet reasonable efficiency and equity criteria.

² Regional- and national-level economic impacts of the proposed Waikato Regional Plan Change No. 1—Waikato and Waipa River Catchments, 12 August 2016. Garry McDonald and Graeme Doole

4. **RELIANCE ON "COMMAND AND CONTROL" APPROACH**

- 4.1 PC1 adopts an "input control" approach in which a suite of regulatory (and related) interventions involves an input (not outcome) oriented set of rules and restrictions applied in a relatively aggregate fashion across some 1.1m hectares and 10,000 properties in the relevant catchments on the assumption that these are capable of producing the desired outcomes, i.e., the WRC desired water quality objectives.
- 4.2 This approach stands in contrast to an "outcomes based" approach in which the policy objectives or the "ends" are stressed rather than the inputs or "means". Policy objectives are identified and compliance with those strictly monitored and enforced (as they should be with input based regulation), but individuals, groups and users choose their own means for ensuring that the standards required to achieve the objectives are met.
- 4.3 The simple difference is that in an outcomes based approach emphasis is placed on achieving the objectives (is the objective met or not) versus prescribing rules which, if followed, it is hoped will produce the outcome.
- 4.4 An example (not precisely that proposed for PC1) is the rule that no stock management activity must take place at least 3 metres from a waterway. Under this classic example of an input rule it is supposed that adequate definitions of "stock", "management", "waterway", and "activity" can be defined unambiguously and that compliance with this rule will result in the required standard of water being met.
- 4.5 An example of an outcome based approach would simply specify the water quality to be met regardless of activity (or lack thereof) of any kind whatsoever with sanctions for breaches. Users would be entirely free to choose, unsolicited, whatever means they saw as being necessary to meet the standard, subject to complying with any legal requirements that may apply (e.g. animal welfare legislation).

Requirements of an input approach

- 4.6 From a design perspective, the input approach requires that regulators are able to estimate what practices, restrictions on activity, forms of use, and myriad other variables will, in the correct quantum, level of intensity, seasonality, environmental and myriad other circumstance, result in the quality standard being met across the entire region through time.
- 4.7 This task is forbidding and the assembly and analysis of this information has to be undertaken by regulators (and their expert advisors) who do not have direct working knowledge nor (financial and other) investment from which they might experience direct material gains or losses.
- 4.8 By comparison with those actively invested and affected by any rules devised, regulators' incentives are weak and necessarily conditioned by limited resources, competing priorities as well as political and other factors, even assuming the rules are capable of delivering the policy objectives satisfactorily.

Requirements of an outcome approach

- 4.9 The fundamental design outcomes of an outcome approach are as set out below.
- 4.10 Given the task of ensuring that they meet the required standard (of, say, water quality), users such as farmers are able to draw directly (and from expert advisors) upon a plethora of information in devising adequate practices and activities. That information incorporates knowledge from anything up to generations of daily contact and involvement with the myriad of variables identified above as well as factors which regulators (understandably) have no knowledge.
- 4.11 The knowledge, skills and experience brought to bear by the people required to meet the standards are likely to reflect the detailed nuances of their particular operational and financial capabilities along with the conditions they operate in and the resources at their disposal.
- 4.12 Moreover, the incentives to apply the most efficient means for reaching required standards are driven by the fact that the people who have to meet them stand to gain or lose directly by the extent to which they are successful. The incentives are strong and direct, with their fate being directly in their own hands. The material costs of success or failure are immediate and personal.
- 4.13 The responsibility is not influenced by external priorities or politics. That responsibility, while significant, is able to be exercised more adequately by users having a free choice of such methods as are at hand.

