PROPERTY ECONOMICS

170 RICCARTON RD WEST

MOSGIEL PRODUCTIVE LAND

COST BENEFIT ANALYSIS

Project No: 52226

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Client: Sweep Consultancy Limited

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SCHEDULE

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1. INTRODUCTION

Property Economics have been engaged by Sweep Consultancy Limited (**SCL**) to undertake a high-level economic assessment on the identified site located at 170 Riccarton Road West, Mosgiel, to assess its potential economic impacts on the High Productivity Land (**HPL**) resource in Dunedin City.

The primary purpose of this report is to quantify (where appropriate) and qualify the significance of (potentially) losing highly productive land in the context of specific characteristics of the identified area. This includes the economic costs and benefits of retaining the productive land against the provision of enabling its development for residential activity taking a longer-term perspective.

These outputs are structured to provide economic market intel that is designed to better inform SCL of the costs and benefits associated with the conversion of the highly productive land to residential activity, so decisions can be made in more confidence and off a sound information platform.

This report follows the same process utilised in the Dunedin Productive Land Cost Benefit Analysis Report Property Economics completed for Dunedin City Council (**DCC**) in November 2020 and follows the same methodology for a comparative economic assessment of the subject Mosgiel land.

Property Economics' 2020 assessment for DCC appraised the relative costs and benefits associated with 16 potential residential rezonings on sites with a range of HPL as well as soil qualities.

It is important to note that the original assessment of each site included social and infrastructure cohesion analysis, undertaken by Beca, that was also utilised to compare sites. This has not been undertaken for the purposes of this report.

1.1. KEY RESEARCH OBJECTIVES

The main objectives of the research and analysis include:

- Identify the proposed site, its geospatial extent and anticipated residential capacity.
- Assess the permitted baseline of what can be developed on the site under the Operative District Plan (**ODP**).
- Evaluate the current level of productive value for the site, including estimated annualised and total primary production value.
- Assess the potential production under the ODP baseline (status quo) if there exists variance from the current land use.
- Assess the overall impact on primary production and compare against the potential uptake of the land for residential purposes.
- Outline any potential impacts from any reverse sensitivities.
- Determine the high-level potential economics costs and benefits resulting from the two alternative activities (primary production or residential development) against the baseline position.

1.2. INFORMATION SOURCES

Information has been obtained from a variety of sources and publications including:

- Distribution of Highly Productive Soils (**HPS**) – DCC
- Dunedin Productive Land Cost Benefit Analysis Report November 2020 – Property Economics
- GIS Data on Each Growth Area – DCC
- Housing and Business Development Capacity Assessment (**HBA**) – DCC
- Mosgiel Development Information – Sweep Consultancy Limited
- Proposed National Policy Statement – Highly Productive Land Indicative Cost-Benefit Analysis – Market Economics (Land Productivities were adapted from this paper)
- Subject Site Map – Google Maps, DCC, Sweep Consultancy Limited

2. BACKGROUND CONTEXT

DCC are currently undertaking Variation 2 to the Proposed Second-Generation Dunedin City District Plan (2GP). Variation 2 aims to respond to Dunedin's urban development capacity needs with the City being reclassified as a Tier 2 urban environment under the National Policy Statement on Urban Development 2020 (NPS-UD).

As a Tier 2 urban environment, the DCC is required to ensure there is sufficient housing development capacity in the short-term (3 years), medium-term (10 years) and long-term (30 years).

As part of Variation 2, DCC investigated potential greenfield sites located in the suburbs and fringes around Dunedin City. Of these, 16 were also classified as areas containing highly productive land due to their soil classification rating.

The proposed National Policy Statement on Highly Productive Land (NPS-HPL) is currently under development, and, when gazetted, is likely to require councils to avoid urban development and growth on highly productive land, where possible.

The final decisions on the proposed NPS-HPL will be made by ministers and Cabinet by the end of August 2022. If approved by Cabinet, the proposal would be gazetted and take effect soon after decisions are made.

