Your ref: SSD-9409987
Our ref: 12524108

25 November 2024

Independent Planning Commission via submissions@ipcn.nsw.gov.au

Attention: Mr Kendall Clydesdale

Dear Mr Clydesdale

Submission on behalf of the proponent: Plasrefine Recycling

Plasrefine Recycling Pty Ltd (Plasrefine Recycling) and GHD thank the Independent Planning Commission for the opportunity to speak at the first day of the Public Meeting held in Bowral on 28 October 2024 and to respond to questions from the panel online on 12 November 2024, at the third day of the Public Meeting.

GHD notes that a number of matters were raised by speakers at the Public Meeting, requesting clarification or more detailed analysis of potential impacts associated with the project. A number of comments were also made regarding perceived impacts, which differed from those identified by the subject matter experts who prepared the technical studies accompanying the environmental impact assessments for the project.

Having regard to the submissions made at the Public Meeting, clarification and/or further information is provided on the following topics:

1. Per- and polyfluoroalkyl substances (PFAS)
2. Microplastics, including delivery and unloading of plastics, wastewater and stormwater management
3. Air quality and health impacts
4. Fire management and evacuation plans
5. Building heights
6. Planning merit and site selection
7. Engagement throughout the project.

1. PFAS

What we heard: Concerns about the potential release of PFAS into drinking water

Numerous sources of PFAS in the environment have the potential to contribute to PFAS in drinking water. WaterNSW has recently published information on PFAS in dams and other catchments. According to WaterNSW, the levels of PFAS in drinking water supplied from Sydney's nine water treatment plants are well inside the current Australian Drinking Water Guidelines (ADWG) levels. It notes that the Australian Drinking Water Guidelines (ADWG) only apply to treated water, and that drinking water is further treated before being consumed.

GHD provided information on the potential impacts of PFAS associated with the proposal to the IPC in a letter dated 30 October 2024. This response is provided at **Appendix A.**

The proposal has been designed to minimise environmental impacts, and protect the community and environment during construction and operation. The potential contribution of the proposal to PFAS in drinking water supplies for Sydney would be negligible.

In addition, while the project design would ensure positive control of PFAS, steps are being taken under the National Packaging Covenant with industry to progressively phase out the use of PFAS within plastics that may be sent to the plant[1]. The Department of Climate Change, Energy, the Environment and Water (DCCEEW) is consulting on imposing mandatory national requirements for packaging circularity, including bans on problematic materials and chemicals of concern such as carbon black, oxo-degradables, and PFAS. All packaging placed on the Australian market would be regulated. Packaging must be designed to be recycled at scale, and bans would be placed on materials and additives that impede recyclability, with progressive bans of packaging that does not meet a minimum recyclability threshold would also be implemented.

The time until the facility is scheduled to open will provide further opportunity for these important PFAS control initiatives to be implemented, effectively reducing / eliminating the potential amount of PFAS that may be within plastic feedstock received at the proposal.

2. Microplastics

The facility has been designed to minimise or eliminate the potential release of plastics and chemicals that may be present in materials accepted for processing directly to the environment. These controls include a combination of processes and equipment design features that will ensure positive containment of any microplastics generated by specific operations in accordance with relevant regulatory guidelines and licensing conditions.

Submissions during the Public Meeting identified a number of potential pathways for plastics to enter the environment, including delivery and unloading of plastics, wastewater treatment plant discharges to the Council sewer and stormwater discharges to the two watercourses on site.

2.1 Delivery and unloading of plastics

What we heard: When the roller doors open, plastics will escape into the environment.

During the third day of the IPC's Public Meeting, a question was asked by the Commissioners in relation to the amount of time the roller doors, used by trucks to deliver and export product from the facility, would be open. The potential 5 hour door open period, stated at the IPC Public Meeting, considered the total time for a truck to enter the site, manoeuvre into position and then enter the facility. This equated to a total door open period each day of 3-5 hours, for 50 trucks at full plant capacity.

A more detailed analysis has been undertaken to confirm the likely door open time and the potential for microplastics to escape during this period. This showed that the roller door would only be open for 30 seconds when a truck entered, and 20 seconds when it left the building. This enabled the overall time open period to be re-estimated as 42 minutes per day.

