

# RIVER TERRACE DEVELOPMENTS LTD

## Request for a Change to the Operative Central Otago District Plan

### Assessment of Effects on the Environment

1 March 2018

**BROWN&COMPANY**  
P L A N N I N G   G R O U P



## 1. Introduction

In requesting this plan change the Requestor is required, pursuant to Clause 22 of the Schedule 1 to the Resource Management Act 1991 (the **Act**), to assess the effects of the activities enabled by the Change on the environment.

The assessment of effects on the environment of the requested change to introduce the River Terrace Resource Area (**RTRA**) into the Central Otago District Plan is set out in this document. It addresses Clauses 6 (information required in assessment of environmental effects); and 7 (matters that must be addressed by assessment of environmental effects) of Schedule 4 of the First Schedule to the Act.

The following categories of effects on the environment are addressed in this assessment:

- Effects in relation to urban land supply and growth;
- Effects in relation to urban design;
- Effects in relation to traffic;
- Effects in relation to infrastructural services;
- Effects in relation to geotechnical conditions and natural hazards;
- Effects in relation to soil contamination;
- Effects on cultural values and archaeology;
- Effects on ecological values;
- Effects on landscape and visual amenity values;
- Effects on surrounding land owners;
- Effects on existing retail centres;
- Effects on existing rural activities in the area;
- Positive effects.

The assessment takes into account and summarises the detailed technical reports prepared by experts in the relevant environmental and cultural disciplines. The technical reports are an integral part of this Request. The environmental discipline, report author and document number are set out in the following table:

Document No.	Assessment / Discipline	Document name, author, company,	Date
<b>DOCUMENT 5</b>	Economics	<i>Economic Assessment River Terrace Private Plan Change Cromwell</i> M.E Consulting (Natalie Hampson)	19 December 2017
<b>DOCUMENT 6</b>	Design & Masterplan	<i>River Terrace Design Report</i> Jasmax Architects (Alistair Ray, Nick McKay)	7 December 2017
<b>DOCUMENT 7</b>	Transportation	<i>Proposed Plan Change – Cromwell Transportation Assessment</i> Carriageway Consulting (Andy Carr)	14 December 2017
<b>DOCUMENT 8</b>	Infrastructure	<i>River Terrace Developments Limited Private Plan Change Request Infrastructure Report</i> Patterson Pitts Partners (Peter Dymock)	4 December 2017

Document No.	Assessment / Discipline	Document name, author, company,	Date
<b>DOCUMENT 9</b>	Geotechnical	<i>Geotechnical Report for Plan Change</i> Geosolve	September 2017
<b>DOCUMENT 10</b>	Contamination	<i>Pearson Road, Cromwell Preliminary Site Investigation</i> e3 Scientific (Glenn Davis)	21 November 2017
<b>DOCUMENT 11</b>	Archaeology	<i>Sandflat Road, Cromwell Archaeological Assessment</i> Origin Consultants (Benjamin Teele)	February 2018

## 2. Effects in relation to urban land supply and growth

The supporting report entitled *Economic Assessment* prepared by M.E Consulting (**DOCUMENT 5**) considers whether the River Terrace plan change responds to projected demand for additional residential capacity in Cromwell, including lot sizes/dwelling typologies that reflect the anticipated demand of current and future households.

The M.E report addresses the latest Statistics New Zealand projections. Growth of 2,210 households is projected between 2016 and 2028, and growth of an estimated 4,120 households is projected by 2043 (a 49% increase overall). One person and couple households will account for a growing share of the future household structure. Combined, they increase from a 66% share of households to a 71% share by 2043. This means that the mix of dwelling types (and densities) available in the District's future housing stock will need to differ from the mix currently available.

Projected growth in resident households and holiday homes translates to demand for approximately 108 additional dwellings per annum in the wider Cromwell area over the medium term (2016-2028) and approximately 86 additional dwellings per annum over the long term (2016-2043). This includes demand for more attached housing, compact homes and/or smaller sections.