Policy 3 of the NPS-HPL states that:

"Urban expansion must not be located on highly productive land unless:

a. there is a shortage of development capacity to meet demand (in accordance with the NPS-UDC methodologies and definitions); and

b. it is demonstrated that this is the most appropriate option based on a consideration of:

- *a cost-benefit analysis that explicitly considers the long-terms costs associated with the irreversible loss of highly productive land for primary production;*
- *whether the benefits (environmental, economic, social, and cultural) from allowing urban expansion on highly productive land outweigh the benefits of the continued use of that land for primary production; and*
- *the feasibility of alternative locations and options to provide for the required demand, including intensification of existing urban areas."*

The proposed site is currently zoned Rural and has significant HPL and HPS coverage. This report assesses this site specifically against the previously identified 16 growth areas. The following section outlines the approach adopted for the original 16 sites. This approach and the subsequent methodology have been applied to the Mosgiel site.

3. APPROACH

In anticipation of the release of the NPS – HPL (the Ministry for Primary Industries (MPI) undertook an assessment of the potential costs and benefits associated with a requirement for territorial authorities to assess the impacts of enabling changes in land use on HPL either through activity changes or subdivision.

While the release of this guiding document has been delayed, due to in part insufficient information, the assessment utilised in the initial process is a useful guide to understanding the potential economic, social, and cultural impacts associated with the uptake of HPL for residential activity. As such Property Economics considers this an appropriate approach to assessing the potential costs and benefits related to the changes proposed at Mosgiel.

Overall, the approach seeks to quantify the loss in primary output as a result of the rezoning of HPL for residential activity. Alternatively, the identification and quantification of benefits relate to the relative location of these sites as well as the potential changes to the District economy as a result of the residential provision.

3.1. HPL LAND AND PRIMARY PRODUCTION

The development of HPL away from primary production has become an important economic issue with the expansion of urban areas and the trended development of rural lifestyle residential sites. HPS currently makes up 15% of the national land area with primary production making up 5% of the national economic composition.

According to the MPI cost benefit assessment Dunedin City has approximately 10% of its land area in HPS with primary production contributing 2% (based on employment) to district economy. In terms of the national 'significance' Dunedin City contributes 0.9% to the country's primary produce. The 'Town Area' defined by the same assessment represented 1.4% of the total land area

In the context of the wider economy the 'Agriculture, Forestry and Fishing' sectors (through ANZSIC) contributed $156.4m to the district economy (2.5%).

3.2. METHODOLOGY FOR PRODUCTION

The methodology followed for the purpose of this report follows the cost benefit assessment undertaken for the assessment of the economic requirement for NPS on HPL. This calculates the net contribution to GDP (value added), per hectare, of HPL land (by category LUC 1-3) and attributes a discounted loss over a 5-year period.

There are several further assumptions relevant for the final relativity between sites[1] including:

- Only sites with single ownership over 4 hectares[2] are expected to have any significant productive value, unless specifically recognised.
- The productive potential value of sites increases as the overall size increases (thus loss of partial blocks may impact the remaining sites).
- The discount rate applied is 6%.
- It is assumed that the value of production remains relative between sites.
- It is assumed that any indirect or induced economic impacts are proportional to the type of land and subsequent production value rather than specific sites or land areas.
- It has been assumed that, under the ODP, subdivision of the site to below 4ha is not permitted.

For the purposes of this report, and in keeping with the NPS review process, the individual areas have firstly been assessed for their productive land areas, with sites that are below 4 hectares significantly discounted for long term production. A further consideration is the impact on the potential productivity of any remaining sites (land areas) that have been reduced through residential zone changes.

Productive values are based on national averages and factored for the levels associated with the Dunedin market by land type (HPL category) and the presence of high valued soils. Production value is based on potential activity rather than existing activity to understand the potential loss over time (for a highest and best use based on agricultural activity). In order to assess a Net Present Value (NPV) for comparison of any other costs or benefits over time, a 6%[3] discount rate has been applied.

The assessment applied to each area in relation to the level of potential economic costs and benefits are then based on 4 key factors:

1. The level of capacity provision and ability to meet future residential growth needs.
2. The level of reverse sensitivity associated with residential activity (at the level proposed) in each area.
3. The overall loss of agricultural production resulting from the land use change.
4. The level of land use efficiency

[1] *While these factors may not be entirely pertinent to the Mosgiel site assessment they are necessary to give context to its relativity with other assessed locations.*

[2] *It is assumed that the potential for aggregation of sites over time is unlikely.*

[3] *While NZTA have more recently utilised 4% discount rates from the standard 6%, it is considered appropriate to assess with the 6% rate given the timeframe of this assessment.*

It is important to note that the original site assessments for DCC included access to infrastructure, amenity and transportation undertaken by Becca. The following assessment by Property Economic has considered primarily the economic factors identified in the original report. The comparison with the original assessment is therefore not entirely complete.

