

I am opposed to elements of Amendment C87 to the Golden Plains Planning Scheme as the Strategic Bushfire Risk Assessment underpinning the Inverleigh Structure plan is based on outdated strategies and old data. Further evidence of this is provided below. Without a current and realistic assessment of the bush fire risk in Inverleigh, the development of the potential growth areas discussed in the Inverleigh Structure plan should be halted. Consequently, I believe Amendment C87 should be abandoned until the Inverleigh Structure Plan and underpinning documents are accurate.

The Strategic Bushfire Risk Assessment is based on weather records dating back over least 10 years, and was developed following an outdated version of Planning Practice Notice 64. The *State Bushfire Plan 2014* concludes that “the bushfire risk in Victoria is increasing”. This suggests that the bush fire risk for Inverleigh as documented in the Strategic Bushfire Risk Assessment underpinning the Inverleigh Structure plan is underestimated because it is based on old data and outdated guidelines. Evidence provided in this submission suggests that decisions made around future development and infrastructure in the Inverleigh Structure Plan are invalid because they are not were not based on a current and sound Bush Fire Risk Assessment. These decisions should therefore be reviewed using an up to date and accurate Strategic Bushfire Risk Assessment using recent weather data and following recent guidelines. Moreover, the updated version of Planning Practice Notice 64 advises against planning developments in high bush fire risk areas and areas with one access/egress, making Growth Area 3 no longer an option for development.

Underestimation of days over 35 °C

The Strategic Bushfire Risk Assessment underpinning the Inverleigh Structure Plan refers to high fire risk days as days with strong north-west wind, low humidity, high temperature (over 35 °C). The Strategic Bushfire Risk Assessment states that these conditions are met an average of 7 days per year. Using the Bureau of Meteorology database for *Sheoaks, closest weather station at 22.2 km from Inverleigh as source*, the number of days where temperatures over 35 °C were recorded since 1990 are plotted in **Figure 1a**, with a slightly different visualisation in **Figure 1b** (data from¹).

The trendline in **Figure 1b** shows an upwards trend in the number of days where temperatures exceeds 35 °C were recorded, agreeing with Emergency Management Victoria’s statement in *State Bushfire Plan 2014* that ‘the bushfire risk is increasing’. Some simple mathematics show that the last time the 10-year average of days over 35 °C was seven was in 2007, while the 5-year average has exceeded seven days since 2006. When looking at recent years, 11 days over 35 °C were recorded in 2018; and 14 high temperature days with the temperature reaching over 35 °C have already been recorded until September 2019. Again, data sourced from the Bureau of Meteorology website ¹.

¹

http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=122&p_display_type=dailyDataFile&p_startYear=2013&p_c=-1519765258&p_stn_num=087168

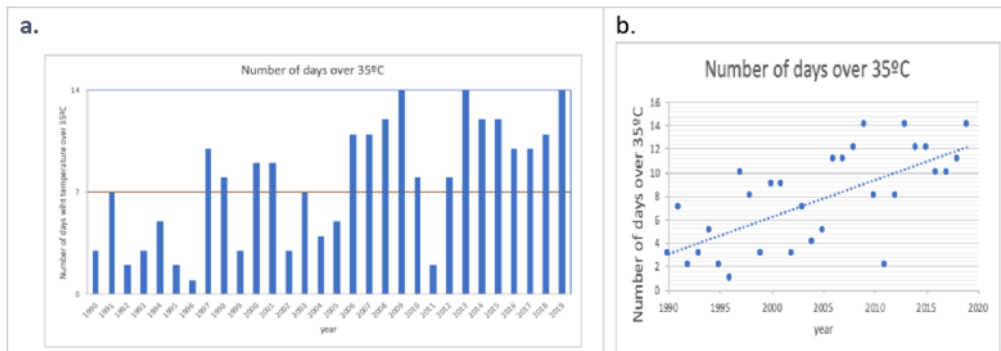


Figure 1 Number of days over 35 °C. Left: bar chart showing the average of 7 days claimed in the Bushfire Risk Assessment underpinning the proposed Inverleigh Structure Plan. Right: trendline confirming upward trend. Data for Sheoaks, closest weather station at 22.2 km from Inverleigh ¹.

The Strategic Bushfire Risk Assessment underpinning the Inverleigh Structure Plan refers to high fire risk days as days with strong north-west wind, low humidity, high temperature (over 35 °C). In addition to the gross underestimation of the number of high fire risk days, it should also be noted that none of the three bush fire cases around Inverleigh studied in the Bush Fire Risk Assessment actually occurred at high temperature days. In the Strategic Bushfire Risk Assessment, case 1 occurred under mild conditions (temperature not stated); case 2 occurred at a cool day (27°C); and case 3 occurred at a warm but not high temperature day (33°C). In the light of these three cases, the validity of the definition of high fire risk days as days with high temperature (over 35 °C) as used in the Bush Fire Risk Assessment should be questioned.

Lightening as risk

Lightening is the major cause of bush fire, and considering historic data shows a bush fire in the Common was caused by lightening, highly relevant to the bushfire risk. With global warming, the frequency of thunder storms is decreasing but 25% more of the strongest storms can be expected, accompanied with a 5% increase in lightning². This risk is not mentioned in the Bushfire Risk assessment underpinning the Inverleigh Structure Plan.

Outdated version of Planning Practice Notice 64

The Strategic Bushfire Risk Assessment prepared in support of the Inverleigh Structure Plan is based on an outdated version of Planning Practice Notice 64. The newer, 2015 version states that "Older plans and strategies that seek to justify planning proposals will need to be carefully considered if the State planning policy for bushfire impacts on the suitability of their content." I would like to suggest Golden Plains Shire takes this advice and that the bush fire risk assessment is re-done using a current approach. In the context of the Strategic Bushfire Risk Assessment prepared in support of the Inverleigh Structure Plan, it is important to consider the policy context of Planning Practice Notice 64 (2015) cited below:

"The State planning policy for bushfire seeks to strengthen community resilience to bushfire through planning decisions. Its overarching strategy is to prioritise the protection of human life over other

² https://www.giss.nasa.gov/research/briefs/delgenio_07/

policy considerations when assessing the risk from bushfire. Key strategies to guide strategic and settlement planning include ensuring that the risk from bushfire is reduced to an acceptable level.

Ministerial Direction No. 11 Strategic Assessment of Amendments applies to planning scheme amendments. It is supported by Planning Practice Note 46: Strategic Assessment Guidelines for preparing and evaluating planning scheme amendments. In preparing a planning scheme amendment a planning authority must address any relevant bushfire risk and determine whether the changes proposed will result in any increase to the risk to life, property and community infrastructure from bushfire.

The Strategic Bushfire Risk Assessment prepared in support of the Inverleigh Structure Plan fails to determine if the proposed changes, development in potential growth areas 1-6, increases the risk to life, property and community infrastructure. Specifically, the bush fire risk for Growth Area 3, indicated as the highest risk of bushfire under scenario's 1 and 2 due to its proximity to the Inverleigh Flora and Fauna Reserve (the Common) is underestimated. The impact of increasing the number of residents in the potential growth areas on the chance of current residents evacuating in a safe and orderly manner is neglected.

Due to reasons detailed in Appendix 1, the Common provides a significant bush fire risk. Despite providing a wild life refuge and unique habitat for many species including rare orchids, the Common carries a legacy of poorly executed and irregular fuel reduction burns. This has resulted in an excessive fuel load, and a high degree of connectivity of fuel at the ground and near-ground level, increasing its bush fire risk rating. Additionally, it has been subject to infestation by Acacia Paradoxa, a native wattle that is known to release highly flammable vapours during warm days. While an Acacia Paradoxa eradication program is in place, no information is provided of the efficacy of this particular program as sole bush fire mitigation strategy, nor of its impact on the bush fire risk rating of the Common. Responsibility for continuation of this program and annual Acacia Paradoxa removal targets are also not documented.

In addition to its elevated bush fire risk due to its proximity to the Common, Growth area 3 is not suitable for development as limited egress options provide an additional threat to life in case of a bush fire in the Common. The Bushfire Risk Assessment relies on Common Road and Inverleigh-Teesdale Road (provided the Twin Bridges are upgraded, details around financial and executive responsibility as well as timelines remain unclear) for access for firefighting equipment and egress for residents.

