

SUBMISSION ON PROPOSED VARIATION NO. 14 – PEACOCKE STRUCTURE PLAN

Main Points

- The Peacockes branch of Mangakotukutuku Stream is a sensitive receiving environment with high biodiversity and ecological values compared to other streams within and around Hamilton City.
- The greenfield Peacockes development offers the opportunity to create a sustainable suburb that will sustain these instream values by using well known and widely accepted methods to treat stormwater at-source.
- Stormwater management that employs the stream to intercept contaminants and peak flows will fail to protect this sensitive receiving environment. Any end-of-pipe systems need to be located outside of the stream channel. The stream itself is not an acceptable location for stormwater ponds or other detention devices.

Values of Mangakotukutuku Stream

- The Peacockes branch of Mangakotukutuku Stream is the most diverse and ecologically significant stream we are aware of in Hamilton City (and the surrounding area). We are confident of this because, between us, we have sampled every major stream in the city.
- Giant kokopu and long-fin eel are threatened species that are found in good numbers in shaded parts of the Peacockes branch.
- The invertebrate fauna in most of Hamilton streams is impoverished due to natural peat drainage and agricultural development, coupled with the effects of stormwater inputs, associated pollutants and habitat modification from urban development. In the absence of urban stormwater inputs, the invertebrate fauna in the Peacockes branch is very diverse by comparison, including mayflies, caddisflies and abundant koura (freshwater crayfish). Most of these animals will not tolerate urban stormwater.
- The biodiversity and ecological values of this stream are not acknowledged in the Peacockes Structure Plan (July 2007) despite being drawn to the attention of the Council in our submission on the draft plan. As well as high ecological values in parts of the mainstem of the Peacockes branch, many very small and high-quality side branches and seepages are present in the catchment, and need to be protected from infilling, piping and stormwater disposal.

Mangakotukutuku Stream Care Group

- Our group was established in 2005 to raise awareness of, and to help to protect and enhance, the ecological values of Mangakotukutuku Stream. Our activities have included restoring part of a gully to help protect a section of stream with high aquatic insect biodiversity. This section of stream drains the Peacockes area, and the group has been active in promoting sustainable urban design principles, in particular stormwater management, that will sustain these values for future generations.

Stormwater management

- Impervious area exceeding around 5-10% is the threshold above which ecological degradation occurs in sensitive streams receiving stormwater inputs. However, if stormwaters are not directly connected to streams much greater impervious areas can be achieved without compromising ecological values. This can be achieved through dispersal-at-source solutions such as the promotion of infiltration and evapotranspiration.
- With the permeable alluvial soils in the Peacockes area, as acknowledged in the Peacocke Structure Plan (The Plan, p.21), soakage of roof runoff (e.g., in raingardens) and swales along roads would be effective ways of reducing peak stormwater flows and removing contaminants from run-off. Innovative and imaginative engineering solutions need to be implemented to deal with stormwater at source and overcome perceived issues associated with the gradient of the land.
- Zinc is a major problem in stormwater because of its toxicity to aquatic life. Hamilton City should deal with stormwater contaminants at the source by requiring that any zincaluminum roofing and fencing be painted to prevent zinc runoff.
- Once the contaminants have entered the stormwater system, stopping them reaching the stream becomes difficult. Ponds with sufficient detention periods to remove fine particulates (to which most contaminants are attached) require a lot of space. As mentioned earlier, the stream itself is not an acceptable location for these ponds or detention dams. It is misleading to propose that such instream structures would constitute “environmental enhancements” (The Plan, p.20) in an ecological context.
- The stream is not simply an “existing overland flow channel” (The Plan, p. 20) waiting to be “enhanced and supplemented” (p. 24) to provide a convenient and inexpensive solution for stormwater generated by urbanization of the Peacockes cell. It is a natural ecosystem with ecological and biodiversity values that need to be sustained through development by using well-established and accepted techniques to treat stormwater at its source.

Roading and barriers to fish migration

- Many native fish are migratory and require unimpeded passage up and down streams to complete their life cycles. Culverts, dams and drop structures can create barriers for migrating native fish, including the threatened giant kokopu. Appropriately designed culverts and other structures to enable fish passage are required.

Relationship with proposed Variation 14 and the Peacockes Structure Plan (July 2007)

- The Plan should explicitly recognise the high instream biodiversity values of the Peacockes branch of Mangakotukutuku Stream as a “key natural resource” for Hamilton City. It currently has the highest aquatic biodiversity values of any stream in or around the city, and these values will be compromised if stormwater is directly discharged into the stream.
- Treatment of stormwater at source and out of the channel is consistent with the “environmental responsibility” and “high quality urban design principles” espoused in the Vision for the Peacocke area. As it stands the stormwater component of the plan is not consistent with the low impact urban design techniques described on p.49 of The Plan.

- Potential stability issues outlined on p.22 of The Plan will in our view be exacerbated by direct discharges of stormwater to the stream. These may cause channel down-cutting and lead to bank erosion and possibly formation of erosion knick-points.
- The suggested problem of existing nutrient issues in the stream will be minor compared to the potential effects of stormwater which will replace nutrients with toxic contaminants.
- One of the main reasons the other gully areas of the Mangakotukutuku catchment are experiencing erosion leading to poor water quality discharges to the Waikato River (The Plan, p.20) is, in our view, partly due to existing urban areas discharging stormwater directly to the stream. We need to learn from this and use alternative methods to deal with stormwater where greenfield developments on permeable soils allow infiltration solutions to be implemented from the start.
- The notion of lower residential densities adjacent to gullies helping to reduce stormwater inputs (The Plan p.36), while commendable in its intention, will have little overall effect on in-stream problems created by stormwater discharges which, it appears from the current plan, will be piped from far-field directly into the stream.

Decisions sought from Council

- Explicitly recognise the special aquatic biodiversity values of the Peacockes Branch and small streamlets and seepages in gullies, and their significance to Hamilton City.
- Prohibit direct discharge of stormwater to stream channels, and require an integrated stormwater management plan that will sustain instream values.
- Require swales, raingardens and other infiltration treatment solutions to deal with stormwater at its source.
- Require zincalume to be painted or promote use of other roofing and fencing materials.
- Prohibit infilling, damming or piping of high quality seepages and streamlets.