4. SITE SPECIFIC BENEFITS AND COSTS

This section outlines the subject site identified for residential development at Mosgiel. The associated information has been utilised to assess the overall production of the site, its ability to meet residential demand and likely implications of the irreversible loss of Highly Productive Land.

The proposed site is located at 170 Riccarton Road West south to the existing Mosgiel urban boundary and spans around 8.37ha. Figure 1 illustrates the location of the site as well as the identification of highly productive land and High-Class soil overlays.

FIGURE 1: SOIL QUALITY IN AND AROUND MOSGIEL SITE

Source: Property Economics, Dunedin City Council, Google Maps

Table 1 following summarises the characteristics of the Mosgiel site with the expected dwelling capacity identified in structure plans.

Under the Land Use Capability (LUC) system, land is categorised into eight classes according to its long-term capability to sustain one or more productive uses, with Class 1, 2, and 3 soils being the most productive soils that are anticipated to be protected under the NPS-HPL framework.

The entire subject site is registered as Class 1: "*Flat to undulating recent floodplains developed on alluvium from various sources, near sea level, with deep (> 100cm) fine textured silt loam to sandy loam fertile Recent (recent) soils in cool moderate (800 - 1600mm) rainfall area*".

The subject site also has about 64% (or around 5.4ha) of its land identifying as High-Class Soils.

Under a proposed General Residential 1 (GR1) Structure Plan, the site would provide for 103 – 144 residential lots. While this does not impact upon the identified economic costs associated with this site (assuming that sufficient infrastructure exists) it does improve the sites' ability to service residential demand and represents a more efficient land use than the larger lot residential development options (i.e., Large Lot Residential 1 (LLR1) and Low Density Residential (LDR)). As such the resulting loss of production per site is lower and the outcome seen as more economically efficient.

TABLE 1: CHARACTERISTICS OF MOSGIEL SITE

Structure Plan	1	2	3
Location	170 Riccarton Road West, Mosgiel		
Current Zone	Rural		
Proposed Zone	Large Lot Residential 1 (LLR1)	Low Density Residential (LDR)	General Residential 1 (GR1)
Minimum Site Area for a Residential Unit within the Proposed Zone (sqm)*	2,000	750	400-500
Land Area (ha)	8.4		
Expected Dwelling Capacity	31 Lots	71 Lots	103 - 144 Lots
High Class Soil Coverage	64%		
HPL - Class 1 Coverage	100%		

*Source: Property Economics, Dunedin City Council, Sweep Consultancy Limited. * Pursuant to 2GP Variation 2 - Additional Housing Capacity Proposed Plan Amendments February 2021.*

