

# Submission : SWAN-SP-2019-4-Henley-Brook-LSP <sup>1</sup>

by Humphrey Boogaardt 2019-09-24

This submission is more than just ticking boxes and making comments on the documents provided. It is a request to the City of Swan to embrace their **climate emergency declaration** they pledged. That means that the City assesses all development applications from a climate emergency viewpoint even though not all regulations may be in place.

## General

As a community we have the right to know who instigated this report, who paid for it and what are the relationships with the various business entities doing the work, that are mentioned in this report, who owns these companies? Who are the in sections 4.3.1 mentioned “other major development participants”? How were these businesses chosen to carry out the development? Is this project a Public Private Partnership? How much funding comes from the City of Swan (CoSw) and how much from the private sector? What is the time frame? Giving as an answer that this was laid out in a report some years ago is not satisfactory. If that report exists, a summary with references should have been added to the current report as an appendix for transparency. In this respect the current documentation is very obscure, so many in the community will be very sceptical about the transparency related to this project.

The submissions period for this structural plan is too short. The plan has impacts for the length of the existence of the suburb for many decades and beyond. Asking people to digest around 700 pages in their spare time in this short one month timeframe is not fair and not transparent; it results in a bias towards the proponent. There is no opportunity to check this document in detail. No extensions were given because of a deadline on 15 October. For this reason the submission may read sketchy. Please explain why there is this hurry, since the redevelopment will take many years and we could not an extension?

We like to know who in the CoSw is assessing the submissions. Are the people independent or are they people that are working on this project, in that case how can they avoid conflict of interest? How thoroughly does the CoSw check the work of the consultants who are paid by the proponents? It is a commercial proposal and the reports by the consultants appear to be thorough. However, to get a more balanced view, on the environmental side at least, I suggest the CoSw commissions organisations like the Conservation Council of WA or Wilderness Society of WA, to do their investigation to see where there are discrepancies are, if any. Otherwise the approval process appears to be a rubber stamp issue based on advice of the proponents with some tinkering at the edges due to submissions. The reviewers should be inquisitive by nature and not just robots ticking boxes. The findings of the independent reviewers are to be debated publically.

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<sup>1</sup> *Italics texts in the submission are copied from the report.*



The Western Australia Government used to have, quoting Carmen Lawrence (2017) “... a Social Impact Unit to ensure that the social impacts of development proposals were systematically included as part of the environmental impact assessment procedures of the EPA. Although it did not have any powers based in legislation, the SIU established a close working relationship with the EPA and before its abolition by the Court government was judged to ‘have considerable success in persuading proponents to commit to social impact management measures as part of their EISs’ ...”. We suggest the CoSw should set up a similar unit along these lines in order to get environmental and societal issues properly weighed in the decision making process. This is especially important in light of the current climate crisis and the fact that the CoSw has declared that there is a Climate Emergency.

## **Locality**

With this large development and the existing suburban Henley Brook development the remaining rural blocks in Henley Brook will not fit in the new profile of Henley Brook. The balance will shift from a rural locality to a suburban locality. Therefore I suggest that the CoSw creates a new locality name for the area of the rural blocks in Henley Brook; an indigenous name? Most of these rural blocks fall within the Swan Valley Planning Act area boundaries. Then there is the issue of the postcode. We suggest that the CoSw contacts the federal government to get a separate postcode for the whole of the Swan Valley Planning Act area, as also has been suggested in the Kobelke Review. This change of locality and postcode will also benefit future census data and other statistics useful for urban planning. Mixing rural and suburban data will provide skewed information.

## **Environment**

To achieve the **Paris Agreement** target of 1.5C, all new developments are to be guided by this target. It is important from a global perspective, but also from a local perspective. The paradigms for development of new suburbs have to be modified. Even though the Triodos development (Volkskrant, 2019) is a commercial building, a lot can be learned from the circular economic approach taken (Boogaardt, 2018). The CoSw has declared a climate emergency and therefore their development paradigms have to change, or was this declaration only *green-washing*? If the Henley Brook Structure Plan Site (HB-site) is developed with the climate emergency as a central tenet and it will become a popular place to live. Amongst others because there will be no heat islands (Brown, et al., 2014). It is not a case of believing or not-believing in climate change, it is accepting the facts and the science of a changing climate. Following on from this, at a time of factual climate crisis any development proposal, both small and large has to be approached from the angle of trying to minimise any impact on a warming and drying climate in the Perth region. Business as usual is not an option. Greenhouse gas emissions are to be considered in the new development plans and even negative emissions are to be considered (Boogaardt, 2019).

