

**SCHEDULE OF SUBMISSIONS
PROPOSED TALISON MINE ACCESS ROAD**

No.	Author of Submission	Summary of Submission	Response
1.	Kim Posavec	<ol style="list-style-type: none"> 1. Supports the proposal for the mine access road. 2. Under or overpasses should be constructed for pedestrians and wildlife. 	<p>Noted</p> <p>A need for pedestrian overpasses or underpasses is not supported. Talison Lithium has advised that the estimated traffic volume on the proposed access road is 1,360 light vehicles and 199 trucks per day by 2027. Such traffic volumes wouldn't warrant grade separated pedestrian crossings.</p> <p>Grade separated crossings are rarely provided except at freeways and other limited access roads (such as Roe, Tonkin and Reid Highways) which carry large traffic volumes at high speeds. They have a high capital cost and general poor patronage due to the additional crossing length and level difference (ref: Planning and Designing for Pedestrians: Guidelines; Department of Transport, Main Roads Western Australia et al, 2016).</p> <p>For example where South Western Highway runs through the town centres of Boyanup, Donnybrook and Bridgetown no specific pedestrian crossings are provided except for an island median in Donnybrook where traffic volumes are some 6 times greater than estimated for the mine access road.</p> <p>There will be a need to realign the existing dual use path that parallels Blackwood Road and ends at the</p>

			<p>Greenbushes Sportsground. Where this path is to cross the proposed access road the installation of an island refuge within the road is necessary to facilitate crossing of the road at the sportsground. If the road proposal is approved there will be a need for detailed design plans to be submitted and one area that would be focused on is the pedestrian connections to the Greenbushes Sportsground precinct.</p> <p>Wildlife crossings would only be effective if both sides of the road were to be fenced so that wildlife would be limited to using the crossings only. Noting that no other roads in the vicinity, including South Western Highway are fenced, there doesn't seem a need to impose such a requirement.</p>
2.	Amanda Hawkins	<ol style="list-style-type: none"> 1. Doesn't support the proposal. 2. Existing natural spaces should be preserved at all costs. Destroying what is currently home to our wildlife and natural environment that is accessible to communities with big trucks and roads is unacceptable. 3. The road should be aligned on cleared farmland. Do not touch any more natural landscapes or destroy any more habitats. 	<p>Noted</p> <p>Talison has engaged consultants to undertake flora and fauna surveys of its proposed infrastructure corridors, including the route of the proposed mine access road. No threatened or protected flora was identified within the study area with vegetation condition typically being rated as "degraded", reflecting a high proportion of the area having been disturbed and rehabilitated as part of historical mining activities. A significant amount of introduced species were identified.</p> <p>Talison has submitted the current road proposal to the Shire for consideration. Council can either approve or reject the proposal. If rejecting the proposal it doesn't</p>

		<p>4. Take the opportunity to find solutions and lead by example to other authorities in similar predicaments.</p> <p>5. Don't be led by financial constraints, be brave enough to put our environment and our communities living in them first.</p>	<p>have any power to direct Talison to investigate alternative road options such as on cleared land. Whilst it could make suggestions such as that Talison wouldn't be obliged to consider those alternatives and could instead simply decide to retain Stanifer Street as its access route from South Western Highway to the mine site.</p> <p>Council is considering the application as a decision making authority, noting that if approval was to be given other approvals such as from DBCA and DPLH would also be required. As stated in the comment above Council could reject the current road proposal but can't dictate to Talison what alternative proposals it should consider.</p> <p>The financial costs of the current mine access road proposal is not a matter that is relevant to Council's consideration of the proposal. By referring the proposal for community consultation demonstrates that Council recognises the potential impact of the proposal on the local community and this has been reflected in the wide range of content in the public submissions received, either for or against the proposal.</p>
3.	Wayne Shalders	1. The Shire should insist that the rail line be used for the transport of mine ore as the use of road transport will have severe impacts for locals and visitors.	Council is considering the application as a decision making authority, noting that if approval was to be given other approvals such as from DBCA and DPLH would also be required. As stated in comments above Council could reject the current road proposal but can't dictate to Talison what alternative proposals it should consider.

			<p>Council can't insist that the rail line be used as the decision to reopen the rail line is not that of Council. Council has been made aware of the investigations that have been occurring and will continue to occur into the possible reopening of the rail line from Greenbushes to Picton and the use of rail to transport the product from the Greenbushes mine to Bunbury, Kemerton and Kwinana.</p>
4.	Andrew and Irene Buss	<ol style="list-style-type: none"> 1. Doesn't support the proposal. 2. The proposed mine access road will be the catalyst for short and long term environmental issues. These include pollution from truck exhausts, rubber tyre debris, possible fuel spillage, destruction of wetland areas, damage to fragile ecosystems and farmlands, noise pollution, devastation to flora and fauna, etc. 3. There are also many social concerns with the mine access road proposal. Children will no longer be able to walk or ride to the sportsground or pool without parental supervision as the navigation of mining vehicles would prove dangerous. There may also be risks associated with speeding by irresponsible drivers on the new road. 	<p>Noted</p> <p>Impacts from traffic occur on all roads. Whether the proposed access road is approved or not there will still exist truck movements to and from the mine together with other vehicle movements. Noting the suggestion being made in this submission about the environmental and community benefits of using rail Council's role in this instance is to determine whether or not to approve the road proposal. If approval isn't granted Talison can continue to use Stanifer Street as the mine access route and the environmental and community impacts described in this submission will simply be transferred to that route. Council is unable to direct the use of rail as an alternative to road transport.</p> <p>As mentioned in the response to Submission 1 if the road proposal is approved there will be a need to further assess the pedestrian connections to the Greenbushes Sportsground precinct. It is important however to note that if Stanifer Street was to remain the mine access route that traffic volumes on that road</p>

		<p>4. The slow speed of trucks on South West Highway will cause traffic congestion and frustrate drivers. There will also be a significant increase of noise pollution.</p> <p>5. A decline in tourism and business would occur as these rely heavily upon the passing of local and tourist traffic. This will lead to loss of local employment.</p> <p>6. The solution to these environmental and social consequences is the reopening of the railway and use of rail to transport the mine products. This could include the construction of a subsidiary line from the existing rail corridor to the mine site.</p>	<p>(mine traffic plus local traffic) would be even greater than that estimated for the new road therefore the concerns about safety would be even more prevalent. If children walk to Greenbushes Pool now there shouldn't be any reason why they couldn't continue to do so as the proposal wouldn't have any impacts on Spring Gully Road or the pathways from Greenbushes to the Pool.</p> <p>Council is considering the access road proposal not the use of South Western Highway. If Stanifer Street was to remain the mine access route the same traffic would continue to access South Western Highway.</p> <p>This is a subjective assessment. Note only one local retail shop front business provided a submission on the proposal and that is in support of the road proposal.</p> <p>Council can't insist that the rail line be used as the decision to reopen the rail line is not that of Council. Council has been made aware of the investigations that have been occurring and will continue to occur into the possible reopening of the rail line</p>
5.	Martin Hartigan	<p>1. Doesn't support the proposal.</p> <p>2. As of the time of writing, my clear impression is that most of the community concerns expressed were unlikely to be taken on board seriously by the management of Talison, nor perhaps by branches of State Government, other than at the very local level of the Shire of Bridgetown-Greenbushes, insofar as it must decide whether to approve the proposed</p>	<p>Noted</p> <p>Shire approval for the proposed road is required as the road would be classified as a local road under the care and control of the Shire. Other approvals such as from DBCA and DPLH would also be required.</p>

		<p>Bypass road.</p> <ol style="list-style-type: none"> 3. At the community meeting held in Greenbushes by Talison on 5.12.18 community members made clear the proposed road would severely degrade their most precious residential and tourist attractions in Greenbushes, detracting from its commercial life and property values, by cutting through an exceptionally appealing native species habitat, and passing directly behind the bush pool and sports grounds that draw many visitors and residents who clearly treasure these areas. 4. Talison should look beyond least-cost solutions and consider other alternatives such as: <ul style="list-style-type: none"> • The southern access road option, now feasible by the company acquiring a property that could accommodate a slip road connecting the mine development envelope to South West Highway. • A conveyer belt system that could bypass the township and reach the highway near the railhead, providing the option of onward haul by either road or rail. 5. The current expansion of Talison production to 2.3Mtpa of Lithium concentrate will more than triple the number of truck movements from 60 to 200 meaning one truck passing every 6 minutes. 6. The EPA approved further expansion to 8 Mtpa would presumably further raise that truck flow rate. These trucks would travel either through the town of Greenbushes or on the proposed bypass, moving to and from Bunbury and the new processing plants in Kemerton and Kwinana using South West 	<p>Feedback from the community, either via submissions on the access road proposal or from the two public meetings held in Greenbushes by Talison, has indicated a reasonably even level of support and opposition to the proposal.</p> <p>Council is limited in considering the current access road proposal only. It can determine to either approve or reject the current road proposal but can't dictate to Talison what alternative proposals it should consider.</p> <p>Truck movements are proposed to occur 24 hours per day meaning the 199 truck movements would average about 8 per hour or 1 every 7 to 7.5 minutes.</p> <p>Council can't insist that the rail line be used as the decision to reopen the rail line is not that of Council. Council has been made aware of the investigations that have been occurring and will continue to occur into the possible reopening of the rail line from</p>
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		<p>Highway. Talison management has indicated it would be prepared to consider a rail option if somebody else (i.e. government) pays for it and an acceptable user fees agreement can be reached.</p> <p>7. Talison should be willing to go the extra mile to address community concerns and open up possibilities for wider regional development impact rather than just maximising its bottom line.</p> <p>8. In its original referral of the expansion project to the EPA, and in supporting consultant studies, Talison chose to exclude impact on human health from consideration as a potentially significant environmental consequence. That despite the fact that a simple web search by anyone in the community reveals that prolonged exposure to lithium or spodumene dust can have serious health consequences based on experience and EPA and other assessments elsewhere in Australia and around the world. Many residents are uneasy about these impacts including dust accumulation, fear of aerial spraying, etc. that engender real fear about future health, security and quality of life.</p> <p>9. At this point, the relatively modest triple bottom line impact of the project to Australia, as compared to Talison's owners, suggest that Talison and its parent companies, at a minimum, owe the southwest region of the state of Western Australia and Australia as a whole, an even bigger, more enlightened, out-of-the-box effort to justify their unusually privileged position of low entry costs and multinational ownership</p>	<p>Greenbushes to Picton and the use of rail to transport the product from the Greenbushes mine to Bunbury, Kemerton and Kwinana.</p> <p>This is a personal opinion/statement and isn't relevant to Council's decision making process for the current access road proposal.</p> <p>This is a personal opinion/statement and isn't relevant to Council's decision making process for the current access road proposal. Local government approval isn't required for mining activities under the Mining Act. Irrespective of whether Council approves the mine access road proposal or the product continues to be transported via Stanifer Street, or is transported to a rail head the mining activity will continue to occur within the conditions imposed by the relevant agencies. For the purpose of assessing this submission the sole matter Council is addressing is whether to approve the proposed mine access route. Refusal of that proposal will not prevent mining of the products from continuing to occur.</p> <p>This is a personal opinion/statement and isn't relevant to Council's decision making process for the current access road proposal.</p>
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6.	Andrea Barker	<ol style="list-style-type: none"> 1. Acknowledges the contribution Talison makes to the community, particularly in rehabilitation of areas. 2. Supports a route that takes mine traffic off Stanifer Street particularly the three-fold increase arising from the mine expansion. The current and future traffic has a big impact upon road users and pedestrians. 3. Acknowledge it is not ideal to have the proposed new road through the wetlands area and proposes that investigation be done into a possible alternative route north of the sportsground and connecting with South West Highway at the current passing lane. Recognises there may be impediments (crown land/native title) to this alternative proposal. 	<p>Noted</p> <p>Noted</p> <p>To go north of the Dumpling Gully waterbodies (dams) would require the road to be moved approximately 1km northwards which would require more clearing. The environmental impacts of such a proposal are outside of the studies undertaken by Talison although it is assumed that with less historical mining activity in this area the existing vegetation would be of a higher environmental value than that along the current mine access route being considered.</p>
7.	John Green	<ol style="list-style-type: none"> 1. Doesn't support the proposal. 2. Concerned about the proximity of the proposed road to the Greenbushes Pool. Believes this shows a complete lack of 'real interest' by Talison to the community on a whole and more of a vested cynical commercial interest. 	<p>Noted</p> <p>At its closest the proposed mine access road would be approximately 100 metres from the water body of Greenbushes Pool and 50 metres from the outer car parking areas. In discussions with Shire staff Talison has recognised some of the community concerns about the proximity of the road to the Greenbushes Pool and measures to mitigate any impacts (i.e. batters, fencing, etc.) can be considered at the detailed design stage. It isn't uncommon for recreational facilities to be located on highways or busy distributor roads that would carry a significantly higher volume of traffic than this road.</p>

		<p>3. The Greenbushes Pool has generational and historical value.</p> <p>4. If the road is built it would affect property values in Greenbushes by between 20-50% and would lead to a mass exodus from the township as the town would have no real family areas as a truck route carrying 100+ trucks per day would go past the only recreational area in town.</p> <p>5. Expresses an opinion that if Council allows the road it would be exposed to potential litigation for allowing a mine manager who is also a councillor to be involved in the process, leading to charges of conflict of interest and making the process invalid. No mention has been made of this councillor recusing from the process of evaluating submissions.</p> <p>6. On further observation it appears that destroying the pool, wetlands and sporting area would benefit those wishing to purchase property at discounted rates due to it becoming more of a hard core mining township than one of families and community.</p> <p>7. Prevailing winds would carry lithium dust across town to settle on the lowest area, namely the 'Pool and Wetlands'.</p>	<p>Noted</p> <p>This is a subjective and personal opinion/statement and isn't relevant to Council's decision making process for the current access road proposal. No evidence has been presented to substantiate any concerns about effects on property values and similar arguments could be presented for retaining Stanifer Street as the mine access route. With the growth in mine workforce there is an expectation that properties in Greenbushes would be subject to more demand which could lead to increased property values. Any argument about future property values has a subjective element.</p> <p>Councillors are well aware of their responsibilities to declare conflicts of interest in relevant matters before Council. Cr Scallan has declared such interests in the past and it is assumed will continue to do so in the future.</p> <p>This is a subjective and personal opinion/statement without any foundation.</p> <p>All trucks are covered to prevent the escape of loaded product. This occurs on present truck movements and no complaints have been received about escaping</p>
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8.	Sophie Wilkinson-Knight	<p>1. Supports the proposal.</p> <p>2. The proposed mine access road is the best option for diverting the mine truck traffic off the main road of Greenbushes. The proposed road seems to be the easiest path around the town to the South West Highway.</p>	<p>Noted</p> <p>Noted</p>

		<p>3. The use of the gravel roads that are already in place behind the Greenbushes Pool the impact on the environment would be minimal.</p> <p>4. Expresses concern about the safety of animals and children in the area and believe that precautions such as a fence alongside the portion of road near the pool would ease these concerns for families and tourists.</p> <p>5. This road will be beneficial to the town as Maranup Ford Road/Stanifer Street is a busy road as it is, with community members and tourists crossing to access the Primary School, Post Office, Roadhouse, Church, Community Garden, the Mine Lookout attraction and more. With the Mine's proposed increase in truck traffic in the near future Stanifer Street just wouldn't cope.</p>	<p>It is noted that approximately 30% of the length of the proposed mine access road will follow existing tracks thereby minimising clearing on those sections. It is correct that these sections of the road include those in closest proximity to Greenbushes Pool. The proposed road reserve would have a width of 20 metres and it is expected that a significant portion of the road reserve would be cleared to accommodate construction of the road.</p> <p>At its closest the proposed mine access road would be approximately 100 metres from the water body of Greenbushes Pool and 50 metres from the outer car parking areas. In discussions with Shire staff Talison has recognised some of the community concerns about the proximity of the road to the Greenbushes Pool and measures to mitigate any impacts (i.e. batters, fencing, etc.) can be considered at the detailed design stage.</p> <p>Noted.</p>
9.	Edna & Rick Freyer	Supports the proposal.	Noted
10.	Shannon Fraser-Butler	1. Supports the proposal due to the benefits of trucks no longer using Blackwood Road and Stanifer Street.	Noted. If the road proposal is rejected Talison could continue to use Stanifer Street as the access route to South Western Highway therefore increasing traffic volumes on that road. Talison could also look at alternative road proposals noting however that its

		<p>2. Redevelopment of the entrances to Greenbushes Pool will improve safety as current access point on Spring Gully Road is on a blind point.</p>	<p>investigations into a southern mine access road off South Western Highway and Forest Park Road identified significant issues with connection to South Western Highway.</p> <p>Noted. If the proposal is to be approved by Council it would be subject to the submittal of detailed design plans for the road which would allow further assessment and approval of intersections and access points to facilities such as Greenbushes Pool and Greenbushes Sportsground.</p>
11.	Luke Butler	<p>Supports the proposal as truck noise and vibration on existing route have impacted home and sleep, crossing of Stanifer Street can be dangerous for pedestrians, particularly children, and dust from trucks will be reduced in town.</p>	<p>Noted – refer comments for Submission 10.</p>
12.	(1 st name suppressed) Smith	<p>1. Supports the proposal.</p> <p>2. Expresses satisfaction with the level of community consultation undertaken by Talison.</p> <p>3. The Greenbushes Pool will not be impacted by the road as there is always background noise from the mine. The new road will improve access to the pool as the current entrance off Spring Gully Road is dangerous.</p> <p>4. The vegetation required to be cleared to accommodate the road isn't of high environmental value and consists mainly of black wattle which is considered a weed.</p>	<p>Noted</p> <p>Noted</p> <p>Noted although many of the other submissions have expressed concern about potential impacts on the Pool.</p> <p>Talison has engaged consultants to undertake flora and fauna surveys of its proposed infrastructure corridors, including the route of the proposed mine access road. No threatened or protected flora was identified within the study area with vegetation condition typically being rated as “degraded”, reflecting a high proportion of the area having been disturbed</p>

		5. Safety in town will be improved by the removal of trucks.	<p>and rehabilitated as part of historical mining activities. A significant amount of introduced species were identified including a number of acacia (wattle) species however the description in this submission that the vegetation required to be cleared is mainly wattle is not a truly accurate description.</p> <p>Noted, trucks currently use Stanifer Street for access between the mine and South Western Highway.</p>
13.	Tracy Lansdell	<p>1. Doesn't support the proposal.</p> <p>2. Appreciates that diverting truck traffic from the townsite is a preferred outcome however the proposed road compromises the natural beauty of the area. The proposed road with a minimum 200 trucks a day cutting through the area and bordering the sportsground and free camping area is completely unacceptable.</p>	<p>Noted</p> <p>Agree that diverting truck traffic from town is a preferred outcome. Council will have to assess and trade off any real or perceived impacts on natural beauty with the social and public safety benefits of removing the truck traffic from Stanifer Street. Any potential impacts on the Greenbushes Sportsground need to be quantified. The proposed access road would be approximately 35 metres from the existing hockey/soccer oval and 120 metres from the main oval compared to 70 metres and 180 metres from the South Western Highway which carries more than double the estimated truck and vehicular traffic. For the free camping area behind the main oval the separation to the proposed mine access road would be approximately 230 metres which is similar to the current separation from the much higher capacity carrying South Western Highway. It is not uncommon to observe campers in the area between the sportsground and highway, little more than 30 metres from the highway carriageway. The impacts of the highway traffic don't seem to deter campers in this</p>

		<p>3. In the past Talison has supported and cared about the co-existence between the area's natural beauty and its mining opportunities. However this now appears to not be the case.</p> <p>4. The road plan (design) doesn't look to minimise the impact the road will have on community, recreation, tourism, biodiversity, etc. It shouldn't be up to members of the public to recommend changes to the road design such as wildlife underpasses and carbon catchment for road pollution. Instead Talison should be addressing these issues in the road design.</p> <p>5. More forward thinking is necessary. In 10 years, this proposed road will easily have 1 million passings of traffic, including 735 000 passings of trucks plus local traffic, mine deliveries and workers commuting to and fro. 1 million vehicles passing an area that is our biggest future potential for bringing people into our town when mining is no longer the main industry, which could be as little as 20 years' time.</p> <p>6. How does the road complement the future development of the free camping area and protect the natural environment?</p>	<p>area therefore it is arguable that campers wouldn't be deterred from having to camp 230 metres away from a road that will carry less than half of the traffic of the highway.</p> <p>Noting the work Talison has done and continues to do in natural areas this statement isn't supported.</p> <p>This matter has been discussed with relevant Talison staff as this was a statement made at the 2nd public meeting held in Greenbushes. The explanation from Talison is that they weren't suggesting it was up to members of the public to come up with road design components but more to suggest that Talison would be open to considering any ideas that any member of the public has.</p> <p>Taking into account truck traffic and light vehicle traffic associated with the workforce, contractors and suppliers the proposed access road could have upwards of 1,500 traffic movements per day which approximately 33% more than currently using Stanifer Street.</p> <p>The road would have minimal impacts on the free camping area and future development of the sportsground precinct subject to pedestrian and vehicle access being finalised in the detailed design process. The environmental assessments undertaken</p>
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		<p>7. With 350ha of state forest habitat to be cleared (with associated impacts on flora and fauna) you would think Talison would have a care to preserve this area with more of a concerted effort.</p> <p>8. The Shire should extend the public consultation period including the holding of at least one more public meeting.</p>	<p>by Talison have determined the environmental impacts of the road proposal aren't significant noting that other agency approvals will be required to remove the land from State Forest and create as a road reserve.</p> <p>Council approval is only required for the proposed road and any clearing associated with mining activities doesn't require local government approval. Clearing for the road would be around 3.5ha in area taking into account the length of the road (approximately 2.8km) and the width of the road reserve less any existing cleared areas.</p> <p>Two public meetings have been held by Talison. If Council is of the view that extending the community consultation period is necessary to determine community views on the proposal it could resolve to undertake further consultation.</p>
14.	Mark Lansdell	<p>1. Doesn't support the proposal.</p> <p>2. The contents of this submission are the same as that contained in the submission (No. 13) from Tracy Lansdell.</p>	<p>Noted</p> <p>Refer comments for Submission 13.</p>
15.	Erin Hefferon	<p>1. Doesn't support the proposal.</p> <p>2. The road will have a detrimental impact on all flora and fauna (habitat loss/disturbance and increased road kill) in the proposed area.</p>	<p>Noted</p> <p>Talison has engaged consultants to undertake flora and fauna surveys of its proposed infrastructure corridors, including the route of the proposed mine access road. No threatened or protected flora was identified within the study area with vegetation condition typically being rated as "degraded", reflecting a high proportion of the area having been disturbed and rehabilitated as part of historical mining activities.</p>

		<ol style="list-style-type: none"> 3. The road will have an impact on endangered species such as the Black Cockatoo. The Shire should be safe guarding habitat for the continuing survival of this species and other endangered species found in our shire. 4. The road will further entrench habitat fragmentation. 5. The proposal lacks any specifics in how it will act to address its impact on the above and it therefore lacks imagination. 6. The road will have adverse affects on the Greenbushes Pool. 	<p>A significant amount of introduced species were identified.</p> <p>The fauna survey report commissioned by Talison references seven previous vertebrate surveys done in the Greenbushes area of which Black Cockatoo surveys were included. Any clearing for construction of the road will require a clearing licence and site specific Black Cockatoo and other flora/fauna assessments will be required in that process.</p> <p>It is acknowledged that some clearing will be required for construction of the road but taking into account the length of the road, width of the proposed road carriageway, width of the proposed road reserve and existing cleared areas the extent of clearing is estimated at around 3.5ha in area.</p> <p>As with all road construction clearing will be minimised to that required for road construction and road safety requirements.</p> <p>The impacts on the Greenbushes Pool haven't been quantified in this submission. It is assumed the main concerns are around public safety due to proximity of the road and noise. As stated in responses to comments made in other submissions the proposed mine access road would be approximately 100 metres from the water body of Greenbushes Pool and 50 metres from the outer car parking areas. It is not uncommon for public recreational areas to be located on busy arterial roads or highways and the above</p>
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		<p>7. A wildlife overpass would address some of these concerns and would be incredible gift to the local community and would build on Talison's other environmental undertakings in partnership with the local community such as the rehabilitation of Schwenke's Dam.</p>	<p>separation distances are not seen to present significant risks to public safety. The need for fencing can be determined at the detailed design stage. With respect to noise the Greenbushes Pool is already is reasonably close proximity to the mine and the noise from mine operations is expected to be greater than that generated by traffic on the nearby access road. The road is intended to be designed to limit the need for trucks to use exhaust braking and this will be factored into the final design.</p> <p>Wildlife crossings would only be effective if both sides of the road were to be fenced so that wildlife would be limited to using the crossings only. Noting that no other roads in the vicinity, including South Western Highway are fenced, there doesn't seem a need to impose such a requirement.</p>
16.	Mary Kirk	<ol style="list-style-type: none"> 1. Doesn't support the proposal. 2. Appreciates that the proposed road will divert truck traffic from the town which is still the preferred outcome however the current proposal will result in permanent, intergenerational changes to the tourist attracting areas of Greenbushes. 3. The balance of the submission is the same as that contained in the submission (No. 13) from Tracy Lansdell and the submission (No. 14) from Mark Lansdell. 	<p>Noted</p> <p>No explanation of these changes has been provided in the submission therefore it is difficult to respond to this comment.</p> <p>Refer comments for Submission 13.</p>
17.	Pip Mills	<ol style="list-style-type: none"> 1. Supports the proposal. 2. The town needs to be free of truck traffic so that its existing businesses can flourish. Removing the trucks from town will enhance amenity and encourage new businesses to emerge. 	<p>Noted</p> <p>If the proposed mine access road is constructed it would remove all truck traffic and the majority of other mine related traffic from Stanifer Street.</p>

		<p>3. The proposed route is following an existing haulage road and whilst there will be impact on bush land the northern proposal will be less intrusive on the landscape than the southern proposal. Appreciates that any impact on bushland creates concern in our community however the alternative of the greatly increased truck traffic through the town centre is not a desirable option.</p> <p>4. Mine management is cognisant of the community in which it sits – to hear it being suggested that they are dismissive of community concerns is hurtful and distressing.</p>	<p>It is noted that approximately 30% of the length of the proposed mine access road will follow existing tracks thereby minimising clearing on those sections. The proposed road reserve would have a width of 20 metres and it is expected that a significant portion of the road reserve would be cleared to accommodate construction of the road. Talison has engaged consultants to undertake flora and fauna surveys of its proposed infrastructure corridors, including the route of the proposed mine access road. No threatened or protected flora was identified within the study area with vegetation condition typically being rated as “degraded”, reflecting a high proportion of the area having been disturbed and rehabilitated as part of historical mining activities. A significant amount of introduced species were identified.</p> <p>Noted</p>
18.	Debbie Taylor	<p>1. Doesn't support the proposal.</p> <p>2. The contents of this submission are the same as that contained in the submission (No. 16) from Mary Kirk.</p>	<p>Noted</p> <p>Refer comments for Submission 13.</p>
19.	Bronwyn Whiteford	<p>1. Doesn't support the proposal.</p> <p>2. The contents of this submission are the same as that contained in the submission (No. 16) from Mary Kirk.</p>	<p>Noted</p> <p>Refer comments for Submission 13.</p>
20.	Anmaree Stallard	<p>Supports (doesn't object) to the proposal however does have concerns about the 1 way in and 1 way out entrance to the sportsground.</p>	<p>Noted. Although there is only a single formal access to the Greenbushes Sportsground a review of access to this facility could occur at the detailed design stage.</p>

21.	Neil Pearce (note late submission)	<p>1. Expresses disappointment with the way the Shire has handled the public consultation on this matter. The information regarding the proposal wasn't widely disseminated and feels that all ratepayers should have been personally notified so they were properly informed.</p>	<p>The following consultative methods were used by the Shire to inform the community about the proposal:</p> <ul style="list-style-type: none"> • An article was included in the December issue of the Shire's 'Insight' newsletter that is distributed by mail to all postal addresses in the Shire. It is acknowledged that absentee land owners without a local property or post box address don't receive this publication. • A public notice document was uploaded to the Shire's website on 22 November 2018. • A post was made on the Shire's Facebook page on 22 November informing readers of the opportunity to comment on the proposal and with a link to the public notice document on the Shire website. • An email was sent on 22 November to all members of the 'Shire Bytes' email service advising of the road proposal and the opportunity to comment. The Shire regularly communicates about the existence of this service and encourages new members to register to receive these emails. • A large aerial photograph and supporting information display was erected in the foyer of the Shire Administration Office in Bridgetown and at the Greenbushes Community Resource Centre for the duration of the consultation period. • Talison Lithium held 2 community information sessions in Greenbushes – on 21 November and 5 December.
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		<ol style="list-style-type: none"> 2. The proposal is very poor and is the cheapest option with little regard to residents of the Shire. 3. The access is too close to the Greenbushes Pool and having the road cut off the sportsground from the town displays a lack of concern for the safety of local children. 	<p>In addition to the above a considerable amount of posting and discussion occurred on the local 'Bridgetown Community Noticeboard' Facebook page.</p> <p>With regard to the suggestion that the Shire should have directly written to all ratepayers it is advised that the Shire does often write to property owners (note it doesn't have access to non-owner occupant details) for referral of development applications on adjoining or nearby property however for major strategic initiatives such as the mine access road proposal it tends to focus its consultation on the mechanisms such as those described above.</p> <p>The financial costs of the current mine access road proposal is not a matter that is relevant to Council's consideration of the proposal. Council isn't privy to the financial costs of the proposal or any cost comparisons with other potential proposals.</p> <p>At its closest the proposed mine access road would be approximately 100 metres from the water body of Greenbushes Pool and 50 metres from the outer car parking areas. In discussions with Shire staff Talison has recognised some of the community concerns about the proximity of the road to the Greenbushes Pool and the pedestrian connection to Greenbushes Sportsground and measures to mitigate any impacts can be considered at the detailed design stage.</p>
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		<p>4. Having an extra 150 trucks a day travelling up South West Hwy, will have a major impact on the other towns they will be driving through. The Talison website states that the WA government is considering the reopening of the railway and this is clearly the safest and most environmentally friendly solution. Any decision regarding the building of a road should be postponed until then.</p>	<p>Council can't insist that the rail line be used as the decision to reopen the rail line is not that of Council. Council has been made aware of the investigations that have been occurring and will continue to occur into the possible reopening of the rail line from Greenbushes to Picton and the use of rail to transport the product from the Greenbushes mine to Bunbury, Kemerton and Kwinana. If Council was to reject the mine access road proposal access to and from the mine to South Western Highway would continue to be on Stanifer Street and the truck traffic on South Western Highway would occur regardless.</p>
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**COPIES OF SUBMISSIONS RECEIVED
PROVIDING COMMENT ON THE PROPOSED
GREENBUSHES MINE ACCESS ROAD**

**SUBMISSIONS ARE NUMBERED TO MATCH THE NUMBER
ALLOCATED IN THE SCHEDULE OF SUBMISSIONS WHICH FORMS
A SEPARATE ATTACHMENT IN THE AGENDA**

In accordance with Council's 'Community Engagement/Consultation' Policy authors of submissions were advised they could have personal information (name & address) suppressed from the schedule of submissions and the public copies of submissions included as attachments in the Council agenda. Some authors of submissions have requested these details be suppressed and this has been done by marking a black line through the relevant part of the submission.



Tim Clynch

From: Eileen Kneale on behalf of BTNSHIRE
Sent: Friday, 23 November 2018 2:47 PM
To: Tim Clynch
Subject: FW: I-EML201851649 - New Form From Website Shire of Bridgetown

SynergySoft: I-EML201851649

Eileen Kneale
Records Officer
Shire of Bridgetown-Greenbushes
PO Box 271
BRIDGETOWN WA 6255
PH: (08) 9761 0800
FAX: (08) 9761 2023
Website: www.bridgetown.wa.gov.au

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From: Shire of Bridgetown [<mailto:no-reply@sparkcms.com.au>]
Sent: Friday, 23 November 2018 2:26 PM
To: BTNSHIRE
Subject: I-EML201851649 - New Form From Website Shire of Bridgetown

New Form From Website Shire of Bridgetown



The following form was filled out on the Shire of Bridgetown website.

Leave Us a Message

Name: Kim Posavec

Email: Kposavec @activ8.net.au

Subject: New truck Rd proposals for Greenbushes

Message:

I am in favour of the proposed truck route due for planned increased traffic to and from the Talison Lithium mine. I would like to suggest though that under or overpasses be constructed for pedestrians and wildlife where needed. We have recently been in Italy and France where this is demonstrated right across expansive freeways and busy minor rds so I think this is achievable. Regards Kim Posavec

Submitted: 23/11/2018 2:26:03 PM

IP: 116.251.19.144

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2

Tim Clynch

From: glen norris on behalf of BTNSHIRE
Sent: Monday, 26 November 2018 8:45 AM
To: Tim Clynch
Cc: glen norris
Subject: FW: I-EML201851652 - New Form From Website Shire of Bridgetown

SynergySoft: I-EML201851652

(Mrs) Glen Norris
Senior Administration Officer
Shire of Bridgetown-Greenbushes
PO Box 271
BRIDGETOWN WA 6255
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Website: www.bridgetown.wa.gov.au

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From: Shire of Bridgetown [<mailto:no-reply@sparkcms.com.au>]
Sent: Sunday, 25 November 2018 6:49 AM
To: BTNSHIRE
Subject: I-EML201851652 - New Form From Website Shire of Bridgetown

New Form From Website Shire of Bridgetown



The following form was filled out on the Shire of Bridgetown website.

Leave Us a Message

Name: Amanda Hawkins
Email: Anandahawkins@westnet.com.au
Subject: Talison Mine Access roads

Message: In this most important time for our planet all existing natural spaces should be preserved at all costs. Destroying what is currently home to our wildlife and natural environment that is accessible to communities with big trucks and roads is unacceptable.. surely there are surrounding farm Land already cleared and with farmers struggling to make a living these areas could be used and a win win for mining and already cleared farmland. Do not touch any more natural landscapes or destroy any more habitat. Take the opportunity to find solutions and lead by example to other authorities In similar predicaments. The time to be creative and caring for our environment is long overdue. Don't be lead by financial constraints, be brave enough to put our environment and our communities living in them first !!

Submitted: 25/11/2018 6:49:03 AM
IP: 114.129.157.29

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3

Tim Clynch

From: glen norris on behalf of BTNSHIRE
Sent: Monday, 26 November 2018 12:01 PM
To: Tim Clynch
Cc: glen norris
Subject: FW: I-EML201851661 - New Form From Website Shire of Bridgetown

SynergySoft: I-EML201851661

(Mrs) Glen Norris
Senior Administration Officer
Shire of Bridgetown-Greenbushes
PO Box 271
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From: Shire of Bridgetown [<mailto:no-reply@sparkcms.com.au>]
Sent: Monday, 26 November 2018 11:41 AM
To: BTNSHIRE
Subject: I-EML201851661 - New Form From Website Shire of Bridgetown

New Form From Website Shire of Bridgetown



The following form was filled out on the Shire of Bridgetown website.

Leave Us a Message

Name: Wayne Shalders

Email: Wanets1@hotmail.com.au

Subject: Talisan mine expansion

Message: I think the shire needs to insist that the rail line needs to be used for the transport of mine ore. The use of road transport will have severe impacts for locals and visitors to this region. We are not receiving much benefit but we are being impacted by mine expansion including in shire funds.

Submitted: 26/11/2018 11:40:54 AM

IP: 1.127.108.108

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4

To whom this may concern,

This letter is a response to the Greenbushes Lithium Mine's proposal regarding the creation of a road that would theoretically link the mine site to the South Western highway. This idea is a cause for concern; for if this proposition becomes reality, not only will it be the catalyst for short-term environmental issues, but also long-term. Additionally, a negative impact upon locals and the residents of nearby towns is inevitable. Luckily, there is an alternative solution that will benefit the Greenbushes Lithium Mine, as well as the locals and the environment.

In order to keep this letter brief and to the point, the following will briefly highlight the inevitable issues that will be experienced as a result of the road's construction. Firstly, there are the environmental problems that will affect the local area of Greenbushes and the surrounding districts. Such difficulties facing the environment will be: the pollution of heavy metal from truck exhausts, rubber tyre debris, possible diesel/oil/petrol spillage, destruction of wetland areas, damage to fragile ecosystems and farmland (as a direct result of logging and road construction), noise pollution and devastation to flora and fauna (the intercepting road will hinder the safe passage of wildlife, particularly native amphibians and reptiles which are crucial to the ecosystem.) Furthermore, if this proposed idea goes ahead, the upcoming generations will be burdened with the potentially irreversible environmental mistakes caused by the decisions of today's society.

Secondly, there are the social concerns – of which there are many. To begin with, children will no longer be able to walk or ride their bikes to the sportsground or Greenbushes pool without parental supervision, as the navigation of mining vehicles would prove dangerous – an issue shared with the surrounding townships. On the topic of mining vehicles, the recommended lowering of the speed limit on the specific stretch of new road to 60km/h will not prevent irresponsible drivers from speeding – which is a common occurrence in rural areas. Additionally, the slow speed of trucks on the South Western highway (which has numerous hills, blind corners and minimal overtaking areas), will cause traffic congestion and frustrate drivers, who will most likely take

greater personal risks in order to overtake them. Again, this project proposal poses a threat to the safety and well-being of residents.

A further aspect that will be negatively impacted by the constant convoy of mining trucks along the South Western highway is the significant increase of noise pollution (which threatens the livelihood of local companies, particularly B&B's, as well as disturbing residences). Unfortunately, the individuals who are theoretically bypassed by the proposed road will experience a different type of problem – a decline in tourism, as their businesses rely heavily upon the passing of local and tourist traffic. Thus loss of local employment would occur soon after.

Which leads me to the solution – re-opening the railroad and using trains to transport the cargo. The train tracks are already in place – and although it will need repairing, the railroad is positioned at an economical distance from the mine site; meaning that the deforestation and destruction of land is rendered unnecessary. The efficiency regarding material transportation to and from the mine site is better than if cargo were to be transported by vehicles, who would be impacted by traffic congestion on a daily basis. And compared to the un-economical running of vehicles twenty four hours a day, seven days a week, a train would only be required two to three times a day. Furthermore, a subsidiary line can be easily built across the South Western highway and directly into the mine site with minimal impact on local traffic – thus saving time in terms of construction.

If one were to accept such a logically beneficial solution, not only would time be saved, but so would the environment and local businesses. As an outcome, locals would not be disturbed by the constant flow of trucks and the safety of children and road users will not be risked unnecessarily. Thus the locals, residents of surrounding townships and the Greenbushes Lithium Mine will benefit as a direct result of employing the railroad once more. It is the most logical, economical, socially and environmentally-friendly solution available, and I implore you to consider it with the future generations in mind.

Kind regards,

The Buss Family.

Addressing Community Concerns in the Greenbushes Lithium Project

As a landholder in this region as yet unfamiliar with the history and plans for the Talison Lithium mining project in Greenbushes, and uninformed about related community concerns, I attended 2 meetings last week with local community members and the mining groups involved to hear what they had to say about this biggest investment undertaking in our Shire.

As of the time of writing, my clear impression is that most of the community concerns expressed were unlikely to be taken on board seriously by the management of Talison, nor perhaps by branches of State Government, other than at the very local level of the Shire of Bridgetown-Greenbushes, insofar as it must decide whether to approve the proposed Bypass road. This note is addressed to the Shire given its pending related decisions and focuses primarily on the pending Bypass road approval decision.

The first meeting I attended was an informal small weekend community gathering (held on Saturday, Dec 1, 2018) to which all political representatives of this area were invited, but only one attended, the Hon. Diane Evers, the Member for the South West Region. The President of the Shire Council also attended, presumably in both that capacity and also as a resident of this area. No company representative attended.

The second meeting was a belated, last-minute, yet well-attended town-hall gathering convened by Talison management on December 5, 2018, under, I believe, mounting pressure from the local community. Talison management used the opportunity to share its plans for the mine and respond to community questions and comment, but in a format and manner betraying a condescending attitude of *fait accomplis* and no real intent or desire to do anything more than already planned about any issue raised by the host community.

Community Concerns and company responses

Though new to the details of the company's plans and related community concerns, it seemed to me that the most urgent topics in community minds concerned environmental impact and product transport alternatives to the company's current plans.

Re Product Transport

Community members explicitly were asking for :

1. **Use of an alternative to the Bypass road now proposed by Talison within Greenbushes.** Community members made clear the proposed Bypass road would severely degrade their most precious residential and touristic attractions in Greenbushes, detracting from its commercial life and property values, by:

- cutting through an exceptionally appealing native species habitat, and
- passing directly behind the bush pool and sports grounds that draw many visitors and residents who clearly treasure these areas.

Talison's General Manager admitted the proposed Bypass road may need roadside walls to protect the habitat and contain resulting noise and dust, along with already planned chemical spraying to suppress dust levels. He noted also that if the Shire did not approve Talison's choice of that route, it would continue to route its trucks through the centre of town.

Community members challenged Talison management to look beyond least-cost solutions, considering the other alternatives, especially:

- The less direct Bypass road option to the south that would avoid Greenbushes altogether, now made feasible by the fact that the company had recently acquired an adjoining property to the south that could provide a slip road connecting the Mine Development Envelope directly to Southwest Highway (community members believed Talison had not yet discussed that option with Main Roads department, nor presented it to the Shire).
- A conveyor belt system that also could bypass the township and eco-sensitive areas and reach the main highway near the railhead, providing the option of onward haul, either by road or rail.

Talison's General Manager showed no interest in opening up discussion of a southern bypass option, nor of a conveyor belt option, dismissing the latter as a fire threat, and as requiring widespread bush clearing plus a costly safety fence (presumably less costly, though, than constructing road walls beside the proposed Bypass road). His objections sounded suspect and too dismissive for a representative of giant mining companies that claim sensitivity to community interests and environmental consequences, and that, in relation to the conveyor issue, already use or will use one at the Greenbushes mine site, presumably safely, and also do so worldwide along with the rest of the world's mining industry, often probably in more difficult circumstances.

2. Committed pursuit by Talison, together with other involved parties, of the alternative use of rail—with prospectively far-reaching benefits for southwest development and quality of life—rather than highways, as now planned, to transport the Lithium concentrate north to the planned Bunbury/Kemerton and Kwinana Lithium refineries. We were told that the current expansion of Greenbushes production to 2.3 Mtpa of Lithium concentrate will more than triple the number of Talison truck-train movements from 60 to 200, meaning one truck passing every 6 minutes. The EPA approved further expansion to 2.8 Mtpa would presumably further raise that truck flow rate. These trucks would travel either through the town of

Greenbushes (as now) or bypass it (as proposed), moving to and from Bunbury and the new processing plants in Kemerton and Kwinana, and utilize Southwestern Highway, the northbound single lane highway most critical to the lives of most southwest residents and to tourism and commerce throughout the region. Talison's General Manager said they would have considered, or could consider, using a rehabilitated rail option if somebody else had paid for it or would do so and then offer them an acceptable user fees agreement, but they clearly thought that unlikely given the number of parties involved, and the need for Government to finance it. Current company investment plans and what was said made it clear that Talison has no plan to position itself to tap a rail option at this point.

A community member noted other negatives re the use of trucking outside the Dec 5 meeting:

- Talison's Greenbushes project has a little-known special payload exemption allowing it to haul 65 ton payloads per truck train unit, rather than the normal maximum of 50 tons, implying highway damage in excess of the norms; and
 - Lithium haulage also may dominate night-time traffic in the highway corridor, representing a much higher percentage of total traffic than the daily average cited by Talison management using Main Roads data.
3. The point was posed to Talison management that as a 100% foreign-owned venture undertaking a \$2.5 billion project that represents the biggest single investment opportunity occurring in the southwest region, it has a unique opportunity and responsibility to adopt a bigger picture approach, stepping into the leadership role warranted by this privilege. Especially so, given that after its one or two cycles of exploitation of the deposits across say a 25 to 40 year horizon, Greenbushes will be left with little more than big holes in the ground. Talison therefore should be willing to go the extra mile to address community concerns and open up possibilities for wider regional development impact rather than just maximising its bottom line.

Footnote re Talison's EPA Referral and supporting studies by GHD, etc.

In its original Referral of the expansion project to the EPA, and in supporting consultant studies, Talison chose to exclude impact on human health from consideration as a potentially significant environmental consequence. That despite the fact that a simple web search by anyone in the community reveals that prolonged exposure to lithium or spodumene dust can have serious health consequences based on experience and EPA and other assessments elsewhere in Australia and around the world.

Moreover, in consultants' studies retained by Talison for submission to the EPA, modelling of dust emissions and estimates of noise and surface water impact from the expansion project, suggest that limits could be exceeded in these areas at certain times for the incremental expansion or combined operation, unless existing and consultant recommended enhancements of mitigation efforts are successful. Those studies also were based on self-reported company data from the Greenbushes site which is limited in scope and not fully indicative of the cumulative consequences of full company operations following the expansion to 2.3 Mtpa of Lithium concentrate, leave alone 2.8 Mtpa.

Many community concerns were raised on related topics at the Dec 5 meeting, and Greenbushes residents' unease expressed inside and outside the meeting extends to daily experiences of removing dust accumulations from vehicles, fear of aerial spraying, etc., that, together with apparent unconcern on the part of Talison management, engender real fears about the future in Greenbushes regarding health, security, and loss of quality of life and property value. Residents draw no comfort from seeing a member of Talison management sitting on the Shire Council assigned the role of protecting their interests in approving Talison activities, whether the individual concerned has or will recuse himself or not from related Council and Shire deliberations.

An overall Conclusion re Talison's Impact and Opportunity in Australia.

Talison is quick to say that Greenbushes has the world's highest grade lithium deposits. But not said at any meetings was that:

- It is exploiting those deposits at probably a low entry cost (having acquired its mining rights during 'fire sale' circumstances of liquidation of the Sons of Gwalia Ltd), and on exceptionally favourable terms by world standards in relation to unrestricted foreign investment ownership and control.
- Talison is selling its output mainly to its two foreign multinational owners at inevitably arbitrary 'transfer' prices, unsurprisingly prompting recent belated attempts by the ATO to assure acceptable market prices, and hence taxes, will be paid to Australia by Talison for the lithium.

At this point, the relatively modest triple bottom line impact of the project to Australia, as compared to Talison's owners, suggest that Talison and its parent companies, at a minimum, owe the southwest region of the state of Western Australia and Australia as a whole, an even bigger, more enlightened, out-of-the-box effort to justify their unusually privileged position. In effect, a majority Chinese owned joint venture between Tianqi and Albermarle of the US, dominant world lithium market players, has been accorded by the State of WA and the Australian Government the right to exploit a uniquely valuable component of the state's and nation's non-renewable patrimony, in

return for rather modest benefits by world standards, with counter-veiling risks to local stakeholders.

Martin Hartigan

Dec 13, 2018.

martin.hartigan@gmail.com

6

To the Shire of Greenbushes Bridgetown.

I love our little town of Greenbushes. I have lived here for 19 years now.

I love the fact that tourists and visitors to me alike visit us and are oblivious to the fact there's a massive great Mine behind the school.

I love in their delight when I take them to the lookout and the awe on their faces when they see the jewel in our town. We are lucky to have a Company like Talison Lithium with us and not a Conglomerate run debacle that doesn't care about any community concerns- They are active in rehabilitation of areas that have been mined already. Many people are oblivious to this fact.

I live on the route that takes ALL the traffic to the mine at the moment.
On the Corner of Jepson and Stanifer Street.

I would like to address the new proposed route that they are suggesting.

Although it is not ideal to take traffic through the wetlands area and I would love the area to be turned north into the bush and taken a route to go North past the cricket club and linking into the overtaking lane and Truck bay North of town, I also understand that Crown Land/Native title and all the RED tape makes it near on impossible for my Perceived best route to be attained.

I AM ALL FOR any route that takes the future load of Qube trucks and ALL others servicing the mine OFF Stanifer Street and thus past my Home, Past the Kids Crossing Zone to the School and Past the Shop.

The Qube trucks I feel in my observations do the right thing. They are doing 40kph driving through the town and I have witnessed them evading other traffic that does not stop at the stop signs at Blackwood Road/Stanifer Street. (MostlyTourists)

The same cannot be said for the other truck users namely
Cutts- Catalanos - Log Trucks- Local Gravel Trucks- Hesketh Contracting; Contractors and Construction to the mine are to name a few.

I sit in my lounge watching the cricket as I do today cringing at the the traffic and wondering how 3 fold increase will look like and the effect on the local pedestrian traffic. Elderly , Parents with kids and the like. I still see kids on skateboards down the main street -Stanifer-which yes is dangerous but At the same time is encouraging to actually see them.

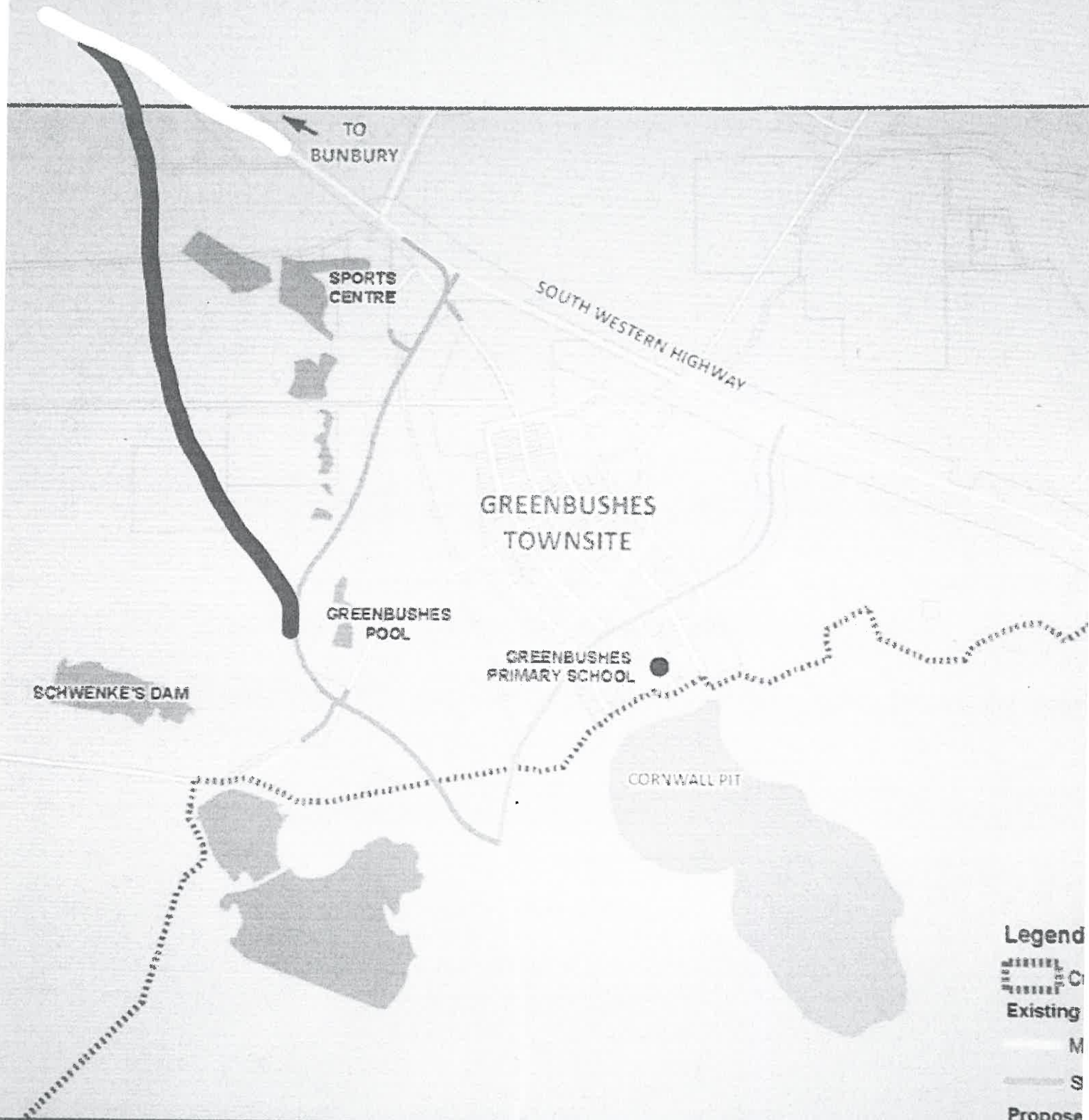
WHICH is WHY we need to redirect the Future Triple Fold Truck Traffic.

Don't let the environmental radicals vandal our towns chance to get the construction and mining HAUL traffic away from the pedestrian and local traffic.

My thoughts

Andrea Barker
27 Jephson Street
Greenbushes WA 6254

oute of the new Greenbushes Mine Access Road.



My proposed road

7

To: Chief Executive Officer, Shire President and Councillors Bridgetown

Objection; to Talison Lithium's Proposed Haulage Road Greenbushes WA

Without Prejudice.

18th December 2018

Dear Sir/Madam

Firstly, thank you for taking time to read my submission pertaining to the proposed route change for Talison trucks.

As known, the Greenbushes Pool area is a widely used area for locals and outsiders including tourists, it has camping, cooking and play areas for all, in addition to this, just beyond the pool area there is a 'Rehabilitated Wetlands' area that has only just been done, and might I add with Talison involvement. This old dam site has become a haven for native wetlands birds and migratory birds which frequent the area, also native water grasses and reeds have been hand transplanted onto man made spits within the dam area allowing nesting sites to be made, on a whole the area has been transformed from an old rundown commercial site into a most unique and picturesque walking route specifically built for tourism and nature lovers.

The very fact that the road skirting it all has even been considered as an alternative route is beyond belief, for I feel it shows a complete lack of "**real interest**" in the community on a whole, and more of a vested cynical commercial interest on behalf of Talison Lithium.

Firstly, the value definition of Greenbushes pool area and how it will be affected along with the sporting grounds if Talison build this road.

The Pool itself is a generational value as it stands, numerous generations have used it, also it represents an intrinsic monetary value to properties along with the sporting grounds in Greenbushes. Notwithstanding there is also the historical value to the site which has been overlooked.

If Talison were to build the road, this I believe would affect values of properties in Gb'. No allowance has been made for potential property price falls due to the road affecting usage of the amenities mentioned, and % it would decrease usage by. Looking at past areas, a 20 to 50% drop could be expected and or a mass exodus from the township could be expected as the town would have no real family areas thus families not moving here. In reality, who would bring a family to a town where a truck route running a 100+ trucks a day, goes right past the only recreational areas the town has to offer.

On observing this situation, other points arise, potential litigation against the council for allowing the road, and potential litigation against the state government for

compensation, particularly the Dept of Local Government, for allowing the council to facilitate this road knowing and being of the understanding that a mine manager who is involved in the process is also a councillor as well, this leads to 'charges of 'conflict of interest' and thus taints the whole process making it invalid.

No mention of this councillor has been expressed in minutes as to recusing themselves from the process of evaluating submissions from both Talison and members of the public.

On further observation, it appears that in destroying the 'Pool, Wetlands and Sporting Area' would benefit those wishing to purchase property at much 'Discounted Rates' in the township of Greenbushes due to it becoming more of a hardcore mining township than one of Families and Community.

I have also looked at the health problems related to lithium dust as prevailing winds carry it across town and when and if those trucks run down into the valley, the lithium dust plume will settle on the lowest area, namely the 'Pool and Wetlands'.

On further investigation it has also become apparent that in Talisons submissions to the EPA on 'environment', the section relating to 'Human Health Hazards' was omitted or as seen left empty.

Breathing lithium dust or alkaline lithium compounds irritates respiratory tracts. Prolonged exposure to lithium can cause fluid to build-up in the lungs, leading to 'Pulmonary Edema' (Respiratory Failure). The metal itself is a handling hazard because of the caustic hydroxide produced when it is in contact with water causing an explosion.

Also prolonged exposure to lithium can cause Nervous System Disorders."

Talison at the 5th December 2018 meeting admitted that there would be 'differences made' if this road were to proceed, how much was never admitted, this insofar points to a change of current conditions which at the moment are an ideal environment. They also admitted that they have purchased land south of the township allowing now the possibility to route the road south instead of the northerly route, the suggestion to the use of a 'conveyor system' was dismissed out of hand by mine management with most outrageous assertions as to its viability and safety.

The final and most acceptable mode is the conveyor belt to a loading station for trucks and if available railroad, however running the road south in the interim is another possibility.

Everything comes at a cost, so while the environmental impact might not be worse than the mountaintop mining, it's going to be important to pay attention to the environmental impact, because there will be one.

John J Green

8

Tim Clynch

From: Eileen Kneale on behalf of BTNSHIRE
Sent: Tuesday, 18 December 2018 1:44 PM
To: Tim Clynch
Subject: FW: I-SUB201851860 - Comment - proposed mine access road for Greenbushes
Attachments: image018.emz

SynergySoft: I-SUB201851860

Eileen Kneale
Records Officer
Shire of Bridgetown-Greenbushes
PO Box 271
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From: trainee@greenbushescrc.net.au [mailto:trainee@greenbushescrc.net.au]
Sent: Tuesday, 18 December 2018 12:42 PM
To: BTNSHIRE
Subject: I-SUB201851860 - Comment - proposed mine access road for Greenbushes

Hello,

This is my comment submission for the proposed mine access road in Greenbushes:

I work in Greenbushes.

I believe that the proposed mine access road is the best option for diverting the mine truck traffic off the main road of Greenbushes. The proposed road seems to be the easiest path around the town to the South West Highway. I believe that with the use of the gravel roads that are already in place behind the Greenbushes pool the impact on the environment would be minimal. I am however concerned about the safety of animals and children in the area and believe that precautions such as a fence alongside the portion of road near the pool would ease these concerns for families and tourists.

This road will be beneficial to the town as Maranup Ford Road/Stanifer Street is a busy road as it is, with community members and tourists crossing to access the Primary School, Post Office, Roadhouse, Church, Community Garden, the Mine Lookout attraction and more. With the Mine's proposed increase in truck traffic in the near future Stanifer Street just wouldn't cope.

Kind regards,

Sophie Wilkinson-Knight

Trainee | Greenbushes Community Resource Centre
trainee@greenbushescrc.net.au | 08 9764 3575
www.greenbushes.crc.net.au | P.O Box 135
Mon, Wed 9 – 5, Tue, Thur 9 – 3 Fri 9 – 12



Department of Primary Industries and Regional Development



9

Tim Clynch

From: Eileen Kneale on behalf of BTNSHIRE
Sent: Wednesday, 19 December 2018 7:45 AM
To: Tim Clynch
Subject: FW: I-SUB201851863 - RE: New mine access road Greenbushes

SynergySoft: I-SUB201851863

Eileen Kneale
Records Officer
Shire of Bridgetown-Greenbushes
PO Box 271
BRIDGETOWN WA 6255
PH: (08) 9761 0800
FAX: (08) 9761 2023
Website: www.bridgetown.wa.gov.au

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From: Edna Fryer [<mailto:ednafryer60@gmail.com>]
Sent: Tuesday, 18 December 2018 5:30 PM
To: BTNSHIRE
Subject: I-SUB201851863 - RE: New mine access road Greenbushes

we also live in Greenbushes on the current access road and are also sick and tired of the hype from outsiders interfering in our community the mine has been a huge asset to this town and you will find that the people I have spoken to about the new road access proposal welcome it with open arms and cannot wait for the work to begin.

Edna & Rick Fryer
26 Stanifer Street
Greenbushes



Shannon Fraser-Butler
Cakes by Tasty Edibles
34 Blackwood Road
Greenbushes, 6254
9764 3361

Bridgetown Shire CEO
Tim Clynch
PO Box 271
Bridgetown, 6255

Dear Mr Clynch,

I write to you as a Greenbushes business owner in support of Talison Lithium's proposed new Northern Alignment Access Road. I believe done the right way this new road will have a positive impact on our town.

Some of the benefits I can see will be heavy haulage trucks no longer using Blackwood Road. I have plenty of photos to prove that they do.

It will be safer for the school children crossing Stanifer Road to get to Greenbushes Primary School or to catch the school bus to Bridgetown.

It will be safer for our elderly population who walk along Stanifer Road to go to the Roadhouse or the Post Office.

No trucks on Stanifer Road will reduce the amount of dust that comes into my shop .

Hopefully there will be adequate signage provided at the Blackwood Road entrance into town.

With the re development of the entrances to the Greenbushes Pool it should make things a lot safer. To turn out of the carpark onto Spring Gully Road can be very dangerous, the corner can be blind and cars travel at speed down the road.

The local businesses have benefited from the free camping, with campers spending money in town at the Roadhouse, using the Post Office, the Community Resource Centre, Dinner at the Pubs and Coffee, Cake & lunches from Tasty Edibles and visiting the Discovery Centre.

Kind Regards

Shannon Fraser-Butler
Owner: Cakes by Tasty Edibles



Luke Butler
29 Telluride Street
Greenbushes, 6254
9764 3007

Bridgetown Shire CEO
Tim Clynch
PO Box 271
Bridgetown, 6255

Dear Mr Clynch,

I write to you in support of Talison Lithium's proposed new Northern Alignment Access Road. I have lived on the corner of Telluride Street and Stanifer Road for nearly 12 years and have seen the traffic grow immensely.

There are main reasons why I support the new road.

- 1: The truck's noise and vibrations 24 hours a day have impacted our home and sleep. We have taken steps to reduce the noise at our own expense installing double glazed windows. This has dulled the noise but not reduced the vibration.
- 2: Most children have to cross Stanifer Road to get to Greenbushes Primary School or to the bus stop that picks students up to take them to Bridgetown. If trucks and mine vehicles are minimised in this area it would make it a much safer place. Greenbushes also has an elderly population who walk to stay active and keep fit and they also have to walk along or need to cross Stanifer Road .
- 3: It will reduce the amount of dust covering our house , inside and out . A lot of dust comes off the trucks leaving the mine . The dust covers our fruit trees, covers the washing on the clothes line and creates allergies on our dogs skin .

Kind Regards,

Luke Butler

Tim Clynch

From: Eileen Kneale on behalf of BTNSHIRE
Sent: Wednesday, 19 December 2018 9:07 AM
To: Tim Clynch
Subject: FW: I-SUB201851868 - Fwd: New Mine Access Road,Greenbushes - Opportunity for Comment

SynergySoft: I-SUB201851868

Eileen Kneale
Records Officer
Shire of Bridgetown-Greenbushes
PO Box 271
BRIDGETOWN WA 6255
PH: (08) 9761 0800
FAX: (08) 9761 2023
Website: www.bridgetown.wa.gov.au

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From: [redacted] Smith [mailto:[redacted]@btshire.wa.gov.au]
Sent: Wednesday, 19 December 2018 8:55 AM
To: BTNSHIRE
Subject: I-SUB201851868 - Fwd: New Mine Access Road,Greenbushes - Opportunity for Comment

Sent from my iPhone

Begin forwarded message:

From: [redacted] Smith <[redacted]@btshire.wa.gov.au>
Date: 19 December 2018 at 5:17:36 am AWST
To: btshire@bridgetown.wa.gov.au
Subject: Re: New Mine Access Road,Greenbushes - Opportunity for Comment

My family and I are Greenbushes residents, we have lived in town now for 10 years. My husband and I have never worked for the mine. I'm writing to you concerning the proposed mine access road in Greenbushes because I'm over hearing from people who are making assumptions, telling half-truths or just outright lies.


The first issue I want to comment on is the information regarding Greenbushes residents being left in the dark regarding the access rd by Talison. Talison has been very pro-active in

letting the town know what is happening at the mine now/future and how it will impact the town/residents. We have had several public meetings over the year, the GM gives updates at the monthly Grow Greenbushes meetings, in our local newsletter and a public consultation meeting at the greenbushes crc (21/11). On top of all this Talison have made themselves available every Wednesday afternoon at the crc for anyone to come in to ask questions about what is happening at mine and to raise any concerns. I believe Talison has a very positive relationship with the community due to the fact that we are kept informed.

The second issue I want to comment on is the Greenbushes Pool and the impact of the access rd. Basically what impact, the pool will still be the same. Its not a natural water hole it was created by mining as a water source. The pool isn't tranquil or pristine there is always background noise from the crusher/plant/highway and guess what Greenbushes residents are used to this since we are a mining town. Changing the road into the pool as one way in and out is going to make it safer as a lot of people don't bother to look right coming out onto the old haulage rd. I have lost count to how many close calls I have had in my car or on our bikes because people haven't given way. Regarding dust - the road will be sealed so no problem there. The mine has said they will provide a safe access to the otherside of the pool for predestrians and our wild life. The change down on blackwood road will make it safer taking out that corner where you turn into sports oval and hopefully speed limit changed from 80km to 50km. I have walked around the area where the road will cut into the bush. A Martin Hartigan quoted that the road will be cutting into exceptionally appealing native species habitat. From that comment I would say he's never been walking there as it's mostly revegetation and been taken over by black wattle which us locals consider a weed. Since the proposed access road is a upgrade of the already existing haul rd this will mean minimal environmental impact, not like the southern by pass route or the conveyor belt system.

Over all the Mine access road will make our town alot safer for our residents most importantly our children crossing Stanifer road to get to school or to catch their school bus. Unfortunately the vocal minority don't see this as they DON'T live in town. I do believe Talison has the town best interest in mind hence the access rd taken out of town. I hope you consider first where the negative comments/half truths are coming from (mostly from people who don't live in town) before you make a decision.

 Smith


Greenbushes

13

Dear Tim,

I am very concerned about the proposed Mine Haulage Road and oppose the concept. Talison are proposing **permanent, intergenerational changes** to the tourist attracting areas of our town.

I appreciate that it is diverting the truck traffic from the townsite, which is the preferred outcome.

However, this road compromises the natural beauty that still co-exists in the Greenbushes surrounds - next to the mine -and has done so successfully for many decades, with the care of past mine managers. This area brings people in from our community, as well as surrounding communities, as well as travellers from all over Australia for all different reasons; free camping, swimming and recreation, nature walks, sports, bird watching, photography, heritage interests and much more. The proposed road with 200 trucks as a minimum of daily traffic cutting through the middle of this and bordering the sports grounds and free camping area is completely unacceptable.

Having been a very active members of this community since moving here in 2006, I've been involved in a lot of the projects that have aimed to continue to develop and beautify this area and put Greenbushes on the map for tourism. A quick google search on Greenbushes Pool brings up countless images and sites that have already put us on the map for this very area that is proposed to be severely compromised.

<https://www.australiassouthwest.com/destination/greenbushes> This example has the top 5 things to do when visiting Greenbushes and number 1 is: *"Visit the Greenbushes Pool and Boardwalk. The spring-fed natural pool has a picnic area, barbecue facilities and a boardwalk with signposted walks. Take time to explore the conservation area adjacent, where you may even spot wildlife in the nesting boxes along the walk trails"*. And not one of the top 5 suggestions is mine related and all are celebrating our natural environment beauty!

In my experience, the mine's previous General Managers Pat and Steve have supported and appeared to care about the co-existence between what this area has to offer in natural beauty as well as mining and opportunities. It is this co-existence and respect that has won Greenbushes many awards in the state and recent national Tidy Towns Sustainable Communities Awards.

Now under the new general manager Craig Dawson, who has no connection to the history of the community, it appears he has little appreciation of the countless hour's volunteers have put into this area and through his public demeanour at community info sessions, clearly has no idea what it is like to operate in such a way that sees the actions we take are for the greater good of the whole community & biodiversity now and in the future. Craig Dawson has been heard discrediting both the pool and schwenkes area as 'just old mine dams', which is how he described them to the Greens MLC Diane Ethers on her visit to the area in early December. And this is the very attitude that is underlying this road proposal!

Talison paid a consultant to draw up this road plan, but clearly did not employ someone with the environmental credibility that could also draw up the plan with suggestions already in place on how to minimise the impact that this road will have on community, recreation, tourism, biodiversity and more. Or perhaps the consultant wasn't given this as a priority in his brief?

Instead, Talison held a community meeting to talk about this road and suggested that **WE the general public** will have to submit our ideas on how Talison can reduce the impact of this road, treating it essentially as *fait accompli*. What do the majority of general public know about road construction and that they can incorporate things such as wildlife underpasses or carbon catchment for the road pollution before it enters waterways?

If the new Talison actually cared about this area and respected the community's past efforts, then they should have come to the community information meeting **with actions already in place** in their road concept plan.

In 10 years, this proposed road will **easily have 1 million passings** of traffic, including 735 000 passings of their huge Cube trucks plus local traffic, mine deliveries and workers commuting to and fro. 1 million vehicles passing an area that is our biggest future potential for bringing people into our town when mining is no longer the main industry... which could be as little as 20 years time!!! Where is the forward thinking?

Currently the pool area is quiet natural swimming hole with surrounding bush walks and a wetlands in it's infancy stages that has the potential to be a haven for threatened species. You the Shire have applied for Federal money to continue upgrading and beautifying the free camping area, isn't that correct? How does this road compliment this development and protect the natural environment?

With the 350 hectares of state forest habitat set to be cleared, which will see nesting hollows destroyed and prime habitat for the local fauna populations of chuditch, bandicoots, phascogales, Baudin's, Carnaby's, Red-tail Cockatoos, Western Ringtail Possum, (the list goes on)... and flora biodiversity... you'd think Talison would have a care to preserve this area with more of a concerted effort.

I object to this Mine Road Haulage proposal and I think it is up to the Bridgetown-Greenbushes Shire to insist on an extension to the public commenting time which includes at least one more Talison public meeting. As a Shire you are representing us and I want to see Talison actually discuss how **THEY** can possibly ensure this road will not ruin this area for future generations!

Kind regards

Tracy Lansdell

Dear Tim,

I am very concerned about the proposed Mine Haulage Road and oppose the concept. Talison are proposing **permanent, intergenerational changes** to the tourist attracting areas of our town.

I appreciate that it is diverting the truck traffic from the townsite, which is the preferred outcome.

However, this road compromises the natural beauty that still co-exists in the Greenbushes surrounds - next to the mine -and has done so successfully for many decades, with the care of past mine managers. This area brings people in from our community, as well as surrounding communities, as well as travellers from all over Australia for all different reasons; free camping, swimming and recreation, nature walks, sports, bird watching, photography, heritage interests and much more. The proposed road with 200 trucks as a minimum of daily traffic cutting through the middle of this and bordering the sports grounds and free camping area is completely unacceptable.

Having been a very active members of this community since moving here in 2006, I've been involved in a lot of the projects that have aimed to continue to develop and beautify this area and put Greenbushes on the map for tourism. A quick google search on Greenbushes Pool brings up countless images and sites that have already put us on the map for this very area that is proposed to be severely compromised.

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In my experience, the mine's previous General Managers Pat and Steve have supported and appeared to care about the co-existence between what this area has to offer in natural beauty as well as mining and opportunities. It is this co-existence and respect that has won Greenbushes many awards in the state and recent national Tidy Towns Sustainable Communities Awards.

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I object to this Mine Road Haulage proposal and I think it is up to the Bridgetown-Greenbushes Shire to insist on an extension to the public commenting time which includes at least one more Talison public meeting. As a Shire you are representing us and I want to see Talison actually discuss how **THEY** can possibly ensure this road will not ruin this area for future generations!

The above statements I endorse and agree with unconditionally as I share these sentiments & concerns with Tracy Lansdell.

Kind regards

Mark Lansdell

15

Submission to the New Mine Access Road, Greenbushes

I oppose the proposed New Mine Access (Northern Alignment) because of

- the detrimental impact it will have on all flora and fauna (habitat loss/disturbance and increased road kill) in the proposed area.
- the impact on endangered species such as the Black Cockatoo. As a resident of Maranup I believe the Bridgetown-Greenbushes Shire should be safe guarding habitat for the continuing survival of this species and other endangered species found in our shire.
- It further entrenches habitat fragmentation.
- It is my view that the proposal lacks any specifics in how it will act to address its impact on the above and it therefore lacks imagination.
- the adverse effects the new road will have on the Greenbushes Pool.

A wildlife overpass would address some of these concerns and would be incredible gift to the local community and would build on Talison's other environmental undertakings in partnership with the local community such as the rehabilitation of Schwenke's Dam.

Thank you,

Erin Hefferon

2 Browne Wheatley Rd,
Maranup, 6256 WA.

Phone: 9761 1135

Tim Clynch

From: Eileen Kneale on behalf of BTNSHIRE
Sent: Wednesday, 19 December 2018 4:32 PM
To: Tim Clynch
Subject: FW: I-SUB201851879 - Proposed mine haulage road...
SynergySoft: I-SUB201851879

Eileen Kneale
Records Officer
Shire of Bridgetown-Greenbushes
PO Box 271
BRIDGETOWN WA 6255
PH: (08) 9761 0800
FAX: (08) 9761 2023
Website: www.bridgetown.wa.gov.au

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From: Ian Kirk [mailto:louiankirk@gmail.com]
Sent: Wednesday, 19 December 2018 4:28 PM
To: BTNSHIRE
Subject: I-SUB201851879 - Proposed mine haulage road...

Dear Tim,

I am very concerned about the proposed Mine Haulage Road and oppose the concept. Talison are proposing permanent, intergenerational changes to the tourist attracting areas of our town.

I appreciate that it is diverting the truck traffic from the townsite, which is still the preferred outcome.

However, this road compromises the natural beauty that still co-exists in the Greenbushes surrounds - next to the mine -and has done so successfully for many decades, with the care of past mine managers. This area brings people in from our community, as well as surrounding communities, as well as travellers from all over Australia for all different reasons; free camping, swimming and recreation, nature walks, sports, bird watching, photography, heritage interests and much more. The proposed road with 200 trucks as a minimum of daily traffic cutting through the middle of this and bordering the sports grounds and free camping area is completely unacceptable.

Having been a very active members of this community since moving here in 2006, I've been involved in a lot of the projects that have aimed to continue to develop and beautify this area and put Greenbushes on the map for tourism. A quick google search on Greenbushes Pool brings up countless images and sites that have already put us on the map for this very area that is proposed to be severely compromised.

<https://www.australiassouthwest.com/destination/greenbushes> This example has the top 5 things to do when visiting Greenbushes and number 1 is: "Visit the Greenbushes Pool and Boardwalk. The spring-fed natural pool has a picnic area, barbecue facilities and a boardwalk with signposted walks. Take time to explore the conservation area adjacent, where you may even spot wildlife in the nesting boxes along the walk trails". And not one of the top 5 suggestions is mine related and all are celebrating our natural environment beauty!

In my experience, the mine's previous General Managers Pat and Steve have supported and appeared to care about the co-existence between what this area has to offer in natural beauty as well as mining and opportunities. It is this co-existence and respect that has won Greenbushes many awards in the state and recent national Tidy Towns Sustainable Communities Awards.

Now under the new general manager Craig Dawson, who has no connection to the history of the community, it appears he has little appreciation of the countless hours volunteers have put into this area and through his public demeanour at community info sessions, clearly has no idea what it is like to operate in such a way that sees the actions we take are for the greater good of the whole community & biodiversity now and in the future. Craig Dawson has been heard discrediting both the pool and schwenkes area as 'just old mine dams', which is how he described them to the Greens MLC Diane Ethers on her visit to the area in early December. And this is the very attitude that is underlying this road proposal!

Talison paid a consultant to draw up this plan, but clearly did not employ someone with the environmental credibility that could also draw up the plan with suggestions already in place on how to minimise the impact that this road will have on community, recreation, tourism, biodiversity and more. Or perhaps the consultant wasn't given this as a priority in his brief?

Instead, Talison held a community meeting to talk about this road and suggested that WE the general public will have to submit our ideas on how Talison can reduce the impact of this road, treating it essentially as fait accompli. What do the majority of general public know about road construction and that they can incorporate things such as wildlife underpasses or carbon catchment for the road pollution before it enters waterways?

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I object to this Mine Road Haulage proposal and I think it is up to the Bridgetown-Greenbushes Shire to insist on an extension to the public commenting time which includes at least one more Talison public meeting. As a Shire you are representing us and I want to see Talison actually discuss how THEY can possibly ensure this road will not ruin this area for future generations!

Kind regards
Mary Louise Kirk

17

Tim Clynch

From: Eileen Kneale on behalf of BTNSHIRE
Sent: Thursday, 20 December 2018 8:12 AM
To: Tim Clynch
Subject: FW: I-SUB201851881 - attn Tim Clynch re: Greenbushes Bypass Road

SynergySoft: I-SUB201851881

Eileen Kneale
Records Officer
Shire of Bridgetown-Greenbushes
PO Box 271
BRIDGETOWN WA 6255
PH: (08) 9761 0800
FAX: (08) 9761 2023
Website: www.bridgetown.wa.gov.au

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From: Bridgetown Pottery - Accounts [<mailto:accounts@bridgetownpottery.com.au>]
Sent: Wednesday, 19 December 2018 4:51 PM
To: BTNSHIRE
Subject: I-SUB201851881 - attn Tim Clynch re: Greenbushes Bypass Road

Dear Tim,

I am writing to support the proposed Greenbushes Bypass Road as proposed.

I feel strongly that the townsite of Greenbushes needs to be free of truck traffic so that it's existing businesses can flourish. Removing the truck traffic from the town centre will enhance the amenity of the town and encourage new businesses to emerge.

I feel that the proposed route is following an existing haulage road and whilst there will be impact on bush land the northern proposal will be less intrusive on the landscape than the southern proposal. I appreciate that any impact on bushland creates concern in our community however the alternative of the greatly increased truck traffic through the town centre is not a desirable option.

I do believe that the mine management is cognisant of the community in which it sits – senior management staff have been devoted volunteers in many community organizations over the years and to hear it being suggested that they are dismissive of community concerns is hurtful and distressing.

Sincerely
Pip Mills

Tim Clynch

From: Eileen Kneale on behalf of BTNSHIRE
Sent: Thursday, 20 December 2018 8:17 AM
To: Tim Clynch
Subject: FW: I-SUB201851882 - CEO Tim Clynch, Greenbushes

SynergySoft: I-SUB201851882

Eileen Kneale
Records Officer
Shire of Bridgetown-Greenbushes
PO Box 271
BRIDGETOWN WA 6255
PH: (08) 9761 0800
FAX: (08) 9761 2023
Website: www.bridgetown.wa.gov.au

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From: Debbie Taylor [mailto:debstaylor1956@gmail.com]
Sent: Wednesday, 19 December 2018 6:39 PM
To: BTNSHIRE
Subject: I-SUB201851882 - CEO Tim Clynch, Greenbushes

Dear Tim,

I am very concerned about the proposed Mine Haulage Road and oppose the concept. Talison are proposing permanent, intergenerational changes to the tourist attracting areas of our town.

I appreciate that it is diverting the truck traffic from the townsite, which is still the preferred outcome.

However, this road compromises the natural beauty that still co-exists in the Greenbushes surrounds - next to the mine -and has done so successfully for many decades, with the care of past mine managers. This area brings people in from our community, as well as surrounding communities, as well as travellers from all over Australia for all different reasons; free camping, swimming and recreation, nature walks, sports, bird watching, photography, heritage interests and much more. The proposed road with 200 trucks as a minimum of daily traffic cutting through the middle of this and bordering the sports grounds and free camping area is completely unacceptable.

Having been a very active members of this community since moving here in 2006, I've been involved in a lot of the projects that have aimed to continue to develop and beautify this area and put Greenbushes on the map for tourism. A quick google search on Greenbushes Pool brings up countless images and sites that have already put us on the map for this very area that is proposed to be severely compromised.

<https://www.australiassouthwest.com/destination/greenbushes> This example has the top 5 things to do when visiting Greenbushes and number 1 is: "Visit the Greenbushes Pool and Boardwalk. The spring-fed natural pool has a picnic area, barbecue facilities and a boardwalk with signposted walks. Take time to explore the conservation area adjacent, where you may even spot wildlife in the nesting boxes along the walk trails". And not one of the top 5 suggestions is mine related and all are celebrating our natural environment beauty!

In my experience, the mine's previous General Managers Pat and Steve have supported and appeared to care about the co-existence between what this area has to offer in natural beauty as well as mining and opportunities. It is this co-existence and respect that has won Greenbushes many awards in the state and recent national Tidy Towns Sustainable Communities Awards.

Now under the new general manager Craig Dawson, who has no connection to the history of the community, it appears he has little appreciation of the countless hours volunteers have put into this area and through his public demeanour at community info sessions, clearly has no idea what it is like to operate in such a way that sees the actions we take are for the greater good of the whole community & biodiversity now and in the future. Craig Dawson has been heard discrediting both the pool and schwenkes area as 'just old mine dams', which is how he described them to the Greens MLC Diane Ethers on her visit to the area in early December. And this is the very attitude that is underlying this road proposal!