The functionality of the northern end of Common Road, the section intended to serve as fire break between the Common and Growth Area 3, is likely to be severely compromised with a bush fire in the Common, as illustrated with a map of the

area with arrows indicating the flow of smoke, ashes and ember under northerly, easterly and north-westerly wind



conditions in

Figure 2.



Figure 2 Map of the Common and Common Road with arrows indicating showing the direction ember, ash and smoke will be sent from the Common in case of a bushfire. Under Northerly and Easterly winds, the north-western part of Common Road will not be usable. With North-Westerly winds, the functionality of Common Road as a whole could be severely compromised due to smoke, ashes and ember.

In a scenario of easterly winds, Common Road will be the sole egress for all residents the northern part of Common Road will be filled with smoke and spot fires due to ember

attacks. In all bush fire scenarios, Inverleigh-Teesdale road is unlikely to provide a safe egress in the direction of Teesdale, as this will lead through the Common and hence through the fire. Under bush fire conditions with northerly to easterly winds, the section of Inverleigh-Teesdale Road connecting Common Road with The Hamilton Highway across the Twin Bridges will be exposed to smoke and ember attack, and not function as egress. With northwesterly winds, Common Road as a whole will be prone to impose bottlenecks to fleeing residents as smoke, ashes and ember will be blown along the direction of escape. Lastly, the Leigh River prevents residents from Growth Area 3 from escaping on foot. This assessment agrees with the statement made by then councillor Guinane (Bannockburn Shire) that abandoned the development of Growth Area 3 because of the cost of building an additional bridge to allow residents to cross the Leigh river, the only way to provide a safe second egress, were too high. In conclusion, Common Road will be the sole access and egress during a bush fire in the Common for current and new residents. This imposes a significant risk on human life.

Planning Practice Notice 64 (2015) recommends, *“Directing development to the lowest risk locations is the most effective way to prioritise the protection of human life. This should be the key strategy to enhance resilience to bushfire.”* The Inverleigh Structure Plan and Amendment 87, however, identify Potential Growth Area 3, for the first stage of development. Moreover, Amendment C87 specifically applies to decreasing the block size to facilitate higher population density, proposing to put more lives at increased risk. Growth area 3 is located in close proximity of the Common, a bush fire risk as documented in the Bushfire Risk Assessment. Growth area 3 will effectively have only one egress in case of a fire in the Common. The worked example provided with Planning Practice Notice 64 (2015) specifically advises to avoid areas with a single access/egress for development (please refer to “The Gully” in the example). This demonstrates that the selection of potential growth area 3 for development starting with the sale of blocks on 256 Common Road as proposed in the amendment not in-line with Victorian Planning Guidelines.

Planning Practice Notice 64 (2015) specifically mentions planners that *“development pressure may potentially conflict with the bushfire hazard”*. It is of particular concern that the proposed ‘developer-led’ development in Growth Area 3 has put the Golden Plains Council under significant pressure from the developer. This is evidenced in the minutes Ordinary Council Meeting 26 March 2019³. Residents attending this meeting witnessed a developer stating “he would walk if the minimum block size would not be decreased from 1 Ha to 1 acre”. This suggests significant pressure from the developer on the council in this developer-led development. This developer aims to increase the population density in a growth area with recognized high bush fire risk, prioritizing revenue over human life. It is uncertain if the assessments and decisions made by council and shire have made were in the best interest of the Inverleigh population, or of the developer. An enquiry should be made to establish if planning authorities were under pressure from a developer in the preparation of the Inverleigh Structure Plan, its Bush Fire Risk Assessment and Amendment C87. An independent panel should confirm the bush fire risk has been adequately and independently considered and if all potential conflicts of interest have been declared.

³ www.goldenplain.gov.au/sites/default/files/Council%20Agenda%20260319_pg1_62_0.pdf

Insection 3.2

Insection 3.2, Landscape Context, the landscape 1 and 5 km around Inverleigh is taken into account. Planning Practice Notice 64 (2015) recommends a significantly larger area, namely to assess landscape factors 1, 10 and 20 km around the assessed area. This part of the risk assessment should be re-done in-line with current guide lines.

The Draft Inverleigh Development Plan is based on the assessment of the fire risk as 'medium', based on the current Victorian Fire Risk Register. This assessment is based on Inverleigh Township, and not specific to the proposed growth areas. The bushfire scenarios presented for the proposed growth areas indicate all areas are at elevated bushfire risk compared with the township. Moreover, the Area 3 is at significantly higher risk due to its position on a hill, proximity to the Common and sole access/egress under most prevailing wind conditions. As such, the assessment of "Medium fire risk" for the Inverleigh township should not be applied to Growth Area 1-6 without considering their individual fire risks. The Bush Fire Risk Assessment underpinning the Inverleigh Structure Plan should be re-done assigning individual bush fire risks for the proposed growth areas rather than applying the bush fire risk assessment for the township to all growth areas. These individual bush fire risk assessments should then be used to prioritize (or abandon) Growth Areas based on an unacceptable risk of loss of human life in the event of a fire.

Section 3 Analysis and Evaluation

Pages 40 and 41 fail to articulate whether the risk for each of the potential growth areas 1-6 has been reduced to an acceptable level. Choices between the growth areas appear not to have been made based on bush fire risk but based on availability of land and interested developers. This contradicts with the guidelines provided in Planning Practice Notice 64 (2015), which emphasizes the priority of protecting of human life over development pressure.

The bushfire risk assessment relies on Common Road as access for firefighting equipment and egress for residents. With the functionality of the northern end of Common Road likely to be compromised in case of a bush fire in the Common Inverleigh-Teesdale road is unlikely to be accessible and safe (Figure 2). Easterly winds make Common Road the sole egress for residents as the escape route over the two ridges will be eliminated. Northerly and north-easterly winds will also invalidate Inverleigh-Teesdale Road as egress.

Common Road is unlikely provide access and egress to a fire in the Common. The example in Planning Practice Notice 64 (2015) recommends avoidance of areas with a single access/egress for development (the gully in the Gumnut example), meaning the selection of potential development area 3 as first area for development on 256 Common Road as proposed in the amendment not in-line with Victorian Planning Guidelines.

The risk of compromised access to the alternative escape routes needs to be articulated in section 3.

Considering the Common serves as only egress under severe fire conditions, it is unlikely CFA captains will send fire crews up Common Road during a bush fire in the Common. Sending crews in would not only put the crew at significant risk, the fire trucks would also hinder evacuating residents that are fleeing the fire. In the event of a bush fire in the Common, smoke and ember will further fuel panic, increasing the risk of accidents and

hence road blockages, compromising the functionality of Common Road as egress. The assessment the intersection with the Hamilton Highway is the only bottle neck on Common Road is unrealistic, as fallen trees and branches due to ember, spot fires and car accidents from panicked residents leaving their properties all can cause bottlenecks all along Common Road. This risk to human life in case of a bush fire in the Common should be articulated in more depth in Section 3.

Following the development of Mannagum Estate, water pressures along Common Road have dropped. It is not documented in the Bush Fire risk Assessment nor the Structure Plan/Amendment 97 if the water supply can guaranteed with further development in Inverleigh, particularly in growth Area 3. The consequences of this (potentially the reliance on tank water) on defending human life and property should be assessed.

Considering the 2018 Strategic Bushfire Risk Assessment for the Inverleigh Structure Plan is outdated, factually incorrect and does not comply with Planning Practice Notice 64 (2015), the assessment is not valid. This undermines the validity of the Inverleigh Structure Plan. Because of the demonstrated increase in bushfire risk over the past decades, basing the Bush Fire Risk Assessment on outdated data and recommendations resulted will have led to an underestimation of the Bush Fire Risk. The Strategic Bushfire Risk Assessment underpinning the Inverleigh Structure Plan should be re-done following recommendations articulated in Appendix 3 in Planning Practice Notice 64 (2015). In particular, the decision for intensification of development of areas where the risk to life, property and community infrastructure cannot be managed, hence Growth Area 3, should be revisited.

Infrastructure and other requirements to mitigate the bush fire risk should be clearly detailed in the new bush fire risk assessment. After this, the Inverleigh Structure Plan needs to be adjusted to incorporate recommendations from the Bush Fire Risk Assessment, including clearly articulated responsibilities between the developer, Golden Plains Shire, PV DELWP and other parties, financial management strategies and enforceable timelines. Only then, new developments can be considered, making Amendment C87 premature and inappropriate.

