

**Ulrich Wilhelm Glasner for QLDC – Summary of Evidence, 15 May 2017**  
**Upper Clutha Mapping – Hearing Stream 12**

1. I have been engaged by Queenstown Lakes District Council (**QLDC**) to provide evidence in relation to infrastructure matters regarding rezoning requests in the Upper Clutha area of the Queenstown Lakes District (**District**).
2. My evidence refers to and relies on Mr Craig Barr's strategic evidence for the Upper Clutha rezoning hearing including, in particular, the part where he explains each of the zones in issue. Specifically, in terms of the type and densities of zones that the Council has recommended through its right of replies in the substantive hearings, and that are being pursued. I have used the Council's reply position on all zones, when considering whether they raise any issues from an infrastructure and servicing perspective.
3. As stormwater is addressed at the time of subdivision or actual development and is required to comply with the Council's requirements under the Subdivision Code of Practice, it is not being assessed individually in relation to the rezoning requests.
4. Of the submissions received some were quite vague in terms of what was being proposed and only a few provided infrastructure details/ assessment. This has made the task of assessing the infrastructure effects more difficult.
5. In assessing each of the site-specific submissions, I have considered three key points for water and wastewater:
  - (a) the serviceability of the area, whether it is anticipated that the site would connect to the water and wastewater networks, and the ease and cost of servicing to the expected level of service, including ongoing operations maintenance costs from additional facilities;
  - (b) the location of the area in terms of elevation, whether the area will have adequate water pressure and can drain wastewater under gravity, and if it is adjacent to similarly zoned land to support efficient servicing of the area; and

- 
- (c) if the area will be serviced by the network, whether there are any capacity issues, and if there are whether there are projects to resolve them within the Long Term Plan (**LTP**).
6. In the urban area, connection to Council services is assumed. In general, water supply is less of an issue for submitter requests for more intensive residential zoning, where residential zoning is currently proposed, because the same FW2 level of firefighting supply is anticipated. Where zoning of a higher fire risk is proposed, that increases the anticipated firefighting requirements (e.g. commercial requiring FW3). The water model results are used to assess the ability to adequately service these proposed areas. Rezoning submissions are generally opposed where there is an increased level of service from residential to commercial or Visitor Accommodation and the models show there is not capacity to meet this expectation, or they are located outside the geographic extent of the Council's model (which I return to below).
7. For properties at higher elevations, additional water reservoirs or booster pump stations may be required to provide water supply to those houses. Council would prefer efficient infrastructure networks that rationalise facilities and not promote an increase in the number of facilities to supply water at this higher elevation because of ongoing operations and maintenance costs.
8. The effect of the wastewater loads from the submitted rezonings have been assessed using the 2055 Wastewater Model. Where the model shows that there is currently no capacity within the system, I have considered whether that will be resolved through planned projects in upcoming Annual Plan reviews and LTP periods. I also identify where LTP projects are required and provided for to enable the rezoning (i.e. the upgrade is already planned). It should be noted if Council upgrades are required to service a site, the timing of this will be based on the timeframe of related LTP project or as negotiated. In some cases, there are capacity issues but the change is quite minor in terms of additional capacity requirements.
9. It is much more efficient to service new developments where capacity already exists. In my opinion, it is not in the Council's best interest for its water and wastewater networks to extend further into currently zoned rural land outside the urban limits, as this will result in increased operational, maintenance and renewal costs for QLDC over the long term.

- 
10. Mr Barr has confirmed that proposed Residential Zoning (including Rural Residential zoning) that adjoins the Urban Growth Boundary would be expected to connect to Council services (water supply and wastewater). Where this zoning can adequately be serviced with existing infrastructure, I do not oppose it from an infrastructure perspective. However, when it is unclear on the level of upgrades required to adequately service a Rural Residential Zone adjoining the Urban Growth Boundary, I oppose the zoning from an infrastructure perspective. This is because I do not support the ad hoc and inefficient extension of infrastructure, particularly where I understand there is sufficient available land within the Urban Growth Boundary to serve further residential growth.
  11. Rural and Rural Lifestyle zonings outside the scheme boundary are not anticipated to connect to the Council network but be privately serviced onsite at the developer's cost. These types of developments will not affect the Council's Infrastructure network (nor ongoing maintenance costs) and therefore I generally do not oppose this type of development.
  12. My opinions on wastewater and water are based on my knowledge of the network and the Council's computer Water and Wastewater Models. The models give a mathematical representation of the infrastructure networks (pipes, pumps, reservoirs and other assets) and the results produce information about pressure, flow and pipe capacity throughout the network. Growth models behind the water and wastewater models are currently being updated to incorporate the PDP, minor amendments are anticipated.

**Ulrich Glasner**  
**15 May 2017**