Talison paid a consultant to draw up this plan, but clearly did not employ someone with the environmental credibility that could also draw up the plan with suggestions already in place on how to minimise the impact that this road will have on community, recreation, tourism, biodiversity and more. Or perhaps the consultant wasn't given this as a priority in his brief?

Instead, Talison held a community meeting to talk about this road and suggested that WE the general public will have to submit our ideas on how Talison can reduce the impact of this road, treating it essentially as fait accompli. What do the majority of general public know about road construction and that they can incorporate things such as wildlife underpasses or carbon catchment for the road pollution before it enters waterways?

If the new Talison actually cared about this area and respected the community's past efforts, then they should have come to the community information meeting with actions already in place in their road concept plan.

In 10 years, this proposed road will easily have 1 million passings of traffic, including 735 000 passings of their huge Cube trucks plus local traffic, mine deliveries and workers commuting to and fro. 1 million vehicles passing an area that is our biggest future potential for bringing people into our town when mining is no longer the main industry... which could be as little as 20 years time!!! Where is the forward thinking?

Currently the pool area is quiet natural swimming hole with surrounding bush walks and a wetlands in it's infancy stages that has the potential to be a haven for threatened species. You the Shire have applied for Federal money to continue upgrading and beautifying the free camping area, isn't that correct? How does this road compliment this development?

With the 350 hectares of state forest habitat set to be cleared, which will see nesting hollows destroyed and prime habitat for the local fauna populations of chuditch, bandicoots, phascogales, Baudin's, Carnaby's, Red-tail Cockatoos, Western Ringtail Possum, (the list goes on)... and flora biodiversity... you'd think Talison would have a care to preserve this area with more of a concerted effort.

I object to this Mine Road Haulage proposal and I think it is up to the Bridgetown-Greenbushes Shire to insist on an extension to the public commenting time which includes at least one more Talison public meeting. As a Shire you are representing us and I want to see Talison actually discuss how THEY can possibly ensure this road will not ruin this area for future generations!

Kind regards

Debra Taylor

Balingup resident

19

Tim Clynch

From: Eileen Kneale on behalf of BTNSHIRE
Sent: Thursday, 20 December 2018 8:18 AM
To: Tim Clynch
Subject: FW: I-SUB201851883 - Proposed road changes

SynergySoft: I-SUB201851883

Eileen Kneale
Records Officer
Shire of Bridgetown-Greenbushes
PO Box 271
BRIDGETOWN WA 6255
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From: Bronwyn Whiteford [mailto:indisabah@outlook.com]
Sent: Wednesday, 19 December 2018 7:31 PM
To: BTNSHIRE
Subject: I-SUB201851883 - Proposed road changes

CEO Tim Clynch

Dear Tim,

I am very concerned about the proposed Mine Haulage Road and oppose the concept. Talison are proposing permanent, intergenerational changes to the tourist attracting areas of our town.

I appreciate that it is diverting the truck traffic from the townsite, which is still the preferred outcome.

However, this road compromises the natural beauty that still co-exists in the Greenbushes surrounds - next to the mine -and has done so successfully for many decades, with the care of past mine managers. This area brings people in from our community, as well as surrounding communities, as well as travellers from all over Australia for all different reasons; free camping, swimming and recreation, nature walks, sports, bird watching, photography, heritage interests and much more. The proposed road with 200 trucks as a minimum of daily traffic cutting through the middle of this and bordering the sports grounds and free camping area .

A quick google search on Greenbushes Pool brings up countless images and sites that have already put us on the map for this very area that is proposed to be severely compromised.

<https://www.australiassouthwest.com/destination/greenbushes> This example has the top 5 things to do when

visiting Greenbushes and number 1 is: "Visit the Greenbushes Pool and Boardwalk. The spring-fed natural pool has a picnic area, barbecue facilities and a boardwalk with signposted walks. Take time to explore the conservation area adjacent, where you may even spot wildlife in the nesting boxes along the walk trails". And not one of the top 5 suggestions is mine related and all are celebrating our natural environment beauty!

In my experience, the mine's previous General Managers Pat and Steve have supported and appeared to care about the co-existence between what this area has to offer in natural beauty as well as mining and opportunities. It is this co-existence and respect that has won Greenbushes many awards in the state and recent national Tidy Towns Sustainable Communities Awards.

Now under the new general manager Craig Dawson, who has no connection to the history of the community, it appears he has little appreciation of the countless hours volunteers have put into this area and through his public demeanour at community info sessions, clearly has no idea what it is like to operate in such a way that sees the actions we take are for the greater good of the whole community & biodiversity now and in the future. Craig Dawson has been heard discrediting both the pool and schwenkes area as 'just old mine dams', which is how he described them to the Greens MLC Diane Ethers on her visit to the area in early December. And this is the very attitude that is underlying this road proposal!

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Kind regards
Bronwyn Whiteford

Sent from my Samsung Galaxy J3 2016 on the Telstra Mobile Network

Tim Clynh, CEO
Shire of Bridgetown-Greenbushes
PO Box 271
BRIDGETOWN WA 6255

Shire of Bridgetown-Greenbushes	
File No:	054-1
Document No:	1-2018-33-288
20 DEC 2018	
Officer:	CEO
Copy:	

To Whom it May Concern,

I Annmaree Stallard of 61 Jephson Street, Greenbushes, do not object to the bypass.

However, I do have concerns on the 1 way in, and 1 way out entrance to the sporting complex.

Yours sincerely,



Annmaree Stallard

19 December 2018

21

Tim Clynch

From: Eileen Kneale on behalf of BTNSHIRE
Sent: Wednesday, 2 January 2019 9:51 AM
To: Tim Clynch
Subject: FW: I-SUB201851921 - New Form From Website Shire of Bridgetown

SynergySoft: I-SUB201851921

Eileen Kneale
Records Officer
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PO Box 271
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From: Shire of Bridgetown [<mailto:no-reply@sparkcms.com.au>]
Sent: Monday, 31 December 2018 8:10 PM
To: BTNSHIRE
Subject: I-SUB201851921 - New Form From Website Shire of Bridgetown

New Form From Website Shire of Bridgetown



The following form was filled out on the Shire of Bridgetown website.

Have Your Say

First Name: Neil

Last Name: Pearce

I wish to express my disappointment with the way the shire has handled the public comment on the proposed new access road for the Talison mine in Greenbushes. I have a property in Greenbushes and I am a ratepayer for the shire, though I do not permanently live in the town. It appears to me that information regarding the proposal and the deadline for public comment was not widely disseminated and that ratepayers should have been personally notified so that they would be properly informed..

Comment:

The proposal, as it stands, is very poor and has obviously been made as it is the cheapest option for a multi million dollar Chinese company, and with little regard for the residents of your shire. The access is far too close to the Greenbushes pool and having the road cut off the sports ground from the town displays a lack of concern for the safety of the local children.

On top of these considerations, having an extra 150 trucks a day travelling up South West Hwy, will have a major impact on the other towns they will be driving through. The Talison website states that the WA government is considering the reopening of the railway and this is clearly the safest and most environmentally friendly solution. Any decision regarding the building of a road should be postponed until then.

I realise that I have missed the deadline for public comment, but I reiterate that placing signs in the Greenbushes Resource centre and shire offices in the expectation that people will wander into them and discover the information is an inefficient way of informing your ratepayers of major decisions.

Your

Contact

Email:

neilmpearce@gmail.com

Submitted:

31/12/2018 8:10:08 PM

IP:

106.68.2.179



Greenbushes Infrastructure Corridors Detailed Flora and Vegetation Survey

Prepared for Talison Lithium
3 December 2018



Document Status						
Rev No.	Authors	Reviewer/s	Date	Approved for Issue		
				Name	Distributed To	Date
1	D.Brearley	B.Menezies	03/11/18	D.Brearley	S.Green, C.Griffin	25/11/18
2	D.Brearley	B.Menezies	29/11/18	D.Brearley	S.Green, C.Griffin	03/12/18



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EXECUTIVE SUMMARY

Talison Lithium Pty Ltd (Talison) currently operates a lithium mine at Greenbushes, situated approximately 250km south of Perth in south-west Western Australia (Figure 1). Talison is proposing to increase output from the Greenbushes Mine and as part of the current expansion of mining operations, requires flora and vegetation survey work to be completed within three proposed infrastructure corridors surrounding the mine site (Figure 2).

Onshore Environmental Consultants Pty Ltd (Onshore Environmental) was commissioned by Talison to undertake a two season detailed flora and vegetation survey of remnant native vegetation occurring within the proposed infrastructure corridors, herein referred to as the study area.

The field survey was completed by two Principal Botanists and one Senior Botanist from Onshore Environmental working over a six day period from the 30th July to the 6th August 2018, with a second season assessment completed over six spring days; 26th, 27th, 29th and 30th September, 3rd, 4th and 18th October 2018. A total number of 280 plant taxa (including varieties and subspecies) from 60 families and 157 genera were recorded from the study area. Species representation was greatest among the Fabaceae, Orchidaceae, Asparagaceae, Myrtaceae, Asteraceae, Cyperaceae, Proteaceae and Poaceae families. The most speciose genus was *Acacia* (17 taxa), followed by *Caladenia* (11 taxa), *Lomandra* (10 taxa), *Stylidium* (8 taxa), *Hibbertia* (7 taxa each), *Drosera* and *Pterostylis* (6 taxa each).

None of the plant taxa recorded from the study area was gazetted as Threatened Flora (T) pursuant to subsection (2) of Section 23F of the *Wildlife Conservation Act (1950)* (WC Act), or listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

One Priority 4 flora taxon was recorded from within the study area; *Acacia semitrullata*. *Acacia semitrullata* was recorded as four plants from a single point location in state forest along the proposed powerline corridor.

The Priority 2 flora taxon *Melaleuca viminalis* was recorded approximately 70 metres east (outside) of the proposed northern bypass road. Three plants were recorded in riparian vegetation adjacent to the Greenbushes “swimming pool”, a popular recreation site. The close proximity of this location to the ablution block and other exotic plantings suggests the individuals may have been introduced to the site.

One taxon recorded from within the study area was identified to represent a significant range extension; *Hybanthus epacroides*. The nearest known record is from Gnowangerup approximately 180 km east of the study area. *Hybanthus epacroides* is known to occur in white or yellow sand in association with laterite. Within the study area it was recorded on orange sands weathered and deposited from laterite positioned higher in the landscape. This habitat type was specific and localised.

A total of 45 introduced species were recorded from the study area, of which two taxa were listed as Declared Plants under the *Biosecurity and Agriculture Management Act 2007* (BAM Act):

- **Asparagus asparagoides* (Bridal Creeper) - s22(2); and
- **Rubus anglocandicans* (Blackberry) - s22(2) (C3 Exempt).

A total of ten vegetation types from four broad landforms were described and mapped from within the corridor study area. Extensive field assessment confirmed there were no Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) represented within the study area.

Vegetation condition across the majority of the study area was rated as *degraded* (44.5 ha or 41% of the study area) reflecting a high proportion of the area having been disturbed and rehabilitated as part of historical tin mining operations. Approximately 12.6 ha (11% of the study area) had been cleared for a mixture of annual pasture, existing road infrastructure, and as part of historical mining activities; these areas do not support any native vegetation cover. Blocks of vegetation rated as *completely degraded* totaled 19.9 ha (18% of the study area) and included a mix of pine and bluegum plantation, and historical rehabilitation. Intact native vegetation was rated as *very good* (22.8 ha or 21% of the study area) or *good* (9.8 ha or 9% of the study area) with the primary disturbances resulting from hardwood logging activities or close proximity to disturbed ground, i.e. road verges.

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1.0 INTRODUCTION

1.1 Preamble

Talison is a Western Australian mining company with operations based at Greenbushes in the south-west of Western Australia. The Greenbushes Mine is located approximately 250 km south of Perth and 80 km south-east of the port of Bunbury (Figure 1).

The site comprises a number of open cut mining operations for tantalum, tin and spodumene (lithium). An underground tantalum operation has also been developed but is currently under care and maintenance. The Greenbushes pegmatite is the world's largest hard rock tantalum resource and the largest and highest-grade lithium minerals resource in the world. Minerals produced at Talison's Greenbushes Mine can be found in many different applications including mobile phones, computers, surgical implants, electronic devices, glassware, ceramics and batteries.

Talison is proposing to increase output from the Greenbushes Mine and as part of the current expansion of mining operations, requires flora and vegetation survey work within three proposed infrastructure corridors surrounding the mine site (Figure 2). Onshore Environmental was commissioned by Talison to undertake a two season detailed flora and vegetation survey of remnant native vegetation occurring within the proposed infrastructure corridors. This work was completed by three botanists working over a total of 12 days between July and October 2018.

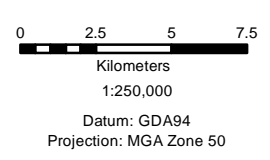
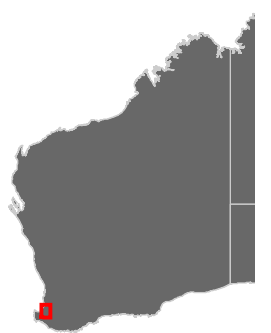
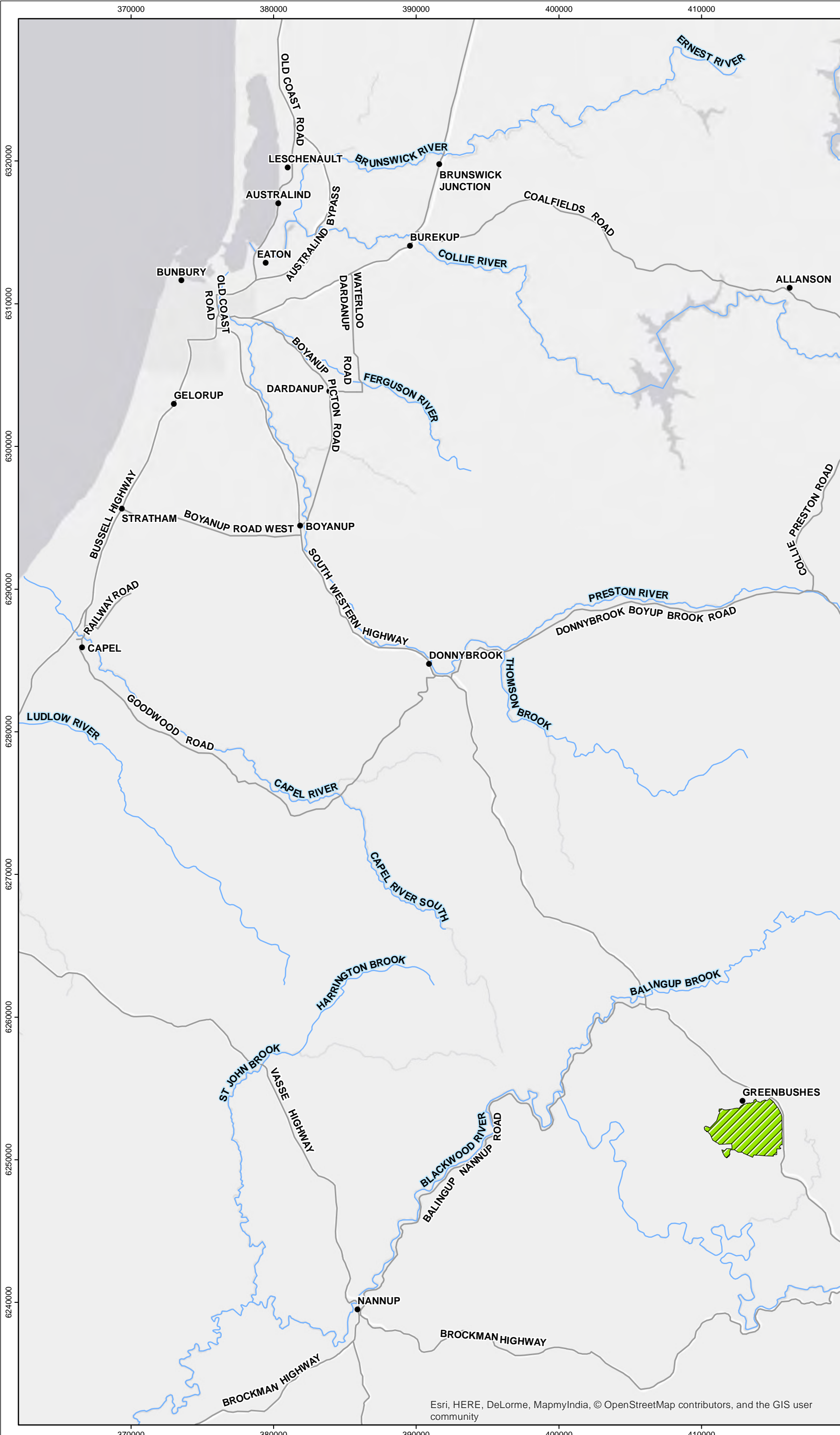
1.2 Previous Surveys

There have been five previous flora and vegetation surveys undertaken within the Greenbushes Mine area that partially overlap with the study area. These surveys are listed below and described in more detail in Section 3.1.1:

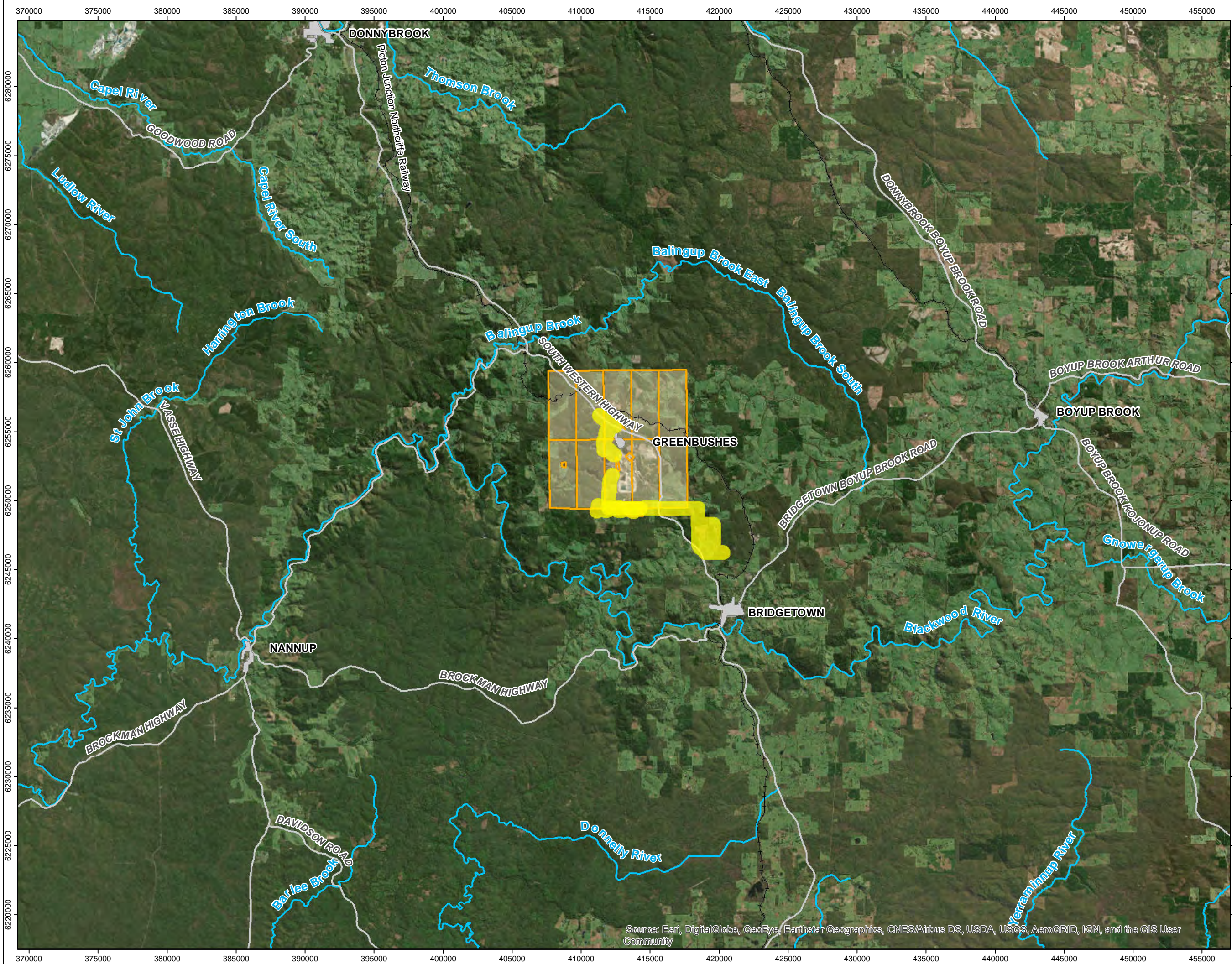
- Trudgen and Morgan (1991) *A Flora and Vegetation Survey of part of the Greenbushes Leases*;
- Onshore Environmental Consultants (2006) *Flora and Vegetation Survey Greenbushes Mine Site: Vegetation surrounding south east corner of the TSF*;
- AECOM Australia Pty Ltd (2010) *Bridgetown RWSS Pipelines Millstream Dam to Greenbushes Link Biological Survey*;
- Onshore Environmental (2012) *Flora and Vegetation Survey Greenbushes Mining Leases*; and
- Onshore Environmental (2018) *Greenbushes Mining Operations, Detailed Flora and Vegetation Survey*.

Legend

- Talison DEC Active Mining Location



Date: 31/01/2018
 Status: Draft
 Figure: 1
 Sheet Size: A3
 Internal Reference: Talison Location
 Drawn by: GSM
 Requested by: DB

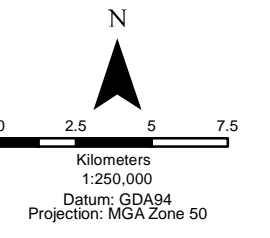
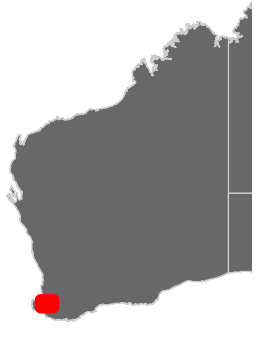


TALISON
Bypass and Powerline Corridors

Study Area Location

Legend

- Study Area
- Talison Tenure
- Railway



Date:	26/11/2018
Status:	Final
Figure:	2
Sheet Size:	A3
Internal Reference:	TL_Loc_Map
Drawn by:	GSM
Requested by:	DB



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

1.3 Climate

The study area occurs on a boundary between the dry Mediterranean region to the north which experiences six dry months per year, and the moderate Mediterranean region to the south which experiences four dry months per year (Beard 1981). The Greenbushes region has cool wet winters and hot dry summers. Average annual rainfall for the town of Greenbushes is 973.2 mm (Bureau of Meteorology [BOM] 2018), with the majority of falls occurring during the winter months of June and July associated with cold fronts moving across the south-west of Western Australia.

The annual rainfall for the three-month period prior to the February/March 2018 and September/October 2018 field surveys was 77 mm and 455 mm respectively (Figure 3). This provided excellent survey conditions with a wide variety of plant taxa flowering across two seasons.

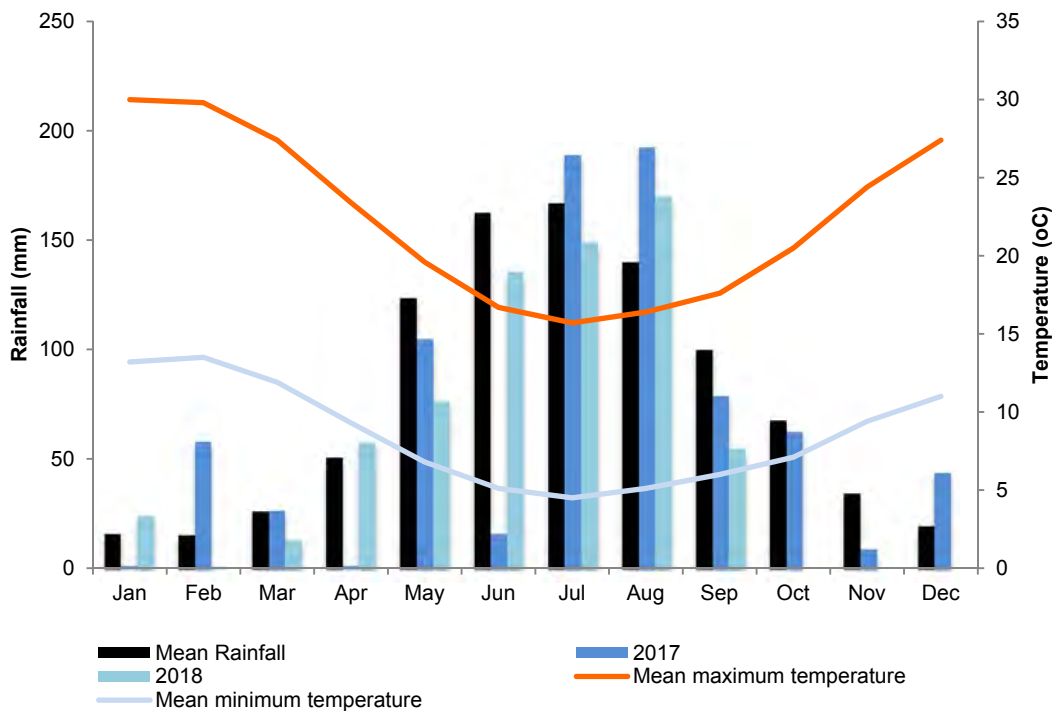


Figure 3 Climatic data for Greenbushes with monthly rainfall figures from January 2017 to September 2018. Rainfall data is from the Greenbushes Weather Station and temperature data from the Bridgetown Weather Station (Bureau of Meteorology 2018).

1.4 Biogeographic Regions

The latest version of the Interim Biogeographic Regionalisation for Australia (IBRA7) divides Australia into 89 bioregions based on climate, geology, landform, native vegetation and species information, and includes 419 sub-regions (Department of Environment 2013). The bioregions and sub-regions are the reporting unit for assessing the status of native ecosystems and their level of protection in the National Reserve System.

The study area is located within the Southern Jarrah Forest (JF2) sub-region within the Jarrah Forest bioregion. The Southern Jarrah Forest sub-region is described as,

“Duricrusted plateau of Yilgarn Craton characterised by Jarrah-Marri forest on laterite gravels and, in the eastern part, by Marri-Wandoo woodlands on clayey soils. Eluvial and alluvial deposits support Agonis shrublands. In areas of Mesozoic sediments, Jarrah forests occur in a mosaic with a variety of species-rich shrublands. The climate is Warm Mediterranean” (Hearn *et al.* 2002).

The vegetation of the sub-region is described as “Jarrah - Marri forest in the west grading to Marri and Wandoo woodlands in the east. There are extensive areas of swamp vegetation in the south-east, dominated by Paperbarks and Swamp Yate. The understory component of the forest and woodland reflects the more mesic nature of this area. The majority of the diversity in the communities occurs on the lower slopes or near granite soils where there are rapid changes in site conditions” (Hearn *et al.* 2002).

1.5 Land Use

The major land uses within the study area and surroundings are State Forest, residential, mining and agriculture. The study area predominantly encompasses State Forest with a smaller block of privately-owned farmland to the south. Nearby towns include Bridgetown (approximately 15 km to the south-east) and Balingup (approximately 10 km to the north-west).

1.5.1 *Agriculture and Associated Industry*

Bridgetown is the oldest town in the south-west of Western Australia. It was first settled by sheep farmers E. Hester and John Blechyden in 1857. The Bridgetown Agricultural Society was formed in 1885 and by this time the area had a well-established agricultural industry, including sheep, cattle, dairy products, timber, fruit and nuts. In 1889 the railway line was extended to Bridgetown allowing the expansion of the fruit and timber markets. Many of these agricultural industries are still operational with wineries and olive farms also established in the area. Currently one of the largest employers in the area is Auswest Timbers, a local timber milling company.

1.5.2 *Mining*

The Greenbushes Mine is situated on the oldest mining tenement in Western Australia and has a long history of mining activities dating back to 1888. Tin was first reported in 1886 in a Government geological survey, and mining commenced in 1888. Since it was first discovered, tin has been mined almost continuously in the Greenbushes area, although in recent years the lower tin prices and emergence of tantalum as the major revenue earner have relegated tin to the position of a by-product. The presence of tantalite was noted as far back as 1893 but at that time the mineral had no value in its own right and was seen as a nuisance because it downgraded the value of tin. Although open cut mining began to be practiced on a small scale in the 1900s much of the tin mined in the early years by small operators came from underground workings to access weathered pegmatite below the caprock. Shafts were blasted in the surface rock and tunnels dug out into the tin bearing alluvium. The dirt was hauled to the surface and stockpiled during the summer months then puddled and sluiced in winter when there was an abundance of water. Tin mining continued more or less as a cottage industry under the control of many small mining companies up to the early 1960s when, for the first time, a major mining company became involved in the tinfields.

For several years a dredge was used to recover surface deposits of tin and tantalum.

By 1970 alluvial resources were dwindling and it was necessary to increase exploration activity. As a direct result of this work development of the weathered pegmatite commenced in 1974. This tin/tantalum source sustained the operation until 1992. Small parcels of tantalite were sold occasionally, but it was not until 1944, when war had stimulated interest in the element tantalite, that the mineral began to be produced steadily for use in telecommunications, electronics and radar equipment.

Spodumene, the major lithium mineral, was first identified by the Western Australian Government Survey in 1949 from a specimen collected in 1928 which was initially thought to be feldspar. During the extensive diamond drilling programme for tantalum that took place between 1977 and 1980, substantial spodumene rich zones were identified. Later drilling confirmed the existence of the richest spodumene ore body ever discovered, with resources sufficient to maintain production well into the 21st Century. However, being a new product, markets had to be developed, so it was not until 1983 that the initial development of the lithium ore body at Greenbushes commenced, and the first lithium processing plant was commissioned in 1985. Since that time, the lithium processing plant has been expanded several times to produce a range of lithium concentrates, with the most recent expansion of the Greenbushes operations occurring in 2012.

1.5.3 Tourism

Tourism is the other major industry in the area with the scenery, historical sites, wineries, and galleries serving as the major attractions. Events such as the annual Blues at Bridgetown Festival also draw large numbers of people to the area.

1.6 Landforms, Soils

Tille (1996) has mapped soils of the Wellington-Blackwood District, which includes the town sites of Greenbushes and Bridgetown on its southern boundary. The study area occurs within the Hester Sub-system of the Darling Plateau System, and consists of undulating ridges and hill crests formed on laterite and gneiss which typically slope downwards off the main plateau into the surrounding Lowden Valleys System. The soils are mostly loamy gravels, sandy gravels and loamy earths.

In 2010 AECOM reviewed the Environmental Geology Series maps prepared by the Geological Survey of Western Australia (1980) for a nearby project area (described in more detail in Section 3.1.1). The geology of this project area was described as Archean granite of the Yilgarn Block and the soils of this area are listed below:

- Bt - Shallow red and yellow earths and rock outcrops on slopes and narrow alluvial terraces;
- Ba - Red and yellow earths, duplex soils on slopes, narrow alluvial terraces, swampy floors;
- G - Grey sands and some swamps;
- Hr - Duricrust and gravels flanked by gravelly duplex soils; and
- Cc - Yellow and duplex soils and red earths on slopes, and narrow alluvial terraces.

1.7 Flora and Vegetation

The study area occurs in the Menzies Sub-district of the Darling Botanical District, in the South-West Botanical Province (Beard 1981). The Menzies Sub-district (southern jarrah forest) covers a total area of 26,572 km², of which 18,715 km² (70%) originally supported jarrah and jarrah-marri forest (Beard 1990). It is estimated that approximately 61% of the total area has been cleared since European settlement, mainly in the valleys which are free of laterite, leaving the forest intact on laterised higher plateau levels.

The Menzies Sub-district is characterised by Jarrah stands on laterite within some Marri and Wandoo woodlands. Valley soils are often richer and Blackbutt (*Eucalyptus patens*) is more dominant in these areas. Flooded Gum (*Eucalyptus rudis*) is common along stream banks and Bullich (*Eucalyptus megacarpa*) is also present in some areas. Within the study area vegetation is dominated by Jarrah (*Eucalyptus marginata*) and Marri (*Corymbia calophylla*) forest over the tall shrubs bull banksia (*Banksia grandis*) and snotty gobble (*Persoonia longifolia*). The lower understorey strata contains a range of plant genera including *Hakea*, *Acacia*, *Xanthorrhoea*, *Adenanthos*, *Hovea*, *Leucopogon*, *Macrozamia*, *Leucopogon*, *Bossiaea*, *Daviesia*, *Grevillea*, *Patersonia*, *Styphelia* and *Kennedia*.

A variety of published studies that relate to flora and vegetation of the southern jarrah forest are listed below:

- Distribution & prehistory of karri, jarrah & marri - Churchill (1968);
- Structure & composition of the karri forest around Pemberton - McArthur and Clifton (1975);
- Vegetation mapping of the Manjimup-Pemberton area - (Smith 1972);
- Vegetation mapping of the Swan area - Beard (1981);
- Vegetation mapping of the Darling System - Heddle *et al.* (1980); and
- Vegetation mapping as part of the Regional Forest Agreement - Mattiske and Havel (1998).

Vegetation complexes of the southern jarrah forest have most recently been defined by Heddle *et al.* (1980) and updated by Mattiske and Havel (1998). Mattiske and Havel (1998) describe vegetation of the survey area as 'mixture of open forest of *Eucalyptus marginata* - *Corymbia calophylla* with some *Eucalyptus patens* on slopes'.

2.0 METHODOLOGY

2.1 Legislation and Guidance Statements

The two season detailed flora and vegetation survey was carried out in a manner that was compliant with Environmental Protection Authority (EPA) requirements for the environmental surveying and reporting of flora and vegetation in Western Australia:

- Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016a); and
- Environmental Factor Guideline: Flora and Vegetation (EPA 2016b).

A specific requirement for 'linear corridor surveys' is to incorporate vegetation unit characterisation using survey data and aerial photography from 500 m to 1,000 m on both sides of the infrastructure corridor (where this is not already part of the survey area) to provide context for environmental impact assessment (EPA 2016a). To address this requirements, vegetation mapping along the defined infrastructure corridor was merged with adjacent mapping recently completed within the Mine Development Envelope (Onshore Environmental 2018). Vegetation mapping was then inferred for any open areas remaining within a 500 metre buffer of the infrastructure corridor.

2.2 Desktop Assessment

2.2.1 Literature Review

Regional scale reports relevant to the study area locality were reviewed, including:

- a summary of bioregional data (Hearn *et al.* 2002); and
- vegetation description and mapping by Beard (1981), and more recently by Hedde, Loneragan and Havel (1980) and by Mattiske and Havel (1998).

In addition, there was a review of all publicly available literature and internal reports commissioned and held by Talison Lithium. There were five flora and vegetation surveys previously completed between 1991 and 2018 within, or immediately surrounding, the study area. As part of the desktop review total flora lists for the five flora assessments were reviewed to ensure nomenclature was accurate, consistent and current. The previous survey work is summarised in more detail in Section 3.1.1.

2.2.2 Database Searches

The desktop assessment included databases relating to significant flora, TECs and PECs previously collected or described within, or in close proximity to, the study area. For this report the search was extended beyond the study area boundary to place flora values into a local and regional context. The following databases were searched:

- NatureMap1: This database represents the most comprehensive source of information on the distribution of Western Australia's flora, comprising records from the Department of Biodiversity, Conservation and Attractions (DBCA) Threatened Flora database, and the Western Australian Herbarium (WAH) Specimen Database (20 km radial search around the central point GDA94 Zone 50 - 413000E 6252000N, accessed 22 March 2018);

- DBCA's Threatened and Priority flora database was searched to confirm the NatureMap results (50 km radial search around the central point GDA94 Zone 50 - 413000E 6252000N, accessed 20 February 2018) (DBCA 2018a);
- DBCA's TEC, PEC and Environmentally Sensitive Areas (ESAs) database was searched to identify significant communities (20 km radial search around the central point GDA94 Zone 50 - 413000E 6252000N, accessed 2 March 2018) (DBCA 2018b);
- EPBC Act Protected Matters database (DoEE 2018, accessed 22 March 2018); and
- International Union for Conservation of Nature (IUCN) database (IUCN 2018, accessed 22 March 2018).

2.2.3 Assessment of Likelihood of Occurrence in the study area

A list of conservation significant species occurring within a 50 km radius of the study area was compiled during the literature review and database searches. The likelihood of each taxon occurring within the study area was assessed using a set of rankings and criteria (Table 1) based on presence of suitable landform (inferred from aerial imagery with contours overlaid and from knowledge of the adjacent areas) and distance to known records.

Table 1 Ranking system used to assign the likelihood that a species would occur in the study area.

Rank	Criteria
Recorded	The species has been recorded in the study area.
Likely to occur	The species has previously been recorded from a landform which is present within the study area, and there are previous records within a 20 km radius of the study area.
Possible to occur	The species has previously been recorded from a landform which is present within the study area, and there are previous records within a 50 km radius of the study area.
Unlikely to occur	The landform from which the species has previously been recorded is absent within the study area, and/or there are no previous records within a 50 km radius of the study area.

2.3 Field Survey Methodology

2.3.1 Timing and Personnel

The two season flora and vegetation survey was completed by two Principal Botanists and one Senior Botanist from Onshore Environmental, Dr Darren Brearley, Dr Jerome Bull and Ms Jessica Waters, working over a six day period from the 30th July to the 6th August 2018, with a second season assessment completed over six spring days; 26th, 27th, 29th and 30th September, 3rd, 4th and 18th October 2018.

2.3.2 Sampling of Study Sites

The field survey involved systematic sampling using quadrats (referred to as study sites). Relevé vegetation descriptions were made to increase the accuracy of vegetation mapping and targeted searches were completed in habitats where it was anticipated significant flora might occur.

The study sites were 10 m by 10 m in dimension which is standard for the Southern Jarrah Forest bioregion. The number of study sites sampled was determined by the size and heterogeneity of the study area, and confirmed by a species accumulation curve (Figure 4) following the second season survey. A total of 22 quadrats were formally assessed. The locations of all quadrats sampled are provided in Figure 5.

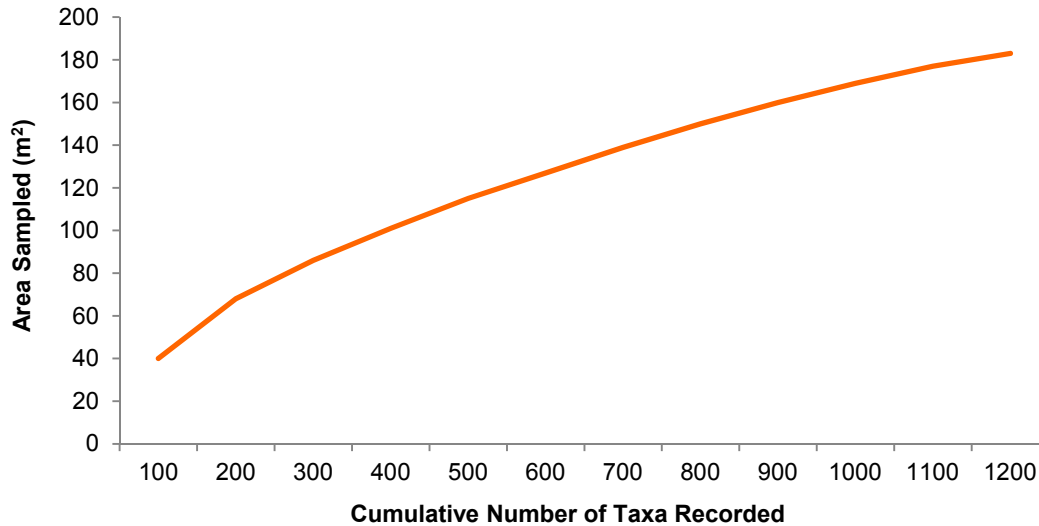


Figure 4 Species accumulation curve for the 22 quadrats formally assessed within the study area.

The study sites were assessed to provide a list of the total flora occurring within the study area and a description of the vegetation structure. Data collected covered a range of environmental parameters including:

- Landform and habitat;
- Aspect;
- Soil colour and soil type;
- Rock type;
- Slope (angle);
- Vegetation condition;
- Disturbance (caused by fire, clearing, grazing etc);
- Age since fire;
- Broad floristic formation;
- Vegetation association description; and
- Height and percentage ground cover provided by individual plant taxa.

Other parameters recorded for each study site were:

- Study site number and date of assessment;
- Names of the botanists undertaking the assessment;
- Location description and waypoint - GPS coordinate (GDA94) using a handheld GPS; and
- Photograph number.

2.3.3 Targeted Surveys for Conservation Significant Species

Targeted searches for species of conservation significance likely to occur within the study area were completed. All vegetation polygons defined were ground truthed during the survey to record opportunistic records for significant flora. This coverage also allowed for closer examination of specific landforms where significant flora may

be expected to occur. These landforms included lower grey sandy slopes and winter wet drainage lines.

2.3.4 Weed Survey and Mapping

Introduced species were recorded from the 22 quadrats formally assessed within the study area. Additional opportunistic collections were also made while moving throughout the study area, with targeted weed searches were completed in high moisture habitats including drainage lines and riparian features.

2.3.5 Floristic Analysis

A multivariate statistical analysis of the floristic quadrat data (22 quadrats) was completed to assist in understanding the vegetation-habitat relationships within the study area. A two-way classification (Agglomerative Hierarchical Fusion) of the presence/absence quadrat data was carried out on the 275 taxon x 22 quadrat dataset using the program PATN (Belbin, 2003). The flexible UPGMA classification strategy was used ($\beta = -0.1$), together with the Bray-Curtis site similarity measure. The number of groups to be determined was set at ten. The primary output of the classification was in the form of a dendrogram and a two-way table of taxa and quadrats (Appendix 1).

2.3.6 Vegetation Association and Condition Mapping

The vegetation mapping utilised high-resolution aerial photography of the study area at a scale of 1:4,000, with definition of vegetation polygons based on shading patterns. Ground-truthing of the study area was completed during the survey with vegetation descriptions made within selected vegetation polygons to confirm dominant structural layers and associated plant taxa.

The location of 22 quadrats assessed during the survey was overlaid on the aerial photography, and associated flora and vegetation data used to provide vegetation association descriptions for individual polygons defined. Description of vegetation structure follows the height, life form and density classes of Muir (1977) (see Appendix 2). This is largely a structural classification suitable for broader scale mapping, but taking all ecologically significant strata into account. Vegetation condition for each of the study sites was determined using a recognised rating scale (based on Keighery 1994, see Appendix 3).

2.3.7 Vouchering

Voucher specimens were taken for all taxa where the identification could not be confirmed in the field. Taxonomy was completed by Dr Jerome Bull, and use was made of the Western Australian Herbarium.

2.3.8 Field Survey Constraints

The EPA Technical Guidance for Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (EPA 2016a) list seven potential limitations that field surveys may encounter. These limitations are addressed in Table 2.

Table 2 Relevance of limitations to the Greenbushes flora and vegetation survey, as identified by EPA (2016a).

Constraint	Relevance
Availability of contextual information at a regional and local scale	There have been five previous flora and vegetation surveys which partly overlap the study area, providing a comprehensive local database.
Proportion of flora recorded and/or collected, any identification issues	The high sampling intensity by three experienced botanists ensured good coverage of the study area and resulted in a high proportion of the total flora present across two seasons during 2018 being recorded. Flowering of specific taxa across the two seasons increased likelihood of maximising total flora recorded, with a variety of annual and ephemeral plant taxa recorded under excellent seasonal conditions during spring 2018.
Survey timing, rainfall, season of survey	The survey was completed by three experienced botanists over six field days in July/August 2018 and six field days in September/October 2018. Seasonal conditions during both assessments were determined to be optimum, with good rainfall experienced during the preceding months and a wide variety of plant flowering during both survey periods.
Disturbance that may have affected the results of survey such as fire, flood or clearing	There were no disturbances recorded within the study area that influenced survey outcomes.
Was the appropriate area fully surveyed (effort and extent)	Three botanists spent a total of 12 field days covering the entire study area. A total of 22 quadrats and numerous relevé sites were assessed within the study area. This represents an appropriate effort to survey remnant native vegetation within the study area.
Access restrictions within the survey area	The study area was accessed by vehicle and on foot, noting that vegetation mapping was facilitated by high-resolution aerial photography (1:4,000). There were no access restrictions encountered.
Competency/experience of the team carrying out the survey, including experience in the bioregion surveyed	The Principal Botanist, Dr Darren Brearley, has 25 years' experience working within the southern jarrah forest, and has worked annually in state forest surrounding the Greenbushes Mine since 2001. The accompanying Principal Botanist and Senior Botanist have in excess of 15 years and seven years' experience working in the region, respectively. Together the team has completed surveys of the Greenbushes Mine area and the wider region.

2.3.9 Assessment of Conservation Significance

The conservation significance of flora, fauna and ecological communities are classified at a Commonwealth, State and Local level on the basis of various Acts and Agreements, including:

Commonwealth Level:

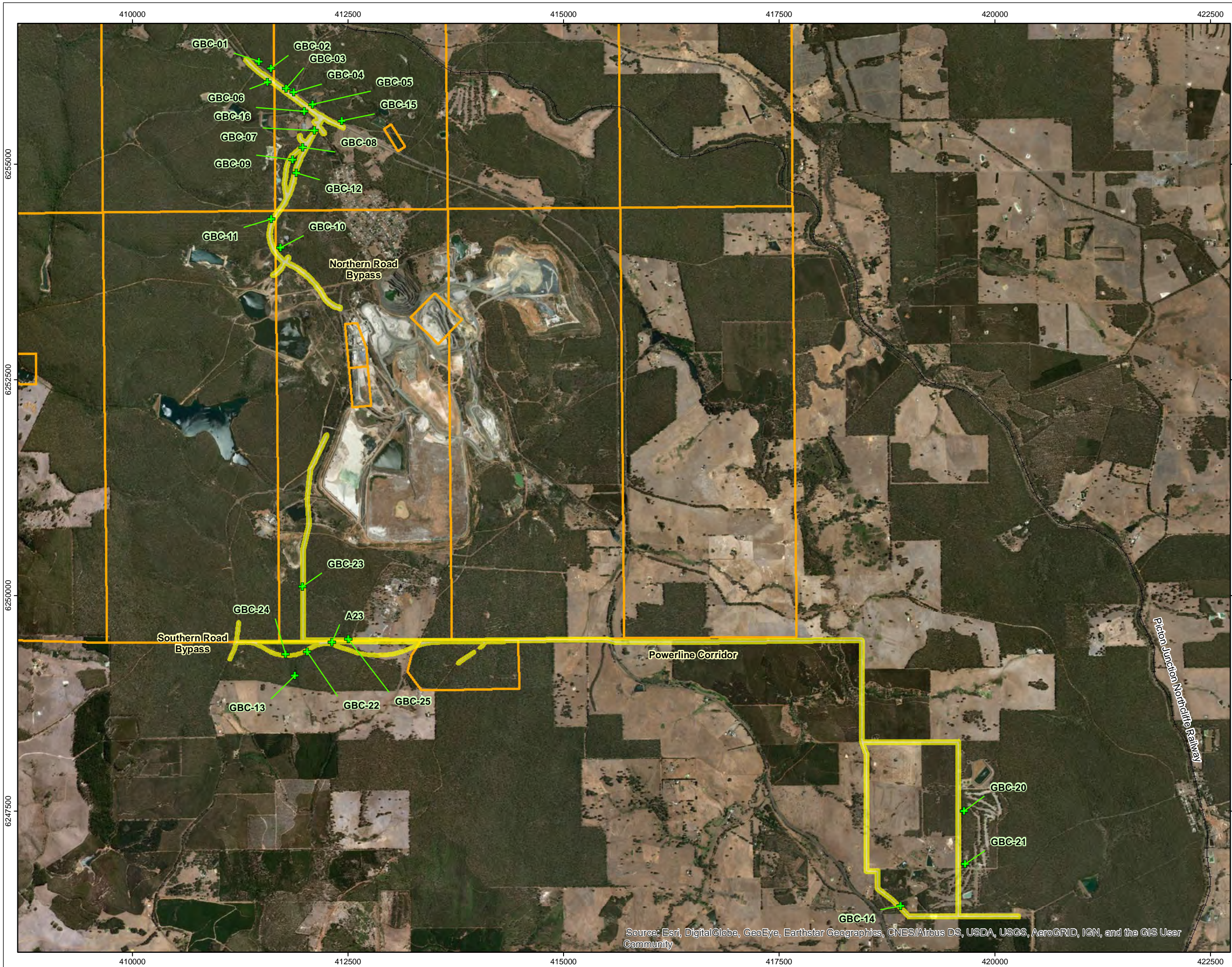
- EPBC Act: The Department of Environment (DoE) lists Threatened Flora, Fauna and Ecological Communities, which are determined by the Threatened Species Scientific Committee according to criteria set out in the Act. The Act lists flora that are considered to be of conservation significance under one of six categories (Appendix 4).

State Level:

- WC Act: At a State level native flora and fauna species are protected under the *WC Act – Wildlife Conservation Notice*. A number of species are assigned an additional level of conservation significance based on a limited number of known populations and the perceived threats to these locations.
- DBCA Priority list: DBCA produces a list of Priority species and ecological communities (PECs) that have not been assigned statutory protection under the WC Act. Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added under Priorities 1, 2 or 3. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been removed from the threatened species list for other taxonomic reasons, are placed in Priority 4. These species require regular monitoring (see Appendix 5). The list of PECs identifies those that need further investigation before nomination for TEC status at a State level.

Local Level:

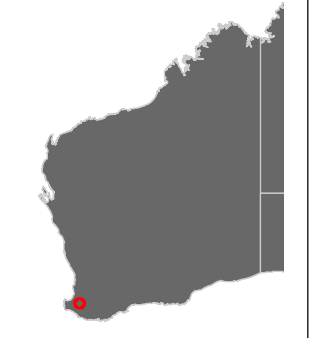
- Species may be considered of local conservation significance because of their patterns of distribution and abundance. Although not formally protected by legislation, such species are acknowledged to be in decline as a result of threatening processes, primarily habitat loss through land clearing.



TALISON
Bypass and Powerline Corridors

Survey Study Site Locations

- Legend**
- Study Areas
 - Study Site Locations
 - Talison Tenure



N

0 500 1,000 1,500

Meters
 1:40,000
 Datum: GDA94
 Projection: MGA Zone 50

Date:	26/11/2018
Status:	Final
Figure:	5
Sheet Size:	A3
Internal Reference:	TL_Study Sites
Drawn by:	GSM
Requested by:	DB



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

3.0 RESULTS

3.1 Desktop Review

3.1.1 Previous Flora Surveys within the study area

The results from previous flora and vegetation surveys completed within, or in close proximity to, the study area are presented in Table 3 and summarised below.

A Flora and Vegetation Survey of part of the Greenbushes Leases (Trudgen and Morgan 1991)

In 1991 Trudgen and Morgan undertook a flora and vegetation survey over the south-east sector of the Greenbushes mining leases which were intended to be used for future storage of waste rock. The survey occurred over two days in April 1991 and a total of ten sites were assessed.

A total of 91 plant taxa were recorded from the area. The most species rich families were Proteaceae (8 taxa), Mimosaceae (5 taxa), Papilionaceae (7 taxa), Myrtaceae (7 taxa), Epacridaceae (6 taxa) and Cyperaceae (5 taxa). No currently listed Declared Rare Flora (DRF) or Priority flora was recorded. However, three species deemed to be of significance at the time were identified; *Pentapeltis silvatica*, *Xanthorrhoea ?gracilis* and *Grevillea* sp. (BM 28). *Pentapeltis silvatica* was listed as Declared Rare Flora (now known as Threatened Flora) but is no longer listed as a species of conservation significance. The form of *Xanthorrhoea ?gracilis* found in this survey was considered to be different to the common *Xanthorrhoea gracilis* present over the larger area; it has been confirmed as the same taxon. The *Grevillea* sp. located during this survey could not be matched to specimens at the Western Australian Herbarium at the time, but subsequent investigations have confirmed that it is not of conservation significance.

The following four vegetation associations were described from the area assessed:

1. *Eucalyptus marginata*, *Eucalyptus* (now *Corymbia*) *calophylla*, Open Forest over *Bossiaea linophylla* High Shrubland over *Pteridium esculentum* Open Heath on lateritic loamy sand on upper hill slopes;
2. *Eucalyptus marginata*, *Eucalyptus* (now *Corymbia*) *calophylla*, Open Forest over *Banksia grandis* Low Woodland over *Bossiaea ornata* Low Shrubland;
3. *Eucalyptus marginata*, *Eucalyptus* (now *Corymbia*) *calophylla*, Open Forest over *Bossiaea ornata* Low Open Heath in sandy loam and some clay; and
4. *Eucalyptus rudis*, *Eucalyptus* (now *Corymbia*) *calophylla* Open to Closed Forest in creeklines.

None of these vegetation associations are considered to be of conservation significance, being widely present over a large area of the Menzies Sub-district.

Flora and Vegetation Survey of the Greenbushes Mine Site: Vegetation surrounding south-east corner of the TSF (Onshore Environmental Consultants 2006)

Onshore Environmental was commissioned by Sons of Gwalia Ltd to undertake a survey of flora and vegetation surrounding the south-east corner of the tailings storage facility (TSF). A total number of 135 plant taxa (including varieties and subspecies) from 37 families and 97 genera were recorded from the survey in April 2006. Species representation was greatest among the Papilionaceae (17 taxa), Poaceae (11 taxa), Myrtaceae (9 taxa), Mimosaceae (9 taxa), Proteaceae (7 taxa),

Cyperaceae (6 taxa), Epacridaceae (5 taxa), Asteraceae (5 taxa) and Haemodoraceae (5 taxa). No plant taxa gazetted as Threatened pursuant to subsection (2) of section 23F of the WC Act were recorded, nor were there any Priority flora species recorded. A total of 27 introduced species were recorded.

Vegetation within the survey area was represented by three broad units:

- Jarrah/Marri forest on lateritic slopes;
- Flooded Gum on lower slopes and along drainage line features; and
- Regrowth and introduced weeds associated with severely disturbed sites.

Vegetation of the study area was generally rated as either degraded or completely degraded due to historical disturbance from clearing, excavation and mineral exploration as well as the introduction of weed species.

Bridgetown RWSS Pipelines Millstream Dam to Greenbushes Link Biological Survey (AECOM Australia Pty Ltd 2010)

A biological survey was undertaken in the Greenbushes area as part of a plan to construct a regional pipeline to supply water from Millstream Dam to seven south-west towns. A field survey was undertaken during the spring of 2009 along Route 1, extending from Millstream Dam to the Greenbushes link. The survey included a flora and fauna assessment as well as a tree habitat survey.

A total of 86 flora species were identified during the survey from 70 genera and 37 families. The most species rich families were Poaceae (11 taxa), Myrtaceae (8 taxa) and Papilionaceae (7 taxa). A total of 29 introduced species were recorded within the study area. There were no Threatened or Priority flora recorded during the survey.

A total of 19 vegetation associations were described along Route 1 consisting of four major vegetation types: Woodland to Low Open Forest, Shrubland, Remnant Vegetation and Completely Degraded Areas. The vegetation types are briefly described below:

1. Low Woodlands to Low Open Forests: Typically consisting of *Eucalyptus marginata* and *Corymbia calophylla* with *Banksia grandis* in sand areas, *Taxandria parviceps* and *Melaleuca preissiana* in drainage areas, *Eucalyptus rudis* on creek banks and various understory species. There were eight vegetation associations within this vegetation type;
2. Shrubland: A Tall Open Shrubland of *Taxandria parviceps* and *Astartea fascicularis* with sedge/land of *Meeboldina* (now *Leptocarpus*) *roycei* and Herbland of *Typha orientalis*. There was a single vegetation association within this vegetation type;
3. Remnant Vegetation: Consists mostly of **Pinus radiata* over a Closed Grassland over **Phalaris canariensis* and Herbland of **Allium triquetrum*, **Fumaria capreolata* and **Raphanus raphanistrum* over Low Open Heath of **Rubus ulmifolius* on clayey soils. There was one vegetation association within the vegetation type.
4. Completely Degraded Areas: This vegetation type included all other mapped areas that were considered completely degraded, including Parkland, Tasmanian Blue Gum (**Eucalyptus globulus*) plantation, cleared land, Pine Plantation (**Pinus* spp.), cleared pine plantation, residential areas and gardens, vineyards and water bodies.

The majority of the area surveyed was considered to be completely degraded with only 1.5 percent of the area surveyed rated as very good to good.

Flora and Vegetation Survey Greenbushes Mining Leases (Onshore Environmental 2012)

A single season Level 2 (now referred to as detailed) flora and vegetation survey of ten mining leases (M01/2 to M01/11) that surround the existing Greenbushes mining operation (10,059.82 ha) was completed by three botanists from Onshore Environmental between the 13th and 21st October 2011. The survey area encompassed the current active mine site as well as large areas surrounding the mine which incorporate a combination of state forest, privately owned farmland, plantation timber, and the Greenbushes townsite. The field survey involved systematic sampling using quadrats (referred to as study sites) and transects which generally linked the quadrats. A total of 26 quadrats were formally assessed.

A total number of 368 plant taxa (including varieties and subspecies) from 73 families and 208 genera were recorded during the spring 2011 survey. Species representation was greatest among the Fabaceae, Poaceae, Myrtaceae, Malvaceae, Asteraceae, Orchidaceae, Cyperaceae, Proteaceae and Stylidiaceae families. The most speciose genus was *Acacia* (18 taxa), followed by *Stylidium* (10 taxa), *Caladenia* (7 taxa), *Lepidosperma* (6 taxa), *Lomandra* (6 taxa) and *Hakea* (6 taxa).

One plant taxon gazetted as Threatened pursuant to subsection (2) of section 23F of the WC Act and listed as Vulnerable under the EPBC Act, was recorded; *Caladenia harringtoniae*. *Caladenia harringtoniae* was recorded as 26 plants from an unincised drainage line / dampland in the south-west sector of the area surveyed. One Priority 3 flora taxon was also recorded; *Tetratheca parvifolia*. *Tetratheca parvifolia* was recorded from two locations within the north-west sector of the area.

A total of 86 introduced species were recorded during the survey, of which three taxa are Declared Plants under the *Agriculture and Related Resources Act 1976*; **Asparagus asparagoides* (Bridal Creeper), **Galium aparine* (Goosegrass) and **Rubus ulmifolius* (Blackberry).

A total of eight vegetation associations, classified into four broad floristic formations according to dominant vegetation strata, were described and mapped from the area. The field assessment confirmed there were no TECs or PECs represented within the area. The vegetation types are briefly described below:

1. *Eucalyptus* Dense Forest: Typically consisting of *Eucalyptus marginata* subsp. *marginata* and *Corymbia calophylla* dense forest over *Banksia grandis* or *Bossiaea ornata* scrub in brown sandy loam on hill slopes and plateau;
2. *Eucalyptus* Forest: Consists mostly of *Eucalyptus marginata* subsp. *marginata* or *E. rudis*, and *Corymbia calophylla* forest over *Banksia* spp. over *Leucopogon capitellatus* and *Bossiaea ornata* scrub in loamy sand on upper hill slopes and plateau, or along drainage lines and flats;
3. *Leptospermum* Scrub: described as *Leptospermum erubescens* scrub over *L. erubescens*, *Bossiaea aquifolium*, *Allocasuarina humilis* heath over *Hypocalymma angustifolium*, *Babingtonia camphorosmae* and *Thomasia foliosa* low heath in brown loamy sand on granite outcrops and sheets; and
4. **Typha orientalis* Dense Tall Sedges.

Greenbushes Mining Operations – Detailed Flora and Vegetation Survey (Onshore Environmental 2018)

To support environmental approvals for the proposed expansion of lithium mining at Talison Lithium's Greenbushes operation, a two season detailed flora and vegetation survey of the proposed expanded development envelope was completed by two Principal Botanists and one Senior Botanist from Onshore Environmental. Field work

occurred over a four day period from the 27th February to the 2nd March 2018, with a second season assessment completed over five spring days; 26th September, 4th and 16th - 18th October 2018.

A total number of 363 plant taxa (including varieties and subspecies) from 62 families and 197 genera were recorded, with species representation greatest among the Fabaceae, Asteraceae, Orchidaceae, Cyperaceae, Poaceae, Asparagaceae, Myrtaceae and Proteaceae families. The most speciose genus was *Acacia* (18 taxa), followed by *Stylidium* (12 taxa), *Lomandra* (8 taxa), *Caladenia*, *Drosera* and *Leucopogon* (7 taxa each).

None of the plant taxa recorded from the study area were gazetted as Threatened Flora (T) under the WC Act, or listed under the EPBC Act. The Priority 4 flora taxon *Acacia semitrullata* was recorded as approximately 213 plants from two populations occurring in grey sand on lower hill slopes within the north-west and central southern sectors of the study area. None of the flora recorded from within the study area was identified as a range extension.

A total of 62 introduced species were recorded from the study area, of which three taxa were listed as Declared Plants under the BAM Act; **Asparagus asparagoides* (Bridal Creeper) - s22(2), **Rubus anglocandicans* (Blackberry) - s22(2) (C3 Exempt), and **Rumex acetosella* (Sorrell) - s12 (C1 Prohibited).

A total of nine vegetation types from three broad landforms were described and mapped from the study area. Extensive field assessment confirmed there were no TECs or PECs represented within the study area. Vegetation within the study area is well represented regionally, and well reserved.

Vegetation condition across the majority of the study area was rated as very good (472 ha or 59 percent) or good (223 ha or 28 percent) with the primary disturbances resulting from hardwood logging activities. Smaller areas supported degraded vegetation which included historical mine rehabilitation (55 ha or 7 percent), or were completely degraded (including cleared annual pasture on private farmland). Other disturbances noted were access tracks, historical mine exploration (excavation of costeans), powerline corridors, and feral pig activity on drainage flats.

Table 3 Results from flora and vegetation surveys previously completed within, or in close proximity to, the study area.

Survey	Consultant	Year	Field Survey Date	Significant Flora	Introduced (Weed) Taxa
A Flora and Vegetation Survey of Part of the Greenbushes Leases	Trudgen and Morgan	1991	April 1991	None	<i>*Briza maxima</i> , <i>*Eragrostis curvula</i> , <i>*Phalaris</i> spp., <i>*Juncus microcephalus</i> , <i>*Rubus discolor</i> , <i>*Eriodium cicutarium</i> , <i>*Centaurium</i> sp. <i>*Dittrichia graveolens</i> , <i>*Hypoclaeris glabra</i>
Flora and Vegetation Survey Greenbushes Mine Site: Vegetation surrounding south east corner of the TSF	Onshore Environmental Consultants	2006	13 th April 2006	None	<i>*Conyza bonariensis</i> , <i>*Dittrichia graveolens</i> , <i>*Hypochaeris glabra</i> , <i>*Sonchus oleraceus</i> , <i>*Hypericum perforatum</i> , <i>*Cyperus tenellus</i> , <i>*Centaurium tenuiflorum</i> , <i>*Eriodium cicutarium</i> , <i>*Gladiolus undulatus</i> , <i>*Romulea rosea</i> , <i>*Juncus microcephalus</i> , <i>*Acacia dealbata</i> , <i>*Acacia pycnantha</i> , <i>*Monadenia bracteata</i> , <i>*Orobanche minor</i> , <i>*Chamaecytisus palmensis</i> , <i>*Lotus angustissimus</i> , <i>*Lotus uliginosus</i> , <i>*Trifolium</i> sp., <i>*Pinus pinaster</i> , <i>*Plantago lanceolata</i> , <i>*Aira caryophyllea</i> , <i>*Briza maxima</i> , <i>*Briza minima</i> , <i>*Eragrostis curvula</i> , <i>*Rumex crispus</i> , <i>*Rubus discolor</i>
Bridgetown RWSS Pipelines Millstream Dam to Greenbushes Link Biological Survey	AECOM Australia Pty Ltd	2010	2009	None	<i>*Rubus ulmifolius</i> , <i>*Asparagus asparagoides</i> , <i>*Acacia decurrens</i> , <i>*Acacia iteaphylla</i> , <i>*Acacia longifolia</i> , <i>Acacia podalyriifolia</i> , <i>*Acacia pycnantha</i> , <i>*Echium plantagineum</i>
Flora and Vegetation Survey Greenbushes Mining Leases	Onshore Environmental Consultants	2012	13-21 October 2011	<i>Caladenia harringtoniae</i> (T); <i>Tetratheca parvifolia</i> (P3)	86 introduced species recorded; three listed as Declared Plants; <i>*Asparagus asparagoides</i> , <i>*Galium aparine</i> , <i>*Rubus ulmifolius</i>

Survey	Consultant	Year	Field Survey Date	Significant Flora	Introduced (Weed) Taxa
Greenbushes Mining Operations, Detailed Flora and Vegetation Survey	Onshore Environmental Consultants	2018	27 February - 2 March 2018, 26 September, 4, 16 - 18 October 2018	<i>Acacia semitrullata</i> (P4)	62 introduced species recorded; three listed as Declared Plants; <i>*Asparagus asparagoides</i> , <i>*Rubus anglocandicans</i> , <i>*Rumex acetosella</i>

3.1.2 *Threatened Flora listed under the EPBC Act*

A search of the EPBC Act Protected Matters database was undertaken within a 20 km radius around the central point of the study area (DoEE 2018). The search identified three records of 'Vulnerable' plant taxa potentially occurring regionally: *Caladenia harringtoniae*, *Diuris micrantha* and *Eleocharis keigheryi*; and a further three records of 'Endangered' plant taxa: *Caladenia hoffmanii*, *Commersonia erythrogyna* and *Goodenia arthrotricha*.

There were no TECs listed from the Federal search occurring within or surrounding the study area.

3.1.3 *Threatened Flora listed under the IUCN Red List*

A search of the IUCN database (IUCN 2018) determined that no Threatened Flora taxon was likely to occur within the study area.

3.1.4 *Threatened Flora listed under the WA Wildlife Conservation (Rare Flora) Notice*

A search of the DBCA rare flora databases identified three Threatened Flora as having previously being recorded within a 50 km radius of the study area (DBCA 2018a); *Caladenia harringtoniae*, *Caladenia christineae* and *Diuris drummondii*.

Caladenia harringtoniae has previously been recorded as one population within state forest outside the southwest boundary of the study area (Onshore Environmental 2012).

3.1.5 *Priority Flora Recognised by the DBCA*

The DBCA rare flora database search (DBCA 2018a) and NatureMap search identified 22 Priority flora taxa as potentially occurring within a 50 km radius of the study area (Table 4). It was determined that four of these taxa were considered *likely* to occur within the study area, and it was considered *possible* that a further six taxa may occur within the study area (as per criteria set out in Table 1) (Table 4).

Table 4 Priority flora taxa previously recorded within a 50 km radius of the study area (DBCA 2018a), and the likelihood of these taxa occurring within the study area.

Taxon	Cons Code	Habitat Preference	Likelihood in the study area
<i>Acacia parkerae</i>	3	Loam soils.	Unlikely
<i>Acacia tayloriana</i>	4	Grey or yellow/orange sandy soils, lateritic gravel, clay loam.	Possible
<i>Andersonia barbata</i>	2	White sand. Swampy areas.	Possible
<i>Aponogeton hexatepalus</i>	4	Freshwater: ponds, rivers, claypans.	Unlikely
<i>Caladenia uliginosa</i> subsp. <i>patulens</i>	1	Clay loam and gravel. Well drained soils amongst dense shrubs.	Possible
<i>Carex tereticaulis</i>	3	Black peaty sand.	Unlikely
<i>Chorizema carinatum</i>	3	Sand, sandy clay.	Possible
<i>Dampiera heteroptera</i>	3	Sandy soils. Swampy areas.	Likely
<i>Dillwynia</i> sp. Capel (P.A. Jurjevich 1771)	1	Littered grey loamy sand, rocky soils. Valleys, rangelands.	Unlikely
<i>Eucalyptus relictus</i>	2	Grey clay-loam. Undulating upper slopes, along creeklines.	Unlikely
<i>Gastrolobium formosum</i>	3	Clay loam. Along river banks or in swamps.	Unlikely
<i>Grevillea bronwenae</i>	3	Grey sand over laterite, lateritic loam. Hillslopes.	Unlikely
<i>Grevillea ripicola</i>	4	Sandy clay, clay or gravelly loam. Swampy flats, granite outcrops, along watercourses.	Likely
<i>Melaleuca viminalis</i>	2	Drainage lines and flats.	Likely
<i>Pultenaea skinneri</i>	4	Sandy or clayey soils. Winter-wet depressions.	Unlikely
<i>Scaevola ballajupensis</i>	1	Brown sandy gravel, laterite, granite. Outcrops.	Unlikely
<i>Synaphea otio stigma</i>	3	Clayey laterite, gravelly loam, sand.	Possible
<i>Tetragia</i> sp. Blackwood River (A.R. Annels 3043)	3	Loam soil.	Possible
<i>Tetragia</i> sp. Nannup (P.A. Jurjevich 1133)	1	Laterite.	Unlikely
<i>Tetragia parvifolia</i>	3	Loam soils.	Likely
<i>Thysanotus formosus</i>	1	Clayey sand, sandy loam. In situations often inundated in winter.	Unlikely
<i>Thysanotus gageoides</i>	3	Sand, clay, granite, sandstone, laterite.	Unlikely

3.1.6 *TECs listed under State and Federal legislation*

A search of the EPBC Act Protected Matters database (DoEE 2018) confirmed there were no Federal listed TECs previously recorded within, or adjacent to, the study area. Similarly, a search of DBCA ecological communities database (DBCA 2018b) confirmed there were no State listed TEC records within a 20 km radius of the study area.

3.1.7 *PECs recognised by DBCA*

A search of DBCA's ecological community database confirmed there were no PEC records within a 20 km radius of the study area.

3.1.8 *Environmentally Sensitive Areas*

There is one Environmentally Sensitive Area (ESA) identified to the south-west of the study area, approximately 560 m from the intersection of Huitson Road and Maranup Ford Road. The ESA incorporates the winter-wet dampland supporting the *Caladenia harringtoniae* population.

3.2 Flora Species

A total number of 280 plant taxa (including varieties and subspecies) from 60 families and 157 genera were recorded from the study area (Table 5, Appendix 6). Species representation was greatest among the Fabaceae, Orchidaceae, Asparagaceae, Myrtaceae, Asteraceae, Cyperaceae, Proteaceae and Poaceae families. The most speciose genus was *Acacia* (17 taxa), followed by *Caladenia* (11 taxa), *Lomandra* (10 taxa), *Stylidium* (8 taxa), *Hibbertia* (7 taxa each), *Drosera* and *Pterostylis* (6 taxa each).

Table 5 Statistics for total flora recorded from the study area.

Parameter	No. Taxa
No. Families	60
No. Genera	157
No. Species (incl. subspecies & varieties)	280
No. Native Species (incl. subsp. & var.)	235
No. Threatened Flora	0
No. Priority Flora	2
No. Range Extensions	1
No. Introduced Species	45
Speciose Families	
Fabaceae	40
Orchidaceae	28
Asparagaceae	20
Myrtaceae	18
Asteraceae	14
Cyperaceae	11
Proteaceae	10
Poaceae	10
Dilleniaceae	8
Ericaceae	8

Speciose Genera	
<i>Acacia</i>	17
<i>Lomandra</i>	9
<i>Stylidium</i>	9
<i>Caladenia</i>	8
<i>Hibbertia</i>	7
<i>Drosera</i>	6
<i>Pterostylis</i>	6
<i>Gompholobium</i>	5
<i>Eucalyptus</i>	5
<i>Lepidosperma</i>	5

3.3 Conservation Significant Flora Species

3.3.1 Threatened Flora listed under the WC Act and EPBC Act

None of the plant taxa recorded from the study area were gazetted as Threatened Flora (T) pursuant to subsection (2) of Section 23F of the WC Act, or listed under the EPBC Act.

3.3.2 Priority Flora

One Priority 4 flora taxon was recorded from the study area; *Acacia semitrullata*. *Acacia semitrullata* is a slender, erect shrub to 0.7 m in height (Plate 1). It is known to occur from white/grey sands on sandplains or swampy areas, from the Jarrah Forest, Swan Coastal Plan and Warren bioregions (WAH 2018). It has been widely recorded between Pinjarra in the north, Cape Leeuwin in the south, and Collie and Nannup in the east, with one outlying record from Walpole on the south coast (Atlas of Living Australia 2018).

Acacia semitrullata was recorded as four plants from a single point location in state forest situated adjacent to Forest Park Avenue along the proposed powerline corridor (Figure 6). It occurred on brown loamy sand on a mid hill slope. Vegetation was described as 'Forest of *Eucalyptus marginata* and *Corymbia calophylla* over Scrub of *Eucalyptus marginata* and *Corymbia calophylla* (regrowth) over Dwarf Scrub D of *Leucopogon capitellatus*, *Bossiaea ornata*, *Hypocalymma angustifolium* and *Hakea lissocarpha* (with scattered *Xanthorrhoea preissii*)'.

The Priority 2 flora taxon *Melaleuca viminalis* was recorded approximately 70 metres east (outside) of the proposed northern bypass road. Three plants up to four metres in height (Plate 2) were recorded in riparian vegetation adjacent to the Greenbushes "swimming pool", a popular recreation site. The close proximity of this location to the ablution block and other exotic plantings suggests the individuals may have been introduced to the site.

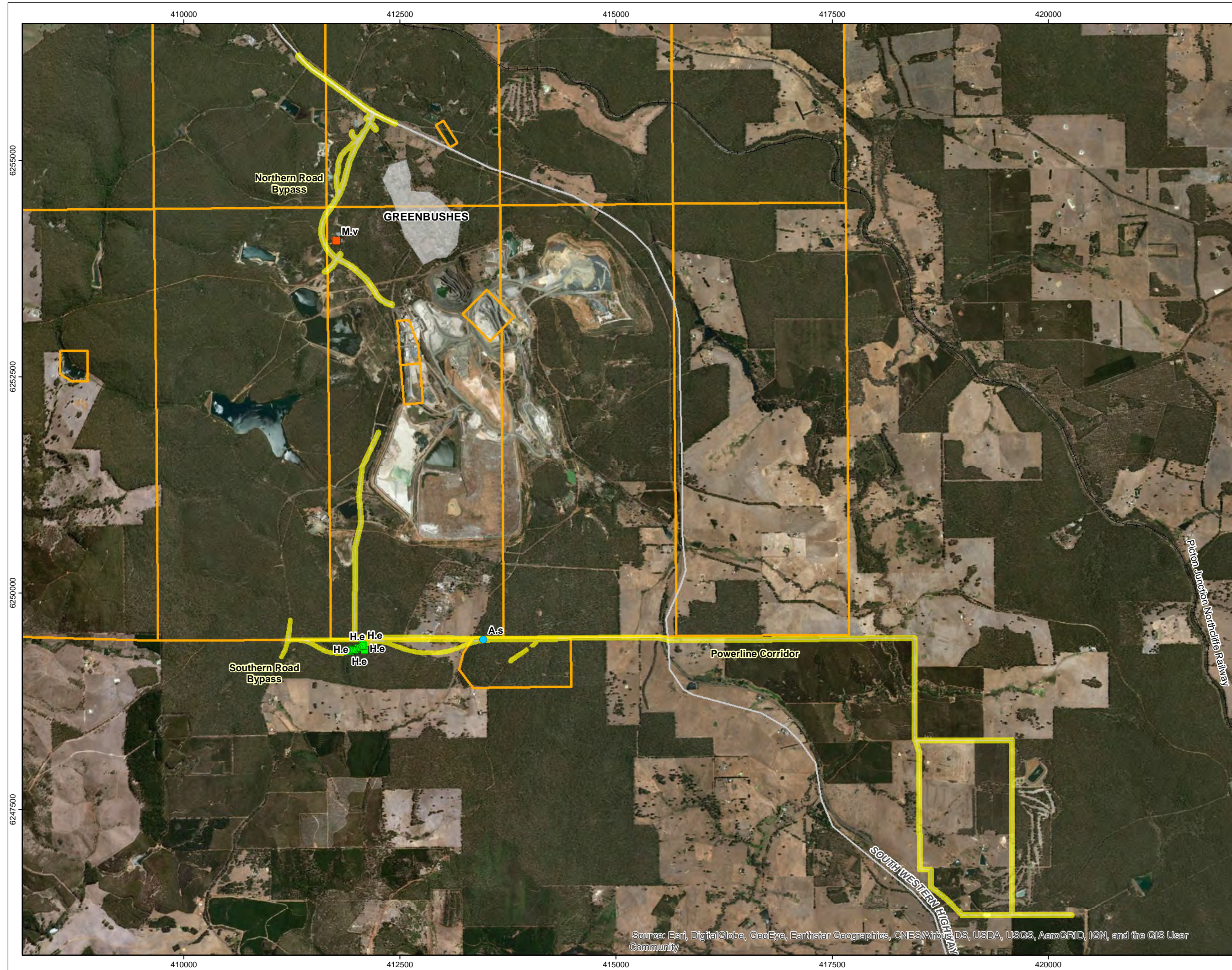
Melaleuca viminalis occurs extensively in Queensland and New South Wales, where the majority of collections have been made east of the Great Dividing Range. It is also known from South Australia and the Northern Territory. In Western Australia it has been collected in the creekline of sandstone gorges in the Kimberley region of Western Australia. There are other scattered records around the Perth metropolitan area, with other localised records from Boddington, Waroona, Greenbushes and Denmark.



Plate 1 *Acacia semitrullata* (Priority 4) from within the study area.



Plate 2 *Melaleuca viminalis* (Priority 2) from adjacent to the study area.



TALISON
Bypass and Powerline Corridors

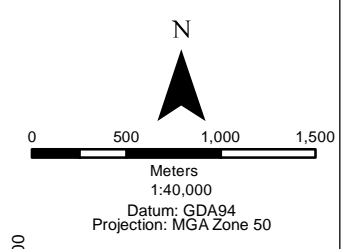
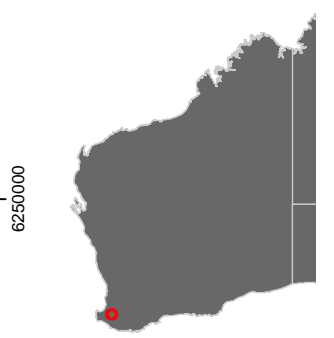
Significant Flora Locations

Legend

- Study Areas
- Talison Tenure
- Railway

Significant Flora

- Opportunistic**
- Acacia semitrullata (A.s) - P4
 - Hybanthus epacroides (H.e) - Range Extension
- Targeted Search**
- Hybanthus epacroides (H.e) - Range Extension
 - Melaleuca viminalis (M.v) - P2



Date: 26/11/2018
 Status: Final
 Figure: 6
 Sheet Size: A3
 Internal Reference: TL_Study_site
 Drawn by: GSM
 Requested by: DB



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

3.3.3 Range Extensions

One taxon recorded from within the study area was considered to occur outside of the previously recognised range, and as such has been identified as a significant range extension; *Hybanthus epacroides* (Plate 3). This taxon occurs along the south coast between Bremer Bay and Cape Arid National Park, extending north to Fraser Range, Coolgardie and Mount Manning Range Nature Reserve, and west to Wongan Hills, Gnowangerup and east of the Stirling Range National Park. The nearest known record to the study area is approximately 180 km to the east at Gnowangerup.

Hybanthus epacroides is known to occur in white or yellow sand in association with laterite. Within the study area it was recorded on orange sands weathered and deposited from laterite positioned higher in the landscape. This habitat type was specific and localised.



Plate 3 *Hybanthus epacroides* (range extension) from within the study area.

3.4 Introduced Flora

A total of 45 introduced species were recorded from within the study area (Table 6), of which two taxa were listed as Declared Plants under the *Biosecurity and Agriculture Management Act 2007* (Department of Agriculture and Food 2018):

- **Asparagus asparagoides* (Bridal Creeper) - s22(2); and
- **Rubus anglocandicans* (Blackberry) - s22(2) (C3 Exempt).

The diversity of weeds within the study area is relatively high and reflects the long mining history of the Greenbushes area and close proximity of remnant native vegetation to surrounding agricultural land. Many of the weed species recorded are likely to have been introduced during early exploration and mining, becoming

established on disturbed ground and volunteering into adjacent areas. High moisture habitats are particularly vulnerable to colonisation by weeds, however infestations recorded in 2018 were generally localised.

Farmland in the southern sector of the study area was another source of introduced species, with 'edge effects' typically evident around the boundary of cleared annual pasture areas. The annual pasture and verge species are represented within intact native vegetation as a minor component of the understorey. Disturbed areas such as tracks and historical rehabilitation are more susceptible to invasion by these introduced taxa, which are generally not vigorous and typically do not impact on native vegetation structure.

Table 6 Introduced species recorded from the study area.