APPENDIX 1 BUSHFIRE RISK IN THE COMMON

Fire risk in The Common - Inverleigh Flora and Fauna Reserve

The Fire Risk in the Inverleigh Flora and Fauna Reserve is managed by DELWP/PV, with fuel reduction burns conducted in 2006, 2009, 2010 and 2015. Mistakes made during the 2009 fuel reduction burn left a legacy of dead, dry timber. With the exception of the 2009 burn which covered approximately 13% of the reserve, other burns covered <5% of the area. The 2009 Victorian Bushfire Royal Commission Report proposes an annual rolling target of a minimum of 5 % of public land (2009 Victorian Bushfire Royal Commission Report, Final Report Summary). This minimum of 5% is conservative, and below the scientifically determined effective fuel reduction burning of 10-15% (Packham, 2010, Some observations on the effectiveness of fuel reduction burning in Southern Australia). The importance of fuel management also underpins the residual risk assessment done for the West Central district by DELWP⁴. The sparse fuel reduction burns up to 2015, followed by its abandoning, illustrate that the management of the Common has fallen short of the recommended fuel reduction burn targets, and hence fails to consider protecting human life at the highest priority. Taking the risk prediction information provided by DELWP, this lack in fuel removal will have significantly increased the fire risk⁴.

The Strategic Bushfire Risk Assessment underpinning the Inverleigh Structure Plan fails to indicate fuel reduction burns are significantly behind target. The Safer Together website indicates the rapid increase in bushfire risk when fuel is not removed, as well as the time it takes before this risk drops again⁴. Considering the backlog in adequate management in the Common since the highest recorded Victorian bushfire risks in the mid-2000's, the risk imposed by the Common on the Inverleigh Community, in particular those living along Common Road, can be expected to be above the Victorian average. The Strategic Bushfire Risk Assessment also does not mention the elevated fuel load as a legacy of the 2009 fuel reduction burn as an additional risk. It also does not incorporate this shortfall in assessing the fire risk, which is merely based on a historic assessment of the Inverleigh township.

Considering the high level of connectivity of fuel at ground and near ground level, the bush fire risk of the Common should have been rates as extreme. Combined with, under prevalent bush fire conditions, only a single access/egress (Common Road) and poorly maintained tracks inside the reserve, the likelihood the CFA commander will decide against a crew to the Common in case of a bush fire. Poor maintenance of the Common has put life and property at risk.

Acacia Paradoxa

The Common contains Acacia Paradoxa, a native plant that has been on the noxious weed register. This yellow flowering shrub contains oils with a flash point at 35°C, 14° below that of eucalyptus. Its presence elevates the bush fire risk, particularly under extreme weather

⁴ <https://www.safertogether.vic.gov.au/landscapes/west-central>

conditions^{5,6}. The Bush Fire Risk Assessment reports that since 2015, fuel reduction burns in the Common were replaced by selective removal of *Acacia Paradoxa*. No details are provided on the amount of *Acacia paradoxa* removed (as tonnage and % of estimated total). Its capacity to regrow or future removal targets and corresponding responsibility are also not included in the Bush Fire Risk Assessment nor the structure plan/amendment C87. The efficacy of selective removal of bushfire prone *Acacia Paradoxa* as sole bush fire risk mitigation strategy is not reported. Searches in the public domain and scientific literature (scopus search conducted on 17/9/2019, *Acacia Paradoxa* management provides 7 hits, none in relation with bushfire management) also failed to reveal any evidence that removal of *Acacia Paradoxa* is a bush fire mitigation risk. Documents agree *Acacia Paradoxa* should be avoided in a bush fire resilient gardens (see for example^{7,8}) and that removal is the best *Acacia Paradoxa* management strategy⁹. Concerns remain that the selective removal of *Acacia Paradoxa* alone does not remove the large amount surface and near-surface fuel originating from the dead trees and other shrubs throughout the Common. The high level of connectivity of the dry, near surface fuel makes this an extreme fire hazard (Overall fuel assessment guide, Department of Sustainable Development and Environment, 2010). The removal of *Acacia Paradoxa* as bush fire mitigation risk as proposed in the Bush Fire Risk Assessment underpinning the Inverleigh Structure Plan is therefore not valid, undermining the technical validity of the document.

Track Maintenance

The Strategic Bushfire Risk Assessment indicated that the tracks in the Common are well maintained to provide access. The condition of the tracks in the Common is poor due to sparse maintenance. Parts of the Eastern and Old Teesdale tracks are eroded with >40 cm deep holes, making accessible with 4WD vehicles impossible, let alone fire trucks. These tracks will complicate effective bush fire management in the likely event of a fire in the Common.

Climate change

Despite the *State Bushfire Plan 2014* conclusion that “the bushfire risk in Victoria is increasing”, the Inverleigh Structure Plan and Amendment C87 fail to include measures to counteract this increasing risk. With climate change, the number of extreme weather events is expected to increase, as already evidenced by the increase in days with temperature over 35 °C per year, with a 10-year average in 2007, and 11 and 14 days recorded in 2018 and 2019 (until September) respectively. Lightning is the major cause of bush fire, and considering

⁵ The Effects of Alien Shrub Invasions on Vegetation Structure and Fire Behaviour in South African Fynbos Shrublands: A Simulation Study B. W. van Wilgen and D. M. Richardson *Journal of Applied Ecology* Vol. 22, No. 3 (Dec., 1985), pp. 955-966

⁶ Evaluating the invasiveness of *Acacia paradoxa* in South Africa, *South African Journal of Botany* 75, 3, 2009, Pages 485-496 R.D.Zenni J.R.U.Wilson J.J.Le Roux D.M.Richardson <https://doi.org/10.1016/j.sajb.2009.04.001>

⁷ <https://www.surfcoast.vic.gov.au/03-community/emergencies-and-safety>

⁸ https://www.naturalresources.sa.gov.au/files/sharedassets/botanic_gardens

⁹ Moore, J. L., Runge, M. C., Webber, B. L. and Wilson, J. R. (2011), Contain or eradicate? Optimizing the management goal for Australian acacia invasions in the face of uncertainty. *Diversity and Distributions*, 17: 1047-1059. doi:[10.1111/j.1472-4642.2011.00809.x](https://doi.org/10.1111/j.1472-4642.2011.00809.x)

historic data shows a bush fire in the Common was caused by lightning, highly relevant to the bushfire risk. With global warming, the frequency of thunder storms is decreasing but 25% more of the strongest storms can be expected, accompanied with a 5% increase in lightning¹⁰. This risk is not mentioned in the Bushfire Risk assessment.

Population Density

Amendment 87 proposes the decrease of the minimum block size to 1 acre, effectively increasing population density. This contradicts information discussed for Amendment 74, where limiting the size to 1 to 2 hectares is used to reduce the extent of population growth that might be exposed to bushfire risk.¹¹ Considering the bush fire risk imposed by the Common, development of Potential growth area 3 should be reconsidered, in line with Golden Plains rulings for other development areas.

Egress

Common Road and Inverleigh Teesdale Road are marked as egress in the event of a bushfire in the Common. Inverleigh-Teesdale road is unlikely to provide a safe egress towards Teesdale, as this will lead through the Common and hence through the fire. In a scenario of easterly winds, the north-western part of Common Road will be filled with smoke and spot fires due to ember attacks. Under bush fire conditions with northerly and north-easterly winds, the section of Inverleigh-Teesdale Road connecting Common Road with The Hamilton Highway across the Twin Bridges will be exposed to smoke and ember attack, and will not function as egress. With the likely scenario of north westerly winds, the functionality of whole of Common Road is in doubt as ember, ash and smoke are likely to travel down Common Road towards the Hamilton Highway. These scenarios are depicted in Figure 3. This means that under the most likely bush fire scenarios, Common Road will be the sole egress for all residents. This is a serious risk and lives are likely to be lost, particularly if a bottleneck forms anywhere on Common due to fallen branches/trees, smoke or accidents due to panicking residents evacuating. The risk of incidents during evacuation increases rapidly with the number of cars evacuating, arguing against the proposed high-density residential development in growth area 3. The risk to life and property as a result of Common Road as sole egress, nor bottlenecks caused by ember attacks, fallen trees or panicking residents are not articulated in the Strategic Bush Fire Assessment.