In the report has been no mention of the nitrogen impact from building and traffic on the native vegetation in the development and its surrounds. In The Netherlands thousands of new suburban building plans have been put on hold because the European Court’s decision that the Dutch State does not comply with the nitrogen emission norms in regards to native vegetation (Bij12, 2019; RvON, 2019; Volkskrant, 2019). The design of the suburb needs to take into account how to abate aerial pollution (Cahill,et al., 2016; El Público, 2019; Jim & Chen, 2008; Varotsos, et al., 2012).



### **3.2.1 Flora**

*Regional vegetation mapping prepared by Beard et al. (2013) shows the site as containing two vegetation associations: Bassendean 1001, of which 22.13% of the pre-European extent remains, with 2.8% formally reserved for conservation; and Bassendean 1018, of which 7.25% of the pre-European extent remains, with 0.71% formally reserved for conservation.*

*Almost all vegetation within the site is in 'completely degraded' condition. The remaining 3.26ha includes more intact native vegetation that is present in predominantly 'degraded' condition (3ha), with smaller areas in 'good' (0.15ha) and 'very good' (0.11ha) condition.*

Of the HB-site only 0.15% is regarded to "good" native vegetation and only 1% of the HB-site has degraded or better quality native vegetation left. These are very small areas that all need to be preserved and enlarged via POS. The report states that 15% of the site is POS, now the question is how much of that is the gas pipeline reserve and how much will be native vegetation? There needs also to be a rethink how to link these POSs with fauna corridors. It would have been great if a map had been included showing the linkage to any fauna and flora corridors of in the surrounding areas.

*In addition, it is expected that some vegetation/trees will be retained in POS (including the retention of the riparian-type vegetation associated with Saint Leonards Creek) and will need to be identified and managed accordingly.*

It appears to be too easy to say it is degraded, therefore let it go. It must be possible to regenerate degraded native bushlands.

*... Overall, the site is largely dominated by areas of 'Parkland cleared' vegetation with scattered remnant native trees, as well as planted endemic and non-endemic species. No vegetation within the site has been identified as significant (i.e. threatened ecological communities or threatened flora) or of regional or local significance.*

Does fauna and flora need to be threatened or nearly extinct before they get valued? Where remnant native vegetation exists it should be restored in order to provide habitat for native fauna.

Before any development takes place is the CoSw going to catalogue all the public trees in in the development area (Giergiczny & Kronenberg, 2014)? No reference to a city wide inventory of public trees could be found on the CoSw website. Is there a public inventory of street trees in the CoSw? To calculate a value to each tree using a method like Helliwell can be used (Helliwell, 2012 & 2014). These public trees become an asset to the CoSw and should be a part of the (alternative) budget. In addition, moving to underground power will enhance the values of the trees since will not to be trimmed (Boogaardt & Brown, 2019).

### **Appendix 3 - 2.1**

*The modification and clearing of some native vegetation will be, displaced by the development areas, roadways and infrastructure. Existing vegetation will be retained where possible through the strategic location of POS and/or wider road reserves.*

*A foreshore area has been designated in association with Saint Leonards Creek, located in the eastern portion of the site. It has been accommodated within POS as part of the proposed structure plan. The intent of the landscape response and management of this area is to assist in achieving the broader objectives of the City of Swan, Department of Biodiversity Conservation and Attractions (DBCA) and Department of Water and Environmental Regulation (DWER) for waterways which includes: enhancing the ecological values of the feature (particularly compared to those currently associated with the existing trapezoidal drain); improving water quality outcomes; and maintaining the hydrological function.*

We fully support this. Of POS how much will be native restored, however the pipeline reserve should not be seen as “standard” openspace where large trees can be grown. The pipeline corridor has limitation with no trees on top of it. So more “native” areas are to be saved and upgraded to POS. The pipeline corridor has limitation with no trees on top of it.