TABLE 2 SUMMARY OF MOSGIEL SITE ECONOMIC COSTS AND BENEFITS

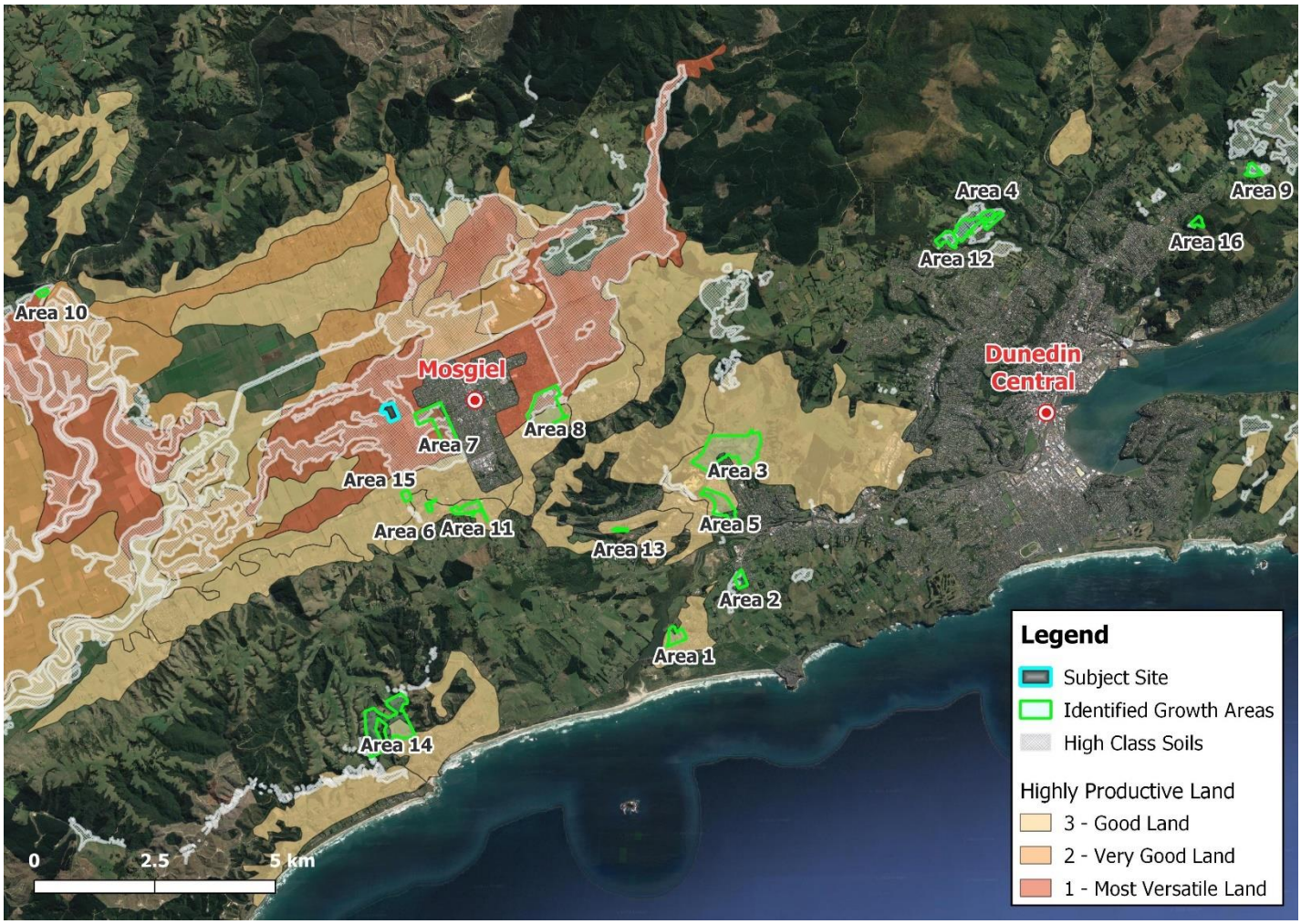
Potential Benefits of Urban Expansion occurring on highly productive land	Costs associated with the irreversible loss of highly productive land for primary production
Economic	
Provides for material residential capacity adjacent to the existing urban environment.	Current value added, based on the Highly Productive soils is estimated at approximately $37,700 per annum. A further site has potential for primary production.
	The total expected reduction in output to 2028: $159,000 (discounted).
	Reverse Sensitivity Risk: Medium due to the surrounding area comprising HPL Class 1 Soil.

Source: Property Economics

5. ECONOMIC REVIEW

The following figure outlines the specific sites identified by DCC and the Mosgiel site for this assessment. The associated information has been utilised to assess the overall production of each site, its ability to meet residential demand and likely implications of the irreversible loss of Highly Productive Land.

FIGURE 2: OVERVIEW OF STUDY HPL SITES



Source: Property Economics, Dunedin City Council, Google Maps

Table 3 following outlines the summary economic variables resulting from the assessment process identified in Section 3 previously.

A key economic cost identified through this report is, specially, the value-added cost resulting as a potential loss of productive agricultural land for residential development. This value-added loss is a representative proxy for losses in food production as well as potential impacts on flow-on benefits to the community through increased productive operations and employment provision.

Essentially this table represents the relative impact of each identified area on the Dunedin economy providing for a scenario where each area has the potential to achieve the highest value (based on localised averages) per hectare activity.

It is therefore considered pertinent to utilise the lost value by site provided for each area as an indicator of the relative economic costs of residential rezoning. Column 7 (Production per Site) within the following table outlines this representative cost ranging from sites that are unlikely to result in lost production (due to factors such as current activities, current site sizes, HPL classifications), such as Area 15 through to areas that have significant relative potential economic costs associated with them, such as Area 14 (due in part to its productive capacity and resulting low density residential outcome.

It is important to note when considering these relative costs that their significance in terms of the wider economy is likely to be less material. As outlined above the total identified land area (for all 17 areas) equates to only 317 hectares in comparison to a District wide HPL land area of 32,000 hectares and an agricultural sector that contributes less proportionately than the national average.