¹⁰ https://www.giss.nasa.gov/research/briefs/delgenio_07/



Figure 3 Map of the Common and Common Road with arrows indicating showing the direction ember, ash and smoke will be sent from the Common in case of a bushfire. Under Northerly and Easterly winds, the north-western part of Common Road will not be usable. With North-Westerly winds, the functionality of Common Road as a whole could be severely compromised due to smoke, ashes and ember.

The proposed development will increase the number of residents evacuating through Common Road (more than double). These residents will first have to flee into the bush fire affected area at the northern end of Common Road, which is intended to serve as fire break, and use this to connect with the rest of Common Road as egress. This decision. appears to put human life at risk and conflicts with planning and development policies including Victorian Planning Practice Note 64.

No Refuge in Inverleigh

The Strategic Bushfire Risk Assessment fails to mention there is no shelter/refuge in Inverleigh. Additionally, documents provided by Golden Plains Shire suggest there is a safe refuge¹¹. The current CFA advise for Inverleigh residents to travel down the Hamilton Highway to Geelong because ‘there are NO designated Neighbourhood Safer Places – Places of Last Resort at Inverleigh’¹².

It is unclear if the Hamilton Highway will allow for safe and orderly evacuation, particularly under poor visibility conditions. Additionally, no provisions are made in Amendment C87 for the development of a refuge in Inverleigh to minimize the reliance on the Hamilton Highway in the event of a bush fire. The panel discussions in Amendment 74¹¹ discuss access to a near and safe refuge as elemental to rezoning that area as residential”. If it would have been known that safe access was not available to a safe refuge within close proximity to the site, the Panel may have had a very different conclusion regarding the Amendment.”¹¹ This makes availability of a refuge quintessential for Growth area 3 as proposed in Amendment

¹¹ <https://www.goldenplains.vic.gov.au/sites/default/files/Golden%20Plains%20C74%20Panel%20Report.pdf>

¹² https://cfaonline.cfa.vic.gov.au/mycfa/Show?pageId=publicDisplayDoc&fname=2017/CIG-BSW-Inverleigh-3_00_78605.pdf

C87, still the refuge is not mentioned in the Structure Plan, Bush Risk Assessment or Amendment.

In conclusion, the Strategic Fire Risk Assessment underpinning the Inverleigh Structure Plan grossly underestimates the bush fire risk imposed by the Common. Fuel reduction burns have not been conducted in line with recommendations from the Royal Commission into the 2009 Victorian Bush Fires nor the DELWP strategic Bushfire Management Plan. Proposed alternative strategies (incl. selective *Acacia Paradoxa* removal) have not been evaluated on effectiveness as bushfire mitigation strategy, tracks in the Common have not been maintained, egress options not thoroughly evaluated. Additionally, the fact there is no bush fire shelter in Inverleigh has been overlooked.

AMENDMENT C87gpla – INVERLEIGH STRUCTURE PLAN

SUBMISSION FORM – The impact on the sustainability and health of small scale intensive agricultural businesses.

I am opposed to elements of Amendment C87 to the Golden Plains Planning Scheme for the following reasons:

Inverleigh has a diverse group of intensive small scale agricultural businesses which, given a situation where there is a lack of diversity in block sizes, are at an increased risk of a decrease in their sustainability and health. Diversity in block sizes is essential to allowing people the country lifestyle choice and encouraging the Council's own position of supporting and promoting productive and sustainable agricultural and rural enterprises (See 3.9 Golden Plains Rural Land Use Strategy). Examples of such businesses are as follows:

- a. Berry Organic in Savage Drive Inverleigh, are a mid-sized family owned and operated 5 acre Berry Organic Farm, producing premium quality Certified Organic Berries. Even though this is considered a non-traditional berry growing location, it has not deterred this family from growing outstanding quality berries. These fruits are renowned for their superior quality and flavour. Excess fruit is made into the Berry Organic range of jams and chutneys which are all certified 100% organic. Certified organic vegetables and other fruits may also be on offer.
- b. Vortex Veggies is a 16 acre certified Australian Demeter Biodynamic family owned and operated market garden since 1997, in Weatherboard Road, Inverleigh. They have consciously remained a manageable size operation so as to remain hands on in all areas of production and to maintain the integrity and quality of their produce. ABC TV's Landline featured this Inverleigh business on the 18th August 2019. With rezoning in Weatherboard Road to LRDZ areas after the broiler farm closes in 2020, it will result in most of that Road being surrounded on 3 sides by homes.
- c. Leighgrove Olives is a family owned and operated boutique olive grove, located on a picturesque stretch of the Barwon River. The 4500 tree olive grove is producing extra virgin olive oil of the finest quality. The cool climate conditions with a long, slow ripening period, together with the rich pastoral soils, results in oil of particularly deep, full flavoured characteristics. With more than ten different olive tree varieties originating from Tuscany, Greece and Spain, the range of flavours and styles of oil makes each season's harvest an exciting time at Leighgrove. Some are very fruity, whilst others are quite peppery and robust, each with its own character. In a true boutique way, the family's aim is to offer the finest quality they can achieve in a choice of styles to suit both differing tastes and culinary uses – to compliment all cooking. They are not bound by big supermarket demands for exactly the same taste each year – indeed the annual variations in temperatures, rainfall and quantities of fruit harvested are a welcome addition to the exclusive nature of their oil. The well-documented health benefits obtained by incorporating extra virgin olive oil into your daily diet is reason enough to insist on the best available product. Being a no-cholesterol monounsaturated fat, it contains the 'good fats' which in turn fight the 'bad fats'. The high level of Polyphenols are antioxidants which enhance the activity of the immune system. To ensure the retention of these, these olives are grown in accordance with modern, environmentally responsible practices, harvested at peak condition and processed quickly under modern hygienic conditions. This attention to

quality is what makes the difference to the final product – another reason to look for small, boutique grown oil where the grower knows the trees and the product intimately, and is not constrained by the demands of large-scale mass productions, where uniqueness of product is so often lost. On this same property The Farmgate Olive Shop sell home cure manzanillo or kalamata olives, sicilian olive relish, olive salt and dukkah all made by Leighgrove Olives, as well as soaps, skin creams and moisturisers, French provincial table linen and gifts.

- d. Jennings Honey is a family owned and operated bee keeping business situated on 2.3 acres in Common Road. The Jennings Family have kept bees for the past 25 years. They manage their own apiaries and their bees produce the best quality honey possible from healthy hives. Only the surplus is harvested, so the bees stay healthy. Their honey contains pollen, is 100% pure Australian and is cold extracted and a real hit with locals and visitors to the Inverleigh Lifestyle and Produce Market.
- e. Leigh River Roses is a family owned and operated business on Hopes Plains Road, Inverleigh. Grown in full sun on the fertile Western Plains of Inverleigh, Leigh River Roses grow roses the way nature intended – full of colour and full of scent. They grow a large range of garden roses in every palette, including the highly sought after, David Austin Roses. Their collection has been specifically chosen for their scent, colour and suitability as a cut flower – roses that will delight your senses – and are highly sought after at markets all around Geelong and district.

With the planned increase in population, associated with a blanket approval of 0.4 ha blocks, this will result in a lack of diversity of block size. With new homes and gardens comes the predicted increase in the frequency of use of herbicides and pesticides in people's gardens. The impact of such herbicides and pesticides on biodynamic and organic businesses from prevailing winds, will be detrimental to the health of these businesses. It would take approximately 2 years for these businesses to have their accreditation status restored if testing showed the presence of contaminating herbicides and pesticides. Therefore, overlays need to be put in place regarding the use of non-organic pesticides and herbicides within the areas of planned development.

Diversity in block sizes is essential to allowing people the country lifestyle choice (something that was repeatedly highlighted in the Golden Plains Shire Inverleigh Structure Plan 2017 survey results) and encouraging the Council's own position of supporting and promoting productive and sustainable agricultural and rural enterprises (See 3.9 Golden Plains Rural Land Use Strategy). A blanket 0.4 hectare block size results in no future businesses of these types which is contrary to both documents mentioned above.