GHD provided information to the IPC on roller door opening times in a letter dated 15 November 2024. This response is provided at **Appendix B.**

There are numerous examples of plastics recycling and reprocessing facilities as well as material recovery facilities with external storage of baled mixed plastics. In contrast, Plasrefine Recycling proposes that all receival and storage of feedstock material will be within a fully enclosed and ventilated (negative air pressure) building.

[1] **Australia plans major overhaul of packaging regulation | Food Packaging Forum**

2.2 Wastewater management

What we heard: Potential for contamination of local waterways from wastewater treatment plant discharges

Plasrefine Recycling will build its own wastewater treatment plant (WWTP) onsite using dissolved air flotation (DAF) technology. This technology is highly effective in removing microplastics from the wash water, which will be continuously recirculated, with only treated wash water disposed. There is no possibility of this water coming into contact with the western watercourse and the eastern drainage line, which lie outside the developed areas of the site.

As described in the section about microplastics, wash water would be recirculated continually, and treated at the on-site wastewater treatment plant, which would remove more than 90 percent of suspended solids, including microplastics. This is illustrated in Figure 2.1.

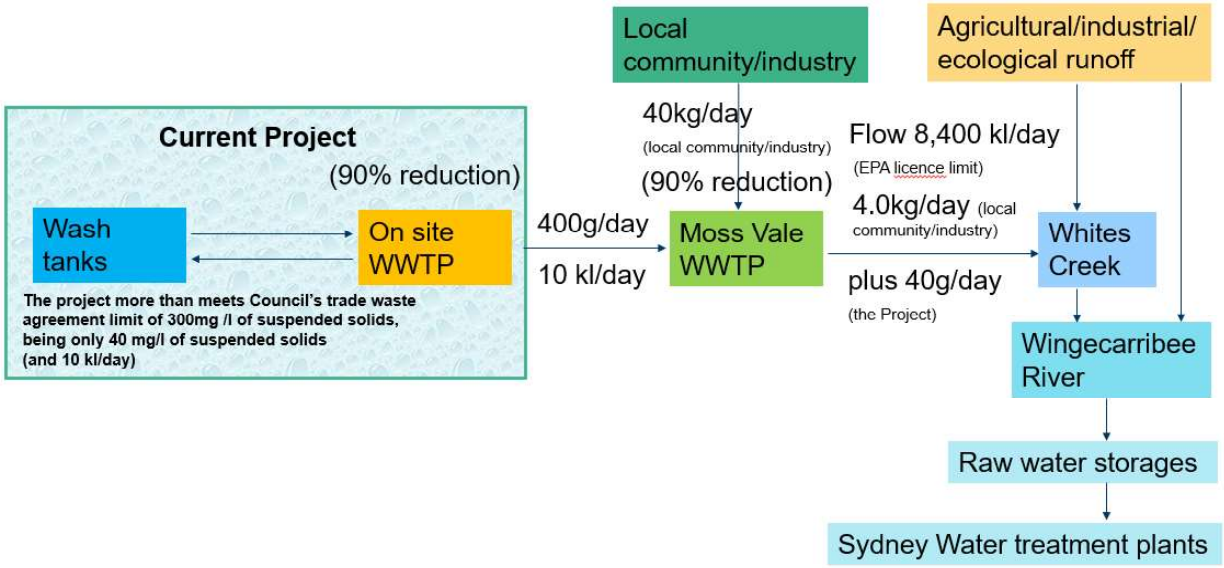

Figure 2.1 Wastewater process and potential levels of discharge (currently proposed in the EIS)

All wastewater discharged to sewer within the Moss Vale catchment is treated at Council's Moss Vale WWTP. Some microplastics are currently discharged to Whites Creek after treatment at the current WWTP. In 2026, the current Moss Vale WWTP is scheduled to be upgraded to a tertiary treatment plant which will increase the ability to remove even more microplastics. Plasrefine Recycling consulted with Council during the preparation of the wastewater strategy for the project.