TABLE 3: RELATIVE ECONOMIC AREA POSITIONS

Area	Sites	Area (ha)	Value Added (Annual)	Value Added (Total NPV)	Average Land Use	Production per Site	Reverse Sensitivity	Urban Connectivity
1	12	9.74	$0	$0	1.23	$0	Low	Medium
2	25	5.76	$6,633	$33,600	4.34	$1,344	Low	Medium
3	617	70.28	$103,443	$524,000	8.78	$849	Medium	High
4	163	22.4	$53,301	$270,000	7.28	$1,656	Low	Medium
5	70	19.72	$28,625	$145,000	3.55	$2,071	Low	Medium
6	14	2.03	$0	$0	6.90	$0	Low	Medium
7	433	37.15	$167,799	$850,000	11.66	$1,963	Low	Medium
8	378	43.92	$48,366	$245,000	8.61	$648	Low	Medium/High
9	48	5.4	$19,741	$100,000	8.89	$2,083	Medium	Low
10	13	2.16	$0	$0	6.02	$0	Low	Low
11	79	10.11	$8,291	$42,000	7.81	$532	Low	Medium
12	37	8.94	$16,780	$85,000	4.14	$2,297	Low	Medium
13	6	1.35	$0	$0	4.44	$0	Low	Medium
14	45	62.88	$103,838	$526,000	0.72	$11,689	Medium	Low
15	36	3.16	$0	$0	11.39	$0	Low	Medium
16	41	3.35	$5,330	$27,000	12.24	$659	Low	Medium
Mosgiel Site Structure Plan								
LLR1	31	8.37	$37,665	$159,000	3.70	$5,129	Medium	Medium
LDR	71	8.37	$37,665	$159,000	8.48	$2,239	Medium	Medium
GR1	124	8.37	$37,665	$159,000	14.76	$1,287	Medium	Medium

Source: Property Economics. Note: Based on the Structure Plan, rezoning the site to GR1 would provide 103 – 144 lots. The midpoint (124 sites) is utilised for assessment.

In terms of relative economic benefits associated with the residential rezoning of these areas, three key factors (two of which are interrelated) have been considered.

The first relates to existing urban connectivity and the ability for the identified area to access amenity and facilities that would amplify the economic value attributable to residential activity in each area. Economic values (beyond such considerations as wealth, affordability, and choice) generally relate to associated amenities that contribution to quality of life and accessibility (to employment, public transport, community facilities etc). In terms of the identified areas these have been summarised as connectivity, each area is therefore rated as low to high.

Additionally, reverse sensitivity has the potential to impact upon existing activities and their productivities, due to this usually coinciding with urban form individually it contributes to a lesser degree than connectivity.

Finally, the general extent to land use efficiency is considered in terms of sites per hectare. While there is value in the provision of larger lots (e.g., for 'lifestyle' choice) the uptake of more land, on average, for residential use typically reduces land use efficiencies and relates to a lower economic value (and typically a lower value per sqm). Once again, in terms of relativity, Area 14 has a low connectivity with lower land use efficiency.

The table below summarises the relative economic impacts associated with each site by categorising the sites into three classifications – Lowest Relative Economic Impact, Medium / Middle Relative Economic Impact, and Highest Relative Economic Impact. These classifications are relative to each other, i.e., Area 14 has High economic costs relative to Area 11.

TABLE 4: RELATIVE ECONOMIC COSTS

Lower Impact	Medium Impact	Highest Impact
1	2	14
6	3	4
8	5	9
10	7	Mosgiel - LLR1
11	12	
13	Mosgiel - GR1	
15	Mosgiel - LDR	
16		

Source: Property Economics

As outlined the economic costs assessed include primarily land-based production value (based on a potential average for the land type classification) as well as considering any reverse sensitivity issues. The economic benefits include the extent and location of potential residential capacity and its ability to meet future demand projections in a managed environment.

Essentially Table 4 outlines the potential production cost associated with each dwelling provided through the potential rezoning. This is 'tempered' through a ratio for reverse sensitivity (7.5% at the upper limit).

While not a full economic cost assessment (not considering such factors as infrastructure constraints and provision), this provides for a relative economic value between the identified growth locations indicating areas that display lower relative (to the full spectrum of areas) direct land costs and those which indicate higher relative costs.