5. DIFFICULTIES WITH INPUT BASED REGULATION

- 5.1 Almost by necessity, centrally based command and control regimes such as PC1 involve:
 - (a) Significant aggregation so as to deal with a wide range of possible (putative) contributors to impacts;
 - (b) Development of rules which are relatively simple to understand and implement, but sometimes difficult to enforce effectively;
 - (c) High costs of effective monitoring exacerbated by absence in some cases of obvious variables to monitor; and,
 - (d) Because of (a) and (b) above, an inevitable reliance on averages and averaging in devising rules.
- 5.2 Averages are particularly difficult for several reasons:
 - (a) Impacts may be triggered more by "threshold effects" than averages. A "straw that broke the camels back" effect is sometimes more relevant but is "missed" by mere compliance with an average.
 - (b) Dispersion (standard deviation) around an average may well be more important than an average as the measure of relevance. The effects of climate change over time for example may render historically based averages impotent as measures of likely impacts.
- 5.3 The crude nature of such an approach is obvious, but it should also be noted that input regulators have little choice if they are to keep costs within reasonable bounds and the task within practical limits.

- 5.4 Reliance on rules tends to preclude the autonomous development and application of innovation designed to generate desired outcomes (meeting the standard) where these do not “match the rules,” thereby precluding dynamic efficiencies (gains made through innovation over time) in attaining policy objectives.
- 5.5 Thus “one size fits all” input regulation tends to produce inflexibility, which is not a characteristic of outcomes based approaches.

Overall costs

- 5.6 The overall costs of the regime are set out in regional- and national-level economic impacts of the report *Proposed Waikato Regional Plan Change No. 1—Waikato and Waipa River Catchments* (“Economic Impacts Report”) and are not repeated here.
- 5.7 Suffice to say that I accept the methodology in the Economic Impacts Report as entirely reasonable, given the constraints faced in such an exercise and that the costs are material. Of significance are:
- (a) The sheer scale of the costs and their far-reaching nature, particularly as they apply to areas which do not enjoy high standards of living (e.g., South Waikato District); and
 - (b) The wide reaching nature of the areas of activity affected, especially in indirect impacts (service industries) and induced impacts (households and their support).
- 5.8 In addition, I note the following issues that arise from the approach adopted in PC1:
- (a) Turning existing investments into sunk costs from which investment cannot be recovered (e.g. facilities to deal with stocking rates which are deemed unacceptable by PC1);
 - (b) Curtailing of business to the degree that the noted loss of value added (GDP) and jobs in the Economic Impacts Report will result in large scale one-off losses (for example, drops in production) and potential difficulties in future activity (e.g. in seeking to expand diversity and production); and
 - (c) Making adaptation difficult because of the controlled and inflexible nature of a rules based regime such as that proposed.
- 5.9 Generally speaking, regulators are well aware of the problems with input command and control regulation - for instance, over generalisation, “missing” critical variables through averaging and aggregating, and failed connections between rules and policy objectives. Consequently there is a tendency for such regimes to be deliberately given “conservative” settings on the grounds that this implies lesser risk (of missing objectives).
- 5.10 Thus default settings tend to favour tight control (of activity, activity levels, permitted uses, permitted changes) with a tendency toward exercising hands on control (imposition of conditions, control of activity levels, slow speed of change).

- 5.11 This response is understandable – especially in a politically charged environment. Whether it goes far toward ensuring a better chance of achieving outcomes sought is difficult to establish.
- 5.12 What is simple to establish and certain is the cost through reducing production, lessening scope of activity and lost output.
- 5.13 The link between costs and benefits and achieving the policy benefit is unclear.

6. **CRITICISMS OF OUTCOMES BASED APPROACHES**

- 6.1 Outcome based approaches are sometimes said to suffer from various weaknesses, most notably heavy dependence on strong enforcement and potential for irreversible damage. I address each of these below.

Very heavy dependence on strong enforcement

- 6.2 For outcome approaches to operate satisfactorily, clear, simple timely enforcement accompanied by suitably onerous sanctions are a necessity.
- 6.3 However, this is equally true of any input based regulation. Without adequate enforcement, coupled with sanctions, failure to enforce rules is equally problematic.
- 6.4 An additional problem with input based regulation, which is more difficult to rectify, is that should rules prove incapable of producing the desired water quality outcome (in part or in whole) it is quite possible to achieve 100% compliance and still fail to achieve the desired outcome.