M.E has also addressed current zoning and proposed new zonings and developments for residential purposes in Cromwell. Even if all known and proposed residential development sites are approved and come on-stream, current dwelling capacity might satisfy demand through to 2028, with little to spare. Continued growth in demand between 2028 and 2033 indicates that additional zoned capacity will be required by then. In the long term (by 2043), a significant shortfall of urban capacity is anticipated – in the order of 950 – 1,100 dwellings. If any of the recently proposed developments were not approved, or did not progress for any other reason, then these capacity shortfalls would be correspondingly worse (and realised sooner).

M.E concludes that the plan change's benefits to economic wellbeing are estimated to outweigh potential costs. The plan change responds to demand for residential growth in urban Cromwell and helps address an estimated shortfall in long term capacity. It will enable greater choice (including affordable housing options) in the Cromwell housing market.

The RTRA will therefore have positive effects on the environment in relation to urban land supply and population growth.

### 3. Effects in relation to urban design

The assessment *River Terrace Design Report* prepared by Jasmax ([DOCUMENT 6](#)) addresses the urban design implications of the Change. The key conclusions in relation to urban design are:

- (a) The RTRA provisions, including the Structure Plan, Movement Plan and Development Parcel plan will enable and result in high quality design outcomes to create a successful and distinctive character settlement;
- (b) The proposed road and block pattern will result in an 'urban' network that is a preferable urban design outcome in relation to efficiency and convenience for use and movement, and for infrastructure servicing;
- (c) Building masses and densities will be appropriately located relative to visual and landscape sensitivities and the site's topography;
- (d) The provisions enable density and a likely residential yield to achieve a range of lot sizes for a range of living options, including families, smaller households and retirement living, and to assist in providing affordable housing;
- (e) The concentration of commercial activities and co-location and synergy with the retirement village services including café and medical and related services will assist in creating a viable and vibrant neighbourhood centre node for the local community;
- (f) The provision of an integrated open space network will offer opportunities for formal and informal social interaction;
- (g) The potential for a school to locate within the RTRA will enable walkability for students from the RTRA and nearby surrounding areas, and positively respond to foreseeable growth by providing for appropriate community facilities;
- (h) The proposal achieves all relevant urban design considerations relating to walkability and opportunity for longer term / wider integration as the settlement grows in future stages.

The RTRA's intended settlement structure is well-designed and will result in a high quality, cohesive urban neighbourhood. The RTRA will therefore have positive urban design effects on the environment.

### 4. Effects in relation to traffic

The effects of the plan change on associated transportation issues are addressed in the report entitled *Transportation Assessment* prepared by Carriageway Consulting ([DOCUMENT 7](#)).

The report concludes that the traffic generated by the development can be accommodated on the adjacent roading network without capacity or efficiency issues arising.

Under the expected future conditions for traffic flows, the need for auxiliary left-turn lanes at the State Highway 6 / Sandflat Road intersection can be met, and these are required by the RTRA standards. Subject to the provision of the auxiliary lanes, the crash history in the vicinity of the site does not indicate that there would be any adverse safety effects from the proposal. Sight distances for drivers turning at the intersections most affected by the generated traffic are excellent.

The internal roads comply with a more up-to-date Standard than the Council's standards, to reduce vehicle speeds, promote road safety and better design outcomes. The proposed widths can be supported from a traffic engineering perspective.

The potential site layout will comply with all but one of the transportation requirements of the District Plan. The non-compliance arises due to lots that are close to curves or intersections not being able to provide the required 40m sight distance from driveways. However, those geometric features also mean that vehicle speeds will be reduced in the immediate area, which in turn means that shorter sight distances will be adequate. The matter can be addressed at the time of detailed design.

Sandflat Road itself will likely be required to be upgraded due to the increased traffic flows. All such upgrade works can be carried out within the legal road reserve.

The transportation assessment concludes that the proposed plan change will not cause adverse effects from a traffic and transportation perspective.

## 5. Effects in relation to infrastructural services

The *Infrastructure Report* prepared by Paterson Pitts ([DOCUMENT 8](#)) addresses stormwater disposal, wastewater disposal, water supply (potable, firefighting & irrigation, network utility services (electricity & telecommunications), and road construction.