Species	Common Name	Category
* <i>Acacia baileyana</i>	Cootamundra wattle	Permitted - s11
* <i>Acacia dealbata</i>	Silver Wattle	Permitted - s11
* <i>Acacia iteaphylla</i>	Flinders Ranges wattle	Permitted - s11
* <i>Acacia longifolia</i> subsp. <i>longifolia</i>	Sydney Golden Wattle	Permitted - s11
* <i>Acacia pycnantha</i>	Golden Wattle	Permitted - s11
* <i>Acaena echinata</i>	Sheep's Burr	Permitted - s11
* <i>Aira caryophyllea</i>	Silvery Hairgrass	Permitted - s11
* <i>Anthoxanthum odoratum</i>	Sweet Veral Grass	Permitted - s11
* <i>Arctotheca calendula</i>	Cape Weed	Permitted - s11
* <i>Asparagus asparagoides</i>	Bridal Creeper	s22(2)
* <i>Asparagus declinatus</i>	Bridal Veil	Permitted - s11
* <i>Briza maxima</i>	Blowfly Grass	Permitted - s11
* <i>Briza minor</i>	Shivery Grass	Permitted - s11
* <i>Bromus diandrus</i>	Great Brome	Permitted - s11
* <i>Callistemon comboynensis</i>	Cliff Bottlebrush	Permitted - s11
* <i>Carduus pycnocephalus</i>	Slender Thistle	Permitted - s11
* <i>Centaureum erythraea</i>	Common Centaury	Permitted - s11
* <i>Chamaecytisus palmensis</i>	Tagasaste	Permitted - s11
* <i>Chasmanthe floribunda</i>	African Cornflag	Permitted - s11
* <i>Conyza bonariensis</i>	Flaxleaf Fleabane	Permitted - s11
* <i>Corymbia maculata</i>	Spotted Gum	Permitted - s11
* <i>Cynodon dactylon</i>	Couch Grass	Permitted - s11
* <i>Ehrharta calycina</i>	Perennial Veld Grass	Permitted - s11
* <i>Eucalyptus resinifera</i>	Red Mahogany	Permitted - s11
* <i>Freesia alba x leichtlinii</i>	Freesia	Permitted - s11
* <i>Hypochaeris glabra</i>	Smooth Catsear	Permitted - s11
* <i>Juncus microcephalus</i>	Rush	Permitted - s11
* <i>Lavandula stoechas</i>	Italian Lavender	Permitted - s11
* <i>Lobularia maritima</i>	Sea Alyssum	Permitted - s11
* <i>Lolium rigidum</i>	Wimmera Ryegrass	Permitted - s11
* <i>Lysimachia arvensis</i>	Pimpernel	Permitted - s11
* <i>Narcissus pseudonarcissus</i>	Wild Daffodi	Permitted - s11
* <i>Osteospermum ecklonis</i>	White Daisybush	Permitted - s11
* <i>Ornithopus pinnatus</i>	Slender Serradella	Permitted - s11
* <i>Oxalis corniculata</i>	Yellow Wood Sorrel	Permitted - s11
* <i>Oxalis glabra</i>	Finger-leaf	Permitted - s11
* <i>Oxalis pes-caprae</i>	Soursob	Permitted - s11
* <i>Oxalis purpurea</i>	Largeflower Wood Sorrel	Permitted - s11
* <i>Petrorhagia dubia</i>	Hairy Pink	Permitted - s11

Species	Common Name	Category
* <i>Pinus pinaster</i>	Pinaster Pine	Permitted - s11
* <i>Plantago lanceolata</i>	Ribwort Plantain	Permitted - s11
* <i>Psoralea pinnata</i>	Taylorina	Permitted - s11
* <i>Ricinus communis</i>	Castor Oil Plant	Permitted - s11
* <i>Romulea rosea</i>	Guildford Grass	Permitted - s11
* <i>Rubus anglocandicans</i>	Blackberry	s22(2) (C3 Exempt)
* <i>Solanum nigrum</i>	Deadly Nightshade	Permitted - s11
* <i>Sonchus oleraceus</i>	Common Sowthistle	Permitted - s11
* <i>Sparaxis bulbifera</i>	Harlequin Flower	Permitted - s11
* <i>Trifolium repens</i>	White Clover	Permitted - s11
* <i>Ursinia anthemoides</i>	Ursinia	Permitted - s11

3.5 Vegetation

A total of ten vegetation types from four broad landforms were described and mapped from within the corridor study area (Figures 7-9). The vegetation types were classified into six broad floristic formations according to dominant vegetation strata (Table 7). Raw data for each of the 22 formal quadrats assessed is provided in Appendix 7.

In order to provide context for environmental impact assessment, as per the requirement for 'linear corridor surveys' (EPA 2016a), vegetation mapping was extended to a minimum distance of 500 metres either side of the study area corridor. It was then merged with adjacent vegetation mapping recently completed within the Mine Development Envelope (Onshore Environmental 2018) to provide additional local context. This resulted in a consolidated vegetation map with 16 vegetation types classified into eleven broad floristic formations and occurring on five broad landforms (Appendix 8).

Table 7 Vegetation types mapped within the study area (shaded grey) and surrounding buffer.

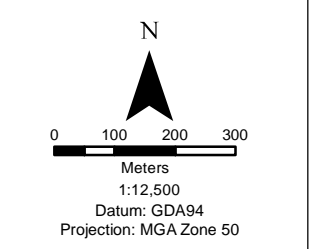
Broad Floristic Formation	Vegetation Code	Vegetation Association Description	Quadrats	Additional Taxa / Strata
<i>Allocasuarina</i> Forest	HC Af	Forest of <i>Allocasuarina fraseriana</i> , <i>Corymbia calophylla</i> and <i>Eucalyptus marginata</i> over Low Woodland A of <i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> and <i>Allocasuarina fraseriana</i> over Open Dwarf Scrub D of <i>Bossiaea ornata</i> (<i>Astroloma pallidum</i>) over Very Open Low Sedges of <i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391) on brown loamy sand on hill crests and upper hill slopes with outcropping laterite	C-6	
<i>Corymbia</i> Forest	HS Bg	Forest of <i>Corymbia calophylla</i> and <i>Eucalyptus marginata</i> subsp. <i>marginata</i> over Low Woodland A of <i>Banksia grandis</i> , <i>Persoonia longifolia</i> , <i>Corymbia calophylla</i> and <i>Eucalyptus marginata</i> subsp. <i>marginata</i> over Open Low Scrub A of <i>Bossiaea linophylla</i> , <i>Pteridium esculentum</i> and/or <i>Macrozamia riedlei</i> over Low Heath D of <i>Bossiaea ornata</i> and/or <i>Leucopogon capitellatus</i> on brown sandy loam on upper hillslopes	C-2, C-14, C-15, C-21, GR-02, GR-10, GR-15, GR-20, GR-41	<i>Bossiaea linophylla</i> , <i>Hibbertia hypericoides</i> , <i>Xanthorrhoea gracilis</i> , <i>Leucopogon verticillatus</i> , <i>Phyllanthus calycinus</i> , <i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391), <i>Lepidosperma leptostachyum</i>
<i>Eucalyptus</i> Forest	HS Bo	Forest of <i>Eucalyptus marginata</i> subsp. <i>marginata</i> and <i>Corymbia calophylla</i> over Low Heath D of <i>Bossiaea ornata</i> and <i>Leucopogon capitellatus</i> on grey/brown loamy sand on hillslopes	C-1, C-9, C-11, C-12, C-20, C-23, GR-03, GR-04, GR-06, GR-08, GR-09, GR-12, GR-14, GR-18, GR-19, GR-21, GR-28, GR-31, GR-33, GR-35, GR-36	<i>Banksia grandis</i> , <i>Persoonia longifolia</i> , <i>Banksia dallanneyi</i> , <i>Hibbertia hypericoides</i> , <i>Xanthorrhoea preissii</i> , <i>Xanthorrhoea gracilis</i> , <i>Leucopogon verticillatus</i> , <i>Hypocalymma angustifolium</i> , <i>Hakea lissocarpha</i> , <i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391)
<i>Podocarpus</i> Heath A	HS Pd TpBI	Heath A of <i>Podocarpus drouynianus</i> (<i>Pultenaea ocheata</i>) with Woodland (to Forest) of <i>Eucalyptus marginata</i> subsp. <i>marginata</i> and <i>Corymbia calophylla</i> over Scrub of <i>Taxandria parviceps</i> (<i>Bossiaea linophylla</i>) over Dwarf Scrub C/D of <i>Dasyopogon bromeliifolius</i> , <i>Adenanthos obovatus</i> and <i>Leucopogon oxycedrus</i> on grey sand on lower hillslopes	C-22, C-24, C-25, C-A23, GR-01, GR-07, GR-13, GR-25	<i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> , <i>Persoonia longifolia</i> , <i>Xanthorrhoea preissii</i> , <i>Macrozamia riedlei</i> , <i>Billardiera heterophylla</i> , <i>Leucopogon capitellatus</i> , <i>Hibbertia diamesogenos</i> , <i>Hypolaena exsulca</i> , <i>Desmocladius fascicularis</i>

Broad Floristic Formation	Vegetation Code	Vegetation Association Description	Quadrats	Additional Taxa / Strata
<i>Corymbia</i> Forest	HS Xp	Forest of <i>Corymbia calophylla</i> and <i>Eucalyptus marginata</i> subsp. <i>marginata</i> over Scrub of <i>Xanthorrhoea preissii</i> (<i>Bossiaea linophylla</i>) over Dwarf Scrub C of <i>Xanthorrhoea gracilis</i> and <i>Phyllanthus calycinus</i> on brown sandy loam on hillslopes	C-3, C-8, GR-11, GR-17, GR-23	<i>Banksia grandis</i> , <i>Macrozamia riedlei</i> , <i>Hypocalymma angustifolium</i> , <i>Bossiaea ornata</i> , <i>Hibbertia hypericoides</i> , <i>Leucopogon capitellatus</i> , <i>Banksia dallanneyi</i> , <i>Thomasia grandiflora</i>
<i>Allocasuarina</i> Heath A	HS AhLe	Heath A of <i>Allocasuarina humilis</i> and <i>Leptospermum erubescens</i> over Low Heath D of <i>Thomasia grandiflora</i> , <i>Andersonia caerulescens</i> and <i>Banksia dallanneyi</i> with Low Open Scrub B of <i>Xanthorrhoea preissii</i> on brown clay loam on lower hill slopes	C-4	Very Open Low Sedges of <i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391) and <i>Desmocladius fasciculatus</i>
<i>Eucalyptus</i> Forest	DF Ep Mp Hp	Forest of <i>Eucalyptus patens</i> , <i>Corymbia calophylla</i> and * <i>Pinus radiata</i> over Scrub of <i>Hakea prostrata</i> , * <i>Acacia pycnantha</i> and <i>Taxandria linearifolia</i> over Low Scrub B of <i>Astartea scoparia</i> and <i>Bossiaea linophylla</i> over Open Dwarf Scrub D of <i>Hypocalymma angustifolium</i> over Very Open Low Sedges of <i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391) on brown sandy clay loam on drainage flats	C-10	
<i>Melaleuca</i> Forest	DF MpEp AsTI	Forest of <i>Melaleuca preissiana</i> and <i>Eucalyptus patens</i> over Scrub of <i>Astartea scoparia</i> and <i>Taxandria linearifolia</i> over Low Scrub B of <i>Aotus gracillima</i> and <i>Pteridium esculentum</i> over Open Low Grass of * <i>Anthoxanthum odoratum</i> and * <i>Vulpia</i> sp. indet over Very Open Tall Sedges of <i>Isolepis cyperoides</i> and <i>Juncus pallidus</i> on black sandy clay loam on seasonally wet drainage flats	C-16, GR-05	
<i>Eucalyptus</i> Forest	DL Er	Forest of <i>Eucalyptus rudis</i> subsp. <i>rudis</i> (sometimes mixed species) over Scrub of <i>Trymalium odoratissimum</i> subsp. <i>odoratissimum</i> , <i>Taxandria linearifolia</i> and/or <i>Hakea prostrata</i> over Open Tall Sedges of <i>Lepidosperma tetraquetrum</i> or <i>Chorizandra enodis</i> on brown sandy clay loam on minor drainage lines	C-5, C-13, GR-16, GR-24, GR-34, GR-37, GR-39, GR-40	<i>Corymbia calophylla</i> , <i>Eucalyptus patens</i> , <i>Callistachys lanceolata</i> , <i>Melaleuca preissiana</i> , <i>Pteridium esculentum</i> , <i>Billardiera heterophylla</i> , <i>Lepidosperma tetraquetrum</i>
<i>Eucalyptus</i> Forest	HR Er	Forest of <i>Eucalyptus resinifera</i> over Very Open Herbs of * <i>Chasmanthe floribunda</i> and * <i>Oxalis glabra</i> on brown loamy sand on post mining rehabilitation landform	C-7	



TALISON LITHIUM
Northern Bypass
Vegetation Types
Figure 7

- Legend**
- Mine Development
 - Study



Date: 13/09/2018
 Status: Final
 Figure: 7
 Sheet Size: A3
 Internal Reference: TL_Nlh_bypass
 Drawn by: GSM
 Requested by: DB



411000 412000 413000 414000



TALISON LITHIUM

Southern Bypass

Vegetation Types

Figure 8

Legend

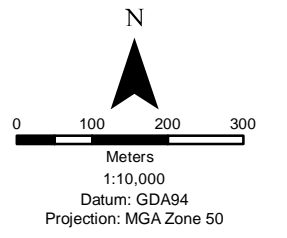
- Mine Development Area
- Study Area

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Date: 13/09/2018
Status: Final
Figure: 8
Sheet Size: A3
Internal Reference: TL_Sth_bypass
Drawn by: GSM
Requested by: DB



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TALISON LITHIUM

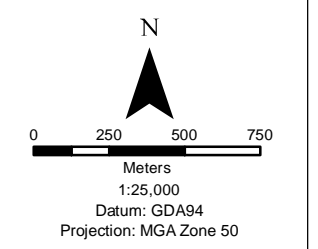
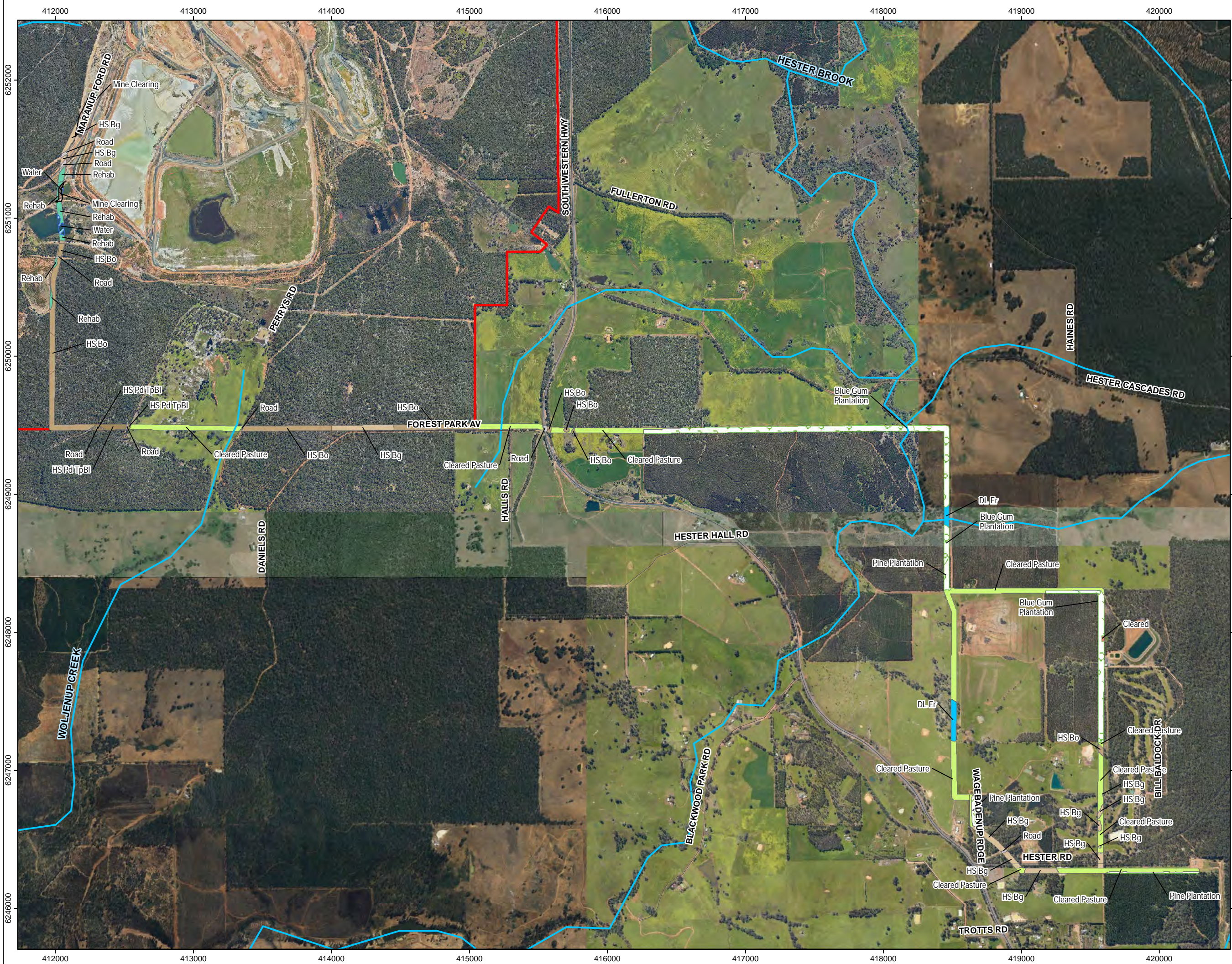
Powerline

Vegetation Types

Figure 9

Legend

- Mine Development Area
- Study Area



Date: 17/09/2018
 Status: Final
 Figure: 9
 Sheet Size: A3
 Internal Reference: TL_Powerline
 Drawn by: GSM
 Requested by: DB

TALISON LITHIUM

Vegetation Types

Legend

Figures 7-9


Legend

 Mine Development


 Study


Vegetation Types


Hill Crest


 HC Af Forest of *Allocasuarina fraseriana*, *Corymbia calophylla* and *Eucalyptus marginata* over Low Woodland A of *Corymbia calophylla*, *Eucalyptus marginata* and *Allocasuarina fraseriana* over Open Dwarf Scrub D of *Bossiaea ornata* and (*Astroloma pallidum*) over Very Open Low Sedges of *Tetraria* sp. Jarrah Forest (R. Davis 7391) on brown loamy sand on hill crests and upper hill slopes with outcropping laterite

Hill Slope


 HS Bg Forest of *Corymbia calophylla* and *Eucalyptus marginata* subsp. *marginata* over Low Woodland A of *Banksia grandis*, *Personia longifolia*, *Corymbia calophylla* and *Eucalyptus marginata* subsp. *marginata* over Open Low Scrub A of *Pteridium esculentum* and *Macrozamia riedlei* over Low Heath D of *Bossiaea ornata* and/or *Leucopogon capitellatus* on brown sandy loam on upper hillslopes


 HS Bo Forest of *Eucalyptus marginata* subsp. *marginata* and *Corymbia calophylla* over Low Heath D of *Bossiaea ornata* and *Leucopogon capitellatus* on grey/brown loamy sand on

 HS Pd TpBl Heath A of *Podocarpus drouynianus* (*Pultenaea ocheata*) with Woodland (to Forest) of *Eucalyptus marginata* subsp. *marginata* and *Corymbia calophylla* over Scrub of *Taxandria parviceps* (*Bossiaea linophylla*) over Dwarf Scrub C/D of *Dasyopogon bromeliifolius*, *Adenanthos obovatus* and *Leucopogon oxycedrus* on grey sand on lower hillslopes


 HS Xp Forest of *Corymbia calophylla* and *Eucalyptus marginata* subsp. *marginata* over Scrub of *Xanthorrhoea preissii* (*Bossiaea linophylla*) over Dwarf Scrub C of *Xanthorrhoea gracilis* and *Phyllanthus calycinus* on brown sandy loam on

Drainage Flats

 DF Ep Mp Hp Forest of *Eucalyptus patens*, *Corymbia calophylla* and **Pinus radiata* over Scrub of *Hakea prostrata*, **Acacia pycnantha* and *Taxandria linearifolia* over Low Scrub B of *Astartea scoparia* and *Bossiaea linophylla* over Open Dwarf Scrub D of *Hypocalymma angustifolium* over Very Open Low Sedges of *Tetraria* sp. Jarrah Forest (R. Davis 7391) on brown sandy clay loam on drainage flats


 DF MpEp Forest of *Melaleuca preissiana* and *Eucalyptus patens* over Scrub of *Astartea scoparia* and *Taxandria linearifolia* over Low Scrub B of *Aotus gracillima* and *Pteridium esculentum* over Open Low Grass of **Anthoxanthum odoratum* and **Vulpia* sp. *indet* over Very Open Tall Sedges of *Isolepis cyperoides* and *Juncus pallidus* on black sandy clay loam on seasonally wet drainage flats

Drainage Line

 DL Er Forest of *Eucalyptus rudis* subsp. *rudis* (sometimes mixed species) over Scrub of *Trymalium odoratissimum* subsp. *odoratissimum*, *Taxandria linearifolia* and/or *Hakea prostrata* over Open Tall Sedges of *Lepidosperma tetraquetrum* or *Chorizandra enodis* on brown sandy clay loam on minor drainage lines


Other

 Cleared

 Cleared Pasture

 Mine Clearing

 Plantation

 Rehabilitation

 Road

 Water

Date: 13/09/2018
Status: Final
Figure: 7-9
Sheet Size: A3
Internal Reference: TL_Veg_types
Drawn by: GSM
Requested by: DB

Broad Floristic Formation *Allocasuarina* Forest
Vegetation Association HC Af - Forest of *Allocasuarina fraseriana*, *Corymbia calophylla* and *Eucalyptus marginata* over Low Woodland A of *Corymbia calophylla*, *Eucalyptus marginata* and *Allocasuarina fraseriana* over Open Dwarf Scrub D of *Bossiaea ornata* (*Astroloma pallidum*) over Very Open Low Sedges of *Tetraria* sp. Jarrah Forest (R. Davis 7391) on brown loamy sand on hill crests and upper hill slopes with outcropping laterite



Area Mapped	0.61 ha
Quadrats Sampled	C-06
Soils	Brown loamy sand
Land Form	Upper Hill Slopes
Priority Ecological Community	No
Conservation Significant Flora	None
Introduced Species	None
Vegetation Condition	Good
Disturbances	Access track, logging
Average Fire Age	Moderate (3-5yrs)
Vegetation Structure & Floristics	
Trees 10-30 m	<i>Allocasuarina fraseriana</i> , <i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i>
Tall Shrubs >2 m	<i>Persoonia longifolia</i>
Low Shrubs >0.5 m	<i>Bossiaea ornata</i> , <i>Astroloma pallidum</i>
Sedges <0.5 m	<i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391), <i>Desmocladus fasciculatus</i>

Broad Floristic Formation	<i>Corymbia</i> Forest
Vegetation Association	HS Bg - Forest of <i>Corymbia calophylla</i> and <i>Eucalyptus marginata</i> subsp. <i>marginata</i> over Low Woodland A of <i>Banksia grandis</i> , <i>Persoonia longifolia</i> , <i>Corymbia calophylla</i> and <i>Eucalyptus marginata</i> subsp. <i>marginata</i> over Open Low Scrub A of <i>Bossiaea linophylla</i> , <i>Pteridium esculentum</i> and/or <i>Macrozamia riedlei</i> over Low Heath D of <i>Bossiaea ornata</i> and/or <i>Leucopogon capitellatus</i> on brown sandy loam on upper hillslopes



Area Mapped	7.94 ha
Quadrats Sampled	C-2, C-14, C-15, C-21, GR-02, GR-10, GR-15, GR-20, GR-41
Soils	Sandy loam
Land Form	Upper Hillslope
Priority Ecological Community	No
Conservation Significant Flora	None
Introduced Species	* <i>Acacia dealbata</i> , * <i>Acacia iteaphylla</i> , * <i>Acacia longifolia</i> subsp. <i>longifolia</i> , * <i>Asparagus asparagoides</i> , * <i>Bicinis communis</i> , * <i>Briza maxima</i> , * <i>Chamaecytisus palmensis</i> , * <i>Chasmanthe floribunda</i> , * <i>Cynodon dactylon</i> , * <i>Ehrharta calycina</i> , * <i>Hypochaeris glabra</i> , * <i>Juncus microcephalus</i> , * <i>Lobularia maritima</i> , * <i>Oxalis corniculata</i> , * <i>Oxalis pes-caprae</i> , * <i>Pinus pinaster</i> , * <i>Plantago lanceolata</i> , * <i>Romulea rosea</i> , * <i>Rubus anglocandicans</i> , * <i>Solanum nigrum</i> , * <i>Sonchus oleraceus</i> * <i>Sparaxis bulbifera</i>
Vegetation Condition	Very Good
Disturbances	Weed invasion, logging, road/access track
Average Fire Age	Moderate (3 to 5yrs) to Old (6+ years)
Vegetation Structure & Floristics	
Trees >15 m	<i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> subsp. <i>marginata</i>
Trees <15 m	<i>Banksia grandis</i> , <i>Persoonia longifolia</i> , <i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> subsp. <i>marginata</i>
Shrubs >1.5 m	<i>Bossiaea linophylla</i> , <i>Pteridium esculentum</i> , <i>Macrozamia riedlei</i> , <i>Xanthorrhoea gracilis</i> , <i>Leucopogon verticillatus</i>
Shrubs <0.5 m	<i>Bossiaea ornata</i> , <i>Leucopogon capitellatus</i> , <i>Banksia dallanneyi</i> , <i>Hibbertia hypericoides</i> , <i>Phyllanthus calycinus</i> , <i>Labichea punctata</i>
Sedges <0.5 m	<i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391), <i>Lepidosperma leptostachyum</i> , <i>Tetraria octandra</i>

Broad Floristic Formation *Eucalyptus* Forest
Vegetation Association HS Bo - Forest of *Eucalyptus marginata* subsp. *marginata* and *Corymbia calophylla* over Low Heath D of *Bossiaea ornata* and *Leucopogon capitellatus* on grey/brown loamy sand on hillslopes



Area Mapped	24.88 ha
Quadrats Sampled	C-1, C-9, C-11, C-12, C-20, C-23, GR-03, GR-04, GR-06, GR-08, GR-09, GR-12, GR-14, GR-18, GR-19, GR-21, GR-28, GR-31, GR-33, GR-35, GR-36
Soils	Loamy sand
Land Form	Hillslope
Priority Ecological Community	No
Conservation Significant Flora	None
Introduced Species	* <i>Acacia pycnantha</i> , * <i>Briza maxima</i> , * <i>Chasmanthe floribunda</i> , * <i>Hypochaeris glabra</i> , * <i>Oxalis corniculata</i>
Vegetation Condition	Very Good
Disturbances	Weeds, road/ access tracks, logging, cattle grazing, dieback, mining exploration, ground disturbance
Average Fire Age	Moderate (3 to 5yrs) to Old (6+ years)

Vegetation Structure & Floristics

Trees >15 m	<i>Eucalyptus marginata</i> subsp. <i>marginata</i> , <i>Corymbia calophylla</i>
Shrubs >2 m	<i>Persoonia longifolia</i> , <i>Banksia grandis</i> , <i>Xanthorrhoea preissii</i>
Shrubs 0.5-1 m	<i>Xanthorrhoea gracilis</i> , <i>Leucopogon propinquus</i> , <i>Hypocalymma angustifolium</i> , <i>Macrozamia riedlei</i> , <i>Leucopogon verticillatus</i>
Shrubs <0.5 m	<i>Bossiaea ornata</i> , <i>Leucopogon capitellatus</i> , <i>Hibbertia diamesogenos</i> , <i>Hibbertia hypericoides</i> , <i>Banksia dallanneyi</i> , <i>Hibbertia amplexicaulis</i> , <i>Hibbertia commutata</i> , <i>Hypocalymma angustifolium</i> , <i>Hakea lissocarpha</i> , <i>Phyllanthus calycinus</i>
Sedges <0.5 m	<i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391), <i>Lepidosperma leptostachyum</i>

Broad Floristic Formation
Vegetation Association

Podocarpus Heath A
HS Pd TpBI - Heath A of *Podocarpus drouynianus* (*Pultenaea ochreatea*) with Woodland (to Forest) of *Eucalyptus marginata* subsp. *marginata* and *Corymbia calophylla* over Scrub of *Taxandria parviceps* (*Bossiaea linophylla*) over Dwarf Scrub C/D of *Dasyogon bromeliifolius*, *Adenanthos obovatus* and *Leucopogon oxycedrus* on grey sand on lower hillslopes



Area Mapped	2.60 ha
Quadrats Sampled	C-22, C-25, C-A23, GR-01, GR-07, GR-13, GR-25
Soils	Sand
Land Form	Lower hillslopes
Priority Ecological Community	No
Conservation Significant Flora	<i>Acacia semitrullata</i>
Introduced Species	* <i>Briza maxima</i> , * <i>Hypochaeris glabra</i>
Vegetation Condition	Very Good
Disturbances	Logging, road/access tracks, pigs
Average Fire Age	Moderate (3 to 5 yr)
Vegetation Structure & Floristics	
Trees >15 m	<i>Eucalyptus marginata</i> subsp. <i>marginata</i> , <i>Corymbia calophylla</i>
Shrubs >2 m	<i>Taxandria parviceps</i> , <i>Bossiaea linophylla</i>
Shrubs 1.5-2 m	<i>Podocarpus drouynianus</i> , <i>Pultenaea ochreatea</i> , <i>Macrozamia riedlei</i>
Shrubs <1 m	<i>Dasyogon bromeliifolius</i> , <i>Adenanthos obovatus</i> , <i>Leucopogon oxycedrus</i> , <i>Hypocalymma angustifolium</i> , <i>Leucopogon capitellatus</i> , <i>Melaleuca thymoides</i>
Sedges <0.5 m	<i>Lyginea imberbis</i> , <i>Hypolaena exsulca</i>

Broad Floristic Formation *Corymbia* Forest
Vegetation Association HS Xp - Forest of *Corymbia calophylla* and *Eucalyptus marginata* subsp. *marginata* over Scrub of *Xanthorrhoea preissii* (*Bossiaea linophylla*) over Dwarf Scrub C of *Xanthorrhoea gracilis* and *Phyllanthus calycinus* on brown sandy loam on hillslopes



Area Mapped	2.02 ha
Quadrats Sampled	C-3, C-8, GR-11, GR-17, GR-23
Soils	Sandy loam
Land Form	Hillslope
Priority Ecological Community	No
Conservation Significant Flora	None
Introduced Species	* <i>Acacia pycnantha</i> , * <i>Briza maxima</i> , * <i>Chasmanthe floribunda</i> , * <i>Conyza bonariensis</i> , * <i>Hypochaeris glabra</i> , * <i>Lavendula stoechus</i> , * <i>Oxalis corniculata</i>
Vegetation Condition	Good
Disturbances	Cattle grazing, road/access track, weeds, logging, dieback, farmland
Average Fire Age	Old (6+yr)
Vegetation Structure & Floristics	
Trees >15 m	<i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> subsp. <i>marginata</i>
Shrubs >2 m	<i>Xanthorrhoea preissii</i> , <i>Bossiaea linophylla</i>
Shrubs <1 m	<i>Xanthorrhoea gracilis</i> , <i>Macrozamia riedlei</i> , <i>Phyllanthus calycinus</i> , <i>Leucopogon propinquus</i> , <i>Leucopogon capitellatus</i> , <i>Hakea lissocarpa</i> , <i>Banksia dallanneyi</i> , <i>Hypocalymma angustifolium</i> , <i>Bossiaea ornata</i> , <i>Hibbertia hypericoides</i>
Sedges <0.5 m	<i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391), <i>Lepidosperma leptostachyum</i>

Broad Floristic Formation *Allocasuarina* Heath A
Vegetation Association HS AhLe - Heath A of *Allocasuarina humilis* and *Leptospermum erubescens* over Low Heath D of *Thomasia grandiflora*, *Andersonia caerulescens* and *Banksia dallaneyi* with Low Open Scrub B of *Xanthorrhoea preissii* on brown clay loam on lower hill slopes



Area Mapped	0 ha (fringing the corridor)
Quadrats Sampled	C-04
Soils	Brown clay loam
Land Form	Footslopes
Priority Ecological Community	No
Conservation Significant Flora	None
Introduced Species	* <i>Hypochaeris glabra</i> , * <i>Lavendula stoechis</i> , * <i>Oxalis glabra</i> , * <i>Oxalis purpurea</i>
Vegetation Condition	Good
Disturbances	Access track
Average Fire Age	Moderate (3-5yrs)
Vegetation Structure & Floristics	
Trees 10-30 m	<i>Allocasuarina humilis</i> , <i>Leptospermum erubescens</i>
Mid Shrubs 1-1.5 m	<i>Xanthorrhoea preissii</i>
Low Shrubs >0.5 m	<i>Thomasia grandiflora</i> , <i>Andersonia caerulea</i> , <i>Banksia dallaneyi</i>
Sedges <0.5 m	<i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391), <i>Desmodcladus fasciculatus</i>

Broad Floristic Formation *Eucalyptus* Forest
Vegetation Association DF Ep Mp Hp - Forest of *Eucalyptus patens*, *Corymbia calophylla* and **Pinus radiata* over Scrub of *Hakea prostrata*, **Acacia pycnantha* and *Taxandria linearifolia* over Low Scrub B of *Astartea scoparia* and *Bossiaea linophylla* over Open Dwarf Scrub D of *Hypocalymma angustifolium* over Very Open Low Sedges of *Tetraria* sp. Jarrah Forest (R. Davis 7391) on brown sandy clay loam on drainage flats



Area Mapped	1.57 ha
Quadrats Sampled	C-10
Soils	Brown sandy clay loam
Land Form	Wetland
Priority Ecological Community	No
Conservation Significant Flora	None
Introduced Species	* <i>Acacia pycnantha</i> , * <i>Oxalis glabra</i> , * <i>Pinus radiata</i>
Vegetation Condition	Good
Disturbances	Access track, weeds, logging
Average Fire Age	Old (6+ yrs)
Vegetation Structure & Floristics	
Trees 10-30 m	<i>Eucalyptus patens</i> , <i>Corymbia calophylla</i> , * <i>Pinus radiata</i>
Tall Shrubs >2 m	<i>Hakea prostrata</i> , <i>Taxandria linearifolia</i> , * <i>Acacia pycnantha</i>
Mid Shrubs 1-1.5 m	<i>Astartea scoparia</i> , <i>Bossiaea linophylla</i>
Low Shrubs <0.5 m	<i>Hypocalymma angustifolium</i>
Sedges <0.5 m	<i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391)

Broad Floristic Formation
Vegetation Association

Melaleuca Forest
DF MpEp AsTI - Forest of *Melaleuca preissiana* and *Eucalyptus patens* over Scrub of *Astartea scoparia* and *Taxandria linearifolia* over Low Scrub B of *Aotus gracillima* and *Pteridium esculentum* over Open Low Grass of **Anthoxanthum odoratum* and **Vulpia* sp. indet over Very Open Tall Sedges of *Isolepis cyperoides* and *Juncus pallidus* on black sandy clay loam on seasonally wet drainage flats



Area Mapped	0.60 ha
Quadrats Sampled	C-16, GR-05
Soils	Sandy clay loam
Land Form	Drainage flats
Priority Ecological Community	No
Conservation Significant Flora	None
Introduced Species	<i>*Asparagus asparagoides</i> , <i>*Chasmanthe floribunda</i> , <i>*Eucalyptus resinifera</i> , <i>*Hypochaeris glabra</i> , <i>*Juncus microcephalus</i> , <i>*Lobularia maritima</i> , <i>*Pinus pinaster</i> , <i>*Plantago lanceolata</i> , <i>*Ricinus communis</i> , <i>*Rubus anglocandicans</i>
Vegetation Condition	Good
Disturbances	Mining exploration, road/access tracks, weeds, heavily disturbed
Average Fire Age	Old (6+yrs)
Vegetation Structure & Floristics	
Trees >15m	<i>Melaleuca preissiana</i> , <i>Eucalyptus patens</i> , <i>Corymbia calophylla</i>
Shrubs >2m	<i>Astartea scoparia</i> , <i>Taxandria linearifolia</i>
Shrubs <2m	<i>Aotus gracillima</i> , <i>Pteridium esculentum</i>
Grasses	<i>*Anthoxanthum odoratum</i> , <i>*Vulpia</i> sp. indet
Sedges	<i>Isolepis cyperoides</i> , <i>Juncus pallidus</i> , <i>Leptocarpus roycei</i>

Broad Floristic Formation *Eucalyptus* Forest
Vegetation Association DL Er - Forest of *Eucalyptus rudis* subsp. *rudis* (sometimes mixed species) over Scrub of *Trymalium odoratissimum* subsp. *odoratissimum*, *Taxandria linearifolia* and/or *Hakea prostrata* over Open Tall Sedges of *Lepidosperma tetraquetrum* or *Chorizandra enodis* on brown sandy clay loam on minor drainage lines



Area Mapped	1.87 ha
Quadrats Sampled	C-5, C-13, GR-16, GR-24, GR-34, GR-37, GR-39, GR-40
Soils	Sandy clay loam
Land Form	Drainage lines
Priority Ecological Community	No
Conservation Significant Flora	None
Introduced Species	* <i>Acacia pycnantha</i> , * <i>Acaena echinata</i> , * <i>Asparagus asparagoides</i> , * <i>Chasmanthe floribunda</i> , * <i>Coryza bonariensis</i> , * <i>Cynodon dactylon</i> , * <i>Hypochaeris glabra</i> , * <i>Oxalis corniculata</i> , * <i>Romulea rosea</i> , * <i>Rubus anglocandicans</i>
Vegetation Condition	Good - Degraded
Disturbances	Mining exploration, road/access track, weeds, kangaroo grazing
Average Fire Age	Old (6+ yr)
Vegetation Structure & Floristics	
Trees <15 m	<i>Eucalyptus rudis</i> subsp. <i>rudis</i> , <i>Corymbia calophylla</i> , <i>Eucalyptus patens</i>
Shrubs >2 m	<i>Trymalium odoratissimum</i> subsp. <i>odoratissimum</i> , <i>Taxandria linearifolia</i> , <i>Hakea prostrata</i> , <i>Gastrolobium bilobum</i> , <i>Melaleuca viminea</i> , <i>Callistachys lanceolata</i> , <i>Melaleuca preissiana</i>
Shrubs 1-2 m	<i>Pteridium esculentum</i> , <i>Astartea scoparia</i> , <i>Billardiera heterophylla</i>
Sedges	<i>Lepidosperma tetraquetrum</i> , <i>Chorizandra enodis</i>

Broad Floristic Formation
Vegetation Association

Eucalyptus Forest
Forest of **Eucalyptus resinifera* over Very Open Herbs of
**Chasmanthe floribunda* and **Oxalis glabra* on brown loamy
sand on post mining rehabilitation landform



Area Mapped	11.24 ha
Quadrats Sampled	C-07
Soils	Brown sandy clay loam
Land Form	Post mining landform, hill slope
Priority Ecological Community	No
Conservation Significant Flora	None
Introduced Species	<i>*Eucalyptus resinifera</i> , <i>*Acacia pycnantha</i> , <i>*Chasmanthe floribunda</i> , <i>*Oxalis glabra</i>
Vegetation Condition	Good
Disturbances	Access track, weeds, mining
Average Fire Age	Recent (<2 yrs)
Vegetation Structure & Floristics	
Trees 10-30 m	<i>*Eucalyptus resinifera</i>
Mid Shrubs 1-1.5 m	<i>Taxandria linearifolia</i> , <i>Taxandria parviceps</i> , <i>*Acacia pycnantha</i>
Low Shrubs >1 m	<i>*Chasmanthe floribunda</i>
Herbs	<i>*Oxalis glabra</i>

3.6 Vegetation Significance

3.6.1 Beard (1981) Vegetation Associations

The study area occurs in the Menzies Sub-district of the Darling Botanical District, in the South-West Botanical Province (Beard 1981). The Menzies Sub-district (southern jarrah forest) covers a total area of 26,572 km², of which 18,715 km² (70 percent) originally supported jarrah and jarrah-marri forest (Beard 1981).

The study area lies within the Bridgetown Vegetation System as recognised by Beard (1981). Within this system, there is one vegetation association that intersects the study area:

- Vegetation Association 3 - Medium Forest; Jarrah-Marri.

When determining representation and reservation of remaining vegetation, Vegetation Association 3 was determined to be well represented at all levels (statewide, bioregional [IBRA and IBRA sub-region], and local government authority), with more than 56% of the Pre-European extent remaining (Table 8).

Vegetation Association 3 was also determined to be well reserved, with more than 15% of the current extent protected for conservation within the Southern Jarrah Forest sub-region and within the Shire of Bridgetown-Greenbushes (Table 8).

3.6.2 Mattiske and Havel (1998) Vegetation Complexes

The pre-1750 distribution of vegetation complexes of the south west forest region of Western Australia has been mapped at 1:50,000 scale by Mattiske and Havel (1998) as part of the biodiversity assessment for the comprehensive regional assessment for the south west forest region. This database has been used to assess flora and vegetation values as part of the 1999 Regional Forest Agreement (RFA). Interrogation of this database confirmed there were five vegetation complexes (as described and mapped by Mattiske and Havel 1998) intersecting the study area (Figure 10):

- Balingup (BL) - Woodland of *Eucalyptus marginata* subsp. *marginata* - *Corymbia calophylla* on slopes, and woodland of *Eucalyptus rudis* on valley floors in the humid zone;
- Catterick 1 (CC1) - Open Forest of *Eucalyptus marginata* subsp. *marginata* - *Corymbia calophylla* mixed with *Eucalyptus patens* on slopes, *Eucalyptus rudis* and *Banksia littoralis* on valley floors in the humid zone;
- Dwellingup 1 (D1) - Open Forest of *Eucalyptus marginata* subsp. *marginata* - *Corymbia calophylla* on lateritic uplands in mainly humid and subhumid zones;
- Goonaping (G) – Mosaic of Open Forest of *Eucalyptus marginata* subsp. *marginata* (humid zones) and *Eucalyptus marginata* subsp. *thalassica* (semiarid to perarid zones) on the sandy gravels, low woodland of *Banksia attenuate* on the drier sandier sites (humid to perarid zones) with some *Banksia menziesii* (northern arid and perarid zones) and low open woodland of *Melaleuca preissiana*-*Banksia littoralis* on the moister sandy soils (humid to perarid zones); and
- Hester (HR) – Tall Open Forest to Open Forest of *Eucalyptus marginata* subsp. *marginata* - *Corymbia calophylla* on lateritic uplands in perhumid and humid zones.

These five vegetation complexes currently have between 24% and 87% of the pre-European extent remaining within the South West Forest Region, and between 13% and 70% of the current extent formally protected for conservation. One vegetation complex, Balingup (BL), was determined to be poorly represented with less than 30% of the pre-European extent remaining (currently 23.9%). However, all five vegetation complexes are determined to be well reserved with >10% of the pre-European extent secured within formal reserves (Table 8).

Table 8 Pre-European extent of vegetation represented on the basis of identified datasets.

Vegetation System / Association	Pre-European Extent (ha)	Extent Remaining (ha)	% Extent of Pre-European	% Current Extent Protected (IUCN I - IV) for Conservation (proportion of Current Extent)
Beard Vegetation Association				
3 - Medium forest; jarrah-marri	2,661,404.62	1,806,035.91	67.86	26.87
Vegetation System				
Bridgetown 3.1	700,920.82	456,448.65	65.12	28.87
Jarrah Forest (JAF)				
Beard Vegetation Association 3	2,390,591.54	1,606,736.77	67.21	23.97
Bridgetown 3.1	695,903.60	451,804.22	64.92	18.55
Southern Jarrah Forest JAF02				
Beard Vegetation Association 3	1,482,491.85	883,557.83	59.60	31.03
Bridgetown 3.1	684,331.98	444,272.04	64.92	18.86
Shire of Bridgetown-Greenbushes				
Beard Vegetation Association 3	121,152.70	68,440.37	56.49	23.39
Bridgetown 3.1	120,148.72	67,456.61	56.14	23.73
Mattiske & Havel Complexes				
Balingup BL	59,460	14,225	23.92	16.2
Catterick Complex CC1	27,386	16,350	59.70	14.2
Dwellingup Complex D1	208,491	181,811	87.20	12.9
Goonaping Complex G	27,467	21,516	78.33	69.6
Hester Complex HR	32,250	23,474	72.79	18.7



TALISON
Bypass and Powerline Corridors

Mattiske and Havel (1998)
 Vegetation Complexes

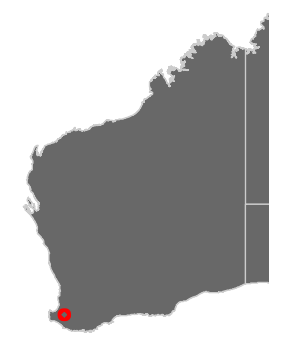
Legend

Study Areas

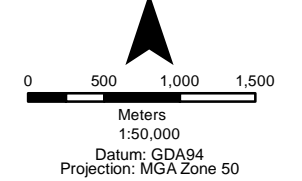
Mattiske and Havel (1998)

Vegetation Complexes

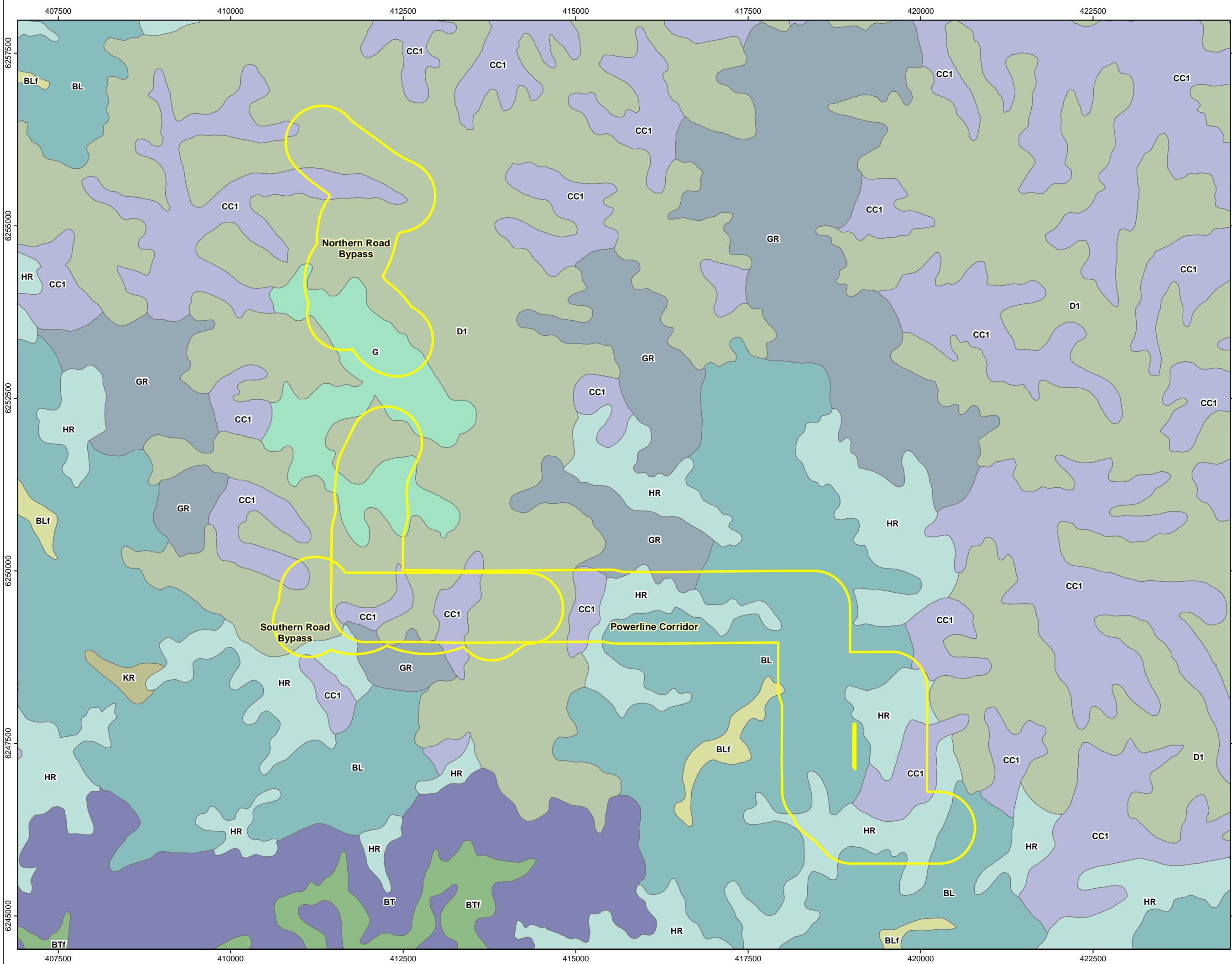
- BL , Balingup
- BLf , Balingup
- BT , Bridgetown
- BTf , Bridgetown
- CC1 , Catterick
- D1 , Dwellingup
- G , Goonaping
- GR , Grimwade
- HR , Hester
- KR , Kirup



N



Date: 26/11/2018
 Status: Final
 Figure: 10
 Sheet Size: A3
 Internal Reference: TL_Mat_Havel
 Drawn by: GSM
 Requested by: DB



3.7 Vegetation Condition

Vegetation condition across the majority of the study area was rated as *degraded* (44.5 ha or 41% of the study area) reflecting a high proportion of the area having been disturbed and rehabilitated as part of historical tin mining operations (Table 9, Figures 11-13).

Approximately 12.6 ha (11% of the study area) has been cleared for a mixture of annual pasture, existing road infrastructure, and as part of historical mining activities; these areas do not support any native vegetation cover. Blocks of vegetation rated as *completely degraded* totaled 19.9 ha (18% of the study area) and included a mix of pine and bluegum plantation, and historical rehabilitation.

Intact native vegetation was rated as *very good* (22.8 ha or 21% of the study area) or *good* (9.8 ha or 9% of the study area) with the primary disturbances resulting from hardwood logging activities or close proximity to disturbed ground, i.e. road verges.

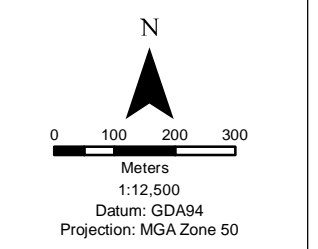
Table 9 Area of vegetation condition classes within the study area.

Vegetation Association	Area (ha)	% of Study Area
Very Good	22.85	20.8
Good	9.75	8.9
Degraded	44.50	40.6
Completely Degraded	19.94	18.2
Cleared	12.55	11.4
Total	109.59	100.0



TALISON LITHIUM
Northern Bypass
Vegetation Condition
Figure 11

- Legend**
- Mine Development Area
 - Study Area
- Vegetation Condition**
- Cleared
 - Degraded
 - Good
 - Very Good



Date: 13/09/2018
 Status: Final
 Figure: 11
 Sheet Size: A3
 Internal Reference: TL_Nth_bp_cond
 Drawn by: GSM
 Requested by: DB



411000 412000 413000 414000



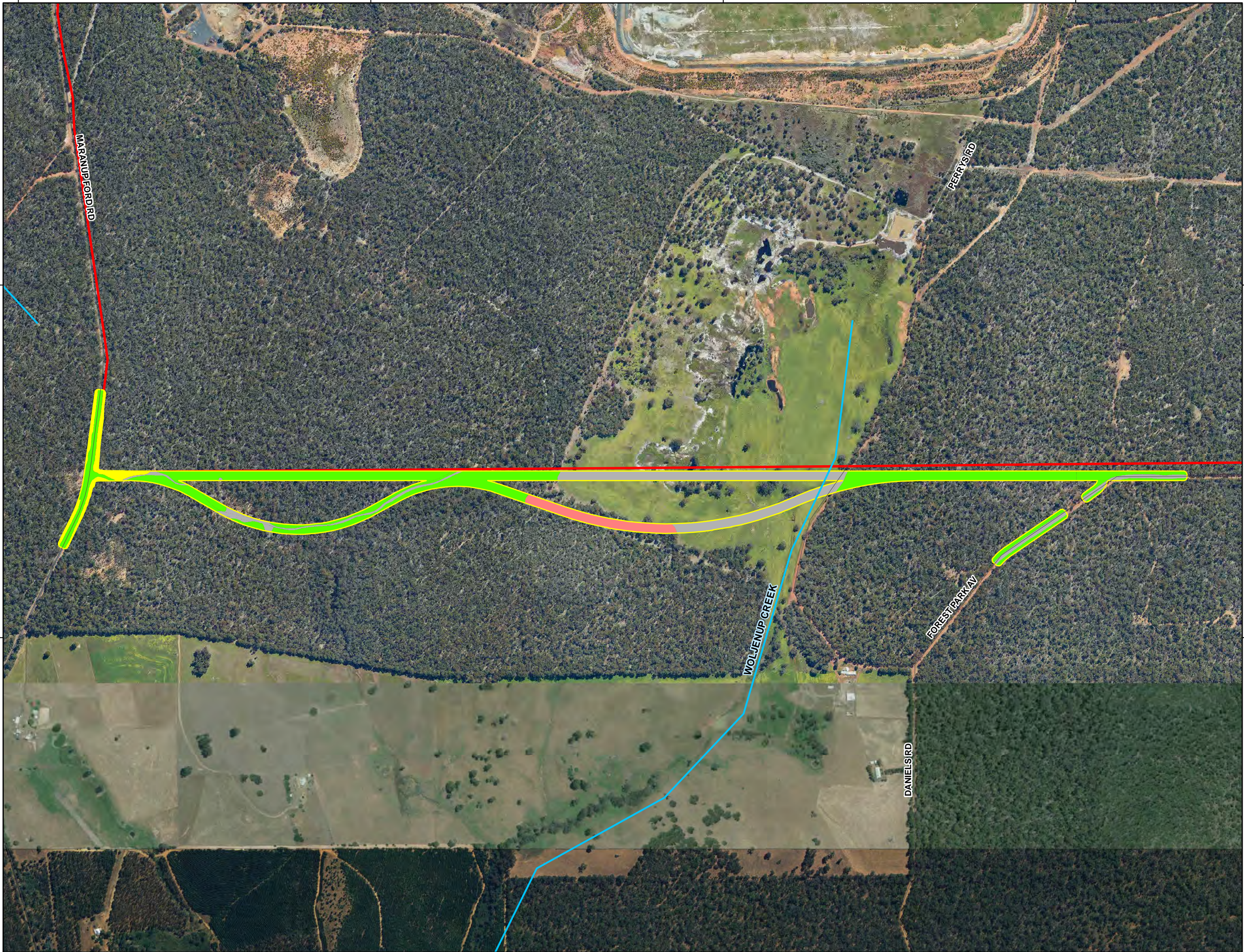
TALISON LITHIUM
Southern Bypass
Vegetation Condition
Figure 12

Legend

- Mine Development Area
 - Study Area
- Vegetation Condition**
- Cleared
 - Degraded
 - Good
 - Very Good

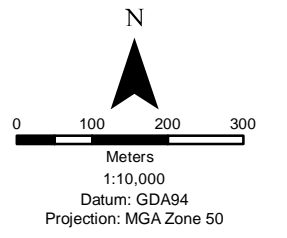
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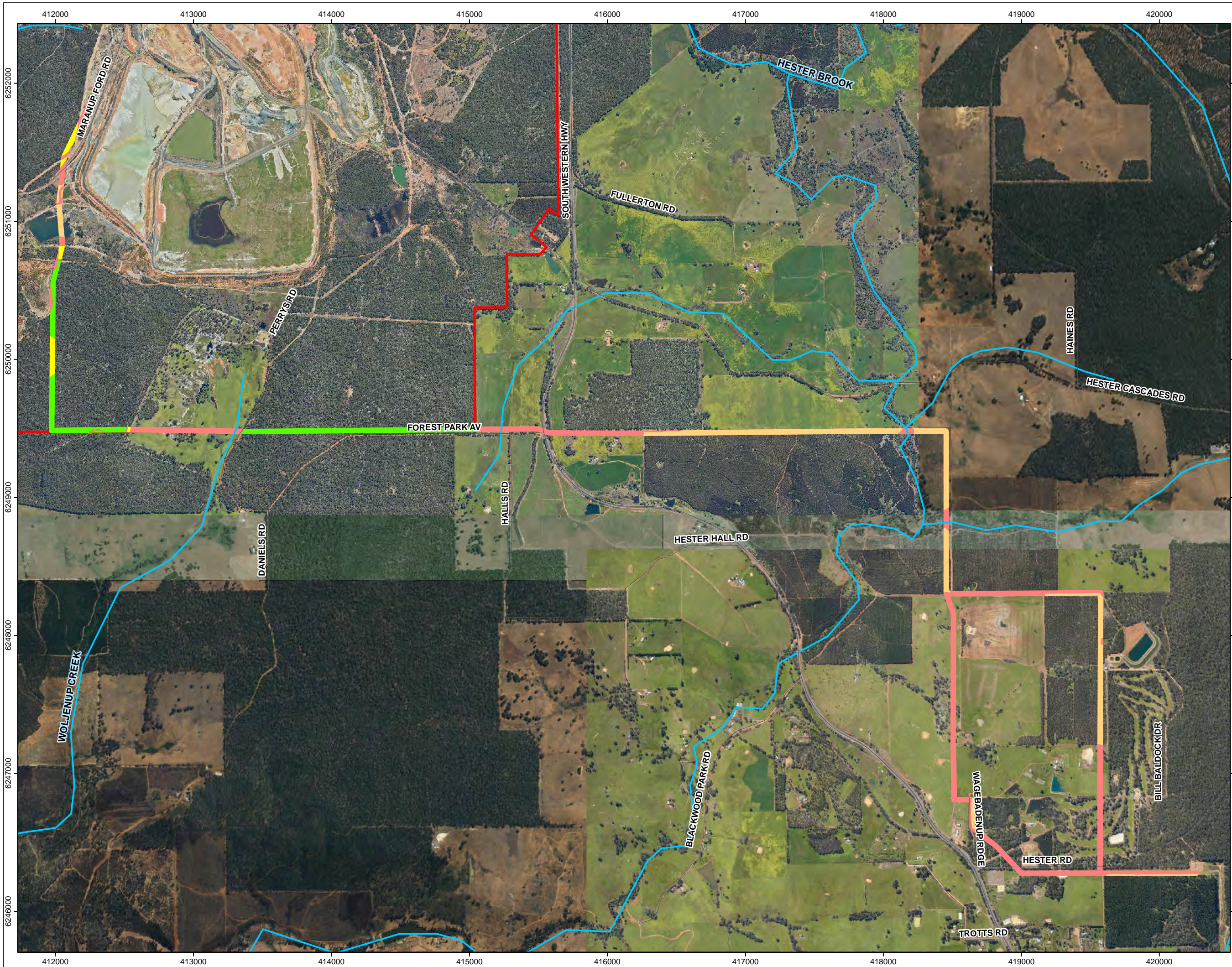
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Date: 13/09/2018
 Status: Draft
 Figure: 12
 Sheet Size: A3
 Internal Reference: TL_Sth_bypass
 Drawn by: GSM
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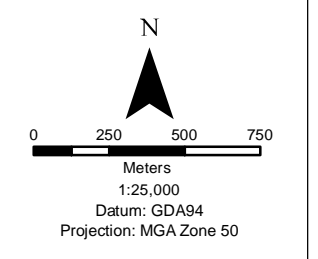


411000 412000 413000 414000



TALISON LITHIUM
Powerline
Vegetation Condition
Figure 13

- Legend**
- Mine Development Area
 - Study Area
- Vegetation Condition**
- Cleared
 - Completely Degraded
 - Degraded
 - Good
 - Very Good



Date: 17/09/2018
 Status: Final
 Figure: 13
 Sheet Size: A3
 Internal Reference: TL_Powerline
 Drawn by: GSM
 Requested by: DB



4.0 SUMMARY

Onshore Environmental completed a two season detailed flora and vegetation survey of remnant native vegetation occurring within three proposed infrastructure corridors surrounding the mine site. The field survey was completed by two Principal Botanists and one Senior Botanist working over six days in July and August 2018, with a second season assessment completed over six days in September and October 2018.

A total number of 280 plant taxa (including varieties and subspecies) from 60 families and 157 genera were recorded from the study area. Species representation was greatest among the Fabaceae, Orchidaceae, Asparagaceae, Myrtaceae, Asteraceae, Cyperaceae, Proteaceae and Poaceae families. The most speciose genus was *Acacia* (17 taxa), followed by *Caladenia* (11 taxa), *Lomandra* (10 taxa), *Stylidium* (8 taxa), *Hibbertia* (7 taxa each), *Drosera* and *Pterostylis* (6 taxa each).

None of the plant taxa recorded from the study area was gazetted as Threatened Flora (T) pursuant to subsection (2) of Section 23F of the WC Act, or listed under the EPBC Act. One Priority 4 flora taxon was recorded from within the study area; *Acacia semitrullata*. *Acacia semitrullata* was recorded as four plants from a single point location in state forest along the proposed powerline corridor.

The Priority 2 flora taxon *Melaleuca viminalis* was recorded approximately 70 metres east (outside) of the proposed northern bypass road. Three plants occurred in riparian vegetation adjacent to the Greenbushes “swimming pool”, a popular recreation site. The close proximity of this location to the ablution block and other exotic plantings suggests the individuals may have been introduced to the site.

One taxon recorded from within the study area was identified to represent a significant range extension; *Hybanthus epacroides*. The nearest known record is from Gnowangerup approximately 180 km east of the study area. *Hybanthus epacroides* is known to occur in white or yellow sand in association with laterite. Within the study area it was recorded on orange sands weathered and deposited from laterite positioned higher in the landscape. This habitat type was specific and localised.

A total of 45 introduced species were recorded from the study area, of which two taxa were listed as Declared Plants under the BAM Act:

- **Asparagus asparagoides* (Bridal Creeper) - s22(2); and
- **Rubus anglocandicans* (Blackberry) - s22(2) (C3 Exempt).

A total of ten vegetation types from four broad landforms were described and mapped from within the corridor study area. Extensive field assessment confirmed there were no TECs or PECs represented within the study area. Furthermore, vegetation was generally well represented regionally and locally, and well reserved.

Vegetation condition across the majority of the study area was rated as *degraded* (44.5 ha or 41% of the study area) reflecting a high proportion of the area having been disturbed and rehabilitated as part of historical tin mining operations. Approximately 12.6 ha (11% of the study area) had been cleared for a mixture of annual pasture, existing road infrastructure, and as part of historical mining activities; these areas do not support any native vegetation cover. Blocks of vegetation rated as *completely degraded* totaled 19.9 ha (18% of the study area) and included a mix of pine and bluegum plantation, and historical rehabilitation. Intact native vegetation

was rated as *very good* (22.8 ha or 21% of the study area) or *good* (9.8 ha or 9% of the study area) with the primary disturbances resulting from hardwood logging activities or close proximity to disturbed ground, i.e. road verges.

5.0 STUDY TEAM

The two season detailed flora and vegetation survey was planned, co-ordinated and executed by the following personnel:

Onshore Environmental Consultants P/L

ABN 41 095 837 120

PO Box 227

YALLINGUP WA 6282

pf 08 9756 6206 m 0427 339 842

Email: info@onshoreenvironmental.com.au

Project Staff

Dr Darren Brearley	PhD	Project Manager and Principal Botanist
Dr Jerome Bull	PhD	Principal Botanist
Ms Jessica Waters	BSc	Senior Botanist
Ms Breanne Menezes	BSc	Senior Environmental Advisor
Mrs Kerry Keenan		Data Analyst
Mr Todd Griffin	BSc	GIS and Mapping Specialist

Licences

The field survey was conducted under the authorisation of the following licences issued by DBCA:

- Darren Brearley, Onshore Environmental Consultants 'Licence to take flora for scientific & other prescribed purposes' Licence No. SL012077;
- Darren Brearley, Onshore Environmental Consultants 'Regulation 4 Written Notice of Lawful Authority' Licence No. CE005699;
- Jerome Bull, Onshore Environmental Consultants 'Licence to take flora for scientific & other prescribed purposes' Licence No. SL012079; and
- Jessica Waters, Onshore Environmental Consultants 'Licence to take flora for scientific & other prescribed purposes' Licence No. SL012078.

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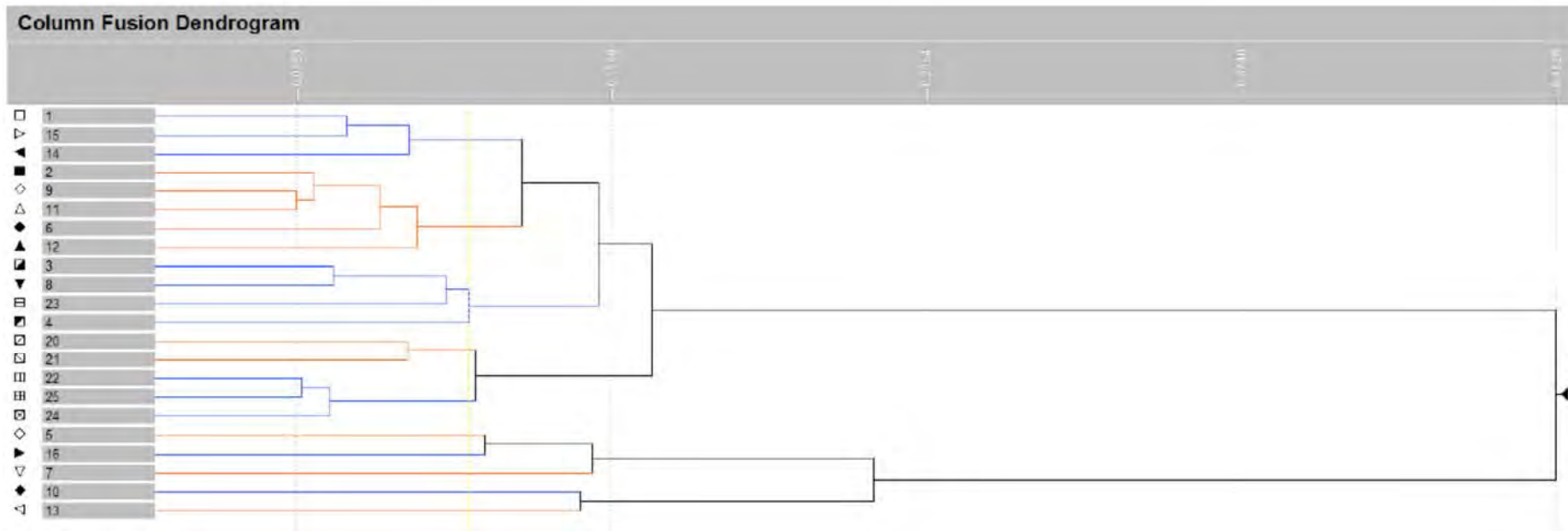
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APPENDIX 1

Dendrogram of floristic quadrat groups produced by the flexible
UPGMA classification



APPENDIX 2

Vegetation Classifications following Muir (1997)

LIFE FORM / HEIGHT CLASS	Canopy Cover			
	DENSE	MID DENSE	SPARSE	VERY SPARSE
	70 % - 100%	30% - 70%	10% - 30%	2% - 10%
Trees > 30 m	Dense Tall Forest	Tall Forest	Tall Woodland	Open Tall Woodland
Trees 15 – 30 m	Dense Forest	Forest	Woodland	Open Woodland
Trees 5 – 15 m	Dense Low Forest A	Low Forest A	Low Woodland A	Open Low Woodland A
Trees < 5 m	Dense Low Forest B	Low Forest B	Low Woodland B	Open Low Woodland B
Mallee tree form	Dense Tree Mallee	Tree Mallee	Open Tree Mallee	Very Open Tree Mallee
Mallee shrub form	Dense Shrub Mallee	Shrub Mallee	Open Shrub Mallee	Very Open Shrub Mallee
Shrubs > 2 m	Dense Thicket	Thicket	Scrub	Open Scrub
Shrubs 1.5 – 2 m	Dense Heath A	Heath A	Low Scrub A	Open Low Scrub A
Shrubs 1 - 1.5 m	Dense Heath B	Heath B	Low Scrub B	Open Low Scrub B
Shrubs 0.5 – 1 m	Dense Low Heath C	Low Heath C	Dwarf Scrub C	Open Dwarf Scrub C
Shrubs 0 - 0.5 m	Dense Low Heath D	Low Heath D	Dwarf Scrub D	Open Dwarf Scrub D
Mat plants	Dense Mat Plants	Mat Plants	Open Mat Plants	Very Open Mat Plants
Hummock grass	Dense Hummock Grass	Mid-Dense Hummock Grass	Hummock Grass	Open Hummock Grass
Bunch grass > 0.5 m	Dense Tall Grass	Tall Grass	Open Tall Grass	Very Open Tall Grass
Bunch grass < 0.5 m	Dense Low Grass	Low Grass	Open Low Grass	Very Open Low Grass
Herbaceous spp.	Dense Herbs	Herbs	Open Herbs	Very Open Herbs
Sedges > 0.5 m	Dense Tall Sedges	Tall Sedges	Open Tall Sedges	Very Open Tall Sedges
Sedges < 0.5 m	Dense Low Sedges	Low Sedges	Open Low Sedges	Very Open Low Sedges
Ferns	Dense Ferns	Ferns	Open Ferns	Very Open Ferns
Mosses, liverworts	Dense Mosses	Mosses	Open Mosses	Very Open Mosses

APPENDIX 3

Vegetation condition scale
(as developed by Keighery 1994)

Condition	Scale	Description
Pristine	1	Pristine or nearly so, no obvious signs of disturbance.
Excellent	2	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
Very Good	3	Vegetation structure altered; obvious signs of disturbance.
Good	4	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it.
Degraded	5	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching Very Good condition without intensive management.
Completely Degraded	6	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species.

APPENDIX 4

Conservation categories for flora described
under the EPBC Act.

Category	Description
Extinct	A species is extinct if there is no reasonable doubt that the last member of the species has died.
Extinct in the Wild	A species is categorised as extinct in the wild if it is only known to survive in cultivations, in captivity, or as a naturalised population well outside its past range; or if it has not been recorded in its known/expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
Critically Endangered	The species is facing an extremely high risk of extinction in the wild and in the immediate future.
Endangered	The species is likely to become extinct unless the circumstances and factors threatening its abundance, survival, or evolutionary development cease to operate; or its numbers have been reduced to such a critical level, or its habitats have been so drastically reduced, that it is in immediate danger of extinction.
Vulnerable	Within the next 25 years, the species is likely to become endangered unless the circumstances and factors threatening its abundance, survival or evolutionary development cease to operate.
Conservation Dependent	The species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

APPENDIX 5

Conservation Codes for Western Australian Flora

Threatened Species

Listed as Specially Protected under the Wildlife Conservation Act 1950, published under Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

- Flora that are extant and considered likely to become extinct, or rare and therefore in need of special protection, are declared to be rare flora.

Species* which have been adequately searched for and are deemed to be, in the wild, either rare, at risk of extinction, or otherwise in need of special protection, and have been gazetted as such. The assessment of the conservation status of these species is based on their national extent.