*... Retaining the existing flooded gums, as well as other existing trees where possible.*

What does “... existing trees where possible ...” exactly mean? Does it mean : “As long as it is not in the way of development”?

Knocking down mature trees for development is lazy design by professionals without any imagination. If this development becomes a “leafy suburb”, higher prices could be generated for the developer. In a warming climate it becomes more and more important to have a tree canopy. In the new development need footpaths along both sides of roads to encourage walking in the shade provided by street trees.

### **3.2.2 Fauna**

*“... The majority of the site does not support significant fauna habitat values. However, scattered paddock and windbreak trees provide some habitat value for avifauna; including state and federally protected black cockatoo species ... However, the site is not considered to provide quality foraging habitat, and while roosting of FRTBC was observed within the site, it is likely to be part of a network of roosting sites used sporadically over the year. ...”*

We could not find any reference to criteria that make any area not suitable for rehabilitation. Neither is there any reference to criteria that spell out when an area is degraded or not.

The cited text appears to us as argument to justify removing mature trees. Even if the roosting sites are only used sporadically it is important to keep them because they are also part of a network of corridors for these and other birds to the Swan River. It is like denying people to have a holiday shack near the beach, because it is only used a few times a year. At the Upper Swan development by Satterley the CoSw has already allowed to have mature native trees to be removed, because they did not have enough nesting holes in them.

### **3.3 Hydrology**

It cannot be iterated enough that in the current climate crisis it is important to take any measures to minimize environmental impact, including water usage. A summary view of rainfall, climate trends and their likelihoods of occurring are on the interactive website setup up by CSIRO (2019).

Watertables have already been lowered in the Swan Valley (grapegrowers and other producers in the Swan Valley can confirm this based on observations of their own bores) due to the Ellenbrook and neighbouring developments that have too much irrigated open space like lawns. In the early 1990s at public meetings in the Swan Valley when the issue of impact of the Ellenbrook development on lowering water tables was raised, we were assured by state politicians (amongst others the Hon. Derrick Tomlinson MLC) that it would not be the case. The facts over time have shown a different outcome, and have been exacerbated by the reduction of rainfall over this period. Let's learn from history and reduce borewater use.

Government bores are likely to be deeper than private garden bores, the latter access the superficial aquifer(s). These superficial aquifers are the ones accessed by trees. Therefore there should be a ban on shallow bores. Any bore, shallow or deep, used to irrigate POS should be used at a bare minimum. Subsurface irrigation systems, like netafim, should be used as much as possible. Bring irrigation into the 21C with irrigation controlled from soil moisture measurements. Have an irrigation system that is operated by information about soil moisture. Soil moisture monitors linked via wifi to the irrigation controllers. For example like the "weather smart irrigation controllers" as promoted by the WA Government (WA Government, 2019).

Aquifers are described as confined or not interconnected; however, often not enough information is available to endorse these assumptions. When aquifers are not confined and/or connected any water extraction will have a major impact on the water levels. Aquifers also do not stop at the suburban boundary; water pumped out at Henley Brook could affect water levels at Wangara or Caversham. It is all too easy to extract water, but in a drying climate extra prudence has to be taken with extraction.

Most blocks in the development will be too small to warrant a **greywater** system to be installed. The idea of greywater is that it will be released subsurface for the benefit of plants and the rest will percolate downwards into the superficial aquifer. So why not install "greywater tanks (a septic tank for greywater only)" on each property, which will only collect "greywater", while the "blackwater" goes into the sewerage. This greywater then replenishes the superficial aquifer, which will benefit trees. There will be also a cost saving for Watercorp because they have to treat only "blackwater". This cost saving should flow through to the householder.

#### **4.3.1 Irrigation Requirements**

*... Existing groundwater licenses within the structure plan area ... has already or is in the process of being transferred to the control of the proponent, Progress Developments Pty Ltd, and other major developer groups active in the structure plan area. ... sufficient to meet ongoing irrigation requirements for the entire structure plan area, with the available allocation expected to increase along ...*

Is it correct to assume that the existing water licenses will be used for the development? Even though the proponent is buying up all the licences, the amount of water extraction allowed in a drying climate should be downgraded by 25%, an essential step towards sustainability.

