

This a technical summary of the Manuherekia Catchment Management Plan.

Purpose of the Catchment Management Plan (CMP)

- ▶ Manage flows in the main stem to maintain the instream ecological values in accordance with ORC target Attribute States.
- ▶ Manage low flow limits in tributaries to maintain instream values and protect rare indigenous species. Coordinate flow restrictions in the flow management zones with a three-tiered flow limit approach.
- ▶ Manage water rationing when flows are approaching the minimum and residual flow limits.
- ▶ Falls Dam will be managed optimally to balance the need of providing flows for abstraction and sustaining minimum flows in the main stem.

Catchment Flow Management Zones

The Manuherekia catchment will comprise of three Flow Management Zones:

- ▶ Above Falls Dam Management Zone
- ▶ Manuherekia Management Zone
- ▶ Ida Valley Management Zone

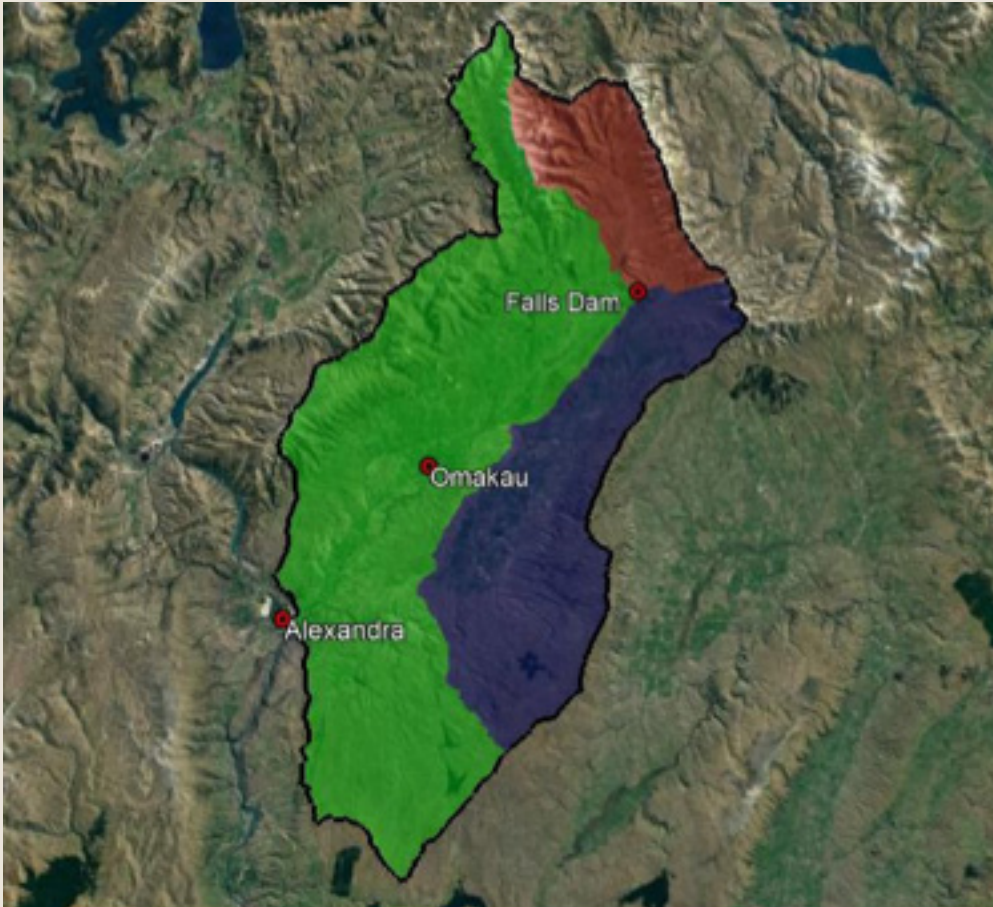


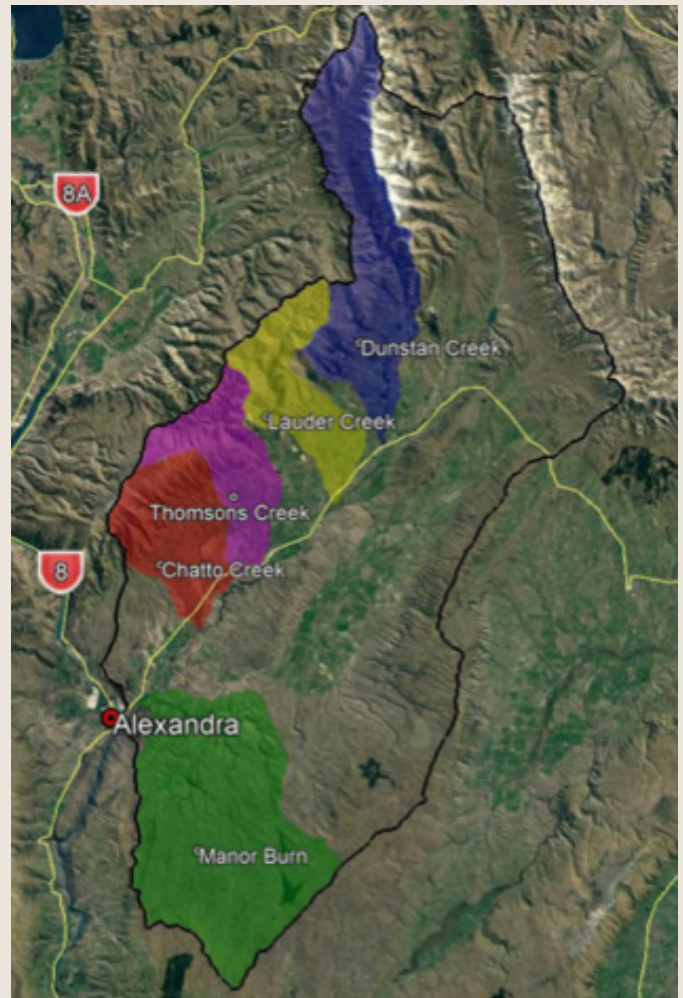
Figure 1. Falls Dam, Manuherekia River (shown in green) and Ida Valley (shown in blue) Management Zones.

Tributary Water Management Zones

The Manuherekia Management Zone will include five Tributary Water Management zones that will have separate flow restrictions for the purpose of maintaining the values identified in each tributary catchment. The five Tributary Water Management zones are as follows and shown in Figure 2 below;

- ▶ Dunstan Creek Tributary Water Management Zone
- ▶ Lauder Creek Tributary Water Management Zone
- ▶ Thomsons Creek Tributary Water Management Zone
- ▶ Chatto Creek Tributary Water Management Zone
- ▶ Manor Burn Tributary Water Management Zone

Figure 2. Tributary Water Management Zones within the Manuherekia River Management Zone.



Three-tiered approach to flow restrictions

The three tiers of flow restrictions are:

1. Manuherekia mainstem minimum flows measured at below Falls Dam, Ophir, and Campground at Alexandra as follows:
 - ▶ 0.720 m³/s residual flow at below Falls Dam
 - ▶ 0.5 m³/s residual flow at OAIC's intake
 - ▶ 0.820 m³/s minimum flow at Ophir
 - ▶ 1.1 m³/s minimum flow at Campground
2. Tributary residual flows measured in the tributary just upstream of the confluence with the Manuherekia - applied to all water permits in the tributary catchment.
 - ▶ 0.250 m³/s residual flow from Dunstan Creek
 - ▶ 0.1 m³/s residual flow from Lauder Creek
 - ▶ 0.07 m³/s residual flow from Thomsons Creek
 - ▶ 0.1 m³/s residual flow from Chatto Creek
 - ▶ 0.015 m³/s residual flow from the Lower Manorburn Dam
3. Site specific residual flows applied to individual water permits to maintain instream values immediately downstream of the point of take.

Application of flow restrictions

Under the CMP, the three tiers of flow restrictions would be applied in the Water Management Zones as follows:

1. Above Falls Dam Management Zone

– all water permits would have tier 1 and tier 3 flow restrictions applied

2. Manuherekia Management Zone

– all water permits with points of take from the main stem would have the tier 1 minimum flow at Campground applied

– all water permits in the Tributaries Management Zones would have the tier 1 minimum flows applied, tier 2 tributary residual flows applied, and any tier 3 site specific residual flow applied

3. Ida Valley Management Zone

Water permits in the Ida Valley would only be subject to tier 3 flow restrictions

NB: The Ida Valley has a dry climate and its natural discharge to the Manuherekia River during low flow periods is small. Most of the water that is used for irrigation is stored in the Poolburn and Upper Manorburn Dams that are filled during the previous years of winter and spring snow melt inflows. Hence tier 1 minimum flow limits would not be applied.

