

Fulton Hogan Land Development Ltd.

Attention Greg Dewe.

Re Parkburn Development

Central Otago.

The following is a high-level overview of the infrastructure required for the proposed Parkburn development at Pisa Moorings, Central Otago.

It should be noted that Plan Change 21 (PC21), now operative had reviewed the infrastructure requirements, but with the removal of the proposed industrial uses and increase in residential housing the infrastructure requirements have been revisited.

The development of this brown fields site will be undertaken from the south of the property (as anticipated by the District Plan provisions introduced via PC21) and will work to the north over successive years.

Earthworks:

The earthworks model has been developed in conjunction with the development of the Master Plan.

The subject site is currently an operating a gravel quarry situated north of the Pisa Moorings subdivision and abuts State Highway 6 to the west and Lake Dustan to the east.

The quarry started operation in the 1990's and is approximately 65% exhausted.

Developing an earthworks model has been complicated as 18% of the processed quarry material is "waste" and cannot be used for conventional quarry extract products. This material has been backfilled as a non-structural fill into the quarry cavities. This material, known as pea gravel, must be further processed (crushed) if it to be used as structural fill. There is circa 2 million cubic meters either buried or stockpiled on site.

The finished contours applicable to the Master Plan will require a total of 3.15 million cubic meters of earthworks, primarily cutting from the north-west of the site to the south of the site, with remediation areas of pea gravel backfill to the north-east and the east.

This is a large volume of material to move, process and place to structural fill standards and will take many years to complete. It is expected that 2 years of earthworks will be required to fill the southern stages prior to the start of the first stage civil construction.

We have undertaken preliminary consultation with the Otago Regional Council.

If the FTAA Referral Application is successful as part of the substantive application a comprehensive management plan for silt and dust controls will be prepared. This will include reference to the staging of construction.

Cove Construction:

The two Coves shown on the Master Plan are similar to those created to the south in the Pisa Moorings development.

They will be constructed deep and wide enough to allow navigation by small boats.

The proposal is to excavate the Coves but not undertake the works to breach them through the Crown Land to Lake Dunstan until later in the construction program. The contained Coves will act as Silt Retention Ponds during the initial stage of Earthworks. When the bulk of the earthworks above the Coves is complete and stabilised with grass, landscaping and hard surfaces such as roads, the Coves will be breached into Lake Dunstan.

The construction works will include the Lake front trail around the southern Cove and the bridge over the northern Cove, in conjunction with these works the landscaping of the trail and Lake foreshore will be undertaken as shown in ReSet's report appended to this application.

Works will be undertaken to ensure the Lake front trail is always available for the public.

These works will be detailed as a part of the substantive application.

State Highway 6 Access:

Carriageway Consultants Ltd in conjunction with Abley Ltd have undertaken traffic surveys and revised the traffic modelling using the CODC Cromwell traffic model. That report is appended to this application, and it states that the access to the from State Highway 6 can be undertaken in two locations as shown on the Master Plan, with appropriate existing network upgrades. As development continues there are trigger points for further upgrades to the State Highway network.

Parkburn Internal Roding Network:

A key attribute of the Masterplan is the permeable road layout, with only two cul-de-sacs.

The Master Plan shows 3 types of Internal Road:

1. **Boulevard Road:** Being the northern access to State Highway 6 which is a 28m wide road with central landscaping. When fully developed this will be the key traffic route to the local commercial hub, possible Primary School, Preschool and the multipurpose Lakeside Park.
2. **Collector Road:** These roads are 23m wide and have been designed in terms of the Queenstown Lakes District Council roading standards. Refer QLDC LDSC E18. (Note Central Otago District Council have adopted QLDC roading standards)

The Collector Roads will be acceptable as future bus routes.

3. **Local Road:** These roads are 15m wide. Refer QLDC LDSC E12.