Priority Species

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened flora or fauna. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

1: Priority One - Poorly Known Taxa

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

2: Priority Two - Poorly Known Taxa

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

3: Priority Three - Poorly Known Taxa

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

4: Priority Four - Rare, Near Threatened and other taxa in need of monitoring

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy

APPENDIX 6

Total flora list from the study area

Family	Genus	Species	Infra Rank	Infra Name	Significant	Introduced/Native
Amaranthaceae	<i>Ptilotus</i>	<i>manglesii</i>			No	Native
Amaryllidaceae	<i>Narcissus</i>	<i>pseudonarcissus</i>			No	Introduced
Apiaceae	<i>Daucus</i>	<i>glochidiatus</i>			No	Native
Apiaceae	<i>Pentapeltis</i>	<i>silvatica</i>			No	Native
Apiaceae	<i>Platysace</i>	<i>tenuissima</i>			No	Native
Apiaceae	<i>Xanthosia</i>	<i>candida</i>			No	Native
Apiaceae	<i>Xanthosia</i>	<i>huegelii</i>			No	Native
Apiaceae	<i>Xanthosia</i>	<i>tasmanica</i>			No	Native
Araliaceae	<i>Hydrocotyle</i>	<i>callicarpa</i>			No	Native
Araliaceae	<i>Trachymene</i>	<i>pilosa</i>			No	Native
Asparagaceae	<i>Asparagus</i>	<i>asparagoides</i>			No	Introduced
Asparagaceae	<i>Asparagus</i>	<i>declinatus</i>			No	Introduced
Asparagaceae	<i>Chamaescilla</i>	<i>corymbosa</i>			No	Native
Asparagaceae	<i>Dichopogon</i>	<i>capillipes</i>			No	Native
Asparagaceae	<i>Laxmannia</i>	<i>squarrosa</i>			No	Native
Asparagaceae	<i>Lomandra</i>	<i>brittanii</i>			No	Native
Asparagaceae	<i>Lomandra</i>	<i>caespitosa</i>			No	Native
Asparagaceae	<i>Lomandra</i>	<i>drummondii</i>			No	Native
Asparagaceae	<i>Lomandra</i>	<i>hermaphrodita</i>			No	Native
Asparagaceae	<i>Lomandra</i>	<i>integra</i>			No	Native
Asparagaceae	<i>Lomandra</i>	<i>nigricans</i>			No	Native
Asparagaceae	<i>Lomandra</i>	<i>pauciflora</i>			No	Native
Asparagaceae	<i>Lomandra</i>	<i>preissii</i>			No	Native
Asparagaceae	<i>Lomandra</i>	<i>sericea</i>			No	Native
Asparagaceae	<i>Lomandra</i>	<i>sonderi</i>			No	Native
Asparagaceae	<i>Sowerbaea</i>	<i>laxiflora</i>			No	Native
Asparagaceae	<i>Thysanotus</i>	<i>manglesianus</i>			No	Native
Asparagaceae	<i>Thysanotus</i>	<i>multiflorus</i>			No	Native
Asparagaceae	<i>Thysanotus</i>	<i>patersonii</i>			No	Native
Asparagaceae	<i>Thysanotus</i>	<i>tenellus</i>			No	Native
Asteraceae	<i>Carduus</i>	<i>pycnocephalus</i>			No	Introduced
Asteraceae	<i>Conyza</i>	<i>bonariensis</i>			No	Introduced
Asteraceae	<i>Craspedia</i>	<i>variabilis</i>			No	Native
Asteraceae	<i>Hypochaeris</i>	<i>glabra</i>			No	Introduced

Family	Genus	Species	Infra Rank	Infra Name	Significant	Introduced/Native
Asteraceae	<i>Lagenophora</i>	<i>huegelii</i>			No	Native
Asteraceae	<i>Millotia</i>	<i>tenuifolia</i>	var.	<i>tenuifolia</i>	No	Native
Asteraceae	<i>Olearia</i>	<i>paucidentata</i>			No	Native
Asteraceae	<i>Osteospermum</i>	<i>ecklonis</i>			No	Introduced
Asteraceae	<i>Senecio</i>	<i>diaschides</i>			No	Native
Asteraceae	<i>Senecio</i>	<i>hispidulus</i>			No	Native
Asteraceae	<i>Sonchus</i>	<i>oleraceus</i>			No	Introduced
Asteraceae	<i>Trichocline</i>	<i>spathulata</i>			No	Native
Asteraceae	<i>Ursinia</i>	<i>anthemoides</i>			No	Introduced
Asteraceae	<i>Waitzia</i>	<i>suaveolens</i>			No	Native
Brassicaceae	<i>Lobularia</i>	<i>maritima</i>			No	Introduced
Campanulaceae	<i>Lobelia</i>	<i>anceps</i>			No	Native
Caryophyllaceae	<i>Petrorhagia</i>	<i>dubia</i>			No	Introduced
Casuarinaceae	<i>Allocasuarina</i>	<i>fraseriana</i>			No	Native
Casuarinaceae	<i>Allocasuarina</i>	<i>humilis</i>			No	Native
Celastraceae	<i>Stackhousia</i>	<i>huegelii</i>			No	Native
Colchicaceae	<i>Burchardia</i>	<i>congesta</i>			No	Native
Cyperaceae	<i>Baumea</i>	<i>preissii</i>			No	Native
Cyperaceae	<i>Chorizandra</i>	<i>enodis</i>			No	Native
Cyperaceae	<i>Cyathochaeta</i>	<i>avenacea</i>			No	Native
Cyperaceae	<i>Lepidosperma</i>	<i>leptostachyum</i>			No	Native
Cyperaceae	<i>Lepidosperma</i>	<i>pubisquameum</i>			No	Native
Cyperaceae	<i>Lepidosperma</i>	<i>squamatum</i>			No	Native
Cyperaceae	<i>Lepidosperma</i>	<i>tenuis</i>			No	Native
Cyperaceae	<i>Lepidosperma</i>	<i>tetraquetrum</i>			No	Native
Cyperaceae	<i>Schoenus</i>	<i>odontocarpus</i>			No	Native
Cyperaceae	<i>Tetraria</i>	<i>octandra</i>			No	Native
Cyperaceae	<i>Tetraria</i>		sp.	Jarrah Forest (R. Davis 7391)	No	Native
Dasygogonaceae	<i>Dasygogon</i>	<i>bromeliifolius</i>			No	Native
Dennstaedtiaceae	<i>Pteridium</i>	<i>esculentum</i>			No	Native
Dilleniaceae	<i>Hibbertia</i>	<i>amplexicaulis</i>			No	Native
Dilleniaceae	<i>Hibbertia</i>	<i>commutata</i>			No	Native
Dilleniaceae	<i>Hibbertia</i>	<i>cuneiformis</i>			No	Native
Dilleniaceae	<i>Hibbertia</i>	<i>diamesogenos</i>			No	Native

Family	Genus	Species	Infra Rank	Infra Name	Significant	Introduced/Native
Dilleniaceae	<i>Hibbertia</i>	<i>ferruginea</i>			No	Native
Dilleniaceae	<i>Hibbertia</i>	<i>glomerata</i>	subsp.	<i>glomerata</i>	No	Native
Dilleniaceae	<i>Hibbertia</i>	<i>hypericoides</i>			No	Native
Droseraceae	<i>Drosera</i>	<i>erythrorhiza</i>			No	Native
Droseraceae	<i>Drosera</i>	<i>glanduligera</i>			No	Native
Droseraceae	<i>Drosera</i>	<i>macrantha</i>			No	Native
Droseraceae	<i>Drosera</i>	<i>modesta</i>			No	Native
Droseraceae	<i>Drosera</i>	<i>pallida</i>			No	Native
Droseraceae	<i>Drosera</i>	<i>stolonifera</i>			No	Native
Elaeocarpaceae	<i>Tetratheca</i>	<i>affinis</i>			No	Native
Elaeocarpaceae	<i>Tetratheca</i>	<i>hirsuta</i>	subsp.	<i>viminea</i>	No	Native
Elaeocarpaceae	<i>Tremandra</i>	<i>diffusa</i>			No	Native
Ericaceae	<i>Andersonia</i>	<i>caerulea</i>			No	Native
Ericaceae	<i>Astroloma</i>	<i>ciliatum</i>			No	Native
Ericaceae	<i>Astroloma</i>	<i>drummondii</i>			No	Native
Ericaceae	<i>Astroloma</i>	<i>pallidum</i>			No	Native
Ericaceae	<i>Leucopogon</i>	<i>australis</i>			No	Native
Ericaceae	<i>Leucopogon</i>	<i>capitellatus</i>			No	Native
Ericaceae	<i>Leucopogon</i>	<i>propinquus</i>			No	Native
Ericaceae	<i>Leucopogon</i>	<i>verticillatus</i>			No	Native
Euphorbiaceae	<i>Amperea</i>	<i>simulans</i>			No	Native
Euphorbiaceae	<i>Monotaxis</i>	<i>occidentalis</i>			No	Native
Euphorbiaceae	<i>Ricinus</i>	<i>communis</i>			No	Introduced
Fabaceae	<i>Acacia</i>	<i>baileyana</i>			No	Introduced
Fabaceae	<i>Acacia</i>	<i>celastrifolia</i>			No	Native
Fabaceae	<i>Acacia</i>	<i>dealbata</i>			No	Introduced
Fabaceae	<i>Acacia</i>	<i>dentifera</i>			No	Native
Fabaceae	<i>Acacia</i>	<i>drummondii</i>			No	Native
Fabaceae	<i>Acacia</i>	<i>extensa</i>			No	Native
Fabaceae	<i>Acacia</i>	<i>insolita</i>	subsp.	<i>insolita</i>	No	Native
Fabaceae	<i>Acacia</i>	<i>iteaphylla</i>			No	Introduced
Fabaceae	<i>Acacia</i>	<i>latericola</i>			No	Native
Fabaceae	<i>Acacia</i>	<i>longifolia</i>	subsp.	<i>longifolia</i>	No	Introduced
Fabaceae	<i>Acacia</i>	<i>nervosa</i>			No	Native

Family	Genus	Species	Infra Rank	Infra Name	Significant	Introduced/Native
Fabaceae	<i>Acacia</i>	<i>obovata</i>			No	Native
Fabaceae	<i>Acacia</i>	<i>pulchella</i>			No	Native
Fabaceae	<i>Acacia</i>	<i>pycnantha</i>			No	Introduced
Fabaceae	<i>Acacia</i>	<i>saligna</i>			No	Native
Fabaceae	<i>Acacia</i>	<i>semitrullata</i>			Yes	Native
Fabaceae	<i>Acacia</i>	<i>stenoptera</i>			No	Native
Fabaceae	<i>Bossiaea</i>	<i>aquifolium</i>			No	Native
Fabaceae	<i>Bossiaea</i>	<i>linophylla</i>			No	Native
Fabaceae	<i>Bossiaea</i>	<i>ornata</i>			No	Native
Fabaceae	<i>Callistachys</i>	<i>lanceolata</i>			No	Native
Fabaceae	<i>Chamaecytisus</i>	<i>palmensis</i>			No	Introduced
Fabaceae	<i>Chorizema</i>	<i>nanum</i>			No	Native
Fabaceae	<i>Daviesia</i>	<i>decurrens</i>			No	Native
Fabaceae	<i>Daviesia</i>	<i>physodes</i>			No	Native
Fabaceae	<i>Daviesia</i>	<i>preissii</i>			No	Native
Fabaceae	<i>Gompholobium</i>	<i>capitatum</i>			No	Native
Fabaceae	<i>Gompholobium</i>	<i>knightianum</i>			No	Native
Fabaceae	<i>Gompholobium</i>	<i>marginatum</i>			No	Native
Fabaceae	<i>Gompholobium</i>	<i>preissii</i>			No	Native
Fabaceae	<i>Gompholobium</i>	<i>tomentosum</i>			No	Native
Fabaceae	<i>Hovea</i>	<i>chorizemifolia</i>			No	Native
Fabaceae	<i>Hovea</i>	<i>trisperma</i>			No	Native
Fabaceae	<i>Isotropis</i>	<i>cuneifolia</i>			No	Native
Fabaceae	<i>Kennedia</i>	<i>coccinea</i>			No	Native
Fabaceae	<i>Kennedia</i>	<i>prostrata</i>			No	Native
Fabaceae	<i>Labichea</i>	<i>punctata</i>			No	Native
Fabaceae	<i>Psoralea</i>	<i>pinnata</i>			No	Introduced
Fabaceae	<i>Sphaerolobium</i>	<i>medium</i>			No	Native
Fabaceae	<i>Trifolium</i>	<i>campestre</i>			No	Introduced
Gentianaceae	<i>Centaurium</i>	<i>tenuiflorum</i>			No	Introduced
Geraniaceae	<i>Geranium</i>	<i>solanderi</i>			No	Native
Goodeniaceae	<i>Dampiera</i>	<i>linearis</i>			No	Native
Goodeniaceae	<i>Lechenaultia</i>	<i>biloba</i>			No	Native
Goodeniaceae	<i>Scaevola</i>	<i>calliptera</i>			No	Native

Family	Genus	Species	Infra Rank	Infra Name	Significant	Introduced/Native
Haemodoraceae	<i>Conostylis</i>	<i>aculeata</i>	subsp.	<i>aculeata</i>	No	Native
Haemodoraceae	<i>Conostylis</i>	<i>laxiflora</i>			No	Native
Haemodoraceae	<i>Conostylis</i>	<i>serrulata</i>			No	Native
Haemodoraceae	<i>Conostylis</i>	<i>setigera</i>			No	Native
Haemodoraceae	<i>Haemodorum</i>	<i>laxum</i>			No	Native
Haloragaceae	<i>Glischrocaryon</i>	<i>aureum</i>			No	Native
Haloragaceae	<i>Gonocarpus</i>	<i>benthamii</i>			No	Native
Hemerocallidaceae	<i>Agrostocrinum</i>	<i>hirsutum</i>			No	Native
Hemerocallidaceae	<i>Agrostocrinum</i>	<i>scabrum</i>			No	Native
Hemerocallidaceae	<i>Caesia</i>	<i>micrantha</i>			No	Native
Hemerocallidaceae	<i>Dianella</i>	<i>revoluta</i>			No	Native
Hemerocallidaceae	<i>Johnsonia</i>	<i>lupulina</i>			No	Native
Hemerocallidaceae	<i>Stypandra</i>	<i>glauca</i>			No	Native
Hemerocallidaceae	<i>Tricoryne</i>	<i>elatior</i>			No	Native
Hemerocallidaceae	<i>Tricoryne</i>	<i>humilis</i>			No	Native
Hypoxidaceae	<i>Pauridia</i>	<i>occidentalis</i>	var.	<i>quadriloba</i>	No	Native
Iridaceae	<i>Chasmanthe</i>	<i>floribunda</i>			No	Introduced
Iridaceae	<i>Freesia</i>	<i>alba × leichtlinii</i>			No	Introduced
Iridaceae	<i>Patersonia</i>	<i>babianoides</i>			No	Native
Iridaceae	<i>Patersonia</i>	<i>occidentalis</i>			No	Native
Iridaceae	<i>Patersonia</i>	<i>pygmaea</i>			No	Native
Iridaceae	<i>Romulea</i>	<i>rosea</i>			No	Introduced
Iridaceae	<i>Sparaxis</i>	<i>bulbifera</i>			No	Introduced
Juncaceae	<i>Juncus</i>	<i>microcephalus</i>			No	Introduced
Juncaceae	<i>Juncus</i>	<i>pallidus</i>			No	Native
Juncaceae	<i>Luzula</i>	<i>meridionalis</i>			No	Native
Lamiaceae	<i>Lavendula</i>	<i>stoechus</i>			No	Introduced
Lauraceae	<i>Cassytha</i>	<i>racemosa</i>	forma	<i>racemosa</i>	No	Native
Loganiaceae	<i>Orianthera</i>	<i>serpyllifolia</i>	subsp.	<i>serpyllifolia</i>	No	Native
Malvaceae	<i>Thomasia</i>	<i>grandiflora</i>			No	Native
Menyanthaceae	<i>Ornduffia</i>	<i>parnassifolia</i>			No	Native
Myrtaceae	<i>Astartea</i>	<i>scoparia</i>			No	Native
Myrtaceae	<i>Callistemon</i>	<i>comboynensis</i>			No	Introduced
Myrtaceae	<i>Corymbia</i>	<i>calophylla</i>			No	Native

Family	Genus	Species	Infra Rank	Infra Name	Significant	Introduced/Native
Myrtaceae	<i>Corymbia</i>	<i>maculata</i>			No	Introduced
Myrtaceae	<i>Eucalyptus</i>	<i>cornuta</i>			No	Native
Myrtaceae	<i>Eucalyptus</i>	<i>marginata</i>	subsp.	<i>marginata</i>	No	Native
Myrtaceae	<i>Eucalyptus</i>	<i>patens</i>			No	Native
Myrtaceae	<i>Eucalyptus</i>	<i>resinifera</i>			No	Introduced
Myrtaceae	<i>Eucalyptus</i>	<i>rudis</i>	subsp.	<i>rudis</i>	No	Native
Myrtaceae	<i>Hypocalymma</i>	<i>angustifolium</i>			No	Native
Myrtaceae	<i>Kunzea</i>	<i>glabrescens</i>			No	Native
Myrtaceae	<i>Leptospermum</i>	<i>erubescens</i>			No	Native
Myrtaceae	<i>Melaleuca</i>	<i>preissiana</i>			No	Native
Myrtaceae	<i>Melaleuca</i>	<i>viminialis</i>			Yes	Native
Myrtaceae	<i>Melaleuca</i>	<i>viminea</i>			No	Native
Myrtaceae	<i>Pericalymma</i>	<i>ellipticum</i>			No	Native
Myrtaceae	<i>Taxandria</i>	<i>linearifolia</i>			No	Native
Myrtaceae	<i>Taxandria</i>	<i>parviceps</i>			No	Native
Orchidaceae	<i>Caladenia</i>	<i>arrecta</i>			No	Native
Orchidaceae	<i>Caladenia</i>	<i>attingens</i>	subsp.	<i>attingens</i>	No	Native
Orchidaceae	<i>Caladenia</i>	<i>cairnsiana</i>			No	Native
Orchidaceae	<i>Caladenia</i>	<i>emarginata</i>			No	Native
Orchidaceae	<i>Caladenia</i>	<i>ferruginea</i>			No	Native
Orchidaceae	<i>Caladenia</i>	<i>flava</i>	subsp.	<i>sylvestris</i>	No	Native
Orchidaceae	<i>Caladenia</i>	<i>flava</i>			No	Native
Orchidaceae	<i>Caladenia</i>	<i>longiclavata</i>			No	Native
Orchidaceae	<i>Caladenia</i>	<i>macrostylis</i>			No	Native
Orchidaceae	<i>Caladenia</i>	<i>magniclavata</i>			No	Native
Orchidaceae	<i>Caladenia</i>	<i>reptans</i>	subsp.	<i>reptans</i>	No	Native
Orchidaceae	<i>Cryptostylis</i>	<i>ovata</i>			No	Native
Orchidaceae	<i>Cyanicula</i>	<i>sericea</i>			No	Native
Orchidaceae	<i>Cyrtostylis</i>	<i>huegelii</i>			No	Native
Orchidaceae	<i>Diuris</i>	<i>longifolia</i>			No	Native
Orchidaceae	<i>Elythranthera</i>	<i>brunonis</i>			No	Native
Orchidaceae	<i>Eriochilus</i>	<i>dilatatus</i>			No	Native
Orchidaceae	<i>Lyperanthus</i>	<i>serratus</i>			No	Native
Orchidaceae	<i>Pterostylis</i>	<i>pyramidalis</i>			No	Native


Family	Genus	Species	Infra Rank	Infra Name	Significant	Introduced/Native
Orchidaceae	<i>Pterostylis</i>	<i>recurva</i>			No	Native
Orchidaceae	<i>Pterostylis</i>	<i>sigmoidea</i>			No	Native
Orchidaceae	<i>Pterostylis</i>	<i>vittata</i>			No	Native
Orchidaceae	<i>Pterostylis</i>		sp.	<i>aff. nana</i>	No	Native
Orchidaceae	<i>Pterostylis</i>		sp.	indet	No	Native
Orchidaceae	<i>Pyrorchis</i>	<i>forrestii</i>			No	Native
Orchidaceae	<i>Pyrorchis</i>	<i>nigricans</i>			No	Native
Orchidaceae	<i>Thelymitra</i>	<i>graminea</i>			No	Native
Orchidaceae	<i>Thelymitra</i>		sp.	indet	No	Native
Oxalidaceae	<i>Oxalis</i>	<i>corniculata</i>			No	Introduced
Oxalidaceae	<i>Oxalis</i>	<i>glabra</i>			No	Introduced
Oxalidaceae	<i>Oxalis</i>	<i>pes-caprae</i>			No	Introduced
Oxalidaceae	<i>Oxalis</i>	<i>purpurea</i>			No	Introduced
Phyllanthaceae	<i>Phyllanthus</i>	<i>calycinus</i>			No	Native
Phyllanthaceae	<i>Poranthera</i>	<i>huegelii</i>			No	Native
Pinaceae	<i>Pinus</i>	<i>pinaster</i>			No	Introduced
Pittosporaceae	<i>Billardiera</i>	<i>heterophylla</i>			No	Native
Pittosporaceae	<i>Billardiera</i>	<i>laxiflora</i>			No	Native
Pittosporaceae	<i>Billardiera</i>	<i>variifolia</i>			No	Native
Plantaginaceae	<i>Plantago</i>	<i>lanceolata</i>			No	Introduced
Poaceae	<i>Aira</i>	<i>caryophyllea</i>			No	Introduced
Poaceae	<i>Amphipogon</i>	<i>amphipogonoides</i>			No	Native
Poaceae	<i>Austrostipa</i>	<i>campylachne</i>			No	Native
Poaceae	<i>Austrostipa</i>	<i>mollis</i>			No	Native
Poaceae	<i>Briza</i>	<i>maxima</i>			No	Introduced
Poaceae	<i>Cynodon</i>	<i>dactylon</i>			No	Introduced
Poaceae	<i>Ehrharta</i>	<i>calycina</i>			No	Introduced
Poaceae	<i>Lolium</i>	<i>rigidum</i>			No	Introduced
Poaceae	<i>Neurachne</i>	<i>alopeкуроidea</i>			No	Native
Poaceae	<i>Tetrarrhena</i>	<i>laevis</i>			No	Native
Podocarpaceae	<i>Podocarpus</i>	<i>drouynianus</i>			No	Native
Polygalaceae	<i>Comesperma</i>	<i>calymega</i>			No	Native
Primulaceae	<i>Lysimachia</i>	<i>arvensis</i>			No	Introduced
Proteaceae	<i>Banksia</i>	<i>dallanneyi</i>			No	Native

Family	Genus	Species	Infra Rank	Infra Name	Significant	Introduced/Native
Proteaceae	<i>Banksia</i>	<i>grandis</i>			No	Native
Proteaceae	<i>Grevillea</i>	<i>centristigma</i>			No	Native
Proteaceae	<i>Grevillea</i>	<i>trifida</i>			No	Native
Proteaceae	<i>Hakea</i>	<i>amplexicaulis</i>			No	Native
Proteaceae	<i>Hakea</i>	<i>lissocarpha</i>			No	Native
Proteaceae	<i>Hakea</i>	<i>prostrata</i>			No	Native
Proteaceae	<i>Hakea</i>	<i>ruscifolia</i>			No	Native
Proteaceae	<i>Persoonia</i>	<i>longifolia</i>			No	Native
Proteaceae	<i>Synaphea</i>	<i>obtusata</i>			No	Native
Ranunculaceae	<i>Clematis</i>	<i>pubescens</i>			No	Native
Ranunculaceae	<i>Ranunculus</i>	<i>colonorum</i>			No	Native
Restionaceae	<i>Desmocladus</i>	<i>fasciculatus</i>			No	Native
Restionaceae	<i>Hypolaena</i>	<i>exsulca</i>			No	Native
Restionaceae	<i>Leptocarpus</i>	<i>depilatus</i>			No	Native
Restionaceae	<i>Loxocarya</i>	<i>cinerea</i>			No	Native
Rhamnaceae	<i>Cryptandra</i>	<i>arbutiflora</i>	subsp.	<i>tubulosa</i>	No	Native
Rosaceae	<i>Acaena</i>	<i>echinata</i>			No	Introduced
Rosaceae	<i>Rubus</i>	<i>anglocandicans</i>			No	Introduced
Rubiaceae	<i>Opercularia</i>	<i>apiciflora</i>			No	Native
Rubiaceae	<i>Opercularia</i>	<i>hispidula</i>			No	Native
Rubiaceae	<i>Opercularia</i>	<i>vaginata</i>			No	Native
Rutaceae	<i>Philothea</i>	<i>spicata</i>			No	Native
Santalaceae	<i>Leptomeria</i>	<i>cunninghamii</i>			No	Native
Solanaceae	<i>Solanum</i>	<i>nigrum</i>			No	Introduced
Stylidiaceae	<i>Levenhookia</i>	<i>dubia</i>			No	Native
Stylidiaceae	<i>Stylidium</i>	<i>adnatum</i>			No	Native
Stylidiaceae	<i>Stylidium</i>	<i>amoenum</i>			No	Native
Stylidiaceae	<i>Stylidium</i>	<i>crassifolium</i>			No	Native
Stylidiaceae	<i>Stylidium</i>	<i>piliferum</i>			No	Native
Stylidiaceae	<i>Stylidium</i>	<i>schoenoides</i>			No	Native
Stylidiaceae	<i>Stylidium</i>	<i>spathulatum</i>			No	Native
Stylidiaceae	<i>Stylidium</i>	<i>tenuis</i>			No	Native
Stylidiaceae	<i>Stylidium</i>	<i>uniflorum</i>	subsp.	<i>uniflorum</i>	No	Native
Thymelaeaceae	<i>Pimelea</i>	<i>angustifolia</i>			No	Native

Family	Genus	Species	Infra Rank	Infra Name	Significant	Introduced/Native
Thymelaeaceae	<i>Pimelea</i>	<i>ciliata</i>	subsp.	<i>ciliata</i>	No	Native
Thymelaeaceae	<i>Pimelea</i>	<i>cracens</i>			No	Native
Violaceae	<i>Hybanthus</i>	<i>debilissimus</i>			No	Native
Violaceae	<i>Hybanthus</i>	<i>epacroides</i>			Yes	Native
Violaceae	<i>Hybanthus</i>	<i>floribundus</i>	subsp.	<i>floribundus</i>	No	Native
Xanthorrhoeaceae	<i>Xanthorrhoea</i>	<i>gracilis</i>			No	Native
Xanthorrhoeaceae	<i>Xanthorrhoea</i>	<i>preissii</i>			No	Native
Zamiaceae	<i>Macrozamia</i>	<i>riedlei</i>			No	Native


APPENDIX 7

Raw data for 22 quadrats formally assessed within
the study area

Site	GBC-01	Location	50K 411466 E	6256195 N
Date	1 st Season: 30/07/18 2 nd Season: 26/09/18			
Landform	Hillslope			
BFF	Eucalyptus Forest			
Vegetation Description	Forest of Eucalyptus marginata and Corymbia calophylla over Low Heath D of Bossiaea ornata, Leucopogon capitellatus and Banksia dallanneyi over Very Open Low Sedges of Tetraria sp. Jarrah Forest (R. Davis 7391)			
				
Condition	Very Good			
Disturbance	Logging, road / access track, weeds			
Fire age	Moderate (3 to 5 yr)			
Slope	Low			
Aspect	South East			
Soil Type	Loamy Sand			
Soil Colour	Brown			

Genus	Species	Rank	Name	Cover	Height
Acacia	celastrifolia				
Acacia	insolita	subsp.	insolita		
Astroloma	pallidum			<1	0.3
Banksia	dallanneyi			7	0.2
Banksia	grandis				
Billardiera	laxiflora			<1	Cl
Bossiaea	ornata			5	0.5
Briza	maxima			<1	0.3
Caesia	micrantha			<1	0.1
Clematis	pubescens			1	Cl
Conostylis	aculeata	subsp.	aculeata	2	0.4
Corymbia	calophylla			25	10-30
Dampiera	linearis			<1	0.1

Genus	Species	Rank	Name	Cover	Height
Daviesia	preissii			<1	0.3
Desmocladus	fasciculatus			<1	
Drosera	glanduligera				
Drosera	pallida			<1	Cl
Drosera	stolonifera			<1	0.1
Eriochilus	dilatatus			<1	0.1
Eucalyptus	marginata	subsp.	marginata	40	10-30
Grevillea	trifida				
Haemodorum	laxum				
Hakea	ruscifolia				
Hibbertia	amplexicaulis			1	0.2
Hibbertia	commutata			0.5	0.2
Hibbertia	hypericoides				
Hovea	chorizemifolia				
Hypochaeris	glabra				
Lagenophora	huegelii			<1	0.1
Lechenaultia	biloba			<1	0.1
Lepidosperma	leptostachyum			<1	0.5
Leucopogon	capitellatus			8	0.5
Leucopogon	verticillatus			<1	1.5
Lomandra	nigricans			<1	0.3
Lomandra	sericea			<1	0.3
Macrozamia	riedlei			0.5	1.5
Oxalis	corniculata			<1	0.1
Patersonia	pygmaea				
Pentapeltis	silvatica			<1	0.1
Persoonia	longifolia			0.5	2.5
Phyllanthus	calycinus			<1	0.1
Synaphea	obtusata				
Tetralia		sp.	Jarrah Forest (R. Davis 7391)	5	0.8
Tetrarrhena	laevis			<1	0.1
Tetralia	affinis			<1	0.4
Tetralia	hirsuta	subsp.	viminea	<1	0.3
Thysanotus	patersonii				
Tremandra	diffusa				
Xanthorrhoea	gracilis			<1	0.5
Xanthosia	candida				

Site	GBC-02	Location	50K 411608 E	6256113 N
Date	1 st Season: 30/07/18 2 nd Season: 26/09/18			
Landform	Hillslope			
BFF	Eucalyptus Forest			
Vegetation Description	Forest of Eucalyptus marginata and Corymbia calophylla over Low Woodland B of Banksia grandis and Persoonia longifolia over Dwarf Scrub D of Bossiaea ornata, Hibbertia hypericoides and Leucopogon capitellatus with Open Low Scrub B of Macrozamia riedlei and Xanthorrhoea gracilis			
				
Condition	Very Good			
Disturbance	Logging			
Fire age	Moderate (3 to 5 yr)			
Slope	Low			
Aspect	South West			
Soil Type	Loamy Sand			
Soil Colour	Brown			

Genus	Species	Rank	Name	Cover	Height
Acacia	extensa				
Acacia	pulchella			<1	1
Acacia	stenoptera				
Allocauarina	fraseriana			<1	6
Astroloma	drummondii			<1	0.3
Astroloma	pallidum			<1	0.2
Banksia	dallanneyi			<1	0.2
Banksia	grandis			25	<5
Billarderia	variifolia			<1	Cl
Billarderia	variifolia			1	0.3
Bossiaea	ornata			5	0.4
Caesia	micrantha			<1	0.1
Caladenia	flava			<1	0.2
Clematis	pubescens			<1	Cl

Genus	Species	Rank	Name	Cover	Height
Comesperma	calymega			<1	0.1
Conostylis	aculeata	subsp.	aculeata	<1	0.3
Conostylis	serrulata			<1	0.2
Corymbia	calophylla			20	10-30
Craspedia	variabilis			<1	0.2
Dampiera	linearis			<1	0.1
Daviesia	preissii			<1	0.5
Desmocladus	fasciculatus			<1	0.1
Dichopogon	capillipes			<1	0.4
Drosera	erythrorhiza			<1	0.1
Drosera	pallida			<1	Cl
Eriochilus	dilatatus			<1	0.1
Eucalyptus	marginata	subsp.	marginata	40	10-30
Glischrocaryon	aureum			<1	0.5
Haemodorum	laxum			<1	0.5
Hakea	amplexicaulis			<1	1.2
Hakea	lissocarpha				
Hibbertia	amplexicaulis			0.5	0.4
Hibbertia	commutata			<1	
Hibbertia	hypericoides			10	0.4
Hovea	chorizemifolia			<1	0.2
Labichea	punctata			<1	0.1
Lagenophora	huegelii			<1	0.1
Lechenaultia	biloba			<1	0.2
Leucopogon	capitellatus			3	0.4
Leucopogon	propinquus				
Lomandra	hermaphrodita			<1	0.2
Lomandra	nigricans			<1	0.5
Lomandra	preissii			<1	0.4
Lomandra	sericea			<1	0.4
Loxocarya	cinerea			<1	0.5
Macrozamia	riedlei			1	2
Neurachne	alopeкуроidea			<1	0.1
Opercularia	hispidula			<1	0.1
Patersonia	babianoides			<1	0.1
Patersonia	pygmaea			<1	0.2
Patersonia	pygmaea			<1	0.1
Pentapeltis	silvatica			<1	0.05
Persoonia	longifolia			5	3.5
Philotheca	spicata			<1	0.5
Podocarpus	drouynianus				
Pterostylis	sigmoidea				
Pterostylis	vittata			<1	0.6
Pterostylis	vittata			<1	0.8
Ptilotus	manglesii				
Scaevola	calliptera			<1	0.1
Stylidium	amoenum			<1	0.1
Synaphea	obtusata			<1	0.3
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	2	0.8
Tetrarrhena	laevis			<1	0.3
Tetratheca	affinis			<1	0.5
Tetratheca	hirsuta	subsp.	viminea	<1	0.3
Thysanotus	patersonii			<1	Cl
Xanthorrhoea	gracilis			1.5	4

Site	GBC-03	Location	50K 411782 E	6255877 N
Date	1 st Season: 30/07/18 2 nd Season: 26/09/18			
Landform	Hillslope			
BFF	Corymbia Forest			
Vegetation Description	Forest of <i>Corymbia calophylla</i> and <i>Eucalyptus marginata</i> over Low Scrub B of <i>Xanthorrhoea preissii</i> over Dwarf Scrub D of (<i>Hypocalymma angustifolium</i>), <i>Bossiaea ornata</i> , <i>Hibbertia hypericoides</i> and <i>Leucopogon capitellatus</i> with Open Low Woodland B of <i>Banksia grandis</i> over Open Dwarf Scrub C of <i>Macrozamia riedlei</i> and <i>Xanthorrhoea gracilis</i>			



Condition	Very Good
Disturbance	Logging, road / access track, weeds
Fire age	Moderate (3 to 5 yr)
Slope	Low
Aspect	South East
Soil Type	Loamy Sand
Soil Colour	Brown

Genus	Species	Rank	Name	Cover	Height
Acacia	celastrifolia				
Acacia	extensa			<1	1
Acacia	nervosa			<1	0.3
Acacia	pulchella			<1	1
Acacia	pycnantha				
Acaena	echinata			0.5	0.1
Allocasuarina	humilis				
Andersonia	caerulea				
Astroloma	drummondii			<1	0.2
Astroloma	pallidum			<1	0.2
Banksia	grandis			2	4
Billardiera	variifolia			<1	Cr

Genus	Species	Rank	Name	Cover	Height
Bossiaea	ornata			4	0.5
Caesia	micrantha			<1	
Caladenia	flava			<1	0.1
Chasmanthe	floribunda			<1	1
Clematis	pubescens				
Conostylis	aculeata	subsp.	aculeata	<1	0.2
Conostylis	setigera			<1	0.2
Corymbia	calophylla			45	30
Craspedia	variabilis			<1	0.1
Cryptandra	arbutiflora	subsp.	tubulosa		
Dampiera	linearis			<1	0.2
Daviesia	preissii			<1	0.5
Desmocladus	fasciculatus			<1	0.1
Dichopogon	capillipes			<1	0.1
Drosera	macrantha				
Eriochilus	dilatatus			<1	0.15
Eucalyptus	marginata	subsp.	marginata	15	30
Grevillea	trifida			<1	0.4
Haemodorum	laxum			<1	0.5
Hakea	lissocarpha			0.5	0.5
Hibbertia	diamesogenos				
Hibbertia	hypericoides			5	0.3
Hovea	chorizemifolia			<1	0.1
Hybanthus	floribundus	subsp.	floribundus		
Hypocalymma	angustifolium			1	0.3
Hypochaeris	glabra			<1	0.1
Isotropis	cuneifolia				
Kennedia	prostrata				
Kunzea	glabrescens				
Kunzea	glabrescens				
Labichea	punctata				
Labichea	punctata			<1	0.2
Lagenophora	huegelii			<1	0.1
Lavendula	stoechus			<1	0.5
Leptospermum	erubescens				
Leucopogon	capitellatus			6	0.3
Lobelia	anceps			<1	0.3
Lomandra	nigricans			0.5	0.3
Lomandra	preissii			<1	0.4
Lomandra	sericea			<1	0.5
Loxocarya	cinerea			2	0.5
Macrozamia	riedlei			1	1.2
Opercularia	hispidula			<1	0.2
Oxalis	corniculata			0.5	0.1
Persoonia	longifolia			0.5	2
Philothea	spicata			<1	0.1
Pimelea	ciliata	subsp.	ciliata		
Pterostylis		sp.	indet	<1	0.1
Scaevola	calliptera				
Stylidium	tenue				
Tetraria	octandra				
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	5	0.5
Tetrarrhena	laevis			<1	0.2

Genus	Species	Rank	Name	Cover	Height
Tetratheca	hirsuta	subsp.	viminea	<1	0.2
Thomasia	grandiflora				
Thysanotus	manglesianus			<1	Cl
Tricoryne	humilis				
Xanthorrhoea	gracilis			1	<1
Xanthorrhoea	preissii			10	1.5
Xanthosia	candida			<1	0.1


Site	GBC-04	Location	50K 411871 E	6255833 N
Date	1 st Season: 30/07/18 2 nd Season: 29/09/18			
Landform	Footslope			
BFF	Allocasuarina Heath A			
Vegetation Description	Heath A of <i>Allocasuarina humilis</i> and <i>Leptospermum erubescens</i> over Low Heath D of <i>Thomasia grandiflora</i> , <i>Andersonia caerulescens</i> and <i>Banksia dallanneyi</i> with Low Open Scrub B of <i>Xanthorrhoea preissii</i> over Very Open Low Sedges of <i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391) and <i>Desmodcladus fasciculatus</i>			



Condition	Good
Disturbance	Road / access track, powerline
Fire age	Moderate (3 to 5 yr)
Slope	Low
Aspect	South
Soil Type	Clay Loam
Soil Colour	Brown

Genus	Species	Rank	Name	Cover	Height
Acacia	<i>nervosa</i>			<1	0.3
Acacia	<i>pulchella</i>			<1	0.3
Acacia	<i>pycnantha</i>			0.5	3.5
Allocasuarina	<i>humilis</i>			15	0.5-2
Andersonia	<i>caerulea</i>			4	0.3
Astroloma	<i>pallidum</i>			<1	0.2
Banksia	<i>dallanneyi</i>			6	0.2
Bossiaea	<i>ornata</i>			<1	0.4
Caladenia	<i>cairnsiana</i>			<1	0.15
Chamaescilla	<i>corymbosa</i>			<1	0.05
Conostylis	<i>setigera</i>			<1	0.05

Genus	Species	Rank	Name	Cover	Height
Corymbia	calophylla			1	4
Craspedia	variabilis			<1	0.1
Cryptandra	arbutiflora	subsp.	tubulosa	<1	0.6
Cyanicula	sericea				
Dampiera	linearis			<1	0.1
Daviesia	preissii			<1	0.3
Desmocladius	fasciculatus			0.5	0.1
Drosera	erythrorhiza			<1	0.05
Drosera	macrantha			<1	Cl
Eriochilus	dilatatus			<1	0.1
Eucalyptus	marginata	subsp.	marginata	1	6
Gompholobium	marginatum				
Haemodorum	laxum			<1	0.5
Hibbertia	hypericoides			0.5	0.4
Hypocalymma	angustifolium			<1	0.4
Hypochaeris	glabra			<1	0.1
Kunzea	glabrescens			2	2
Lavendula	stoechus			<1	0.1
Laxmannia	squarrosa			<1	0.05
Lepidosperma	leptostachyum			<1	0.7
Lepidosperma	pubisquameum			<1	0.5
Leptospermum	erubescens			1	2.5
Lomandra	nigricans			<1	0.4
Lomandra	sericea			<1	0.3
Macrozamia	riedlei			0.5	1
Oxalis	glabra			1	0.05
Oxalis	purpurea			<1	0.1
Pentapeltis	silvatica			<1	0.05
Stylidium	tenue			<1	0.05
Tetraria	octandra			<1	0.3
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	4	0.6
Thomasia	grandiflora			5	0.5
Thysanotus	patersonii			<1	Cl
Ursinia	anthemoides				
Xanthorrhoea	preissii			3	1.5

Site	GBC-05	Location	50K 412091 E	6255696 N
Date	1 st Season: 30/07/18 2 nd Season: 27/09/18			
Landform	Minor Drainage Line			
BFF	Taxandria Thicket			
Vegetation Description	Thicket of <i>Taxandria linearifolia</i> and <i>Astartea scoparia</i> over Low Heath D of * <i>Chasmanthe floribunda</i> with Tall Woodland of <i>Eucalyptus rudis</i> over Low Woodland A of <i>Callistachys lanceolata</i> and <i>Melaleuca preissiana</i>			
				
Condition	Degraded			
Disturbance	Road / access track, weeds			
Fire age	Old (>6 yrs)			
Slope	Low			
Aspect	South			
Soil Type	Clayey Sand			
Soil Colour	Brown			

Genus	Species	Rank	Name	Cover	Height
Acacia	pulchella			<1	0.3
Acacia	pycnantha			0.5	2.5
Agrostocrinum	scabrum			<1	0.5
Asparagus	asparagoides				
Astartea	scoparia			2	2.5
Baumea	preissii				
Callistachys	lanceolata			20	8
Chasmanthe	floribunda			45	0.5
Conostylis	aculeata	subsp.	aculeata	<1	0.2
Corymbia	calophylla				
Cynodon	dactylon			<1	0.1
Drosera	glanduligera			<1	0.01
Eucalyptus	rudis	subsp.	rudis	0.5	2

Genus	Species	Rank	Name	Cover	Height
Hypochaeris	glabra			<1	0.1
Juncus	microcephalus			<1	0.5
Juncus	pallidus				
Leptocarpus	depilatus			1	1.2
Lysimachia	arvensis			<1	0.1
Melaleuca	preissiana			2	5
Ornduffia	parnassifolia				
Oxalis	purpurea			<1	0.1
Romulea	rosea			<1	0.1
Stypandra	glauc				
Taxandria	linearifolia			30	3


Site	GBC-06	Location	50K 411567 E	6255953 N
Date	1 st Season: 30/07/18 2 nd Season: 27/09/18			
Landform	Hillcrest / Upper Hill Slope			
BFF	Allocasuarina Forest			
Vegetation Description	Forest of Allocasuarina fraseriana, Corymbia calophylla and Eucalyptus marginata over Low Woodland A of Corymbia calophylla, Eucalyptus marginata and Allocasuarina fraseriana over Open Dwarf Scrub D of Bossiaea ornata and (Astroloma pallidum) over Very Open Low Sedges of Tetraria sp. Jarrah Forest (R. Davis 7391)			



Condition	Good
Disturbance	Road / access track, weeds, logging
Fire age	Moderate (3 to 5 yr)
Slope	Low
Aspect	South
Soil Type	Loamy Sand
Soil Colour	Brown

Genus	Species	Rank	Name	Cover	Height
Acacia	celastrifolia				
Acacia	extensa			<1	0.4
Allocasuarina	fraseriana			30	5-20
Astroloma	pallidum			<1	0.2
Billardiera	variifolia			<1	CL
Bossiaea	ornata			2	0.5
Caesia	micrantha			<1	0.3
Chamaescilla	corymbosa			<1	0.1
Conostylis	setigera			<1	0.1
Corymbia	calophylla			20	10-30
Cyrtostylis	huegelii				

Genus	Species	Rank	Name	Cover	Height
Dampiera	linearis			<1	0.05
Dichopogon	capillipes			<1	0.1
Drosera	erythrorhiza			<1	0.05
Drosera	pallida			<1	Cl
Eucalyptus	marginata	subsp.	marginata	5	10-30
Hibbertia	amplexicaulis			<1	0.1
Hibbertia	commutata			<1	0.2
Hovea	chorizemifolia			0.5	0.2
Lagenophora	huegelii			<1	0.05
Lechenaultia	biloba			<1	0.2
Leucopogon	capitellatus			<1	0.1
Leucopogon	propinquus			<1	0.5
Lomandra	hermaphrodita			<1	0.3
Lomandra	nigricans			<1	0.2
Lomandra	sericea			<1	0.5
Opercularia	vaginata			<1	0.3
Patersonia	babianoides			<1	0.1
Patersonia	pygmaea			<1	0.2
Persoonia	longifolia			0.5	1.5
Philotheca	spicata			<1	0.2
Pterostylis	vittata			<1	0.5
Pyrorchis	nigricans			<1	0.5
Scaevola	calliptera			<1	0.05
Stylidium	amoenum			<1	0.05
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	5	0.5
Tetrarrhena	laevis			<1	0.2
Tetratheca	hirsuta	subsp.	viminea	<1	0.1
Thysanotus	manglesianus			<1	Cl

Site	GBC-07	Location	50K 412110 E	6255392 N
Date	1 st Season: 31/07/18 2 nd Season: 27/09/18			
Landform	Footslope			
BFF	Eucalyptus Forest			
Vegetation Description	Forest of *Eucalyptus resinifera over Very Open Herbs of *Chasmanthe floribunda and *Oxalis glabra			
				
Condition	Completely Degraded			
Disturbance	Road / access track, weeds, post-mining rehabilitation			
Fire age	Recent (0 to 2 yr)			
Slope	Flat			
Aspect	Flat			
Soil Type	Loamy Sand			
Soil Colour	Brown			

Genus	Species	Rank	Name	Cover	Height
Acacia	celastrifolia				
Acacia	drummondii				
Acacia	latericola				
Acacia	pulchella				
Acacia	pycnantha			<1	1.2
Acacia	saligna				
Asparagus	asparagoides				
Astartea	scoparia				
Billardiera	heterophylla			<1	0.2
Chamaecytisus	palmensis			<1	0.2
Chamaescilla	corymbosa			<1	0.05
Chasmanthe	floribunda			0.5	0.7
Corymbia	maculata				
Cynodon	dactylon			<1	0.5

Genus	Species	Rank	Name	Cover	Height
Eucalyptus	patens			<1	0.5
Eucalyptus	resinifera			60	30
Eucalyptus	rudis	subsp.	rudis		
Hypocalymma	angustifolium			<1	0.2
Hypochaeris	glabra			<1	0.1
Lavendula	stoechus				
Leptocarpus	depilatus			<1	1
Melaleuca	preissiana				
Oxalis	corniculata			2	0.1
Patersonia	pygmaea			<1	0.2
Pericalymma	ellipticum				
Pinus	pinaster				
Plantago	lanceolata			<1	0.1
Rubus	anglocandicans				
Taxandria	linearifolia			1	1.5
Taxandria	parviceps			0.5	1.5
Tetrarrhena	laevis			<1	0.1


Site	GBC-08	Location	50K 411974 E	6255197 N
Date	1 st Season: 31/07/18 2 nd Season: 27/09/18			
Landform	Hillslope			
BFF	Corymbia Forest			
Vegetation Description	Forest of <i>Corymbia calophylla</i> and <i>Eucalyptus marginata</i> over Dwarf Scrub D of <i>Banksia dallaneyi</i> , <i>Phyllanthus calycinus</i> , <i>Hibbertia hypericoides</i> and <i>Thomasia grandiflora</i> with Open Low Scrub B of <i>Xanthorrhoea preissii</i> , <i>Macrozamia riedlei</i> and <i>Xanthorrhoea gracilis</i>			



Condition	Good
Disturbance	Road / access track, weeds, logging
Fire age	Recent (0 to 2 yr)
Slope	Low
Aspect	North
Soil Type	Sandy Loam
Soil Colour	Black


Genus	Species	Rank	Name	Cover	Height
Acacia	dentifera			<1	0.3
Acacia	nervosa			<1	0.1
Acacia	pycnantha			<1	0.2
Astroloma	pallidum			<1	0.1
Banksia	dallaneyi			6	0.3
Bossiaea	ornata			<1	0.2
Briza	maxima			<1	0.3
Caladenia	flava			<1	0.05
Chamaescilla	corymbosa			0.5	0.05
Chasmanthe	floribunda			<1	0.5
Conostylis	aculeata	subsp.	aculeata	<1	0.2
Conostylis	setigera			<1	0.1

Genus	Species	Rank	Name	Cover	Height
Conyza	bonariensis				
Corymbia	calophylla			20	10-30
Craspedia	variabilis			<1	0.2
Dampiera	linearis			<1	0.1
Desmocladius	fasciculatus			2	0.1
Dianella	revoluta				
Drosera	erythrorhiza			<1	0.05
Drosera	macrantha			<1	Cl
Eriochilus	dilatatus			<1	0.2
Eucalyptus	marginata	subsp.	marginata	25	5-25
Eucalyptus	patens			<1	6
Gompholobium	knightianum			<1	0.1
Grevillea	trifida			0.5	0.4
Haemodorum	laxum			<1	0.4
Hakea	amplexicaulis				
Hakea	lissocarpha				
Hibbertia	hypericoides			3	0.3
Hovea	chorizemifolia			0.5	0.2
Isotropis	cuneifolia			<1	0.5
Kennedia	coccinea			<1	0.1
Kennedia	prostrata			<1	0.1
Labichea	punctata			<1	0.1
Lagenophora	huegelii			<1	0.05
Lechenaultia	biloba			<1	0.2
Leucopogon	capitellatus			<1	0.1
Lomandra	nigricans			<1	0.1
Lomandra	sericea			<1	0.3
Macrozamia	riedlei			1	1
Patersonia	pygmaea			<1	0.3
Persoonia	longifolia			2	2.5
Philothea	spicata			0.5	0.3
Phyllanthus	calycinus			4	0.3
Pimelea	ciliata	subsp.	ciliata	<1	0.2
Scaevola	calliptera			<1	0.1
Stylidium	piliferum			<1	0.05
Tetraria		sp.	Jarraah Forest (R. Davis 7391)	<1	0.5
Tetrateca	hirsuta	subsp.	viminea	<1	0.2
Thomasia	grandiflora			4	0.3
Thysanotus	manglesianus			<1	Cl
Xanthorrhoea	gracilis			1	1
Xanthorrhoea	preissii			8	1.3

Site	GBC-09	Location	50K 411858 E	6255053 N
Date	1 st Season: 31/07/18 2 nd Season: 27/09/18			
Landform	Hillslope			
BFF	Corymbia Forest			
Vegetation Description	Forest of <i>Corymbia calophylla</i> and <i>Eucalyptus marginata</i> over Dwarf Scrub D of <i>Bossiaea ornata</i> and <i>Hibbertia hypericoides</i> with Open Dwarf Scrub C of <i>Macrozamia riedlei</i> and <i>Hibbertia hypericoides</i>			
				
Condition	Very Good			
Disturbance	Road / access track			
Fire age	Old (>6 yr)			
Slope	Low			
Aspect	North West			
Soil Type	Sandy Loam			
Soil Colour	Brown			


Genus	Species	Rank	Name	Cover	Height
Acacia	extensa			0.5	2.5
Acacia	insolita	subsp.	insolita	<1	0.3
Acacia	pulchella			<1	0.8
Acacia	pycnantha			0.5	3
Billarderia	variifolia			<1	Cl
Bossiaea	ornata			15	0.5
Burchardia	congesta			<1	0.3
Caesia	micrantha			<1	0.2
Chamaescilla	corymbosa			<1	0.1
Conostylis	setigera			<1	0.2
Corymbia	calophylla			30	10-30
Dampiera	linearis			<1	0.1
Daviesia	preissii			<1	0.5

Genus	Species	Rank	Name	Cover	Height
Drosera	erythrorhiza			<1	0.05
Drosera	pallida			<1	Cl
Eucalyptus	marginata	subsp.	marginata	20	10-30
Gompholobium	knightianum			<1	0.1
Grevillea	trifida			<1	0.2
Haemodorum	laxum			<1	0.1
Hakea	amplexicaulis			0.5	1.2
Hibbertia	amplexicaulis			<1	0.2
Hibbertia	commutata			<1	0.3
Hibbertia	hypericoides			10	0.4
Hovea	chorizemifolia			0.5	0.3
Kennedia	coccinea			<1	0.1
Lagenophora	huegelii			<1	0.2
Lechenaultia	biloba			<1	0.2
Leucopogon	verticillatus			0.5	1
Lomandra	nigricans			<1	0.2
Lomandra	preissii			<1	0.5
Lomandra	sericea			<1	0.3
Lomandra	sonderi			<1	0.5
Macrozamia	riedlei			0.5	1
Opercularia	hispidula			<1	0.1
Orianthera	serpyllifolia	subsp.	serpyllifolia	<1	0.1
Patersonia	babianoides			<1	0.1
Pentapeltis	silvatica			<1	0.1
Persoonia	longifolia			1	4
Philothea	spicata			0.5	0.2
Podocarpus	drouynianus			1	2
Pterostylis	vittata			<1	0.5
Scaevola	calliptera			<1	0.5
Stylidium	amoenum			<1	0.05
Taxandria	parviceps			<1	1.5
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	<1	0.5
Tetrarrhena	laevis			<1	0.3
Tetrateca	affinis			<1	0.3
Tetrateca	hirsuta	subsp.	viminea	<1	0.4
Tremandra	diffusa			<1	0.3
Xanthorrhoea	gracilis			2	1
Xanthosia	huegelii			<1	0.1

Site	GBC-10	Location	50K 411718 E	6254031 N
Date	1 st Season: 31/07/18 2 nd Season: 03/10/18			
Landform	Wetland			
BFF	Eucalyptus Forest			
Vegetation Description	Forest of <i>Eucalyptus patens</i> , <i>Corymbia calophylla</i> and * <i>Pinus radiata</i> over Scrub of <i>Hakea prostrata</i> , * <i>Acacia pycnantha</i> and <i>Taxandria linearifolia</i> over Low Scrub B of <i>Astartea scoparia</i> and <i>Bossiaea linophylla</i> over Open Dwarf Scrub D of <i>Hypocalymma angustifolium</i> over Very Open Low Sedges of <i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391)			
				
Condition	Good			
Disturbance	Road / access track, rubbish, weeds, logging			
Fire age	Old (>6 yr)			
Slope	Flat			
Aspect	Flat			
Soil Type	Sandy Clay Loam			
Soil Colour	Brown			


Genus	Species	Rank	Name	Cover	Height
Acacia	extensa			0.5	1
Acacia	pulchella			0.5	1.5
Acacia	pycnantha			8	2-8
Astartea	scoparia			10	2
Astroloma	ciliatum				
Austrostipa	mollis			<1	0.4
Billardiera	heterophylla			<1	1.5
Bossiaea	linophylla			6	1-2
Caladenia	ferruginea				
Caladenia	ferruginea				
Caladenia	flava				

Genus	Species	Rank	Name	Cover	Height
Chamaescilla	corymbosa				
Conostylis	aculeata	subsp.	aculeata	<1	0.4
Corymbia	calophylla			5	30
Diuris	longifolia			<1	0.4
Eriochilus	dilatatus			<1	0.3
Eucalyptus	patens			40	30
Grevillea	centristigma				
Hakea	prostrata			10	2-3
Hibbertia	glomerata	subsp.	glomerata		
Hypocalymma	angustifolium			8	0.5
Juncus	pallidus				
Laxmannia	squarrosa				
Lepidosperma	squamatum				
Leptocarpus	depilatus			<1	1.5
Leucopogon	capitellatus				
Leucopogon	verticillatus			<1	0.5
Lomandra	integra			<1	0.3
Melaleuca	viminea				
Neurachne	alopecuroidea			<1	0.1
Oxalis	glabra				
Patersonia	occidentalis			<1	0.3
Philothea	spicata				
Pimelea	angustifolia				
Pinus	pinaster			10	30
Pterostylis	vittata			<1	0.4
Pterostylis	vittata			<1	0.4
Stylidium	uniflorum	subsp.	uniflorum		
Taxandria	linearifolia			2	3
Taxandria	parviceps			<1	2
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	5	0.5
Tetrarrhena	laevis			<1	0.3
Thysanotus	patersonii			<1	Cl
Xanthosia	huegelii			<1	0.1
Acacia	extensa			0.5	1
Acacia	pulchella			0.5	1.5
Acacia	pycnantha			8	2-8
Astartea	scoparia			10	2
Astroloma	ciliatum				
Austrostipa	mollis			<1	0.4
Billardiera	heterophylla			<1	1.5
Bossiaea	linophylla			6	1-2
Caladenia	ferruginea				
Caladenia	ferruginea				

Site	GBC-11	Location	50K 411609 E	6254364 N
Date	1 st Season: 31/07/18 2 nd Season: 03/10/18			
Landform	Hillslope			
BFF	Eucalyptus Forest			
Vegetation Description	Forest of Eucalyptus marginata and Corymbia calophylla over Dwarf Scrub D of Bossiaea ornata, Hibbertia hypericoides and Leucopogon capitellatus with Open Dwarf Scrub C of Xanthorrhoea preissii and Macrozamia riedlei			
				
Condition	Very Good			
Disturbance	Road / access track, weeds			
Fire age	Moderate (3 to 5 yr)			
Slope	Low			
Aspect	South East			
Soil Type	Sandy Loam			
Soil Colour	Brown			


Genus	Species	Rank	Name	Cover	Height
Acacia	celastrifolia			<1	1.4
Acacia	pulchella			0.5	1
Acacia	pycnantha			<1	6
Amphipogon	amphipogonoides			<1	0.2
Banksia	dallanneyi			2	0.3
Billarderia	variifolia			<1	Cl
Bossiaea	aquifolium				
Bossiaea	ornata			10	0.5
Burchardia	congesta			<1	0.4
Caesia	micrantha			<1	0.3
Cassytha	racemosa	forma	racemosa	<1	Cl
Chamaescilla	corymbosa			0.5	0.1
Chasmanthe	floribunda			<1	0.8

Genus	Species	Rank	Name	Cover	Height
Clematis	pubescens				
Corymbia	calophylla			35	20-30
Dampiera	linearis			<1	0.1
Desmocladius	fasciculatus			0.5	0.1
Drosera	erythrorhiza			<1	0.05
Drosera	macrantha			<1	Cl
Eucalyptus	marginata	subsp.	marginata	25	20-30
Grevillea	trifida			<1	0.5
Haemodorum	laxum				
Hakea	amplexicaulis			<1	1.7
Hibbertia	amplexicaulis			<1	0.1
Hibbertia	commutata			<1	0.2
Hibbertia	hypericoides			15	0.5
Hovea	chorizemifolia			1	0.3
Lagenophora	huegelii			<1	0.05
Lechenaultia	biloba			<1	0.2
Lepidosperma	leptostachyum			<1	0.7
Leucopogon	capitellatus			2	0.3
Lobelia	anceps			<1	0.1
Lomandra	integra			<1	0.2
Lomandra	sericea			<1	0.2
Macrozamia	riedlei			0.5	1.2
Neurachna	alopecuroidea			<1	0.1
Opercularia	apiciflora			<1	0.1
Patersonia	babianoides			<1	0.15
Patersonia	pygmaea				
Pentapeltis	silvatica			<1	0.05
Philothea	spicata			1	0.3
Pterostylis	vittata			<1	0.4
Pterostylis	vittata			<1	0.3
Stylidium	amoenum			<1	0.05
Synaphea	obtusata			<1	0.4
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	1	0.5
Tetrarrhena	laevis			<1	0.3
Tetratheca	hirsuta	subsp.	viminea	<1	0.3
Xanthorrhoea	gracilis			2	1.2
Xanthorrhoea	preissii			1	1.5

Site	GBC-12	Location	50K 411900 E	6254900 N
Date	1 st Season: 31/07/18 2 nd Season: 03/10/18			
Landform	Hillslope			
BFF	Eucalyptus Forest			
Vegetation Description	Forest of <i>Eucalyptus marginata</i> and <i>Corymbia calophylla</i> over Open Low Woodland A of <i>Banksia grandis</i> and <i>Persoonia longifolia</i> over Open Dwarf Scrub C of <i>Xanthorrhoea gracilis</i> and <i>Leucopogon verticillatus</i>			
				
Condition	Good			
Disturbance	Logging, weeds			
Fire age	Moderate (3 to 5 yr)			
Slope	Low			
Aspect	North West			
Soil Type	Sandy Loam			
Soil Colour	Brown			


Genus	Species	Rank	Name	Cover	Height
Acacia	pulchella			<1	0.5
Acacia	pycnantha			2	2.5
Agrostocrinum	hirsutum			<1	0.6
Amphipogon	amphipogonoides			<1	0.1
Austrostipa	campylachne			<1	0.1
Banksia	grandis			3	5
Billardiera	variifolia			<1	0.2
Bossiaea	ornata			1	0.3
Briza	maxima			<1	0.1
Burchardia	congesta				
Caladenia	arrecta			<1	0.2
Caladenia	arrecta			<1	0.1
Caladenia	flava			<1	0.1

Genus	Species	Rank	Name	Cover	Height
Caladenia	macrostylis				
Chamaescilla	corymbosa			<1	0.05
Clematis	pubescens			<1	Cl
Corymbia	calophylla			15	20
Daviesia	preissii			<1	0.6
Diuris	longifolia			<1	0.2
Drosera	erythrorhiza			<1	0.05
Drosera	macrantha			<1	Cl
Eriochilus	dilatatus				
Eucalyptus	marginata	subsp.	marginata	20	10-25
Grevillea	trifida			<1	0.1
Hibbertia	amplexicaulis			<1	0.3
Hibbertia	commutata			<1	0.4
Hibbertia	hypericoides			4	0.4
Hovea	chorizemifolia			<1	0.5
Hypochaeris	glabra			<1	0.05
Kennedia	coccinea			<1	0.1
Labichea	punctata			<1	0.2
Lagenophora	huegelii			<1	0.1
Lechenaultia	biloba				
Leucopogon	capitellatus			0.5	0.3
Leucopogon	verticillatus			1.5	1
Lobelia	anceps			<1	0.1
Lomandra	drummondii				
Lomandra	hermaphrodita			<1	0.2
Lomandra	integra			<1	0.2
Lomandra	preissii			<1	0.1
Lomandra	sericea			<1	0.2
Macrozamia	riedlei			<1	1
Neurachne	alopecuroidea			<1	0.1
Opercularia	hispidula			<1	0.4
Patersonia	babianoides			<1	0.1
Pentapeltis	silvatica			<1	0.05
Pericalymma	ellipticum			<1	0.4
Philotheca	spicata				
Pterostylis	sigmoidea				
Pterostylis	vittata			<1	0.3
Pterostylis		sp.	aff. nana		
Scaevola	calliptera			<1	0.05
Senecio	diaschides				
Stylidium	amoenum			<1	0.05
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	2	0.5
Tetrarrhena	laevis			<1	0.2
Tetratheca	affinis				
Tetratheca	hirsuta	subsp.	viminea	<1	0.3
Thysanotus	tenellus			<1	0.2
Xanthorrhoea	gracilis			3	0.5-1
Xanthosia	atkinsoniana			<1	0.1

Site	GBC-13	Location	50K 411885 E	6249071 N
Date	1 st Season: 06/08/18 2 nd Season: 03/10/18			
Landform	Wetland			
BFF	Corymbia Forest			
Vegetation Description	Forest of <i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> and (<i>Eucalyptus rudis</i>) over Low Scrub A of <i>Lepidosperma tetraquetrum</i> with Open Low Woodland B of <i>Callistachys lanceolata</i> over Open Scrub of <i>Taxandria linearifolia</i> over Open Low Scrub B of <i>Pteridium esculentum</i> , * <i>Rubus ulmifolius</i> and <i>Billardiera heterophylla</i>			
				
Condition	Very Good			
Disturbance	Road / access track, weeds			
Fire age	Moderate (3 to 5 yr)			
Slope	Low			
Aspect	South			
Soil Type	Sandy Clay Loam			
Soil Colour	Brown			

Genus	Species	Rank	Name	Cover	Height
Acaena	echinata			<1	0.1
Amperea	simulans				
Amphipogon	amphipogonoides			<1	0.5
Asparagus	asparagoides			<1	Cl
Billardiera	heterophylla			2	1.5
Bossiaea	ornata			<1	0.1
Caesia	micrantha				
Caladenia	flava	subsp.	sylvestris	<1	0.1
Caladenia	reptans	subsp.	reptans		
Callistachys	lanceolata			4	8
Carduus	pycnocephalus			<1	0.1

Genus	Species	Rank	Name	Cover	Height
Clematis	pubescens			<1	Cl
Conyza	bonariensis			<1	0.15
Corymbia	calophylla			25	30
Cryptostylis	ovata				
Cynodon	dactylon			0.5	0.1
Cyrtostylis	huegelii			<1	Pr
Daucus	glochidiatus			<1	0.1
Drosera	modesta			<1	0.1
Drosera	stolonifera				
Eucalyptus	marginata	subsp.	marginata	15	30
Eucalyptus	patens			5	35
Geranium	solanderi			<1	0.1
Gonocarpus	benthamii				
Hibbertia	amplexicaulis			<1	0.5
Hibbertia	commutata			<1	0.2
Hibbertia	cuneiformis			<1	0.4
Hovea	trisperma			<1	0.3
Hybanthus	debilissimus				
Hypochaeris	glabra			1	0.05
Isotropis	cuneifolia			<1	0.1
Lagenophora	huegelii			<1	0.4
Lepidosperma	tetraquetrum			15	1-2
Leucopogon	capitellatus			<1	0.5
Leucopogon	verticillatus			<1	0.1
Lolium	rigidum			<1	0.2
Lomandra	pauciflora			<1	0.3
Luzula	meridionalis				
Macrozamia	riedlei			<1	0.1
Neurachne	alopecuroidea			<1	0.05
Olearia	paucidentata				
Opercularia	hispidula			<1	0.3
Oxalis	corniculata			<1	0.2
Patersonia	occidentalis			0.5	0.5
Pelargonium	littorale			3	0.05
Phyllanthus	calycinus			<1	0.4
Pteridium	esculentum			5	1-2
Pterostylis	pyramidalis			<1	0.1
Ranunculus	colonorum			<1	0.1
Rubus	anglocandicans			2	2
Senecio	hispidulus			<1	0.2
Sowerbaea	laxiflora				
Stylidium	adnatum			<1	0.2
Taxandria	linearifolia			4	3
Tetrarrhena	laevis			<1	0.1
Thysanotus	patersonii			<1	Cl
Tremandra	diffusa			<1	0.1

Site	GBC-14	Location	50K 418907 E	6246400 N
Date	1 st Season: 06/08/18 2 nd Season: 03/10/18			
Landform	Hillslope			
BFF	Eucalyptus Forest			
Vegetation Description	Forest of <i>Eucalyptus marginata</i> and <i>Corymbia calophylla</i> over Open Low Woodland B of <i>Banksia grandis</i> over Open Dwarf Scrub C of <i>Macrozamia riedlei</i> and <i>Petridium esculentum</i> over Open Dwarf Scrub D of <i>Leucopogon capitellatus</i> and <i>Leucopogon verticillatus</i> over Very Open Low Sedges of <i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391) and <i>Tetraria octandra</i>			
				
Condition	Degraded			
Disturbance	Road / access track, rubbish, weeds, logging			
Fire age	Moderate (3 to 5 yr)			
Slope	Low			
Aspect	South			
Soil Type	Sandy Loam			
Soil Colour	Black			

Genus	Species	Rank	Name	Cover	Height
Acacia	longifolia	subsp.	longifolia		
Acacia	pulchella			<1	0.3
Agrostocrinum	scabrum			<1	0.5
Austrostipa	campylachne			<1	0.4
Banksia	dallanneyi				
Banksia	grandis			5	1-4
Billardiera	heterophylla				
Bossiaea	ornata			0.5	0.3
Briza	maxima			2	0.2
Burchardia	congesta			<1	0.5
Caesia	micrantha			<1	0.1

Genus	Species	Rank	Name	Cover	Height
Chamaecytisus	palmensis				
Chasmanthe	floribunda				
Clematis	pubescens			2	Cl
Conostylis	laxiflora			<1	0.1
Corymbia	calophylla			25	10-30
Dampiera	linearis			<1	0.1
Daucus	glochidiatus			<1	0.1
Desmodcladus	fasciculatus			<1	0.1
Dianella	revoluta				
Drosera	erythrorhiza			<1	0.03
Drosera	macrantha			<1	Cl
Ehrharta	calycina				
Eucalyptus	marginata	subsp.	marginata	35	10-30
Hakea	amplexicaulis				
Hibbertia	hypericoides				
Hypochaeris	glabra			0.5	0.05
Kennedia	coccinea			1	0.5
Labichea	punctata				
Labichea	punctata				
Lagenophora	huegelii			<1	0.1
Leucopogon	capitellatus			0.5	0.4
Leucopogon	verticillatus			0.5	0.5
Lomandra	nigricans			<1	0.2
Lomandra	sericea			<1	0.3
Luzula	meridionalis			<1	0.3
Macrozamia	riedlei			1	1
Opercularia	vaginata				
Oxalis	corniculata			<1	0.1
Patersonia	pygmaea			<1	0.15
Persoonia	longifolia			<1	0.8
Phyllanthus	calycinus			<1	0.2
Pteridium	esculentum			1	0.6
Scaevola	calliptera			<1	0.1
Solanum	nigrum			<1	0.8
Sonchus	oleraceus			<1	0.1
Sparaxis	bulbifera			<1	0.1
Tetraria	octandra			<1	0.3
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	0.5	0.5
Tetrarrhena	laevis			<1	0.2
Tetradlea	hirsuta	subsp.	viminea	<1	0.3
Thelymitra		sp.	indet		
Thysanotus	multiflorus			<1	0.1
Thysanotus	patersonii				
Xanthorrhoea	gracilis				
Xanthosia	candida			<1	0.05


Site	GBC-15	Location	50K 412428 E	6255505 N
Date	2 nd Season: 27/09/18			
Landform	Hillslope			
BFF	Corymbia Forest			
Vegetation Description	Forest of <i>Corymbia calophylla</i> over Scrub of <i>Bossiaea linophylla</i> and <i>Banksia grandis</i> over Open Low Scrub B of <i>Macrozamia riedlei</i> and <i>Acacia celastrifolia</i> over Open Dwarf Scrub D of <i>Phyllanthus calycinus</i> , (<i>Leucopogon capitellatus</i>) and <i>Labichea punctata</i> over Very Open Low Sedges of <i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391)			



Condition	Degraded
Disturbance	Mining exploration, road/ access track, weeds, powerline
Fire age	Old (>6 yr)
Slope	Low
Aspect	North
Soil Type	Sandy Loam
Soil Colour	Brown

Genus	Species	Rank	Name	Cover	Height
Acacia	celastrifolia			5	1.5
Acaena	echinata			<1	0.1
Banksia	grandis			10	2-3
Bossiaea	linophylla			10	2-5
Bossiaea	ornata			<1	0.5
Briza	maxima			<1	0.2
Caesia	micrantha			<1	0.2
Chasmanthe	floribunda			7	1
Clematis	pubescens			<1	Cl
Conostylis	aculeata	subsp.	aculeata	<1	0.2
Corymbia	calophylla			60	15-30
Haemodorum	laxum			<1	0.3

Genus	Species	Rank	Name	Cover	Height
Hibbertia	commutata			0.5	0.3
Hovea	chorizemifolia			<1	0.2
Hypochoeris	glabra			<1	0.1
Labichea	punctata			2	0.2
Lagenophora	huegelii			0.5	0.1
Lechenaultia	biloba			<1	0.1
Leucopogon	capitellatus			1	0.5
Leucopogon	propinquus			<1	0.2
Leucopogon	verticillatus			<1	0.5
Lomandra	sericea			<1	0.3
Macrozamia	riedlei			1.5	1.2
Opercularia	hispidula			1	0.5
Oxalis	corniculata			<1	0.1
Oxalis	purpurea			1	0.1
Patersonia	pygmaea			<1	0.1
Persoonia	longifolia			<1	0.4
Philothea	spicata			<1	0.5
Phyllanthus	calycinus			3	0.5
Scaevola	calliptera			<1	0.1
Stylidium	amoenum			<1	0.2
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	5	0.5
Tetrarrhena	laevis			<1	0.3
Tetradlea	hirsuta	subsp.	viminea	<1	0.2
Trichocline	spathulata			0.5	0.1
Xanthorrhoea	gracilis			<1	0.6

Site	GBC-16	Location	50K 411991 E	6255614 N
Date	2 nd Season: 27/09/18			
Landform	Wetland			
BFF	Melaleuca Low Forest A			
Vegetation Description	Low Forest A of Melaleuca preissiana with Woodland of Eucalyptus patens and Corymbia calophylla over Open Dwarf Scrub C of *Rubis anglocandicans, *Chasmanthe floribunda			
				
Condition	Degraded			
Disturbance	Mining exploration, road/ access track, weeds, rubbish, altered drainage			
Fire age	Old (>6 yr)			
Slope	Low			
Aspect	North West			
Soil Type	Clayey Sand			
Soil Colour	Black			

Genus	Species	Rank	Name	Cover	Height
Asparagus	asparagoides			0.5	0.5
Baumea	preissii			0.5	1
Chasmanthe	floribunda			2	1
Chorizandra	enodis			0.5	0.5
Corymbia	calophylla			5	20
Cynodon	dactylon			1	0.2
Eucalyptus	cornuta				
Eucalyptus	patens			15	25
Eucalyptus	resinifera				
Hypochaeris	glabra			<1	0.1
Juncus	microcephalus			<1	0.8
Kennedia	prostrata			<1	0.3
Leptocarpus	depilatus			2	1.5
Lobularia	maritima			<1	0.2

Genus	Species	Rank	Name	Cover	Height
Melaleuca	preissiana			60	14
Ornduffia	parnassifolia			<1	0.1
Pinus	pinaster			<1	1.8
Plantago	lanceolata			<1	0.3
Ricinus	communis				7
Rubus	anglocandicans			5	1
Taxandria	linearifolia			1	1.4
Tetrarrhena	laevis			<1	0.2
Xanthorrhoea	preissii				


Site	GBC-20	Location	50K 419644 E	6247500 N
Date	1 st Season: 02/08/18 2 nd Season: 18/10/18			
Landform	Hillcrest / Upper Hillslope			
BFF	Eucalyptus Forest			
Vegetation Description	Forest of <i>Eucalyptus marginata</i> and <i>Corymbia calophylla</i> over Open Low Sedges of <i>Lepidosperma leptostachyum</i> , <i>Lomandra drummondii</i> and <i>Tetraria octandra</i> with Open Low Woodland A of <i>Corymbia calophylla</i> over Open Dwarf Scrub D of <i>Phyllanthus calycinus</i> , <i>Leucopogon capitellatus</i> and <i>Bossiaea ornata</i> over Open Hummock Grass of * <i>Briza maxima</i>			



Condition	Good
Disturbance	Road/ Access Track; Rubbish; Weeds; Logging; Gold Course
Fire age	Old (>6 yr)
Slope	Low
Aspect	South
Soil Type	Loam
Soil Colour	Brown

Genus	Species	Rank	Name	Cover	Height
Acaena	echinata			<1	0.1
Aira	caryophyllea			<1	0.1
Austrostipa	campylachne			<1	0.5
Bossiaea	ornata			0.5	0.3
Briza	maxima			5	0.2
Burchardia	congesta			<1	0.5
Caesia	micrantha			<1	0.2
Caesia	micrantha			<1	0.4
Caladenia	atingens	subsp.	atingens	<1	0.35
Caladenia	macrostylis				
Centaurium	tenuiflorum			<1	0.4

Genus	Species	Rank	Name	Cover	Height
Clematis	pubescens			1	Cl
Corymbia	calophylla			30	5-30
Craspedia	variabilis			<1	0.1
Dampiera	linearis			<1	0.1
Daucus	glochidiatus			<1	0.05
Desmodcladus	fasciculatus			<1	0.2
Dichopogon	capillipes			<1	0.4
Diuris	longifolia			<1	0.4
Drosera	erythrorhiza			<1	0.1
Drosera	pallida			<1	Cl
Elythranthera	brunonis			<1	0.3
Eucalyptus	marginata	subsp.	marginata	30	5-30
Geranium	solanderi			<1	0.1
Hakea	amplexicaulis			<1	1
Hibbertia	amplexicaulis			<1	0.3
Hibbertia	commutata			<1	0.3
Hovea	chorizemifolia			<1	0.2
Hypochaeris	glabra			<1	0.1
Lagenophora	huegelii			0.25	0.1
Lepidosperma	leptostachyum			9	0.5
Leucopogon	capitellatus			2	0.4
Leucopogon	propinquus			<1	0.3
Leucopogon	verticillatus			<1	0.3
Lomandra	drummondii			1.5	0.5
Lomandra	pauciflora			<1	0.2
Lomandra	preissii			<1	0.5
Luzula	meridionalis			<1	0.3
Macrozamia	riedlei			<1	0.7
Neurachne	alopeкуроidea			0.5	0.1
Opercularia	apiciflora			<1	0.3
Opercularia	hispidula			<1	0.2
Orianthera	serpyllifolia	subsp.	serpyllifolia	<1	0.1
Oxalis	corniculata			1.5	0.1
Persoonia	longifolia			<1	0.5
Petrorhagia	dubia			<1	0.2
Phyllanthus	calycinus			4.5	0.4
Ptilotus	manglesii				
Pyrorchis	forrestii			<1	0.15
Scaevola	calliptera			<1	0.1
Tetraria	octandra			0.5	0.5
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	1	0.4
Tetrarrhena	laevis			0.5	0.3
Thelymitra	graminea				
Thelymitra		sp.	indet	<1	0.3
Thysanotus	patersonii			<1	Cl
Trachymene	pilosa			<1	0.05
Trifolium	campestre			<1	0.1
Xanthorrhoea	gracilis			1	0.5-1

Site	GBC-21	Location	50K 419656 E	6246886 N
Date	1 st Season: 02/08/18 2 nd Season: 04/10/18			
Landform	Hillslope			
BFF	Corymbia Low Forest A			
Vegetation Description	Low Forest A of <i>Corymbia calophylla</i> and <i>Banksia grandis</i> over Heath A of <i>Pteridium esculentum</i> and <i>Bossiaea linophylla</i> with Forest of <i>Corymbia calophylla</i> , Open Low Woodland of <i>Banksia grandis</i> , Open Dwarf Scrub D of <i>Phyllanthus calycinus</i> and Very Open Low Sedges of <i>Tetraria</i> sp. Jarrah Forest (R. Davis 7391) and <i>Lepidosperma leptostachyum</i>			
				
Condition	Good			
Disturbance	Road/ Access Track; Rubbish; Weeds; Logging; Gold Course			
Fire age	Old (>6 yr)			
Slope	Low			
Aspect	South			
Soil Type	Sandy Loam			
Soil Colour	Brown			

Genus	Species	Rank	Name	Cover	Height
Acacia	dealbata			0.5	2-10
Acacia	iteaphylla			2	4
Acacia	pulchella			<1	1
Asparagus	declinatus			<1	0.2
Banksia	grandis			3	2-5
Bossiaea	linophylla			2	1-3
Briza	maxima			<1	0.1
Chamaescilla	corymbosa			<1	0.05
Corymbia	calophylla			55	10-20
Drosera	pallida			<1	Cl
Freesia	alba × leichtlinii			1	0.3

Genus	Species	Rank	Name	Cover	Height
Haemodorum	laxum			<1	0.3
Hibbertia	amplexicaulis			<1	0.4
Hibbertia	commutata			0.5	0.3
Hypochaeris	glabra			<1	0.1
Kennedia	coccinea			<1	Cr
Lepidosperma	leptostachyum			3	0.5
Leucopogon	capitellatus			0.5	0.3
Leucopogon	propinquus			<1	0.3
Levenhookia	dubia			<1	0.1
Macrozamia	riedlei			1	0.5-1
Neurachne	alopeкуроidea			<1	0.05
Opercularia	hispidula			<1	0.2
Oxalis	pes-caprae			5	0.3
Phyllanthus	calycinus			2	0.4
Psoralea	pinnata				
Pteridium	esculentum			30	1-2
Ptilotus	manglesii			<1	0.1
Romulea	rosea			<1	0.2
Scaevola	calliptera			<1	0.1
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	5	0.4
Tetrarrhena	laevis			<1	0.2

Site	GBC-22	Location	50K 412027 E	6249348 N
Date	1 st Season: 02/08/18 2 nd Season: 04/10/18			
Landform	Hillslope			
BFF	Corymbia Forest			
Vegetation Description	Forest of <i>Corymbia calophylla</i> and <i>Eucalyptus marginata</i> over Heath B of <i>Podocarpus drouynianus</i> , <i>Macrozamia riedlei</i> and <i>Billardiera heterophylla</i> (<i>Dasypogon bromeliifolius</i>) with Low Scrub A of <i>Taxandria parviceps</i> and (<i>Bossiaea linophylla</i>), Open Dwarf Scrub D of <i>Leucopogon capitellatus</i> and <i>Hibbertia diamesogenos</i> , and Very Open Low Sedges of <i>Hypolaena exsulca</i> and <i>Desmocladus fascicularis</i>			




Condition	Very Good
Disturbance	Road/ Access Track; Weeds
Fire age	Old (>6 yr)
Slope	Low
Aspect	South
Soil Type	Sandy
Soil Colour	Grey

Genus	Species	Rank	Name	Cover	Height
Acacia	extensa			<1	1
Astroloma	pallidum				
Austrostipa	campylachne				
Banksia	dallanneyi				
Billardiera	heterophylla			1	1.5
Billardiera	variifolia				
Bossiaea	linophylla			0.5	1.5
Bossiaea	ornata				
Briza	maxima				
Burchardia	congesta				


Genus	Species	Rank	Name	Cover	Height
Caesia	micrantha				
Caladenia	flava				
Caladenia	magniclavata				
Chamaescilla	corymbosa				
Conostylis	aculeata	subsp.	aculeata	<1	0.3
Conostylis	serrulata			<1	0.2
Corymbia	calophylla			35	20-30
Cyathochaeta	avenacea				
Cyrtostylis	huegelii			<1	0.05
Dampiera	linearis			<1	0.1
Dasyogon	bromeliifolius			3	1.2
Daucus	glochidiatus			<1	0.1
Desmocladius	fasciculatus			1	0.1
Drosera	erythrorhiza			<1	0.05
Drosera	pallida			<1	Cl
Eucalyptus	marginata	subsp.	marginata	20	20-30
Gompholobium	capitatum			<1	0.1
Gompholobium	tomentosum			0.5	0.2
Hibbertia	amplexicaulis			<1	0.3
Hibbertia	commutata				
Hibbertia	diamesogenos			0.5	0.2
Hibbertia	ferruginea			<1	0.2
Hovea	chorizemifolia			<1	0.2
Hovea	trisperma				
Hypocalymma	angustifolium			<1	0.3
Hypochaeris	glabra			<1	0.1
Hypolaena	exsulca			5	0.3
Isotropis	cuneifolia			<1	0.1
Johnsonia	lupulina			<1	0.5
Lagenophora	huegelii			1	0.05
Leptomeria	cunninghamii				
Leucopogon	australis			1	1.2
Leucopogon	capitellatus			4	0.2
Leucopogon	propinquus				
Lomandra	britannii			<1	0.1
Lomandra	caespitosa				
Lomandra	nigricans			<1	0.3
Lomandra	preissii				
Lomandra	sericea				
Macrozamia	riedlei			1.5	1.2
Millotia	tenuifolia	var.	tenuifolia	<1	0.1
Monotaxis	occidentalis			<1	0.2
Neurachne	alopeкуроidea				
Opercularia	apiciflora				
Opercularia	hispidula				
Opercularia	vaginata			<1	0.3
Orianthera	serpyllifolia	subsp.	serpyllifolia	<1	0.15
Patersonia	occidentalis				
Pentapeltis	silvatica				
Pentapeltis	silvatica				
Persoonia	longifolia			1	4
Philotheca	spicata			<1	0.3
Platysace	tenuissima				

Genus	Species	Rank	Name	Cover	Height
Podocarpus	drouynianus			45	1.2
Pterostylis	vittata			<1	0.3
Pyrorchis	nigricans			<1	0.05
Scaevola	calliptera				
Stylidium	amoenum			<1	0.1
Taxandria	parviceps			1	1.5
Tetraria	octandra			<1	0.2
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	<1	0.3
Tetrarrhena	laevis			<1	0.2
Thysanotus	patersonii			<1	0.1
Trachymene	pilosa			<1	0.05
Tremandra	diffusa			<1	0.2
Xanthorrhoea	preissii			0.5	1.2
Xanthosia	huegelii			<1	0.1
Xanthosia	tasmanica				

Site	GBC-23	Location	50K 411971 E	6250104 N
Date	1 st Season: 02/08/18 2 nd Season: 04/10/18			
Landform	Hillslope			
BFF	Eucalyptus Forest			
Vegetation Description	Forest of <i>Eucalyptus marginata</i> and <i>Corymbia calophylla</i> over Low Heath D of <i>Hibbertia hypericoides</i> , <i>Hypocalymma angustifolium</i> , <i>Leucopogon capitellatus</i> and <i>Hakea lissocarpa</i> with Open Low Woodland B of <i>Persoonia longifolia</i>			
				
Condition	Very Good			
Disturbance	Logging, mining exploration			
Fire age	Old (>6 yr)			
Slope	Low			
Aspect	North			
Soil Type	Sandy Loam			
Soil Colour	Brown			

Genus	Species	Rank	Name	Cover	Height
Acacia	celastrifolia			1	1-2.5
Acacia	insolita	subsp.	insolita	<1	0.4
Acacia	latericola			<1	1
Acacia	obovata			<1	0.3
Astroloma	ciliatum			<1	0.1
Astroloma	drummondii			<1	0.2
Astroloma	pallidum			<1	0.2
Banksia	dallanneyi			5	0.3
Banksia	grandis				
Billardiera	variifolia			<1	0.1
Bossiaea	ornata			6	0.5
Caladenia	flava			<1	0.1
Chamaescilla	corymbosa			<1	0.05

Genus	Species	Rank	Name	Cover	Height
Conostylis	serrulata			<1	0.25
Corymbia	calophylla			25	10-30
Cyanicula	sericea			<1	0.2
Dampiera	linearis			<1	0.1
Daviesia	decurrens			<1	0.7
Daviesia	physodes			<1	0.6
Daviesia	preissii			0.5	0.6
Desmocladius	fasciculatus			1	0.2
Drosera	erythrorhiza			<1	0.05
Drosera	pallida			<1	Cl
Drosera	stolonifera			<1	0.1
Elythranthera	brunonis			<1	0.3
Eucalyptus	marginata	subsp.	marginata	25	10-30
Gompholobium	preissii			<1	0.1
Grevillea	trifida			<1	0.2
Hakea	lissocarpha			3	0.75
Hibbertia	amplexicaulis			<1	0.2
Hibbertia	commutata			2	0.25
Hibbertia	commutata			<1	0.15
Hibbertia	diamesogenos			<1	0.1
Hibbertia	hypericoides			60	0.5
Hovea	chorizemifolia			<1	0.15
Hypocalymma	angustifolium			4	0.6
Labichea	punctata			<1	0.1
Lagenophora	huegelii			<1	0.1
Leucopogon	capitellatus			3	0.4
Leucopogon	propinquus			<1	0.3
Lomandra	caespitosa			<1	0.15
Lomandra	nigricans			<1	0.4
Lomandra	preissii			<1	0.3
Macrozamia	riedlei			<1	0.3
Patersonia	babianoides			<1	0.1
Patersonia	occidentalis			<1	0.3
Patersonia	pygmaea			<1	0.1
Persoonia	longifolia			3	1.5-4
Philothea	spicata			<1	0.4
Pimelea	cracens			<1	0.9
Pterostylis	pyramidalis			<1	0.1
Pterostylis	vittata			1	0.2
Scaevola	calliptera			<1	0.1
Scaevola	calliptera			<1	0.1
Sphaerolobium	medium			<1	0.1
Stylidium	amoenum			<1	0.3
Stylidium	amoenum			<1	0.1
Stylidium	piliferum			<1	0.01
Tetraria	octandra			<1	0.3
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	1	0.4
Tetratheca	hirsuta	subsp.	viminea	1	0.35
Thomasia	grandiflora			0.5	0.3
Trichocline	spathulata			<1	0.2

Site	GBC-24	Location	50K 411776 E	6249323 N
Date	1 st Season: 03/08/18 2 nd Season: 18/10/18			
Landform	Hillslope			
BFF	Eucalyptus Forest			
Vegetation Description	Forest of Eucalyptus marginata and Corymbia calophylla over Low Woodland A of Banksia grandis and Persoonia longifolia over Low Scrub A of Podocarpus drouynianus over Dwarf Scrub D of Desmodium fasciculatus			
				
Condition	Very Good			
Disturbance	Road / Access Tracks, Weeds, Logging			
Fire age	Old (>6 yr)			
Slope	Low			
Aspect	South East			
Soil Type	Loamy Sand			
Soil Colour	Grey			

Genus	Species	Rank	Name	Cover	Height
Acacia	extensa			1	1.5
Acacia	pulchella			<1	0.1
Aira	caryophyllea			<1	0.1
Banksia	dallanneyi			<1	0.2
Banksia	grandis			20	6
Bossiaea	linophylla			2	2
Bossiaea	ornata			<1	0.3
Briza	maxima			2	0.2
Burchardia	congesta			<1	0.5
Caesia	micrantha			<1	0.3
Caladenia	emarginata				
Caladenia	flava			<1	0.2
Chamaescilla	corymbosa			<1	0.1

Genus	Species	Rank	Name	Cover	Height
Conostylis	aculeata	subsp.	aculeata	<1	0.2
Corymbia	calophylla			15	30
Craspedia	variabilis			0.5	0.4
Cyathochaeta	avenacea			0.5	0.5
Dampiera	linearis			<1	0.1
Daucus	glochidiatus			<1	0.1
Desmocladius	fasciculatus			18	0.1
Drosera	erythrorhiza			<1	0.05
Drosera	pallida			<1	Cl
Drosera	stolonifera			<1	0.1
Eriochilus	dilatatus			<1	0.1
Eucalyptus	marginata	subsp.	marginata	45	30
Gompholobium	tomentosum			<1	0.2
Hibbertia	amplexicaulis			<1	0.3
Hibbertia	commutata			<1	0.3
Hibbertia	diamesogenos			0.2	0.1
Hydrocotyle	callicarpa			<1	0.1
Hypocalymma	angustifolium			<1	0.5
Hypochaeris	glabra			<1	0.1
Hypolaena	exsulca			4	0.2
Johnsonia	lupulina			<1	0.3
Kennedia	coccinea			<1	0.2
Kennedia	prostrata			<1	0.1
Lagenophora	huegelii			<1	0.05
Leucopogon	capitellatus			<1	0.2
Leucopogon	propinquus			1	0.8
Levenhookia	dubia			<1	0.2
Lomandra	caespitosa			<1	0.2
Lomandra	hermaphrodita			<1	0.2
Lomandra	nigricans			<1	0.2
Lomandra	sericea			<1	0.3
Macrozamia	riedlei			3	1.2
Monotaxis	occidentalis			<1	0.1
Opercularia	apiciflora			<1	0.2
Opercularia	hispidula			0.5	0.3
Orianthera	serpyllifolia	subsp.	serpyllifolia	1	0.1
Patersonia	occidentalis			0.5	0.5
Persoonia	longifolia			2	2
Philothea	spicata			<1	0.3
Podocarpus	drouynianus			20	2
Pteridium	esculentum			3	1-2
Pterostylis	vittata			<1	0.2
Ptilotus	manglesii			<1	0.1
Scaevola	calliptera			<1	0.1
Schoenus	odontocarpus			<1	0.1
Stylidium	amoenum			<1	0.1
Stylidium	schoenoides			<1	0.1
Tetraria	octandra			3	0.5
Tetraria		sp.	Jarrah Forest (R. Davis 7391)	<1	0.4
Tetrarrhena	laevis			<1	0.2
Tetratheca	hirsuta	subsp.	viminea	0.5	0.2
Thelymitra		sp.	indet	<1	0.5
Thysanotus	patersonii			<1	Cl

Genus	Species	Rank	Name	Cover	Height
Trachymene	pilosa			<1	0.1
Tricoryne	humilis			<1	0.2
Waitzia	suaveolens			<1	0.1
Xanthosia	candida			<1	0.1
Xanthosia	huegelii			<1	0.1

Site	GBC-25	Location	50K 412505 E	6249495 N
Date	1 st Season: 03/08/18 2 nd Season: 18/10/18			
Landform	Stony Plain			
BFF	Eucalyptus Forest			
Vegetation Description	Forest of Eucalyptus marginata over Heath A of Taxandria parviceps and Bossiaea linophylla with Open Scrub of Xanthorrhoea preissii, Persoonia longifolia and Bossiaea linophylla over Low Scrub B of Macrozamia riedlei and Taxandria parviceps			



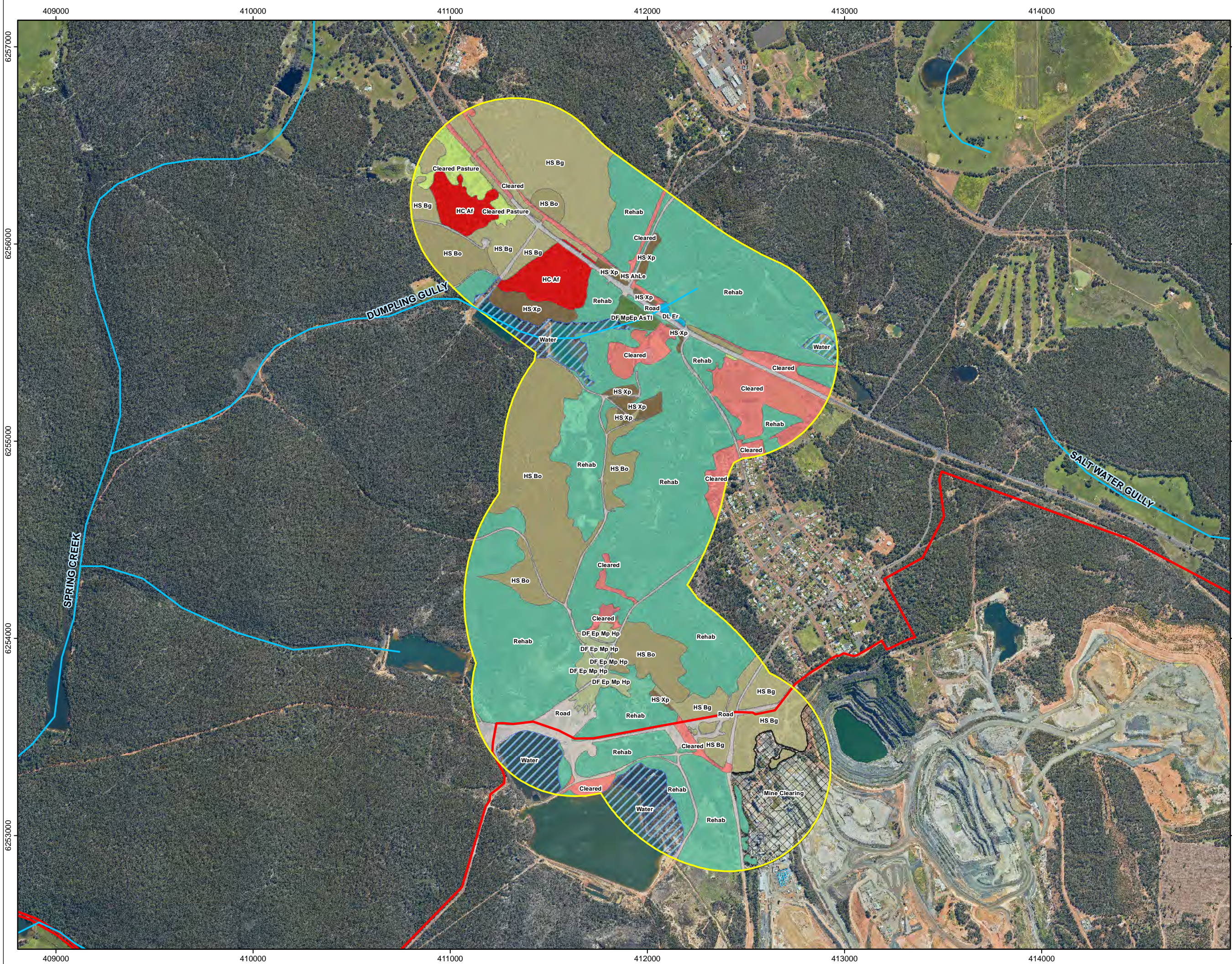
Condition	Very Good
Disturbance	Road / access track, logging
Fire age	Old (>6 yr)
Slope	Low
Aspect	South East
Soil Type	Sand
Soil Colour	Grey

Genus	Species	Rank	Name	Cover	Height
Acacia	celastrifolia			<1	1-2
Acacia	extensa			1	2
Acacia	pulchella			<1	0.5
Banksia	dallanneyi				
Billardiera	variifolia			<1	Cl
Bossiaea	linophylla			3	2.-3
Caesia	micrantha				
Caladenia	flava			<1	0.1
Caladenia	longiclavata			<1	0.35
Caladenia	longiclavata				
Chorizema	nanum				
Corymbia	calophylla			25	10-30

Genus	Species	Rank	Name	Cover	Height
Cyanicula	sericea				
Cyathochaeta	avenacea			1.5	0.3
Dampiera	linearis			<1	0.1
Dasyogon	bromeliifolius			1.5	0.6
Desmodcladus	fasciculatus			2.5	0.1
Dianella	revoluta			<1	0.4
Drosera	pallida			<1	Cl
Eriochilus	dilatatus			<1	0.1
Eucalyptus	marginata	subsp.	marginata	25	10-30
Hibbertia	amplexicaulis			1	0.2
Hibbertia	commutata			<1	0.5
Hovea	trisperma			<1	0.15
Hypocalymma	angustifolium			3.5	0.5
Hypolaena	exsulca			1	0.3
Kennedia	prostrata				
Lagenophora	huegelii			<1	0.1
Leucopogon	australis			1	0.6
Leucopogon	capitellatus			1	0.4
Leucopogon	propinquus			0.5	0.4
Lomandra	caespitosa			<1	0.2
Lomandra	nigricans			<1	0.2
Lomandra	pauciflora			<1	0.2
Luzula	meridionalis			<1	0.2
Macrozamia	riedlei			3	1-1.5
Monotaxis	occidentalis			<1	0.1
Opercularia	apiciflora			0.5	0.3
Opercularia	hispidula			1	0.2
Pauridia	occidentalis	var.	quadriloba	<1	0.1
Persoonia	longifolia			1	3
Philothea	spicata			2	0.3
Podocarpus	drouynianus			1	1.5
Pterostylis	recurva			<1	0.1
Pterostylis	vittata				0.6
Scaevola	calliptera			<1	0.1
Stackhousia	huegelii				
Stylidium	crassifolium				
Stylidium	spathulatum			<1	0.1
Taxandria	parviceps			35	1-2.5
Tetraria	octandra			0.5	0.3
Tetraria		sp.	Jarra Forest (R. Davis 7391)	1	0.3
Tetrarrhena	laevis			1	0.4
Tetratheca	affinis				
Thysanotus	patersonii			<1	Cl
Tremandra	diffusa			0.5	0.1
Xanthorrhoea	preissii			2.5	3-4

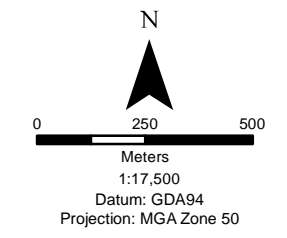
APPENDIX 8

Consolidated vegetation mapping for a 500 metre radius either side of the study area corridor, along with adjacent vegetation mapping recently completed within the Mine Development Envelope.