Flow monitoring sites

The minimum flows for the main stem of the Manuherekia will be monitored at the following established Otago Regional Council flow sites:

- ▶ Manuherekia at Campground
- ▶ Manuherekia River at Ophir (MS8)
- ▶ Manuherekia at Falls Dam 1000m downstream
- ▶ Manuherekia at Blackstone Hill Runs Road

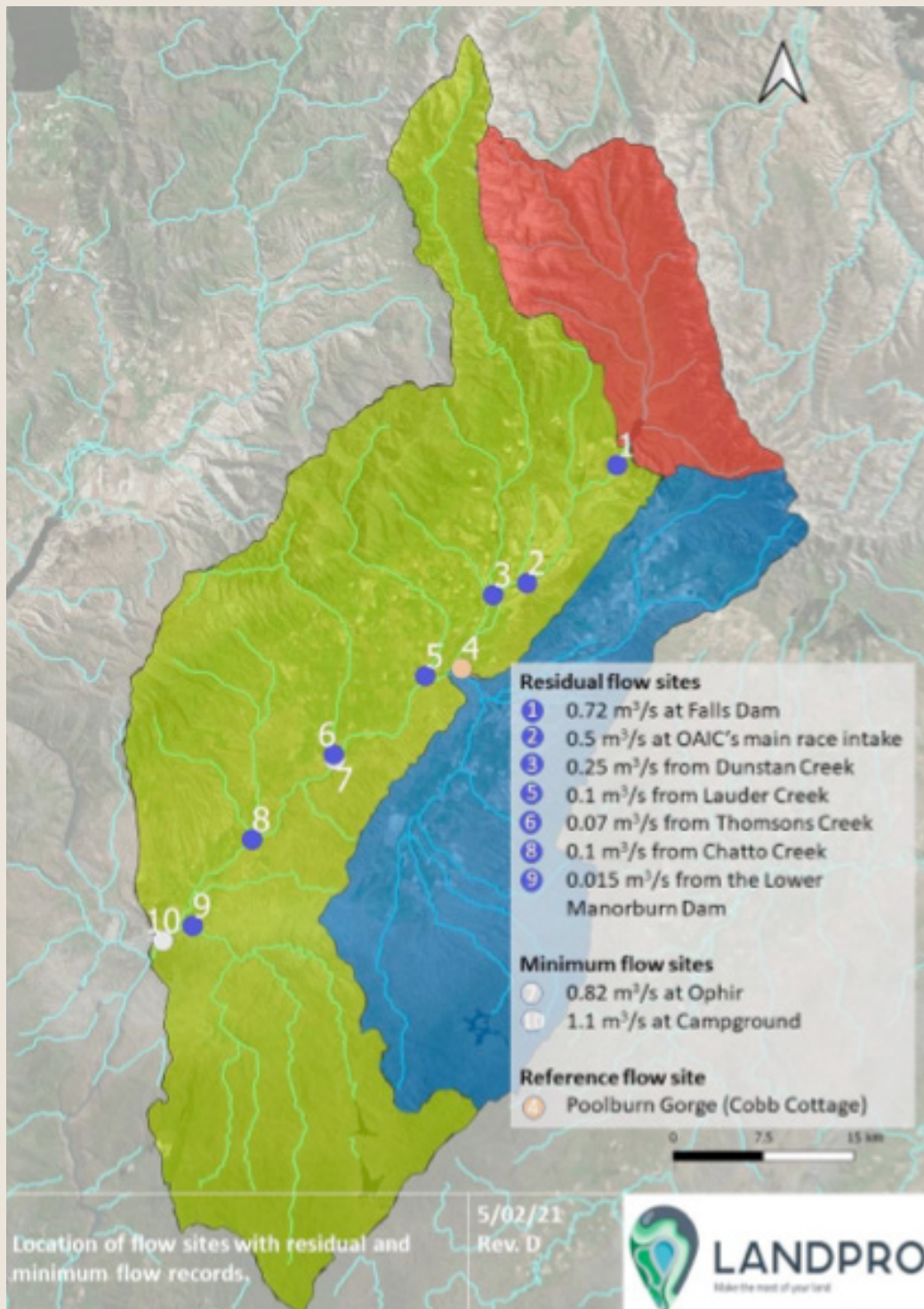
Residual flows in the tributaries will be monitored at the following established Otago Regional Council flow sites:

- ▶ Dunstan Creek at Beattie Road (*note: abstraction occurs downstream of this site so the residual will be calculated from the Beattie Road site*)
- ▶ Thomsons Creek at SH85
- ▶ Lauder Creek at Rail Trail
- ▶ Chatto Creek at Manuherekia confluence
- ▶ Poolburn River at Cobb Cottage

Manual flow gauging checks during low flow periods will be used at other residual flow sites.

Flow limits applied to Management Zones

Under the CMP the following flows limits would be applied to the Catchment and Tributary Management Zones:



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