For stormwater, the site is underlain by a considerable depth of glacial gravels, with depths to groundwater of around 25 – 33m below ground level. These gravels are highly permeable. Stormwater from roading, hardstand areas and roof run-off will be discharged direct to ground via suitably designed soak pits, which is consistent with the usual methods for development in Cromwell. No adverse effects on the environment will arise from stormwater disposal.

For wastewater, there is currently insufficient capacity in the existing network, and to service the development a new direct connection to the existing 750mm diameter pipe up-stream of the Cromwell Treatment Station, at Bannockburn Road, will likely be required. Thereafter there will be sufficient capacity in the Council's system for the RTRA development. No adverse effects on the environment will arise from wastewater disposal, and the upgrade will benefit the wider area beyond the servicing of the River Terrace proposal.

For water supply, RTDL has commissioned a joint report with the Council to determine how the network conveyance need to be improved to allow for growth in Cromwell, including the RTRL. A new trunk ring main will likely be required, connected to the 600mm diameter main Cromwell feed from the town reservoirs and connecting to the Bannockburn Road main at Pearson Road. No adverse effects on the environment will arise in relation to water supply for the development, and the upgrade will benefit the wider area beyond the servicing of the River Terrace proposal.

For network utility services, Chorus New Zealand Limited has confirmed that a suitable telecommunications (fibre) supply can be made available to the proposed development.

In summary, the development is able to be serviced for infrastructure and no adverse effects will arise in relation to the infrastructural services.

## 6. Effects in relation to geotechnical conditions and natural hazards

The report entitled *Geotechnical Report for Plan Change* prepared by GeoSolve ([DOCUMENT 9](#)) assesses the geotechnical conditions, hazards and parameter implications of the Change.

The findings of the Geotechnical Report are as follows:

- (a) The site is underlain by surficial topsoil and loess deposits which overlie outwash sand and gravel deposits (alluvium) overlying Manuherikia group lake sediments at depth beneath the surface of the proposed subdivision;
- (b) Groundwater seepages or flows were not observed in any of the test pits during site investigations;
- (c) Nearby ORC borehole data indicates that the regional groundwater table lies at considerable depth beneath this site at 25-34 m below ground level;
- (d) No evidence of ground surface slope instability has been identified on site, and this should be reassessed following earthworks design (at subdivision stage);
- (e) There is an historic mine shaft (Horn's Shaft) on an adjacent land parcel to the east of the RTRA. The shaft has been filled, but it is possible that settlement induced by seismic shaking could create a sink hole or crown hole around the perimeter of the shaft. It is recommended that no buildings are constructed and that stormwater transfer to ground does not take place within the immediate vicinity of Horn's Shaft. An increase in groundwater dissipation through these soil types beyond the current natural capacity could cause the perimeter area of the shaft to settle. A reserve area is proposed on the RTRA Structure Plan in the area potentially affected by the shaft, and in any case a rule is included to ensure that there is no development within 20m of the shaft;
- (f) Moderate to good bearing for shallow foundations is available on the outwash sand and gravel deposits;
- (g) Recommendations for batter slope angles are provided, and slopes that are required to be steeper than those described should be structurally retained or subject to specific geotechnical design;
- (h) All retaining walls should be designed using the geotechnical parameters recommended;
- (i) The outwash soils are suitable for use as engineered fill (during earthworks season and in accordance with an earthfill specification). All unsuitable soils identified in foundation excavations, particularly those softened by exposure to water, should be undercut and replaced with engineered fill during construction. Any fill that is utilised as bearing for foundations should be placed and compacted in accordance with NZS 4431:1989 and certification provided to that effect;
- (j) For detailed design purposes, it is recommended that the site is classified "Class D – Deep Subsoil" in accordance with NZS 1170.5:2004 seismic provisions;

The investigation concludes that the majority of the site is acceptably safe from geotechnical hazards. In summary, the area is suitable for the proposed land uses noting that site-specific assessments and localised mitigation measures may be necessary. This would be undertaken at the time of specific subdivision / development proposals.

