IN THE MATTER	**of the Resource Management Act 1991**
AND	
IN THE MATTER	**of the Proposed Waikato Regional Plan Change 1 – Waikato and Waipa River Catchments ("Proposed Plan or PC1")**
AND	
IN THE MATTER	**of submissions and further submissions by Strang and Strang Limited, Waiawa Farms Limited and Pukerimu Farms Limited**

STATEMENT OF EVIDENCE OF SALLY STRANG ON BEHALF OF STRANG AND STRANG LIMITED FOR HEARINGS BLOCK 2

2 JULY 2019

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1. INTRODUCTION

1.1 My full name is Sally Barker Strang. I hold the qualification of Bachelor of Civil Engineering. I have 27 years experience in environmental and land management roles, the last 18 of which has been in the forestry industry. I am currently employed as Environmental Manager for Hancock Forest Management NZ Ltd, a role I have held for the past 12 years. Prior to that I worked for Carter Holt Harvey for 11 years in environmental management roles.

1.2 I am Chair of the Forest Owners Association Environment Committee, and Chair of the Waikato Regional Council Upper Waikato Catchment Committee. I was a delegate to the Collaborative Stakeholder Group process as one of two delegates for the forestry sector.

1.3 My husband Richard and I own a cropping and drystock farming operation located near Arapuni in the Waikato Catchment which is run by Richard.

1.4 Today I am presenting evidence on behalf of our farming business Strang and Strang Ltd along with Pukerimu Farms Ltd and Waiawa Farms Ltd. All three are drystock and cropping farming operations located within the Waikato catchment. With the exception of one property near Pureora all of the operations are located in the South Waikato District (refer attached maps).

1.5 This evidence:

- Provides an overview of our farming operations
- Describes the impacts of the rules on our current operations and future options
- Summarises our key concerns with the PC1 rules as proposed and redrafted in the Section 42A Report for Block 2

2. BACKGROUND TO FARMING OPERATIONS

Strang and Strang Limited

2.1 Richard and I own the farming business, Strang and Strang Limited which includes two farm properties, both located on river flats adjacent to the Waikato River at Lake Karapiro. The home farm located on Horahora Rd near Arapuni has a total area of 307 ha of which approximately 270 ha is effective, with the balance made up of native bush, wetlands and riparian margins. The farm has been in the Strang family since it was purchased by Richard's grandfather in 1946.

2.2 Prior to the Strang's ownership the farm was operated as a dairy farm. During the Strang's ownership over three generations the farm has been operated as a drystock farm, initially as a sheep breeding and beef fattening operation. Since taking over the farm from Richard's parents in 2000 we initially ran the farm as a conventional drystock operation, with bull and steer fattening and sheep breeding. Since that time Richard has progressively developed cropping operations on the flat country.

2.3 The majority of the productive area of the farm is Land Use Capability (LUC) class 1s and 2s flats (206 ha) with the balance made up of class 3s river flats, steep class 7e sidelings a Class 6e gully unit running along the eastern boundary and a small area of class 7s in one paddock. For the past 15 years we have undertaken cropping on the Class 1 and 2 flats, generally maize but also in some years potatoes and onions. Over the winter season the cropping land is regrassed and used for grazing of either lambs or heifers.

2.4 The remainder of the farm is farmed as drystock which tends to change from year to year depending on seasonal conditions and markets. This has included grazing heifers, cows, steers, bulls, sheep and lambs, along with a several horses. We have also on occasions cut silage (predominantly grass but also lucerne and sorgum).

2.5 The second farm is located directly across the Waikato River at Wesley Road, and is 56ha of flat class 1s land purchased by us in 2013. The property has in the past been used for vegetable cropping, initially asparagus followed by potatoes and onions. Since purchase of the property we have farmed it on a similar regime as the class 1 and 2 flats on the home farm, growing maize silage in the summer followed by winter grazing of lambs and one year sorgum for silage.

2.6 All units have relatively low overland flow runoff potential due to the large areas of flats, relatively free draining soils and physical disconnection of the steep sidelings from waterways. Even in very heavy rain events the majority of storm water ponds on the flats and soaks to ground.

Waiawa Farms Limited

2.7 Waiawa Farms Limited is a drystock and cropping operation located on Waotu South Road and owned and run by Stuart and Deborah Ranger. The farm has a total area of 205 ha (191ha effective) and was purchased by Stuart's parents in 1958. Stuart has worked on the farm since 1982 and took over management of the operation in 1990.