TALISON LITHIUM
Northern Bypass
500m Inferred
Boundary
Vegetation Types
Appendix 8a

- Legend**
- Mine Development
 - Study Area



Date: 22/11/2018
 Status: Final
 Figure: A8a
 Sheet Size: A3
 Internal Reference: TL_Nlh_bypass
 Drawn by: GSM
 Requested by: DB



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TALISON LITHIUM

Southern Bypass 500m Inferred Boundary

Vegetation Types

Appendix 8b

Legend

Study

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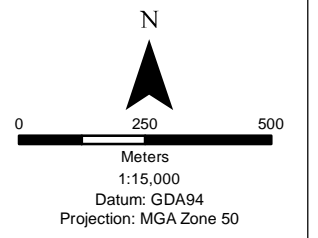
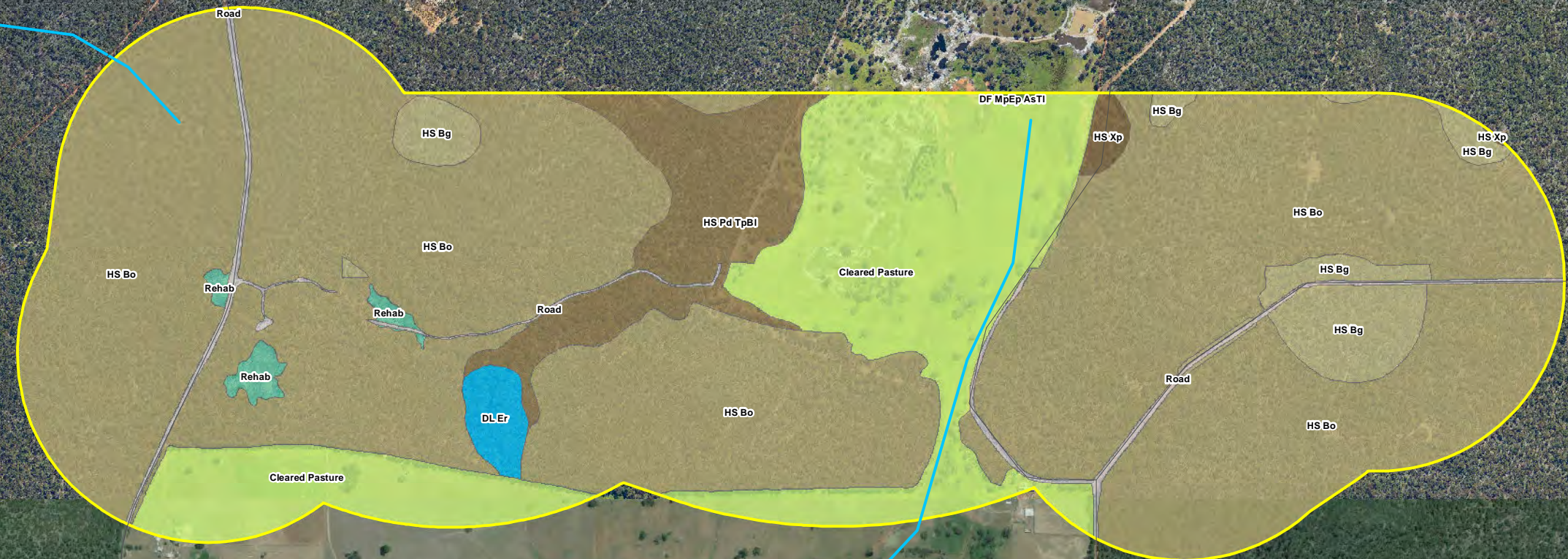
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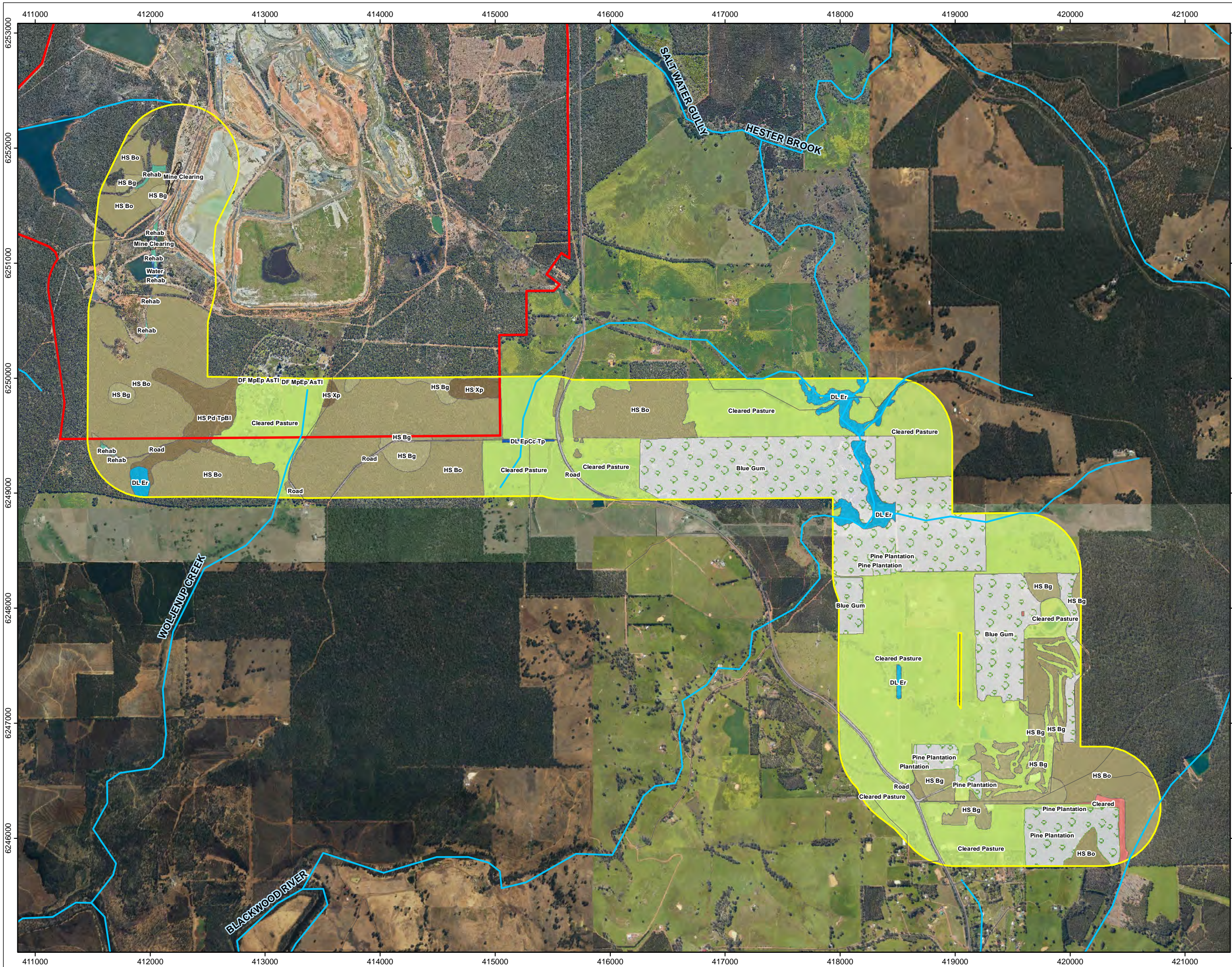
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 Figure: A8b
 Sheet Size: A3
 Internal Reference: TL_Nth_bypass
 Drawn by: GSM
 Requested by: DB



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TALISON LITHIUM

**Powerline
500m Inferred
Boundary**

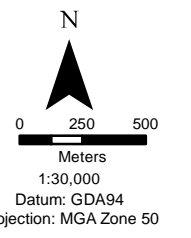
Vegetation Types

Appendix 8c

Legend

- Mine Development
- Study

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6252000
6251000
6250000
6249000
6248000
6247000
6246000



Date: 22/11/2018
 Status: Final
 Figure: A8c
 Sheet Size: A3
 Internal Reference: TL_Nth_bypass
 Drawn by: GSM
 Requested by: DB



411000 412000 413000 414000 415000 416000 417000 418000 419000 420000 421000




TALISON LITHIUM

Powerline 500m Inferred Boundary

Vegetation Types Legend

Appendix 8

Legend







 Study Area

Vegetation Types




Hill Crest

 HC Af Forest of *Allocasuarina fraseriana*, *Corymbia calophylla* and *Eucalyptus marginata* over Low Woodland A of *Corymbia calophylla*, *Eucalyptus marginata* and *Allocasuarina fraseriana* over Open Dwarf Scrub D of *Bossiaea ornata* and (*Astroloma pallidum*) over Very Open Low Sedges of *Tetraria* sp. Jarrah Forest (R. Davis 7391) on brown loamy sand on hill crests and upper hill slopes with outcropping laterite



Hill Slope

-  HS AhLe Heath A of *Allocasuarina humilis* and *Leptospermum erubescens* over Low Heath D of *Thomasia grandiflora*, *Andersonia caerulea* and *Banksia dallanneyi* with Low Open Scrub B of *Xanthorrhoea preissii* on brown clay loam on lower hill slopes
-  HS Bg Forest of *Corymbia calophylla* and *Eucalyptus marginata* subsp. *marginata* over Low Woodland A of *Banksia grandis*, *Persoonia longifolia*, *Corymbia calophylla* and *Eucalyptus marginata* subsp. *marginata* over Open Low Scrub A of *Bossiaea linophylla*, *Pteridium esculentum* and/or *Macrozamia riedlei* over Low Heath D of *Bossiaea ornata* and/or *Leucopogon capitellatus* on brown sandy loam on upper hillslopes
-  HS Bo Forest of *Eucalyptus marginata* subsp. *marginata* and *Corymbia calophylla* over Low Heath D of *Bossiaea ornata* and *Leucopogon capitellatus* on grey/brown loamy sand on lower hillslopes
-  HS Ew Low Heath C of *Hypocalymma angustifolium*, *Babingtonia camphorosmae* and *Banksia dallanneyi* (*Xanthorrhoea gracilis* and *Bossiaea ornata*) with Low Woodland A of *Eucalyptus wandoo* (*Corymbia calophylla*) over Open Low Scrub B of *Xanthorrhoea preissii*, *Acacia celastrifolia* and *Corymbia calophylla* on grey clay loam soil on lower hillslopes
-  HS Pd TpBI Heath A of *Podocarpus drouynianus* (*Pultenaea ocheata*) with Woodland (to Forest) of *Eucalyptus marginata* subsp. *marginata* and *Corymbia calophylla* over Scrub of *Taxandria parviceps* (*Bossiaea linophylla*) over Dwarf Scrub C/D of *Dasyopogon bromeliifolius*, *Adenanthos obovatus* and *Leucopogon oxycedrus* on grey sand on lower hillslopes
-  HS Xp Forest of *Corymbia calophylla* and *Eucalyptus marginata* subsp. *marginata* over Scrub of *Xanthorrhoea preissii* (*Bossiaea linophylla*) over Dwarf Scrub C of *Xanthorrhoea gracilis* and *Phyllanthus calycinus* on brown sandy loam on lower hillslopes

Drainage Flats

-  DF Ep Mp Hp Forest of *Eucalyptus patens*, *Corymbia calophylla* and **Pinus radiata* over Scrub of *Hakea prostrata*, **Acacia pycnantha* and *Taxandria linearifolia* over Low Scrub B of *Astartea scoparia* and *Bossiaea linophylla* over Open Dwarf Scrub D of *Hypocalymma angustifolium* over Very Open Low Sedges of *Tetraria* sp. Jarrah Forest (R. Davis 7391) on brown sandy clay loam on drainage flats
-  DF Pe Dense Heath B of *Pteridium esculentum* on grey sand on seasonally wet drainage
-  DF MpEp AsTI Forest of *Melaleuca preissiana* and *Eucalyptus patens* over Scrub of *Astartea scoparia* and *Taxandria linearifolia* over Low Scrub B of *Aotus gracillima* and *Pteridium esculentum* over Open Low Grass of **Anthoxanthum odoratum* and **Vulpia* sp. *indet* over Very Open Tall Sedges of *Isolepis cyperoides* and *Juncus pallidus* on black sandy clay loam on seasonally wet drainage flats

Drainage Line

-  DL Er Forest of *Eucalyptus rudis* subsp. *rudis* (sometimes mixed species) over Scrub of *Trymalium odoratissimum* subsp. *odoratissimum*, *Taxandria linearifolia* and/or *Hakea prostrata* over Open Tall Sedges of *Lepidosperma tetraquetrum* or *Chorizandra enodis* on brown sandy clay loam on minor drainage
-  DL EpCc Tp Woodland (to Forest) of *Eucalyptus patens* and *Corymbia calophylla* (sometimes with *Banksia seminuda* or *Banksia littoralis*) over Thicket of *Taxandria parviceps* (sometimes with *Bossiaea linophylla*, *Acacia extensa* and *Pteridium esculentum*) over Open Dwarf Scrub D of *Dasyopogon bromeliifolius* and *Conospermum capitatum* on grey sand on drainage lines

Other

-  Cleared
-  Powerline
-  Corridor
-  Cleared Pasture
-  Mine Clearing
-  Plantation
-  Rehabilitation
-  Road
-  Water

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Level 1 Vertebrate Fauna Survey Greenbushes Infrastructure Corridors

Prepared for Talison Lithium
19 November 2018



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EXECUTIVE SUMMARY

Talison Lithium Pty Ltd (Talison) currently operates a lithium mine at Greenbushes, situated approximately 250 km south of Perth in south-west Western Australia. Talison is proposing to increase output from the Greenbushes Mine and as part of the current expansion of mining operations, requires vertebrate fauna survey work within three proposed infrastructure corridors surrounding the mine site. Onshore Environmental Consultants Pty Ltd (Onshore Environmental) was commissioned by Talison to undertake a Level 1 vertebrate fauna survey within the proposed infrastructure corridors, herein referred to as the study area.

The field survey was completed by a Senior Zoologist from Onshore Environmental working over a three-day period between the 4th and 7th October 2018. No conservation significant fauna species were recorded from the study area during the survey. No introduced fauna species (feral animals) were observed during the survey.

A total of seven fauna habitat types were described and mapped from the study area, with a majority of the study area consisting of Hill Slope habitat type, as well as areas of historical mine rehabilitation, cleared annual pasture, and plantation.

There was no evidence of foraging, roosting or breeding by Black Cockatoos observed from within the study area. Within the study area eight (8) trees with hollows were recorded and assessed, of which one was deemed suitable for use by Black Cockatoos; however, there were no signs of this hollow being utilised.

No evidence of Western Ringtail Possums were recorded during the survey (i.e. no scats or dreys were observed during the active searches, and no individuals were observed). The majority of habitats within the study area are considered to be unsuitable for Western Ringtail Possums.

The South-western Brush-tailed Phascogale and Western Brush Wallaby were assessed as 'likely to occur' within the study area, however were not recorded during the survey. These species may utilise habitats within the study area on occasion.

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1.0 INTRODUCTION

1.1 Preamble

Talison is a Western Australian mining company with operations based at Greenbushes in the south-west of Western Australia. The Greenbushes Mine is located approximately 250 km south of Perth and 80 km south-east of the port of Bunbury (Figure 1).

The site comprises a number of open cut mining operations for tantalum, tin and spodumene (lithium). An underground tantalum operation has also been developed but is currently under care and maintenance. The Greenbushes pegmatite is the world's largest hard rock tantalum resource and the largest and highest-grade lithium minerals resource in the world. Minerals produced at Talison's Greenbushes Mine can be found in many different applications including mobile phones, computers, surgical implants, electronic devices, glassware, ceramics and batteries.

Talison is proposing to undertake an expansion at the Greenbushes Mine, aimed at increasing supply of lithium to the market. To support the proposed expansion, Onshore Environmental Consultants Pty Ltd (Onshore Environmental) was commissioned by Talison to undertake a single-season Level 1 vertebrate fauna survey of three proposed infrastructure corridors (Figure 2):

- Northern Bypass road corridor (40 m corridor);
- Southern Bypass road corridor (20 m corridor); and
- Powerline corridor (40 m corridor).

1.2 Previous Surveys

There have been seven previous vertebrate fauna surveys undertaken within the adjacent Greenbushes Mine area that provide local context for the study area. These surveys are listed below and described in more detail in Section 3.1.1:

- Greenbushes Level 1 Fauna Survey (Biologic Environmental Survey 2011);
- Black Cockatoo Survey, Talison Mining, Greenbushes (Kirkby 2018);
- Black Cockatoo Habitat Quality Assessment (Ennovate 2018);
- Greenbushes Black Cockatoo Hollow Review (Harewood 2018a);
- Greenbushes Preliminary Western Ringtail Possum Surveys – June 2018 (Harewood 2018b);
- Greenbushes Vertebrate Fauna, SRE and Subterranean Fauna Desktop Assessment (Biologic Environmental Survey 2018a); and
- Greenbushes Targeted Vertebrate and SRE Invertebrate Fauna Survey (Biologic Environmental Survey 2018b).



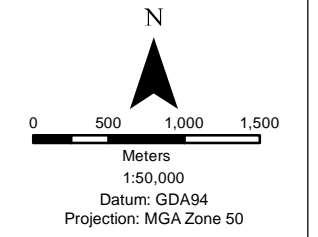
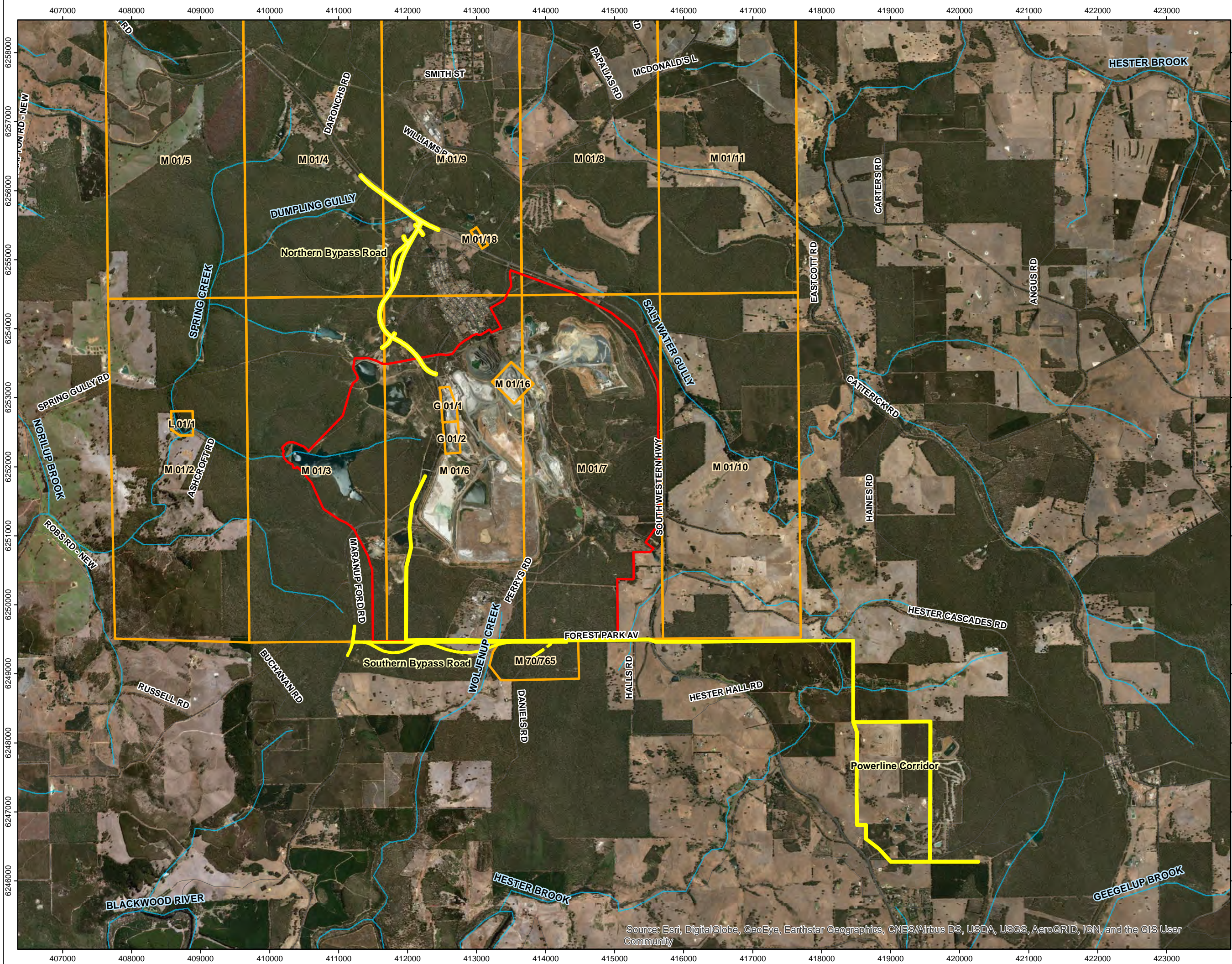
TALISON LITHIUM

Figure 2

Infrastructure Corridors Study area

Legend

- Mine Development
- Talison Tenements
- Study



Date: 14/11/2018
 Status: Draft
 Figure: 2
 Sheet Size: A3
 Internal Reference: TL_Faun_SA
 Drawn by: GSM
 Requested by: DB

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



1.3 Climate

The study area occurs on a boundary between the dry Mediterranean region to the north which experiences six dry months per year, and the moderate Mediterranean region to the south which experiences four dry months per year (Beard 1981). The Greenbushes region has cool wet winters and hot dry summers. Average annual rainfall for the town of Greenbushes is 928.7 mm (Bureau of Meteorology [BOM] 2018), with the majority of falls occurring during the winter months of June and July associated with cold fronts moving across the south-west of Western Australia.

The annual rainfall for the twelve-month period prior to the October 2018 field survey was 798 mm, which is below the long-term average (Figure 3). Temperatures experienced during the survey period were typical for the time of year and aligned with the monthly long-term averages.

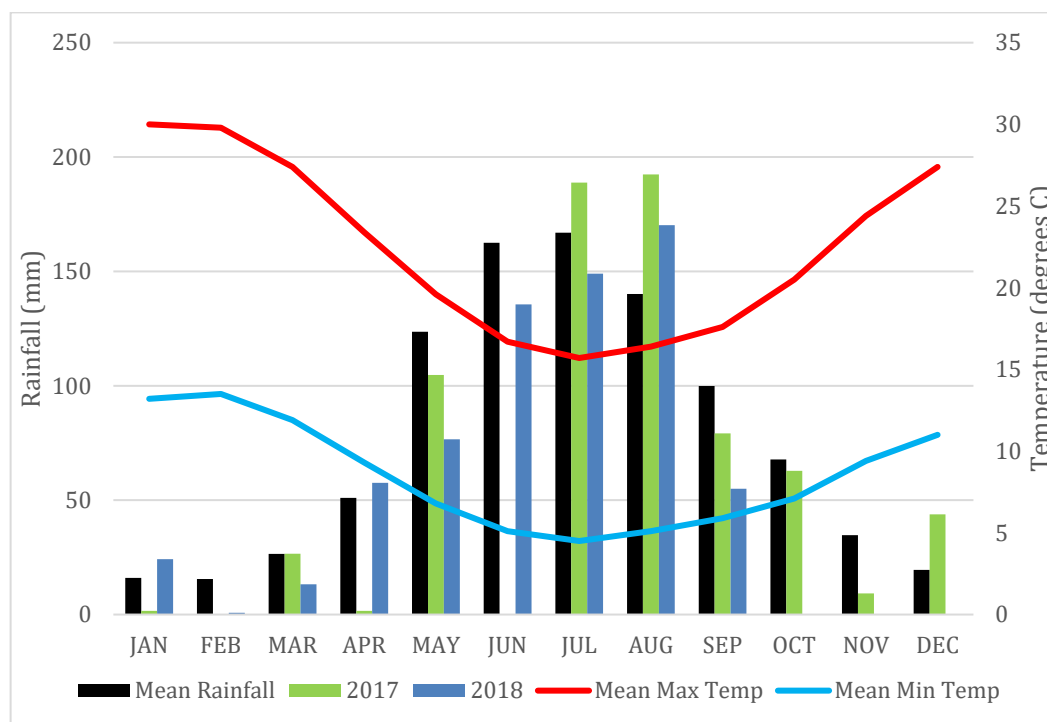


Figure 3 Climatic data – rainfall data is from the Greenbushes Weather Station and temperature data from the Bridgetown Weather Station (BOM 2018).

1.4 Biogeographic Regions

The latest version of the Interim Biogeographic Regionalisation for Australia (IBRA7) divides Australia into 89 bioregions based on climate, geology, landform, native vegetation and species information, and includes 419 sub-regions (Department of the Environment and Energy [DoEE] 2018a). The bioregions and sub-regions are the reporting unit for assessing the status of native ecosystems and their level of protection in the National Reserve System.

The study area is located within the Southern Jarrah Forest (JF2) sub-region within the Jarrah Forest bioregion. The Southern Jarrah Forest sub-region is described as, “Duricrusted plateau of Yilgarn Craton characterised by Jarrah-Marri forest on laterite gravels and, in the eastern part, by Marri-Wandoo woodlands on clayey soils. Eluvial

and alluvial deposits support *Agonis* shrublands. In areas of Mesozoic sediments, Jarrah forests occur in a mosaic with a variety of species-rich shrublands. The climate is Warm Mediterranean” (Hearn *et al.* 2002).

The vegetation of the sub-region is described as “Jarrah-Marri forest in the west grading to Marri and Wandoo woodlands in the east. There are extensive areas of swamp vegetation in the south-east, dominated by Paperbarks and Swamp Yate. The understory component of the forest and woodland reflects the more mesic nature of this area. The majority of the diversity in the communities occurs on the lower slopes or near granite soils where there are rapid changes in site conditions” (Hearn *et al.* 2002).

1.5 Land Use

The major land uses within the study area and surroundings are State Forest, residential, mining and agriculture. The study area predominantly traverses sections of State Forest and privately-owned farmland to the south-east. Nearby towns include Bridgetown (approximately 15 km to the south-east) and Balingup (approximately 10 km to the north-west).

1.5.1 Agriculture and Associated Industry

Bridgetown is the oldest town in the south-west of Western Australia. It was first settled by sheep farmers E. Hester and John Blechyden in 1857. The Bridgetown Agricultural Society was formed in 1885 and by this time the area had a well-established agricultural industry, including sheep, cattle, dairy products, timber, fruit and nuts. In 1889 the railway line was extended to Bridgetown allowing the expansion of the fruit and timber markets. Many of these agricultural industries are still operational with wineries and olive farms also established in the area. Currently one of the largest employers in the area is Auswest Timbers, a local timber milling company.

1.5.2 Mining

The Greenbushes Mine is situated on the oldest mining tenement in Western Australia and has a long history of mining activities dating back to 1888. Tin was first reported in 1886 in a Government geological survey, and mining commenced in 1888. Since it was first discovered, tin has been mined almost continuously in the Greenbushes area, although in recent years the lower tin prices and emergence of tantalum as the major revenue earner have relegated tin to the position of a by-product. The presence of tantalite was noted as far back as 1893 but at that time the mineral had no value in its own right and was seen as a nuisance because it downgraded the value of tin. Although open cut mining began to be practiced on a small scale in the 1900s much of the tin mined in the early years by small operators came from underground workings to access weathered pegmatite below the caprock. Shafts were blasted in the surface rock and tunnels dug out into the tin bearing alluvium. The dirt was hauled to the surface and stockpiled during the summer months then puddled and sluiced in winter when there was an abundance of water. Tin mining continued more or less as a cottage industry under the control of many small mining companies up to the early 1960s when, for the first time, a major mining company became involved in the tinfields.

For several years a dredge was used to recover surface deposits of tin and tantalum. By 1970 alluvial resources were dwindling and it was necessary to increase

exploration activity. As a direct result of this work development of the weathered pegmatite commenced in 1974. This tin/tantalum source sustained the operation until 1992. Small parcels of tantalite were sold occasionally, but it was not until 1944, when war had stimulated interest in the element tantalite, that the mineral began to be produced steadily for use in telecommunications, electronics and radar equipment.

Spodumene, the major lithium mineral, was first identified by the Western Australian Government Survey in 1949 from a specimen collected in 1928 which was initially thought to be feldspar. During the extensive diamond drilling programme for tantalum that took place between 1977 and 1980, substantial spodumene rich zones were identified. Later drilling confirmed the existence of the richest spodumene ore body ever discovered, with resources sufficient to maintain production well into the 21st Century. However, being a new product, markets had to be developed, so it was not until 1983 that the initial development of the lithium ore body at Greenbushes commenced, and the first lithium processing plant was commissioned in 1985. Since that time, the lithium processing plant has been expanded several times to produce a range of lithium concentrates, with the most recent expansion of the Greenbushes operations occurring in 2012.

1.5.3 Tourism

Tourism is the other major industry in the area with the scenery, historical sites, wineries, and galleries serving as the major attractions. Events such as the annual Blues at Bridgetown Festival also draw large numbers of people to the area.

1.6 Landforms and Soils

Tille (1996) has mapped soils of the Wellington-Blackwood District, which includes the town sites of Greenbushes and Bridgetown on its southern boundary. The study area occurs within the Hester sub-system of the Darling Plateau System, and consists of undulating ridges and hill crests formed on laterite and gneiss which typically slope downwards off the main plateau into the surrounding Lowden Valleys System. The soils are mostly loamy gravels, sandy gravels and loamy earths.

In 2010 AECOM reviewed the Environmental Geology Series maps prepared by the Geological Survey of Western Australia (1980) for a nearby area (AECOM 2010). The soils and landforms described for the area are expected to be similar to those within the study area. The geology of the nearby area was described as Archean granite of the Yilgarn Block and the soils of this area are listed below:

- Bt - Shallow red and yellow earths and rock outcrops on slopes and narrow alluvial terraces;
- Ba - Red and yellow earths, duplex soils on slopes, narrow alluvial terraces, swampy floors;
- G - Grey sands and some swamps;
- Hr - Duricrust and gravels flanked by gravelly duplex soils; and
- Cc - Yellow and duplex soils and red earths on slopes, and narrow alluvial terraces.

1.7 Flora and Vegetation

The study area occurs in the Menzies sub-district of the Darling Botanical District, in the South-West Botanical Province (Beard 1981). The Menzies sub-district (Southern

Jarrah Forest) covers a total area of 26,572 km², of which 18,715 km² (70%) originally supported jarrah and jarrah-marri forest (Beard 1990). It is estimated that approximately 61% of the total area has been cleared since European settlement, mainly in the valleys which are free of laterite, leaving the forest intact on laterised higher plateau levels.

The Menzies sub-district is characterised by Jarrah stands on laterite within some Marri and Wandoo woodlands. Valley soils are often richer and Blackbutt (*Eucalyptus patens*) is more dominant in these areas. Flooded Gum (*Eucalyptus rudis*) is common along stream banks and Bullich (*Eucalyptus megacarpa*) is also present in some areas. Within the study area vegetation is dominated by Jarrah (*Eucalyptus marginata*) and Marri (*Corymbia calophylla*) forest over the tall shrubs bull banksia (*Banksia grandis*) and snotty gobble (*Persoonia longifolia*). The lower understory strata contains a range of plant genera including *Hakea*, *Acacia*, *Xanthorrhoea*, *Adenanthos*, *Hovea*, *Leucopogon*, *Macrozamia*, *Leucopogon*, *Bossiaea*, *Daviesia*, *Grevillea*, *Patersonia*, *Styphelia* and *Kennedia*.

Vegetation complexes of the southern jarrah forest have most recently been defined by Hedde *et al.* (1980) and updated by Mattiske and Havel (1998). Mattiske and Havel (1998) describe vegetation of the survey area as 'mixture of open forest of *Eucalyptus marginata* - *Corymbia calophylla* with some *Eucalyptus patens* on slopes'.

2.0 METHODOLOGY

2.1 Guidance Statements

The single-season Level 1 vertebrate fauna survey was carried out in a manner that was compliant with Environmental Protection Authority (EPA) requirements for the environmental surveying and reporting of vertebrate fauna in Western Australia:

- Statement of Environmental Principles, Factors and Objectives (EPA 2018);
- Environmental Factor Guideline Terrestrial Fauna (EPA 2016a);
- Technical Guidance Sampling Methods for Terrestrial Vertebrate Fauna (EPA 2016b);
- Technical Guidance Terrestrial Fauna Surveys (EPA 2016c);
- Department of the Environment, Water, Heritage and the Arts (DEWHA) (2010a) Survey Guidelines for Australia's Threatened Bats;
- DEWHA (2010b) Survey Guidelines for Australia's Threatened Birds;
- Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) (2011a) Survey Guidelines for Australia's Threatened Mammals;
- DSEWPC (2011b) Survey Guidelines for Australia's Threatened Reptiles;
- DEWHA (2010c) Survey Guidelines for Australia's Threatened Frogs;
- DSEWPC (2012) EPBC Act Referral Guidelines for Three Threatened Black Cockatoo Species; and
- Department of Parks and Wildlife (DPaW) (2017) Western Ringtail Possum Recovery Plan.

2.2 Desktop Assessment

2.2.1 Literature Review

Regional scale reports relevant to the study area locality were reviewed, including:

- a summary of bioregional data (Hearn *et al.* 2002); and
- vegetation description and mapping by Beard (1981), and more recently by Heddle *et al.* (1980) and by Mattiske and Havel (1998).

In addition, there was a review of all publicly available literature and internal reports commissioned and held by Talison. There are seven vertebrate surveys that have previously been completed between 2011 and 2018 within the Greenbushes Mine expansions area, adjacent to the study area. The previous survey work is summarised in more detail in Section 3.1.1.

2.2.2 Database Searches

The desktop assessment included databases relating to significant fauna, Threatened Ecological Communities (TECs) and Priority Ecological Communities (PECs) previously collected or described within, or in close proximity to, the study area. For this report the search was extended beyond the study area to place vertebrate fauna values into a local and regional context. The following databases were searched:

- NatureMap: This database represents the most comprehensive source of information on the distribution of Western Australia's fauna (20 km radial search around the central point GDA94 Zone 50 - 414500E 6252000N, accessed 24 October 2018) (DPaW 2018);

- DBCA's Threatened Fauna Database was searched to confirm the NatureMap results (50 km radial search around the central point GDA94 Zone 50 - 414500E 6252000N, accessed 25 October 2018) (DBCA 2018a);
- DBCA's TEC, PEC and Environmentally Sensitive Areas (ESAs) database was searched to identify significant communities (20 km radial search around the central point GDA94 Zone 50 - 413000E 6252000N, accessed 2 March 2018) (DBCA 2018b);
- EPBC Act Protected Matters database (20 km radial search around the central point GDA94 Zone 50 - 414500E 6252000N, accessed 24 October 2018) (DoEE 2018b); and
- International Union for Conservation of Nature (IUCN) database (accessed 24 October 2018) (IUCN 2018).

2.2.3 Assessment of Conservation Significance

The conservation significance of fauna and ecological communities are classified at a Commonwealth, State and Local level on the basis of various Acts and Agreements, including:

International Level:

- IUCN: The IUCN 'Red List' lists species at risk under nine categories (status codes) (Appendix 1); and
- International Conventions: Migratory taxa listed under the Japan-Australia Migratory Bird Agreement (JAMBA), China-Australia Migratory Bird Agreement (CAMBA), Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA), and Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).

Commonwealth Level:

- EPBC Act: The DoEE lists Threatened fauna and ecological communities, which are determined by the Threatened Species Scientific Committee according to criteria set out in the Act. The Act lists flora that are considered to be of conservation significance under one of six categories (Appendix 2).

State Level:

- WC Act: At a State level, native fauna species are protected under the WC Act – Wildlife Conservation Notice. A number of species are assigned an additional level of conservation significance based on a limited number of known populations and the perceived threats to these locations (Appendix 3); and
- DBCA Priority list: DBCA produces a list of Priority species and ecological communities that have not been assigned statutory protection under the WC Act. Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added under Priorities 1, 2 or 3. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been removed from the threatened species list for other taxonomic reasons, are placed in Priority 4. These species require regular monitoring (see Appendix 4). The list of PECs identifies those that need further investigation before nomination for TEC status at a State level.

Local Level:

- Species may be considered of local conservation significance because of their patterns of distribution and abundance. Although not formally protected by legislation, such species are acknowledged to be in decline as a result of threatening processes, primarily habitat loss through land clearing.

2.2.4 Assessment of Likelihood of Occurrence in the Study Area

A list of conservation significant fauna species occurring within a 50 km radius of the study area was compiled during the literature review and database searches. The likelihood of each taxon occurring within the study area was assessed using a set of rankings and criteria (Table 1) based on presence of suitable landform (inferred from aerial imagery with contours overlaid, and from knowledge of the adjacent areas), and distance to known records.

Table 1 Ranking system used to assign the likelihood that a species would occur in the study area.

Rank	Criteria
Recorded	The species has been recorded in the study area.
Likely to occur	The species has previously been recorded from a landform/habitat which is present within the study area, and there are previous records within immediate surrounds of the study area.
Possible to occur	The species has previously been recorded from a landform/habitat which is present within the study area, and there are previous records within a 20 km radius of the study area.
Unlikely to occur	The landform/habitat from which the species has previously been recorded is absent within the study area, and/or there are no previous records within a 20 km radius of the study area.

2.3 Field Survey Methodology

2.3.1 Timing and Personnel

The vertebrate fauna survey was completed by Senior Zoologist from Onshore Environmental, Mr Michael Brown, working over a three-day field trip on the 4th, 6th and 7th of October 2018.

2.3.2 Surveying of Study Area

The entire length of each corridor was walked and assessed to document habitat characteristics including evaluation of the presence of habitats suitable to support conservation significant fauna.

The survey recorded any observations of fauna species made, via primary or secondary evidence, from within the corridors. In addition, low intensity sampling was undertaken throughout the corridors, involving bird census and active foraging. Targeted searches (as detailed below) were also undertaken for conservation significant fauna species identified during the database review.

The following parameters were recorded for all conservation significant fauna:

- Co-ordinate locations;
- Description of habitat in which the species was located; and
- Photograph of the species, evidence of species and/or habitat.

Active Foraging

Active foraging, involving raking litter and turning over rocks, was completed throughout the study area. Records were captured for any conservation significant species sighted during foraging.

Bird Census

Timed bird census (45 minutes) were completed within the study area. The bird census were undertaken at the commencement of each day when conditions were more favourable for bird activity. Records were captured for any conservation significant bird species sighted during the census. Opportunistic records of bird sightings throughout the day were also recorded during the wider field survey.

2.3.3 Targeted Surveys for Conservation Significant Species

Tree Hollow searches

Tree hollows were actively searched for during transect walks within the corridors. Each tree hollow encountered was assessed for its suitability to provide habitat for conservation significant species (namely, Western Ringtail Possums and Black Cockatoos). Those hollows deemed appropriate (i.e. sufficient size) were assessed further (as per below).

Black Cockatoo searches

Habitats used by black cockatoos have been placed into three categories by DSEWPC (2012), these being:

- Breeding Habitat;
- Foraging Habitat; and
- Night Roosting Habitat.

Breeding habitat for black cockatoos was assessed by the identification of all suitable breeding trees that had a diameter at breast height (DBH) of equal to or greater than 50 cm. Target tree species included marri and jarrah and any other *Corymbia/Eucalyptus* species of a suitable size that were present. The location of each tree identified (with appropriate DBH) was recorded along with details on the number and size of hollows present (if any).

Trees were examined to identify hollows using binoculars and evidence of actual use by black cockatoos (e.g. chewing around hollow entrance, scarring and scratch marks on trunks and branches). Any potential hollows observed were further investigated using a drone to categorise the hollows, based on the size of the hollow entrance, and its suitability for black cockatoos to use (i.e. greater than 10 cm in diameter) and to nest in (i.e. deep enough).

Any evidence of foraging (e.g. chewed fruits around the base of trees) was recorded, and the type of foraging was also detailed. Potential foraging habitat was documented notwithstanding of the presence of foraging evidence.

Any evidence of roosting (e.g. branch clippings, droppings or moulted feathers) within trees was recorded.

Drey searches

Dreys were actively searched to provide evidence of the presence of Western Ringtail Possums. Each drey encountered was photographed (where possible) and a GPS point collected.

Nocturnal searches

Two 2.5 hour nocturnal searches were undertaken within suitable habitat in each corridor. The nocturnal searches involved spotlighting trees and undertaking foot

transects using a head torch with any fauna of conservation significance recorded and a GPS co-ordinate taken.

2.3.4 Fauna Habitat Mapping

Assessments of the habitat were undertaken throughout the study area to document habitat characteristics and map the fauna habitat types. The fauna habitat mapping utilised high-resolution aerial photography of the study area at a scale of 1:15,000. Ground-truthing of the study area was completed during the survey with habitat characteristics recorded at each habitat assessment site, and the habitat type selected for each polygon. Vegetation association mapping was utilised to further aid in characterising the habitat map accuracy across the full extent of the study area.

2.3.5 Species Identification and Nomenclature

Vertebrate fauna species were identified at the time of capture/observation in the field by the Senior Zoologist. All species were able to be fully identified with no specimens needed to be taken for further examination. Nomenclature and conservation significance rankings used in this report are in accordance with the current listing of WA fauna recognised by the DBCA, as listed on NatureMap.

2.4 Field Survey Constraints

The EPA Technical Guidance (EPA 2016c) list potential limitations that field surveys may encounter. Limitations associated with the Level 1 vertebrate fauna survey, are addressed in Table 2. There were no survey-specific limitations for this survey.

Table 2 Relevance of limitations, as identified by EPA (2016c), to the Greenbushes vertebrate survey.

Constraint	Relevance
Competency/experience of the consultant carrying out the survey	The Senior Zoologist working on the survey has in excess of 12 years fauna experience in the south-west, and has completed other fauna surveys for Talison in the Greenbushes area.
Scope (faunal groups sampled and were some sampling methods not able to be employed because of constraints)	The entire length of the corridors were assessment and all allocated tasks detailed in the scope of works were achieved during the survey, with foraging, bird census and targeted searches undertaken. Two nights of nocturnal searches were also undertaken as part of this survey.
Proportion of fauna identified, recorded and/or collected	All fauna species were identified and recorded in the field when observed.
Sources of information e.g. previously available information (whether historic or recent) as distinct from new data	There has been no previous survey work completed within the study area. However, there have been seven previous vertebrate fauna surveys undertaken adjacent to the study area, providing a comprehensive local database.
Proportion of the task achieved and further work which might be needed	The Level 1 vertebrate fauna survey was aimed at mapping fauna habitats within the study area and assessing their suitability to support fauna species of conservation significance, as well as targeting fauna species of conservation significance. All allocated tasks detailed in the scope of works were achieved during the survey.

Constraint	Relevance
Timing/weather/season/cycle	The survey was completed in October 2018 under <i>good</i> seasonal conditions with average rainfall and temperatures experienced, providing favourable conditions for the surveying of fauna species.
Disturbances which affected results of survey	There were no disturbances recorded within the study area that influenced survey outcomes.
Intensity	A Senior Zoologist working over a three-day period sampled traversed and sampled the three corridor alignments and assessed habitats during the field survey, representing an adequate survey intensity for a Level 1 survey.
Completeness	All allocated tasks detailed in the scope of works were adequately completed during the Level 1 survey.
Resources	All resources required to complete the Level 1 survey were available, with information available from numerous surveys completed from neighbouring areas.
Remoteness and/or access problems	There were no access restrictions experienced during the survey with the study area accessible by vehicle and on foot; noting that fauna habitat mapping was facilitated by high-resolution aerial photography.
Availability of contextual information on the region	There has been no previous survey work completed within the study area. However, there have been seven previous vertebrate fauna surveys undertaken adjacent to the study area, providing a comprehensive local database.

3.0 RESULTS

3.1 Desktop Assessment

3.1.1 Literature Review

The results from previous vertebrate fauna surveys completed within the vicinity of the study area are summarised below and presented in Table 3.

Greenbushes Level 1 Fauna Survey (Biologic Environmental Survey 2011)

Biologic Environmental Survey was commissioned by Talison to undertake a Level 1 vertebrate fauna survey and comprehensive literature and database review of the active mining area and all leases held by Talison.

Desktop assessments identified 196 vertebrate fauna species to have the potential to occur within the study area. Of these, the survey recorded a total of 82 species of vertebrates. Four current conservation significance fauna species were recorded from the study area:

- South-western Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*) – WC Act Schedule 6, IUCN Near Threatened;
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – EPBC Act Vulnerable, WC Act Schedule 3;
- Baudin's Cockatoo (*Calyptorhynchus baudinii*) – EPBC Act Endangered, WC Act Schedule 2, IUCN Endangered; and
- Carnaby's Cockatoo (*Calyptorhynchus latirostris*) – EPBC Act Endangered, WC Act Schedule 2, IUCN Endangered.

Six broad fauna habitats were identified within the Study Area:

- Jarrah (*Eucalyptus marginata*)/Marri (*Corymbia calophylla*) forest;
- Jarrah/Marri forest over Banksia dominated mid-story;
- Marri/Blackbutt (*Eucalyptus patens*) /Flooded Gum (*Eucalyptus rudis*) Woodland over Banksia dominated mid-story;
- *Typha* dense tall sedges;
- *Leptospermum* scrub; and
- Disturbed/rehabilitated areas.

Black Cockatoo Survey, Talison Mining, Greenbushes (Kirkby 2018)

Kirkby was commissions to locate and document feeding, breeding and roosting habitat used by black cockatoos *Calyptorhynchus* species at the proposed mining extension areas at the Greenbushes Mine. Breeding habitat at the study area was identified as Jarrah *Eucalyptus marginata*/Marri *Corymbia calophylla* forest with a small amount of Flooded Gum *E. rudis*. In the Jarrah/Marri Forest, Marri provides the vast majority (over 90%) of breeding trees.

A total of 50 trees (49 Marri, 1 jarrah) were located across the survey area which had a hollow entrance of suitable size, shape and position in the tree to be considered suitable for use as a black cockatoo breeding hollow, with 24 of these trees having entrances which showed evidence of use. The remaining 26 trees had hollows with a suitable entrance and are possibly or potentially black cockatoo breeding hollows but show no signs of past use. No roost sites were located during the survey.

Forest Red-tailed Black Cockatoo feeding residues was observed during the survey and ranged from fresh to old indicating presence throughout the year and breeding seasons. The feeding residues noted from Baudin's Cockatoo and Carnaby's Cockatoo were all classed as not recent.

Small numbers of Forest Red-tailed Black Cockatoo were seen and/or heard at most locations during the survey. Carnaby's Cockatoo were heard to the east of the study area on one occasion. Baudin's Cockatoo were not present during the survey.

Black Cockatoo Habitat Quality Assessment (Ennovate 2018)

Ennovate was commissioned to undertake an assessment of Black Cockatoo habitat quality. The following information was used to assign a habitat condition score to each of the separate blocks of native vegetation. The location of habitat trees, bird sightings and feeding residues was also used. Finally, historical and detailed current aerial photography was viewed to ascertain vegetation disturbance history and class structure.

Overall, the condition of the Black Cockatoo habitat within the expanded development area was assigned a median score (ranging from 5-7 out of 10) for the blocks assessed.

Greenbushes Black Cockatoo Hollow Review (Harewood 2018a)

A number of potential breeding hollows have been identified within and near the Mine Development Envelope area. Previous surveys involved the assessment of tree hollows from ground level. As this method has some limitations, Talison requested Harewood undertake an assessment of the identified trees using a drone with the aim of photographing specific hollows so that additional characteristics relating to their potential to represent actual or possible black cockatoo breeding hollows could be determined.

Of the 70 trees re-inspected 14 were positively identified as showing evidence of previous use by black cockatoos in the form of chew marks to varying degrees. An additional 16 trees were assessed as being possibly suitable but showed no conclusive evidence of actual use for nesting purposes. The remaining trees inspected (40) did not appear to have suitable hollows for black cockatoos.

Greenbushes Preliminary Western Ringtail Possum Surveys – June 2018 (Harewood 2018b)

Harewood was commissioned to undertake a preliminary Western Ringtail Possum (*Pseudocheirus occidentalis*) survey within and near the Greenbushes Mine. Day and nocturnal survey was completed with no conclusive evidence of Western Ringtail Possums found during the course of the survey in and around the mine development area.

Generally speaking, much of the vegetation observed seems to represent poor or marginal habitat for Western Ringtail Possums. This conclusion is based on the fact that much of the area has been historically logged and lacks a coherent mid-story component, a structural unit most often favoured by Western Ringtail Possums.

Greenbushes Vertebrate Fauna, SRE and Subterranean Fauna Desktop Assessment (Biologic Environmental Survey 2018a)

Biologic Environmental Survey was commissioned by Talison to undertake a desktop assessment for terrestrial vertebrate fauna, short-range endemic (SRE) invertebrate

fauna and subterranean fauna within and surrounding the Greenbushes Mine. The study area comprised 1,989 hectares, comprising the current mining area and an indicative expansion area.

The vertebrate fauna desktop assessment reviewed a total of seven literature sources and four databases were searched. A total of eight fauna habitats have previously been recorded and mapped across the study area, comprising four naturally occurring habitat types (Jarrah/Marri Forest, Jarrah/Marri Forest over Banksia, Marri/Blackbutt/Flooded Gum Woodland over Banksia, and Waterbodies).

The desktop assessment identified a total of 44 conservation significance fauna species which have previously been recorded and/or have the potential to occur within the study area, of which seven have been recorded within the study area:

- Carnaby's Cockatoo (*Calyptorhynchus latirostris*) – EPBC Act Endangered, WC Act Schedule 2, IUCN Endangered;
- Baudin's Cockatoo (*Calyptorhynchus baudinii*) – EPBC Act Endangered, WC Act Schedule 2, IUCN Endangered;
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – EPBC Act Vulnerable, WC Act Schedule 3;
- South-western Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*) – WC Act Schedule 6, IUCN Near Threatened;
- Chuditch (*Dasyurus geoffroii*) – EPBC Act Vulnerable, WC Act Schedule 3, IUCN Near Threatened;
- Southern Brown Bandicoot (*Isodon obesulus fusciventer*) – DBCA Priority 4; and
- Western Brush Wallaby (*Notamacropus irma*) – DBCA Priority 4.

One additional species, Western Ringtail Possum (*Pseudocheirus occidentalis*) (Vulnerable EPBC Act, Critically Endangered, WC Act), was considered highly likely to occur in the study area.

Five databases were searched for SRE invertebrate fauna records within and surrounding the study area. Broad fauna habitats were also reviewed for their ability to support SRE species. Of the four naturally occurring habitats present in the Study Area, three were assessed as having a moderate potential for SRE fauna: Jarrah/Marri Forest, Jarrah/Marri Forest over Banksia, Marri/Blackbutt/Flooded Gum Woodland over Banksia. Only one terrestrial invertebrate (a widespread species) has previously been recorded within the study area to date.

Five databases were searched for subterranean fauna records. Geology and hydrogeology of the study area was also reviewed. Three broad surface geology types have been mapped, with the dominant geological groups being the undivided sediments and ferruginous duricrust, both of which are sedimentary in nature. The study area is situated in the Blackwood River catchment within the Karri groundwater sub-area. Based on the available information, it was concluded that a number of prospective habitats for troglofauna and stygofauna may potentially occur within the study area.

Greenbushes Targeted Vertebrate and SRE Invertebrate Fauna Survey (Biologic Environmental Survey 2018b)

Biologic Environmental Survey was commissioned by Talison to undertake a targeted survey for vertebrate fauna of conservation significance and short-range endemic (SRE) invertebrate fauna within and surrounding the Greenbushes Mine. The study

area comprised 1,989 hectares, comprising the current mining area and an indicative expansion area.

The survey was undertaken between the 12th and 21st of February 2018. Twelve motion camera sites were established in the Study Area, each consisting of five baited cameras. Twelve additional motion cameras were deployed opportunistically throughout the Study Area. Targeted searches for vertebrate fauna were conducted at 27 locations within the Study Area. Spotlighting searches were undertaken at ten locations over four nights.

A total of 43 species were recorded during the survey directly and/or via secondary evidence, including five species of conservation significance:

- Chuditch (*Dasyurus geoffroi*) – EPBC Act Vulnerable, WC Act Schedule 3, IUCN Near Threatened;
- South-western Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*) – WC Act Schedule 6, IUCN Near Threatened;
- Southern Brown Bandicoot (*Isodon obesulus fusciventer*) – DBCA Priority 4;
- Western Brush Wallaby (*Notamacropus irma*) – DBCA Priority 4; and
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – EPBC Act Vulnerable, WC Act Schedule 3.

Scats possibly belonging to the Western Ringtail Possum (*Pseudocheirus occidentalis*) (listed as EPBC Act Critically Endangered, WC Act Schedule 1, and IUCN Critically Endangered) were also recorded but could not be confirmed as belonging to the species.

SRE sampling comprised sampling at 12 sites for a total of 18 personnel hours. Each site was subject to active foraging, leaf and soil sieving and burrow excavations (if found). Three invertebrate taxa recorded during the survey were identified as 'Potential SRE'. In all three cases, a precautionary level of Potential SRE was allocated as a precise taxonomic identification could not be made. This comprised two specimens identified as Nemesiidae sp. indet., two specimens of Paradoxosomatidae sp. indet., and one specimen belonging to the family Siphonotidae.

Table 3 Results from vertebrate fauna surveys previously completed within the vicinity of the study area.

Survey	Consultant	Field Survey Date	Survey Level	Conservation Significant Fauna Species
Greenbushes Level 1 Fauna Survey	Biologic Environmental Survey	13 – 17 Oct 2011	Level 1	South-western Brush-tailed Phascogale (<i>Phascogale tapoatafa wambenger</i>) – WC Act Schedule 6, IUCN Near Threatened Forest Red-tailed Black Cockatoo (<i>Calyptorhynchus banksii naso</i>) – EPBC Act Vulnerable, WC Act Schedule 3 Baudin’s Cockatoo (<i>Calyptorhynchus baudinii</i>) – EPBC Act Endangered, WC Act Schedule 2, IUCN Endangered Carnaby’s Cockatoo (<i>Calyptorhynchus latirostris</i>) – EPBC Act Endangered, WC Act Schedule 2, IUCN Endangered
Black Cockatoo Survey	Kirkby	22 Jan – 12 Feb 2018	Targeted	Forest Red-tailed Black Cockatoo (<i>Calyptorhynchus banksii naso</i>) – EPBC Act Vulnerable, WC Act Schedule 3 Baudin’s Cockatoo (<i>Calyptorhynchus baudinii</i>) – EPBC Act Endangered, WC Act Schedule 2, IUCN Endangered Carnaby’s Cockatoo (<i>Calyptorhynchus latirostris</i>) – EPBC Act Endangered, WC Act Schedule 2, IUCN Endangered
Black Cockatoo Habitat Quality Assessment	Ennovate Consulting	Not relevant	Desktop	Not recorded
Greenbushes Black Cockatoo Tree Hollow Review	Harewood	11 – 19 Jun 2018	Targeted	None
Greenbushes Preliminary Western Ringtail Possum Surveys	Harewood	11, 13 & 15 Jun 2018	Targeted	South-western Brush-tailed Phascogale (<i>Phascogale tapoatafa wambenger</i>) – WC Act Schedule 6, IUCN Near Threatened
Greenbushes Vertebrate Fauna, SRE and Subterranean Fauna Desktop Assessment	Biologic Environmental Survey	Not relevant	Desktop	Not recorded

Survey	Consultant	Field Survey Date	Survey Level	Conservation Significant Fauna Species
Greenbushes Targeted Vertebrate and SRE Invertebrate Fauna Survey	Biologic Environmental Survey	12 – 21 Feb 2018	Targeted	<p>Chuditch (<i>Dasyurus geoffroi</i>) – EPBC Act Vulnerable, WC Act Schedule 3, IUCN Near Threatened</p> <p>Western Ringtail Possum (<i>Pseudocheirus occidentalis</i>) – EPBC Act Critically Endangered, WC Act Schedule 1, IUCN Critically Endangered¹</p> <p>South-western Brush-tailed Phascogale (<i>Phascogale tapoatafa wambenger</i>) – WC Act Schedule 6, IUCN Near Threatened</p> <p>Southern Brown Bandicoot (<i>Isoodon obesulus fusciventer</i>) – DBCA Priority 4</p> <p>Western Brush Wallaby (<i>Notamacropus irma</i>) – DBCA Priority 4</p> <p>Forest Red-tailed Black Cockatoo (<i>Calyptorhynchus banksii naso</i>) – EPBC Act Vulnerable, WC Act Schedule 3</p>

¹ This record is of scats possibly belonging to the species, and therefore the record is unconfirmed.

3.1.2 Database Searches

Threatened Fauna listed under the EPBC Act

A search of the EPBC Act Protected Matters database was undertaken for a 20 km buffer around the study area (DoEE 2018b). The database search listed 11 Threatened fauna species, or species habitat, that may occur in the study area:

Mammals:

- Woylie (*Bettongia penicillata*) – listed as Endangered;
- Chuditch (*Dasyurus geoffroii*) – listed as Vulnerable;
- Numbat (*Myrmecobius fasciatus*) – listed as Endangered;
- Western Ringtail Possum (*Pseudocheirus occidentalis*) – listed as Critically Endangered; and
- Southern Brown Bandicoot (*Setonix brachyurus*) – listed as Vulnerable.

Birds:

- Australasian Bittern (*Botaurus poiciloptilus*) – listed as Endangered;
- Curlew Sandpiper (*Calidris ferruginea*) – listed as Critically Endangered;
- Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*) – listed as Vulnerable;
- Baudin's Cockatoo (*Calyptorhynchus baudinii*) – listed as Endangered;
- Carnaby's Cockatoo (*Calyptorhynchus latirostris*) – listed as Endangered; and
- Eastern Curlew (*Numenius madagascariensis*) – listed as Critically Endangered.

The database search also identified eight Migratory bird species, or species habitat, that may occur in the study area:

- Fork-tailed Swift (*Apus pacificus*);
- Grey Wagtail (*Motacilla cinerea*);
- Common Sandpiper (*Actitis hypoleucos*);
- Sharp-tailed Sandpiper (*Calidris acuminata*);
- Curlew Sandpiper (*Calidris ferruginea*);
- Pectoral Sandpiper (*Calidris melanotos*);
- Eastern Curlew (*Numenius madagascariensis*); and
- Osprey (*Pandion haliaetus*).

Threatened Fauna listed under the WC Act

The DBCA Threatened Fauna database search (DBCA 2018b) and NatureMap search (DPaW 2018) identified 13 species listed as Scheduled species under the WC Act from a 20km radius around the study area:

Mammals:

- Woylie (*Bettongia penicillata ogilbyi*) – listed as Schedule 1;
- Chuditch (*Dasyurus geoffroii*) – listed as Schedule 3;
- Bilby (*Macrotis lagotis*) – listed as Schedule 3;
- Numbat (*Myrmecobius fasciatus*) – listed as Schedule 2;
- Red-tailed Phascogale (*Phascogale calura*) – listed as Schedule 6;
- South-western Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*) – listed as Schedule 6;
- Western Ringtail Possum (*Pseudocheirus occidentalis*) – listed as Schedule 1; and
- Quokka (*Setonix brachyurus*) – listed as Schedule 3.

Birds:

- Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*) – listed as Schedule 3;

- Baudin's Cockatoo (*Calyptorhynchus baudinii*) – listed as Schedule 2;
- Carnaby's Cockatoo (*Calyptorhynchus latirostris*) – listed as Schedule 2;
- Peregrine Falcon (*Falco peregrinus*) – listed as Schedule 7; and
- Wood Sandpiper (*Tringa glareola*) – listed as Schedule 5.

Priority Fauna recognised by the DBCA

The DBCA Threatened Fauna database search (DBCA 2018b) and NatureMap search (DPaW 2018) identified seven Priority fauna species as potentially occurring within a 20 km radius of the study area:

Mammals:

- Western False Pipistrelle (*Falsistrellus mackenziei*) – listed as Priority 4;
- Water-rat (*Hydromys chrysogaster*) – listed as Priority 4;
- Southern Brown Bandicoot (*Isodon obesulus fusciventer*) – listed as Priority 4; and
- Western Brush Wallaby (*Notamacropus irma*) – listed as Priority 4.

Reptiles:

- Dell's skink (*Ctenotus delli*) – listed as Priority 4.

Birds:

- Blue-billed Duck (*Oxyura australis*) – listed as Priority 4; and
- Masked Owl (southwest) (*Tyto novaehollandiae novaehollandiae*) – listed as Priority 3.

A total of 29 conservation significant species were identified during the desktop assessment, comprising 12 mammals, one reptile and 16 bird species.

Based on the known distributions and habitat preferences of the species and comparison with the habitats identified and mapped within the study area, five species were determined as being “likely” to occur within the study area (Table 4). Eight species was determined as “possible” to occur in the study area (Table 4). The remaining species identified as “unlikely” to occur (Table 4).

Table 4 Conservation significant fauna species identified during the desktop assessment.

Common Name	Scientific Name	Cons. Code				Habitat Preference	Suitable Habitat Present	Likelihood in the Study Area
		EPBC Act	WC Act	IUCN	DBCA			
Mammals								
Woylie	<i>Bettongia penicillata ogilbyi</i>	EN	S1	CE		Woodlands and adjacent heaths with a dense understory of shrubs (Woinarski <i>et al.</i> 2014).	Yes	Possible
Chuditch	<i>Dasyurus geoffroii</i>	VU	S3	NT		Jarrah forest, in moist, densely vegetated, steeply sloping forest and drier, open, gently sloping forest particularly in riparian vegetation (Orell & Morris 1994).	Yes (only limited areas)	Possible
Numbat	<i>Myrmecobius fasciatus</i>	EN	S2	EN		Eucalypts forests and woodland, notably wandoo and jarrah woodland (Van Dyck & Strahan 2008).	Yes (only limited areas)	Unlikely ²
Western Ringtail Possum	<i>Pseudocheirus occidentalis</i>	CE	S1	CE		Coastal <i>Agonis flexuosa</i> forest or eucalypt woodland or forest with a mid-story of <i>Agonis flexuosa</i> (DPaW 2017, Jones <i>et al.</i> 1994).	No	Unlikely
Quokka	<i>Setonix brachyurus</i>	VU	S3	VU		Habitat varies, but prefer <i>Acacia</i> and <i>Melaleuca</i> thickets. Associated with <i>Taxandria linearifolia</i> in Jarrah Forest (de Tores 2008).	No	Unlikely
Bilby	<i>Macrotis lagotis</i>	VU	S3	VU		Mixture of woodland including Jarrah, Marri and Wandoo in the south-west (Abbott 2001).	Yes	Unlikely ¹

² Due to no known recent recordings of this species from the local area.

Common Name	Scientific Name	Cons. Code				Habitat Preference	Suitable Habitat Present	Likelihood in the Study Area
		EPBC Act	WC Act	IUCN	DBCA			
Red-tailed Phascogale	<i>Phascogale calura</i>	VU	S6	NT		Wandoo-rock sheoak uplands, and lowland habitat with riverine fringing vegetation of swamp sheoak, York Gum and Wandoo (Short <i>et al.</i> 2011).	Yes (only limited areas)	Possible
South-western Brush-tailed Phascogale	<i>Phascogale tapoatafa wambenger</i>		S6	NT		Dry sclerophyll forests and open woodlands that contain hollow-bearing trees with a sparse ground cover (Woinarski <i>et al.</i> 2014).	Yes	Likely
Western False Pipistrelle	<i>Falsistrellus mackenziei</i>			NT	P4	Tall forests and woodlands in higher rainfall parts of the south-west, particularly Karri forests but also Tuart and Jarrah forests (Woinarski <i>et al.</i> 2014).	Yes (only limited areas)	Possible
Water-rat	<i>Hydromys chrysogaster</i>				P4	Permanent bodies of fresh or brackish water, subalpine streams to lakes and farm dams (Van Dyck & Strahan 2008).	No	Unlikely
Southern Brown Bandicoot	<i>Isoodon obesulus fusciventer</i>				P4	Jarrah forest and swamp habitats, preferring dense vegetation around wetland fringes and heathland (Cooper 1998, Woinarski <i>et al.</i> 2014).	Yes (only limited areas)	Possible
Western Brush Wallaby	<i>Notamacropus irma</i>				P4	Wide-range of habitats including low <i>Banksia</i> woodlands, Jarrah/Marri woodlands and moist <i>Melaleuca</i> lowlands, favours open, grassy areas (Wann & Bell 1997, Woinarski <i>et al.</i> 2014).	Yes	Likely

Common Name	Scientific Name	Cons. Code				Habitat Preference	Suitable Habitat Present	Likelihood in the Study Area
		EPBC Act	WC Act	IUCN	DBCA			
Reptiles								
Dell's skink	<i>Ctenotus delli</i>				P4	Dry sclerophyll forest on stony hills and ranges (Cogger 2014).	Yes (only limited areas)	Possible
Birds								
Australasian Bittern	<i>Botaurus poiciloptilus</i>	EN	S2	EN		Tall dense <i>Typha</i> and sedges in freshwater swamps (Johnstone & Storr 1998).	No	Unlikely
Curlew Sandpiper	<i>Calidris ferruginea</i>	CE, MG	S3	NT		Intertidal mudflats in sheltered coastal areas (Geering <i>et al.</i> 2007).	No	Unlikely
Forest Red-tailed Black-Cockatoo	<i>Calyptorhynchus banksii naso</i>	VU	S3			Eucalypt forests, areas of seeding Marri, Jarrah, Blackbutt, Karri and Sheoak (Johnstone & Storr 1998).	Yes	Likely
Baudin's Cockatoo	<i>Calyptorhynchus baudinii</i>	EN	S2	EN		Eucalypt forest, areas of Marri, Karri and Wandoo (Johnstone & Storr, 1998, Johnstone & Kirkby 2008).	Yes	Likely
Carnaby's Cockatoo	<i>Calyptorhynchus latirostris</i>	EN	S2	EN		Eucalypt woodlands and forests and adjacent area of <i>Proteaceous</i> scrubs and heaths (Johnstone & Storr 1998).	Yes	Likely
Eastern Curlew	<i>Numenius madagascariensis</i>	CE, MG	S3	EN		Tidal mudflats, also reef flats, sandy beaches (Johnstone & Storr 1998).	No	Unlikely
Fork-tailed Swift	<i>Apus pacificus</i>	MG	S5			Entirely aerial species (Johnstone & Storr 1998).	N/A	Possible
Grey Wagtail	<i>Motacilla cinerea</i>	MG	S5			Various habitats with open waterbodies (Johnstone & Storr 2004).	No	Unlikely

Common Name	Scientific Name	Cons. Code				Habitat Preference	Suitable Habitat Present	Likelihood in the Study Area
		EPBC Act	WC Act	IUCN	DBCA			
Common Sandpiper	<i>Actitis hypoleucos</i>	MG	S5			Edge of sheltered waters, salt or fresh, estuaries, river pools, claypans, drying swamps (Johnstone & Storr 1998).	No	Unlikely
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	MG	S5			Coastal and inland areas saline and fresh or brackish wetlands (Geering <i>et al.</i> 2007).	No	Unlikely
Pectoral Sandpiper	<i>Calidris melanotos</i>	MG	S5			Fresh waterbodies including swamps, lagoons and river pools (Johnstone & Storr 1998).	No	Unlikely
Osprey	<i>Pandion haliaetus</i>	MG	S5			Sheltered seas around islands, tidal creeks, estuaries and saltwork ponds, and large river pools (Johnstone <i>et al.</i> 2013).	No	Unlikely
Peregrine Falcon	<i>Falco peregrinus</i>		S7			Coastal cliffs, rivers and ranges, wooded watercourses and lakes (Johnstone & Storr 1998).	No	Unlikely
Wood Sandpiper	<i>Tringa glareola</i>		S5			Freshwater wetlands and occasional brackish intertidal mudflats (Geering <i>et al.</i> 2007).	No	Unlikely
Blue-billed Duck	<i>Oxyura australis</i>			NT	P4	Mainly deep freshwater swamps and lakes, occasionally salt lakes and estuaries freshened by flood waters (Johnstone & Storr 1998).	No	Unlikely
Masked Owl	<i>Tyto novaehollandiae</i>				P3	Forested areas and occasionally dry woodland areas (Johnstone & Storr 1998).	Yes	Possible

3.1.3 Ecological Communities

TECs listed under State and Federal Legislation

A search of the EPBC Act Protected Matters database (DoEE 2018b) and the DBCA ecological communities database (DBCA 2018b) identified no Federal listed TECs previously recorded within, or adjacent to, the study area.

PECs recognised by DBCA

A search of the State database (DBCA 2018b) identified no PECs previously recorded within, or adjacent to, the study area.

Environmentally Sensitive Areas

There is one Environmentally Sensitive Area (ESA) identified to the south-west of the study area approximately 560 m from the intersection of Huitson Road and Maranup Ford Road. The ESA incorporates the winter-wet dampland supporting the *Caladenia harringtoniae* population.

3.2 Level 1 Fauna Survey

3.2.1 Vertebrate Fauna Species

Threatened Fauna listed under the WC Act and EPBC Act

No vertebrate fauna species listed as Scheduled species under the WC Act or listed as Threatened fauna under the EPBC Act were recorded from the study area.

Priority Fauna recognised by the DBCA

No Priority fauna species, as recognised by the DBCA, were recorded from the study area.

Introduced Fauna species

No introduced fauna species (feral animals) were observed within the study area during the survey.

3.2.2 Fauna Habitat

Habitat Types

Seven fauna habitats were identified and mapped within the study area during the field survey (Figure 4; Table 5).

The Northern Bypass corridor of the study area was dominated by the Hill Slope habitat type as well as areas of historical mine rehabilitation. The Southern Bypass corridor was also dominated by the Hill Slope habitat type and included areas of cleared annual pasture. The Powerline corridor of the study area largely consisted of areas of cleared annual pasture, and Blue Gum and Pine plantation. There was also a section of the Hill Slope habitat type intersecting the powerline corridor (Figure 4).

Table 5 Fauna habitat mapped within the study area.

Habitat Type	Description
Hill Crest & Upper Hill Slope	Jarrah, Marri and Sheoak forest with open scrubs on loamy sands with laterite outcropping.
Hill Slope	Jarrah, Marri and mixed woodland to forest over scrubs on grey/brown sandy loam.
Drainage Flat	Marri and Yarri (with pine trees) forest over scrubs with scattered sedges on sandy clay loam.
Minor Drainage Line	Flooded gum (<i>Eucalyptus rudis</i>) forest over scrubs and tall sedges on sandy clay loam.
Pasture	Areas of cleared annual pasture on farmland.
Plantation	Areas of Blue Gum (<i>Eucalyptus globulus</i>) or Pine plantation.
Rehabilitation	Areas of historical mine rehabilitation.