<https://www.goldenplains.vic.gov.au/sites/default/files/RESULTS%20OF%20THE%20INVERLEIGH%20STRUCTURE%20PLAN%20SURVEY%202017.pdf>

AMENDMENT C87gpla – INVERLEIGH STRUCTURE PLAN**SUBMISSION FORM - Impact on The Common**

I am opposed to the approval of elements of Amendment C87 to the Golden Plains Planning Scheme because of the potential impact of the rezoning on the 1050 hectare Reserve known as the Inverleigh Nature Conservation Reserve, the Inverleigh Flora and Fauna Reserve or the Inverleigh Common, and locally and colloquially as The Common.

In addition, the impact of the omission in the amendment to address the anomaly of the northern section of The Common (Inverleigh-Teesdale Road and Bakers Lane) being zoned as farm land, when it is within the boundary of The Common and is looked after by Parks Victoria. The area of The Common south of the Inverleigh-Teesdale road is zoned as Public Conservation and Resource Zone (PCRZ). It is reasonable in the context of the Golden Plains Shire's stated role and goal of reassuring the Inverleigh Community of its future, that safeguarding The Common and its significance to the community by including the rezoning as part of the amendment.

I also have concerns of the complete removal of strategies related to The Common. The area is managed by Parks Victoria, however the decisions and impacts of Amendment C87 approval will affect this area and vice versa.

The Structure Plan lists the Inverleigh Community Plan as a key reference point in strategic plans and representation of the community's priorities, however it is a 2013 document, is therefore 6 years old and was, according to the document itself, to be updated every two years (page 6). There is no evidence there has been an evaluation of priorities met or of their ongoing relevance.

INVERLEIGH NATURE CONSERVATION RESERVE FLORA

Inverleigh is also famous for its 1,000ha reserve, three kilometres north of the township. **The Inverleigh Nature Conservation Reserve** was originally declared as the Inverleigh Common in the 1860's to provide a source of firewood for locals as well as somewhere to graze stock in times of drought. The wildflowers that are found there are so rare and numerous that it is now protected and it is illegal to collect firewood or graze stock. The Common is a space without facilities which is intentional.

The Common has significant and enduring connections with the Inverleigh Community and the community requires reassurance that the development of the land surrounding the Common is respectful, considers current environmental issues and aims to sustain the biodiversity of its flora and wildlife. This is captured through Recollections of The Common by three older gentlemen, whose families have lived here for generations.

West of the Inverleigh Common on Common Road is farmland that is now proposed to be subdivided into 0.4 ha blocks. Whilst wandering dogs cause problems with native animals, the major threat to native wildlife is cats. Domestic and feral cats can travel several kilometres at night or during the day. One conservative figure is that in

established suburban areas each house cat will kill at least 80 birds each year (Melbourne Zoo figures)¹

The Golden Plains Shire Amendment document and Structure Plan aims for a moderate growth of approximately 27 homes per year. If 50% of those new homes have a domestic cat, in the first year, an additional 1,080 birds will die in the first year, 2,160 in the second year, 3,240 in the third year and on, up to 20,000 per year by the end of the planned development.

Councils are introducing cat curfews and other initiatives to limit prowling and reduce the number of native animals and birds cats kill.

The City of Greater Geelong, The City of Kingston, The City of Greater Bendigo have all introduced a cat curfew between sunset and sunrise. Before implementing their cat curfew, the Mitchell Shire Council recently conducted a survey which showed 70% of people supported a cat curfew from sunrise to sunset bringing them in to line with many other Victorian Councils who have overnight or permanent curfews in place.

This problem is not isolated to Inverleigh with the Golden Plains Shire having a number of Reserves with endangered wildlife needing protection from cats as the population of cats associated with urbanisation increases.

We therefore recommend the following:

- Overlays on all properties opposite the Reserve requiring the owners of cats to install cat nets on their properties²
- And in particular Golden Plains Shire implement sunset to sunrise curfews on cats, and
- That the curfew is enforced

The Inverleigh Common is home to many native animals, all of whom are at increased risk of harm, from human population density and proximity, and loss of habitat. Road kill and maiming of our native wildlife increases each year because of an increase in the numbers of humans and their cars and their proximity to the Common. People come to live in Inverleigh to be on the land and enjoy open spaces and proximity to wildlife and nature. Police have been called out to shoot wildlife who have no chance of survival. Surf Coast Animal Rescue Service (SCARS) perform between 700- 1000 wildlife rescues a year. They have stated that there has been a 30% increase in road trauma to wildlife in the Surf Coast Shire associated with increased urbanisation.

¹ <https://mobile.abc.net.au/news/2019-09-20/nuisance-cats-in-council-crosshairs-in-adelaide/11527730?pfmredir=sm>

<https://www.abc.net.au/news/2019-09-20/nuisance-cats-in-council-crosshairs-in-adelaide/11527730>

² <https://catnets.com.au>

Rural Roads Victoria does not collect data on wildlife injuries and death associated with urbanisation and have sought this data from SCARS who do collect it.

Based on SCAR's experience and knowledge regarding wildlife injuries and death associated with urbanisation, they suggest the following remediations:

- Change Common Road's speed limit to no more than 60 kilometres an hour for the length of Common Road. This will give drivers the chance to avoid hitting wildlife and even if wildlife is hit, will give them a better chance of survival.
- A devoted 400m wildlife corridor on the westernmost part of the property 385 Common Road linking the Reserve with the River at its closest point and using the farmland west of the Inverleigh-Teesdale Road as a buffer zone, where wildlife are kept apart from human activity.

BIO-LINK

According to the Inverleigh Structure Plan³ page 41, "A Bio-link of a substantial width of at least 60 metres is to be provided as part of the proposed future rezoning and development of land in Common Road. The location of the Bio-link should align with existing vegetation and be of sufficient width to accommodate increased planting to allow wildlife to travel from the Flora Reserve to the Leigh River as well as provide for pedestrian and maintenance/emergency vehicle access and also be wide enough for the edges to be mown and maintained in a fire-risk reduced state, without compromising the sustainability of the link as a wildlife corridor."

However, according to the Biolink Alliance,

With rising global temperatures ensuring that species can move to more suitable habitat is essential. This means being able to move large distances (200-400 km). So we need to re-connect our important natural places at large scales. Maintaining genetic diversity is also vital for birds, wildlife and plants to be able to adapt to climate change. Habitats need to be connected to allow populations to share their genes. Connection of habitats is key to the long-term health of our ecosystems and the species they contain. Only through keeping them healthy will they be able to continue to provide fresh drinking water, storage of carbon, pollination of plants and crops and all the other things we rely on them for. 'Connectivity conservation' is a new and inclusive approach to address conservation on a large scale. It is about finding ways of restoring and reconnecting habitat, across land tenures, that benefits both people and nature⁴.

The 60-metre green link is not an exclusive wildlife corridor. According to SCARS there should be a major bio-link along the western boundary of the 385 Common

³

<https://www.goldenplains.vic.gov.au/sites/default/files/Inverleigh%20Structure%20Plan.pdf>

⁴ <https://biolinksalliance.org.au>

Road subdivision which would be vegetated and planted out, as this borders on rural land and where the Reserve comes closest to the River, linking the Reserve to the River. In the recognition of the effects of climate change, the Common does not have a year around water source for animals and it is essential that they are enabled to safely access to the river in periods of drought in line with what they have been doing for centuries.

ENDANGERED FLORA IN THE RESERVE

The Inverleigh Nature Reserve is home to an array of flora and fauna of which at least one species is on the endangered species list, refer Attachment 4.⁵ Prominent among the wildflowers found in the Inverleigh Nature Conservation Reserve are its orchids. There are over 50 different species here, the rarest being the Dwarf Spider Orchid. Another rare Spider Orchid which is named after the town is the Inverleigh Spider Orchid (*arachnorchis* sp Inverleigh), photos.mnr.id.au/2007/10/13/. This superb pink and white plant flowers between September and October, stands over 30 cm tall and is pollinated by a small thynnid wasp that is tricked into thinking it is mating with a female wasp of its species.