A general comment about water licences is they should be location lot specific and in that way cannot be traded as a commodity; and water is a public good. The water trading schemes in the Murray-Darling Basin are a prime example what goes wrong when trading with water licences.

What has been proposed in the local water management structure is possibly sensitive to excess nutrients runoff from the properties. When excess nutrients get into St Leonards creek system the native vegetation downstream could be affected. What mechanisms will be in place to limit unnecessary use of fertiliser?

Also of concern is the use of pesticides, which often gets washed down the creek system which can affect native plants downstream. As general rule pesticides should be used as a last resort. If general pesticide is to be used let's use an environmentally friendly vinegar and salt mix (see Appendix 1).

#### **4.8.2 Power.**

For the CoSw to reach the 1.5C Paris target and fulfil the climate emergency declaration obligations, all energy has to come from renewable resources. Resulting in that a new development should be totally electric; for this reason a policy was introduced in The Netherlands that by 2020 no gas for new developments will be allowed and similarly policies are developed in the ACT (Mazengarb, & Parkinson, 2019). Since natural gas is not a renewable energy source new gas connections should not be allowed in the HB-site. Gas is not as environmentally friendly has been promoted, due to fugitive emissions which actually makes it produce more potent greenhouse gasses than coal (Cahill, et al., 2016; Howarth, 2014). To recap, to achieve zero emissions in the future gas cannot be used. New homes should have induction cooktops instead of gascookers and heatpumps instead of gashotwater systems<sup>2</sup>. The cost saving by not having to install a gas infrastructure and the lack of a monthly gas connection fee will easily offset the extra cost for installing an induction cooktop and heatpump hotwater systems.

In the design specification of houses a minimum of 3kW solar panels are to be installed. A site specific "community" battery system to store excess solar during the day for use at night, like in Meadows Spring near Mandurah, should be installed (Synergy, 2019).

#### **Section 4.4.3 Public Transport Network and Rail Services**

In addition to the outlined public transport network, the design of roads should incorporate to dedicated cycleways and footpaths. Create a network of cycleways linking up with Lord Street, railway stations, bus exchanges and retail hubs in the neighbouring suburbs (Ewing, et al., 2005; Gordon, 2015; Hansen, 2014).

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<sup>2</sup> The authors have no pecuniary interest in any of the technologies mentioned in this submission.

With the new Lord Street operational and the planned Metronet railway to Ellenbrook why is there a need for the extension of Henley Brook Drive southwards? Which was probably planned well before the Metronet to Ellenbrook was confirmed. It is time to scrap this road and let the existing Henley Brook Drive veers into Asturian Drive. This would save development money and frees up space.

In WA the amount of concrete used for footpaths is enormous, which means very large amounts of cement are used. To produce one ton of cement half a ton of CO2 is emitted, therefore pouring concrete everywhere is environmentally friendly. Alternatives are to be found that can be reused and recycled may even go back to slabs. This would also reduce the amount of landfill.

### **Appendix 3. Bushfire management:**

*No bushfire hazards are predicted to be located within the site following development, based on the proposed treatment and management of POS.*

Plate 1 in appendix 3 indicates that more than 30% of the HB-site falls into the bushfire prone areas. But on page *iv* of appendix 1 the report states that no bushfire hazard are predicted following development. Does this mean that besides from POS all vegetation will be flattened and a concrete jungle suburb will be created and therefore eliminating bushfire hazards?

Looking in more detail at the bushfire map on the OBRM trying to understand the criteria, there are areas known to us that we think should have be part of the BPA classification. The explanations given are not clear.

In light of a warmer climate, increased fire risk, and with the in this submission suggested increase in native vegetation kept a higher density of fire hydrants should be installed. May be there is a need for extra hydrants in a buffer zone around the HB-site.

The current (September 2019) very early start of the bushfire season in the eastern states had various bushfire chiefs suggest to build new houses to higher bushfire hazard standards, than necessary in the bushfire rating of the HB-site

### **Urban Design**

Relevant to the whole HB-site the block development should follow the natural contours, instead of the customary level of everything and building retaining walls.