TALISON LITHIUM

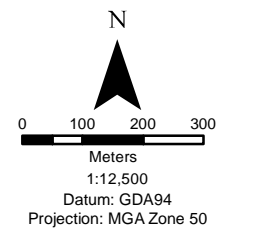
Northern Bypass

Habitat Types

Figure 4

Legend

- Mine Development Area
- Study
- Habitat Types**
- Hill Crest & Upper Hill Slope (HCUH)
- Hill Slope (HS)
- Drainage Flat (DF)
- Minor Drainage Line (MDL)
- Cleared (CL)
- Cleared Pasture (CP)
- Rehab (RH)
- Road (RD)



Date: 13/09/2018
 Status: Draft
 Figure: 4
 Sheet Size: A3
 Internal Reference: TL_Nib_bp_HT
 Drawn by: GSM
 Requested by: DB



411000 412000 413000 414000



TALISON LITHIUM

Southern Bypass

Habitat Types

Figure 4

Legend

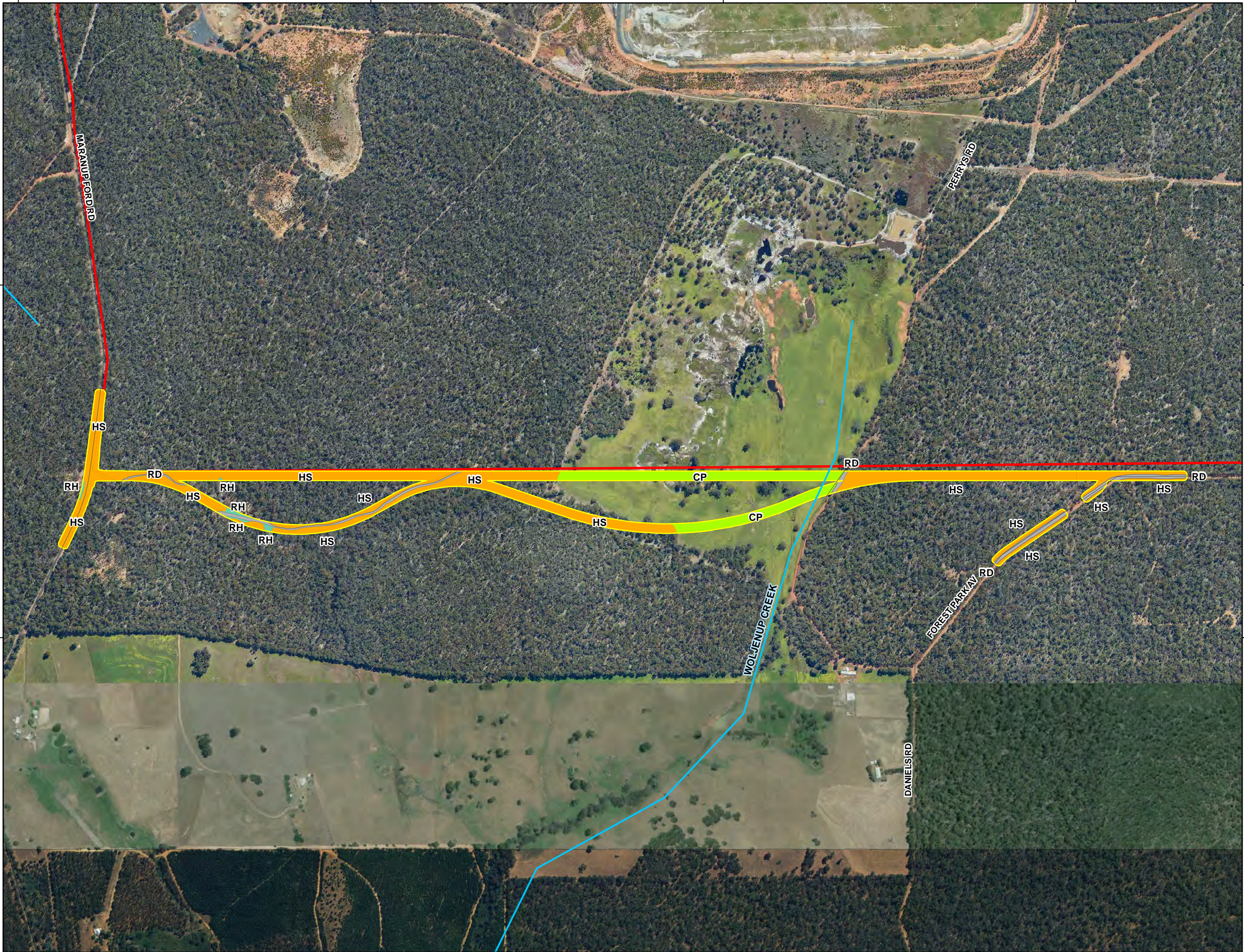
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- Study
- Habitat Types**
- Hill Slope (HS)
- Cleared Pasture (CP)
- Rehab (RH)
- Road (RD)

6250000

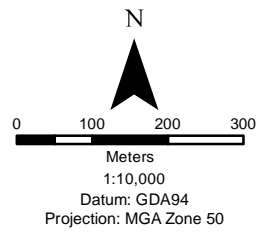
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TALISON LITHIUM

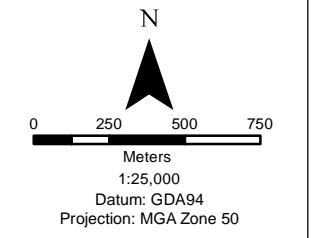
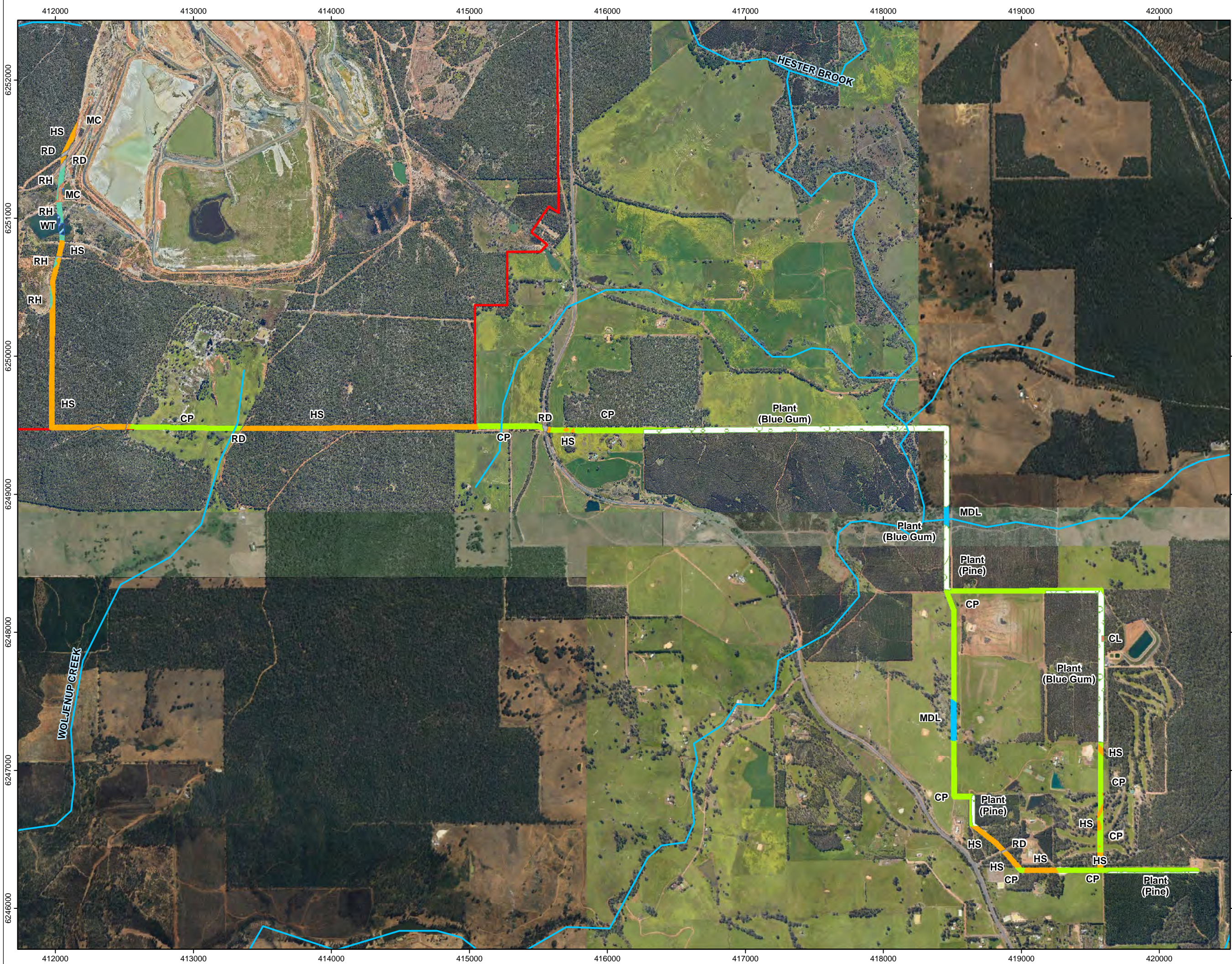
Powerline

Habitat Types

Figure 4

Legend

- Mine Development Area
- Study Area
- Habitat Types**
- Hill Slope (HS)
- Minor Drainage Line (MDL)
- Cleared (CL)
- Cleared Pasture (CP)
- Rehab (RH)
- Plantation (Plant)
- Road (RD)
- Water (WT)
- Mine Clearing (MC)



Date: 15/11/2018
 Status: Draft
 Figure: 4
 Sheet Size: A3
 Internal Reference: TL_Powerline
 Drawn by: GSM
 Requested by: DB

3.2.3 Fauna Habitats and Species of Significance

Black Cockatoos

Habitats within the study area were assessed for the use by, and suitability for, Black Cockatoos. There was no evidence of foraging by Black Cockatoos observed from within the study area. However, the majority of habitats within the study area are deemed to be suitable foraging habitat for the cockatoos, with the exception of areas of cleared annual pasture and historical mine rehabilitation (Figure 4). Although it is not a native habitat, Black Cockatoos are considered likely to use the areas of plantation. They may forage within the pine plantation areas, and may use large introduced *Eucalyptus* species (i.e. the Blue Gum plantation) for night roosting but not for nesting or foraging (Figure 4).

To assess the potential for breeding habitat within the study area, suitable tree species (i.e. *Corymbia/Eucalyptus* species) that had a DBH of equal to or greater than 50 cm were evaluated. Of the trees identified, four were observed to have hollows present and were assessed by Onshore Environmental (Table 6). An additional four trees with hollows that were previously assessed are also located within the study area (Table 6) (Harewood 2018a). Four of these trees are located within the Northern Bypass Corridor and four within the Powerline Corridor of the study area (Figure 5). Details of each tree hollow is presented in Table 6, with photographs presented in Appendix 5. Of the assessed tree hollows, only one (ON-01) was deemed suitable for use by Black Cockatoos (Table 6). Although the hollow was considered suitable there was no evidence of use by Black Cockatoos. No evidence of roosting from Black Cockatoos was observed during the field survey.

Table 6 Tree hollows recorded within the study area (by Onshore Environmental or reported by Harewood 2018a).

Hollow ID	Description of Usage	Classification
ON-01	Potential hollow, however no usage observed	Potential
ON-03	Hollow very shallow	Unsuitable
ON-04	Hollow very shallow	Unsuitable
ON-32	Hollow shallow and diameter less than 10cm	Unsuitable
1055	Hollow shallow	Unsuitable
65	Unused relatively small hollow	Unused / likely unsuitable
115	Hollow shallow with a small diameter	Unsuitable
331	Unused hollow with hindered access	Unused / likely unsuitable

Western Ringtail Possum

Dreys were actively searched for within the study area to provide evidence of the presence of Western Ringtail Possums. No evidence of Western Ringtail Possums were recorded during the survey. No scats or dreys were observed during the active searches undertaken within the study area, and no individuals were observed during nocturnal searches.

The majority of habitats within the study area are considered to be unsuitable for Western Ringtail Possums. Areas comprised of cleared annual pasture farmlands, plantation and historical mine rehabilitation do not provide habitat for this species (Figure 4). Areas with open scrubs that are lacking a well-connected mid-story and upper-story (i.e. the Hill Crest and Upper Hill Slope habitat type) are also considered unsuitable habitat for the Western Ringtail Possum.

The remaining three habitat types of the study area (Hill Slope, Drainage Flat and Minor Drainage Line) (Figure 4) provided poor or marginal habitat for Western Ringtail Possums. The habitats lack structured mid-story and upper-story strata and canopy connectivity that Western Ringtail Possums require. It is considered unlikely that a population of Western Ringtail Possums would inhabit the study area, and if individuals are occasionally present within the study area, they are not considered to be dependent on the habitats of the study area.

South-western Brush-tailed Phascogale

The South-western Brush-tailed Phascogale was assessed during the desktop assessment as likely to occur within the study area. No evidence of this species was recorded during the survey of the study area, with no individuals observed during nocturnal searches. The species has previously been recorded from habitat situated adjacent to the study area, specifically from within remnant regrowth Marri-Jarrah forest in close vicinity to the Powerline corridor (Biologic Environmental Survey 2011), approximately 1.5 km south-west of the Northern Bypass corridor (Harewood 2018b) and from numerous locations within the Mine Development Envelope (Biologic Environmental Survey 2018b).

This species is known to inhabit dry sclerophyll forests and open woodlands that contain hollow-bearing trees with a sparse ground cover (Woinarski *et al.* 2014). South-western Brush-tailed Phascogales rely on tree hollows for nesting. Although not observed, individuals may utilise the Hill Slope, Hill Crest and Upper Hill Slope, and Drainage Flat habitat types of the study area for foraging (Figure 4). None of the hollows assessed within the study area are considered to provide suitable nesting habitat for this species as they are too shallow.

Western Brush Wallaby

The Western Brush Wallaby was assessed during the desktop assessment as likely to occur within the study area. No evidence of this species was recorded during the survey of the study area. The species has previously been recorded from within the Mine Development Envelope from Jarrah-Marri forest habitat type (Biologic Environmental Survey 2018b).

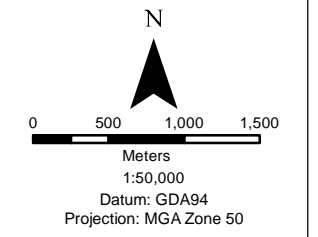
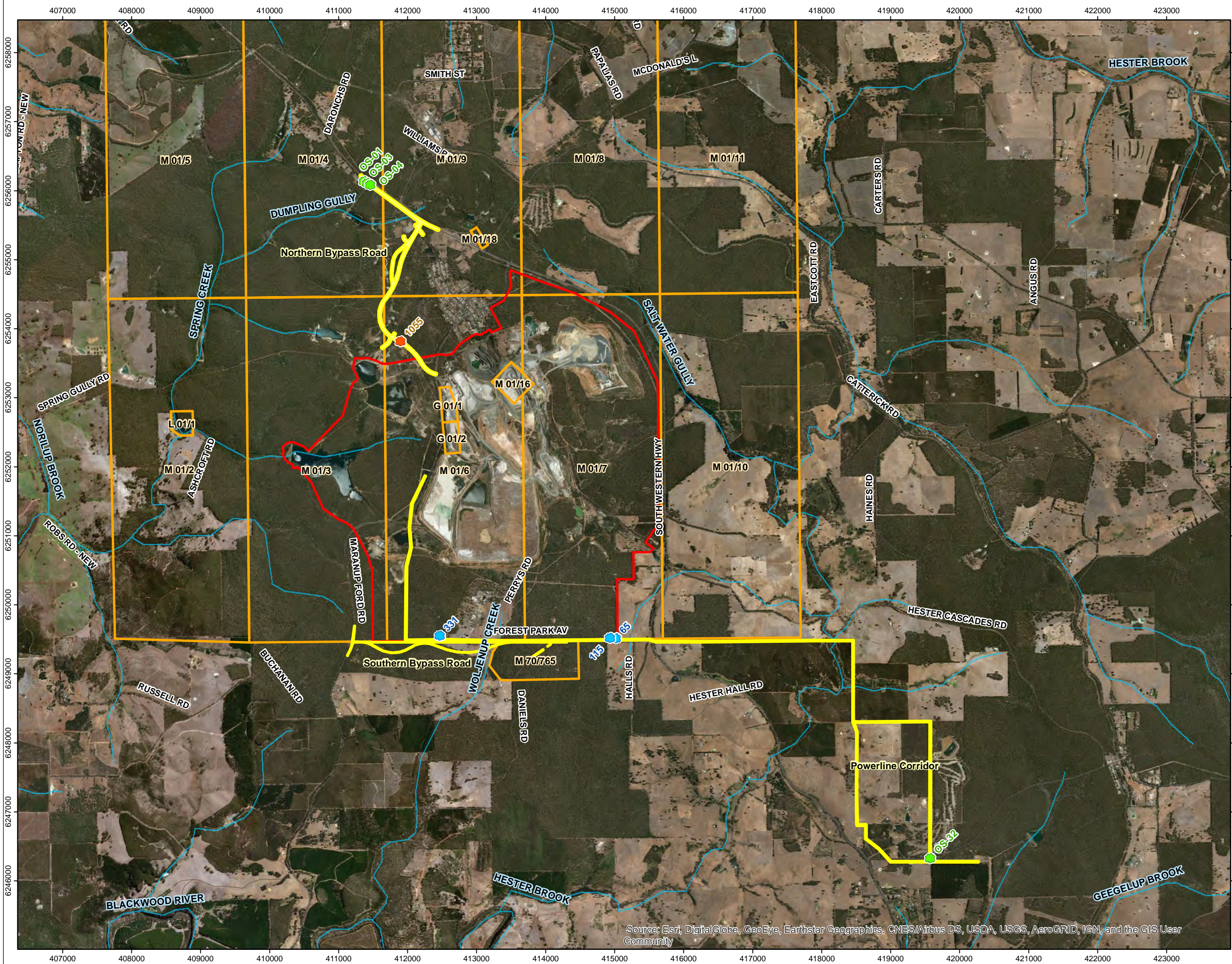
This species is known to inhabit a wide-range of habitats including low Banksia woodlands, Jarrah/Marri woodlands and moist Melaleuca lowlands, and it favours open, grassy areas (Wann & Bell 1997, Woinarski *et al.* 2014). Due to the nearby records and present of suitable habitat, the Western Brush Wallaby may utilise habitats within the study area on occasion.

TALISON LITHIUM

Figure 5
Tree hollows recorded inside and within 50m of the study area

Legend

- Mine Development
 - Talison
 - Study
- Tree Hollow Locations - within 50m**
- Biologic
 - Kirkby
 - Onshore



Date:	14/11/2018
Status:	Draft
Figure:	5
Sheet Size:	A3
Internal Reference:	TL_Hab_tree
Drawn by:	GSM
Requested by:	DB

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

4.0 SUMMARY

Talison currently operates a lithium mine at Greenbushes, situated approximately 250 km south of Perth in south-west Western Australia. As part of the current expansion of mining operations at the Greenbushes Mine, Onshore Environmental was commissioned to undertake a vertebrate fauna survey of three proposed infrastructure corridors surrounding the mine site.

The field survey was completed by a Senior Zoologist from Onshore Environmental working over a three-day period between the 4th and 7th October 2018.

No conservation significant fauna species were recorded from the study area during the survey. No introduced fauna species (feral animals) were observed during the survey.

A total of seven fauna habitat types were described and mapped from the study area, with a majority of the study area consisting of the Hill Slope habitat type, as well as areas of historical mine rehabilitation, cleared annual pasture, and Blue Gum and Pine plantation. The fauna habitats mapped within the study area are well represented in adjacent local areas, as well as regionally.

Habitats within the study area were assessed for the use by, and suitability for, Black Cockatoos. There was no evidence of foraging, roosting or breeding by Black Cockatoos observed from within the study area. Within the study area eight (8) trees with hollows were recorded and assessed, of which one was deemed suitable for use by Black Cockatoos; there were no signs of this hollow being utilised.

Dreys were actively searched for within the study area to provide evidence of the presence of Western Ringtail Possums. No evidence of Western Ringtail Possums were recorded during the survey (i.e. no scats or dreys were observed during the active searches, and no individuals were observed). The majority of habitats within the study area are considered to be unsuitable for Western Ringtail Possums.

The South-western Brush-tailed Phascogale and Western Brush Wallaby were assessed during the desktop assessment as being likely to occur within the study area, having previously been recorded during surveys of adjacent areas. The South-western Brush-tailed Phascogale may utilise the Hill Slope, Hill Crest and Upper Hill Slope, and Drainage Flat habitat types within the study area for foraging. No tree hollows within the study area were considered suitable for nesting by this species. Due to nearby records and present of suitable habitat, the Western Brush Wallaby may utilise habitats within the study area on occasion. No evidence of these species occurring within the study area were recorded during the survey.

5.0 STUDY TEAM

The Level 1 vertebrate fauna survey was planned, co-ordinated and executed by the following personnel:

Onshore Environmental Consultants P/L

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Project Staff

Dr Darren Brearley	PhD	Project Manager and Principal Botanist
Mr Michael Brown	BSc	Senior Zoologist
Mrs Breanne Menezies	BSc	Senior Environmental Advisor
Mr Todd Griffin	BSc	GIS and Mapping Specialist

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APPENDIX 1

Status codes for species listed on the IUCN 'Red List'

Category	Description
Extinct (EX)	A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.
Extinct in the Wild (EW)	A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.
Critically Endangered (CR)	A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered, and it is therefore considered to be facing an extremely high risk of extinction in the wild.
Endangered (EN)	A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered, and it is therefore considered to be facing a very high risk of extinction in the wild.
Vulnerable (VU)	A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable, and it is therefore considered to be facing a high risk of extinction in the wild.
Near Threatened (NT)	A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.
Least Concern (LC)	A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.
Data Deficient (DD)	A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases great care should be exercised in choosing between DD and a threatened status. If the range of a taxon is suspected to be relatively circumscribed, and a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.
Not Evaluated (NE)	A taxon is Not Evaluated when it has not yet been evaluated against the criteria.

APPENDIX 2

Conservation categories for species listed under the EPBC Act

Category	Description
Extinct	A species is extinct if there is no reasonable doubt that the last member of the species has died.
Extinct in the Wild	A species is categorised as extinct in the wild if it is only known to survive in cultivations, in captivity, or as a naturalised population well outside its past range; or if it has not been recorded in its known/expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
Critically Endangered	The species is facing an extremely high risk of extinction in the wild and in the immediate future.
Endangered	The species is likely to become extinct unless the circumstances and factors threatening its abundance, survival, or evolutionary development cease to operate; or its numbers have been reduced to such a critical level, or its habitats have been so drastically reduced, that it is in immediate danger of extinction.
Vulnerable	Within the next 25 years, the species is likely to become endangered unless the circumstances and factors threatening its abundance, survival or evolutionary development cease to operate.
Conservation Dependent	The species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

APPENDIX 3

Conservation categories for species listed under the WC Act

Fauna Species - Wildlife Conservation (Specially Protected Fauna) Notice 2017

Category	Description
Schedule 1	Fauna that is rare or is likely to become extinct as critically endangered fauna.
Schedule 2	Fauna that is rare or is likely to become extinct as endangered fauna.
Schedule 3	Fauna that is rare or is likely to become extinct as vulnerable fauna.
Schedule 4	Fauna presumed to be extinct.
Schedule 5	Migratory birds protected under an international agreement.
Schedule 6	Fauna that is of special conservation need as conservation dependent fauna.
Schedule 7	Other specially protected fauna.

APPENDIX 4

Conservation codes for Western Australian species

Threatened Species

Published as Specially Protected under the *Wildlife Conservation Act 1950*, and listed under Schedules 1 to 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice* for Threatened Fauna and *Wildlife Conservation (Rare Flora) Notice* for Threatened Flora (which may also be referred to as Declared Rare Flora).

Threatened fauna is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the *Wildlife Conservation Act*.

Threatened flora is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the *Wildlife Conservation Act*.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria.

Priority One: Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

Priority Two: Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

Priority Three: Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

Priority Four: Rare, Near Threatened and other species in need of monitoring

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

APPENDIX 5

Photographs of tree hollow recorded within the study area

Hollow ID	Classification
ON-01	Potential



ON-03	Unsuitable
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Hollow ID	Classification
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ON-04	Unsuitable
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ON-32	Unsuitable
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Hollow ID	Classification
1055	Unsuitable
No photo available	
65	Unused / likely unsuitable
	
115	Unsuitable
	

Hollow ID	Classification
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331	Unused / likely unsuitable
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ROLLING ACTION SHEET

ROLLING ACTION SHEET
January 2019 (encompassing Council Resolutions up to Council Meeting held 20 December 2018)

Where a tick is indicated this Item will be deleted in the next update

Council Decision No.	Wording of Decision	Responsible Officer	Past comments	Progress since last report	√
<p>C.28/1108 Public Access to Rear of Shops on Western Side of Hampton Street</p>	<p>That Council:</p> <ol style="list-style-type: none"> 1. Endorse in-principle the proposal to obtain an easement in gross over private land at the rear of shops west of Hampton Street between Henry Street and the existing public accessway opposite the public car park in Hampton Street. 2. That the CEO obtain the necessary legal advice to enable correspondence to be sent to affected property owners seeking their in-principle consent for the creation of an easement in gross for public access to the rear of their premises. 3. That upon receipt of responses from affected property owners the matter be brought back to Council for final determination, including consideration of how the proposed public accessway could be designed to take into account risk management of flooding. 	<p>T Clynch</p>	<p>Work on developing a draft easement document has been delayed.</p> <p>A request was to be prepared to a local solicitor requesting preparation of a draft/template easement document. This will be funded from general legal expenses account. Since then the CEO has made the decision to defer the preparation of the document pending completion of the Geegelup Brook Flood Study in case there are implications regarding land acquisition/tenure/use arising from that Study. The Flood Study was endorsed by Council at its November 2014 meeting so the easement proposal will be re-actioned (February 2015).</p> <p>Discussions held with solicitor on best process to progress this matter. Property ownership details currently being compiled for forwarding to solicitor (September 2015)</p> <p>This matter was discussed at quarterly briefing session held on 4 February 2016 where it was agreed that the proposal should be extended to include the car parking areas within the proposed</p>	<p>January 2019 No progress since last update.</p>	

		<p>easement. This can happen under the current resolution C.28/1108. A plan of the proposed easement will be prepared and correspondence forwarded to affected property owners (March 2016).</p> <p>Progress of this matter has been deferred pending finalisation of the proposed land exchange and creation of easement for the property at 145 Hampton Street (corner Henry Street).</p> <p>Shire staff will prepare a concept plan showing how the area can be developed for access and public parking and this will be used when corresponding with affected property owners about the proposal to create an easement (March 2018).</p> <p>November 2018 A concept plan was presented to the November Concept Forum.</p> <p>The differing levels of the land make provision of formalised parking on the eastern side of the laneway difficult as significant excavation and earthworks would be necessary. Therefore the plan proposes the following:</p> <ul style="list-style-type: none"> • Extend the single row of sealed and marked parking bays against the kerb line as far north as possible. • In order to accommodate the bays at the northern end the current access land will have to 		
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			<p>be shifted closer to the back of the shops.</p> <ul style="list-style-type: none"> • 11 sealed and marked parking bays could be provided on the eastern side of the laneway at its northern end as the slope of the land is suitable. • The balance of the land on the eastern side of the laneway could be sealed on its existing slope and wouldn't be formally marked for parking but could be used for informal parking. <p>The plan will be used in writing to property owners seeking approval to grant the Shire an easement for access and parking in order to formalise the existing use of the land. No compensation would be offered to property owners – rather the Shire would commit to funding the works. Prior to writing to property owners the CEO will engage a solicitor to prepare an easement document.</p>	
C.16/0809a Development of Car Parking and Proposed Town Square in Railway Reserve	That Council formally request the Public Transport Authority to initiate the process to gazette the land known as Railway Parade to a public road.	S Donaldson	<p>A written request has been forwarded to PTA and Heritage Council of WA, with favourable support received. Formal gazettal process by State Land Services commenced. Final plan agreed to by PTA and Brookfield Rail, pending finalisation of survey plans and land transfer. This process is still ongoing. Pending 'in-principle' support from Landgate as Railway Parade not formally named and initial response unfavourable. Response pending. At its February 2014</p>	<p>January 2019 DPLH advised on 12 December 2018 that Public Transport Authority has forwarded closure request for approval of the Minister for Transport, prior to gazettal. Expected timeframe unknown.</p>

			<p>meeting Council resolved to rename the road as an extension of Stewart Street and correspondence seeking approval for this has been forwarded to the Geographic Names Committee. Renaming as Stewart Street approved by Landgate in March 2014. Deposited Plan lodged with Landgate (March 2016).</p> <p>November 2018 Contact is to be made with the Department of Lands to determine what issue is specifically delaying the gazettal of the road.</p>	
C.14/0310 Preliminary Report – Plantation Exclusion Zones	<p>That Council:</p> <ol style="list-style-type: none"> 1. Agrees that any consideration of plantation exclusion zones should also address the Greenbushes, North Greenbushes and Hester townsites, the Yornup township and existing or proposed local development areas throughout the Shire municipality. 2. Directs the Chief Executive Officer to prepare preliminary documentation and present a report to a future meeting of Council to initiate a scheme amendment to Town Planning Scheme No. 3 seeking to modify Table 1 to prohibit 'Afforestation' within the Rural zone of the scheme area. 3. Directs the Chief Executive Officer to present all planning applications for 'Afforestation' for land within Town Planning Scheme No. 3 to Council for 	S Donaldson	<ol style="list-style-type: none"> 1. Noted. 2. Presented to Council in August 2011 for initial adoption. Advertising period closed on 8 December 2011. Amendment adopted by Council on 25 January 2012 and forwarded to WAPC for final approval. Amendment gazetted 8 June 2012. 3. Noted. 	<p>January 2019 Final draft Bushfire Hazard Strategy received for Staff review, to be presented to Council by March 2019. No progress made of Plantation Applications Policy Review.</p>

	<p>determination, until such time as the scheme amendment required by Point 2 above has been finalised.</p> <p>4. Directs the Chief Executive Officer to engage a suitably qualified consultant to undertake a Bush Fire Hazard Assessment of the Shire municipality, in consultation with FESA, and in accordance with the Planning for Bush Fire Protection document.</p> <p>5. Directs the Chief Executive Officer to commence a comprehensive review of the Shire's Plantation Applications Policy to address the following issues:</p> <ul style="list-style-type: none"> a) Definition of woodlots and shelter belts and list of acceptable locally native tree species. b) Location of surrounding development and adequate bush fire risk assessment and management, with reference to FESA Guidelines for Plantation Fire Protection. c) Other natural resource management issues identified in the Shire's Managing the Natural Environment Policy and Natural Environment Strategy. <p>6. Following completion of Points 4 and 5 above, the Chief Executive Officer is to present a report to a future meeting of Council for further consideration.</p>		<p>4. Funding application was successful – Council accepted funds at March 2011 meeting. Bushfire Hazard Strategy Consultant Brief finalised and tenders called for by 14 September 2011. Final report received and adopted by Council in August 2012 for purpose of future public consultation. Council in March 2016 resolved not to progress. See Point 6 below.</p> <p>5. Commenced but little progress to date, pending adoption of Bushfire Hazard Strategy. No further action progressed. New detailed Bushfire Hazard Level Assessment to be prepared for Local Planning Strategy, with recommendations for plantation exclusion (August 2017). November 2018 New draft Bushfire Hazard Assessment being prepared by consultant, to assist further consideration of plantation exclusion. December 2018 CEO and Manager Planning met with bushfire consultant on 28 November 2018. Bushfire Hazard Assessment nearing completion for presentation to Council early in 2019.</p> <p>6. Noted. Draft Bush Fire Hazard Strategy adopted by Council in August 2012 for the purpose of future public consultation along with scheme</p>		
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			amendments. See Item C.19/0812 below. No further action to be taken with strategy as per C.18/0216. No further action on policy review (May 2016).	
C.16/0513 Greenbushes Overnight Stay Facility	That Council: 1. Endorse the proposal to establish a short term caravan and camping transit park (6 sites) at the Greenbushes Sportsground, adjacent to the old cricket pavilion. 2. Endorse the proposal to redevelop the old cricket pavilion to a “camper’s bunkhouse” with 4 bunks being provided. 3. Seek the approval of the Minister for Local Government for approval of the transit park and bunkhouse 4. Consider allocation of a sum of \$6,000 in the 2013/14 budget for development of the transit park and hikers bunkhouse.	T Clynch	An application has been submitted to the Department of Local Government (October 2013). Approval for the use of the land as a transient caravan park has been granted (subject to conditions) by the Department of Lands. The approval of the Minister for Local Government is now required and an application is being submitted (September 2014). Concerns have been raised by Water Corporation due to proximity to Greenbushes water supply and it appears that until such time as the water supply dam is discontinued (as proposed under new integrated water supply project) the transit caravan park will be deferred (May 2015). Progression of this proposal can be seen as a linkage to Council’s request for acquisition of the Dumpling Gully Precinct – Resolution C.02/1216 (April 2017). November 2018 The processes involved in Council’s acquisition of the Dumpling Gully Precinct is far longer and complicated that originally estimated by all parties	January 2019 Refer item in Council agenda about de-vesting of Greenbushes water supply catchment area which is the first step in the Dumpling Gully dams being vested in the Shire for recreational and irrigation purposes.

			<p>however there is a commitment from both DBCA and Water Corporation to progress it.</p> <p>In the meantime the process for preparing a concept plan for the Greenbushes Sportsground precinct could be commenced and this will be referred to the next Concept Forum for discussion.</p>	
C.10/0315 Investigating the provision of an Organic Waste Collection Service	That Council investigate the possibility of introducing "Organic Waste" kerb side collection for the Shire.	T Clynch	<p>A meeting has been held with the relevant officer at the Shire of Donnybrook-Balingup to discuss various aspects of its organic waste collection service. This will assist in preparing a report to Council (February 2016).</p> <p>Processing of organic waste will be a consideration in the planning and eventual design of any regional waste site (March 2017).</p> <p>At the budget workshop held on 17 May 2018 the annual review of the Corporate Business Plan was workshopped. The updated Corporate Business Plan is being presented to the June council meeting and includes a new Action (2.5.1.9) requiring a desktop investigation into the financial cost and feasibility of establishing an organic waste service (June 2018).</p> <p>November 2018 Due to other work priorities this project hasn't progressed. The CEO recently met with the Acting CEO of the Shire of</p>	<p>January 2019 A meeting of the regional waste working group is being planned for February 2019.</p>

			<p>Augusta-Margaret River to obtain feedback on similar investigations it recently carried out. Progression of this project is earmarked for early 2019.</p> <p>December 2018 The CEO had a recent discussion with the CEO of the Bunbury Harvey Regional Council about arranging a council visit to the regional waste site to view and discuss organic waste issues. Further details to be arranged in early 2019.</p>		
C.03/0116 Request for Installation of Street Lighting – Pioneer Road	<ol style="list-style-type: none"> 1. That Council requests Western Power to prepare a design plan and estimate for lighting Pioneer Street between Nelson Street and Peninsula Road and that the costs of this be funded by council as unbudgeted expenditure. 2. Prior to any action being taken at dot point 1, financial support be sought from the Bridgetown Agricultural Society and the Blues at Bridgetown to meet one third each of the cost of installation. 3. That the Shire's portion of this cost be funded in the 2016/17 budget. 4. That the project be abandoned should the support funding from both Bridgetown Agricultural Society and Blues at Bridgetown be refused. 5. That Council also investigate the option of installation of pedestrian solar lighting. 	T Clynch	<p>Application being prepared for Western Power.</p> <p>Design and cost estimate obtained – correspondence to be forwarded to Blues at Bridgetown and Bridgetown Agricultural society enquiring about contributions to the project once a cost estimate for alternative solar lighting is obtained (June 2016).</p> <p>A quotation request has been submitted to a company that supplies solar and wind powered street lights and this can be presented to a budget workshop for consideration in the 2018/19 budget (March 2018).</p> <p>Funding for a solar light on Pioneer Street was considered at the Concept Forum held on 14 June 2018 with the recommendation being to include the necessary funds in the 2018/19 budget (June 2018).</p>	January 2019 Street light has been installed.	√

			<p>November 2018 The solar street light and pole has been ordered.</p> <p>December 2018 Pole has been delivered, awaiting delivery of solar light.</p>	
C.06/0116 Proposed Closure of Rights-of-Way for Partial Dedication as Public Roads and Amalgamation – Adjoining Barlee Street, Bridgetown	<p>That Council, in relation to the proposed closure of the two Rights-of-Way adjoining Barlee Street, Bridgetown, as per Attachment 6:</p> <ol style="list-style-type: none"> 1. Notes the public submissions received, as per Attachment 8, and the Shire staff responses in the Schedule of Submissions, as per Attachment 9. 2. Supports the proposed closure of ROW West (being Lot 66 on Diagram 4315) for ceding to the Crown for action as follows: <ol style="list-style-type: none"> a) Dedication of the 65 metre east-west portion of ROW West as a public road pursuant to s.52 and s.58 of the Land Administration Act 1997; and b) Amalgamation of the 82 metre north-south portion of ROW West with adjoining properties where practical. 3. Supports the proposed closure of 150 metre length of ROW East (being Lot 67 on Diagram 5653) for ceding to the Crown for dedication as a public road pursuant to s.52 and s.58 of the Land Administration Act 1997. 4. Directs the Chief Executive Officer to forward relevant information to the 	S Donaldson	<ol style="list-style-type: none"> 1. Noted. 2. Noted. 3. Noted. 4. Correspondence sent to Department Planning, Lands and Heritage on 4 February 2016. Responses pending (March 2016). Response received confirming documentation to acquire and dedicate the land was lodged at Landgate on 8 June 2018 (excluding 	<p>January 2019 No progress since last update.</p>

	Department of Planning and Department of Lands requesting approval in relation to Points 3. and 4. above.		western ROW portion adjoining Bridgetown High School (June 2018). November 2018 A list of all outstanding actions referred to the Department Planning, Lands and Heritage (as listed in this Rolling Action Sheet) is to be compiled and a meeting requested with relevant staff of that department in order to progress them to conclusion.	
C.06/0416 Bridgetown Railside Landscaping Project	That Council seek a review of the decision by Brookfield Rail regarding the proposed Bridgetown Railside Landscaping Project and seeks the assistance of the Minister for Transport and Minister for Regional Development in facilitating this review.	T Clynch	Discussions being held with Terry Redman's office on best way to progress this matter (June 2016). Brookfield Rail has recently appointed a community liaison officer and it is intended to meet that person soon to discuss various issues, including this issue (September 2016). A meeting was held with Brookfield Rail on 29 November 2016 and this issue was raised. Brookfield indicated it would reconsider its position on the landscaping and requested that a formal request be submitted based on the landscaping being groundcover only. That application is currently being prepared (February 2017). A new application has been submitted to Arc Infrastructure seeking approval to plant a 100 metre long, 3 metre wide landscaping strip from the town square southwards. The application has nominated the following ground cover	January 2019 A request has again been submitted to Arc Infrastructure seeking progression of this matter.

		<p>selections for consideration by Arc Infrastructure:</p> <ul style="list-style-type: none"> • Banksia blechnifolia • Banksia integrifolia • Hemiandra pungens (March 2018) <p>Discussions held with representative of Arc Infrastructure with indications given that approval to this proposal should be provided by June (May 2018).</p> <p>An update has been requested from Arc Infrastructure (July 2018). A follow-up reminder has been sent in August (September 2018).</p> <p>Arc Infrastructure has indicated that it is prepared to grant approval to this proposal once the Shire has signed off on a proposed interface agreement for rail crossings. The contents of the interface agreement have been subject to extensive discussions between the Shire and Arc Infrastructure with particular reference to an un-gazetted rail crossing on Pratt Road. A solution to this issue has been identified – being the ceding of Pratt Road from the railway reserve and this is being progressed and should be presented to Council in November (October 2018)</p> <p>November 2018 Presentation of the Pratt Road issue to Council couldn't occur in November as</p>		
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			Arc Infrastructure has yet to provide (despite several reminders) the necessary plans showing the extent of railway reserve to be ceded as a public road reserve. Arc Infrastructure has committed to approving the railside landscaping proposal once the Pratt Road issue has been resolved.	
C.04/0516 Proposed Investigation of Strategic Purchase for Somme Creek Improvements	That Council considers investigating the potential strategic purchase of Lot 84 (42) Forrest Street with the possibility of purchasing a part thereof, which encompasses the Somme Creek creek line and associated riparian edges, to be incorporated into the Somme Creek Parklands project.	T Clynch S Donaldson	<p>Correspondence sent to landowner on 22 August 2016. Meeting arranged for mid September 2016. Waiting for further contact from landowner (October 2016). Letter sent to Valuer General's Office on 17 November 2016, feedback pending (February 2017). Valuer General's Office feedback received. Follow up letter sent to landowner for further negotiation. Response received July 2017. Liaison with other landholders prior to further reporting to Council (August 2017).</p> <p>Negotiations are continuing with land owners but progress is really dependent upon securing an agreement with principle land owner as other parcels to be purchased would be amalgamated with that land. A revised offer is to be sent to that land owner so that this project can be progressed (October 2018).</p> <p>November 2018 The revised offer to the main land owner wasn't sent in October and is due to be sent by the end of November.</p> <p>December 2018</p>	<p>January 2019 Still waiting responses from three landowners. Shire staff to follow up via phone, email or correspondence. Report to Council expected February or March 2019.</p>

			Correspondence sent to four different landowners with potential offers to purchase. One favourable response received, pending feedback from three other landowners prior to presenting report to Council in January 2019.	
C.03/1116 RV Friendly Towns	That Council consider the registration and promotion of Bridgetown as an RV Friendly Town and Greenbushes as an RV Destination and request the CEO present a report back to Council on the requirements and implications of obtaining such registrations.	T Clynch	<p>Assessment against guidelines of Campervan and Motorhome Club of Australia Limited (CMCA) has commenced (March 2017).</p> <p>The requirement for a dump point is a mandatory requirement for registration as a RV Friendly Town and assessment of options is currently occurring to enable a report back to Council (April 2017).</p> <p>A meeting has recently been held with representatives of the Bridgetown Agricultural Society regarding development of a dump point at the showgrounds (June 2017).</p> <p>Greenbushes appears to comply with the requirements necessary to obtain "RV Friendly Destination" Status and the Visitor Centre Manager is in the process of submitting an application (February 2018).</p> <p>An application to Water Corporation is currently being prepared for a sewerage connection for a dump point at the railway car park. This will enable a cost estimate to be conducted. Funding of the dump point is a proposed new action in the updated corporate Business Plan</p>	<p>January 2019 No progress since last update.</p>

			<p>proposed to be presented to the budget workshop (May 2018).</p> <p>Discussions occurred at August Council Concept forum. Railway car park site confirmed. Costings and design for both sewerage and holding tank options being progressed (September 2018).</p> <p>November 2018 Discussion occurred at the November Concept forum about the proposed dump point in Bridgetown and direction was given to staff to further investigate waste water disposal options.</p> <p>Greenbushes site – refer comments for Resolution C.16/0513 on Page 5.</p>	
C.02/1216 Acquisition of Dumpling Gully Precinct	That Council request the CEO to investigate the options of the Shire of Bridgetown-Greenbushes taking ownership of the Dumpling Gully Dams (and associated area) commonly called the Dumpling Gully Precinct to incorporate the area into a Shire Reserve which can be developed for both passive and active recreation activities for the community and to manage and protect the Wetlands and associated unique fauna and flora of the region.	T Clynh	<p>Correspondence forwarded to Water Corporation on 23 December 2016. Response received 28 February 2017 indicating in-principle support to the proposal (April 2017).</p> <p>A meeting was held with the Water Corporation and Talison Lithium on 19.6.17 to further discuss the processes for de-proclamation of the drinking water source and the need to engage with DPAW (July 2017).</p> <p>A meeting is scheduled for 3 September with Water Corporation to progress this matter (September 2018).</p> <p>Advice received from Water Corporation that is continuing to work with</p>	<p>January 2019 Refer item in January agenda.</p>

			<p>Department of Water and Environmental Regulation (DWER) about excising the dam from State Forest (requires Cabinet approval) and resolving the water allocation issues. A follow up meeting with DWER is being planned (October 2018).</p> <p>November 2018 Refer comments for Resolution C.16/0513 on Page 5</p>	
<p>C.05/1216 Greenbushes Townsite Carpark</p>	<p>That Council:</p> <ol style="list-style-type: none"> 1. Adopts in principle the proposed Greenbushes Town Centre Carpark and Access Concept Plan. 2. Authorises the CEO to progress discussion with the landholders to acquire private property adjacent to the laneway at the rear of the shopping area on the corner of Blackwood Road and Stanifer Streets in Greenbushes for the purposes of creating a formalised car parking area. 3. Requests the CEO to finalise the plan to include appropriate drainage, road access and parking and traffic ways. 4. Requests the CEO to identify suitable funding opportunities for the project. 	<p>T Clynh</p>	<p>Letters sent to affected property owners in order to commence consultation on possible ceding of private land for the project (March 2017).</p> <p>Cr Scallan provided an update to the February 2018 Standing Committee meeting advising:</p> <ul style="list-style-type: none"> • Consultation still in progress • Owner now supportive of concept • Commercial discussions to commence • Once agreement in place discussions will be had with other landowners • Detailed design work now progressing in parallel <p>The CEO meet with Grow Greenbushes representatives on 31 May 2018 to discuss pathway for acquiring land and investigating grant opportunities (June 2018).</p>	<p>January 2019 Revised offers for land acquisition are to be sent to the property owners.</p>

			<p>An updated concept plan has been received and is being assessed (July 2018).</p> <p>Letters have been sent to land owners requesting written agreement to the proposals for land acquisition (September 2018).</p> <p>Responses have been received from 2 of the 3 land owners with the other advising that a response will be provided by early to mid November (October 2018).</p> <p>November 2018 Two grant applications have been submitted for this project and will be determined by March 2018.</p>		
C.03/0217 Potential Outsourcing of Selected Park Maintenance Functions	That the CEO report back to Council prior to or during the 2017/18 budget process on the implications and processes that would be required for Council to consider calling for expressions of interest from suitable contractors to take over maintenance of a number of Shire parks including but not limited to Memorial Park, Blackwood River Park, Geegelup Park and Thompson Park.	T Clynych	<p>Compilation of existing maintenance functions and associated resources currently occurring which is required for report to Council. Report being prepared for June meeting. Further reporting is to occur by the end of the year.</p> <p>Council workshop to occur in February.</p> <p>Workshop held on 22.2.18 with the directions from that workshop to be used to refine the service levels before formal presentation back to Council (March 2018)</p> <p>Investigation into processes and specifications for calling tenders for selected outsourcing is currently</p>	January 2019 No progress since last update.	

			<p>occurring (July 2018).</p> <p>November 2018 A tender document for mowing of passive open spaces is currently being prepared.</p> <p>December 2018 The completion of the tender document has been deferred until completion of the organisational restructure and new workforce plan. Discussion on this occurred at the Council workshop held on 10.12.18.</p>	
C.05/0217 Registration as a "Waterwise Council"	That Council endorse the recommendation from its Sustainability Advisory Committee and direct the CEO to submit a request to the Water Corporation for commencement of the process to becoming a "Waterwise Council".	T Clynh	<p>Request has been submitted (April 2017).</p> <p>Process for preparation and signing of a Memorandum of Understanding has commenced (August 2017)</p> <p>A reminder has been sent to Water Corporation requesting an update on the status of Council's registration (July 2018).</p> <p>Water Corporation has requested the Shire prepare a Waterwise Council Action Plan and this is to be progressed through the Sustainability Advisory Committee (September 2018).</p>	<p>January 2019 No progress since last update.</p>

<p>C.11/0817 Road Safety – Steere Street</p>	<ol style="list-style-type: none"> 1. That Council direct the CEO to assess the safety of the intersection of Steere Street, the Shire car park and Stewart Street. 2. If the intersection requires modification to increase safe intersection sight distances, Council directs the CEO to explore possible solutions and present them to Council for consideration at a future Council meeting. 	<p>L Crooks</p>	<ol style="list-style-type: none"> 1. Assessment completed. 2. Plans forwarded to Main Roads for approval re: remedial works; once Main Roads response received solutions will be presented to Council. EMWS will monitor and follow up on the progress with Main Roads if a response is not received. <p>Still awaiting response from MRWA Bunbury which has a significant resource deficiency (July 2018).</p> <p>MRWA officer attended meeting of Roadwise Committee on 31 July 2018 and indicated that in principle MRWA wouldn't object to removal of the first car parking bay near this intersection. Previous advice from MRWA was that it wouldn't allow the holding (stop) line at this intersection (Stewart Street) to be brought out further into Steere Street. Discussion of this issue occurred at the August Council Concept Forum where it was agreed that no funds would be included in the 2018/19 budget to progress changes to footpath or Steere Street. Instead investigations would occur into whether removal of box tree near Civic Lane entry would sufficiently improve sight distances so that removal of adjacent parking bay isn't necessary to improve sight distances at intersection (September 2018).</p>	<p>January 2019 Community consultation scheduled to commence in late January.</p>
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		<p>November 2018 This matter was a discussion item at November Concept Forum. The discussion points and outcomes from the forum were:</p> <ul style="list-style-type: none"> • Main Roads WA has indicated it wouldn't object to removal of parking bays adjacent to these intersections. Dependent upon whether footpath is to be extended to take in current parking bay areas a formal approval from Main Roads may be required. • Two bays are identified for removal – south side of Steere Street outside newsagent and north side of Steere Street between the two entries into civic centre car park. • Councillors supported the proposal to refer this proposal out for community consultation for a 35 day period. Included on the concept plan should be the removal of the box tree immediately adjacent to eastern entry of the civic centre car park. <p>December 2018 In accordance with Council policy community consultation over the Christmas period is being avoided with consultation to commence in mid to late January 2019.</p>		
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<p>C.08/0917 Preparation of Shire of Bridgetown-Greenbushes Local Planning Strategy and Local Planning Scheme No 6</p>	<p>That Council:</p> <ol style="list-style-type: none"> Notes that the draft Local Planning Strategy adopted by Council in November 2012 has not been endorsed by the Western Australian Planning Commission for the purpose of advertising and will not be further progressed. Notes the appointment of Lush Fire & Planning to prepare a Bushfire Hazard Level Assessment to guide preparation of a new Local Planning Strategy and Local Planning Scheme for the Shire of Bridgetown-Greenbushes. Pursuant to regulation 11 of the Planning and Development (Local Planning Schemes) Regulations 2015, directs the Chief Executive Officer to prepare a new Local Planning Strategy for all land within the Shire of Bridgetown-Greenbushes municipality, as per the Scheme Map Area marked in Attachment 9. Pursuant to section 72 of the Planning and Development Act 2005 and regulation 19 of the Planning and Development (Local Planning Schemes) Regulations 2015, directs the Chief Executive Officer to prepare a new Local Planning Scheme No.6, for all land within the Shire of Bridgetown-Greenbushes municipality, as per the Scheme Map Area in Attachment 9, and upon gazettal will revoke Town Planning Scheme No. 3 and Town Planning Scheme No. 4. 	<p>S Donaldson</p>	<ol style="list-style-type: none"> Noted. Noted. Preliminary investigations completed. Preliminary draft report received February 2018 for staff review. Meeting scheduled with Department of Planning, Lands and Heritage for 8 March 2018 for preliminary advice. Follow up meeting with DPLH staff on 27 March 2018, working with consultant on modifications. Draft report to be presented to Council in July 2018 (April 2018). Contact has since been made with a planning consultant to assist in completion of the Local Planning Strategy (June 2018). Consultant has been engaged (July 2018). Meeting held with DPLH staff on 4 September 2018 (September 2018). Noted. Noted. Correspondence sent to WAPC on 26 October 2017. Response received. <p>November 2018 Liaison with Shire's planning consultant and DPLH staff continuing.</p>	<p>January 2019 Final draft Bushfire Hazard Strategy received for Shire staff review. Further consultation with planning consultant undertaken in December 2018. Shire staff working through detailed zoning and lot analysis for all townsites and investigation areas.</p>	
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	<p>5. Pursuant to section 72 of the Planning and Development Act 2005 and regulation 20 of the Planning and Development (Local Planning Schemes) Regulations 2015, directs the Chief Executive Officer to forward to the Western Australian Planning Commission:</p> <p>a) A copy of Council's resolution deciding to prepare a new Local Planning Strategy and Local Planning Scheme No. 6 for the Shire of Bridgetown-Greenbushes; and</p> <p>b) A map marked Scheme Map Area signed by the Chief Executive Officer, on which is delineated the area of land proposed to be included in the Local Planning Strategy and Local Planning Scheme No. 6 for the Shire of Bridgetown-Greenbushes.</p> <p>6. Subject to receiving notification from the Western Australian Planning Commission pursuant to regulation 20 of the Planning and Development (Local Planning Schemes) Regulations 2015, directs the Chief Executive Officer to:</p> <p>a) publish a notice within a newspaper circulating in the Shire district of the passing of the resolution deciding to prepare a Local Planning Strategy and Local Planning Scheme No. 6 for the Shire of Bridgetown-Greenbushes.</p> <p>b) forward a copy of the notice to and</p>		<p>6. Noted. To be actioned.</p> <p>December 2018 Sections of draft LPS prepared by planning consultant currently being reviewed by Shire staff.</p>		
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	<p>seeking a memorandum in writing setting out any recommendations in respect of the resolution to:</p> <ul style="list-style-type: none"> (i) the local government of each district that adjoins the local government district; (ii) each licensee under the Water Services Act 2012 likely to be affected by the scheme; (iii) the Chief Executive Officer of the Department of Biodiversity, Conservation and Attractions assisting in the administration of the Conservation and Land Management Act 1984; and (iv) each public authority likely to be affected by the scheme, including the Department of Water and Environment Regulation pursuant to section 81 of the Planning and Development Act 2005. 				
<p>C.07/1217 Ratio Action Plan – Fair Value Accounting & Depreciation Expense</p>	<p>That Council endorse the following Ratio Improvement Action Plan:</p> <ul style="list-style-type: none"> • A full review of Council's asset depreciation expenditure is undertaken. Specifically, a review of each individual Council asset (at component level) of its condition, useful life, remaining useful life and residual value. 	<p>M Larkworthy</p>	<p>Relevant Staff will receive training in condition rating and useful life assessment as part of the Department's Asset Management Capacity Building program. Last training session is scheduled for 27 February 2018. (February 2018). Training complete. Inspections at component level of all Shire buildings is currently being undertaken. An assessment of furniture & equipment has been undertaken (May 2018).</p>		

	<ul style="list-style-type: none"> An assessment as to whether the Shire is revenue short or expenditure long by undertaking a comparison of neighbouring and similar sized Shires in relation to the level of own source revenue (i.e. rates, fees and charges) compared to expenditure. Develop a policy to guide future Council decisions in relation to the allocation of funds to renewal works versus upgrade works. 		<p>Inspection of Shire buildings is now complete. Data (including the remaining useful life of each component) is now being collated to inform Council's future depreciation expenditure for this asset class. A review of 'remaining useful life' for Council's infrastructure assets at component level will now commence. (September 2018).</p> <p>November 2018 Work is ongoing.</p> <p>December 2018 Work is ongoing Not yet commenced.</p> <p>This assessment will occur following completion of the 2017/18 annual financial statements (September 2018).</p> <p>November 2018 The 2017/18 annual financial statements are now complete and the audit report is pending. This assessment will now be undertaken and results presented to the first Audit Committee meeting to be held in 2019.</p> <p>December 2018 Data collection has commenced</p> <p>Policy will be developed following full review of Council's asset depreciation expenditure in point 1 above.</p> <p>November 2018 No progress since last report</p> <p>December 2018 No progress since last report as point 1 is ongoing</p>		
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	<ul style="list-style-type: none"> That various scenarios are modelled during the next review of Council's Long Term Financial Plan in relation to achieving minimum ratio benchmarks. The results of these scenarios to be workshopped with Council. 		<p>A review of Council's Long Term Financial Plan will commence in conjunction with the Corporate Business Plan and 10 Year Capital Works plans annual reviews.</p> <p>The draft Long Term Financial Plan will be workshopped at Council's October 2018 Concept Forum before formal presentation to Council (September 2018).</p> <p>LTFP presented to October Concept Forum, final draft will now be prepared and presented to Council in November. (October 2018)</p> <p>November 2018 The 2018/19 to 2032/33 Long Term Financial Plan is included in this agenda for Council endorsement.</p> <p>December 2018 Council adopted its Long Term Financial Plan (LTFP) in November. It should be noted that this will be an annual process. The workshop approach for Council's review of the draft LTFP including predicted ratio results is suggested.</p>		
C.06/0418 Proposed Road Closure for Amalgamation – Adjoining Roe Street, Bridgetown	<p>That Council, in relation to the proposed closure for amalgamation of the road adjoining Roe Street, Bridgetown, as per Attachment 8:</p> <ol style="list-style-type: none"> Notes the public submissions received, as per Attachment 10, and the Shire staff responses in the Schedule of Submissions, as per Attachment 11. Pursuant to s.58 of the Land Administration Act 1997 supports the proposed closure of 	S Donaldson	<ol style="list-style-type: none"> Noted. Noted. 	<p>January 2019 Decision of DPLH pending on proposed road closure. Overall audit of outstanding matters not progressed.</p>	

	<p>unmade and unnamed road adjoining Roe Street, Bridgetown, between Lot 3 (99) and Lot 4 (101) Roe Street, Bridgetown, for amalgamation with adjoining land.</p> <p>3. Directs the Chief Executive Officer to forward relevant information to the Department of Planning, Lands and Heritage seeking approval from the Minister for Lands in relation to Point 2.</p>		<p>3. Referred to DPLH on 2 May 2018, response pending.</p> <p>November 2018 A list of all outstanding actions referred to the Department Planning, Lands and Heritage (as listed in this Rolling Action Sheet) is to be compiled and a meeting requested with relevant staff of that department in order to progress them to conclusion.</p> <p>December 2018 No progress since November update.</p>	
<p>C.08/0718 Licence to Occupy – Greenbushes Railway Station</p>	<p>That Council:</p> <ol style="list-style-type: none"> Writes to Arc Infrastructure advising the Greenbushes Discovery Centre Incorporated has expressed a long-term goal to relocate the Greenbushes Railway Station Building to the Greenbushes Discovery Centre, 38 Blackwood Road, Greenbushes as an extension to that facility. Inform Arc Infrastructure that the Shire of Bridgetown Greenbushes and Greenbushes Discovery Centre have received letters from the Public Transport Authority giving permission for the relocation of the building when finances/grant funding opportunities enable this to occur. Enquire whether a Licence to Occupy 	<p>T Clynh</p>	<p>Correspondence has been forwarded to Arc Infrastructure (September 2018)</p> <p>November 2018 A response to the Shire's correspondence is yet to be received.</p>	<p>January 2019 No progress since last update.</p>

	<p>the land and buildings would be necessary given the agreement with the PTA for community end-use for the building.</p> <p>4. Assist the Greenbushes Discovery Centre finalise the business plan for consideration by all parties, including potential funding partners.</p>				
C.14/0718 Bridgetown Information Bays	<p>That Council:</p> <ol style="list-style-type: none"> 1. Endorses the removal of all structures and signage at the Information Bay at the southern end of Hampton Street. 2. Endorses the replacement of structures and signage at the Information Bay at the northern end of Hampton Street. 3. Endorses the installation of a new, static Information Bay structure and information boards at the information bay located at the northern end of Hampton Street based upon the concept at Attachment 14. 4. Determines to consider interactive technology options for the visitor centre in a review of Visitor Centre service levels to be conducted in 2018/19. 	E Denniss	<p>The Shire has been invited to submit an application in the Stronger Communities Program Round 4 by Rick Wilson's office. This project has been identified as a suitable option to apply for (seeking 50% of total project cost). Applications closed 11 October 2018 (September 2018). Rick Wilson's office has verbally advised that the Shire's application did not make the funding round for October but will be included in the January non-competitive round (October 2018).</p> <p>November 2018 No progress since last report.</p> <p>December 2018 Email sent to Rick Wilson's office seeking assurance/confirmation of the opportunity for consideration in January, response pending.</p>	January 2019 Rick Wilson's Office has advised that the exact date has not been set for the next funding round. They will contact us in February with further information.	
C.03/0818 Installation of Condom Dispensing Machines in Library Toilets	<p>That Council approves the installation of condom dispensing machines in the male and female toilets at the Bridgetown Regional Library subject to the following conditions:</p> <ol style="list-style-type: none"> 1. The machines are being installed on a 6 month trial basis after which a review into making the installations permanent 	T Clynych	<p>Advice of the Council decision was conveyed to Blackwood Youth Action.</p> <p>November 2018 Advice has recently been received from Blackwood Youth Action that it is progressing the acquisition and</p>	January 2019 No progress since last update.	

	<p>will be held.</p> <ol style="list-style-type: none"> 2. That Blackwood Youth Action is responsible for purchase of the dispensing machines and purchase of stock noting that the CEO has discretion to provide a one-off monetary donation to assist in this initiative. 3. That the Shire will be responsible for installation of the dispensing machines, storage of stock (condoms) and replenishing the stock in the machines using the stock purchased by Blackwood Youth Action. 4. That signage (posters) be displayed in the male and female toilets explaining the importance of having free condom dispensing machines in our community. 5. That Blackwood Youth Action coordinates the making of suitable posters for display in the male and female toilets requesting respect for the initiative and responsible use of stock 		<p>installation of the machines and stock.</p> <p>December 2018 The CEO provided a \$200 donation to BYA to assist with purchase of machines and stock.</p>		
<p>C.06/0818 Cats Local Law</p>	<p>That Council:</p> <ol style="list-style-type: none"> 1. Notes the submissions received from Mr B Bebbington and the Department of Local Government, Sport and Cultural Industries. 2. Resolves not to proceed with the Cats Local Law 2018 that was advertised on 	<p>G Norris</p>	<p>Advertising has commenced, submissions about the proposed Local Law will be accepted up to the close of business on 25 October 2018 (September 2018)</p> <p>November 2018 At the close of the submission period 1 submission had been received and this</p>	<p>January 2019 Refer item in Council agenda</p>	<p>√</p>

	<p>11 April 2018.</p> <p>3. In accordance with Section 3.12 of the Local Government Act 1995, Council gives notice that it proposes to make a new Shire of Bridgetown-Greenbushes Cats Local Law 2018 as per Attachment 4. The purpose of the proposed Local Law is to repeal the Shire of Bridgetown-Greenbushes Keeping and Welfare of Cats Local Law and to provide Council under the proposed Cats Local Law 2018 with measures in addition to those under the Cat Act 2011 to control the keeping of cats. The effect of the proposed Local Law is to control the number of cats that can be kept, the places where cats can be kept and to control the activity of cats where a nuisance is caused.</p>		<p>will be assessed and the matter presented to the December Council meeting.</p> <p>December 2018 Presentation of this item has been deferred to the January 2019 meeting.</p>	
<p>C.09/0818 Library Green Roof</p>	<p>That Council approves the following revised scope of works for the library green roof noting:</p> <ul style="list-style-type: none"> a) All existing vegetation to be removed; b) No weed matting to be installed; c) New plantings of a mix of <i>Carpobrotus</i> (also known as Pigface) and <i>Mesembryanthemum</i>; and d) Inspection and minor vegetation management program (no more than twice per annum). 	T Clynch	<p>Works to be scheduled.</p> <p>November 2018 Staff are in the process of employing a Elevated Work Platform contractor now that the weather is more suitable.</p> <p>December 2018 The works commenced in the late November with removal of all vegetation and spraying. As a significant seed bank has built up regermination of weeds and vegetation is expected so the roof will be sprayed again in 6-8 weeks with the new “pigface” vegetation to be planted in autumn.</p>	<p>January 2019 No progress since last update.</p>

<p>C.12/0818 Blackwood River Foreshore Development</p>	<p>That Council:</p> <ol style="list-style-type: none"> Notes and receives the concept plans provided by Emerge Associates for the Blackwood River Foreshore Development from the walk bridge to the western end of the Old Rectory Walk (13 hectares). Determines to seek community comment on the concept plans for a period for 5 weeks from Monday 3 September to Friday 5 October 2018 inclusive, prior to the plans being presented back to Council for consideration of formal endorsement. 	<p>M Richards</p>	<p>Community consultation currently in progress (September 2018).</p> <p>An agenda item on this project is included in the October 2018 Council meeting – seeking an extension of the community consultation period (October 2018).</p> <p>November 2018 Consultation period was extended as per C.07/1018.</p> <p>December 2018 It is intended to hold a Council Workshop to discuss the matters raised from the Community Consultation process. A date will be determined in consultation with Councillors.</p>	<p>January 2019 Consultation completed. The feedback from the extended consultation period and project will be on the agenda for the February 2019 Concept Forum.</p> <p>This resolution is superseded by Resolution C.07/1018.</p>	<p>√</p>
<p>C.14/0818 ACROD Parking</p>	<p>That Council:</p> <ol style="list-style-type: none"> Directs the CEO to install an ACROD parking bay in the Bridgetown Community Resource Centre car park area in place of the proposed Post Office car park ACROD parking bay. Reduce the time limit placed on the 6 parallel car parking bays on the western side of Hampton Street outside IGA from 2 hours to 1 hour. Reduce the time limit on the two parking bays on the western side of Hampton Street that are currently infirm bays from 2 hours to 20 minutes. The current infirm bay at the front of the 	<p>S Gannaway</p>	<p>Works to be scheduled.</p> <p>November 2018 Sourcing of suitable contractors in progress</p> <p>December 2018 No progress since November update.</p>	<p>January 2019 Works have commenced.</p>	

	post office be changed to a 20 minute parking bay.				
C.15/0818 Proposed Land Purchase – Western Portion of Lot 150 (39) Hampton Street, Bridgetown	That Council: 1. Resolves to purchase the western portion of Lot 150 (39) Hampton Street, Bridgetown (currently on Diagram 60989 Volume/Folio 2763/62) for the sum of \$43,000 plus subdivision and legal costs of approximately \$7,000, as shown in Attachment 1. 2. That the unbudgeted expenditure of \$43,000 purchase price and estimated \$7000 subdivision and legal (transfer of land) costs be funded by withdrawal of an amount of up to \$50,000 from the Land & Buildings Reserve. 3. That the CEO be authorised to submit an application to the Western Australian Planning Commission for the subdivision of Lot 150 (on Diagram 60989), with the western portion to be amalgamated with adjoining Lot 14 (on Plan 222161).	S Donaldson	The land owner has formally accepted the offer and the process to subdivide the land off the existing property has commenced (October 2018). November 2018 Subdivision application posted to WAPC on 12 November 2018. December 2018 No progress since November update.	January 2019 WAPC decision still pending.	
C.07/1018 Blackwood River Foreshore Development	That Council extends the opportunity for community consultation for the Blackwood River Foreshore development concept plans for a further 3 weeks commencing on Monday 29 October and concluding on Friday 16 November.	M Richards	November 2018 Extended consultation period has ended. A report to Council will be submitted in December detailing all community feedback received during the consultation period. December 2018 It is intended to hold a Council Workshop to discuss the matters raised from the Community Consultation process. A date will be determined in consultation with	January 2019 The feedback from the extended consultation period and project will be on the agenda for the February 2019 Concept Forum.	

			Councillors.		
C.02/1118 Construction of Turning Pocket at Entrance to Bridgetown Gardens Estate	That Council: <ol style="list-style-type: none"> 1. Reaffirm its intent to construct a turning pocket on Kangaroo Gully Road at the intersection of Claret Ash Rise when necessary. 2. Seek legal advice as to how the Trust Funds can be allocated to works identified by the Council of Owners. 	T Clynch	December 2018 The procurement of legal advice has yet to be progressed.	January 2019 Legal advice has been sought and this matter is expected to be presented to February 2019 Council meeting.	
C.08/1218 Proposed Road Closure – Portion of Perry Road, Greenbushes	That Council notes the submissions received, as per Attachment 8, and pursuant to section 58 of the Land Administration Act supports closure of the northern portion of Perry Road, Greenbushes, as per Attachment 9, for conversion to Unallocated Crown Land, and directs the Chief Executive Officer to seek support from the Minister for Lands through the Department of Planning, Lands and Heritage.	S Donaldson		January 2019 Correspondence sent to Department of Planning, Lands and Heritage. Support received from Land Use Planning Division (Regional South West Office) on 16.1.2019. Decision pending from Land Use Management Division (Perth office).	

From: Steven Elliott [<mailto:steven.elliott@dlgsc.wa.gov.au>]
Sent: Thursday, 25 October 2018 10:30 AM
To: BTNSHIRE
Subject: I-EML201851426 - Department of Local Government - Comments on proposed cat local law (2)

Dear Ms Lockley

This email is regarding the revised version of the Shire's proposed cat local law, which replaced the draft proposed earlier this year.

No significant issues were identified, but some minor comments are noted below:

Cats Local Law 2018

1. Minor edits

The following minor edits are suggested:

- Clause 2.4(2) – Replace the dash with “to”.
- Clause 2.3:
 - Remove the single quote marks from the clause title.
 - In the clause text, italicise “*standard number of cats*” for consistency.
- Clause 2.8: Delete “2.8”.

The Shire should also ensure that all references and cross references are accurate, particularly if any further changes are made prior to the law being submitted to Council.

Minister's Directions – pursuant to s 3.12(7) of the Local Government Act 1995

Please note: once the Shire has published a local law in the *Government Gazette*, the Shire must comply with the requirements of the Minister's *Local Laws Explanatory Memoranda Directions 2010*. The Shire must, within 10 working days of the Gazettal publication date, forward the signed Explanatory Memoranda material to the Committee at the current address:

Committee Clerk
Joint Standing Committee on Delegated Legislation
Legislative Council Committee Office
GPO Box A11
PERTH WA 6837
Email: delleg@parliament.wa.gov.au
Tel: 9222 7404
Fax: 9222 7805

A copy of the Minister's Directions and Explanatory Memoranda forms can be downloaded from the Department of Local Government and Communities website at www.dlgsc.wa.gov.au. Failure to comply with the Directions may render the local law inoperable.

Please note that my comments:

- have been provided to assist the Shire with drafting matters in relation to the local law;

- do not constitute legal advice;
- have been provided in good faith for the Shire's consideration; and
- should not be taken as an approval of content.

The Shire should ensure that a detailed editorial analysis of the proposed local law has been undertaken and that the content of the local law is in accordance with the Shire's policies and objectives.

Kind regards,

Steven Elliott

Senior Legislation Officer

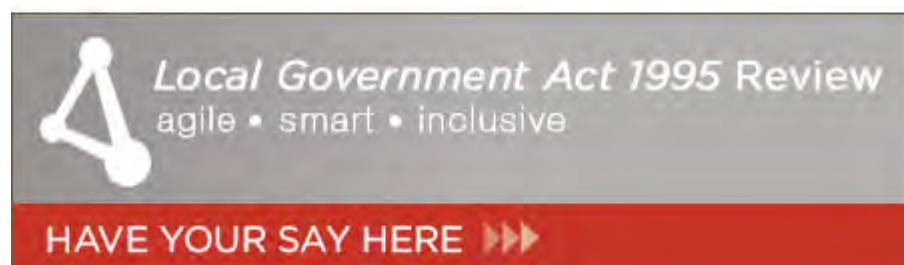
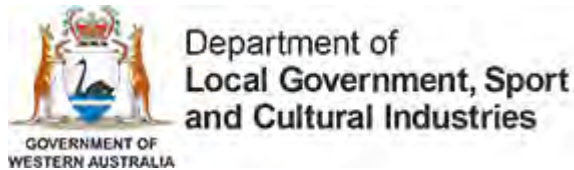
Department of Local Government, Sport and Cultural Industries
140 William Street, Perth WA 6000
GPO Box R1250, Perth WA 6844

Telephone +61 8 6552 1642

Email steven.elliott@dlgsc.wa.gov.au

Web www.dlgsc.wa.gov.au

The Department acknowledges the Aboriginal peoples of Western Australia as the traditional custodians of this land, and we pay our respects to their Elders past and present.



SHIRE OF BRIDGETOWN-GREENBUSHES

CATS LOCAL LAW 2018

Submission lodged by B Bebbington

Limit on number of cats

The local law itself confirms that it sets a limit on the number of cats that may be kept at a premise.

It appears that the limit is 3 cats over the age of six months, however-

2.2 "...this local law limits the number of cats that may be kept at any premises within the district..."

"2.3 'Standard number of cats'

For the purposes of the definition of **standard number of cats** in regulation 4(1) of the *Cat (Uniform Local Provisions) Regulations 2013*, no more than 3 cats may be kept on premises at which a member of a cat organisation is not ordinarily resident."

2.3 indicates that if a member of a cat organisation is ordinarily resident, then that premises can have more than 3 cats over the age of six months but does not have to be an approved premise as per 2.2 nor do they have to be an animal carer or shelter for that cat organisation.

Any member of the public can join a "cat organisation" by subscribing and paying any fees, but this does not mean that they are acting on behalf of that organisation. The local law does not allow a person from a cat organisation to seek approval for more than 3 cats, only a prescribed premise.

The wording of 2.3 should either stipulate that it can only be approved prescribed premises, or if a cat organisation is to be retained, that approval must be granted for such a premises, which is not a prescribed premises.

Conditions 2.6 (a)

"(a) that the premises must be adequately fenced (and premises will be taken not to be adequately fenced if there is more than one escape of a cat from the premises);"

This does not allow for any exception if there is unlawful action taken by a person or persons who enter the premises, such as cutting fences or locks to retrieve an animal.

Under the definite wording of the local law, this would mean that the premises are not adequately fenced and would lose its approval.

There have been instances where, albeit more with dogs, unlawful entry and removal of animals has occurred, often from Local Government operated facilities.

It would therefore be more appropriate to make provision for an exemption where unlawful access has occurred, to protect the applicant.

Condition 2.6 (d)

This condition remains in the local law, despite my raising concerns about it previously.

“(d) that, without the consent of the local government, the approved person must not substitute or replace any cat that dies or is permanently removed from the premises.”

The approved person at the prescribed premises, being “-

“(a) a cat management facility operated by a body prescribed as a cat management facility operator under the *Cat Regulations 2012*;
(b) a cat management facility operated by the local government;
(c) a veterinary clinic or veterinary hospital as defined under section 2 of the *Veterinary Surgeons Act 1960*, but only in relation to cats kept on those premises for treatment; or
(d) a commercial cat boarding facility which is subject of a valid planning approval granted under a local planning scheme.

2.6 (d) means that whenever the vet takes in a cat for overnight treatment it must notify the shire, obtain approval and then when that cat leaves and another is brought in, must repeat the procedure.

A cat boarding facility would have to do the same, every time someone leaves their cat the approved person must advise the shire, apply for the variation, and then when the cat leaves, repeat the process.

This clause is possibly only retained from the earlier local law which indicated an ability for a landowner or resident to keep more than 3 cats on a premises, other than those specified as prescribed premises.

The approval for a prescribed premises, which is the only one the shire can issue under this local law, should specify a maximum number of cats that can be kept at each of the four prescribed premises types, without the need to specify individual cats and movements of cats.

The retention of this clause indicates that the intent of the local law is to allow persons other than prescribed premises to have more than 3 cats over the age of six months, but the clauses specifically refer to prescribed premises, not premises and the limit set by the local law is 3.

If the intention is to allow individuals to have more than 3 cats over the age of six months, with approval, then the local law would have to be redrafted to allow for this scenario.

Renewal to allow for variation

“2.7 (2) On the renewal of an approval, the conditions of the approval that applied

immediately before the renewal continue to have effect”.

This could be extended to include an ability to impose a variation under 2.9 (1) so that it clarifies that the conditions immediately before plus any variation.

Transfer of approval date should be on the form

There is no form appended, however the form should state the intended date of transfer, to accommodate pre-approval as a condition, for example of the purchase of the facility. The ability to specify a date of approval is allowed for in 2.8 5(b) but not referred to in 2.8.2.

Time for compliance with variation or cancellation.

2.9 Variation or cancellation of an approval

(1) The local government may, at any time, vary the conditions of an approval by giving written notice to the permit holder and specifying the date on which the changes will become effective.

The local law does not specify any minimum timeframe for which compliance is required. It specifies that an effective date must be included but does not give notification timeframes to allow for the approved person to implement the changes.

If the change is minor, such as a reduction in the maximum number of cats, the timeframe can be small, however if the variation involves fencing or structural changes, which in turn, require approval from the local government, then these timeframes should be allowed for before an effective date can occur.

In the event of a cancellation, due to issues of animal cruelty or concerns raised by the RSPCA, I would support in effect, immediate cancellation being permitted with the local government using its best endeavours to rehome the affected animals (temporarily in its own facilities if possible) with the assistance of welfare organisations such as the RSPCA.

The local law does not specify an ability to make an effective date for cancellations, only that it can cancel the approval. For example, a cancellation in “x” days to allow rehoming or cancelled as of “x” date where an approved person applies for a cancellation due to cessation of activities.

B Bebbington
RMB 313a Bridgetown 6255
77 Carunup Brook Road Sunnyside 6256
97617535
Email bebbington@westnet.com.au

Response to Cats Local Law 2018 Submission from Mr Bebbington

Mr Bebbington's concerns are printed in 'blue' ink, officer responses are in 'black' ink.