2.8 The farm is predominantly rolling hill country with Tirau Ash soils and LUC classes 4e, 6e and 6s. The farm has been operated as a drystock operation under the Ranger's ownership, including sheep breeding, cattle fattening (steers and bulls), grazing (cows and heifers), maize cropping, silage and hay production and farm forestry.

Pukerimu Farms Limited

2.9 Pukerimu Farms Limited is a drystock farming operation located on Stringers Road near Waotu and owned and run by Andrew and Megan Ranger. The farm was purchased by Andrew's parents in 1978 with a total area of 203ha of which 193 ha is effective, with the balance predominantly native bush. Andrew has managed the farm since 1979 and now owns the farm with his wife Megan. The farm is flat and rolling contour with Tirau Ash soils and is located entirely with an LUC class 4 unit. The farm has been operated as a drystock operation over the years with a similar activities to the other two operations, including sheep breeding, cattle fattening (steers and bulls), grazing (cows and heifers), maize cropping, silage and hay production and farm forestry.

2.10 Andrew and Stuart also jointly own a drystock farm located at Benneydale in Waitomo District, which they purchased in 1997. The property has a total area of 319ha of which approximately 200 ha is in the Waipa catchment and the balance in Horizons Region. The property is run as a grazing operation with bulls, heifers, sheep and steers.

2.11 All of the farms are located within dairy farming areas and surrounded by dairy farms. The decision not to convert to dairy has been based on personal farming choices, and all of the farms are of suitable climate, contour and soils to be dairy farms.

2.12 A key feature of all three farming operations has been the ability to be flexible due to the quality of the land with more opportunities than typical drystock farms due to our contour, climate and location. This has enabled us to take strategic advantage of changes in market conditions and variable climatic conditions. The desire to best match land use with the land resource has also been a factor. This flexibility is a key difference from a dairying operation that has broadly similar stock numbers through the seasons and from year to year. In our

mixed farming operation significant variation occurs between years and at different times within the year.

2.13 It is precisely this flexibility that has enabled all three farming businesses to remain economically viable without the need to convert the farms to dairying, like the vast majority of farms in our District. This approach to farming does not however match the cap and hold approach of PC1 and is challenging to model in Overseer, as further described below.

3. MITIGATIONS UNDERTAKEN TO DATE

3.1 Stock exclusion from waterways

3.2 Due to the contour and scale of our properties, all of our farming operations currently meet the proposed livestock exclusion rules in PC1.

3.3 Our home farm is bound on two sides by rivers, the Waikato River and Little Waipa Rivers. Both have been fenced off for many years with the planting of riparian margins taking place over a number of years, most recently with assistance from the Waikato River Authority and South Waikato Environment Initiative.

3.4 A small tributary to the Waipa River originates at a spring within our property and has been fenced off for a number of years. We have recently retired the entire gully unit above the stream and planted the area in native species. The most recent priority has been retiring and fencing off boggy areas and small steep sideling units and planting with native species.

3.5 The Wesley Road property is flat with no surface water bodies within or adjacent to the property.

3.6 Andrew and Megan's property on Stringers Road has one main waterway passing through it, the Raporahi Stream in the Little Waipa catchment. The majority of the waterway has been fenced and the riparian margin has now been planted with native species. The remaining unfenced section (one paddock) is grazed with sheep only.

3.7 Stuart and Deborah's property on Waotu South Road bounds the Mangaroa stream in the Little Waipa catchment in three paddocks. Two of the paddocks are fenced and one is managed by grazing the paddock with sheep only.

3.8 The Ranger's Benneydale property has numerous smaller waterways all of which are fenced.

Precision Agriculture

3.9 Due to the scale of our maize cropping operation Richard undertakes all of the cultivation and planting himself and has invested in precision agriculture equipment to run a strip till operation. This involves pre-plant desiccation and tilling, which is carried out in 10cm strips separated by 20cm strips of uncultivated land, with pre-plant fertilising also incorporated within the strip. The benefit of a strip till operation is that two thirds of the paddock remains undisturbed, with a resulting reduction in thepotential for sediment loss. Agronimists advices that strip tilling reduces leaching potential due to reduced soil disturbance, improved soil structure and organic matter,and reduced area and time that the land remains fallow after spraying (and therefore susceptible to leaching). Incorporation of pre-plant fertiliser within the planting strip should also reduce leaching by ensuring all of the fertiliser is within the rooting zone of the crop. Overseer does not currently have an option to recognise strip till operations.

3.10 In recent years Richard has had farm soil mapping undertaken and has experimented with variable rate planting to account for changes in soil properties across the farm.

