



3 October 2016

New Zealand Productivity Commission
PO Box 8036
The Terrace
Wellington 6143

Dear Sir/Madam

New Zealand Society of Soil Science (NZSSS) Submission to the Better urban planning Draft report

Thank you for the opportunity to make a submission on the “Better urban planning Draft report.” Attached is New Zealand Society of Soil Science’s submission regarding this document.

Should you have any queries regarding the content of this submission please contact the New Zealand Society of Soil Science directly by email nzsss@groundworkassociates.co.nz.

Regards

Dr Reece Hill
President NZSSS



Submission from New Zealand Society of Soil Science on the Better Urban Planning Draft Report

The Submitter

The New Zealand Society of Soil Science (“NZSSS”) represents the professional and technical interests of professionals engaged in all aspects of the study, management and use of soils in New Zealand. NZSSS provides a forum for the exchange of ideas and information within the profession, and is thus normally engaged more internally in the science of the soil, rather than externally in the politics of its use.

However, an exception to its internal focus is a need to ensure that factual information in relation to our country’s soil resources is given due recognition in the context of land use planning and decision making at district, regional and national level.

The Application

This submission is made by the New Zealand Society of Soil Science in respect of the Productivity Commission’s ‘Better Urban Planning’ (BUP) Draft report. We thank the Productivity Commission for the opportunity to provide feedback on the BUP draft report.

There are numerous interchangeable terms used to describe “high quality soils”. Other terms include high quality land, versatile land/soils. For the purposes of this submission, the NZSSS prefers to use the term “high class soils”¹ when referring to “high quality soils”.

Reasons for making this submission

The BUP Draft report makes a couple of references to ‘*high quality soils*’. The NZSSS consider it important to clarify points that relate to high class soils, as well as highlight the noted absence of reference to the value of the soil resource in the BUP Draft report as a whole.

The objective of this submission is to raise awareness on matters pertaining to the value of soils including ‘high quality soils’ in New Zealand urban areas. NZSSS advocate for explicit and accurate evidence based consideration of the soil resource and impacts on high class soils¹ associated with urban planning be included in this report.

High class soils in the planning environment

Caption from the former Minister for the Environment, Simon Upton’s 1997 speech

The New Zealand Society of Soil Science does not consider references to statements made by the former Minister for the Environment, Simon Upton in his speech over 20 years ago (p100) to be a suitable reference on which to base findings relating to “high quality soils” such as in F12.1. Although the citation may contribute to historical context, the NZSSS requests that references to “high quality soils” be based on current scientific and evidenced based information. To provide this sole statement by a non-expert and not provide any contrary opinion is unbalanced and could be misleading.

Previous protection

The soils that occupy areas of land that have high productive versatility, and that may be considered to have comparatively high value for the production of food, are a finite and diminishing resource (Rutledge et al., 2010). This fact was recognised in the former Town and

¹ An example definition for high class soils: *Those soils in Land Use Capability Classes I and II (excluding peat soils) and soils in Land Use Capability Class IIIe1 and IIIe5, classified as Allophanic Soils, using the New Zealand Soil Classification (Waikato Regional Council, May 2016). Soil Classes are defined in Lynn et al., (2009), with Class I to III soils typically associated with easy topography, high fertility and production of high value horticultural, vegetable and arable crops, along with historic high value dairy farms.*

Country Planning Act, which made the protection of such soils a matter of national significance. The repeal of that Act, and its replacement with the Resource Management Act in 1991, removed the national significance of the protection of such soils; it did not, however, change the fact of the value of the resource, nor its finite and diminishing nature. The impact of the legislative change from the Town and Country Planning Act to its replacement with the Resource Management Act in 1991, as it relates to “high quality soils” are not adequately addressed in the *Better urban planning* Draft report and should be considered, especially in relation to F12.1.

The commissioner’s decision on the Auckland unitary plan supported the protection of high class soils (referred to in as Elite land in their report). There was little objection to protecting this valuable land from residential development even from developers. This consensus should be recognized in the BUP Draft report.

Historic investment

High class soils, incorporating unique combinations of geology, landform, climate, and comparatively short histories of productive use must be regarded as the foundation of any comparative market advantage enjoyed by our country. Further, the historic investment into the critical soil infrastructure should be recognised, which in many cases has seen millions of dollars used to create and maintain fertility that provides for financially viable production systems, which to a significant extent our national economy is already based on. The re-investment in developing fertility ‘elsewhere’ comes at a cost to the community and the nation, and should be considered as an opportunity cost (loss) when considering alternative land uses.

High class soils cannot be substituted by using other soils. They have unique properties that are best suited to a wide range of use not found in other soils. For example, they are often the only soils suited to high value export crops such as avocado or kiwifruit. They are also able to be used for wastewater irrigation from dairy factories all year round. This is a quality not available in many other soils. They provide a range in productive and industrial services not readily replaced.

Loss of high class soils/land

The loss of high class soils has occurred nationally and internationally for many years as communities develop and grow. The rapid growth of communities has seen the rate of loss increase, with 29 % of the 25,000 ha of new urban areas in New Zealand developed between 1990 and 2008 occurring on high class land.

Rutledge et al., (2010) indicated that “To date, LUC classes I and II (highest class land) have experienced the highest urbanisation rates as a percentage of original area (5.6 % and 3.9 % respectively) over the period 1985 to 2002. In addition, based on historical census data, housing density has increased across almost all areas of New Zealand, indicating that the extent of urbanisation may be broader than currently assessed.” From 1990 to 2008, 29 % of new urban land occurred on high class land (Andrew and Dymond, 2012).