The Master Plan shows there is one roading connection to the south, connecting the southern internal road to the property boundary opposite Pony Court in the Pisa Mooring subdivision.

There is one roading connection to the north, this is an existing legal road servicing the property to north, this will be upgraded to CODC/QLDC collector standards when developed.

The Master Plan shows 2 further possible roading connections to the north, but on the current plan there is a cycleway along the northern boundary that limits the access from northern neighbour to these roads (as currently required by CODC).

Stormwater:

It is common in the Cromwell area to discharge stormwater from roads and housing to ground. This is due to the geology which is predominately gravels and has appropriate soakage characteristics

On the subject site the area to the north that will be in earth worked in cut and it will remain with its insitu gravels. This area will be tested for soakage, and this method of stormwater disposal will be used if appropriate.

To the fill area to the south and in the cavity areas to be remediated, these areas will require structural filling. The method of "to ground" disposal of stormwater may not be appropriate and this being the case a traditional pipe network will be constructed.

The low points on the development are the central Cove and the Park Burn Watercourse. This is where any pipes stormwater will be directed and treated such as baffle boxes or downstream defenders at the lower end of the network prior to discharge into Lake Dunstan.

Woods have prepared a report as part of this application outlining Stormwater Quality Treatment and methods available to treat water prior discharge.

Wastewater and Water Supply Headworks:

Consultation has been undertaken with CODC 3 Waters as to the proposed development.

We have had a clear written response that states the CODC will provide all the headworks (and any upgrades, if required) for the development and will charge appropriate Development Contributions to cover these works.

Connections for both water and wastewater are/will be available at the intersection of State Highway 6 and Pisa Moorings Road. CODC requires the developer to extend this network circa 1000m to the Parkburn development at their cost.

Internal reticulation within the development will be at the developers cost and be approved and constructed to CODC standards.

Wastewater Network:

The internal pipe wastewater network will be reticulated throughout the development and be gravitated to the low point adjacent to the central Cove. At this location a wastewater pump station and storage facility will be constructed and a wastewater rising main up to State Highway 6. At this location on State Highway 6 the internal network will then connect to the wastewater main reticulated from Pisa Mooring Road and into the existing CODC network.

Water Supply Networks:

The water supply network will be reticulated throughout the development, complying with the required standards for flow and pressure. If required, booster stations will be constructed.

CODC requires that the Parkburn internal water supply network connect in the future to the existing Pisa Mooring network via Pony Court to provide a looped system.

Irrigation Water Network:

CODC prohibit their treated potable water from being used for irrigation of landscaped areas, reserves and residential gardens. The developer will therefore construct a bore on site and provide a non-potable irrigation network to each landscape area, reserve and residential property.

Cycle and Pedestrian Trails:

At present there is a pedestrian and cycle trail along the Crown Land Margin of Lake Dunstan. It is proposed to lower, landscape and integrate this trail into the development. This will be like the existing trail at the southern end of Pisa Moorings.

The trail It will continue in its current location but deviate in two areas as it will follow around the southern Cove and then a bridge will be provided over the northern Cove. The proposed bridge will be circa 35m long and have a width of 3m, this allows small boats to outlet from the Cove into the Lake.

A trail will be constructed along the western side of the development adjacent and running parallel to State Highway 6. In the future when development occurs to the north and south of the subject proposal, this trail will continue along SH 6. The two roads connection to SH 6 on this proposal will have shared paths that will connect to the trail form a loop for cyclists and pedestrians in conjunction with the Lake front trail

A link from this western trail to east will be constructed through the central Greenway and link onto the Lake front trail via a trail on the north side of the northern Cove.

Cycleways will be provided within the development, being a shared path on all collector roads and the Boulevard Road.

Power and Telecommunications:

At present the working quarry, offices and other uses at the northern end of the subject site are connected to power and telecommunications. This will be enhanced to service the proposed development.

Tim James
NZCLS. BSurv. RPSurv. MNZIS.
September 2025.