The Dwarf Spider Orchid (*Caladenia pumila*) is listed as "critically endangered" under the Commonwealth Government Environment Protection and Biodiversity Conservation Act 1999 (EPBC) Act⁶. After the orchid was first described in 1922, numbers declined until only two specimens were known in 1933. There were no records of the species from then and the species was presumed extinct. In 2009, two specimens were found in the Inverleigh Flora and Fauna Reserve. Efforts are being made to increase numbers. The main threats to the species are habitat degradation, trampling, competition with other species and a lack of genetic diversity.

IMPLICATIONS OF THE PLANNING SCHEME ON THE COMMON

The Planning Scheme amendments do not address the potential harm to the biodiversity of the Common with the rezoning and development and farming into 0.4 ha blocks. Urbanisation brings with it an increased demand for recreational space and a variety of activities in the space, such as off-road vehicle use, including motor bikes, illegal camping and gatherings in the Common which increase the risk of fires and damage to flora and the disruption to wildlife.

To mitigate the risk to wildlife and flora we therefore recommend the following, as part of the C87 Planning Scheme Amendments:

- Overlays on all properties opposite The Common requiring the owners of cats to install cat nets on their properties
- The Golden Plains Shire implement sunset to sunrise curfews on cats, and
- That the curfew is enforced
- A 173 Agreement for a Developer Contribution to establish a community-led Caretaker Program to work with Department of Environment, Land, Water and Planning and Parks Victoria to mitigate any potential problems to wildlife

⁵ <https://www.recreatingthecountry.com.au/wild-plants-of-inverleigh.html#>

⁶ <http://www.environment.gov.au/biodiversity/threatened/species/pubs/4155-listing-advice.pdf>

- and fauna associated with the urbanisation as a result of the Amendments already included in the Golden Plains Planning Scheme for 385 Common Road and 230 Hopes Plains Road, and future developments around The Common including Inverleigh and Teesdale.
- Rezoning of the north sector of the Common from farmland to Public Conservation and Resource Zone (PCRZ) as part of the Amendment C87 approval.

Submission – Retain Town Boundary

I confirm I support Strategy 1.1 of Amendment C87 to the Golden Plains Planning Scheme.

I think it is imperative the existing township boundary of Inverleigh is maintained to retain and preserve our small country town lifestyle and our small, but highly valued, community, as well as protect the natural landscape and environment features unique to our town, as we know it.

AMENDMENT C87gpla – INVERLEIGH STRUCTURE PLAN

SUBMISSION FORM – Unsewered blocks

I am opposed to the Amendment C87 to the Golden Plains Planning Scheme due to the potential leeching of septic run-off to the Leigh River (and through to the Barwon River). On Common Road, the natural slope towards the Leigh River and unsewered blocks on that slope has the risk of contamination of our local natural waterways. Recommended buffer zones from septic systems to water bodies can be as large as 300 metres¹. While the Leigh River does not fit into the highest category there is real uncertainty about the combined impact of a significant portion of the 525 unsewered properties on a slope toward the river. An investigation on the cumulative output from the septic systems and their likely impact on the river should be done as part of the assessment and viability for this development to proceed.

In the Inverleigh Structure Plan 2018 Page 36 under Section 5.4.4. Loss of Biodiversity it states “The Leigh and Barwon Rivers provide valuable environmental corridors that need to be protected from development and pollution associated with stormwater and septic seepage. The extensive floodway and floodplain assist in the protection of these river environs, as does the Environment Significance Overlay 2 – Watercourse Protection”. For this reason, we request more detail on measures that will be taken to prevent septic seepage from adding to the nutrient load of the Leigh River, a river which is already carrying the nutrient loads from the Ballarat Waste Treatment Plant.

http://www.vic.waterwatch.org.au/cb_pages/monitoring.php

In the Inverleigh Structure Plan Review (2005)² and in the 2015 Domestic Wastewater Management Plan Volume 1 Golden Plains³, particular focus was given to disposal options, most of which remains relevant and is applicable to all unsewered towns.

- The structure plan review noted that existing smaller lots within the township zone already present a problem with effluent run-off from septic systems and development of the township-zoned area will remain severely constrained without the provision of suitable sewerage management facilities. Golden Plains Shire should obtain health and environmental information for Inverleigh such as odour issues within the township and the bacterial quality of flows in street drains and that bacterial sampling and tests should be carried out in accordance with procedures specified by a NATA accredited laboratory and should analyse for total and faecal coliforms.
- Representative locations in the township should be selected, and samples taken at each location on at least three occasions. The date/time of sampling and weather conditions should be recorded for each sample, as well as any other relevant information (e.g. recent rainfall). The situation at Inverleigh has changed very little since 2005, except that there is now perhaps more pressure for close-development

¹ <https://www.epa.vic.gov.au/~media/Publications/891%204.pdf>

²

https://www.goldenplains.vic.gov.au/sites/default/files/Ref%20141_Inverleigh_Final_Report_030305_incl_appendices.pdf

³

<https://www.goldenplains.vic.gov.au/sites/default/files/Golden%20Plains%20DWMP%20Volume%201%20Final%20V5r.pdf>, page 15

and less appetite from water authorities and state government to fund reticulated sewerage.

- Site CO_LEI017 is an active water watch location, however, pH and conductivity data have only been monitored between 2007 and 2015. Over this period, minimal changes in pH were observed, but salinity peaked in Spring 2008 at 2440 $\mu\text{S}/\text{cm}$, after which it rapidly dropped to 500 $\mu\text{S}/\text{cm}$ in January 2010, and increased to ca 1500 $\mu\text{S}/\text{cm}$ early in 2015. "In general, levels below 1,500 $\mu\text{S}/\text{cm}$ are considered to have minimal short-term effect on aquatic biota. Toxicity studies suggest a step-wise impact on biota, with more and more taxa being removed from the aquatic community as salinity rises. "[http://www.vic.waterwatch.org.au/resources/Pages from WW DI MANUAL PART B p 19 35 .pdf](http://www.vic.waterwatch.org.au/resources/Pages_from_WW_DI_MANUAL_PART_B_p_19_35_.pdf)". The proximity of the most recent measurements of the Leigh river to the upper limit of 'normal salinity' at 1500 $\mu\text{S}/\text{cm}$, the Leigh can be considered vulnerable to additional nutrient load.

Data collection from this location should be resumed ASAP to ensure data-driven insight in environmental changes.

- The feasibility of sewerage for Inverleigh should be revisited, with a focus on alternative non-traditional means of collecting, natural treatment and disposal or reuse. However, there is a need to first build sufficient evidence to demonstrate that this is the best option for the town.
- The revised monitoring and audit program for existing systems (refer to Section 2.3) will lead to increased understanding of the quality of wastewater management in the town.
- We therefore request tests be conducted according to this document prior to the development on these rezoned areas within the township.
- It is also recommended that stormwater quality monitoring is undertaken and an engagement/education program is established for residents to promote best practice onsite wastewater management. Much of Inverleigh is subject to inundation from the Barwon and Leigh Rivers. Overlays showing the extent of floodway and land subject to inundation are shown in the planning scheme. Extra care is required when planning, installing and operating onsite systems on flood prone land.

These actions have not been undertaken to date, and the need for them to be undertaken remains.

[http://www.ccma.vic.gov.au/admin/file/content2/c7/Upper Barwon Yarrowee Leigh FLOWS study update.pdf](http://www.ccma.vic.gov.au/admin/file/content2/c7/Upper_Barwon_Yarrowee_Leigh_FLOWS_study_update.pdf)



AMENDMENT C87gpla – INVERLEIGH STRUCTURE PLAN SUBMISSION FORM

PLEASE PROVIDE YOUR DETAILS BELOW

Name: [REDACTED]

Address: [REDACTED]

Contact telephone number: [REDACTED]

Email: [REDACTED]

PLEASE PROVIDE YOUR SUBMISSION BELOW:

I would like to object to Amendment C87 to the Inverleigh Structure Plan because I don't feel the documents have been prepared with the best interest of the Inverleigh population at heart, as a developer-driven rushed job towards fast and non-sustainable income. This is particularly clear by the lack, transparency and assurances around developer contributions towards infrastructure and amenities. Another concern includes the severe underestimation of the bush fire risk and associated consequences due to the lack of egress. My thoughts are supported by enclosed attachments concerning

- 1 - Bush Fire Risk
- 2 - Strategic Bush Fire Risk Assessment
- 3 - Educational Facilities Impact
- 4 - Retain Town Boundary
- 5 - Inverleigh Flora and Fauna Reserve impact
- 6 - Sustainability and Health of small-scale intensive agricultural businesses
- 7 - Unsewered lots
- 8 - Sustainable development in Inverleigh
- 9 - Diversity of lot size
- 10 - Loss of faith in Golden Plains Shire



MENDHAM CATCHMENT INVESTMENT STRUCTURE PLAN

[Large area with horizontal dotted lines for text entry]

***Please attach additional pages as necessary**

Signature.....  Date 14 October 2019

Sustainable Growth in Inverleigh 01-10-2019

I am writing to you to express my concerns regarding the currently under public review for endorsement, Amendment C87 to the Golden Plains Planning Scheme.