## 7. Effects in relation to soil contamination

The *Preliminary Site Investigation (PSI)* prepared by e3 Scientific ([DOCUMENT 10](#)) addresses the landuse history of the site, identifies any potential contaminant risks and determines the need for any further investigation.

The PSI identifies that the majority of the site has only been used for extensive pastoral activity and it is highly unlikely this activity has impacted the soil quality to a level that would present a risk to residential activity.

Based on the findings of the PSI, further targeted investigation and management may be required in respect to the firewood processing yards and isolated areas of metal contamination associated with the miners' residence and a 'concrete feature'. These will be addressed and remediated, if necessary, at the time of subdivision consent.

Accordingly, there are no potential adverse effects arising in relation to soil contamination.

## 8. Effects on cultural values and archaeology

The cultural and archaeological values of the site are addressed in the report *Sandflat Road, Cromwell Archaeological Assessment* prepared by Origin Consultants dated November 2017 ([DOCUMENT 11](#)).

The cultural association of the site can be identified to its early association with European settlers. There is no evidence of other groups being active on the site. There are no known Māori cultural values of relevance to the site.

However, if pre-European (Māori) material is encountered in the area that is undergoing work, then all work is to cease immediately with a 20m exclusion zone established around the find. This work would be required as part of the conditions of the consent for subdivision of the land following the plan change process. A rule in the RTRA provisions requires such a condition for subdivision consents.

The report identifies the remains of two early water races, constructed in the 1870s to provide irrigation to land on Cromwell Flat. The northern race is located at the base of the escarpment through the middle of the property, and the southern race is located near the southern boundary. The races have subsequently been truncated by 20th century development on either side of the plan change site, with the remaining portions falling into disuse and being partly filled in by natural accumulation processes; both races are almost imperceptible on the site. The remains of these water races have a moderate archaeological significance, as they were part of expensive endeavours to provide water to parts of the Cromwell Flat to allow land to be farmed.

The report recommends that consideration should be given to preserving the water races during the development of the site. Any works that will modify or destroy part of either water race will require an archaeological authority under Section 44 of the Heritage New Zealand Pouhere Taonga Act (2014).

The archaeological assessment identifies that water races provide only minimal information through excavation. However, sections of the two water races should be excavated by the archaeologist in select places to provide a topographical record of the races, and this information should be added to the site record form held on ArchSite.

RTDL proposes to retain one of the races, the northern race, by including it within the open space reserve area ("Area C" within the Structure Plan) (except where it is crossed by the proposed roads). It will be necessary to commission the topographical record work and seek the archaeological authority from Heritage New Zealand, prior to any development works occurring on the site, because of the statutory requirements of the Heritage New Zealand Pouhere Taonga Act (2014).

Accordingly, any adverse effects of the Change on cultural values and archaeology will be acceptable in that one of the races will be mostly preserved in its current state and the other will be recorded.

## 9. Effects on ecological values

The site principally comprises low exotic grasses and scrubby vegetation, with some established pines near the eastern boundary of the property. There are no stands of indigenous vegetation, and no notable trees. The land has been grazed, periodically, for many decades.

The District Plan does not identify any areas of Significant Natural Value on the land (significant indigenous vegetation, habitats of indigenous fauna and wetlands). The existing District Plan's Rural and Rural Residential Resource Areas both enable, as permitted activities, farming, including grazing, ploughing, and forestry (except in the case of some tree species), and more intensive productive activities including orcharding and horticulture.

The Rural Residential land, which covers the southern half of the site (south of the escarpment), enables subdivision to a minimum lot size of 2ha as a controlled activity, which has the potential to change the ground conditions of the site considerably. The relevant matters of control for subdivision do not include assessment of ecological values.

The existing provisions of the District Plan therefore allow significant physical change to the natural resources and values of the area, without regard to any ecological values.

The proposal includes landscaping, including planting of indigenous species, within the proposed open space areas and greenways, and on the western periphery of the Resource Area. This planting is for the purpose of enhancing the amenity values of the new urban environment, but will have additional benefit to ecological values by providing new habitat for fauna, particularly bird life.

In summary, the effects on ecological values from urbanising the land will not be adverse; the effects are likely to be the same or very similar to the effects already anticipated by the District Plan.