In Auckland the rate of urban expansion onto high class land (LUC class I-III) has accelerated since 1996, with the majority of land allocated to urban expansion since 1996 has been high class land. Pukekohe has been identified as a potential satellite town with up to 50,000 new dwellings, but is the area where the majority of Auckland’s LUC class I or elite land is located (Curran-Cournane et al. 2014). In Hawke’s Bay and Marlborough a high proportion of urbanisation has occurred on high-class land — 49 % and 59 % respectively (Andrew and Dymond, 2012).

The overhang

Outward development and not inward development generates an ‘overhang factor’, whereby

further outward development provides for an even greater exposure to land, disproportionately increasing the “zone of influence” on land use beyond the urban boundary. This means there is scope for a rapid consumption of high class soils.

One chance

Urban encroachment onto adjacent rural land has been seen to be an almost entirely one-way process. Once land has been used for the establishment of housing, commercial and industrial use, with the associated provision of communication and other public infrastructure, it is not cheap, not easy, and mostly not practical to reverse the process, remove the urban development, and return the land involved to its former actual or potential productive use.

The Resource Management Act requires that the life supporting capacity of the soil be preserved for future generations. This directive is worth acknowledging in the BUP Draft report by providing for the protection of high class soils. District, Unitary and Regional councils are providing for their protection to some degree and it is necessary to support legislation by affording them protection in the BUP Draft report.

Urban planning and the natural environment

Soils in urban areas

NZSSS agree with the finding F8.1 but note that there is no mention of soils and the integral role of soil ecosystem services in urban areas. The inclusion of soils, soil ecosystems services, and the preservation of high class soils (to make best use of their full ecosystems service contributions) within urban environments are seen as essential components to be considered as part of efficient management of the natural environment in urban areas and sound urban planning. With reference to finding R7.8, retaining high class soil as green spaces within an urban area provides the greatest versatility and flexibility into the future, while maintaining the majority of soil ecosystems services.

Site vs Community

Urban use can safely and sustainably be established on a wide variety of soils and sites. Provided flooding and landslide hazards are avoided as may be appropriate, a wide variety of topographies, soil types, and locations may be equally suitable for urban development. Therefore, while there is limited choice of whether to develop or not when considered in one area, a wider look at opportunities surrounding the larger community, and in some cases region, may identify scope that had not previously been considered.

Ecosystems and biodiversity

Urban development has the scope to utilise landscapes that have maintained and developed unique ecosystems, some of which have inherent biodiversity characteristics not seen elsewhere. While not limited to high class soils, urban development can, and will likely, result in ecosystem changes through direct effects and loss of habitat; and also as a result of pressures on the ecosystem and habitat from cumulative effects beyond the development footprint.

The soil resource in New Zealand’s future

A future planning framework

The NZSSS remains neutral on whether a single or two separate laws for the built and natural environments are required (Q13.1). However, the NZSSS advocate that clear national policy (such as a NPS) directing the use of New Zealand’s soil resource is required to ensure high class soils especially are available for future generations.

Economic future

By general consensus, New Zealand’s long-term economic future will continue in large measure to rely on the production and export of high quality, high value food products for

consumption by discerning purchasers. Such produce cannot be produced at will on just any old land; New Zealand has large areas of land that are suited only to pastoral or forestry uses at best, and only relatively limited areas of high class soils. To illustrate this point the Horticulture industry currently utilises approximately 130,000 ha of land and is aiming to be a \$20 billion business by 2020. To double this return they will need another 130,000 ha, but also they need the better landscape units (high class soils), the very units which are nationally limited and could be consumed by urban development.

The value of soil

The NZSSS acknowledge that a balancing of costs and values will be required to arrive at sound decisions on which land should, and should not be made available for housing and associated developments. There will be circumstances in which it will be appropriate to decide to proceed with an urban development despite its consumption of valuable soils. The NZSSS advocate to include consideration of the value of the soils involved in reaching a decision on new urban development.

Looking after soils is important. Providing for growth is important. Dovetailing into existing hard infrastructure is important. Because many facets of development are important not all the objectives will necessarily be satisfied, and hence compromises will be needed. The most logical solution need not be the cheapest or the quickest; and there may be a time where a combination of factors, such as water reticulation limitations, roading limitations and loss of high value soils means that less favorable and potentially more expensive building sites are best for the community. These decisions cannot be made on a development by development basis; but require big picture national, regional and community perspectives to direct and influence what is right for New Zealand Inc. and not only for the benefit of expedient progress and the prosperity of developers.

Concluding comments

The balance should consider economic, social, cultural and environmental factors. Not one factor should be the sole contributor to growth, with both positive and negative factors integrated and considered across the larger community, and not on an ad-hoc development by development basis at the whim of political and/or developer pressure. Soil, and particularly the loss and consequence of loss, of high class soils should be an integral part of the decision making matrix.

Decision requested

1. That the BUP report include due consideration of the soil resource, especially the inclusion of current and accurate information on the impacts on the soil resource (especially high class soils) with respect to the period of transition into and during the RMA 1991.
2. That the need to protect and sustain the availability and versatility of New Zealand's high value soil resources is included in the matrix of matters for consideration when evaluating urban planning. Ideally this consideration should occur at a master planning stage and not when evaluating ad hoc local development proposals.

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