Potential for irreversible damage being caused

- 6.5 It is sometimes argued that with an outcome based approach it can be “too late” once a given method (say a chosen stocking rate) has failed, whereas with input approaches prohibition of an activity avoids this problem altogether.
- 6.6 This argument fails, however, when a given input rule does not produce the required standard, with “damage done” only apparent when the rule failure is discovered. Failure is common to both approaches. Even complete prohibition relies on the contention that the practice or activity being prohibited is relevant and causal.
- 6.7 In short, all intervention schemes suffer from the possibility of failing to meet standards perfectly.
- 6.8 Thus it behoves those designing the intervention (WRC in this case) to ensure that those with the greatest chance of designing adequate means to achieve the desired outcome are charged with doing just that. Those with the greatest relevant information and the greatest direct incentive to gather and use such information are, therefore, to be favoured in designed interventions.

7. **PREFERRED APPROACHES**

- 7.1 It would be desirable for WRC to adopt an outcome based approach for all or some of the interventions it seeks to deploy to achieve the desired water quality standards. The communities upon which it is proposed to impose PC1 have a wealth of relevant information.

- 7.2 This would enable the advantages of a devolved decisionmaking process which reflects communities' and users expertise, knowledge and proximity to issues to be capitalised upon.
- 7.3 Further, it would avoid the numerous problems of input regulation as these relate to arms-length aggregate estimates made by way of centrally based command and control.
- 7.4 There are various ways to implement outcome based approaches, such as the use of liability rules and bonds. I am not aware of any public discussion of any outcomes based approaches, nor acknowledgement of their value with respect to PC1. Nor am I aware of any acknowledgement or discussion of the potential for regulatory failure (and its costs, both monetary and non-monetary).

8. **EFFECTS AT AN AGGREGATE LEVEL**

- 8.1 Beyond the scale of individual users, centrally based input regulation also creates difficulties which add to costs. The requirements implied by PC1 in dealing with wastewater treatment are a case in point.
- 8.2 The standards set for levels of treatment are demanding – and in the case of some chemicals (ammonia) above those required by the National Policy Statement for Freshwater Management 2014 (Updated 2017).
- 8.3 The report by GHD and Boffa Miskell³ and described specifically in Mr Harty's evidence as the findings relate to PC1 shows the complexity of the problem and the nuances involved in the several possible options for meeting the proposed standards.
- 8.4 There are some 23 treatment plants in the Waikato Region of which eight are reported as needing upgrade to reach the standard required by PC1. Estimates of cost lie in the range \$125m to \$210m for the upgrades.
- 8.5 Areas (and plants) have different capacity and functioning, each dealing with differing physical environments and each providing for different wastewater loads and types. One size fits all solutions are likely (according to the report) to prove expensive.
- 8.6 Mr Harty points out, for example, that assimilative processes are largely ignored or brushed over in PC1 with the result that there is confusion as to appropriate methods for measurement of standards and the possibility of overly costly and inappropriate point source measures implied in some requirements of PC1.
- 8.7 PC1 recognises this at least to some extent through a form of "offset: policy which permits a range of alternatives (see Harty example for Cambridge example involving fencing and riparian planting rather than plant upgrade.

³ Three Waters Review: Cost Estimates for Upgrading Wastewater Treatment Plants to Meet Objectives of the NPS Freshwater Final Report. Department of Internal Affairs, Sept. 2018.

8.8 This area is one in which community expertise and local solutions customised to local circumstance but capable (through their own means) of meeting the finally agreed standards is likely to be appropriate.

9. **COSTS OF UNDUE INFLEXIBILITY THROUGH "ONE SIZE FITS ALL" APPROACH TO ALL DISTRICTS**

9.1 A difficulty with PC1 which is likely to generate significant and unnecessary cost is that it has little explicit recognition of the spatial differences across the region. Developed from a regional perspective as if the region was homogeneous, PC1 takes little heed of the geographical differences which are likely to influence the effectiveness of the rules designed to achieve its objectives or the capacity of subregional areas to absorb their economic and social impact.