## 10. Effects on landscape values

The assessment of the proposal on landscape values is in three parts:

- Description of the existing landscape character of the land and the wider environment;
- The change to the landscape character that would result from the plan change and the effects of that change; and
- Summary.

### 10.1 Description of the existing landscape character

The RTRA is close to the existing urban area – the employment / business area of Cemetery Road is around 1km to the east of the site, and the intervening area contains the Highlands Motorsport Park and the Speedway. These uses, including the buildings, the tracks, carparking areas, signage, and the related activities they attract, have modified the landscape significantly.

There are various rural businesses in the vicinity, adjacent to and highly visible from the highway, containing buildings, signs, outdoor storage, access and carparking, and general activity, including businesses that attract large visitor numbers arriving in buses.

There are various rural residential properties in the wider area, with dwellings and ancillary buildings, and some with farm buildings, with associated activity and “domestication”.

When viewed from the highway north of the site the urban area of Cromwell is clearly apparent, including various commercial businesses (such as large format retail activities). Various other



urban activities and rural businesses are in the field of view also, including those in the general vicinity of the racecourse.

There are numerous shelter belts, hedgerows and engineered berms which contribute to the character of the wider landscape.

The highway and other roads in the area, and the traffic that use them, as well as other infrastructural networks such as overhead powerlines (including the high voltage line south of the RTRA site) also contribute to the character of the wider area.

The wider panoramic views of the surrounding mountain ranges and hills are still broadly visible from most vantage points in this landscape; such views are not generally disrupted or adversely affected by the urban, peri-urban and rural development in the locality. However, in more localised, short-range views the landscape is not generally "open" because it is enclosed by buildings, activities, shelter rows, forestry and other vegetation.

The RTRA site itself is, by virtue of the lack of farming activity, "open" to the extent that much of the top terrace is visible from the highway and is not obscured by buildings or shelter rows, and much of the upper and lower terraces are openly visible from Sandflat Road.

The part of the RTRA site to the south of the escarpment, and the land further south of the RTRA site, are within the Rural Residential Resource Area and could otherwise be expected to be modified through the controlled activity status for subdivision to a minimum lot size average of 2ha. Such subdivision would include, inevitably, dwellings and associated buildings, fencing, driveways, shelter rows, and general change to the existing character of the landscape.

The low escarpment between the two terraces is a natural feature of the landscape which is legible and visible within the plan change area and expresses its geological origins (river erosion and terracing). The escarpment is less legible and visible further to the west (because of shelter rows and woodlots) and east (because of the speedway and the Motorsport Park).

Given the extent of landscape modification in this area, there is little remaining landscape "naturalness", and landscape has considerable capacity to absorb change without adverse effects.

## **10.2 The landscape change and the effects of that change**

The RTRA when implemented would change the character of the site: the site will lose its open ruralness and become, over time, urban. This is an inevitable consequence of growth and the expansion of urban uses into greenfield areas close to the urban-rural interface.

Urban development of the site, in accordance with the RTRA provisions, will not be alien to or out of character in the wider area, given the values and characteristics of the immediate and wider landscape as described in 11.1 above. Urban development is not an unexpected element in the landscape in this area, and the area is not remote but is highly modified, typical of a peri-urban setting.

The land itself, being flat, cannot be viewed from a wide geographic area. It is visible from the stretch of the state highway along the 300m frontage of the site and for several hundred metres east along the highway; from Sandflat Road and part of Pearson Road; and from some nearby properties.

The views of the urban development when viewed from the state highway would be softened by the 30m setback of built development from the highway and the use of this buffer area for landscaping, as shown on the structure plan and as discussed in Jasmax's Design Report ([DOCUMENT 6](#)). This buffer area and planting will also soften views of the development when viewed from the opposite side of the state highway. The buffer area will play the same role as the buffer planting area at the state highway frontage of the Motorsport Park site (which is currently planted in grape vines).