Notwithstanding this, Plasrefine Recycling has progressed detailed design of the WWTP and now proposes to add an additional treatment step to enable the 10 kilolitres per day of wash water expected to be disposed to sewer to meet a standard of 5 milligrams per litre for suspended solids before discharge. This would make the water suitable for further re-use, removing the need to dispose of it and creating a situation where there would be limited need to discharge to sewer. This is illustrated in Figure 2.2.

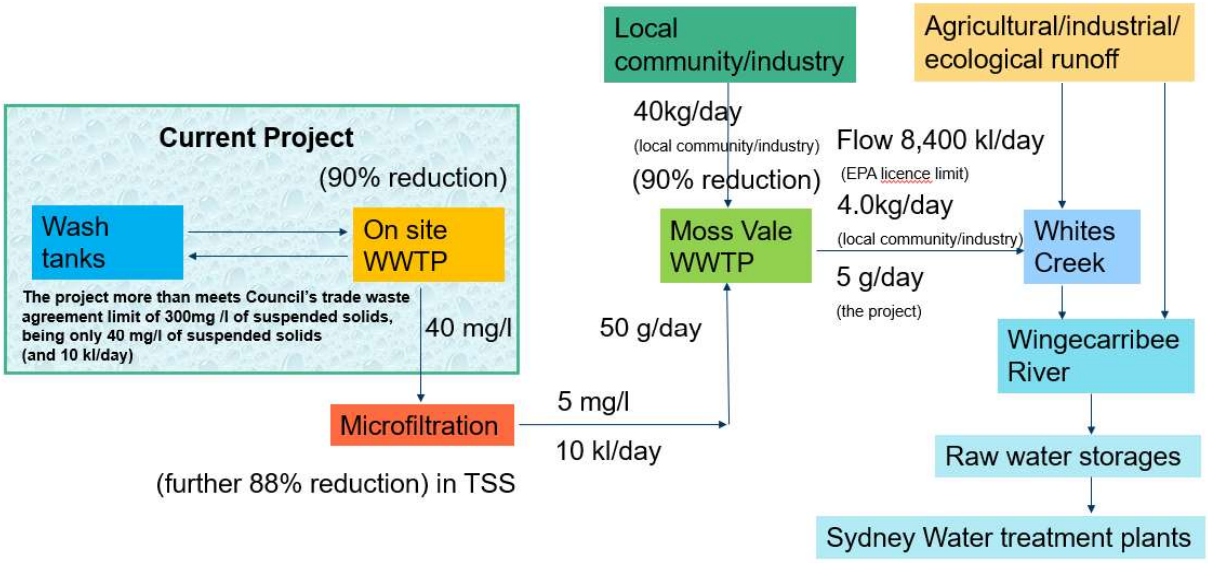

Figure 2.2 Wastewater process and potential levels of discharge (proposed post IPC Public Meetings)

2.3 Stormwater management on site

What we heard: Wastewater from processing will directly enter the local waterways.

Figure 2.3 shows the water and wastewater systems on the site. Rainwater will be collected from the roof areas and used to top up the process water, used for washing the plastics. Water can also be drawn from the Council mains if needed. The facility will be more than 80 percent self-sufficient at full capacity.

As described above, wash water will not be disposed of to the onsite waterways, but will be treated on site and continuously recirculated. Stormwater from the roads will be treated to the neutral or beneficial effect on water quality (NorBE) standard, and improved in quality by more than 10 percent before being discharged to any watercourses via the onsite bioretention basins.