9.2 The best estimates of cost effects, as derived from McDonald and Doole⁴ but analysed as to their likely spatial distribution are shown in the following table:

Council	Decrease in sector profit (\$m p.a.)	%	Decrease in value added (\$m)	%	Decrease in employment count	%
Hamilton City	0.2	1%	14.9 - 20.8	18%	138 - 184	19%
Otorohanga District	5.8	15%	6.9 - 11.8	10%	66 - 114	11%
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Waitomo District	5.7	15%	6 - 8.9	8%	49 - 74	8%
TOTAL	37.8	100%	106	99%	938	99%

9.3 The above information is not available for Taupo District Council or Matamata-Piako District Council.

9.4 The above table shows that there are clear differences across the region and the aggregation characterising the approach used in PC1 tends to mask, average and understate such differences, rather than recognise and choose methods which allow for, offset, or build on them.

9.5 I explain certain of these impacts below using the South West Waikato District ("SWDC") as a case study exemplifying the difficulties since that district highlights the problems in a clear (though not unparalleled) fashion.

9.6 Key problems include the following:

⁴⁴ Original data source. Estimates have been mad to apportion costs by WRC management and in preparation of this evidence.

- (a) Administrative differences;
- (b) Existing regimes;
- (c) Differing levels of physical capacity; and
- (d) Differing levels of social capacity.

9.7 I address each of these below.

Administrative differences

- 9.8 Administrative differences arise from the fact that physical water catchments do not overlap exactly with the administrative boundaries between region and district. Thus the changes with PC1 seeks to impose new or supplant existing regimes on sub-regions.
- 9.9 Below the regional level at district scale, a series of boundaries delimit other regimes used to govern the district. In the case of SWDC, for instance, half the district is in the Upper Waikato Freshwater Management Unit (FMU), which has its own regime of water regulation. PC1 appears to over ride this existing arrangement. Possibly it is envisaged as running in parallel to that regime. The position is unclear with resulting uncertainty and possible duplication of effort and cost.
- 9.10 Lack of overlap means that 'half' the township of Putaruru is in the administrative area of PC1, while the other half of the town and the district would not be governed by the rules of PC1. This generates confusion and lack of jurisdictional clarity.
- 9.11 In respect of the RMA, some ambiguity as to responsibility is also likely to arise as SWDC seeks to discharge its responsibilities while adhering in some part and manner to the dictates of PC1.

Existing regimes

- 9.12 Existing regimes also seek to address water quality as district planning matters (e.g., South Waikato District Plan as noted above and as detailed in the evidence of Mr Kivell). There appears to be no cognisance of:
- (a) The extent to which these (adequately or inadequately) address the issues PC1 addresses. Regulation to improve water quality is in tow and underlines the District Plan approach and rules and efforts to avoid duplicative intervention should be made in the interests efficient of outcomes; and
 - (b) Land owners and other stakeholders have already invested in existing improvement efforts and made decisions, including longer run resource allocation decisions, to comply with existing regimes. PC1 appears to have no mechanism for recognising these investments and offsetting the costs to be imposed by PC1 with the value of work to date.
- 9.13 In the South Waikato District, for example, existing plans address managing land conversion and maintaining riparian margins to address landscape, biodiversity and amenity outcomes and water quality outcomes. No account is made for these in PC1. To the extent that PC1 duplicates or supplants these, investment becomes a sunk cost.

9.14 The evidence of Mr Kivell addresses the requirements of existing regulatory regimes in detail for the SWDC and sets out the significant process of consultation (of interested parties over five years) and advice gathering which underlay development of existing regimes.

9.15 While the above difficulties might be regarded by some as relatively minor, three other factors are of prime importance. These are differing levels of physical capacity, differing levels of social capacity, and the impacts of interrelated economic effects, which I turn to now.

Differing levels of physical capacity

9.16 The effectiveness of different regulatory input tools tends to differ from place to place since the sensitivity of environments (for instance in soil structure, chemistry and biology) differs from place to place.

9.17 The form of land management and its effects also differs significantly from place to place with different farming systems likely to generate differing effects.

9.18 The results of intervention may thus either fail to reach the required standard or, in other cases, lead to over investment in compliance and in yet others lead to cessation or severe reduction of other productive activity without clear beneficial effects.

Differing levels of social capacity

9.19 Sub regions differ significantly in their ability to respond to PC1 as well as their capacity to absorb significant losses in GDP, jobs and job opportunities and negative impacts on economic wellbeing.