Fertiliser application

3.11 All three farm operations undertake annual soil testing and seek advice from fertiliser specialists and for the maize country a consultant agronomists, to ensure fertiliser application is accurately matched to soil nutrient conditions and demand of the proposed crop (grass or maize). Richard is investigating the use of variable rate fertiliser application, which is reliant on yield mapping through harvester monitoring technology which is developing.

Stocking policies and rates

3.12 A key feature of a drystock operation is the variation in stock types, enabling different parts of the farm to be farmed with suitable stock matched to the contour and differing ground conditions at different times of the year.

3.13 Our stocking rates vary considerably through the year. At the time of maximum stocking our properties are generally around 14-16 stock units per hectare, depending on how it is calculated. At other times of the year stocking rates will fall to as low as 5 stock units per hectare. From our knowledge of our neighbours' stocking rates, if our farms were operated as conventional dairy farms they would be operating at around 30 to 40 stock units per hectare.

Farm Environment Plans

On our home farm we have now had three FEP's undertaken, one with assistance from the Waikato Regional Council in 2010, and more recently by Waikato Regional Council and FAR using our farm as a case study for a FEP for a mixed cropping and drystock farm. The recommendations from the FEP's are either completed or were already being implemented.

4. OVERALL CONCERNS WITH THE PC1 APPROACH

4.1 We support the goal of Plan Change 1 and the Vision and Strategy for the Waikato River. As noted above our families have farmed in the South Waikato for several generations. As regular recreational users of the Waikato River we have observed changes in water quality over time. We understand the need for farmers to operate within environmental constraints and to continue to find ways to minimise our impacts on the environment.

4.2 We also support the approach of developing FEP's for all farms in the catchment. Water quality objectives for the Waikato River are only going to be achieved by farmers leaving no stone unturned to improve their operations and minimise farm contaminant losses, and FEP's could be a useful tool to achieve this. For FEP's to be effective it is in our view important that they are undertaken through 'boots on the ground' viewing and inspection of all parts of farms, to identify hots spots and high risk areas. Desk top exercises could potentially result in improvements on paper that are not reflective of what is happening on the ground. A second factor is that FEP's should be undertaken from a consistent basis, by which I mean that farmers that are operating well-ahead of their peers could have few or potentially no further actions to undertake, whereas those who have areas of high risk that have not been well managed are required to improve significantly, albeit over a practical and reasonable timeframe.

4.3 Our major concern with PC1 relates to the proposed grand parented approach of the plan, through the combined effect of Policy 3.11.3, the use of Nitrogen Reference Points (NRPs) and the land use change rule (rule 3.11.5.7). We are very concerned as to what this will mean for the future of our farming operations for a number of reasons, which I address below.

4.4 From an operational perspective running an operation that by its nature changes from season to season and year to year does not match a model of freezing farming operations at a point in time. Even routine seasonal variations such as having a higher lambing percentage or a better than average growing season, or an earlier maize harvest extending the winter grazing period, could result in a variation in the resulting Overseer output. If consent conditions require that an NRP be met, then at any given point in time we could find ourselves in non-compliance with the NRP after the fact if the Overseer assessment shows

an increase. . The effect of this is that lower contaminant loss land uses with inherent variation are in a worse regulatory position than neighbouring farms with significantly higher but more consistent losses.

4.5 The approach of PC1 effectively rewards the highest polluters. With the exception of the highest 75th percentile N leachers, the most intensive land uses are rewarded with the greatest flexibility of future farming choices while those with polluting the least face the greatest constraints. Due to the location and contour of our farms we are more significantly impacted than most drystock farms, given all of our properties are suitable for dairying operations, and have significant areas suitable for vegetable production.

4.6 Under the PC1 approach only those land uses with excess contaminant losses will have the opportunity to undertake land use change. The effect of the policies and rules is that the only way conversion to a higher intensity land use can take place is if it were combined with a nearby farming operation that has higher than necessary contaminant losses and therefore the ability to economically reduce losses on one property to balance the increase on another. This seems inequitable and again rewards polluters.

4.7 The grand parenting approach unquestionably deters farmers from voluntarily converting to less intensive land uses. PC1 is the third significant plan change in which Waikato Regional Council have adopted a grandparented approach. Farmers are well aware of this and the implications for their farming businesses. If you change to a lower intensity land use you almost certainly run the risk of facing greater constraints in the future than your neighbours. This creates a powerful incentive to continue farming up to the cap to preserve future land use options and therefore land value.