The views of the development from the northern section of Sandflat Road near the state highway will be softened by the landscape mitigation in the setback buffer area within the RTRA. The development will be visible when viewed from the remaining sections of Sandflat Road and the adjoining rural lifestyle property on the western side of Sandflat Road. This area is close to the Motorsport Park and the Speedway, as well as the production forest and the high voltage lines transecting the area further south of the site. However, it is inevitable that the urban development proposed will significantly change the landscape.

When viewed from the rural residential and rural properties to the south and west of the RTRA south of the escarpment, the currently open views across the land would, under the Rural Residential Resource Area subdivision provisions, be likely to change, with a loss of openness. The RTRA will introduce an urban intensity (lots around the periphery would be around 600m<sup>2</sup> – 1000m<sup>2</sup>), however the provisions require a 5m setback between the southern and western boundaries and a 2m wide landscaping area from the boundary, which will provide a visual screening or softening of the views of the urban development when viewed from outside the RTRA area. It also mitigates potential effects from horticulture activities (discussed below). This buffer planting is required to be carried out at the time of subdivision.

The views into the site from the orchard west of the RTRA and north of the escarpment are currently obscured by large shelter rows. The 5m separation distance from buildings and the buffer planting, to mitigate any potential reverse sensitivity effects of the urban development and the orchard operations, will also mitigate the visual effects of the development.

The landscaped Greenways through the RTRA development, and the landscaped Open Space (Area C) over the escarpment, will also, over time, visually soften the development, when viewed from viewpoints outside the RTRA area.

### **10.3 Summary of landscape effects**

The RTRA development will have a negligible effect on the wider landscape character of the Cromwell Basin. The development is not out of character with the existing highly modified, peri-urban landscape.

At the finer scale of the site and its immediate surrounds, there will be a high degree of visual change because the open terraces will be urbanised, but the RTRA provisions build in a reasonable and appropriate degree of mitigation, through the open space areas, building setbacks and buffer planting, and the Greenways. The RTRA will therefore change the landscape significantly at the localised level of the site, but any perceived adverse effects of this change on landscape values are not adverse.

## **11. Effects on nearby land uses**

Facilities and activities surrounding the site include the following:

- State Highway 6;
- Highlands Motorsport Park, on the east side of Sandflat Road;
- The Cromwell Speedway, on the east side of Sandflat Road;
- Rural-residential properties, to the north (on the opposite side of the highway), east (on the western side of Sandflat immediately adjacent to the site) and southwest (adjoining the boundary with the lower terrace);
- Farmland, including the vacant paddock south of the site and Jones Orchard west of the northern terrace.

The effects on these land uses are assessed as follows.

### **11.1 Effects on State Highway 6**

The effects on the safety and efficiency of the highway are addressed in [DOCUMENT 7](#) and in Part 4 above. The conclusion from that assessment is that the plan change is acceptable from a traffic perspective.

The effects on the landscape, as viewed from the highway, are addressed in Part 11 above. The RTRA provisions include a 30m building setback from the highway boundary. The setback area will be landscaped, providing a visual buffer into the site from the highway. The visual effects of the development will be not dissimilar to the effects of the existing urban development further to the north, where a landscape and open space strip separates the highway from the development.

The effects of the RTRA on the highway are therefore not adverse and are acceptable.

### **11.2 Effects on the Motorsport Park and the Speedway**

There is potential for reverse sensitivity effects arising from the location of the RTRA near to the existing Motorsports Park and the Speedway. These operate under existing consents which allows their lawful operation subject to meeting various conditions, including meeting noise emission limits (in the case of the Motorsports Park).

The RTRA provisions require that all titles within the RTRA are subject to a land covenant that prevents any owner from complaining about or taking any measures to prevent or hinder the motorsports and related activities from being lawfully carried out, assuming the relevant landowners agree to registration of the covenant.

Some people are more sensitive to noise and more bothered by noise than other people. Registration of the land covenant on the titles to the RTRA lots will ensure that purchasers are alerted to the potential noise of these nearby activities and make their purchase decisions with that knowledge. People sensitive to noise can elect not to buy an RTRA lot.

The legal effect of the land covenant ensures that no resident or occupier in the RTRA can complain about, or seek to prevent, the lawful operations of the existing motorsports and speedway activities.