It should be stated that the Local Law is not to replicate issues covered in the following legislation:

- Cat Act 2011
- Cat Regulations 2012
- Cat (Uniform Local Provisions) Regulations 2013

Clause	Comments
2.2 /2.3	<p>Limit on number of cats</p> <p>The local law itself confirms that it sets a limit on the number of cats that may be kept at a premise. It appears that the limit is 3 cats over the age of six months, however-</p> <p>2.2 "...this local law limits the number of cats that may be kept at any premises within the district..."</p> <p>"2.3 'Standard number of cats'</p> <p>For the purposes of the definition of standard number of cats in regulation 4(1) of the <i>Cat (Uniform Local Provisions) Regulations 2013</i>, no more than 3 cats may be kept on premises at which a member of a cat organisation is not ordinarily resident."</p> <p>2.3 indicates that if a member of a cat organisation is ordinarily resident, then that premises can have more than 3 cats over the age of six months but does not have to be an approved premise as per 2.2 nor do they have to be an animal carer or shelter for that cat organisation.</p> <p>Any member of the public can join a "cat organisation" by subscribing and paying any fees, but this does not mean that they are acting on behalf of that organisation. The local law does not allow a person from a cat organisation to seek approval for more than 3 cats, only a prescribed premise.</p> <p>The wording of 2.3 should either stipulate that it can only be approved prescribed premises, or if a cat organisation is to be retained, that approval must be granted for such a premises, which is not a prescribed premises.</p> <p>The '<i>prescribed premises</i>' is any premises within the district except those listed in the Local Law. Therefore no premises is allowed to have more than 3 cats unless a resident of the premises is a member of one of the following Cat Organisations:</p> <ul style="list-style-type: none"> • Cat Owners Association of WA • Feline Control Council of WA • Australian National Cats <p>(All of the above organisations provide services related to the registration of pedigree cats and companion cats; and services for owners, breeders and exhibitors).</p> <p>Regulation 7 of the Cat (Uniform Local Provisions) Regulations 2013 sets out the</p>

	<p>limits on the number of cats kept at certain premises by a member of a cat organisation therefore it is not required to be replicated in the Local Law.</p> <p>Regulation 8 of the same Regulations allows for a person who is ordinarily resident at prescribed premises in a local government district to apply to the local government for approval to keep an additional number of cats at the premises.</p> <p>Regulation 5 of the same Regulations states that a cat under the age of 6 months is not to be included when calculating the number of cats ordinarily kept at prescribed premises.</p>
2.6(1)(a)	<p>“(a) that the premises must be adequately fenced (and premises will be taken not to be adequately fenced if there is more than one escape of a cat from the premises);”</p> <p>This does not allow for any exception if there is unlawful action taken by a person or persons who enter the premises, such as cutting fences or locks to retrieve an animal.</p> <p>Under the definite wording of the local law, this would mean that the premises are not adequately fenced and would lose its approval.</p> <p>There have been instances where, albeit more with dogs, unlawful entry and removal of animals has occurred, often from Local Government operated facilities.</p> <p>It would therefore be more appropriate to make provision for an exemption where unlawful access has occurred, to protect the applicant.</p> <p>Clause 2.6(1) of the Local Law does not include an ‘exemption where unlawful access/entry has occurred’ and if a cat was unlawfully released or stolen common sense would prevail and a penalty would not be imposed as has been the case from time to time with dogs.</p>
2.6(1)(d)	<p>This condition remains in the local law, despite my raising concerns about it previously.</p> <p>“(d) that, without the consent of the local government, the approved person must not substitute or replace any cat that dies or is permanently removed from the premises.”</p> <p>The approved person at the prescribed premises, being “-</p> <p>“(a) a cat management facility operated by a body prescribed as a cat management facility operator under the <i>Cat Regulations 2012</i>; (b) a cat management facility operated by the local government; (c) a veterinary clinic or veterinary hospital as defined under section 2 of the <i>Veterinary Surgeons Act 1960</i>, but only in relation to cats kept on those premises for treatment; or (d) a commercial cat boarding facility which is subject of a valid planning</p>

	<p>approval granted under a local planning scheme.</p> <p>2.6 (d) means that whenever the vet takes in a cat for overnight treatment it must notify the shire, obtain approval and then when that cat leaves and another is brought in, must repeat the procedure.</p> <p>A cat boarding facility would have to do the same, every time someone leaves their cat the approved person must advise the shire, apply for the variation, and then when the cat leaves, repeat the process.</p> <p>This clause is possibly only retained from the earlier local law which indicated an ability for a landowner or resident to keep more than 3 cats on a premises, other than those specified as prescribed premises.</p> <p>The approval for a prescribed premises, which is the only one the shire can issue under this local law, should specify a maximum number of cats that can be kept at each of the four prescribed premises types, without the need to specify individual cats and movements of cats.</p> <p>The retention of this clause indicates that the intent of the local law is to allow persons other than prescribed premises to have more than 3 cats over the age of six months, but the clauses specifically refer to prescribed premises, not premises and the limit set by the local law is 3.</p> <p>If the intention is to allow individuals to have more than 3 cats over the age of six months, with approval, then the local law would have to be redrafted to allow for this scenario.</p> <p>As mentioned above <i>prescribed premises</i> is any premises within the local government district except those listed in clause 2.2(a); (b); and (c). Therefore those premises listed in clause 2.2(a), (b) or (c) do not apply to clause 2.6 (1)(d). The intent of this sub-clause is that every cat aged over 6 months must be microchipped and registered, therefore the sub-clause is not to deny a person from having a new cat or replace a cat that may have died, but rather the new or replacement cat must have local government approval by way of being registered.</p> <p>The Cat Act 2011 does allow for a person to apply to keep more than the standard number of cats on premises with Regulations 8, 9 and 10 of the Cat (Uniform Local Provisions) Regulations 2013 providing a local government with guidance in dealing with an application.</p>
2.7(2)	<p>Renewal to allow for variation</p> <p>“2.7 (2) On the renewal of an approval, the conditions of the approval that applied immediately before the renewal continue to have effect”.</p> <p>This could be extended to include an ability to impose a variation under 2.9 (1) so that it clarifies that the conditions immediately before plus any variation.</p>

	<p>As clause 2.9(1) allows the local government to vary conditions of an approval at anytime, officers don't see the need to make any amendment to clause 2.7(2).</p>
2.8	<p>Transfer of approval date should be on the form</p> <p>There is no form appended, however the form should state the intended date of transfer, to accommodate pre-approval as a condition, for example of the purchase of the facility. The ability to specify a date of approval is allowed for in 2.8 5(b) but not referred to in 2.8.2.</p> <p>The forms are 'in-house', not 'statutory' and do not need to be appended to the Local Law. The 'date of approval' will be inserted in the approval given to the applicant. The application form mentioned in sub-clause 2.8(2)(a) would have an area to insert the proposed date when the transfer of the approval is to take place. This will be noted by the processing officer.</p>
2.9	<p>2.9 Variation or cancellation of an approval</p> <p>(1) The local government may, at any time, vary the conditions of an approval by giving written notice to the permit holder and specifying the date on which the changes will become effective.</p> <p>The local law does not specify any minimum timeframe for which compliance is required. It specifies that an effective date must be included but does not give notification timeframes to allow for the approved person to implement the changes.</p> <p>If the change is minor, such as a reduction in the maximum number of cats, the timeframe can be small, however if the variation involves fencing or structural changes, which in turn, require approval from the local government, then these timeframes should be allowed for before an effective date can occur.</p> <p>In the event of a cancellation, due to issues of animal cruelty or concerns raised by the RSPCA, I would support in effect, immediate cancellation being permitted with the local government using its best endeavours to rehome the affected animals (temporarily in its own facilities if possible) with the assistance of welfare organisations such as the RSPCA.</p> <p>The local law does not specify an ability to make an effective date for cancellations, only that it can cancel the approval. For example, a cancellation in "x" days to allow rehoming or cancelled as of "x" date where an approved person applies for a cancellation due to cessation of activities.</p> <p>Timeframes are not specified in clause 2.9 as common sense would need to prevail if an approval was to be cancelled especially if animals needed to be rehoused or in the case where conditions are to be varied ie; for construction of fences, etc.</p>

CAT ACT 2011
LOCAL GOVERNMENT ACT 1995

SHIRE OF BRIDGETOWN-GREENBUSHES
CATS LOCAL LAW 2019

Under the powers conferred by the *Cat Act 2011*, the *Local Government Act 1995* and all other powers enabling it, the Council of the Shire of Bridgetown-Greenbushes resolved on to make the following local law.

PART 1—PRELIMINARY

1.1 Title

This is the *Shire of Bridgetown-Greenbushes Cats Local Law 2019*.

1.2 Commencement

This local law comes into operation 14 days after the date of its publication in the *Government Gazette*.

1.3 Repeal

The *Shire of Bridgetown-Greenbushes Keeping and Welfare of Cats Local Law 2010* as published in the *Government Gazette* on 11 November 2010 and as amended in the *Government Gazette* on 5 August 2011 is repealed.

1.4 Terms used

(1) In this local law, unless the context otherwise requires—

Act means the *Cat Act 2011*;

applicant means a person who applies for an approval;

application means an application for an approval;

approval means approval under regulation 9 of the *Cat (Uniform Local Provisions) Regulations 2013* and Part 2 of this local law;

approved person means the person to whom an approval is granted;

authorised person means a person appointed by the local government to perform the functions conferred on an authorised person under this local law;

cat has the meaning given to it in the Act;

CEO means the Chief Executive Officer of the local government;

district means the district of the local government;

local government means the Shire of Bridgetown-Greenbushes;

local planning scheme means a local planning scheme made by the local government under the *Planning and Development Act 2005*;

nuisance means where the behaviour of a cat —

- (a) results in an activity or condition which is harmful or annoying and which gives rise to legal liability in the tort of public or private nuisance at law;
- (b) causes an unreasonable interference with the use and enjoyment of a person of his or her ownership or occupation of land; or
- (c) causes interference which results in material damage to land or other property on the land affected by the interference.

owner has the meaning given to it in the Act;

premises has the meaning given to it in the Act; and

veterinarian has the meaning given to it in the Act.

- (2) A term that is used in this local law and is not defined in subclause (1) has the same meaning given to it in the Act or, if not defined in the Act, the same meaning given to it in the *Cat Regulations 2012*, the *Cat (Uniform Local Provisions) Regulations 2013* or the *Local Government Act 1995*.

1.5 Application

This local law applies throughout the district.

PART 2—NUMBER OF CATS THAT MAY BE KEPT

2.1 Interpretation

For the purposes of applying this Part, a cat does not include a cat less than 6 months old.

2.2 Prescribed premises

For the purposes of the definition of **prescribed premises** in regulation 4(1) of the *Cat (Uniform Local Provisions) Regulations 2013*, this local law limits the number of cats that may be kept at any premises within the district except—

- (a) a cat management facility operated by a body prescribed as a cat management facility operator under the *Cat Regulations 2012*;
- (b) a cat management facility operated by the local government;
- (c) a veterinary clinic or veterinary hospital as defined under section 2 of the *Veterinary Surgeons Act 1960*, but only in relation to cats kept on those premises for treatment; or
- (d) a commercial cat boarding facility which is subject of a valid planning approval granted under a local planning scheme.

2.3 Standard number of cats

For the purposes of the definition of **standard number of cats** in regulation 4(1) of the *Cat (Uniform Local Provisions) Regulations 2013*, no more than 3 cats may be kept on premises at which a member of a cat organisation is not ordinarily resident.

2.4 Application for approval

- (1) An application for approval to keep an additional number of cats at prescribed premises is dealt with in regulation 8 of the *Cat (Uniform Local Provisions) Regulations 2013*.

- (2) An application for approval must be accompanied by the application fee determined by the local government in accordance with section 6.16 to 6.19 of the Act.

2.5 Determining an application

- (1) For the purpose of determining whether to grant approval for an application to keep an additional number of cats (more than the standard number of cats) at prescribed premises, the local government may have regard to—
 - (a) the zoning of the land under the local planning scheme;
 - (b) the physical suitability of the premises for the proposed use;
 - (c) the environmental sensitivity and general nature of the location surrounding the premises for the proposed use;
 - (d) the structural suitability of any enclosure in which any cat is to be kept;
 - (e) the likelihood of a cat causing a nuisance, inconvenience or annoyance to an occupier of adjoining land;
 - (f) the likely effect on the amenity of the surrounding area of the proposed use;
 - (g) the likely effect on the local environment including any pollution or other environmental damage, which may be caused by the proposed use; and
 - (h) any other factors which the local government considers to be relevant in the circumstances of the application.
- (2) An approval is to be in the form determined by the CEO and is to be issued to the approved person.

2.6 Conditions

- (1) For the purpose of ensuring that the premises to which an application relates are suitable for the additional number of cats, the local government may impose any condition that it considers to be reasonably necessary for that purpose, including—
 - (a) that the premises must be adequately fenced (and premises will be taken not to be adequately fenced if there is more than one escape of a cat from the premises);
 - (b) that there must be adequate space for the exercise of the cats;
 - (c) that, in the case of multiple dwellings where there is no suitable dividing fence, each current occupier of the adjoining multiple dwellings must give their written consent to the approval; and
 - (d) that, without the consent of the local government, the approved person must not substitute or replace any cat that dies or is permanently removed from the premises.
- (2) An approved person who does not comply with a condition of the approval, commits an offence.

Penalty: a fine of \$5,000.

2.7 Renewal of an application

- (1) An application is to be renewed if—
 - (a) the approved person has not breached the conditions of the approval;
 - (b) the approval would have been granted if a fresh application for approval had been made; and

- (c) the renewal fee, imposed and determined by the local government under sections 6.16 to 6.19 of the *Local Government Act 1995*, is paid to the local government before the expiry of the approval.
- (2) On the renewal of an approval, the conditions of the approval that applied immediately before the renewal continue to have effect.

2.8 Transfer of an approval

- (1) An approval relates only to the premises specified in the approval, and only to the approved person specified in the approval, and is transferrable only in accordance with this clause.
- (2) An application for the transfer of an approval from the approved person to another person must be—
 - (a) made in the form determined by the CEO;
 - (b) made by the proposed transferee;
 - (c) made with the consent of the approved person; and
 - (d) lodged with the local government together with the fee for the application for the transfer of an approval that is imposed and determined by the local government under sections 6.16 to 6.19 of the *Local Government Act 1995*.
- (3) The local government is not to determine an application for the transfer of an approval until the proposed transferee has complied with subclause (2).
- (4) The local government may grant, or refuse to grant an application for the transfer of an approval, and any approval will be subject to such conditions as the local government may impose under Regulation 9(3) of the *Cat (Uniform Local Provisions) Regulations 2013*.
- (5) Where the local government grants an application for the transfer of an approval—
 - (a) it is to issue to the transferee an approval in the form determined by the CEO; and
 - (b) on the date of approval, unless otherwise specified in the approval, the transferee becomes the approved person for the purposes of this local law.

2.9 Variation or cancellation of an approval

- (1) The local government may, at any time, vary the conditions of an approval by giving written notice to the permit holder and specifying the date on which the changes will become effective.
- (2) The local government may cancel an approval—
 - (a) on the request of the approved person;
 - (b) if the approved person breaches the Act, the *Cat Regulations 2012*, the *Cat (Uniform Local Provisions) Regulations 2013* or this local law; or
 - (c) if the approved person is not a fit and proper person to provide for the health and welfare of the cats.
- (3) If an approval is cancelled, the fee paid for the approval is not refundable for the term of the approval that has not yet expired.

2.10 Objection and review rights

A decision of the local government made under clauses 2.7, 2.8 or 2.9 is a decision to which Division 1, Part 9 of the *Local Government Act 1995* applies.

PART 3—ENFORCEMENT

3.1 Infringement notices

- (1) An offence against clause 2.6(2) is a prescribed offence for the purposes of section 62(1) of the Act and the modified penalty for the offence is a fine of \$200.
- (2) The form of an infringement notice is Form 6 in the *Cat Regulations 2012*, Schedule 1.
- (3) The form of withdrawal of the infringement notice is Form 7 in the *Cat Regulations 2012*, Schedule 1.

3.2 Objection: prescribed form

The form of an objection under clause 2.10 is Form 8 in the *Cat Regulations 2012*, Schedule 1.

Dated: 2019

The Common Seal of the Shire of Bridgetown-Greenbushes was affixed by authority of a resolution of the Council in the presence of —

Cr Antonino Pratico
Shire President

Tim Clynch
Chief Executive Officer



**THE HON DAVID COLEMAN MP
MINISTER FOR IMMIGRATION, CITIZENSHIP AND
MULTICULTURAL AFFAIRS**

Australian Citizenship Ceremonies Code

Dear Mayor,

We as a nation truly value our Australian citizenship. Whether you are Australian by birth or choose to settle here, Australian citizenship is at the heart of who we are and what we believe as a nation.

Every Australia Day, Australians in huge numbers celebrate our success as a nation at the many events organised by Local Government Councils across the country. These celebrations often include citizenship ceremonies, with more than 73,000 people choosing this special day to take the formal pledge of commitment to Australia in the past five years. Australia Day is by far the most popular day of the year for people to attend a citizenship ceremony.

For some time now the Australian Government has been reviewing the *Australian Citizenship Ceremonies Code*. As a result of this review, I am proposing changes to the Code, to ensure it reflects the expectations of the Australian community and provides clear guidance to Councils on hosting citizenship ceremonies.

Key changes are outlined below.

- Local Government Councils will be required to hold a citizenship ceremony on Australia Day (26 January) and Australian Citizenship Day (17 September).
- Federal members of Parliament, if attending a ceremony, should read the Minister's message at citizenship ceremonies.
- There will be a recommended standard of dress for ceremonies, which will be set by Councils. The attire of attendees at citizenship ceremonies should reflect the significance of the occasion. Conferees may wear national or cultural dress if they wish.
- Ceremonies must be scheduled to avoid parliamentary sitting days.

In recognition of the vital role of local government in the delivery of citizenship ceremonies, I am seeking your feedback on the revised Code. Please send all feedback to natoceremonies@homeaffairs.gov.au by **28 February 2019**.

I am pleased that a vast majority of Councils already hold citizenship ceremonies on Australia Day, as they are always great events. Eligible migrants across the country

should be afforded the opportunity to become an Australian citizen on our national day.

Thank you for the job done by your Council in supporting citizenship ceremonies and I look forward to receiving your responses to the proposed changes to the Code.

Yours sincerely

A handwritten signature in black ink, appearing to read 'David Coleman', with a long horizontal flourish extending to the right.

David Coleman

14/01/2019



SHIRE OF BRIDGETOWN-GREENBUSHES

MONTHLY FINANCIAL REPORT

For the Period Ended 31 December 2018

LOCAL GOVERNMENT ACT 1995

LOCAL GOVERNMENT (FINANCIAL MANAGEMENT) REGULATIONS 1996

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Detailed account schedules will be provided with financial reports to be presented at the following Council meetings:

October 2018

February 2019 (Budget Review)

April 2019

July 2019

SHIRE OF BRIDGETOWN-GREENBUSHES
STATEMENT OF FINANCIAL ACTIVITY
(Statutory Reporting by Program)
For the Period Ended 31 December 2018

	Amended Annual Budget	Amended YTD Budget (a)	YTD Actual (b)	Var. \$ (b)-(a)	Var. % (b)-(a)/(a)
Note	\$	\$	\$	\$	%
Operating Revenues					
Governance	369	135	220	85	63.23%
General Purpose Funding - Rates	4,648,851	4,544,738	4,546,394	1,656	0.04%
General Purpose Funding - Other	1,048,591	497,364	518,584	21,220	4.27%
Law, Order and Public Safety	759,013	190,240	189,351	(889)	(0.47%)
Health	18,200	13,700	12,731	(969)	(7.07%)
Education and Welfare	25,509	1,925	222	(1,703)	(88.47%)
Housing	22,000	10,440	10,187	(253)	(2.43%)
Community Amenities	1,130,507	1,017,355	998,468	(18,887)	(1.86%)
Recreation and Culture	434,094	198,887	193,269	(5,618)	(2.82%)
Transport	1,375,107	295,494	356,015	60,521	20.48%
Economic Services	131,573	71,712	65,094	(6,618)	(9.23%)
Other Property and Services	149,726	80,704	78,168	(2,536)	(3.14%)
Total Operating Revenue	9,743,540	6,922,694	6,968,704	46,010	
Operating Expenses					
Governance	(1,041,437)	(456,107)	(432,984)	23,123	5.07%
General Purpose Funding	(186,077)	(54,796)	(55,391)	(595)	(1.09%)
Law, Order and Public Safety	(989,311)	(463,077)	(475,159)	(12,082)	(2.61%)
Health	(85,618)	(43,139)	(46,133)	(2,994)	(6.94%)
Education and Welfare	(237,877)	(115,572)	(107,012)	8,560	7.41%
Housing	(33,605)	(17,793)	(15,256)	2,537	14.26%
Community Amenities	(1,781,532)	(864,697)	(839,342)	25,355	2.93%
Recreation and Culture	(3,171,553)	(1,443,033)	(1,304,922)	138,111	9.57%
Transport	(3,762,593)	(1,874,629)	(1,913,801)	(39,172)	(2.09%)
Economic Services	(642,600)	(346,267)	(315,854)	30,413	8.78%
Other Property and Services	(132,666)	(169,936)	(195,651)	(25,715)	(15.13%)
Total Operating Expenditure	(12,064,869)	(5,849,046)	(5,701,504)	147,542	
Funding Balance Adjustments					
Add back Depreciation	3,470,930	1,735,361	1,721,780	(13,581)	
Adjust (Profit)/Loss on Asset Disposal	8 13,139	5,158	10,710	5,552	
Adjust Provisions and Accruals	0	0	2,913	2,913	
Net Cash from Operations	1,162,740	2,814,167	3,002,603	188,436	
Capital Revenues					
Proceeds from Disposal of Assets	8 337,864	203,664	151,473	(52,191)	(25.63%)
Total Capital Revenues	337,864	203,664	151,473	(52,191)	
Capital Expenses					
Land and Buildings	(674,409)	(304,714)	(213,417)	91,297	29.96%
Infrastructure - Roads	(1,862,012)	(221,186)	(222,334)	(1,148)	(0.52%)
Infrastructure - Footpaths	(5,000)	(2,450)	0	2,450	100.00%
Infrastructure - Drainage	(128,022)	(54,856)	(50,888)	3,968	7.23%
Infrastructure - Parks and Ovals	(49,210)	(20,210)	(2,235)	17,975	88.94%
Infrastructure - Bridges	(450,561)	(389,675)	(332,216)	57,459	14.75%
Infrastructure - Other	(541,550)	(234,728)	(122,577)	112,151	47.78%
Plant and Equipment	(1,206,789)	(364,700)	(321,999)	42,701	11.71%
Furniture and Equipment	(16,500)	(5,000)	0	5,000	100.00%
Total Capital Expenditure	9 (4,934,053)	(1,597,519)	(1,265,666)	331,853	

SHIRE OF BRIDGETOWN-GREENBUSHES
STATEMENT OF FINANCIAL ACTIVITY
(Statutory Reporting by Program)
For the Period Ended 31 December 2018

	Note	Amended Annual Budget	Amended YTD Budget (a)	YTD Actual (b)	Var. \$ (b)-(a)	Var. % (b)-(a)/(a)
		\$	\$	\$	\$	%
Net Cash from Capital Activities		(4,596,189)	(1,393,855)	(1,114,193)	279,662	
Financing						
Proceeds from New Debentures	10	200,000	0	0	0	
Self-Supporting Loan Principal	10	8,337	8,337	4,130	(4,207)	(50.46%)
Transfer from Reserves	7	2,245,303	1,268,042	1,268,042	0	0.00%
Repayment of Debentures	10	(268,034)	(268,034)	(132,795)	135,239	(50.46%)
Transfer to Reserves	7	(680,899)	(119,565)	(119,565)	0	0.00%
Net Cash from Financing Activities		1,504,707	888,780	1,019,812	131,032	
Net Operations, Capital and Financing		(1,928,742)	2,309,092	2,908,222	599,130	
Opening Funding Surplus(Deficit)	2	1,928,742	1,928,742	1,948,267	19,525	
Closing Funding Surplus(Deficit)	2	0	4,237,834	4,856,489	618,655	

In accordance with Council's variance policy explanation of material variances are reported at sub program level.

This statement is to be read in conjunction with the accompanying Financial Statements and notes.

SHIRE OF BRIDGETOWN-GREENBUSHES
STATEMENT OF FINANCIAL ACTIVITY
(By Nature or Type)
For the Period Ended 31 December 2018

	Note	Amended Annual Budget	Amended YTD Budget (a)	YTD Actual (b)	Var. \$ (b)-(a)	Var. % (b)-(a)/(a)
		\$	\$	\$	\$	%
Operating Revenues						
Rates	11	4,539,351	4,472,157	4,472,792	635	0.01%
Operating Grants, Subsidies and Contributions		1,573,045	761,053	815,238	54,185	7.12%
Grants, Subsidies and Contributions for the Development of Assets		1,595,608	217,200	219,200	2,000	0.92%
Fees and Charges		1,695,634	1,324,305	1,294,026	(30,279)	(2.29%)
Interest Earnings		199,321	81,827	100,811	18,984	23.20%
Other Revenue		119,231	62,552	63,164	612	0.98%
Profit on Disposal of Assets	8	21,350	3,600	3,473	(127)	(3.53%)
Total Operating Revenue		9,743,540	6,922,694	6,968,704	46,010	
Operating Expenses						
Employee Costs		(4,566,526)	(2,138,819)	(2,058,432)	80,387	3.76%
Materials and Contracts		(3,061,708)	(1,333,521)	(1,308,955)	24,566	1.84%
Utility Charges		(284,442)	(135,444)	(101,239)	34,205	25.25%
Depreciation on Non-Current Assets		(3,470,930)	(1,735,361)	(1,721,780)	13,581	0.78%
Interest Expenses		(77,918)	(38,908)	(39,892)	(984)	(2.53%)
Insurance Expenses		(263,121)	(262,962)	(265,150)	(2,188)	(0.83%)
Other Expenditure		(305,735)	(195,273)	(191,873)	3,400	1.74%
Loss on Disposal of Assets	8	(34,489)	(8,758)	(14,183)	(5,425)	(61.94%)
Total Operating Expenditure		(12,064,869)	(5,849,046)	(5,701,504)	147,542	
Funding Balance Adjustments						
Add back Depreciation		3,470,930	1,735,361	1,721,780	(13,581)	
Adjust (Profit)/Loss on Asset Disposal	8	13,139	5,158	10,710	5,552	
Adjust Provisions and Accruals		0	0	2,913	2,913	
Net Cash from Operations		1,162,740	2,814,167	3,002,603	188,436	
Capital Revenues						
Proceeds from Disposal of Assets	8	337,864	203,664	151,473	(52,191)	(25.63%)
Total Capital Revenues		337,864	203,664	151,473	(52,191)	
Capital Expenses						
Land and Buildings		(674,409)	(304,714)	(213,417)	91,297	29.96%
Infrastructure - Roads		(1,862,012)	(221,186)	(222,334)	(1,148)	(0.52%)
Infrastructure - Footpaths		(5,000)	(2,450)	0	2,450	100.00%
Infrastructure - Drainage		(128,022)	(54,856)	(50,888)	3,968	7.23%
Infrastructure - Parks and Ovals		(49,210)	(20,210)	(2,235)	17,975	88.94%
Infrastructure - Bridges		(450,561)	(389,675)	(332,216)	57,459	14.75%
Infrastructure - Other		(541,550)	(234,728)	(122,577)	112,151	47.78%
Plant and Equipment		(1,206,789)	(364,700)	(321,999)	42,701	11.71%
Furniture and Equipment		(16,500)	(5,000)	0	5,000	100.00%
Total Capital Expenditure	9	(4,934,053)	(1,597,519)	(1,265,666)	331,853	
Net Cash from Capital Activities		(4,596,189)	(1,393,855)	(1,114,193)	279,662	

SHIRE OF BRIDGETOWN-GREENBUSHES
STATEMENT OF FINANCIAL ACTIVITY
(By Nature or Type)
For the Period Ended 31 December 2018

	Note	Amended Annual Budget	Amended YTD Budget (a)	YTD Actual (b)	Var. \$ (b)-(a)	Var. % (b)-(a)/(a)
		\$	\$	\$	\$	%
Financing						
Proceeds from New Debentures	10	200,000	0	0	0	
Self-Supporting Loan Principal	10	8,337	8,337	4,130	(4,207)	(50.46%)
Transfer from Reserves	7	2,245,303	1,268,042	1,268,042	0	0.00%
Repayment of Debentures	10	(268,034)	(268,034)	(132,795)	135,239	(50.46%)
Transfer to Reserves	7	(680,899)	(119,565)	(119,565)	0	0.00%
Net Cash from Financing Activities		1,504,707	888,780	1,019,812	131,032	
Net Operations, Capital and Financing		(1,928,742)	2,309,092	2,908,222	599,130	
Opening Funding Surplus(Deficit)	2	1,928,742	1,928,742	1,948,267	19,525	
Closing Funding Surplus(Deficit)	2	0	4,237,834	4,856,489	618,655	

In accordance with Council's variance policy explanation of material variances are reported at sub program level.

This statement is to be read in conjunction with the accompanying Financial Statements and notes.

SHIRE OF BRIDGETOWN-GREENBUSHES
STATEMENT OF FINANCIAL ACTIVITY
(Statutory Reporting by Sub Program)
For the Period Ended 31 December 2018

	Amended Annual Budget	Amended YTD Budget (a)	YTD Actual (b)	Var. \$ (b)-(a)	Var. % (b)-(a)/(a)	Var.
Note	\$	\$	\$	\$	%	
Operating Revenues						
Governance						
Members of Council	50	0	0	0		
Other Governance	319	135	220	85	63.23%	
General Purpose Funding - Rates						
Rates	4,648,851	4,544,738	4,546,394	1,656	0.04%	
Other General Purpose Funding	1,048,591	497,364	518,584	21,220	4.27%	
Law, Order and Public Safety						
Fire Prevention	713,521	167,717	165,858	(1,859)	(1.11%)	
Animal Control	25,350	15,988	15,929	(59)	(0.37%)	
Other Law, Order and Public Safety	20,142	6,535	7,565	1,030	15.76%	▲
Health						
Prev Services - Inspection and Admin	18,200	13,700	12,731	(969)	(7.07%)	
Education and Welfare						
Other Education	509	259	222	(37)	(14.31%)	
Aged and Disabled - Other	5,000	0	0	0		
Other Welfare	20,000	1,666	0	(1,666)	(100.00%)	▼
Housing						
Staff Housing	22,000	10,440	10,187	(253)	(2.43%)	
Community Amenities						
Sanitation - General Refuse	1,034,607	969,457	953,123	(16,334)	(1.68%)	
Sanitation - Other	50	0	200	200		
Sewerage	25,700	12,846	9,526	(3,320)	(25.84%)	▼
Town Planning and Regional Develop	51,150	25,566	23,623	(1,943)	(7.60%)	▼
Other Community Amenities	19,000	9,486	11,996	2,510	26.46%	▲
Recreation and Culture						
Public Halls and Civic Centres	16,009	8,007	9,495	1,488	18.58%	▲
Other Recreation and Sport	361,553	182,359	176,458	(5,901)	(3.24%)	
Libraries	11,713	7,592	6,887	(705)	(9.29%)	
Heritage	1,407	429	429	0	0.08%	
Other Culture	43,412	500	0	(500)	(100.00%)	
Transport						
Streets and Road Construction	1,260,608	197,200	199,200	2,000	1.01%	
Streets and Road Maintenance	114,344	98,294	156,815	58,521	59.54%	▲
Parking Facilities	55	0	0	0		
Traffic Control	100	0	0	0		
Economic Services						
Tourism and Area Promotion	65,123	40,128	41,239	1,111	2.77%	
Building Control	55,450	29,074	21,237	(7,837)	(26.96%)	▼
Economic Development	500	200	174	(26)	(13.08%)	
Other Economic Services	10,500	2,310	2,445	135	5.83%	
Other Property and Services						
Private Works	75,200	31,384	28,182	(3,202)	(10.20%)	▼
Plant Operation Costs	30,000	17,498	17,274	(224)	(1.28%)	
Salaries and Wages	5,000	0	0	0		
Corporate Services Department	2,500	1,500	1,500	0	0.00%	
Admin and Finance Activity Units	200	96	92	(4)	(3.83%)	
Planning and Environment Department	0	0	100	100		

SHIRE OF BRIDGETOWN-GREENBUSHES
STATEMENT OF FINANCIAL ACTIVITY
(Statutory Reporting by Sub Program)
For the Period Ended 31 December 2018

	Note	Amended Annual Budget	Amended YTD Budget (a)	YTD Actual (b)	Var. \$ (b)-(a)	Var. % (b)-(a)/(a)	Var.
		\$	\$	\$	\$	%	
Operating Revenues (Continued)							
Community Services Department		0	0	149	149		
Unclassified		36,826	30,226	30,871	645	2.13%	
Total Operating Revenue		9,743,540	6,922,694	6,968,704	46,010		
Operating Expenses							
Governance							
Members of Council		(323,427)	(169,243)	(164,452)	4,791	2.83%	
Other Governance		(718,010)	(286,864)	(268,533)	18,331	6.39%	▲
General Purpose Funding							
Rates		(185,162)	(54,654)	(55,185)	(531)	(0.97%)	
Other General Purpose Funding		(915)	(142)	(206)	(64)	(45.23%)	
Law, Order and Public Safety							
Fire Prevention		(850,892)	(396,188)	(406,238)	(10,050)	(2.54%)	
Animal Control		(75,992)	(36,805)	(35,198)	1,607	4.37%	
Other Law, Order and Public Safety		(62,427)	(30,084)	(33,724)	(3,640)	(12.10%)	▼
Health							
Maternal and Infant Health		(6,000)	(6,000)	(6,000)	0	0.00%	
Prev Services - Inspection and Admin		(72,202)	(33,636)	(36,256)	(2,620)	(7.79%)	▼
Preventative Services - Pest Control		(1,188)	(461)	(482)	(21)	(4.64%)	
Preventative Services - Other		(6,228)	(3,042)	(3,394)	(352)	(11.58%)	
Education and Welfare							
Other Education		(27,146)	(14,516)	(13,593)	923	6.36%	
Care of Families and Children		(88,949)	(43,556)	(40,245)	3,311	7.60%	▲
Aged and Disabled - Other		(56,636)	(35,411)	(36,518)	(1,107)	(3.13%)	
Other Welfare		(65,146)	(22,089)	(16,656)	5,433	24.60%	▲
Housing							
Staff Housing		(33,605)	(17,793)	(15,256)	2,537	14.26%	▲
Community Amenities							
Sanitation - General Refuse		(857,656)	(433,672)	(445,597)	(11,925)	(2.75%)	
Sanitation - Other		(42,294)	(15,667)	(12,753)	2,914	18.60%	▲
Sewerage		(50,478)	(17,724)	(19,240)	(1,516)	(8.55%)	▼
Urban Stormwater Drainage		(280,579)	(140,202)	(115,528)	24,674	17.60%	▲
Protection of Environment		(77,830)	(38,861)	(36,675)	2,186	5.63%	▲
Town Planning and Regional Develop		(254,577)	(113,663)	(115,228)	(1,565)	(1.38%)	
Other Community Amenities		(218,118)	(104,908)	(94,319)	10,589	10.09%	▲
Recreation and Culture							
Public Halls and Civic Centres		(158,869)	(81,974)	(64,835)	17,140	20.91%	▲
Swimming Areas and Beaches		(17,010)	(8,246)	(4,531)	3,715	45.05%	▲
Other Recreation and Sport		(2,362,458)	(1,036,590)	(932,346)	104,244	10.06%	▲
Television and Radio Re-Broadcasting		(4,494)	(1,566)	(2,992)	(1,426)	(91.05%)	▼
Libraries		(446,427)	(231,375)	(227,543)	3,832	1.66%	
Heritage		(76,424)	(39,771)	(34,440)	5,331	13.40%	▲
Other Culture		(105,871)	(43,511)	(38,236)	5,275	12.12%	▲
Transport							
Streets and Road Maintenance		(3,718,727)	(1,866,519)	(1,905,765)	(39,246)	(2.10%)	
Parking Facilities		(39,728)	(7,576)	(7,323)	253	3.34%	
Traffic Control		(3,138)	(534)	(713)	(179)	(33.45%)	

SHIRE OF BRIDGETOWN-GREENBUSHES
STATEMENT OF FINANCIAL ACTIVITY
(Statutory Reporting by Sub Program)
For the Period Ended 31 December 2018

	Amended Annual Budget	Amended YTD Budget (a)	YTD Actual (b)	Var. \$ (b)-(a)	Var. % (b)-(a)/(a)	Var.
Note	\$	\$	\$	\$	%	
Operating Expenses (Continued)						
Aerodromes	(1,000)	0	0	0		
Economic Services						
Tourism and Area Promotion	(384,929)	(215,062)	(205,125)	9,937	4.62%	
Building Control	(202,542)	(92,382)	(82,735)	9,647	10.44%	▲
Economic Development	(37,969)	(32,650)	(24,318)	8,332	25.52%	▲
Other Economic Services	(17,160)	(6,173)	(3,675)	2,498	40.46%	▲
Other Property and Services						
Private Works	(75,006)	(36,498)	(35,756)	742	2.03%	
Works and Services Management	0	(16,104)	(7,697)	8,407	52.20%	▲
Waste Activity Unit	0	(1,088)	236	1,324	121.66%	▲
Works Activity Unit	0	(26,594)	(29,618)	(3,024)	(11.37%)	▼
Fleet Activity Unit	0	596	832	236		
Plant Operation Costs	0	(38,823)	(35,108)	3,715	9.57%	▲
Salaries and Wages	(5,000)	0	0	0		
Corporate Services Department	(2,500)	(4,190)	3,781	7,971	190.25%	▲
Chief Executive Office Department	0	(2,499)	(15,191)	(12,692)	(507.87%)	▼
Admin and Finance Activity Units	0	0	0	0		
Planning and Environment Department	0	(16,921)	(37,593)	(20,672)	(122.17%)	▼
Community Services Department	0	(4,770)	(17,601)	(12,831)	(269.00%)	▼
Unclassified	(50,160)	(23,045)	(21,937)	1,108	4.81%	
Total Operating Expenditure	(12,064,869)	(5,849,046)	(5,701,504)	147,542		
Funding Balance Adjustments						
Add back Depreciation	3,470,930	1,735,361	1,721,780	(13,581)		
Adjust (Profit)/Loss on Asset Disposal	8 13,139	5,158	10,710	5,552		
Adjust Provisions and Accruals	0	0	2,913	2,913		
Net Cash from Operations	1,162,740	2,814,167	3,002,603	188,436		
Capital Revenues						
Proceeds from Disposal of Assets						
Governance						
Other Governance	17,200	17,200	17,555	355	2.06%	
Law, Order & Public Safety						
Fire Prevention	46,200	0	0	0		
Other Law, Order & Public Safety	15,000	15,000	0	(15,000)	(100.00%)	▼
Health						
Preventative Services	18,000	18,000	18,182	182	1.01%	
Community Amenities						
Sanitation - General Refuse	70,000	0	0	0		
Town Planning	17,500	17,500	17,982	482	2.75%	
Transport						
Road Plant Purchases	135,964	135,964	97,755	(38,209)	(28.10%)	▼
Economic Services						
Building Control	18,000	0	0	0		
Total Capital Revenues	337,864	203,664	151,473	(52,191)		
Capital Expenses						
Governance						
Members of Council	(5,000)	(5,000)	0	5,000	100.00%	▲

SHIRE OF BRIDGETOWN-GREENBUSHES
STATEMENT OF FINANCIAL ACTIVITY
(Statutory Reporting by Sub Program)
For the Period Ended 31 December 2018

	Note	Amended Annual Budget	Amended YTD Budget (a)	YTD Actual (b)	Var. \$ (b)-(a)	Var. % (b)-(a)/(a)	Var.
		\$	\$	\$	\$	%	
Capital Expenses (Continued)							
Other Governance		(148,583)	(63,782)	(62,958)	824	1.29%	
Law, Order and Public Safety							
Fire Prevention		(385,500)	(30,500)	(27,438)	3,062	10.04%	▲
Other Law, Order and Public Safety		(36,000)	(36,000)	0	36,000	100.00%	▲
Health							
Preventative Services		(32,000)	(32,000)	(28,368)	3,632	11.35%	▲
Housing							
Staff Housing		(25,500)	(12,000)	(4,444)	7,556	62.97%	▲
Community Amenities							
Sanitation - General Refuse		(497,800)	(23,520)	(13,675)	9,845	41.86%	▲
Sewerage		(225,750)	(169,311)	(83,550)	85,761	50.65%	▲
Urban Stormwater Drainage		(128,022)	(54,856)	(50,888)	3,968	7.23%	▲
Other Community Amenities		(36,000)	(30,000)	(29,548)	452	1.51%	
Recreation and Culture							
Public Halls and Civic Centres		(110,050)	(22,250)	(14,913)	7,337	32.97%	▲
Swimming Areas and Beaches		(8,750)	(4,500)	0	4,500	100.00%	▲
Other Recreation and Sport		(362,910)	(177,807)	(74,403)	103,404	58.16%	▲
Libraries		(11,500)	(1,230)	(1,764)	(534)	(43.45%)	
Transport							
Streets and Road Construction		(2,340,573)	(618,311)	(559,809)	58,502	9.46%	▲
Road Plant Purchases		(376,789)	(271,700)	(271,692)	8	0.00%	
Economic Services							
Tourism and Area Promotion		(25,000)	0	0	0		
Building Control		(32,000)	0	0	0		
Other Property and Services							
Unclassified		(146,326)	(44,752)	(42,214)	2,538	5.67%	▲
Total Capital Expenditure	9	(4,934,053)	(1,597,519)	(1,265,666)	331,853		
Net Cash from Capital Activities		(4,596,189)	(1,393,855)	(1,114,193)	279,662		
Financing							
Proceeds from New Debentures	10	200,000	0	0	0		
Self-Supporting Loan Principal	10	8,337	8,337	4,130	(4,207)	(50.46%)	
Transfer from Reserves	7	2,245,303	1,268,042	1,268,042	0	0.00%	
Repayment of Debentures	10	(268,034)	(268,034)	(132,795)	135,239	(50.46%)	
Transfer to Reserves	7	(680,899)	(119,565)	(119,565)	0	0.00%	
Net Cash from Financing Activities		1,504,707	888,780	1,019,812	131,032		
Net Operations, Capital and Financing		(1,928,742)	2,309,092	2,908,222	599,130		
Opening Funding Surplus(Deficit)	2	1,928,742	1,928,742	1,948,267	19,525		
Closing Funding Surplus(Deficit)	2	0	4,237,834	4,856,489	618,655		

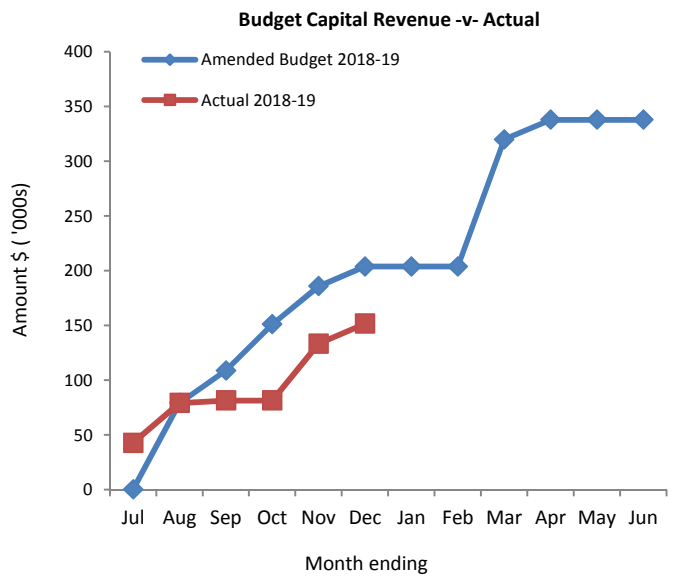
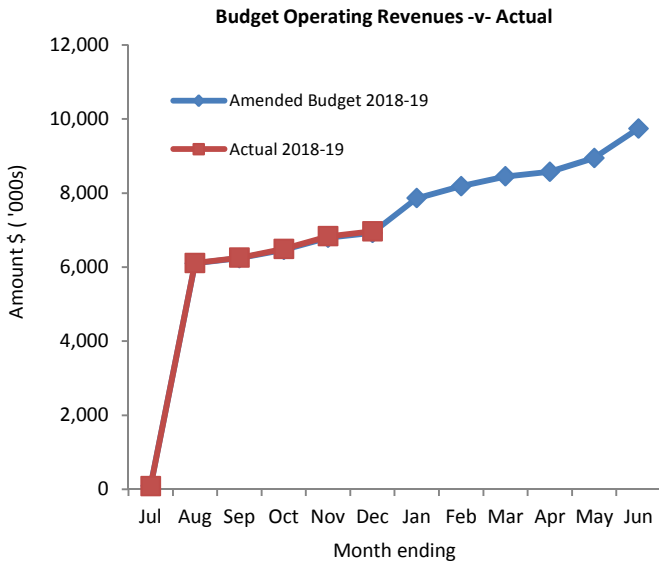
▼Deficit ▲Surplus - Indicates a variance between Year to Date (YTD) Budget and YTD Actual data as per the adopted materiality threshold. Refer to Note 3 for an explanation of the reasons for the variance.

This statement is to be read in conjunction with the accompanying Financial Statements and notes.

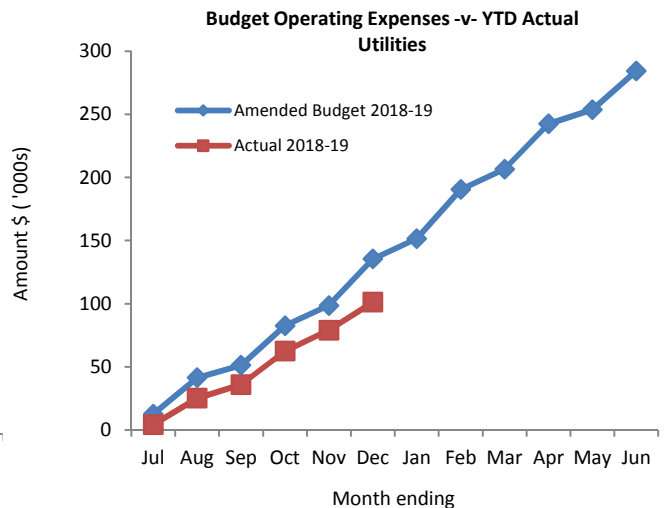
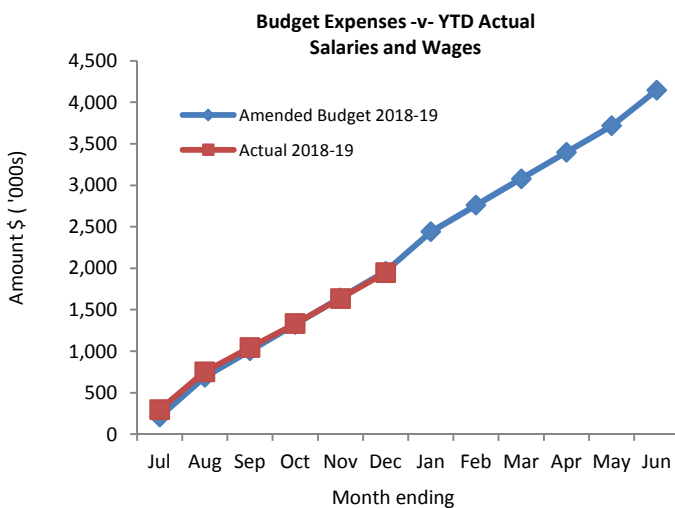
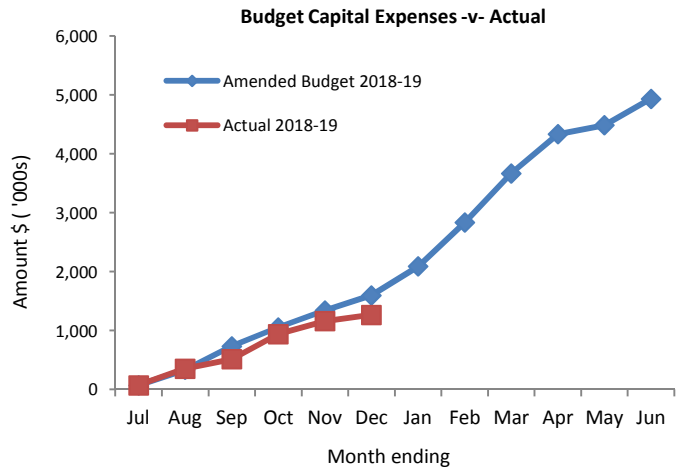
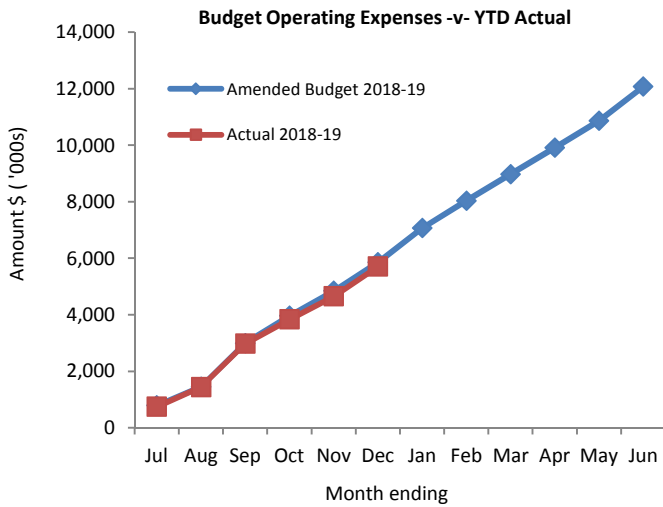
SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 1: GRAPHICAL REPRESENTATION - Source Statement of Financial Activity

Revenues



Expenditure

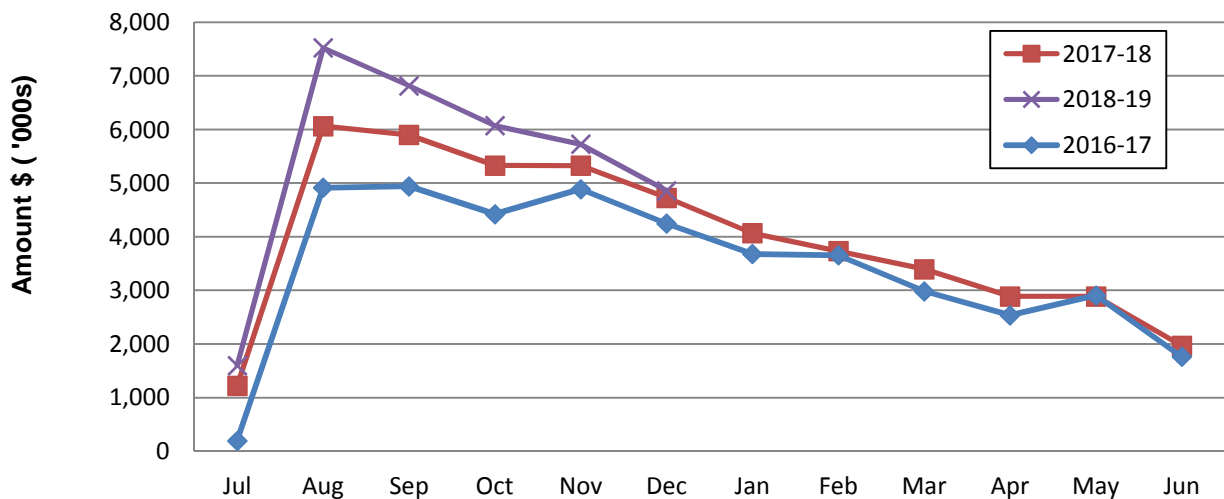


SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 2: NET CURRENT FUNDING POSITION

		Positive=Surplus (Negative=Deficit)		
		YTD 31 Dec 2018	Last Period	Estimated 30 June 2018
		\$	\$	\$
Current Assets				
Cash Unrestricted	5	4,342,297	4,918,095	3,073,791
Cash Restricted	5	2,934,215	2,907,875	4,082,692
Receivables - Rates	6	1,415,791	1,769,703	126,308
Receivables - Sundry Debtors	6	46,050	33,772	77,720
Receivables - Other		177,628	245,258	73,286
Inventories		23,062	23,896	22,013
		8,939,043	9,898,600	7,455,811
Less: Current Liabilities				
Payables		(527,508)	(768,480)	(929,773)
Provisions		(931,887)	(931,887)	(931,887)
		(1,459,395)	(1,700,368)	(1,861,660)
Less: Cash Reserves	7	(2,934,215)	(2,907,875)	(4,082,692)
Less: Loans - Clubs/Institutions		(4,207)	(8,337)	(8,337)
Add: Current Leave Provision Cash Backed		180,025	178,296	177,112
Add: Current Loan Liability		135,238	268,033	268,033
Net Current Funding Position		4,856,489	5,728,350	1,948,267

Note 3 - Liquidity Over the Year



SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 3: EXPLANATION OF MATERIAL VARIANCES BY SUB PROGRAM

Reporting Program	Variance \$	Variance %	Var.	Reason	Explanation of Variance
Operating Revenues					
Other Law, Order and Public Safety	1,030	15.76%	▲	Permanent	SES supplementary operating grant received for 2017/18. Adjustment to be included in budget review.
Education and Welfare					
Other Welfare	(1,666)	(100.00%)	▼	Timing	Income for Youth programmes less than estimated at this time, offset by reduced expenditure.
Community Amenities					
Sewerage	(3,320)	(25.84%)	▼	Timing	Income received for septic tank applications, inspections and waste disposal less than estimated at this time.
Town Planning and Regional Develop	(1,943)	(7.60%)	▼	Timing	Income for planning application less than estimated at this time.
Other Community Amenities	2,510	26.46%	▲	Timing	Income for Cemetery fees and community bus greater than estimated at this time.
Recreation and Culture					
Public Halls and Civic Centres	1,488	18.58%	▲	Timing	Income for hall hire greater than estimated at this time.
Transport					
Streets and Road Maintenance	58,521	59.54%	▲	Permanent	Regional Road Direct grant greater than budget estimate. Adjustment to be made at budget review.
Economic Services					
Building Control	(7,837)	(26.96%)	▼	Timing	Income received for building licence approvals less than estimated at this time.
Other Property and Services					
Private Works	(3,202)	(10.20%)	▼	Timing	Commission revenue for Department of Transport licensing service for month of December not yet received.
Operating Expenses					
Governance					
Other Governance	18,331	6.39%	▲	Timing	Expenditure on one off projects less than estimated at this time \$7,405. Balance due to timing of leave and training being taken.
Law, Order and Public Safety					
Other Law, Order and Public Safety	(3,640)	(12.10%)	▼	Timing	SES expenditure greater than estimated at this time.
Health					
Prev Services - Inspection and Admin	(2,620)	(7.79%)	▼	Timing	Variance due to timing of leave and training being taken.
Education and Welfare					
Care of Families and Children	3,311	7.60%	▲	Timing	Variance due to timing of leave and training being taken.

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 3: EXPLANATION OF MATERIAL VARIANCES BY SUB PROGRAM

Reporting Program	Variance \$	Variance %	Var.	Reason	Explanation of Variance
Other Welfare	5,433	24.60%	▲	Timing	Various youth projects expenditure less than estimated at this time.
Housing					
Staff Housing	2,537	14.26%	▲	Timing	Expenditure for staff housing building maintenance less than estimated at this time.
Community Amenities					
Sanitation - Other	2,914	18.60%	▲	Allocations	Variance in wages and overheads allocated to this sub program offset by allocations in other sub programs.
Sewerage	(1,516)	(8.55%)	▼	Timing	Variance due to timing of leave and training being taken.
Urban Stormwater Drainage	24,674	17.60%	▲	Timing	Drainage maintenance works undertaken less than estimated at this time.
Protection of Environment	2,186	5.63%	▲	Timing	Environmental Officer expenses less than estimated at this time.
Other Community Amenities	10,589	10.09%	▲	Timing	Public conveniences and other minor building maintenance less than estimated at this time \$12,131. Cemeteries expenditure greater than estimated at this time.
Recreation and Culture					
Public Halls and Civic Centres	17,140	20.91%	▲	Timing	Costs are less than estimated in building maintenance and operations of halls and civic centres at this time.
Swimming Areas and Beaches	3,715	45.05%	▲	Timing	Costs are less than estimated for Greenbushes Pool building maintenance at this time.
Other Recreation and Sport	104,244	10.06%	▲	Timing	Works on parks and gardens \$73,013, Leisure Centre expenses \$5,030, and Building operations and maintenance \$22,414 are less than estimated. Balance relates to trails expenditure less than estimated at this time.
Television and Radio Re-Broadcasting	(1,426)	(91.05%)	▼	Allocations	Variance in wages and overheads allocated to this sub program offset by allocations in other sub programs.
Heritage	5,331	13.40%	▲	Timing	Heritage building maintenance expenditure less than estimated at this time.
Other Culture	5,275	12.12%	▲	Timing	Various Art & Culture programs expenditure less than estimated at this time.
Economic Services					
Building Control	9,647	10.44%	▲	Timing	Variance due to timing of leave and training being taken.
Economic Development	8,332	25.52%	▲	Timing	Expenditure on one off projects less than estimated at this time.
Other Economic Services	2,498	40.46%	▲	Timing	Water consumption for stand pipes less than estimated at this time.
Other Property and Services					
Works and Services Management	8,407	52.20%	▲	Timing	Vehicle costs greater than estimated at this time \$1,846. Balance relates to time of leave and training being taken.
Waste Activity Unit	1,324	121.66%	▲	Timing	Variance due to timing of leave and training being taken.

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 3: EXPLANATION OF MATERIAL VARIANCES BY SUB PROGRAM

Reporting Program	Variance \$	Variance %	Var.	Reason	Explanation of Variance
Works Activity Unit	(3,024)	(11.37%)	▼	Allocations	Overhead recovery less than estimated due to staff vacancies. Overhead rate to be monitored.
Plant Operation Costs	3,715	9.57%	▲	Timing	Variance due to plant depreciation less than estimated at this time.
Corporate Services Department	7,971	190.25%	▲	Timing	Variance due to timing of leave and training being taken.
Chief Executive Office Department	(12,692)	(507.87%)	▼	Timing	Variance due to timing of leave and training being taken.
Planning and Environment Department	(20,672)	(122.17%)	▼	Timing/ Allocations	Variance due to timing of leave being taken and allocation of hours to building program planning.
Community Services Department	(12,831)	(269.00%)	▼	Timing	Expenditure on vehicle greater than estimated at this time. Balance relates to timing of leave and training being taken.
Capital Revenues					
Law, Order & Public Safety					
Other Law, Order & Public Safety	(15,000)	(100.00%)	▼	Timing	Sale of Rangers vehicle not yet finalised.
Transport					
Road Plant Purchases	(38,209)	(28.10%)	▼	Timing	Sale of light fleet not yet finalised.
Capital Expenses					
Governance					
Members of Council	5,000	100.00%	▲	Timing	Purchase order for honour boards has been raised.
Law, Order and Public Safety					
Fire Prevention	3,062	10.04%	▲	Permanent	DFES funded vehicle purchased. Reserve transfer will be adjusted at budget review.
Other Law, Order and Public Safety	36,000	100.00%	▲	Timing	Purchase of Ranger vehicle not yet finalised.
Housing					
Staff Housing	7,556	62.97%	▲	Timing	Various works on staff housing not yet commenced.
Community Amenities					
Sanitation - General Refuse	9,845	41.86%	▲	Timing	Expenditure at inert waste site less than estimated at this time.
Sewerage	85,761	50.65%	▲	Timing	Expenditure at Bridgetown liquid waste facility less than estimated at this time.
Urban Stormwater Drainage	3,968	7.23%	▲	Timing	Palmers Road and Forest/Padbury Street scope of works greater than estimated \$10,615. To be offset by reduction in other drainage jobs.
Recreation and Culture					
Public Halls and Civic Centres	7,337	32.97%	▲	Timing	Expenditure on halls less than estimated at this time.
Swimming Areas and Beaches	4,500	100.00%	▲	Timing	Greenbushes pool toilet works less than estimated at this time.

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 3: EXPLANATION OF MATERIAL VARIANCES BY SUB PROGRAM

Reporting Program	Variance \$	Variance %	Var.	Reason	Explanation of Variance
Other Recreation and Sport	103,404	58.16%	▲	Timing	Bridgetown Leisure Centre renewal works \$53,775, sportsground dam \$17,756, horse stalls \$16,116 and Bridgetown Leisure Centre infrastructure works less than estimated at this time.
Transport Streets and Road Construction	58,502	9.46%	▲	Timing	Various bridge expenditure less than estimated at this time. Adjustments to be included in budget review.
Other Property and Services Unclassified	2,538	5.67%	▲	Timing	Asbestos removal works less than estimated at this time.

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 4: BUDGET AMENDMENTS

Amendments to original budget since budget adoption. Surplus/(Deficit)

GL Account Code	Description	Council Resolution	Classification	Non Cash Adjustment	Increase in Available Cash	(Decrease) in Available Cash	Amended Budget Running Balance
				\$	\$	\$	\$
	Budget Adoption		Opening Surplus				0
	Permanent Changes						0
1790040	Purchase of Land - Lot 150 Hampton Street	C.15/0818a	Capital Expenses			(50,000)	(50,000)
Reserve 103	Land & Building reserve	C.15/0818a	Reserve Transfer		50,000		0
1065940	Purchase of Plant & Vehicles - Bushfire Logistics	C.05/0918	Capital Expenses		7,000		7,000
Reserve 103	Light Fleet Reserve	C.05/0918	Reserve Transfer			(7,000)	0
06IN	Bridgetown Leisure Centre shade sails	C.09/1018	Capital Expenses			(8,400)	(8,400)
Reserve 131	Bridgetown Leisure Centre reserve	C.09/1018	Reserve Transfer		8,400		0
1790220	General insurance claims - shade sails	C.09/1018	Operating Expenses			(6,600)	(6,600)
1790130	Insurance claims reimbursement - shade sails	C.09/1018	Operating Revenue		6,600		0
83MA	Bridgetown Library building maintenance	C.05/1218	Operating Expenses			(3,867)	(3,867)
Reserve 125	Building maintenance reserve	C.05/1218	Reserve Transfer		3,867		0
59CA	Bridgetown Leisure Centre building operations	C.10/1218	Operating Expenses			(3,500)	(3,500)
Reserve 131	Bridgetown Leisure Centre Reserve	C.10/1218	Reserve Transfer		3,500		0
				0	79,367	(79,367)	

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 5: CASH AND INVESTMENTS

	Interest Rate	Unrestricted	Restricted	Trust	Investments	Total Amount	Institution	Maturity Date
		\$	\$	\$	\$	\$		
(a) Cash Deposits								
Municipal Bank Account	Various	93,515				93,515	CBA	At Call
Municipal On-Call Account	1.50%	173,306				173,306	Bankwest	At Call
Trust Bank Account	Various			172,878		172,878	CBA	At Call
Visitor Centre Trust Account	Nil			28,218		28,218	CBA	At Call
Cash On Hand	Nil	2,500				2,500	N/A	On Hand
(b) Term Deposits								
Municipal Funds	2.65%	600,000				600,000	Bankwest	02-Jan-19
Municipal Funds	2.68%	600,000				600,000	Westpac	03-Jan-19
Municipal Funds	2.68%	500,000				500,000	Westpac	10-Jan-19
Municipal Funds	2.67%	500,000				500,000	Westpac	21-Jan-19
Municipal Funds	2.50%	603,889				603,889	Bankwest	01-Feb-19
Municipal Funds	2.45%	357,786				357,786	Westpac	12-Feb-19
Municipal Funds	2.60%	500,000				500,000	Bankwest	19-Feb-19
Municipal Funds	2.50%	411,300				411,300	Westpac	21-Mar-19
Reserve Funds	2.71%		2,934,215			2,934,215	Westpac	31-Dec-18
Total		4,342,297	2,934,215	201,096	0	7,477,608		

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 6: RECEIVABLES

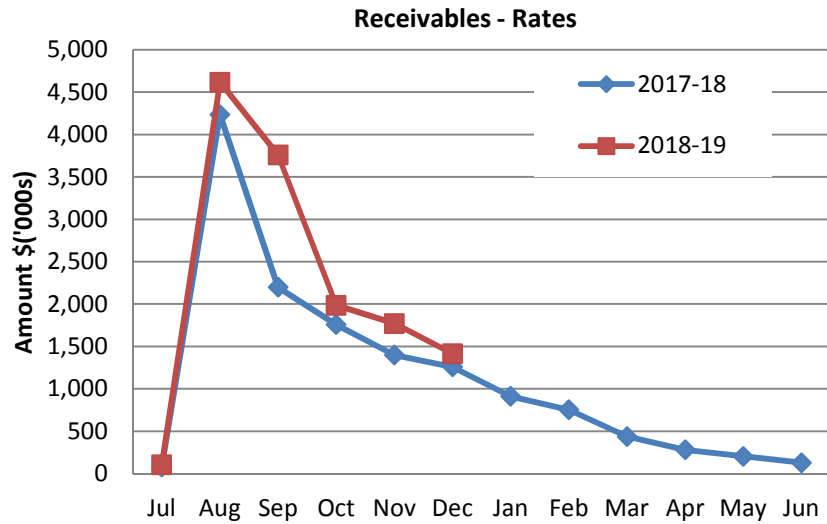
Receivables - Rates

Opening Arrears Previous Years
 Levied this year
 Less Collections to date
 Equals Current Outstanding

	YTD 31 Dec 2018	30 June 2017
	\$	\$
Opening Arrears Previous Years	126,308	102,877
Levied this year	4,536,839	4,371,071
Less Collections to date	(3,247,356)	(4,345,704)
Equals Current Outstanding	1,415,791	128,244
Net Rates Collectable	1,415,791	128,244
% Collected	69.64%	97.13%

Net Rates Collectable

% Collected



Receivables - Sundry Debtors

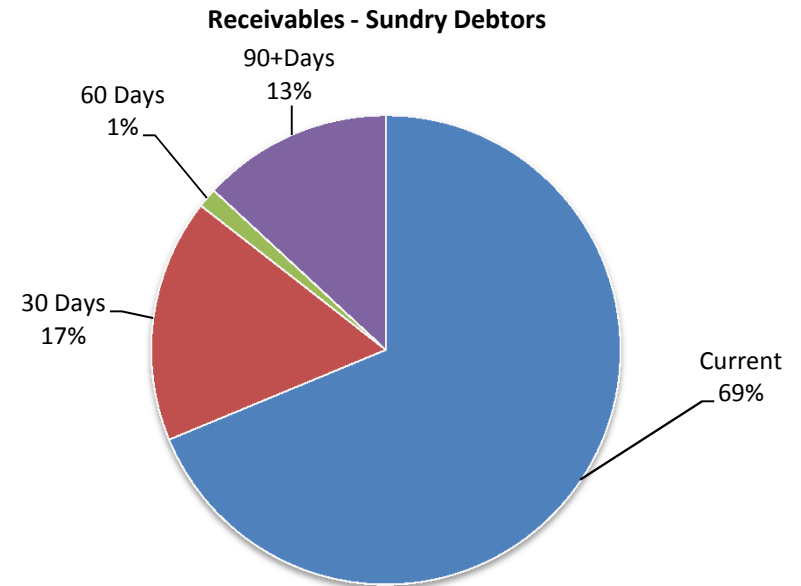
Receivables - Sundry Debtors

	Current	30 Days	60 Days	90+Days
	\$	\$	\$	\$
Receivables - Sundry Debtors	33,571	8,197	660	6,402

Total Sundry Debtor Receivables Outstanding

48,830

Amounts shown above include GST (where applicable)



SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 7: CASH BACKED RESERVE

2018-19										
Res No.	Name	Opening Balance	Amended Budget Interest Earned	Actual Interest Earned	Amended Budget Transfers In (+)	Actual Transfers In (+)	Amended Budget Transfers Out (-)	Actual Transfers Out (-)	Amended Budget Closing Balance	Actual YTD Closing Balance
		\$	\$	\$	\$	\$	\$	\$	\$	\$
101	Leave Reserve	177,112	5,705	2,913					182,817	180,025
102	Plant Reserve	318,625	5,338	3,898	265,550		(418,435)	(138,435)	171,078	184,088
103	Land and Building Reserve	709,401	21,389	11,668			(95,326)		635,464	721,069
104	Bush Fire Reserve	687	183	11	5,000				5,870	698
105	Maranup Ford Road Maintenance Reserve	101,525	114	1,670			(98,000)		3,639	103,195
106	Subdivision Reserve	379,565	12,548	6,243	10,000				402,113	385,808
107	Sanitation Reserve	19,903	133	1,049	102,222	74,475	(118,000)		4,258	95,427
109	Recreation Centre Floor and Solar Reserve	175,310	5,969	2,884	10,000				191,279	178,193
111	Mobile Garbage Bins Reserve	74,222	0	253			(74,222)	(74,475)	(0)	0
112	Refuse Site Post Closure Reserve	208,099	6,445	3,423	5,000		(13,000)		206,544	211,521
113	Drainage Reserve	10,747	668	177	10,000				21,415	10,924
114	Community Bus Reserve	48,985	1,578	806					50,563	49,791
115	SBS Tower and Infrastructure Reserve	30,718	989	505					31,707	31,223
118	Playground Equipment Reserve	25,846	929	425					26,775	26,272
119	Swimming Pool Reserve	4,307	139	71	3,000				7,446	4,378
121	Car Park Reserve	922	30	15					952	937
123	ROMANS Reserve	4,591	148	76					4,739	4,667
125	Building Maintenance Reserve	145,551	4,688	2,394			(3,867)		146,372	147,945
126	Strategic Projects Reserve	64,136	2,227	1,055	10,000		(5,000)		71,363	65,191
127	Matched Grants Reserve	30,287	976	498	10,000		(10,000)		31,263	30,786
128	Aged Care Infrastructure Reserve	54,477	1,755	896					56,232	55,373
129	Equipment Reserve	5,844	188	96					6,032	5,940
130	Assets and GRV Valuation Reserve	84,308	1,693	1,348	35,767		(67,500)	(4,000)	54,268	81,656
131	Bridgetown Leisure Centre Reserve	124,897	3,739	2,054			(20,700)		107,936	126,952
132	Trails Reserve	20,698	667	340					21,365	21,039
133	Light Fleet Vehicle Reserve	19,500	4	321	94,830		(107,200)		7,134	19,821

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 7: CASH BACKED RESERVE

2018-19										
Res No.	Name	Opening Balance	Amended Budget Interest Earned	Actual Interest Earned	Amended Budget Transfers In (+)	Actual Transfers In (+)	Amended Budget Transfers Out (-)	Actual Transfers Out (-)	Amended Budget Closing Balance	Actual YTD Closing Balance
		\$	\$	\$	\$	\$	\$	\$	\$	\$
	Cash Backed Reserves (Continued)									
134	Prepaid Rates Reserve	0	966		30,000				30,966	0
135	Blackspot Reserve	0	322		10,000				10,322	0
201	Unspent Grans Reserve	1,242,429	0				(1,214,053)	(1,051,132)	28,376	191,297
		4,082,692	79,530	45,090	601,369	74,475	(2,245,303)	(1,268,042)	2,518,288	2,934,215

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 8: CAPITAL DISPOSALS

YTD Actual Replacement			Disposals	Amended Current Budget			
Net Book Value	Proceeds	Profit (Loss)		Net Book Value	Proceeds	Profit (Loss)	Profit (Loss) Variance
\$	\$	\$		\$	\$	\$	\$
			Plant and Equipment				
11,818	9,800	(2,018)	P3055 2014 Subaru Liberty (EMCOR)	11,000	11,000	0	(2,018)
8,426	7,755	(671)	P3060 2013 Holden Cruze (Pool Vehicle)	7,335	6,200	(1,135)	464
			P2051 2014 Holden Colorado (Ranger)	15,000	15,000	0	0
			P4135 1998 Hino Fire Tender (Hester Brook)	65,047	40,000	(25,047)	25,047
			P4190 2008 Ford Ranger (Btwn Support)	5,000	6,200	1,200	(1,200)
18,266	18,182	(84)	P3020 2014 Nissan Pathfinder (MEH)	18,000	18,000	0	(84)
16,909	17,982	1,073	P3010 2014 Holden Colorado (MP)	17,500	17,500	0	1,073
			P2082 2006 Cat Tracked Loader (Landfill)	52,250	70,000	17,750	(17,750)
20,603	16,391	(4,212)	P3065 2014 Nissan Pathfinder (EMWS)	19,858	17,000	(2,858)	(1,354)
			P3035 2014 Nissan Pathfinder (SETO)	18,492	18,000	(492)	492
			P2280 2008 Ford Ranger (General Hand)	8,706	8,600	(106)	106
			P2165 2009 Ford Ranger (BMO)	11,000	11,000	0	0
40,122	36,364	(3,758)	P2037 2009 Mitsubishi Tip Truck	38,432	36,364	(2,068)	(1,690)
12,000	11,800	(200)	P2092 2007 John Deere Tractor	11,800	11,800	0	(200)
1,761	1,200	(561)	54674 New Holland Nugget Slasher	1,571	1,200	(371)	(190)
32,278	29,600	(2,678)	P2236 2014 New Holland Tractor	31,328	29,600	(1,728)	4,406
0	1,200	1,200	54658 Metro count Traffic Classifier	0	1,200	1,200	(2,400)
0	1,200	1,200	54682 Metro count Traffic Classifier	0	1,200	1,200	0
			P3090 2014 Holden Colorado (PBS)	18,684	18,000	(684)	0
162,183	151,473	(10,710)		351,003	337,864	(13,139)	4,701

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 9: CAPITAL ACQUISITIONS

Assets	General Ledger/Job No.	Amended Annual Budget	YTD 31 Dec 2018			Comment
			Amended YTD Budget	YTD Actual	Variance (Under)/Over	
		\$	\$	\$	\$	
Land and Buildings						
Other Governance						
Records Storage Facility	07BN	63,783	63,782	62,421	(1,361)	Works continuing
Shire Administration Building	07BU	73,300	0	537	537	
		137,083	63,782	62,958	(824)	
Fire Prevention						
Bridgetown Bushfire Brigade Garage	05BN	5,500	5,500	5,500	0	Job completed
		5,500	5,500	5,500	0	
Staff Housing						
146 Hampton Street	26BU	8,500	5,000	4,444	(556)	Carpet installation completed
144 Hampton Street	38BU	11,000	7,000	0	(7,000)	Works not yet commenced
31 Gifford Road	28BU	6,000	0	0	0	
		25,500	12,000	4,444	(7,556)	
Other Community Amenities						
Hampton Street Toilets	46BU	6,000	0	350	350	
Bridgetown Cemetery Toilets	02BN	30,000	30,000	29,198	(802)	
		36,000	30,000	29,548	(452)	
Public Halls and Civic Centres						
Bridgetown Civic Centre	02BU	30,350	10,350	1,843	(8,507)	Works continuing
Greenbushes Hall	20BU	72,200	11,900	11,869	(31)	
Greenbushes Offices	21BU	7,500	0	1,201	1,201	Works commenced sooner than estimated
		110,050	22,250	14,913	(7,337)	
Swimming Areas and Beaches						
Greenbushes Pool Toilet	05BU	8,750	4,500	0	(4,500)	Works not yet commenced
		8,750	4,500	0	(4,500)	
Other Recreation and Sport						
Bridgetown Leisure Centre Renewals	16BU	105,900	85,700	31,925	(53,775)	Works continuing
Bridgetown Trotting Club	23BU	5,000	0	0	0	
Greenbushes Golf Club	39BU	24,750	0	940	940	

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 9: CAPITAL ACQUISITIONS

Assets	General Ledger/Job No.	Amended Annual Budget	YTD 31 Dec 2018			Comment
			Amended YTD Budget	YTD Actual	Variance (Under)/Over	
		\$	\$	\$	\$	
Other Recreation and Sport (Continued)						
Bridgetown Sports Ground Horse Stalls	56BU	30,000	30,000	13,884	(16,116)	Works continuing
Greenbushes Sportsground Toilets/Kiosk	45BU	5,050	0	67	67	
		170,700	115,700	46,816	(68,884)	
Libraries						
Bridgetown Library	1365540	11,500	1,230	1,764	534	
		11,500	1,230	1,764	534	
Streets and Road Construction						
Shire Depot	08BU	23,000	5,000	5,260	260	
		23,000	5,000	5,260	260	
Unclassified						
Geegelup Brook Land	1790040	91,326	33,752	33,753	1	Works continuing
Asbestos Removal	1790240	55,000	11,000	8,461	(2,539)	
		146,326	44,752	42,214	(2,538)	
Land and Buildings Total		674,409	304,714	213,417	(91,297)	
Roads						
Streets and Road Construction						
Winnejup Road Regional Road Group 17/18	RR21	213,000	0	880	880	
Mockerdillup Road Regional Road Group	RR16	9,000	0	102	102	
Kerbing	KB01	5,000	2,453	0	(2,453)	Works not yet commenced
Glentulloch Road Roads to Recovery	RT10	130,772	130,772	156,109	25,337	Job completed
Tweed Road Roads to Recovery	RT52	61,054	61,054	35,963	(25,091)	Job completed
Maranup Ford road	RC32	1,035,000	0	1,121	1,121	Preliminary planning
Kangaroo Gully Road	RC33	30,800	0	0	0	
Blackwood Park Road	RC46	60,843	0	3,642	3,642	Preliminary planning
Nelson Street	RC41	35,000	0	0	0	

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 9: CAPITAL ACQUISITIONS

Assets	General Ledger/Job No.	Amended Annual Budget	YTD 31 Dec 2018			Comment
			Amended YTD Budget	YTD Actual	Variance (Under)/Over	
		\$	\$	\$	\$	
Streets and Road Construction (Continued)						
Roadside Vegetation Removal	RC43	80,735	26,907	17,990	(8,917)	Works continuing
Brockman Highway Blackspot	BK02	200,808	0	6,526	6,526	Signs purchased
		1,862,012	221,186	222,334	1,148	
Roads Total		1,862,012	221,186	222,334	1,148	
Footpaths						
Streets and Road Construction						
Footpaths Disability Access	FP28	5,000	2,450	0	(2,450)	Works not yet commenced
		5,000	2,450	0	(2,450)	
Footpaths Total		5,000	2,450	0	(2,450)	
Drainage						
Urban Stormwater Drainage						
Geegelup Brook	DR17	22,800	0	0	0	
Palmers Road	DR21	14,674	14,674	20,000	5,326	Scope of work greater than estimated
Four Seasons Estate	DR24	11,364	0	0	0	
Barlee Street	DR26	5,997	5,997	5,754	(243)	Job completed
Dusting Drive	DR28	14,423	14,423	9,667	(4,756)	Job completed
Forest/Padbury Street	DR29	8,688	8,686	13,975	5,289	Scope of work greater than estimated
Sunridge Drive	DR30	11,076	11,076	1,065	(10,011)	Works continuing
Claret Ash Rise	DR31	9,000	0	0	0	
Moultin Street	DR32	30,000	0	428	428	
		128,022	54,856	50,888	(3,968)	
Drainage Total		128,022	54,856	50,888	(3,968)	
Parks and Ovals						
Other Recreation and Sport						
Somme Park (Fitness Trail Equipment)	05IU	7,010	3,010	0	(3,010)	Installation not yet commenced
Bridgetown Leisure Centre Shade Sails	06IN	17,200	17,200	2,235	(14,965)	Purchase order raised
		24,210	20,210	2,235	(17,975)	

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 9: CAPITAL ACQUISITIONS

Assets	General Ledger/Job No.	Amended Annual Budget	YTD 31 Dec 2018			Comment
			Amended YTD Budget	YTD Actual	Variance (Under)/Over	
		\$	\$	\$	\$	
Tourism & Area Promotion						
Bridgetown Information Bays	11IN	25,000	0	0	0	
		25,000	0	0	0	
Parks and Ovals Total		49,210	20,210	2,235	(17,975)	
Bridges						
Streets and Road Construction						
Maranup Ford Road Bridge 3318A	BR06	101,500	101,500	88,206	(13,294)	Job completed
Catterick Bridge 3703A	BR13	35,732	35,732	19,307	(16,425)	Job completed
Hester Cascades Bridge 3704A	BR08	33,958	33,958	43,010	9,052	Job completed
Blackbutt Bridge 3707A	BR14	190,000	129,114	129,114	(0)	
Fletchers Bridge 3329A	BR16	23,191	23,191	15,729	(7,462)	Job completed
Blackbutt Road Bridge 3706A (RTR)	BR17	34,401	34,401	18,847	(15,554)	Job completed
Blackbutt Road Bridge 3707A (RTR)	BR18	31,779	31,779	18,003	(13,776)	Job completed
		450,561	389,675	332,216	(57,459)	
Bridges Total		450,561	389,675	332,216	(57,459)	
Infrastructure Other						
Sanitation - General Refuse						
Bridgetown Landfill - Reticulation	WA01	130,000	5,720	7,428	1,708	Preliminary planning
Bridgetown Inert Waste	WA03	17,800	17,800	6,247	(11,553)	Works continuing
		147,800	23,520	13,675	(9,845)	
Sewerage						
New Bridgetown Septic Pit Site	WA05	225,750	169,311	83,550	(85,761)	Works continuing
		225,750	169,311	83,550	(85,761)	
Other Recreation and Sport						
Blackwood River Boardwalk	10IN	50,000	4,080	4,080	0	
Four Seasons Estate - POS Reserve	03IN	45,454	0	0	0	
Four Seasons Estate - Stream Protection	04IN	18,182	0	0	0	

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 9: CAPITAL ACQUISITIONS

Assets	General Ledger/Job No.	Amended Annual Budget	YTD 31 Dec 2018			Comment
			Amended YTD Budget	YTD Actual	Variance (Under)/Over	
		\$	\$	\$	\$	
Other Recreation and Sport (Continued)						
Construct New Sportsground Dam	12IN	18,000	18,000	244	(17,756)	Job not yet commenced
Four Seasons Estate - Street Tree Planting	05IN	36,364	19,817	21,027	1,210	Works continuing
		168,000	41,897	25,351	(16,546)	
Infrastructure Other Total		541,550	234,728	122,577	(112,151)	
Plant and Equipment						
Fire Prevention						
Fire Fighting Equipment - Brigades Funded	1065540	5,000	0	0	0	
Vehicles for Brigade	1065940	375,000	25,000	21,938	(3,062)	Vehicle purchased, some savings made
		380,000	25,000	21,938	(3,062)	
Other Law, Order and Public Safety						
Rangers Vehicle	1080240	36,000	36,000	0	(36,000)	Purchase order raised
		36,000	36,000	0	(36,000)	
Health						
EHO Vehicle	1145540	32,000	32,000	28,368	(3,632)	Vehicle purchased, some savings made
		32,000	32,000	28,368	(3,632)	
Community Amenities						
Tracked Loader	PL14	350,000	0	0	0	
		350,000	0	0	0	
Road Plant Purchases						
Tractor	PL03	60,600	60,600	60,600	(0)	Job completed
Tip truck	PL04	156,799	156,799	156,798	(1)	Job completed
Works and Services Fleet	1405040	129,000	43,900	43,892	(8)	
Sundry Equipment	1403740	30,390	10,401	10,401	0	
		376,789	271,700	271,692	(8)	
Economic Services						
PBS Vehicle	1470140	32,000	0	0	0	
		32,000	0	0	0	
Plant and Equipment Total		1,206,789	364,700	321,999	(42,701)	

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 9: CAPITAL ACQUISITIONS

Assets	General Ledger/Job No.	Amended Annual Budget	YTD 31 Dec 2018			Comment
			Amended YTD Budget	YTD Actual	Variance (Under)/Over	
		\$	\$	\$	\$	
<i>Furniture and Equipment</i>						
Members of Council						
Council Honour Boards	1040040	5,000	5,000	0	(5,000)	Purchase order raised
		5,000	5,000	0	(5,000)	
Other Governance						
IT Communications Equipment and Software	1055140	11,500	0	0	0	
		11,500	0	0	0	
Furniture and Equipment Total		16,500	5,000	0	(5,000)	
Capital Expenditure Total		4,934,053	1,597,519	1,265,666	(331,853)	

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 10: INFORMATION ON BORROWINGS

(a) Debenture Repayments

Particulars	Principal 1/07/2018	New Loans	Principal Repayments		Principal Outstanding		Interest Repayments	
		Actual	Actual	Amended Budget	Actual	Amended Budget	Actual	Amended Budget
		\$	\$	\$	\$	\$	\$	\$
Community Amenities								
Loan 108 Landfill Plant	96,654		11,235	22,703	73,951	73,951	1,996	3,760
Loan 113 Landfill Site New Cell	306,774		49,691	99,949	206,825	206,825	3,497	6,428
Loan 114 Liquid & Inert Waste Sites	120,000		11,281	22,716	97,284	97,284	1,638	3,122
Loan 115 Landfill Cell Extension	0			0		100,000		0
Loan 116 Liquid Waste Facility	0			0		100,000		0
Recreation and Culture								
Loan 105 Memorial Park Improvements	27,987		13,778	27,987	14,209	0	875	1,319
Loan 106 Somme Creek Parkland	22,137		10,898	22,137	11,239	0	692	1,043
Loan 110 Bridgetown Bowling Club - SSL	25,964		4,130	8,337	21,834	17,627	484	891
Loan 112 Bridgetown Swimming Pool	1,532,099		31,781	64,205	1,500,318	1,467,894	30,948	61,255
	2,131,615	0	132,795	268,034	1,925,659	2,063,581	40,130	77,818

(b) New Debentures

Particulars	Amount to be Borrowed Budget	Institution	Loan Type	Term Years	Amount Borrowed Actual
	\$				\$
Community Amenities					
Loan 115 Landfill Cell Extension	100,000	WATC	Debenture	5	0
Loan 116 Liquid Waste Facility	100,000	WATC	Debenture	10	0
	200,000				0

No new debentures were raised during the reporting period.