9.20 The South Waikato District provides the sharpest illustration of these difficulties. In that regard, the South Waikato District is characterised by high levels of deprivation. The New Zealand Index of Multiple Deprivation ("IMD"), developed by Auckland University, shows the South Waikato District as having the fourth highest population living in quintile 5 in New Zealand, the highest 20% of deprivation, at 51% of its population based on 2013 data.

9.21 This is the highest in the Waikato Region, with Hauraki next at 12,th having 40% of its population in Quintile 5. In terms of the employment metric of the IMD, over 70% of the population of the South Waikato District are in quintile 5, the next in the Waikato region being Hauraki District at approximately 35%.

9.22 Capacity to absorb declines in profits, value added and employment are therefore:

(a) In absolute terms extremely limited; and

(b) Relative to other areas quite different (lower).

9.23 PC1 as developed and in its present form does not reflect consideration of these effects.

9.24 The overall social and economic effect is likely to be an exacerbation of an already difficult situation.

Impacts of inter-related economic effects

- 9.25 It should be noted too, that costs are interrelated with the direct costs on land use forming one part of a chain which sees costs (lower GDP and job losses) occurring in adjacent industries and services (indirect costs), along with increased costs for supporting activity such as household and related social activity (induced costs).
- 9.26 In the South Waikato District, for instance, agriculture accounts for some 23% of employment (compared with 5.9% nationally). Alongside that, manufacturing, drawing from other primary sector activity, accounts for 17.6% (national level 8.7%), so that some 40% of the South Waikato District's economic activity is directly affected to a greater or lesser extent.
- 9.27 These effects link as well to services in education and training activity.
- 9.28 Aggregate regional level approaches tend to mask these effects. More nuanced, customised approaches which harness local knowledge, skills, experience and capacity are essential to achieving the water quality outcomes sought while minimising economic costs to the greatest extent practical.

South Waikato District Council and Matamata-Piako District Council evidence

- 9.29 I have read the evidence of Mayor Jenny Shattock of South Waikato District Council and Mr James Thomas, Deputy Mayor of Matamata-Piako District. Their evidence supports:
- (a) The general thrust of my evidence that overly prescriptive command and control approaches are unnecessarily inflexible; and
 - (b) The specific social profiles in these communities mean that adapting to the proposals in PC1 would be unduly burdensome, particularly in some already stressed communities.

Conclusion - interventions become counter productive

- 9.30 Perhaps ironically, and leaving aside the human elements of job loss and business decline, the untrammelled imposition of costs in ways which ignore local and sub regional differences is likely to have the unintended consequence of diminishing water quality as the communities which might otherwise provide valuable contributions become poorer.
- 9.31 The effect over the medium and longer run is to risk reversing the very outcome intended as communities capacity to improve water quality is reduced.

10. COMMENT ON THE OFFICER'S REPORT

- 10.1 It is noted that the Section 42 report reflects more the inadequacies of the consultation process when applied to such a large scale of submission across such a vast scope. The process (through no fault of any particular individuals or entities), is necessarily cumbersome, tedious and most unlikely to move matters forward in the sense of achieving a more net beneficial outcome.

10.2 Identification of fundamental differences, their separation from detail and their resolution would likely go a good way toward making useful amendment of PC1 more tractable and reflect the motivation of the many submissions more meaningful.

10.3 Given the scale of submission, mere compliance is likely inadequate.

11. **CONCLUSIONS**

11.1 Ultimately, achieving the objectives sought for persistent improved water quality depends upon beneficial change in activity and behaviour along with innovation which allows superior allocation and use of the resource.

11.2 This evidence does not argue against change or against striving to achieve improved water quality. It does suggest however that there are more beneficial, less costly means for doing this.

11.3 It is the promotion and encouragement of beneficial innovation and change which will allow the objectives sought by PC1 to be achieved. Command and control input regulation, especially where imposed without regard to subregional differences, offers a much less satisfactory means for achieving this by comparison with devolved decisionmaking which seeks outcomes directly.

Philip Brent Wheeler
22 February 2019