This will ensure that any potential adverse effects arising from reverse sensitivity are avoided.

### **11.3 Effects on rural residential properties**

There are several rural residential properties close to or adjoining the RTRA site.

To the north, there is a rural residential property on the northern side of the highway opposite the Sandflat Road intersection. The visual outlook from this property out towards the RTRA site will change, in the same way that the view from the highway will change, but the effects are mitigated by the existing shelter row on the north side of the highway road reserve, the RTRA's setback area adjacent to the highway and the northern section of Sandflat Road, and the landscaping within this setback. There are no effects on the privacy of this property, and any additional noise effects on the property would be inconsequential given the existing noise effects from the highway, the Motorsport Park and the speedway, and nearby rural activities. There will be additional traffic to and from the RTRA site, using the highway and Sandflat Road, which will add to the perceived level of activity in the area, but this additional activity is not in itself an adverse effect. Additional traffic noise will be inconsequential in this environment.

Any potential adverse effects on the rural residential property to the north of the highway are therefore minor.

The rural residential property to the immediate east of the RTRA site and west of Sandflat Road. The dwelling on this property is separated to the west by a large storage area (currently occupied mostly by cars in various states of repair) and a shelter row. North of the dwelling the site is open and views of the RTRA land will be visible.

There are several rural residential properties adjoining the western boundary of the RTRA site south of the central escarpment. The visual effects on these properties are addressed in part 11 above. These effects are mitigated by the larger minimum lot size along this boundary, the 5m setback of buildings from the boundary, and the 2m landscaping buffer along the boundary. These elements of the RTRA provisions will also adequately mitigate any potential effects on the privacy of these properties. The RTRA will generate urban levels of noise, which may be perceived to be adverse, and will be different to, and may be no greater than rural noise sources and the Motorsport Park that could otherwise be expected from the area.

#### 11.4 Effects on existing rural activities in the area

The lower terrace area is opposite a production forest on Sandflat Road. The RTRA will have no effects on, nor will be affected by, the forest and related forestry operations.

The land between the southern boundary of the RTRA site and Pearson Road mostly comprises a series of flat, vacant paddocks. The 5m building setback and buffer planting will adequately mitigate any effects and reverse sensitivity effects of farming activities on this land.

To the west of the RTRA upper terrace is an established orchard (Jones Orchard). An established pine shelter row separates the orchard from the RTRA land. The New Zealand Standard 8409:2004<sup>1</sup> provides guidelines for buffer zones and shelter belts to assist in the management of activities sensitive to agrichemicals. The buffer zone guidelines are as follows:

Application method (of agrichemical)	Distance (metres)	
	With shelter	Without shelter
Boom sprayer	2	10
Air blast sprayer	10	30
Aerial application	100	300

The RTRA proposes a 5m setback from the boundary with a 2m buffer planting strip adjacent to the boundary (2m height at planting, and at an effective density) which will be adequate to mitigate the effects of spray drift or agrichemicals from the boom spray and air blast spray application techniques.

The RTRA proposal will therefore not cause any adverse effects on the health of residents within the RTRA arising from spray drift of agrichemicals from the nearby orchard operations.

The orchard may utilise winter frost fighting methods, some of which could be noisy (such as helicopters), and bird scaring devices which can also be noisy. These are not anticipated to adversely affect nearby residential users in any way other than as an occasional annoyance.

The RTRA will therefore not cause adverse effects on the nearby intensive rural production activities.

<sup>1</sup> New Zealand Standard 8409:2004 – *Management of Agrichemicals*, Part G6

## 12. Effects of the proposed neighbourhood centre on existing commercial centres

The effects of the proposed new Neighbourhood Centre within the RTRA on the vitality and amenity values of the existing commercial centres of Cromwell are assessed by M.E Consulting ([DOCUMENT 5](#)). The report specifically addresses whether the neighbourhood centre is appropriately scaled to achieve a convenience role for residents within the RTRA without adversely impacting on the role of the Cromwell town centre to serve the day-to-day/weekly shopping needs of local residents.