It is important that new houses are to be built at the higher environmental standard than currently are the norm. Retrofitting is very expensive and can be avoided by having proper building standards. For example in The Netherlands retrofitting an average dwelling with better insulation, PV panels, changing to all electric cooking and heating, etc. costs on around €35,000. That is a lot of money that can be avoided when new dwellings are built with sustainability in mind. In addition the liveability, positive health impact, of the dwelling will have improved as well.

The built up form is different, but nevertheless it is worthwhile to study the “Fremantle Alternative” style of developments. There should be set standards of a minimum of 30% “Green space” on a block in addition to the standard openspace requirement. As in the Freo Alternative at least one large tree should be planted. Housing design needs to become more innovative. Watertanks should also be standard feature. The concept of biophilic design should be applied to the HB-site (Beatley, 2017). In light of the “climate emergency declaration” by the CoSw building codes are to be developed to suite the circular economy and until these regulations are in place any proponents are to be informed and encouraged to follow these sustainable practices (Boogaerdt, 2018; Volkskrant, 2019).

## **Conclusion**

The reports provided appear to be thorough and fits in with current practices. However, with the CoSw having signed the **climate emergency declaration**, the proponents have to go back adjust the project to make suitable to withstand the climate crisis and that is in the public interest.

## **References**

- Bij12, 2019. Programma Aanpak Stikstof: achtergrond en inhoud (= Program Tackling Nitrogen : background and content). <https://www.bij12.nl/onderwerpen/programma-aanpak-stikstof/>.
- Beatley, T., 2017. Handbook of Biophilic City Planning & Design. *Island Press, Chicago, USA*.
- Boogaerdt, H., 2018. Circular Economy in the Third industrial Revolution. [www.payung.biz](http://www.payung.biz).
- Boogaerdt, H., 2019. Negative Emissions and the Circular Economy (*to be published December 2019*). [www.payung.biz](http://www.payung.biz).
- Boogaerdt, H. & Brown, A., 2019. Tree-trimming impact on local government property management. *Property Management*.
- Brown, H., et al., 2014. Cool communities: Urban trees, climate and health. *Curtin University* <http://ehia.curtin.edu.au/advisory-services/climate-change-health/>.
- Cahill, T. A. et al., 2016. Transition metals in coarse, fine, very fine and ultra-fine particles from an interstate highway transect near Detroit. *Atmospheric Environment*.
- CSIRO, 2019. How the climate crisis will affect you – interactive map. <https://www.theguardian.com/news/datablog/ng-interactive/2019/sep/21/how-the-climate-crisis-will-affect-you-interactive-map>.
- El Público, 2019. La contaminación mata 400.000 europeos cada año (= The pollution kills 400,000 europeans a year). *From the Spanish online newspaper El Público* <https://blogs.publico.es/otrasmiradas/21537/la-contaminacion-mata-a->.
- Ewing, R., et al., 2005. Identifying and Measuring Urban Design Qualities Related to Walkability. *Robert Wood Johnson Foundation*.