I am of the strong belief that the proposed amendment does not provide enough protection to ensure the Inverleigh town and surrounding areas maintain their unique attributes that makes it the desirable place to live and visit it has been and is today.

In particular but not limited to, the proposal to reduce the minimum block size to a blanket of 0.4 hectare is most concerning.

The proposed density of future developments has the potential to negatively impact on the environment, flora and fauna of the areas identified for future development and beyond. These identified future development areas will directly impact on the natural waterways, being; the Leigh River, Native Hut Creek and ultimately downstream to the Barwon River, as these water ways are either directly adjacent to the sites identified or directly downstream of the sites.

The Corangamite Waterway Strategy (CWS) 2014-2022 (Corangamite Catchment Authority being the governing authority responsible for the management of these waterways) details the current condition of the Barwon catchment basin (the catchment area that the proposed above-mentioned changes will impact) as being the worse of the two worst catchments of the four basins they control. It is interesting that the other basin of concern is the Moorabool Basin which also travels through the Golden Plains Shire (GPS) and is also impacted by significant population growth. The Barwon Basin (including Leigh Zone and the Mid Barwon Zone) was part of the statewide Index of Stream Condition (ISC) program that is an integrated snapshot of the condition of rivers, creeks and estuaries and was undertaken in 2010 which forms the basis for the condition reports that are referenced below and taken from the CWS. The investigations revealed that stream conditions across the Corangamite region varied, with the heavily forested Otway Coast basin in good and excellent condition, but with the Barwon basin having 17% at a very poor condition, 41% at poor condition, 37% at moderate condition, 4% at good condition 0% excellent and 1% insufficient. This compares to the average across

the 4 basins under CCA management; 13% Very poor, 23% poor, 45% moderate, 7% good, 11% excellent and 1% insufficient data.

The CWS describes the Leigh and Barwon Rivers and their tributaries as *“High Value and Priority Waterways”* with values of *“Significant Ecological Vegetation Classes, Significant bird species and important bird habitat, provides support for biodiversity including many species of fish and birds, remnant native vegetation and flagship species including Platypus and recreation, including picnicking, sightseeing, walking tracks and non-motor boating.”*

Also recognising the Key threats to the waterways as *“Altered flow rates, eroded banks, damaged riparian vegetation and reduced water quality through sedimentation and effluent contamination”*.

So, significant indicators that our local waterways systems are already under pressure without the additional potential impacts that these developments will bring.

The following factors will impact:

- 1) **Storm water runoff**; dramatically altered by the changes to the land by buildings, roads and other infrastructure and due to the altered natural flows of the landscape. Volumes and flow rates will be dramatically altered by the fact that the stormwater produced from the development sites will be concentrated to specific drainage systems not natural to the waterways (rivers and creeks), that will receive the stormwater drainage outputs.

Increase in pollutants and sediments within the stormwater due to population growth (human involvement) and what that brings with it (chemicals, plastic waste, animal waste and the like). This is also likely to be exacerbated by the change in weather events attributed to climate change. Forecasts from Bureau of Meteorology predict more violent weather events in the future where storms will be more intense in both their delivery and volume. In turn this will also impact on the ability of the waterways to cope with the stormwater delivered into the areas of development and ultimately the streams in larger volumes than ever received, now proposed to be directed into built systems that will change the stream shape and flows forever.

2) Leaching of effluent from wastewater systems; the septic wastewater management is governed by the EPA. But all waste water management systems are assessed and approved on an individual application, site by site, in conjunction with the Building permit application and managed by the Council Health surveyor. The Health Surveyor checks the proposed system against the EPA guidelines and Council's wastewater management policy. What's not accounted for in these systems performance is the waste sediment residue that remains in the ground once the moisture is evaporated. The residue made up of nutrients and salts as a result of the use of household chemicals, like washing powder and detergents.

Wastewater dispersal must be irrigated to not exceed the optimum water and nutrient requirements of the vegetation within the premises. Nutrient and organic uptake application rates are taken from EPA's Publication 168, Guidelines for Wastewater Irrigation, April 1991.

The guidelines and criteria followed for the design of proposed wastewater effluent dispersal area are based on EPA's Code of Practice for Onsite Wastewater Management, Publication 891.4.

The purpose of which is to protect public health and the environment. To this end it is a requirement of State Environment Protection Policy (Waters of Victoria) 2003, that wastewater performance minimum and maximum daily volumes that can be effectively treated on the property.

The risks that are associated with wastewater management is that while the system/s may be designed to perform at the required level to meet the needs of the site and anticipated use levels, the actual installed system may not perform at the designed performance levels, or not be maintained to ensure ongoing required performance levels. These systems require yearly and 3-5 yearly maintenance regimes to ensure ongoing performance levels are maintained. This maintenance requirement is not a mandatory requirement. There for property owners are not aware of this maintenance requirement, so not something that would be undertaken by the householder.

The reduced performance outcomes affect the system's ability to cope with:

- large shock loads or surge flows
- toxic substances like bleach, oil, paint thinners etc.

- being switched off for 1 week, 1 - 3 months or no inflow for 1 week or more.

The risk of effluent leaching to waterways is then multiplied by the size of the developments and density of these developments and is often only realised when it's developed, completely built out some years after and the developer long gone, along with his bags of money and no accountability.

In summary; I am not opposed to Inverleigh's development into the future, but growth of the population needs to be sustainable for both the environment and amenity of the area, that all future development takes into account the uniqueness of our town and enhances it and the surrounding district.

Council needs to demonstrate within the Inverleigh Town Structure Plan (ITSP) Amendment C87 GPLA, that developers will be made accountable to meet all requirements associated with environmental impacts of development of land within the GPS jurisdiction.

Developers need to prove that they have put appropriate protections in place to ensure;

- That the natural environment is total safeguarded by appropriate mitigation measures addressing all hazards to waterways, natural land, flora and fauna. This critical assessment and mitigation plan should be mandatory and referenced within Amendment C87 GPLA.
- That individual block sizes are large enough to cope with waste water impacts of the total development holistically, with no potential to have a detrimental impact on waterways both locally and downstream. I suggest a minimum lot size of 1 hectare be adopted within the Amendment C87 GPLA. This is currently and traditionally the minimum size of allotments in this zoning in and around Inverleigh and will maintain a consistent balanced approach to growth.
- That the infrastructure that is delivered as part of the built development; sealed roads, pedestrian paths, stormwater drainage systems, etc, must meet a set standard of design and built quality, to a minimum useful life of 50 years. This can be achieved by using the Infrastructure Design Manual, now adopted by Golden Plains Shire (2016), as the minimum standard for infrastructure design. This standard should now be referenced within Amendment C87 GPLA.

- That land release is restricted to ensure the designated development is providing building opportunities appropriate to Inverleigh's stated moderate growth goal of 27 homes per year. This should be controlled by staged releases of land over this period and should also be referenced within Amendment C87 GPLA.

AMENDMENT C87gpla – INVERLEIGH STRUCTURE PLAN

SUBMISSION FORM – Unsewered blocks

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In the Inverleigh Structure Plan 2018 Page 36 under Section 5.4.4. Loss of Biodiversity it states “The Leigh and Barwon Rivers provide valuable environmental corridors that need to be protected from development and pollution associated with stormwater and septic seepage. The extensive floodway and floodplain assist in the protection of these river environs, as does the Environment Significance Overlay 2 – Watercourse Protection”. For this reason, we request more detail on measures that will be taken to prevent septic seepage from adding to the nutrient load of the Leigh River, a river which is already carrying the nutrient loads from the Ballarat Waste Treatment Plant.