The report concludes that as Cromwell expands at the urban fringe, the distance to the town centre will increase and it will become less accessible, particularly for convenience shopping trips. The gradual development of a more structured centres network (particularly one that provides for convenience centres) will become increasingly practical for Cromwell.

The report estimates that the annual retail spend generated by households in the RTRA area is just under \$31.4m as at 2023 (assuming full occupancy), increasing to \$32.6m by 2028 and \$35.3m by 2038 on account of the projected increase in spend per household. That demand translates into around 5,500m<sup>2</sup> gross floor area (**GFA**) of retail and service demand in all locations (including locally within Cromwell, but also in Alexandra, Queenstown, and elsewhere) by 2023, increasing to 5,800m<sup>2</sup> GFA by 2038. A small share of that demand is associated with convenience retail and service demand – such as would be expected in a neighbourhood centre.

Providing for a neighbourhood centre in the plan change area generates a number of benefits for RTRA households, but also other nearby households and workers while still ensuring that the major share of retail and service demand is directed at other centres, including the Cromwell town centre.

The report finds that:

- a 1,000m<sup>2</sup> total GFA limit on retail and service floorspace is appropriate to sustain a functional neighbourhood centre that serves just a convenience role for the RTRA;
- a cap on any individual retail or service outlet is appropriate to ensure a mix of small scale activities;
- this size of neighbourhood centre is appropriate given the greater distance RTRA households would need to travel to meet their convenience retail and service needs, and it contributes to a more efficient urban form while avoiding more than minor, if any, adverse effects on the Cromwell town centre;
- the Cromwell Town Centre will experience net growth in sales and vitality as a result of the household growth enabled through the plan change.

The effects of the neighbourhood centre on the vitality and amenity provided by the existing Cromwell centres will therefore be acceptable.

## 13. Positive effects

The proposed Change will have the following positive effects on the environment:

- (a) The spatial expansion of urban Cromwell to meet current and future residential land needs for a wide range of residents,
- (b) The range of housing product provided for by the rules will assist in maintaining housing affordability and bringing greater residential catchment to Cromwell.

- (b) An integrated, masterplanned urban development providing for residential (including retirement) living, a small neighbourhood centre, a network of open space areas, the opportunity for a school, and suitable road and infrastructure networks.
- (c) A variety of open spaces, safe walking and cycling connections, and a high-quality building environment for living in and visiting.
- (d) A safe and efficient street network that integrates with the existing network and possible future development in surrounding areas;
- (e) A well-designed built environment that provides a high quality of amenity for residents and visitors.
- (f) A conveniently located neighbourhood centre with amenities to serve the development while complementing and not undermining the existing business centres in Cromwell, and the potential for a school to serve the immediate and wider neighbourhood.

## 14. Summary and conclusions

The foregoing assessment is summarised as follows:

- (a) The change will provide adequate land for urban expansion of Cromwell, to meet Cromwell's projected rapid population increase.
- (b) The RTRA reflects accepted industry standards for urban design and will enable a well-designed development that will be functionally linked with and complementary to Cromwell.
- (c) There are minor but acceptable adverse effects on cultural values. One of the existing historic water races will be protected by its inclusion in an open space reserve area within the masterplan.
- (d) There are no adverse effects on ecological values.
- (e) There are no adverse effects on traffic safety and efficiency.
- (f) There are no geotechnical conditions and natural hazards that would create adverse risk for the development; any risk can be adequately avoided or mitigated.
- (g) There are no soil contamination problems that would cause adverse effects on the residential environment.
- (h) Infrastructure can be adequately planned for and implemented, without adverse effects on the existing systems.
- (i) There are no adverse effects on landscape values;
- (j) Any perceived adverse effects on surrounding properties, including the Motorsport Park, the speedway, rural residential owners and rural activities are adequately avoided or mitigated.
- (k) There would be no adverse effects on Cromwell's existing commercial centres.
- (l) The RTRA will have various positive effects on the environment.

In broad summary, the proposed plan change will have no significant adverse effects on the environment; any adverse effects have been identified and methods are included in the Change for their avoidance or mitigation. The net effects of the change on the environment are, overall and on balance, positive.