4.8 At a bigger picture level it appears from industry and environmental commentators that farming may be on the cusp of significant and disruptive change brought about by a range of factors, not least of which are technological advances in synthetic food production, changes in consumer preferences toward plant based diets, climate change and associated regulatory impacts (potential inclusion in the ETS). Unfortunately because PC1 is based on a backward looking ‘batten down the hatches’ approach that effectively holds land use as it is, PC1 is very poorly aligned to manage these challenges.. By comparison what farmers and regulators actually need to be doing right now is looking to the future and changing - to meet environmental requirements and to meet potentially disruptive market changes, most obviously to more plant-oriented farming with potentially significantly less animals. We are very concerned that the approach of allocating rights to participate in such change, based on how much a farmer is currently leaching, will foreclose future options for our farming operations and the region.

5. CONCERNS WITH USE OF OVERSEER FOR ALLOCATION

5.1 We are concerned with the use of Overseer as a tool for allocation of future property rights. I have no detailed knowledge of Overseer other than through numerous discussions with Overseer users, with other farmers regarding their results and from reading various reports on Overseer.

5.2 Our own personal experience with Overseer assessments for our home farming operation reinforced what I had heard. Two well qualified and experienced individuals undertook separate assessments of our farming operation using the same input information for the same time period and arrived at different results. Further adding to the confusion Waikato Regional undertook a further assessment as part of the FEP process and arrived at a third figure, with a 70% difference between the highest and lowest figures. Without sitting the two individuals down and running through the detail of their input decisions it was difficult for us to understand the reason behind that difference. As it was explained to me, a real life farming operation often does not easily match the Overseer model, particularly with a farming operation like ours with a large number of different operations taking place. This requires the inputter to make judgement calls as to how to best represent the operation in the model. Different input decisions will inevitably result in different results.

5.3 For cropping operations, the problem is compounded by the ability to model different crop types, some of which are not present as an option in Overseer at all. As noted above, Overseer also cannot account for some of the developments in precision agriculture. It is also well understood that it has not been fully ground-truthed for all soil types. We are aware that a significant investment is being made in improving Overseer, for different land uses and different soil types. This is clearly necessary if it is to be a useful tool, but one outcome of this is that the output will almost certainly change with each upgrade, in some instances significantly. This creates significant uncertainty.

5.4 A further issue unrelated to the accuracy of the model itself, is that Overseer assumes best practice, with no direct discharges to water via Overland flow. In all of our personal experience, living and working in the South Waikato, this does not reflect reality. We have all personally seen numerous examples of significant overland flow contaminant losses from farms to water which will be occurring on a frequent basis, particularly during the winter months. Overseer assessments will therefore be significantly underestimating losses from some farms.

5.5 While there is clearly a place for Overseer as a tool for farmers to evaluate and select different management options within a given property (the purpose it was designed for), given its well understood short comings and significant variability it does not appear in our

view to be a suitable tool on which to base something as critical as the allocation of future property rights for farming.

6. BLOCK 2 OFFICERS RECOMMENDED CHANGES TO PC1 (BLOCK 2)

Overall Views

6.1 In our view, while the bulk of the Officers' Block 2 changes are simply rearranging the layout of the rules, if the underlying issue of grandparenting is put to one side, there are some areas of improvement. .

6.2 In principle we support the officer's recommended approach of more stringent consent status with increasing intensity of land use. The originally proposed version of PC1 was in our view somewhat illogical, with some of the majority of the most intensive land use able to operate as permitted under an industry managed scheme (due to their cooperative model), while less intensive farming operations would like end up consented.

6.3 We are also supportive of using stocking units per hectare as a key measure of risk for the purpose of establishing consent status. While a large number of factors affect water quality outcomes, it is unquestionable that increased stocking rates on a pasture based system will almost certainly increase the potential for contaminant losses.

6.4 While we are concerned at the potentially burgeoning bureaucracy at Waikato Regional Council and their ability to manage the massive increases in consents required, we do accept that consenting may be a fact of life for farming in the future. One key caveat to this is that consents will only be effective if they include sensible practical conditions that relate to water quality, and are also actively monitored and enforced.

6.5 Two areas where the bureaucracy can be kept manageable is by avoiding overly complex consenting processes, so farmers could potentially complete the consent application process themselves provided it is accompanied by an independently produced FEP. The second is by the use of sensible permitted activity rules for low intensity low risk farms so that Regional Council resources are concentrated in the areas of greatest need / risk.

Issues with the detail of the proposed rules

6.6 In each of the lower intensity rules we note there are somewhat arbitrary requirements, some of which are unrelated to water quality impacts that will relegate the majority of farming land uses into a more stringent consent status. These include:

- The requirement that the farming activities do not form part of a 'farming enterprise' (rule 3.11.5.2 clause A-2A and rule 3.11.5.2A clause 4). The notified definition of farming enterprise would appear to include every type of farming operation, effectively making both rules redundant. I noted that the Block 3 planners report now proposes to delete the definition of farming enterprise, further bringing into question the intent and interpretation of the clauses.