- Freo Alternative, 2019. The Freo Alternative (Local Planning Scheme Amendment No. 63). [https://mysay.fremantle.wa.gov.au/Freo\\_Alternative](https://mysay.fremantle.wa.gov.au/Freo_Alternative) .
- Giergiczny, M. & Kronenberg, J., 2014. From valuation to governance: Using choice experiment to value street trees. *Ambio*.
- Gordon, D., 2015. Patrec Perspectives : Estimating the Size of Australia's Suburban Population. [http://www.patrec.uwa.edu.au/\\_data/assets/pdf\\_file/0005/2808410/OCT-2015-PATREC-PERSPECTIVES.pdf](http://www.patrec.uwa.edu.au/_data/assets/pdf_file/0005/2808410/OCT-2015-PATREC-PERSPECTIVES.pdf) .
- Hansen, G., 2014. Design for Healthy Communities: The Potential of Form-Based Codes to Create Walkable Urban Streets. *Journal of Urban Design*.
- Helliwell, R., 2012. Management of tree populations. *Arboricultural Journal*.
- Helliwell, R., 2014. Putting a value on visual amenity. *Arboricultural Journal*.
- Howarth, R. W., 2014. A bridge to nowhere: Methane emissions and the greenhouse gas footprint of natural gas. *Energy Science and Engineering*.
- Jim, C. Y. & Chen, W. Y., 2008. Assessing the ecosystem service of air pollutant removal by urban trees in Guangzhou (China). *Journal of Environmental Management*.
- Lawrence, C., 2018. Inquiry into the impacts associated with hydraulic fracture simulation (fracking) in Western Australia: Psychological and community impacts. *School of Psychological Science, University of Western Australia*.
- Mazengarb, M. & Parkinson, G., 2019. ACT to phase out gas as it launches next stage to zero carbon strategy. *Renew Economy : Clean Energy News and Analysis* <https://reneweconomy.com.au/act-to-phase-out-gas-as-it-launches-next-stage-to-zero-carbon-strategy-92906/>
- RvON (Rijksdienst voor Ondernemend Nederland (a Dutch Government Agency)), 2019. Stikstof gebruiksnorm en gebruikruimte (= Nitrogen usage norms and spatial usage). <https://www.rvo.nl/onderwerpen/agrarisch-ondernemen/mest-en-grond/gebruiksruimte-berekenen/stikstofgebruiksnorm-en-ruimte> .
- Synergy, 2019. PowerBank : The future of community energy storage is here. <https://www.synergy.net.au/Our-energy/Future-energy/PowerBank> .
- Tridios, 2019. Tridos Bank op De Reehorst (= Triodos Bank on the “De Reehorst” Estate in Zeist, The Netherlands). <https://tridosopreehorst.nl/ontwerp/> .
- Varotsos, C. et al., 2012. An observational study of the atmospheric ultra-fine particle dynamics. *Atmospheric Environment*.
- Volkscrant, 2019. Het paddestoelvormige Triodos-kantoor in Zeist is een ode aan de natuur (= The mushroom-shaped Triodos office in Zeist is an ode to nature). *A Dutch newspaper* <https://www.volkscrant.nl/cultuur-media/het-paddestoelvormige-tridos-kantoor-in-zeist-is-ee-ode-aan-de-natuur~bfd6dd01/> .
- WA Government, 2019. Media statement. <https://www.mediastatements.wa.gov.au/Pages/McGowan/2019/09/Rebate-offered-for-Perth-residents-to-install-a-weather-smart-irrigation-controller.aspx> .



## Appendix 1

### Vinegar & Salt Based Weedkiller

	Cost vinegar / Liter	Acetic Strength Commercial Product	Dilution Factor from Able Westchem product	Amount vinegar 1 L	Amount liters vinegar for 5 L sprayer	Cost per Liter
Richgro Natural weedkiller has 90grams per liter of acetic acid and 40 grams / liter salt	7.85	0.09	8.3			7.85
(that is 9% acetic acid)						
Standard cheap vinegar has about 4% acetic acid		0.04				
Able Westchem has Acetic Acid 75%FG/weedkiller; 20L \$147.35 == \$7.37 / L that 18.5 * stronger household vinegar --> = \$0.39 / L 5 L container \$46.49 = \$9.3 / L	7.37	0.75				
home made strength 10%		0.10	7.5	0.13	0.67	0.98
home made strength 15%		0.15	5.0	0.20	1.00	1.47
home made strength 20%		0.20	3.8	0.27	1.33	1.97
Able Westchem, 273 Collier Rd, Bayswater; 9471 9111						

#### Form Able Westchem's website :

Acetic Acid is commonly used as an all-natural weed killer and is understood to be the best off the shelf alternative to herbicides such as glyphosate. Acetic Acid w/ has been shown to be the optimum strength (when cost is considered) to control crabgrass, broadleaf plantain and annual weeds.

At 20% strength there is virtually no re-growth for up to 13 weeks. Levels of 5% Acetic (which are sold at supermarkets) provide only short-term control of most per suffer from high instances of regrowth.

To make a 20% solution use 2 litres of 75% Acetic and add 5L of water. This solution can be then sprayed as your would normally do as a replacement for Glyphosat treatments of 20% (or higher) quickly caused a dramatic discoloration and browning of foliage on all plant species tested. In a few hours, the foliage will become bla soaked. After 24 hours, control in all plots with an acetic acid product was 99.9%

**Use rubber gloves and goggles and other PPE when dealing with strong acids!**