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 11: RATING INFORMATION

RATE TYPE	Rate in Dollar	Number of Properties	Rateable Value	Rate Revenue	Interim Rates	Back Rates	Total Revenue	Amended Budget Rate Revenue	Amended Budget Interim Rate	Amended Budget Back Rate	Amended Budget Total Revenue
	\$		\$	\$	\$	\$	\$	\$	\$	\$	\$
Differential General Rate											
GRV Shire	0.090434	1,684	25,684,292	2,322,733	5,570	100	2,328,403	2,322,733	9,000	1,000	2,332,733
UV Shire Rural	0.006222	490	185,418,000	1,139,982	1,715	28	1,141,726	1,153,671			1,153,671
UV Bridgetown Urban Farmland	0.000000	0	0	13,688			13,688	0			0
UV Mining	0.078450	14	911,447	71,503	561		72,064	71,503			71,503
Sub-Totals		2,188	212,013,739	3,547,907	7,846	128	3,555,881	3,547,907	9,000	1,000	3,557,907
Minimum Payment	Minimum \$										
GRV Shire	897.00	793	4,030,005	711,321	(307)		711,014	711,321			711,321
UV Shire Rural	1,112.00	239	31,385,900	265,768	(2,232)		263,536	265,768			265,768
UV Bridgetown Urban Farmland	0.00	0	0	0			0	0			0
UV Mining	534.00	12	27,764	6,408	0		6,408	6,408			6,408
Sub-Totals		1,044	35,443,669	983,497	(2,539)	0	980,958	983,497	0	0	983,497
Rates Paid in Advance							4,536,839				4,541,404
Amount from General Rates							(61,994)				0
Discounts/concessions							4,474,845				4,541,404
Totals							(2,053)				(2,053)
							4,472,792				4,539,351

SHIRE OF BRIDGETOWN-GREENBUSHES
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 December 2018

Note 12: TRUST FUND

Funds held at balance date over which the Shire has no control and which are not included in this statement are as follows:

Description	Opening Balance 1-Jul-17	Amount Received	Amount Paid	Closing Balance 31-Dec-18
	\$	\$	\$	\$
BCITF	3,366	7,143	(9,461)	1,049
Builders Registration Board Levy	5,584	11,868	(13,342)	4,110
Traffic Act	0	600,778	(600,778)	0
Relocated Housing Bonds	6,077	18		6,095
Subdivision Clearance Bonds	22,103	65		22,168
Cat Trap Bonds	100	100	(150)	50
Community Bus Bonds	1,800	2,300	(1,950)	2,150
Community Stall Bonds	100	750	(800)	50
Earthworks Bonds	50,884	743	(3,664)	47,962
Hall Hire Bonds	1,200	2,700	(3,000)	900
Standpipe Card Bonds	7,783	400	(321)	7,862
Council Built Asset Bonds	17,632	51	(515)	17,168
Bushfire Donations	5,399	16		5,415
Accommodation - Visitor Centre	53,929	105,080	(132,688)	26,322
South West Coach Lines	467	4,056	(4,248)	275
Other Visitor Centre	744	2,228	(2,346)	626
TransWA	1,408	6,719	(7,133)	994
Local Drug Action Group	762	2		765
Coral Marble - Extractive Industries Bond	4,497	13		4,510
Department of Agriculture - Bond	7,138	21		7,159
Bridgetown Tidy Town Bank A/C	829	2		831
Perry - Fee Relating to Caveat	104	0		104
Seagate Holdings - Turning Lane Bond	37,608	110		37,718
Ouch Festival	619	2		620
R Witlen Overpayment	21			21
Visitor Centre Accommodation Payment	230			230
Dress Down Donations	610	122		732
R Edwards Bond Gifford Rd	200			200
BG Hockey Windup of Assn	3,860	11		3,871
M Olsen - Rental bond	0	440		440
Frank Draper Cemetery Fees	0	700		700
Interest to be Distributed	0	530	(530)	0
	235,054	746,967	(780,925)	201,096

SHIRE OF BRIDGETOWN-GREENBUSHES

LIST OF ACCOUNTS PAID IN DECEMBER TO BE RECEIVED

Cheque/ Voucher No.	Date of Payment	Payee	Payment Description	Payment Amount
<u>MUNICIPAL FUND</u>				
<u>DIRECT DEBITS</u>				
3122018	03/12/2018	LES MILLS ASIA PACIFIC	MONTHLY LES MILLS LICENCE FEES FOR DECEMBER	280.95
31122018	31/12/2018	WESTERN AUSTRALIAN TREASURY	LOAN REPAYMENTS	172,925.37
DD13458.1	05/12/2018	WA SUPER	PAYROLL DEDUCTIONS	17,101.95
DD13458.10	05/12/2018	AUSTRALIAN SUPER	SUPERANNUATION CONTRIBUTIONS	231.63
DD13458.11	05/12/2018	COLONIAL FIRST CHOICE PERSONAL SUPER	SUPERANNUATION CONTRIBUTIONS	120.21
DD13458.12	05/12/2018	GUILD SUPER	SUPERANNUATION CONTRIBUTIONS	251.30
DD13458.13	05/12/2018	REST INDUSTRY SUPER	SUPERANNUATION CONTRIBUTIONS	114.46
DD13458.14	05/12/2018	HESTA SUPER	SUPERANNUATION CONTRIBUTIONS	118.36
DD13458.15	05/12/2018	COMMONWEALTH BANK SUPERANNUATION	SUPERANNUATION CONTRIBUTIONS	100.27
DD13458.16	05/12/2018	COLONIAL FIRST STATE PERSONAL SUPER	SUPERANNUATION CONTRIBUTIONS	145.39
DD13458.17	05/12/2018	ANZ CHOICE SUPERANNUATION	SUPERANNUATION CONTRIBUTIONS	57.92
DD13458.2	05/12/2018	HOST PLUS EXECUTIVE SUPERANNUATION	SUPERANNUATION CONTRIBUTIONS	112.85
DD13458.3	05/12/2018	AMP SUPERANNUATION SAVINGS TRUST	SUPERANNUATION CONTRIBUTIONS	107.26
DD13458.4	05/12/2018	COLONIAL FIRST STATE SUPERANNUATION	SUPERANNUATION CONTRIBUTIONS	50.46
DD13458.5	05/12/2018	MLC SUPER FUND	SUPERANNUATION CONTRIBUTIONS	52.28
DD13458.6	05/12/2018	BT SUPER FOR LIFE	SUPERANNUATION CONTRIBUTIONS	130.69
DD13458.7	05/12/2018	TAL SUPER	SUPERANNUATION CONTRIBUTIONS	86.67
DD13458.8	05/12/2018	WAIKAWA DREAMING SUPER FUND	PAYROLL DEDUCTIONS	678.46
DD13458.9	05/12/2018	ASGARD SUPER	SUPERANNUATION CONTRIBUTIONS	79.82
DD13469.1	07/12/2018	CALTEX STARCARD	FUEL FOR THE MONTH OF NOVEMBER	4,681.66
DD13469.2	14/12/2018	SHERIFFS OFFICE	FER LODGEMENT FEES	127.00
DD13469.3	15/12/2018	WATERLOGIC AUSTRALIA PTY LTD	MONTHLY HIRE/SERVICE OF WATER COOLERS	136.88
DD13498.1	19/12/2018	WA SUPER	PAYROLL DEDUCTIONS	17,609.46
DD13498.10	19/12/2018	AUSTRALIAN SUPER	SUPERANNUATION CONTRIBUTIONS	274.62
DD13498.11	19/12/2018	GUILD SUPER	SUPERANNUATION CONTRIBUTIONS	251.30
DD13498.12	19/12/2018	COLONIAL FIRST CHOICE PERSONAL SUPER	SUPERANNUATION CONTRIBUTIONS	127.22
DD13498.13	19/12/2018	HESTA SUPER	SUPERANNUATION CONTRIBUTIONS	144.03
DD13498.14	19/12/2018	REST INDUSTRY SUPER	SUPERANNUATION CONTRIBUTIONS	170.09
DD13498.15	19/12/2018	COMMONWEALTH BANK SUPERANNUATION	SUPERANNUATION CONTRIBUTIONS	97.21
DD13498.16	19/12/2018	COLONIAL FIRST STATE PERSONAL SUPER	SUPERANNUATION CONTRIBUTIONS	135.88
DD13498.17	19/12/2018	ANZ CHOICE SUPERANNUATION	SUPERANNUATION CONTRIBUTIONS	68.14
DD13498.2	19/12/2018	HOST PLUS EXECUTIVE SUPERANNUATION	SUPERANNUATION CONTRIBUTIONS	107.41
DD13498.3	19/12/2018	AMP SUPERANNUATION SAVINGS TRUST	SUPERANNUATION CONTRIBUTIONS	99.51
DD13498.4	19/12/2018	COLONIAL FIRST STATE SUPER FUND	SUPERANNUATION CONTRIBUTIONS	36.70
DD13498.5	19/12/2018	MLC SUPER FUND	SUPERANNUATION CONTRIBUTIONS	140.88
DD13498.6	19/12/2018	BT SUPER FOR LIFE	SUPERANNUATION CONTRIBUTIONS	81.86
DD13498.7	19/12/2018	TAL SUPER	SUPERANNUATION CONTRIBUTIONS	72.91
DD13498.8	19/12/2018	WAIKAWA DREAMING SUPER FUND	PAYROLL DEDUCTIONS	678.48
DD13498.9	19/12/2018	ASGARD SUPER	SUPERANNUATION CONTRIBUTIONS	259.84
B/S	02/12/2018	COMMONWEALTH BANK	MERCHANT FEES	688.38
B/S	05/12/2018	COMMONWEALTH BANK	TOTAL WAGES FOR 22.11.2018 - 05.12.2018	115,324.33
B/S	17/12/2018	COMMONWEALTH BANK	ACCOUNT KEEPING FEES	54.99
B/S	17/12/2018	COMMONWEALTH BANK	BPOINT/BPAY FEES	783.94

SHIRE OF BRIDGETOWN-GREENBUSHES

LIST OF ACCOUNTS PAID IN DECEMBER TO BE RECEIVED

Cheque/ Voucher No.	Date of Payment	Payee	Payment Description	Payment Amount
B/S	19/12/2018	COMMONWEALTH BANK	TOTAL WAGES FOR 06.12.2018 - 19.12.2018	118,808.44
B/S	31/12/2018	COMMONWEALTH BANK	RETURNED EFT/CHEQUE FEES	2.50
B/S	30/11/2018	COMMONWEALTH BANK - CREDIT CARD	DINNER FOR VOLUNTEERS SETTING UP CHRISTMAS DECORATIONS	116.00
B/S	10/12/2018	COMMONWEALTH BANK - CREDIT CARD	LUNCH FOR WORKFORCE PLAN CONSULTANT	62.00
B/S	10/12/2018	COMMONWEALTH BANK - CREDIT CARD	DINNER FOR COUNCIL WORKSHOP FOR WORKFORCE PLAN - 1 STAFF MEMBER	357.70
B/S	12/12/2018	COMMONWEALTH BANK - CREDIT CARD	LUNCH WITH LOCAL GOVERNMENT MENTOR	110.00
B/S	12/12/2018	COMMONWEALTH BANK - CREDIT CARD	LUNCH WITH LOCAL GOVERNMENT MENTOR	27.40
B/S	13/12/2018	COMMONWEALTH BANK - CREDIT CARD	PARKING FEES - CEO MEETING IN PERTH	5.05
B/S	13/12/2018	COMMONWEALTH BANK - CREDIT CARD	PARKING FEES - CEO MEETING IN PERTH	5.05
B/S	17/12/2018	COMMONWEALTH BANK - CREDIT CARD	SHADE UMBRELLAS FOR POOL	422.94
B/S	20/12/2018	COMMONWEALTH BANK - CREDIT CARD	ICE FOR DECEMBER COUNCIL MEETING	4.60
B/S	21/12/2018	COMMONWEALTH BANK - CREDIT CARD	REFRESHMENTS FOR STAFF CHRISTMAS PARTY	598.88
B/S	21/12/2018	COMMONWEALTH BANK - CREDIT CARD	REFRESHMENTS FOR STAFF CHRISTMAS PARTY	43.99
ELECTRONIC PAYMENTS				
EFT27319	07/12/2018	EASISALARY	EMPLOYEE SALARY PACKAGED ITEMS	667.35
EFT27324	13/12/2018	ABCO PRODUCTS PTY LTD	VARIOUS CLEANING PRODUCTS	647.68
EFT27325	13/12/2018	ACCESS ENGINEERING	REPAIR HYDRAULIC CYLINDER FOR BOMAG WASTE COMPACTOR	237.60
EFT27326	13/12/2018	ALLWOOD STUMP GRINDING	STUMP GRINDING OF BOX TREE ROOTS ON STEERE STREET FOOTPATH	390.00
EFT27327	13/12/2018	AMD CHARTERED ACCOUNTANTS	AUDIT OF THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 30/06/2018	13,035.00
EFT27328	13/12/2018	AMITY SIGNS	2 X MAGNETIC PANELS STATING - FIELD INTELLIGENCE FOR BFB VEHICLE	107.80
EFT27329	13/12/2018	AUSTRALASIAN PERFORMING RIGHT	OUTDOOR FILM FESTIVAL - APRA LICENCE	82.50
EFT27330	13/12/2018	AUSTRALIA POST	MONTHLY SHIRE POSTAGE FOR NOVEMBER & NEW IPHONE 6 RANGERS	1,936.45
EFT27331	13/12/2018	AUST COMMUNICATIONS & MEDIA	ANNUAL LICENCE RENEWAL OF ABC BROADCASTING/RETRANSMISSION AT SHOWGROUNDS SITE	44.00
EFT27332	13/12/2018	B & B STREET SWEEPING PTY LTD	SWEEPING OF THE CBD & SURROUNDING AREAS FOR NOVEMBER	1,859.00
EFT27333	13/12/2018	BELIA ENGINEERING	PICKUP & REMOVED 55 X USED MATTRESSES & COLLECTION OF E-WASTE FROM WASTE FACILITY	869.00
EFT27334	13/12/2018	BLACKWOOD RURAL SERVICES	ELECTRIC WINCH FOR DRYING 12.2 COLLAR TANK, TOOLS FOR PLANT MECHANIC & MINOR ITEMS	915.35
EFT27335	13/12/2018	BLACKWOODS	REFLECTIVE TAPE WHITE, PPE GLOVES & EAR PLUGS	191.24
EFT27336	13/12/2018	BLACKWOOD FRESH	REFRESHMENTS FOR CITIZENSHIP CEREMONY	16.03
EFT27337	13/12/2018	BLACKWOOD HEAVY TILT	FLOAT POSI TRACK FROM PERTH TO BRIDGETOWN FOR MAF PROJECT	880.00
EFT27338	13/12/2018	BLISS FOR DESIGN	VARIOUS MINOR EQUIPMENT & PARTS FOR NOVEMBER	504.72
EFT27339	13/12/2018	BLUES AT BRIDGETOWN	REFUND OF ROAD CLOSURE EQUIPMENT AS PER TRAFFIC MANAGEMENT PLAN FOR BLUES FESTIVAL	5,784.00
EFT27340	13/12/2018	BOOEASY AUSTRALIA PTY LTD	BOOEASY BOOKING RETURNS/MONTHLY FEES	342.97
EFT27341	13/12/2018	BOOKS AND PUBLISHING PTY LTD	'BOOKS + PUBLISHING' FULL YEAR MAGAZINE ONLY SUBSCRIPTION	69.00
EFT27342	13/12/2018	JULIA ANN BOYLE	REFUND OF ACCOMMODATION & TRAVEL EXPENSES INCURRED FOR WASTE CONFERENCE	745.36
EFT27343	13/12/2018	BRIDGETOWN MUFFLER & TOWBAR CENTRE	MINOR ITEMS	18.00
EFT27344	13/12/2018	BRIDGETOWN MEDICAL CENTRE	PRE-PLACEMENT MEDICAL ASSESSMENTS	270.00
EFT27345	13/12/2018	BRIDGETOWN TIMBER SALES	10 X 20KG BAGS RAPID SET, 6 X 20KG BAGS OF GREY CEMENT & VARIOUS MINOR ITEMS	273.71
EFT27346	13/12/2018	BTOWN COMMUNITY RESOURCE CENTRE	COMMUNITY VOUCHERS - ROADWISE COP-IT-SWEET PROJECT	140.00
EFT27347	13/12/2018	BRIDGETOWN HISTORICAL SOCIETY INC.	2 X COPIES OF BOOK BY MARY ELGAR - A MERE COUNTRY VILLAGE FOR LIBRARY STOCK	100.00
EFT27348	13/12/2018	BLACKWOOD AUTO ELECTRICAL SERVICES	ELECTRICAL REPAIRS FOR MAINTENANCE TRUCK, WATER TANK & ISUZU TIP TRUCK	1,230.20
EFT27349	13/12/2018	BRIDGETOWN NETBALL ASSOCIATION	UMPIRING FOR TERM 4 MIXED NETBALL COMPETITION FOR 23/10/2018 - 11/12/2018	480.00
EFT27350	13/12/2018	BTOWN VOLUNTEER BUSH FIRE BRIGADE	MEALS FOR BUSH FIRE BRIGADE OFFICERS MEETING AND LEMC MEETING & EXERCISE	825.00
EFT27351	13/12/2018	BRIDGETOWN MITRE 10 & RETRAVISION	ASSORTED METAL FILES, 2 X SACK TROLLEYS, TOOLS FOR PLANT MECHANIC & MINOR ITEMS	599.49
EFT27352	13/12/2018	BRIDGETOWN PAINT SALES	CARTON OF WHITE SPRAY CANS FOR ROAD MARKING	149.65
EFT27353	13/12/2018	BRIDGETOWN NEWSAGENCY	MONTHLY NEWSPAPER CHARGES FOR NOVEMBER & OFFICE STATIONERY SUPPLIES	465.65

SHIRE OF BRIDGETOWN-GREENBUSHES

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EFT27354	13/12/2018	ROB BROGAN	50% SHIRE CONTRIBUTION TO PERSONAL MOBILE PHONE PLAN FOR JUNE - NOVEMBER 2018	285.00
EFT27355	13/12/2018	BUNBURY AUTO GROUP	PURCHASE OF NEW 2018 MITSUBISHI OUTLANDER AWD WITH EXTRAS, LESS TRADE-IN	11,523.15
EFT27356	13/12/2018	BUNBURY SUBARU	6 MONTH SERVICE - SUBARU LIBERTY B.8666	311.74
EFT27357	13/12/2018	BURGESS RAWSON (WA) PTY LTD	SES WATER USAGE FOR PERIOD 02/10/2019 TO 27/11/2018	119.86
EFT27358	13/12/2018	CAMPBELLS	SNACKS AND CONFECTIONERY FOR LEISURE CENTRE CAFÉ	391.98
EFT27359	13/12/2018	CHILD SUPPORT AGENCY	PAYROLL DEDUCTIONS	216.87
EFT27360	13/12/2018	CITY & REGIONAL FUELS	BULK FUEL FOR MONTH OF NOVEMBER	14,835.50
EFT27361	13/12/2018	CLEANAWAY PTY LTD	WASTE COLLECTION SERVICES FOR NOVEMBER 2018	28,003.72
EFT27362	13/12/2018	COURIER AUSTRALIA	FREIGHT CHARGES	75.75
EFT27363	13/12/2018	CRENDON MACHINERY	2 X ENGINE AND COMPRESSOR BAY DOOR GAS STRUTS FOR CHERRY PICKER	88.00
EFT27364	13/12/2018	CUSTOM SERVICE LEASING LTD	VEHICLE LEASING FOR DECEMBER	393.31
EFT27365	13/12/2018	CUTTS TRANSPORT PTY LTD	FREIGHT CHARGES	197.81
EFT27366	13/12/2018	DAVMECH	LABOUR TO COMPLETE MECHANICAL SURVEY & REPAIRS ON TRACK LOADER	618.73
EFT27367	13/12/2018	DELTA FORCE CABLING SOLUTIONS	REPLACE POWER INLET ON BFB CANTEEN TRAILER	242.00
EFT27368	13/12/2018	DEPT OF BIODIVERSITY, CONSERVATION	LEASE 1646/97 WASTE WATER DISPOSAL FOR 01/12/2018 - 30/11/2019	550.00
EFT27369	13/12/2018	DEPARTMENT OF PREMIER AND CABINET	GAZETTAL OF 2018-19 FIREBREAK ORDER	436.08
EFT27370	13/12/2018	DOMESTIC MAINTENANCE SW	PREP AND OIL TIMBER PICNIC TABLES & BENCHES IN MEMORIAL PARK	120.00
EFT27371	13/12/2018	EMPORIUM BISTRO	BREAKFAST MEETING WITH YOUTH PRECINCT CONSULTANT	36.20
EFT27372	13/12/2018	ENVIRONMENTAL HEALTH AUSTRALIA INC	2018/19 ANNUAL SUBSCRIPTION TO "IM ALERT ONLINE FOOD SAFETY"	330.00
EFT27373	13/12/2018	GABRIEL EVANS	VC STOCK - GREETING CARDS, BOOKS & CDS	594.00
EFT27374	13/12/2018	FISHERS TYRE CENTRE	2 X NEW BATTERIES FOR BRIDGETOWN 12.2, CATERICK 24 & GREENBUSHES 24 BFB VEHICLES	1,350.00
EFT27375	13/12/2018	FLYING DUCK CAFE	MEAL FOR CONCEPT FORUM - 8.11.18	216.00
EFT27376	13/12/2018	GARDEN CITY PLANTERS PTY LTD	2 X SWAGMAN BATTERY OPERATED 16 LTR SPRAYER BACK PACKS	476.10
EFT27377	13/12/2018	GBUSHES COMMUNITY RESOURCE CENTRE	COMMISSION ON GREENBUSHES HALL HIRE BOOKINGS TAKEN FOR 02/08/2018 - 10/12/2018	67.50
EFT27378	13/12/2018	ANDRE HARRIS	SHIRE'S CONTRIBUTION TOWARDS CROSSOVER	870.00
EFT27379	13/12/2018	GLENYS HARRIS	REFUND FOR DIFFERENCE BETWEEN UNSTERILISED & STERILISED LIFETIME DOG REGISTRATION	77.50
EFT27380	13/12/2018	HASTIE WASTE	REFUND OF REFUSE SITE ACCESS FEES PAID IN EXCESS	2,350.00
EFT27381	13/12/2018	H C JONES & CO	PRE-LAY & INSTALL SEPTIC SYSTEM FOR BRIDGETOWN CEMETERY TOILETS	2,889.00
EFT27382	13/12/2018	J R & A HERSEY PTY LTD	VARIOUS MINOR EQUIPMENT & TOOLS FOR FLEET MECHANIC	232.10
EFT27383	13/12/2018	HILLVIEW ELECTRICAL SERVICE	COURT LIGHTING PREP WORK & MATERIALS	1,639.00
EFT27384	13/12/2018	HYWOOD SIGNS	PRINTING OF 2 X CLEAN FILL SIGNS & A GATEHOUSE STOP SIGN FOR WASTE SITE	625.00
EFT27385	13/12/2018	INTERPHONE	NBN FOR ADMIN OFFICE - DECEMBER	130.90
EFT27386	13/12/2018	INTERFIRE AGENCIES PTY LTD	15 X BR5 WILDFIRE HELMETS WHITE WITH VISORS & INSIGNIA & 2 PAIRS OF APOLLO COOLMAX BOOTS	3,857.92
EFT27387	13/12/2018	ISA TECHNOLOGIES	MONTHLY IT SUPPORT - NOVEMBER	1,694.00
EFT27388	13/12/2018	JASON SIGNMAKERS	TRAFFIC SIGNS FOR WARREN BLACKWOOD STOCK ROUTE	6,990.94
EFT27389	13/12/2018	JOHNSON'S FOOD SERVICES	FROZEN FOODS AND SNACKS FOR THE BLC CAFE	291.69
EFT27390	13/12/2018	KEYBROOK UTILITY SERVICES	ROOF CLADDING REPAIRS FOR YORNUP SCHOOL BUILDING	2,388.38
EFT27391	13/12/2018	ALBERT KLAASSEN ELECTRICAL	REPLACE VARIOUS LIGHT FITTINGS AT SWIMMING POOL & ELECTRICAL TESTING FOR BTN CRC	1,474.00
EFT27392	13/12/2018	LEEWIN CIVIL PTY LTD	CONSTRUCTION OF NEW LIQUID WASTE FACILITY - PROGRESS PAYMENT 1	73,038.78
EFT27393	13/12/2018	LIFESPORTS BRIDGETOWN	COMPRESSOR NEEDLES FOR LEISURE CENTRE	6.95
EFT27394	13/12/2018	KIM LONGMAN	REIMBURSEMENT FOR RENEWAL OF HIGH RISK WORK LICENCE	50.40
EFT27395	13/12/2018	MANJIMUP MOTORS PTY LTD	MINOR PARTS	86.59
EFT27396	13/12/2018	MANJIMUP TOYOTA & MITSUBISHI	90,000 KM SERVICE - TOYOTA PRADO (CEO VEHICLE)	450.29
EFT27397	13/12/2018	MARKETFORCE	SHIRE ADVERTISEMENTS	565.00
EFT27398	13/12/2018	MCG FIRE SERVICES	REPLACEMENT 9KG FIRE EXTINGUISHER & MONTHLY TESTING FOR FDAS/EWIS AT LEISURE CENTRE	286.00

SHIRE OF BRIDGETOWN-GREENBUSHES

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EFT27399	13/12/2018	MICK TUCK GRADER SERVICES PTY LTD	CONTRACT GRADER SERVICES	9,410.50
EFT27400	13/12/2018	MIRACLE RECREATION EQUIPMENT	4 X FLAT RUBBER SWING SEATS FOR RIVER PARK	506.00
EFT27401	13/12/2018	ONESTEEL DISTRIBUTION	GAL PIPE AND POST CAP FOR SIGN INSTALLATION	173.58
EFT27402	13/12/2018	ORBIT HEALTH AND FITNESS SOLUTIONS	MONTHLY HIRE OF COMMERCIAL GYM EQUIPMENT - DECEMBER	176.00
EFT27403	13/12/2018	PARADIGM CLEANING & PROFESSIONAL	SUPPLY OF INTERNAL & EXTERNAL WINDOW CLEANING SERVICES FOR BRIDGETOWN PUBLIC	5,117.36
EFT27404	13/12/2018	QUALITY SHOP	PRINTING OF CEMETERY GRANT BOOKS	298.00
EFT27405	13/12/2018	REGIONAL DEVELOPMENT AUSTRALIA SW	CONTRIBUTION TOWARDS THE ECONOMIC & COMMUNITY PROFILING FOR THE WHOLE SOUTH WEST	1,100.00
EFT27406	13/12/2018	REPCO	20LTS PENRITE RED COOLANT CONCENTRATE & AN ORICOM HAND HELD RADIO	281.44
EFT27407	13/12/2018	RICHFEEDS AND RURAL SUPPLIERS	UNIFORMS FOR DEPOT & CLEANING STAFF, 2 X GATES FOR NEW CLEAN FILL SITE & MINOR ITEMS	8,155.09
EFT27408	13/12/2018	RONS EXPRESS	FREIGHT CHARGES	52.80
EFT27409	13/12/2018	SCHWEPPE AUSTRALIA PTY LTD	VARIOUS DRINKS FOR THE BLC CAFE	470.96
EFT27410	13/12/2018	SCOPE BUSINESS IMAGING	TRAVEL CHARGES	129.26
EFT27411	13/12/2018	SHEDFORCE	TENDER VARIATION FOR WARREN BLACKWOOD STOCK ROUTE CAMP SITES	7,089.50
EFT27412	13/12/2018	SIGMA POOL & SPA SUPPLIES	CHEMICALS AND WATER REAGENTS FOR BRIDGETOWN LEISURE CENTRE AQUATIC FACILITY	1,497.38
EFT27413	13/12/2018	SOUTH WEST ISUZU	MINOR PARTS	51.80
EFT27414	13/12/2018	ST BRIGIDS PRIMARY SCHOOL	ANNUAL SCHOOL AWARD	55.00
EFT27415	13/12/2018	STEWART & HEATON CLOTHING CO PTY LTD	1 X BUSH FIRE JACKET - SIZE 112	226.81
EFT27416	13/12/2018	DION STEVEN	ENVIRONMENTAL WORKS FOR THE MONTH OF NOVEMBER	2,270.20
EFT27417	13/12/2018	KARL SULLIVAN	REIMBURSEMENT FOR COST OF NATIONAL POLICE CLEARANCE APPLICATION	54.30
EFT27418	13/12/2018	TENNANT	REPLACEMENT BRUSHES FOR RIDE ON SWEEPER	999.38
EFT27419	13/12/2018	THE OWNER BUILDER MAGAZINE	ANNUAL SUBSCRIPTION TO THE OWNER BUILDER MAGAZINE	50.00
EFT27420	13/12/2018	THE STABLES IGA	LOLLIES FOR CHRISTMAS IN THE PARK LOLLY BAGS & VARIOUS SHIRE GROCERIES	500.34
EFT27421	13/12/2018	TUCK'S GARDEN SERVICES	MECHANICAL REMOVAL & WEED SPRAYING OF VEGETATION AROUND THE SHIRES BRIDGES	1,540.00
EFT27422	13/12/2018	TYRECYCLE PTY LTD	PICKUP AND REMOVAL OF USED TYRES AT THE WASTE FACILITY	665.61
EFT27423	13/12/2018	WATER INFRASTRUCTURE ENGINEERING	BRIDGETOWN LEACHATE POND SPRAY EVAPORATION RETICULATION SYSTEM	8,492.00
EFT27424	13/12/2018	WEST COAST ANALYTICAL	SAMPLE & ANALYSIS OF 4 X BORES AT THE WASTE FACILITY FOR DECEMBER	2,288.00
EFT27425	13/12/2018	WESTBOOKS	BOOK PURCHASES FOR BRIDGETOWN LIBRARY	126.90
EFT27426	13/12/2018	WINC AUSTRALIA PTY LTD	OFFICE CHAIR, TOILET PAPER & CLEANING SUPPLIES, WHITEBOARD & VARIOUS OFFICE STATIONERY	2,061.23
EFT27427	13/12/2018	WML CONSULTANTS	BRIDGETOWN LIQUID WASTE FACILITY : SUPERINTENDENCE AND CONTRACT ADMINISTRATION	3,107.28
EFT27448	20/12/2018	ACCESS ENGINEERING	MINOR PARTS	40.57
EFT27449	20/12/2018	AFGRI EQUIPMENT AUSTRALIA PTY LTD	V-BELT FOR JOHN DEERE X320 RIDE-ON MOWER	81.07
EFT27450	20/12/2018	AMPAC DEBIT RECOVERY (WA) PTY LTD	RATES DEBT COLLECTION CHARGES	209.00
EFT27451	20/12/2018	AROMATIC ESSENTIALS	VC STOCK - SOAPS & SHAMPOO BARS	228.75
EFT27452	20/12/2018	AUSTRALIAN TAXATION OFFICE	BAS NOV 2018	34,500.00
EFT27453	20/12/2018	AUSLEC	35W LED ALL-IN ONE SOLAR LIGHTS FOR PIONEER STREET	1,461.90
EFT27454	20/12/2018	AUSQ TRAINING	DEPOSIT FOR TC & BWTM REFRESHER TRAINING COURSE FOR WORKS STAFF	1,000.00
EFT27455	20/12/2018	ANTHONY JAMES BALLARD	PERFORM PRIORITY ROOF REPAIRS FOR GREENBUSHES OFFICE BUILDING	865.00
EFT27456	20/12/2018	BELL FIRE EQUIPMENT CO PTY LTD	REBANDING LAYFLAT HOSE COUPLINGS	286.00
EFT27457	20/12/2018	BLACKWOOD RURAL SERVICES	VARIOUS MINOR ITEMS & EQUIPMENT	272.50
EFT27458	20/12/2018	BLACKWOODS	24 CANS OF WHITE & 12 CANS OF PINK LINEMARKER PAINT & PINK FLAGGING TAPE	257.31
EFT27459	20/12/2018	BLACKWOOD PROPERTY MAINTENANCE	HAZARD REDUCTION FOR TWO PRIVATE PROPERTIES	800.00
EFT27460	20/12/2018	BLISS FOR DESIGN	REPLACEMENT COMPACTOR, IRRIGATION FITTINGS, SLASHER BLADES & MINOR ITEMS	2,367.81
EFT27461	20/12/2018	JOHN CARTER BOOKLESS	MONTHLY COUNCILLOR ALLOWANCE	880.00
EFT27462	20/12/2018	JULIA ANN BOYLE	MONTHLY COUNCILLOR ALLOWANCE	880.00
EFT27463	20/12/2018	BRIDGETOWN MUFFLER & TOWBAR CENTRE	PARTS AND LABOUR FOR CLUTCH REPAIRS TO RANGER VEHICLE	3,590.00

SHIRE OF BRIDGETOWN-GREENBUSHES

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EFT27464	20/12/2018	BTOWN COMMUNITY RESOURCE CENTRE	COMMUNITY VOUCHERS FOR EMPLOYEE RESIGNATION GRATUITY GIFT FOR 5-8YEARS SERVICE	150.00
EFT27465	20/12/2018	BRIDGETOWN HOTEL	YOUTH PRECINCT - CONSULTANT ACCOMMODATION	180.00
EFT27466	20/12/2018	BTOWN BOARDING KENNELS & CATTERY	KENNEL & CATTERY FEES FOR AUGUST - DECEMBER	900.00
EFT27467	20/12/2018	BRIDGETOWN DESIGN & PRINT	20 X 'PERMIT TO SET FIRE TO THE BUSH' TRIPLICATE BOOKLETS	687.50
EFT27468	20/12/2018	BRIDGETOWN MITRE 10 & RETRAVISION	2 X GAS BOTTLES FOR WASTE FACILITY FORKLIFT, 2 X 10KG GRANULAR CHLORINE & MINOR ITEMS	356.88
EFT27469	20/12/2018	BRIDGETOWN PAINT SALES	1 LITRE RUST CONVERTER & PAINT BRUSHES FOR GREENBUSHES OFFICES	91.75
EFT27470	20/12/2018	BUNBURY MACHINERY	HIRE ELEVATED WORK PLATFORM FOR LEISURE CENTRE WORKS	162.01
EFT27471	20/12/2018	BUNBURY LAWN & GARDEN SUPPLIES	25M3 POWER DIRT FOR CEMETERY	1,237.50
EFT27472	20/12/2018	BUNBURY TRUCKS	STARTER MOTOR FOR HINO TRUCK WITH CRANE	522.50
EFT27473	20/12/2018	BUNBURY FREIGHT SERVICES	FREIGHT CHARGES	228.67
EFT27474	20/12/2018	HAIDEE BYGRAVES	PARTIAL REFUND OF FITNESS CLASS PASS	90.00
EFT27475	20/12/2018	CHILD SUPPORT AGENCY	PAYROLL DEDUCTIONS	216.87
EFT27476	20/12/2018	CLOVERS GENERAL & LIQUOR STORE	MONTHLY GROCERIES FOR THE LEISURE CENTRE KIOSK OCTOBER - DECEMBER	110.10
EFT27477	20/12/2018	CLYDE & CO	PROFESSIONAL FEES	4,010.05
EFT27478	20/12/2018	COMMISSIONER OF POLICE	VOLUNTEER POLICE CLEARANCE	15.90
EFT27479	20/12/2018	DAVMECH	REPAIRS TO RUBBISH SITE TRAXCAVATOR	9,722.99
EFT27480	20/12/2018	DIESELS PLUS	RECTIFIER PART FOR WATER TANK	293.91
EFT27481	20/12/2018	EASISALARY	EMPLOYEE SALARY PACKAGED ITEMS	667.35
EFT27482	20/12/2018	ELISHA FAITH EDDON	REFUND OF LICENSING EFTPOS OVERCHARGE - 30/11/2018	3.00
EFT27483	20/12/2018	DEPT OF FIRE & EMERGENCY SERVICES WA	2018/19 2ND QUARTER ESL CONTRIBUTION	83,773.08
EFT27484	20/12/2018	FULTON HOGAN INDUSTRIES PTY LTD	SUPPLY & INSTALL FULL SERVICE 10mm PRIMER SEAL ON VARIOUS ROADS & BULK CATEMUL	40,665.19
EFT27485	20/12/2018	GEOGRAPHE CIVIL PTY LTD	TO CONDUCT BRIDGE MAINTENANCE ON BRIDGE NUMBER 3318 MARANUP FORD ROAD	19,405.32
EFT27486	20/12/2018	GO1 PTY LTD	LEARNING MANAGEMENT SYSTEM FOR ONLINE TRAINING	8,250.00
EFT27487	20/12/2018	HANSEN'S HOT BREAD SHOP	CATERING FOR VARIOUS SHIRE EVENTS/MEETINGS	237.00
EFT27488	20/12/2018	HANSON CONSTRUCTION MATERIALS	TRUCK & TRAILER LOAD OF 5MM SINGLE SIZE BASALT FOR ROAD MAINTENANCE	2,504.00
EFT27489	20/12/2018	H C JONES & CO	PLUMBING FIT OUT FOR BRIDGETOWN CEMETERY TOILETS	500.00
EFT27490	20/12/2018	INTERFIRE AGENCIES PTY LTD	23 X PAIRS OF LEVEL 1 GLOVES FOR BFB PROTECTIVE CLOTHING	703.34
EFT27491	20/12/2018	IXOM OPERATIONS PTY LTD	920KG CHLORINE GAS DRUM FOR SWIMMING POOL INCLUDING DELIVERY TO BRIDGETOWN	3,184.83
EFT27492	20/12/2018	JASON SIGNMAKERS	VARIOUS STREET & WARNING SIGNS INCLUDING BRACKETS AND STANDS	836.00
EFT27493	20/12/2018	JAYBRO	4 X CHEVRON DELINEATORS W/REF INCLUDING 10KG RUBBER BASE TO SUIT	528.00
EFT27494	20/12/2018	ADAM JENKINS TREE SERVICES	TREE REMOVAL IN BANKWEST LANEWAY	550.00
EFT27495	20/12/2018	JOHNSON'S FOOD SERVICES	FROZEN GOODS AND SNACKS FOR THE BLC KIOSK	1,559.52
EFT27496	20/12/2018	PETER C KARAFILIS	RATES REFUND	402.37
EFT27497	20/12/2018	KEIDY CONTRACTORS	HIRE OF TRUCK AND OPERATOR TO CART GRAVEL FOR TWEED ROAD	1,028.50
EFT27498	20/12/2018	RADOVAN KOLOC	CLEAN EXTERNAL OF BUILDING & PAVEMENT AREA OF HAMPTON STREET TOILETS & KIOSK	780.00
EFT27499	20/12/2018	LANDGATE	LAND VALUATION ENQUIRY CHARGES	382.00
EFT27500	20/12/2018	LG PEOPLE & CULTURE	REVIEW OF WORKFORCE PLAN - 2ND PROGRESSIVE PAYMENT	5,500.00
EFT27501	20/12/2018	LIWA AQUATICS	LIWA AQUATICS ANNUAL MEMBERSHIP/ ACCREDITATION FEE	120.00
EFT27502	20/12/2018	DOREEN MACKMAN	MONTHLY COUNCILLOR ALLOWANCE	880.00
EFT27503	20/12/2018	MANJIMUP JUNIOR CRICKET CLUB	2017 KIDSPORT FEES	145.00
EFT27504	20/12/2018	MEERES FREIGHTLINES AUSTRALIA	FREIGHT CHARGES	37.30
EFT27505	20/12/2018	MICK TUCK GRADER SERVICES PTY LTD	CONTRACT GRADER SERVICES	7,656.00
EFT27506	20/12/2018	JOANN ROBERTA MOORE	MONTHLY COUNCILLOR ALLOWANCE	880.00
EFT27507	20/12/2018	JOHN DIGBY NICHOLAS	MONTHLY COUNCILLOR ALLOWANCE	880.00
EFT27508	20/12/2018	ORBIT HEALTH AND FITNESS SOLUTIONS	H/D BOXING BAG WALL MOUNTED ARM & SPEED BAG ADJUSTABLE PLATFORM FOR 24HR GYM	313.50

SHIRE OF BRIDGETOWN-GREENBUSHES

LIST OF ACCOUNTS PAID IN DECEMBER TO BE RECEIVED

Cheque/ Voucher No.	Date of Payment	Payee	Payment Description	Payment Amount
EFT27509	20/12/2018	PHONOGRAPHIC PERFORMANCE COMPANY	ANNUAL PUBLIC PERFORMANCE LICENCE FOR FITNESS CLASSES FOR 01/01/2019 - 31/12/2019	665.00
EFT27510	20/12/2018	ANTONINO PRATICO	MONTHLY COUNCILLOR ALLOWANCE	1,730.00
EFT27511	20/12/2018	Q1 FRANCHISE MANAGEMENT PTY LTD	ACCOMMODATION WHILST ATTENDING LICENSING TRAINING - 09/12/2018 TO 14/12/2018	770.00
EFT27512	20/12/2018	REPCO	24V TRICKLE CHARGERS FOR 3 X SHIRE DEPOT TRUCKS	759.00
EFT27513	20/12/2018	RICHFEEDS AND RURAL SUPPLIERS	PPE & UNIFORMS FOR SHIRE CLEANERS	385.50
EFT27514	20/12/2018	DANIELA ROBBA	VC STOCK - BOOKMARKS & MAGNETS	210.00
EFT27515	20/12/2018	PATRICK M SCALLAN	MONTHLY COUNCILLOR ALLOWANCE	880.00
EFT27516	20/12/2018	SCHWEPPE AUSTRALIA PTY LTD	VARIOUS DRINKS FOR THE BLC CAFE	337.45
EFT27517	20/12/2018	SHEDFORCE	WBSR - PURCHASE & INSTALLATION OF SMEATHERS CAMP SITE	23,290.00
EFT27518	20/12/2018	SOFT LANDING	RECYCLING OF USED MATTRESSES - NOVEMBER	1,210.00
EFT27519	20/12/2018	SOUTHERN FOREST PEST MANAGEMENT	TREAT TERMITES IN FUEL SHED AT SHIRE DEPOT	165.00
EFT27520	20/12/2018	SPIRIT OF THE BOABS	TRAVEL REIMBURSEMENT FOR SENIOR'S WEEK 2018	450.00
EFT27521	20/12/2018	SPRINT EXPRESS	FREIGHT CHARGES	45.65
EFT27522	20/12/2018	STEWART & HEATON CLOTHING CO PTY LTD	BUSH FIRE SERVICE PPE JACKETS & TROUSERS	2,214.52
EFT27523	20/12/2018	STEVE MAXWELL'S MECHANICAL SERVICES	ANNUAL SERVICE OF BRIDGETOWN 12.2, WANDILLUP FAST ATTACK, WINNEJUP LT & MARANUP 2.4	12,355.05
EFT27524	20/12/2018	KARL SULLIVAN	REIMBURSEMENT FOR MEAL EXPENSES WHILST ATTENDING LICENSING TRAINING 09/12/18 - 14/12/18	276.60
EFT27525	20/12/2018	SUNNY INDUSTRIAL BRUSHWARE	2 X WIRE/NYLON SQUARE DRIVE ROAD SWEEPING BRUSHES	787.60
EFT27526	20/12/2018	THE STABLES IGA	VARIOUS SHIRE GROCERIES	155.96
EFT27527	20/12/2018	THE LINEN PRESS	VC STOCK - CUSTOM PRINTED TEA TOWELS & LINEN PRODUCTS	565.40
EFT27528	20/12/2018	TPG NETWORK PTY LTD	NBN FOR LIBRARY - DECEMBER	159.50
EFT27529	20/12/2018	TRISLEY'S HYDRAULIC SERVICES	INSTALL DANFOSS VSD TO POOL PUMP 1 & REPLACE BEARINGS & MECHANICAL SEAL TO PUMP 2	4,495.56
EFT27530	20/12/2018	CHRISTOPHER PHILLIP WALLACE	MONTHLY COUNCILLOR ALLOWANCE	880.00
EFT27531	20/12/2018	W/B ALLIANCE OF COUNCILS	18/19 CONTRIBUTION TO SOUTHERN FORESTS BLACKWOOD VALLEY TOURISM ASSOC DEVELOPMENT	33,880.00
EFT27532	20/12/2018	DARREN A WILSON	REIMBURSEMENT FOR 50% OF PERSONAL MOBILE PHONE PLAN FOR JULY 2018 - DECEMBER 2018	297.00
EFT27533	20/12/2018	ALAN JOSEPH WILSON	MONTHLY COUNCILLOR ALLOWANCE	1,057.08
EFT27534	20/12/2018	WINC AUSTRALIA PTY LTD	STAINLESS STEEL WIPE DISPENSER FOR BLC, FILING CABINET & VARIOUS STATIONERY SUPPLIES	1,800.55
EFT27535	20/12/2018	WORKWEAR GROUP	CORPORATE UNIFORMS	414.73
EFT27536	21/12/2018	STEVE MAXWELL'S MECHANICAL SERVICES	ANNUAL SERVICE OF YORNUP 2.4, KANGAROO GULLY FIRE TRUCK & HESTER BROOK FIRE TENDER	16,925.70
CHEQUES				
30773	13/12/2018	BGC RESIDENTIAL PTY LTD	REFUND OF SEPTIC INSPECTION FEE	118.00
30774	13/12/2018	SHIRE OF BRIDGETOWN-GREENBUSHES	BUILDING PERMIT FEES FOR BRIDGETOWN CEMETERY TOILETS	219.35
30775	13/12/2018	SYNERGY	ELECTRICITY	17,716.40
30776	13/12/2018	TELSTRA	TELEPHONE	2,893.83
30777	13/12/2018	WATER CORPORATION	WATER USAGE	10,288.33
30778	13/12/2018	SHIRE OF BRIDGETOWN-GREENBUSHES	OUTDOOR FILM FESTIVAL FLOAT	100.00
30779	20/12/2018	AIMEE COURT	REFUND OF OVERCHARGE ON DOG REGISTRATION FEES DUE TO EFTPOS MACHINE ERROR	42.50
30780	20/12/2018	LANDSCOPE MAGAZINE	ANNUAL SUBSCRIPTION TO LANDSCOPE MAGAZINE	30.00
30781	20/12/2018	PIVOTEL SATELLITE PTY LTD	MONTHLY TRACK SPOT TRACKERS FEES FOR DECEMBER	155.00
30782	20/12/2018	SHIRE OF BRIDGETOWN-GREENBUSHES	PETTY CASH ADVANCE	300.00
30783	20/12/2018	SYNERGY	ELECTRICITY	660.85
30784	20/12/2018	TELSTRA	TELEPHONE	1,092.16
				<u>1,097,607.89</u>
TRUST FUND				
DIRECT DEBITS - LICENSING TRUST				
22571	03/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 03/12/2018	8,246.70

SHIRE OF BRIDGETOWN-GREENBUSHES

LIST OF ACCOUNTS PAID IN DECEMBER TO BE RECEIVED

Cheque/ Voucher No.	Date of Payment	Payee	Payment Description	Payment Amount
22572	04/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 04/12/2018	3,276.70
22573	05/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 05/12/2018	7,512.80
22574	06/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 06/12/2018	5,215.45
22575	07/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 07/12/2018	5,447.05
22576	10/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 10/12/2018	7,064.85
22577	11/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 11/12/2018	5,337.05
22578	12/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 12/12/2018	4,580.60
22579	13/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 13/12/2018	5,000.95
22580	14/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 14/12/2018	6,452.55
22581	17/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 17/12/2018	5,004.80
22582	18/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 18/12/2018	5,697.30
22583	19/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 19/12/2018	791.15
22584	20/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 20/12/2018	6,919.30
22585	21/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 21/12/2018	5,680.05
22586	24/12/2018	DEPARTMENT OF TRANSPORT	LICENSING PAYMENTS FOR 24/12/2018	7,934.35
CHEQUES - GENERAL TRUST				
2240	07/12/2018	BRIDGETOWN CAMP SCHOOL	HALL HIRE BOND REFUND	100.00
2241	07/12/2018	BUILDING & CONSTRUCTION TRAINING	BCITF LEVIES COLLECTED FOR THE MONTH OF NOVEMBER	2,611.52
2242	07/12/2018	GAIL HAY	COMMUNITY STALL BOND REFUND	50.00
2243	07/12/2018	NATIONAL DISABILITY INSURANCE AGENCY	HALL HIRE BOND REFUND	100.00
2244	07/12/2018	PATRICIA RODGERS	HALL HIRE BOND REFUND	100.00
2245	07/12/2018	SHIRE OF BRIDGETOWN-GREENBUSHES	SHIRES FEES/COMMISSION RETAINED	245.22
2246	18/12/2018	GLENN HYWOOD	CAT TRAP BOND REFUND	50.00
2247	18/12/2018	RUSSELL MORRIS	STANDPIPE BOND REFUND	100.00
2248	18/12/2018	SHIRE OF BRIDGETOWN-GREENBUSHES	SHIRES FEES/COMMISSION RETAINED	60.20
ELECTRONIC PAYMENTS - GENERAL TRUST				
EFT27320	07/12/2018	BLUES AT BRIDGETOWN	HALL HIRE BOND REFUND	100.00
EFT27321	07/12/2018	BUILDING COMMISSION	BSL'S COLLECTED FOR THE MONTH OF NOVEMBER	2,026.80
EFT27322	07/12/2018	LINDA VOWLES	HALL HIRE BOND REFUND	100.00
EFT27323	07/12/2018	ROSEMARY WELLS	HALL HIRE BOND REFUND	100.00
EFT27428	18/12/2018	DA & H BARDSLEY	HALL HIRE BOND REFUND	100.00
EFT27429	18/12/2018	BRIDGETOWN COMMUNITY HOME CARE	HALL HIRE BOND REFUND	100.00
EFT27430	18/12/2018	HELEN CUXSON	GREENBUSHES HALL HIRE BOND REFUND	100.00
EFT27431	18/12/2018	LEONIE EASTCOTT	GREENBUSHES HALL HIRE BOND REFUND	100.00
EFT27432	18/12/2018	GBUSHES COMMUNITY RESOURCE CENTRE	COMMUNITY BUS BOND REFUND LESS MILEAGE CHARGES	295.00
EFT27433	18/12/2018	LEANNE HOLDSWORTH	COMMUNITY STALL BOND REFUND	50.00
EFT27434	18/12/2018	EILEEN KNEALE	COMMUNITY STALL BOND REFUND	50.00
EFT27435	18/12/2018	MARGARET JOY MORTON	COMMUNITY STALL BOND REFUND	50.00
EFT27436	18/12/2018	ST BRIGID'S PARISH	COMMUNITY BUS BOND REFUND LESS MILEAGE CHARGES	244.80
EFT27437	18/12/2018	TALISON LITHIUM PTY LTD	GREENBUSHES HALL HIRE BOND REFUND	200.00
EFT27438	18/12/2018	ROSALIE WITTENOOM	COMMUNITY STALL BOND REFUND	50.00
CHEQUES - VISITOR CENTRE TRUST				
1296	18/12/2018	SHIRE OF BRIDGETOWN-GREENBUSHES	SHIRES COMMISSION FOR NOVEMBER	424.08
ELECTRONIC PAYMENTS - VISITOR CENTRE TRUST				
EFT27439	18/12/2018	BRIDGETOWN'S GRUMPY OLD MEN INC	CONSIGNMENT STOCK SOLD FOR NOVEMBER	34.50

SHIRE OF BRIDGETOWN-GREENBUSHES

LIST OF ACCOUNTS PAID IN DECEMBER TO BE RECEIVED

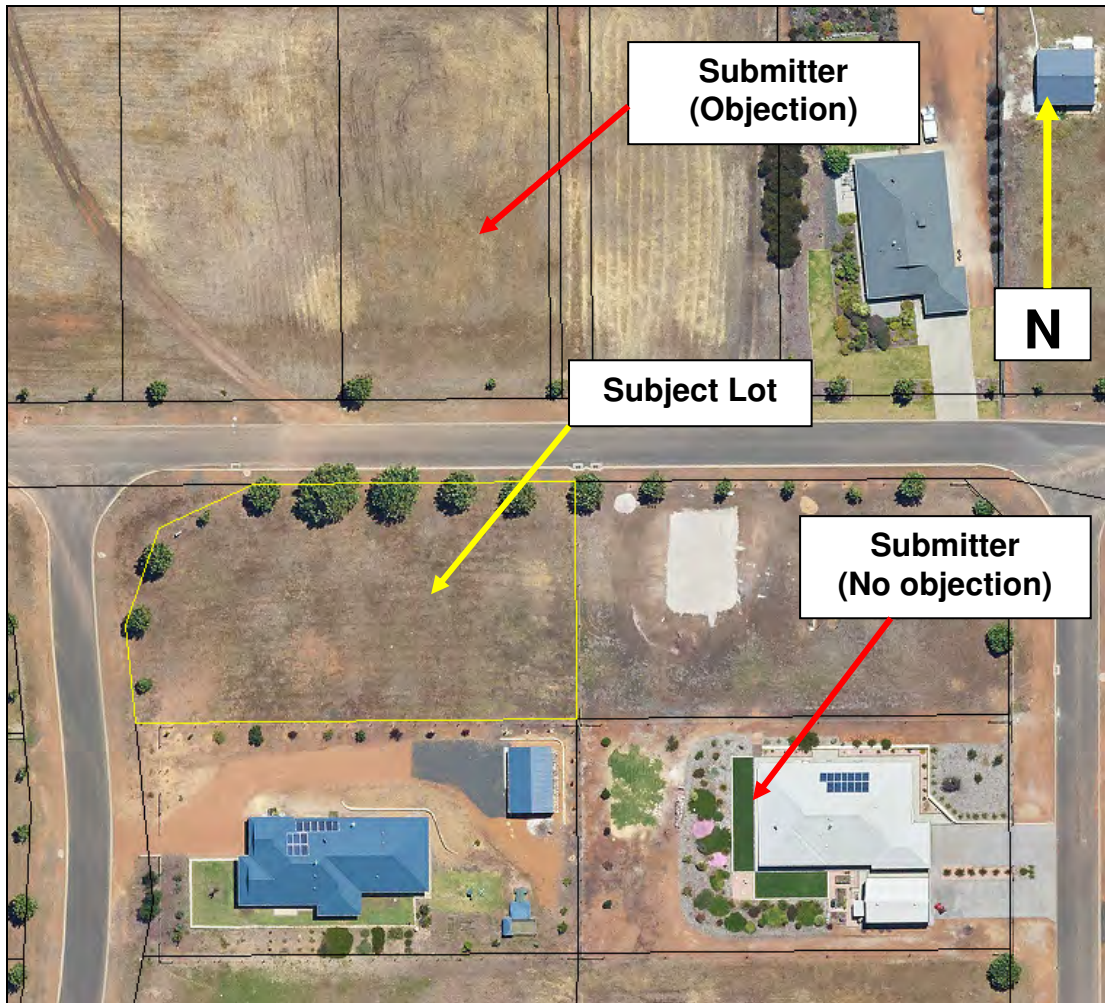
Cheque/ Voucher No.	Date of Payment	Payee	Payment Description	Payment Amount
EFT27440	18/12/2018	NOELLE J CAMERON	CONSIGNMENT STOCK SOLD FOR NOVEMBER	151.42
EFT27441	18/12/2018	NEWLGALUP GRAZING COMPANY	CONSIGNMENT STOCK SOLD FOR NOVEMBER	22.50
EFT27442	18/12/2018	PUBLIC TRANSPORT AUTHORITY OF WA	BUS TICKETS SOLD FOR NOVEMBER	1,062.95
EFT27443	18/12/2018	E & C RUSSELL	CONSIGNMENT STOCK SOLD FOR NOVEMBER	41.25
EFT27444	18/12/2018	SOUTH WEST COACH LINES	BUS TICKETS SOLD FOR NOVEMBER	541.28
EFT27445	18/12/2018	CA WOODLAND	ACCOMMODATION REFUND LESS CANCELLATION FEE	638.00
EFT27446	18/12/2018	JENNIFER WRIGHT	CONSIGNMENT STOCK SOLD FOR NOVEMBER	22.46
EFT27447	18/12/2018	WUD	CONSIGNMENT STOCK SOLD FOR NOVEMBER	26.96
V300172	11/12/2018	COMMONWEALTH BANK	TOTAL ACCOMMODATION FOR THE MONTH OF NOVEMBER	41,409.00
				<u>141,619.59</u>

This schedule of accounts paid for the Municipal Fund totalling **\$1,097,607.89** and for the Trust Fund totalling **\$141,619.59** which was submitted to each member of the Council on 31st January 2019 has been checked and is fully supported by vouchers and invoices which are submitted herewith and which have been duly certified as to the receipt of goods and the rendition of services and as to prices, computations and castings.

Total creditor accounts outstanding as at 31.12.2018 \$210,624.85


.....
CHIEF EXECUTIVE OFFICER

31 January 2019



**Proposed Outbuilding (Setback Variation) -
Lot 133 (24) Stirling Street, Bridgetown**

(Shire of Bridgetown-Greenbushes – Aerial Photo November 2017)

M & G Norris
PO Box 288
BRIDGETOWN WA 6255

Mr Scott Donaldson
Shire of Bridgetown-Greenbushes
PO Box 271
BRIDGETOWN WA 6255

Your Ref: A47741/O-PA201828261/P123/2018

Dear Scott

Shire of Bridgetown-Greenbushes	
File No:	A47741
Document No:	IPC:1943
- 2 JAN 2019	
Officer	MP
Copy	

**PROPOSED OUTBUILDING VARIATION
LOT 333 STIRLING STREET**

I refer to your correspondence of 19 December 2018 and advise that Mark and I have no objections to the requested reduced setback proposed for Lot 333 Stirling Street, Bridgetown.

Yours sincerely



Glen Norris
24 December
2018

Scott Donaldson

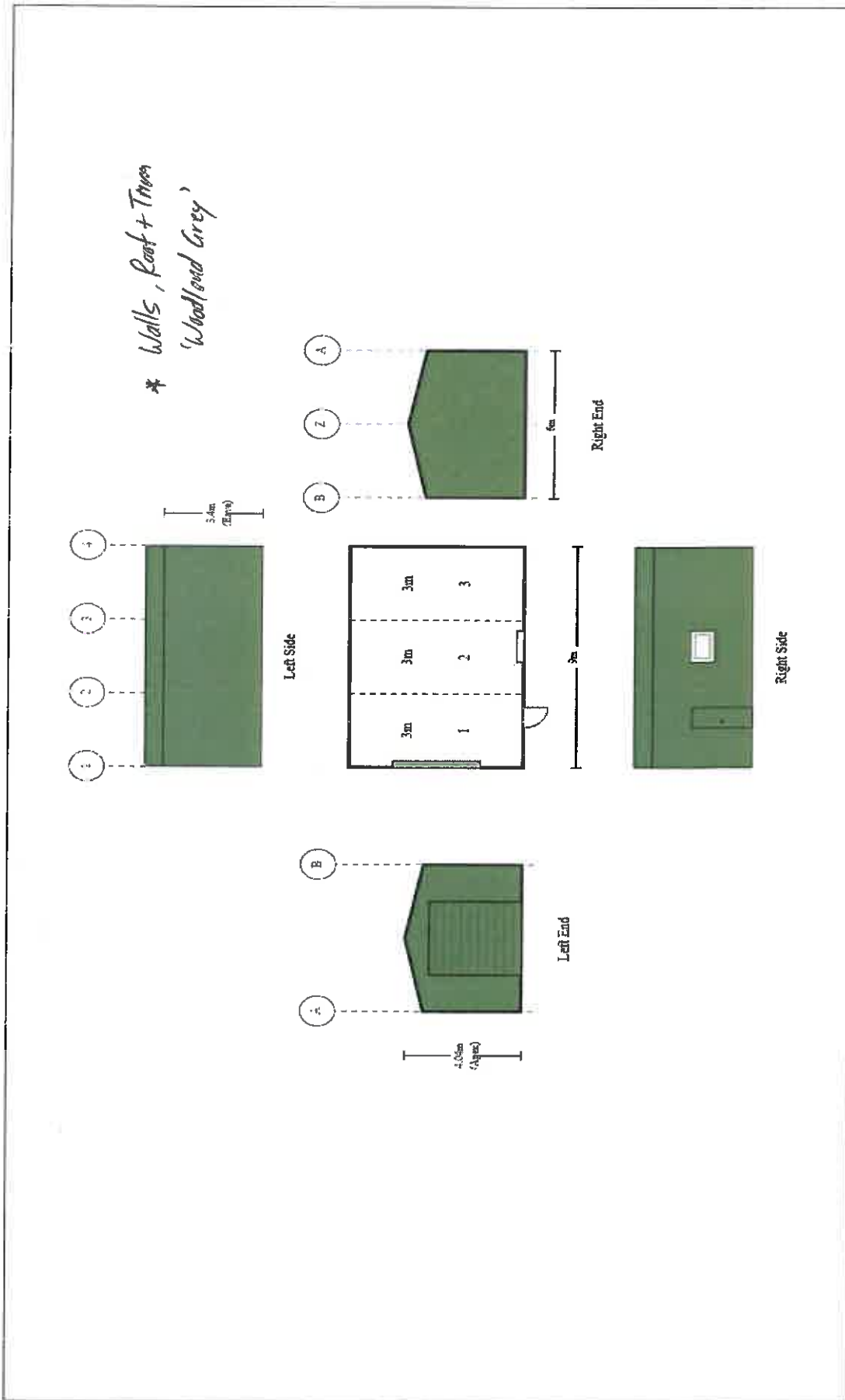
From: Martin Angelatos <martin.angelatos43@gmail.com>
Sent: Wednesday, 16 January 2019 1:02 AM
To: Scott Donaldson
Subject: I-PA201952009 - Proposed outbuilding lot 333 Stirling st. Bridgetown

SynergySoft: I-PA201952009

If this building is loomingly obvious from the street, I object to the street to beginning looking like a factory site instead of a simple garage.

If the owner is requesting a 3 metre distance closer to the road, I assume then that the structure would be quite large and therefore a possible eyesore for a residential street.

Grace Angelatos
Lakeview Cres.



Seller: Sheds n Homes Group
 Name: Tom Phillips
 Phone: (08) 9772 4591
 Fax:
 Email: tom.phillips@shedsnhomes.com.au

Building Layout
 no revision

Purchaser Name: Maria Olsen
 Site Address:
 Ref: TPS1810001
 Draw Date: 01/08/21

05 December 2018

Mr Tim Clynch
Chief Executive Officer
Shire of Bridgetown-Greenbushes
PO Box 271
BRIDGETOWN WA 6255

Dear Tim,

I write to request development approval to construct a shed at Lot 333 (24) Stirling Street Bridgetown. I also request a setback variation reducing the rear setback from 12m to 9m. I provide the below points as justification for the proposed setback variation.

- Increasing the setback would require an adjustment to the position of the rainwater tank and would impact on the earthworks required adding additional cost to the development.
- Having the shed positioned at 12m would impact the visual amenity of the house and cause some overshadowing issues due to the height of the shed.
- The position of the shed at 9m setback allows for the crossover to be placed in between existing trees along Lakeview crescent.

Yours Sincerely

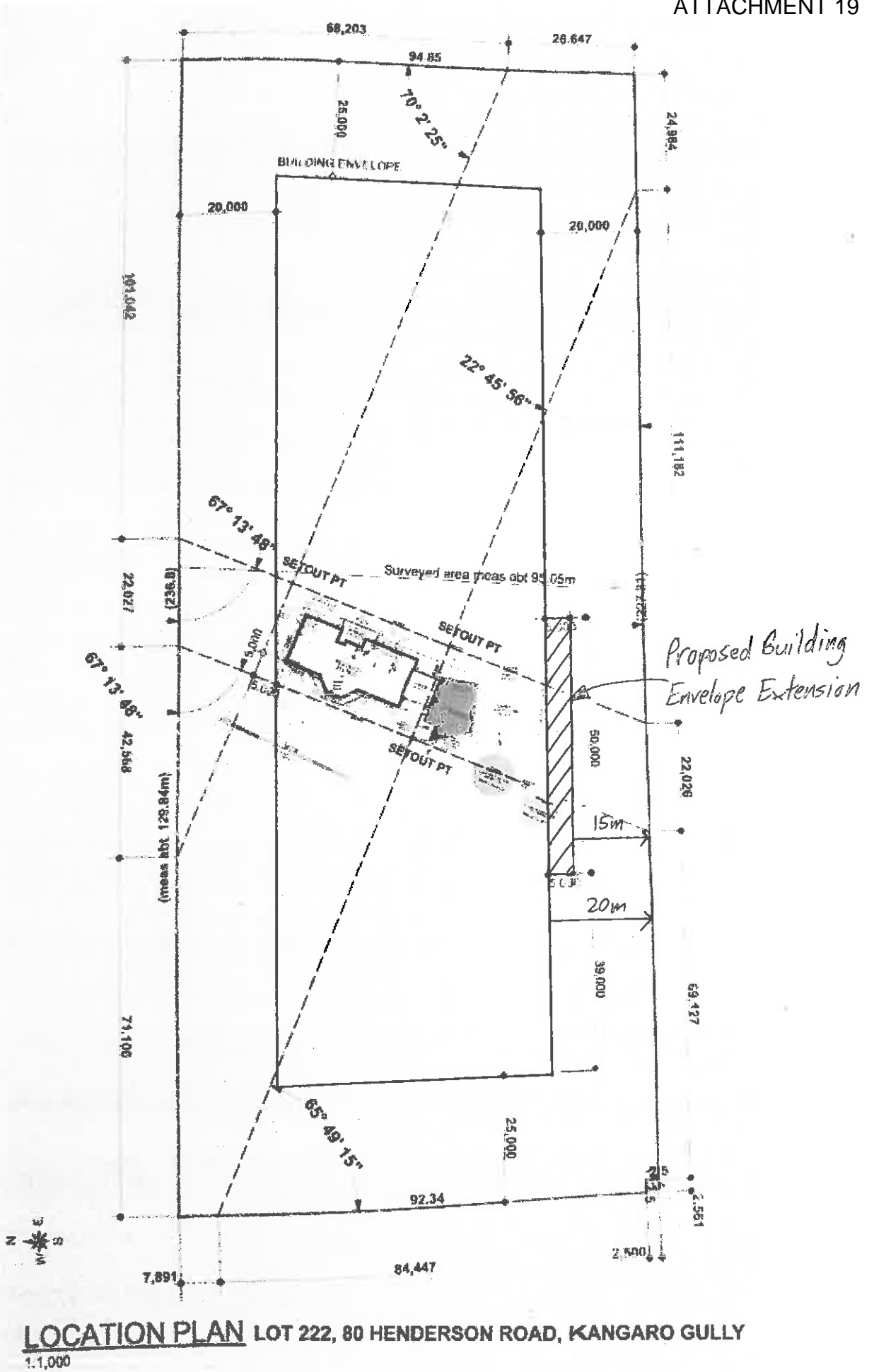


Marius Olsen



**Proposed Building Envelope Extension (Setback Variation) –
Lot 222 (RSN 80) Henderson Road, Kangaroo Gully**

((Shire of Bridgetown-Greenbushes – Aerial Photo November 2017))



67° 13' 48"

SETOUT PT

Surveyed area meas abt 95.05m

(227.31)

SETOUT PT

Proposed Building Envelope Extension

5,000

5,000

5,000

50,000

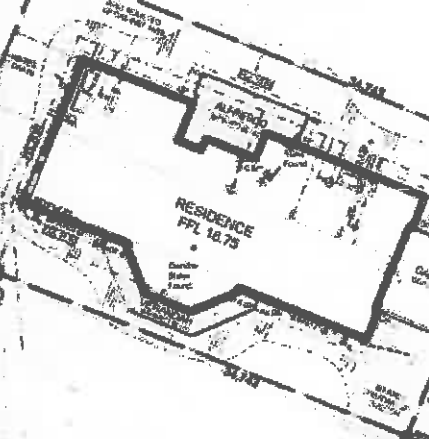
SETOUT PT

15m

5,000

20m

39,000



Existing
Lot
Guide
PPL 10.75

Existing
Lot
PPL 10.75

Proposed
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From: Angus D Meredith
80 Henderson Road, Kangaroo Gully, WA 6255 (Lot 222)

To: The Chief Executive Officer
Shire of Bridgetown – Greenbushes
1 Steere St, Bridgetown. WA 6255

03/12/2018

Dear Sir/Madam,

This letter is in relation to the attached Development Application Form seeking to have approval for an adjustment to the building envelope for Lot 222 at 80 Henderson Road, Kangaroo Gully, WA 6255.

The adjustment being sought applies to the Southern part of the building envelope and seeks to have the envelope moved 5 metres Southward for a length of 50 metres as shown in the attached site plan.

The reason for the adjustment is to facilitate the installation of an additional 135,000 litre rain water tank adjacent to the existing water tank and also for the future installation of a 5 metre lean-to on the southern end of the existing shed.

The intent is to have the new water tank on as much as possible the same level as the existing water tank in order to have them linked together, the current lay of the land and how best to work with the existing contours and considering future access to the proposed lean-to will determine the exact position of the new water tank.

The adjustment to the building envelope if approved will allow some additional flexibility in the planning and layout of the additions and allow clear access to the lean-to and water tanks.

It is not anticipated that the adjustment outlined above will have any impact on the neighbouring lot.

Thank you.

Yours Sincerely

Angus D Meredith



POLICY NO.	F.1
POLICY SUBJECT	Shire Community Grants, Service Agreements, Donations and Contributions
ADOPTION DATE	30 September 1999
LAST REVIEW DATE	30 November 2017 (C.11/1117)

Annual Funding Allocations and Categories

Council will determine an annual funding allocation for the provision of community grants, service agreements and other donations and contributions within the following categories:

1. Service Agreements
2. Community Grants
3. Chief Executive Officer Donations
4. Chief Executive Hall Hire Donations
5. Rubbish & Recycling Collection Community Groups
6. Rubbish & Recycling Collection Shire Leased Facilities
7. Annual Contributions

Categories 1 and 2 are identified in the remainder of this policy as “Contestable Funding” because these are the contestable (application based) funding options available to the community.

The total annual funding allocation will be determined in the annual review of the Corporate Business Plan and the disbursement of that sum across the 7 categories will be determined in a separate process. This process will be application based for the Contestable Funding categories, with the assessment of submitted grant applications undertaken by a Working Group (comprising interested Councillors). The Working Group recommendations will be considered by Council via an agenda report. The Working Group will recommend:

- The successful applicants at category numbers 1 – 2 (and the value of each successful application).
- The recommended value of each category at numbers 3 – 7

Council may, at any time, choose to identify recipients of funding within each category 3 – 7 however the allocation of funding will be done annually in alignment with the contestable funding timeline (being categories 1 – 2).

If Council resolves, at other times during a financial year, to commit to ongoing (more than one-off) contributions towards projects, initiatives or services the amount of that contribution will be notated under Category 7 – Annual Contributions. This will be reviewed annually at the same time as all other funding categories and will be funded via the total annual funding allocation identified in the Corporate Business Plan.

Contestable Funding Timeline

The contestable funding application period will commence on 1 December annually and close at 4.30pm on the last Friday in February annually. The Working Group will review the submitted applications no later than April annually with Council consideration of recommendations no later than May annually.

Contestable Funding Guidelines and Requirements

- A representative from the applicant entity must meet with a representative from the Shire of Bridgetown-Greenbushes Community Services Department prior to submitting an application.
- Funds may be used for construction, purchase of equipment, salaries, and contract services, operational expenses, marketing expenses, consumables, and administration expenses.
- Applicants must answer all questions in the grant application, and provide full details on all questions asked in the application form.
- Applications must reach the Shire no later than 4.30pm on the last Friday in February annually.
- Late applications will not be considered and will not be presented to the Working Group.
- Applicants must be local community (including sporting) groups, or commercial ventures that provide community benefit.
- An acquittal of the project must be provided to the Shire immediately after the project has been completed. Failure to provide an acquittal will eliminate consideration of future applications until such time as an acquittal is received.
- Grants will not be provided retrospectively (i.e. for a project that is completed or already underway).
- Funding will not be provided for recurring projects at the conclusion of either a community grant or a service agreement and will not be considered in the application assessment process.

Contestable Funding Conditions

- The Shire of Bridgetown-Greenbushes will determine terms of payment of grant funding.
- Successful applicants who receive funding of \$5,000 or more are required to present to Council (annually) on the outcome of the funded activity.
- Council may use the information provided by funded entity for its own promotional purposes.
- All funded entities will be required to enter into an agreement with the Shire of Bridgetown-Greenbushes which will detail specific conditions and terms relevant to that project.
- All funded entities must acknowledge the support of the Shire of Bridgetown-Greenbushes in all their promotional material.
- Funded entities must advise the Shire of Bridgetown-Greenbushes of any change to office bearers and their contact details.
- Payments of grant funding may be suspended at any time if, in the opinion of Council, any of the conditions of the funding agreement, or satisfactory progress, has not been achieved.

- Any change to a funded project cannot proceed without a formal resolution from Council – the applicant must submit a written grant variation request to the Shire of Bridgetown-Greenbushes clearly stating any proposed changes to the project and the reason why the changes are required. This will be considered by Council and a determination made.

Assessment of Applications for Contestable Funding

A Working Group comprising elected member (Councillor) representation will assess all of the eligible applications for contestable funding and will make recommendations to Council in accordance with the following assessment criteria:

1. The Working Group will assess each application received in the Contestable Funding process on its merit, and determine the value of the application in relation whole of community benefit.
2. Applications which demonstrate a cash contribution (not just an 'in kind' contribution) from the applicant will be assessed as having higher merit than applications solely reliant upon grant funding.
3. Applications which demonstrate a strong ability to assist Council deliver strategic objectives and actions (as identified in the Strategic Community Plan and Corporate Business Plan) will generally be assessed as having higher merit than applications that do not.
4. The Working Group will consider funding projects which do not have direct links to Council deliver strategic objectives and actions (as identified in the Strategic Community Plan and Corporate Business Plan) based on the applicants ability to explain why their project will benefit the community, or other rationale as to why their project should be funded.

Assessment of Projects for Non Contestable Funding

A Working Group comprising elected member (Councillor) representation will assess all of the eligible projects for non-contestable funding and will make recommendations to Council in accordance with the following assessment criteria:

1. The Working Group will assess each project (application based or otherwise) received in the Contestable Funding process or throughout the year via alternative process, on its merit, and determine the value of the project in relation to whole of community benefit. This assessment will be undertaken annually, at the same time as the assessment of the contestable funding applications.
2. The Working Group will review projects on an annual basis that are not new, but are existing projects within the Shire's operating budget to determine ongoing community benefit and funding provision. This will include the budget allocation for CEO Donations.
3. Projects can be service delivery or event based activities.

4. Projects which demonstrate a strong ability to assist Council deliver strategic objectives and actions (as identified in the Strategic Community Plan and Corporate Business Plan) will generally be assessed as having higher merit than projects that do not.
5. The Working Group will consider funding projects which do not have direct links to Council deliver strategic objectives and actions (as identified in the Strategic Community Plan and Corporate Business Plan) based on the applicants ability to explain why their project will benefit the community, or other rationale as to why their project should be funded.



**BRIDGETOWN-GREENBUSHES ACCESS AND INCLUSION ADVISORY COMMITTEE
(2017-2019)**

INSTRUMENT OF APPOINTMENT & DELEGATION

1. Introduction

The Council of the Shire of Bridgetown-Greenbushes (hereinafter called the "Council") hereby establishes a committee under the powers given in Section 5.8, 5.9(2)(c) and 5.17(c) of the Local Government Act 1995, such committee to be known as the Bridgetown-Greenbushes Access and Inclusion Advisory Committee (hereinafter called the "Committee").

The Council appoints to the Committee those persons whose names appear in section 4.0 below. Membership of the Committee shall, unless otherwise specified, be for a term ceasing on the third Saturday in October in the year the Shire's local government elections are held, after which time the Council may appoint members for a further term.

The Committee shall act for and on behalf of Council in accordance with provisions of the Local Government Act 1995, local laws and policy of the Shire of Bridgetown-Greenbushes and this Instrument.

2. Name

The name of the Committee shall be the *Bridgetown-Greenbushes Access and Inclusion Advisory Committee*.

3. Objectives

The objectives and role of the Committee are:

- 3.1 To advise Council on the establishment of priorities and review of progress on the implementation of the strategies identified in the relevant Disability Access and Inclusion Plan and the Age Friendly Communities Plan.
- 3.2 To formally report to Council annually on the implementation of the Disability Access and Inclusion Plan and the Age Friendly Communities Plan.
- 3.3 To carry out consultation with the community as part of the annual review of the Disability Access and Inclusion Plan and Age Friendly Communities Plan.
- 3.4 To recommend to Council any changes to the priorities identified in the Disability Access and Inclusion Plan and Age Friendly Communities Plan either as part of the annual review process, or if necessary at other times of the year.

4. Membership

- 4.1 Council will appoint a minimum of one (1) elected member as Council's representative(s) on the Committee.
- 4.2 Council will appoint a maximum of 9 community/service agency representatives.

Appointed Members are:

- One (1) representative from Silver Chain
- One (1) representative from Blackwood Parent Support Group
- Eight (8) Community representatives, being:
 - Bronwyn Mitchell
 - Jana Mayhew
 - Ursula Wade
 - Joan Leader
 - Harold Thomas
 - Clare Quinn
 - Jesse Donovan
 - Warren Boggs

4.3 One CEO appointed shire representative shall be an ex-officio member of the committee and will not be permitted to vote on matters considered by the Committee.

5. Presiding Member

The Committee shall appoint a Presiding Member and Deputy Presiding Member to conduct its business. The Presiding Member shall ensure that minutes of the proceedings are kept and that business is conducted in accordance with the Shire of Bridgetown-Greenbushes Standing Orders.

6. Meetings

The Committee shall meet on at least four occasions per year.

6.1 Notice of meetings shall be given to members at least 3 days prior to each meeting.

6.2 If any member is absent from 3 consecutive meetings without leave of the Committee, they shall forfeit their position on such Committee. The Council shall be informed, who will appoint a replacement for the balance of the Committee's term of appointment.

6.3 The Presiding Member shall ensure that detailed minutes of all meetings are kept and shall, not later than 10 days after each meeting, provide Council with a copy of such minutes.

6.4 All members of the Committee shall have one vote. If the vote of the members present is equally divided, the person presiding may cast a second vote.

7. Quorum

Quorum for a meeting shall be at least 50% of the number of offices whether vacant or not.

8. Delegated Powers

The Committee is established as an Advisory Committee only and does not have delegated authority to make decisions on behalf of the Council.

9. Termination of Committee

Termination of the Committee shall be:

- a) In accordance with the Local Government Act 1995 (ie; 19 October 2019); or
- b) At the direction of Council

10. Amendment to the Instrument of Appointment and Delegation

This document may be altered at any time by the Council on the recommendation of the Committee, or after giving 14 days notice to the Committee.

11. Committee Decisions

Committee decisions shall not be binding on Council if such decisions are in conflict with the delegated powers of the Council.