



E-MAILED
KO 29/10/09

Hon Brian Ellis MLC
Chair
Standing Committee on Environment and Public Affairs
Parliament House
PERTH WA 6000

PUBLIC

Dear Mr Ellis

INQUIRY INTO DEEP SEWERAGE IN THE COCKBURN AREA

Thank you for your letter of 22 September 2009 inviting the Department of Environment and Conservation (DEC) to provide a submission to the inquiry into deep sewerage in the Cockburn area.

DEC views the deep sewerage infill program as an important initiative by Government to help reduce excess nutrients and bacteria entering the environment from septic systems, either through the groundwater or surface water.

Environmental impacts caused by nutrient and bacteria loss from septic systems or other more traditional sewage disposal systems can be very significant. These two contaminants can degrade the environment and threaten human use, public health, recreational contact and also endanger wildlife and native vegetation.

DEC supports programs that will help reduce excessive and unnatural nutrient and bacterial inputs to the environment, particularly near susceptible waterways, estuaries, wetlands and shallow dampland areas, on the Swan Coastal Plain and elsewhere in the State. Excessive nutrient enrichment is a recognised threat to the WA environment and was referred to as such in the *State of the Environment Report: Western Australia 2007*.

DEC provides the following comments:

- 1. Nutrient and bacterial interactions with groundwater or surface water.** The interaction of septic systems with groundwater or nearby surface drainage can be complex. The depth of aerobic and anaerobic conditions near leach lines or tanks can have major influences on how effectively septic systems operate. This can affect nitrogen reduction and bacterial degradation while in turn influencing quantities of nutrients and types of bacteria that can leach or move from the septic system, contaminating local ground and surface waters, wetlands and other nearby waterbodies.

For example, the length of time that septic systems are inundated by high groundwater, the distance between leach lines and permanently anaerobic deeper groundwater and soils, sediment composition, mineralogy and chemistry in which the septic system lies, temperature and maintenance of the septic system, can all affect nutrient concentrations, bacterial loads and risk. Further, proximity to local drainage or mobile groundwater mound hydraulics and other geological features can also influence environmental risk to, or vulnerability of, adjacent waterways and water bodies.

2. **Lack of local monitoring data.** Much of the area where the infill program has been working over the last fifteen years lacks relevant local monitoring data. As a result, DEC has generally been unable to determine local risk to environmental assets or the risk of movement of nutrients and bacteria. This has often resulted in requesting the Water Corporation or its contractors to monitor water quality when dewatering of pipeline trenches occurs. This is so that local ambient water quality levels can be documented and possible contingencies planned, if unacceptably contaminated water is proposed to be recharged into groundwaters or discharged into local waterways, wetlands and drainage lines.

Notwithstanding this, DEC recognises that in some situations local groundwater, sedimentary settings, topography and other environmental or physical factors may not warrant infill connection to sewer. The availability of locally relevant data would help define these areas and allow more strategic infilling to occur, possibly saving unnecessary expenditure within the program.

3. **Support for a planned and focused infill program.** DEC supports a targeted program that would identify remaining unsewered areas that are near environmental assets vulnerable to septic systems. This applies to inputs into both surface and groundwater environments. DEC is of the view that an infill program should be continued, incorporating environmental quality as a key objective and decision making factor.

DEC is advised that providing infill for areas of high environmental value was a consideration for the program when it began in 1994. DEC believes this consideration is equally relevant today. Furthermore, DEC would be happy to provide advice into future infilling so that this goal is maintained. For example, areas along the Serpentine and Murray Rivers and areas near wetlands in the Beeliar Region including Forrestdale Lake should remain as high priority areas. DEC recognises that much progress has been made in these areas but also sees value in completing infill in those areas to capture any remaining pockets of unsewered properties, particularly given their proximity to environmentally sensitive areas.

4. **Recent DEC experience with the infill program.** While DEC supports the long-term value of completing the deep sewerage infill program, it also recognises that local construction can generate short-term environmental problems. As mentioned above, previous DEC advice has centred on the need for contractors and the Water Corporation to monitor water quality from any construction or from the de-watering of pipeline trenches, the need to ensure return water does not harm the environment and that timing for dewatering was appropriate for minimising any harmful drawdown of groundwater. It also recognised the need to survey and assess vegetation that could be affected, including development of a vegetation replacement plan or a plan to alter construction pathways if vegetation of particular conservation significance were potentially affected. Other issues have included dust suppression, odour and access as well as management of local storage and re-fuelling and maintenance activities. There have also been cases where local contingency plans were required. In general, these short-term issues were recognised by all parties and genuine attempts were made to address them.

In summary, DEC believes the deep sewerage infill program is a strategically important program that, in the main, has assisted in protecting the environment. DEC would encourage that the continuation of the program be based on the threat to the environment posed by septic systems.

If you have any questions please do not hesitate to contact Mr Paul Brown, A/Regional Manager Swan Region, on 9423 2900.

Yours sincerely



Keiran McNamara
DIRECTOR GENERAL

29 October 2009