- The requirement that "No dairy farming or grazing of dairy cattle occurs" (rule 3.11.5.2 clause A-2C). This presumably is intended to apply to dairy cows currently being milked, however this is not clear from the rule or definition. As currently worded it could apply to the grazing of heifers or dry cows (which are dairy cattle), even if the stocking rates were at low enough levels to meet the other requirements of the rule. This does not appear to be particularly logical.

- The potential slope limitation on grazing indicated by rule 3.11.5.2 Clause C-c1[1]. Almost all that are not dead flat, will have some sidelings or areas with short steep slopes, not all of which will have any potential to contribute discharge to water. If the slope is hydraulically disconnected from waterways by a considerable area of flat land then it has no potential for discharge to water. The key issue is grazing of steep slopes with a direct flow path to water, which is what the rule should correctly be focussed on.

- A key condition of each of the recommended rules 3.11.5.2 to 3.11.5.4 is limitations on stock units per hectare, however under the plan currently it is not clear how this is to be calculated – based on total farm area, productive farm area, or potentially a hybrid option excluding some areas of unproductive land. The method of calculation will make a significant difference to the result on some farming properties. In our opinion it would be backward step to not allow the inclusion of areas voluntarily retired from production (eg through riparian retirement or planting of trees) in the calculation of stock units per hectare, as this would become a powerful disincentive to retiring currently productive land area. To the contrary, inclusion of retired areas in the calculation would provide a small tangible benefit to the landowners to encourage such decisions.

- A final concern is the deletion of a sunset date on the land use change rule. As the hearing panel will be aware, PC1 as originally proposed signalled a transition to a 'land use suitability' approach in the future with an end date on the land use change rule of

[1] "No part of the property over xx degrees of slope is grazed."

1 July 2026. I know from my involvement in the Collaborative Stakeholder Group that this clause was a key factor in the agreement to inclusion of a land use change rule, that any such moratorium was temporary only with a transition in future to a more equitable approach. This reasoning is clearly reflected in the s32 Report and used as justification for inclusion of the land use change policies and rules. This has been inappropriately lost.

7. SUMMARY

7.1 In summary it is our view that:

- The PC1 approach of grand parenting rights to future land use rewards polluters and penalises those who have contributed least to the problem. The impacts on future land use options and therefore land value are significant, particular for properties such as ours suited to multiple land uses.
- The goal of freezing land use will have a potentially massive impact on rural businesses in the longer term by restricting the ability to adapt and change. This is particularly concerning at a time when we are facing potentially significant disruptive change in our climate, our markets and in our broader regulatory requirements.
- The approach deters improvement for fear of losing future property rights.
- The key system for measuring N leaching (Overseer) is unreliable.
- With some modifications the officers recommendations offer some potential for a more pragmatic and effective solution with graduated activity status appropriately related to increasing intensity to ensure regulation is appropriately targeted to those land uses of highest intensity and therefore risk.

Sally Strang

On behalf of Strang & Strang Ltd, Waiwa Farms Ltd and Pukerimu Farms Ltd

Attachment 1: Farm Location Map


Strang home farm
Strang - Wesley Rd property
Arapuni
Putaruru
Waiawa Farms Ltd
(Stuart and Deborah Ranger)
Waotu
Pukerimu Farms Ltd
(Andrew & Megan Ranger)
Makgill Rd
Horahora Rd
Hildreth Rd
Overdale Rd
Arapuni St
Arapuni Rd
Pearsons Rd
Old Taupo Rd
Waotu Rd
Orei Punga Rd
Darby Rd
Lake Arapuni Rd
Huihuitaha Rd
Tomalin Rd
Dukeson Rd
Lichfield Rd
John Rd
Sneddon Rd
Wiltsdown Rd
Old Cambridge Taupo Rd
Rexel Rd
Landing Rd
Mangare Rd
Pukewhau Rd
Waotu South Rd
Stringers Rd
McDonald Rd
Drummond Rd
Himiona Rd
Mortensen Rd
Waipa Rd
Pat Rd
Commons Rd
Hutirimu Rd
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Attachment 2: Photos

Strang home farm - summer (during maize harvest) above and winter below

Waiawa Farms Ltd, Waotu (Stuart and Deborah Ranger)

Pukerimu Farms Ltd, Stringers Road (Megan and Andrew Ranger)

Riparian retirement and planting Little Waipa Stream (left side is Strang property)

Waikato River boundary Strang farm

Riparian fencing and native planting, Andrew and Megan Rangers