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In the Inverleigh Structure Plan Review (2005)² and in the 2015 Domestic Wastewater Management Plan Volume 1 Golden Plains³, particular focus was given to disposal options, most of which remains relevant and is applicable to all unsewered towns.

- The structure plan review noted that existing smaller lots within the township zone already present a problem with effluent run-off from septic systems and development of the township-zoned area will remain severely constrained without the provision of suitable sewerage management facilities. Golden Plains Shire should obtain health and environmental information for Inverleigh such as odour issues within the township and the bacterial quality of flows in street drains and that bacterial sampling and tests should be carried out in accordance with procedures specified by a NATA accredited laboratory and should analyse for total and faecal coliforms.
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²

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³

<https://www.goldenplains.vic.gov.au/sites/default/files/Golden%20Plains%20DWMP%20Volume%201%20Final%20V5r.pdf>, page 15

and less appetite from water authorities and state government to fund reticulated sewerage.

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These actions have not been undertaken to date, and the need for them to be undertaken remains.

[http://www.ccma.vic.gov.au/admin/file/content2/c7/Upper Barwon Yarrowee Leigh FLOWS study update.pdf](http://www.ccma.vic.gov.au/admin/file/content2/c7/Upper_Barwon_Yarrowee_Leigh_FLOWS_study_update.pdf)

Submission – Retain Town Boundary

I confirm I support Strategy 1.1 of Amendment C87 to the Golden Plains Planning Scheme.

I think it is imperative the existing township boundary of Inverleigh is maintained to retain and preserve our small country town lifestyle and our small, but highly valued, community, as well as protect the natural landscape and environment features unique to our town, as we know it.

Structure Plan Submission – Educational Facilities Impact

I am opposed to elements of Amendment C87 to the Golden Plains Planning Scheme as it does not demonstrate sustainable development by providing adequate infrastructure and services, specifically in relation to the educational facilities in Inverleigh.

The number of children living in Inverleigh, and therefore the number of children wishing to attend Inverleigh Primary School, will increase by a minimum of 30% but easily up to 60% over the duration of the Structure Plan, yet there are no definitive commitments made to accommodate this growth; nor the demand new families will place on the Kindergarten.

The 2018 Inverleigh Primary School Annual Report states "There are 10 classrooms, accommodating our current school enrolment of 212 students. Most classrooms are grouped in composite grade level communities, with collaboration spaces, and connecting decks. The average class size in Grades 3 to 6 is 23 students. In Grades 1 & 2 the average class size is 21 students. The Prep students are housed in the Mod 5 building with two classes of 15 students. An additional classroom was added this year to accommodate the growing student population and to reduce class sizes across the school, as this had been identified as a priority. Smaller class sizes allow classroom teachers to differentiate effectively to meet the needs of all students."

Data provided by the Victorian Department of Education and Training for 2018 shows the average All Primary Class size is 22.2 students; the average for Prep is 19.4 students; the average for Years 1 & 2 is 21.2 students and the average for Years 3 to 6 is 23.4 students (Attachment 1).

Pleasingly, Inverleigh Primary School currently has slightly smaller than average class sizes, which the School has specifically identified as important, however I am concerned that this will change for the worse, if the Structure Plan is implemented.

Whilst the Structure Plan outlines that at least 430 houses are required in Inverleigh in the next 15 years, 525 lots are proposed to be built on Future Growth Areas 1, 2 and 3 alone. The additional number of houses proposed for Future Growth Areas 4, 5 and 6 is not quantified and could easily run into the hundreds given the land area of these sites.

The Structure Plan states that in 2016, 45% of household in Inverleigh were couples with children and a further 7% were single parent families with children"; over 50% of houses in Inverleigh currently have children. The Structure Plan states that "...the most common household type moving into the township 2006-2016 was couples with children...", furthermore "in 2016, the households with children (couple or single parent) were predominately young families: 57% had young children (under 15 years)...."

Based on the above figures, at least 50% of the 430 new households (215) will have children and 57% of these will be "young" children (123). 123 divided by 15 (to account for the age range), multiplied by 8 (children are at primary school between the ages of 5 and 12) equals 66 students. At an absolute minimum (given these calculations assume only a single child per household, and are only based on the number of houses "required" in Inverleigh vs the number of households the Structure Plan proposes to make available for development), there will be an 66 additional children (30% increase) or an additional three classrooms worth of children wanting to attend Inverleigh Primary School, yet there are no definitive provisions made to accommodate them. Should families move to Inverleigh and have two children, numbers of children wishing to attend the Primary School could increase by up to 60%.

The Structure Plan states that even though the school is relatively constrained in terms of enabling growth, there are no plans to relocate the Primary School. The School and Council have been working with the neighbouring Church regarding land for expansion and additional portables but the Structure Plan does not confirm anything from these discussions.

"Additional land would be available with the relocation of the tennis courts to the Inverleigh Recreation Reserve" yet "The relocation is hampered by the cost of providing new tennis courts and a lack of funding opportunities

for tennis facilities.” Further in the Structure Plan it states that “Continued moderate growth of the town will generate a requirement for a wide range of local infrastructure including...potential relocation of the tennis courts...”, yet in the next paragraph under the heading “List of infrastructure upgrades required for the continued growth of the township: ...Relocation of the tennis courts to the recreation reserve”. The Structure Plan is contradictory and needs to be amended to clarify the Council’s position in relation to the tennis courts and thus the availability (or not) of additional space at the current School location.

The Structure Plan states that “The School Woodlot, located on McCallum Road and Railway Street....provides opportunity for expansion of the school, if required”. This option implies that if the school ran out of space at its current location, which it will if the tennis courts are not relocated or the Church does not give up land, the School will “expand” and operate over two campuses; one in the current location, the other on McCallum Road. If the Primary School was to operate over two campuses this would create a multitude of issues to the detriment of the families in Inverleigh.

Assuming campuses would be split by year group, the children would not have the same experience as other children in a Prep to Year 6 primary school; it’s likely they’d be the only government schooled children in regional Victoria in this situation. Younger and older children, including siblings, would not be able to support, learn and play with each other. Children would likely need to move between the campuses meaning they would need to cross the Hamilton Highway and a train line with no barriers. The administration and staffing costs of running two campuses would be higher.

Alternatively “expand” the school could mean relocate completely to the new site; this would come with equally significant concerns, namely the cost of building a new school and the loss of history if the current school building was no longer our school.

A further pressure compounding the schools’ limited space is that should the Kindergarten run out of space, the long-term option is to co-locate with the Primary School.

The community survey from March 2017 identified that at least 72% of Inverleigh residents work in Geelong or Melbourne. Inverleigh currently offers 4 year old kinder, 9am – 2pm, three days a week; Teesdale offer this program as well as a condensed version over 2 days, 8:30am – 4:00pm. The shorter day program is not a practical option for many families if having to travel to and from Geelong or Melbourne for work. I am confident the demand for 4 year old Kinder services in Inverleigh would increase if there was a longer day option; parents at present do not have this option in Inverleigh, have to find services elsewhere and thus the demand from *current* Inverleigh families for services in Inverleigh are not accurately captured, let alone the demand *future* families will generate. If the right services are offered I am confident that they will be utilised, and with the amount of development proposed it’s not a question of if the Kinder will run out of space, but when, and “when” will now be sooner than first thought...

In addition to the demand current and future families will place on the Kinder for four-year old services, is the recent announcement by the Victorian Government that it will be investing \$5 million over ten years to introduce kindergarten for three-year old children (Attachment 2). The three-year old funded kindergarten will become available in stages and in 2022 families in the Golden Plains Shire will have access to up to 5 hours, increasing to 15 hours per week by 2029.

If the Kinder did not co-locate with the school and used the Public Hall instead, as has been proposed as an option in the Structure Plan, this would also raise major concerns. The Hall would need significant financial investment to build anything resembling a Kindergarten to make it a safe, comfortable and engaging place of learning for our youngest residents.

The concerns identified in relation to the educational facilities can be resolved, and their detrimental impact to Inverleigh avoided, yet the Structure Plan fails to do so.

One option is to reduce the volume of development proposed, to lessen the growth and burden on Inverleigh’s resources. The Structure Plan states “...State Planning Policy requires Council to ensure a sufficient supply of urban land is available.....to accommodate projected population growth over at least a 15 year period....” The