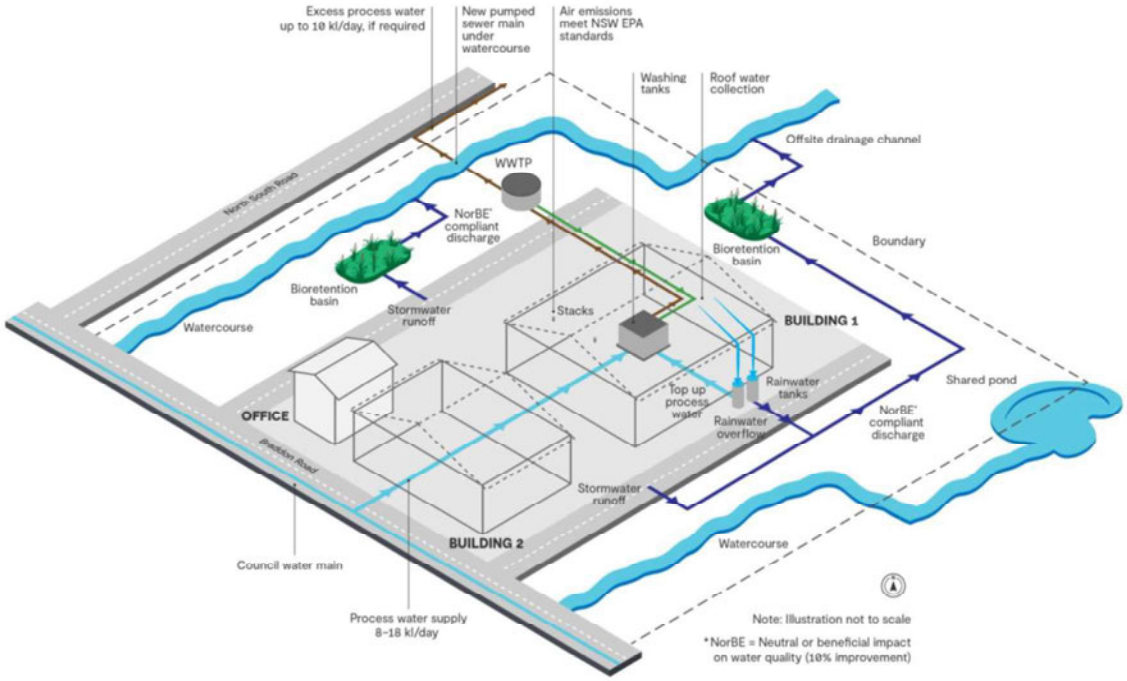

Figure 2.3 *Water and wastewater systems on the site*

3. Greater Sydney's drinking water catchment

What we heard: Potential for contamination of local waterways, including the Wingecarribee River and Sydney's water catchment area

The Greater Sydney drinking water catchment is made up of five water catchments- Warragamba, Shoalhaven, Upper Nepean, Woronora and Blue Mountains. They stretch from north of Lithgow at the head of the Coxs River in the Blue Mountains, to the source of the Shoalhaven River south of Braidwood - and From Woronora in the east to the source of the Wollondilly River west of Crookwell. This is an area of 16,000km^2, as shown in Figure 3.1.

The Wingecarribee local government area is located wholly within Greater Sydney's drinking water catchment. Sources of water (which could add contaminants to the drinking water supply) include residential runoff, commercial and industrial areas and agriculture areas. The impact on water quality of a single industrial facility with EPA complaint water controls is insignificant because of the sheer area of the catchment and the associated dilution effects.

Every year there is a range of new and modified residential, commercial, industrial and agricultural development and activities in Greater Sydney's drinking water catchment. All proposed developments in this catchment are required to have a neutral or beneficial effect on water quality (NorBE).

A NorBE is satisfied if the development:

- has no identifiable potential impact on water quality, or
- will contain any water quality impact on the development site and prevent it from reaching any watercourse, waterbody or drainage depression on the site, or
- will transfer any water quality impact outside the site where it is treated and disposed of to standards approved by the consent authority.

In 2021, as part of the EIS for the proposal, an assessment of NorBE was undertaken and identified that the NorBE criteria would be achieved for the proposal, with a minimum of approximately a 10 per cent improvement from the pre-development scenario. Rainwater that falls on the roof of each building would be collected to reduce the reliance on Council supplied potable water. Stormwater that falls onto the roads and paved areas of the site would be drained to the bioretention basins, where it would be passively treated by natural processes to meet the NorBE criteria.

The MUSIC stormwater quality modelling was updated for the RTS by upsizing the areas of bio-retention to satisfy the NORBE requirements, providing further bio-retention at the south-west and the north of the site to accommodate the retention of the existing north-eastern (shared) dam.

This includes heavy industrial sites, sites that use outdoor storage for building materials, and Council's own waste depot, which stores most waste and recovered resources outdoors.

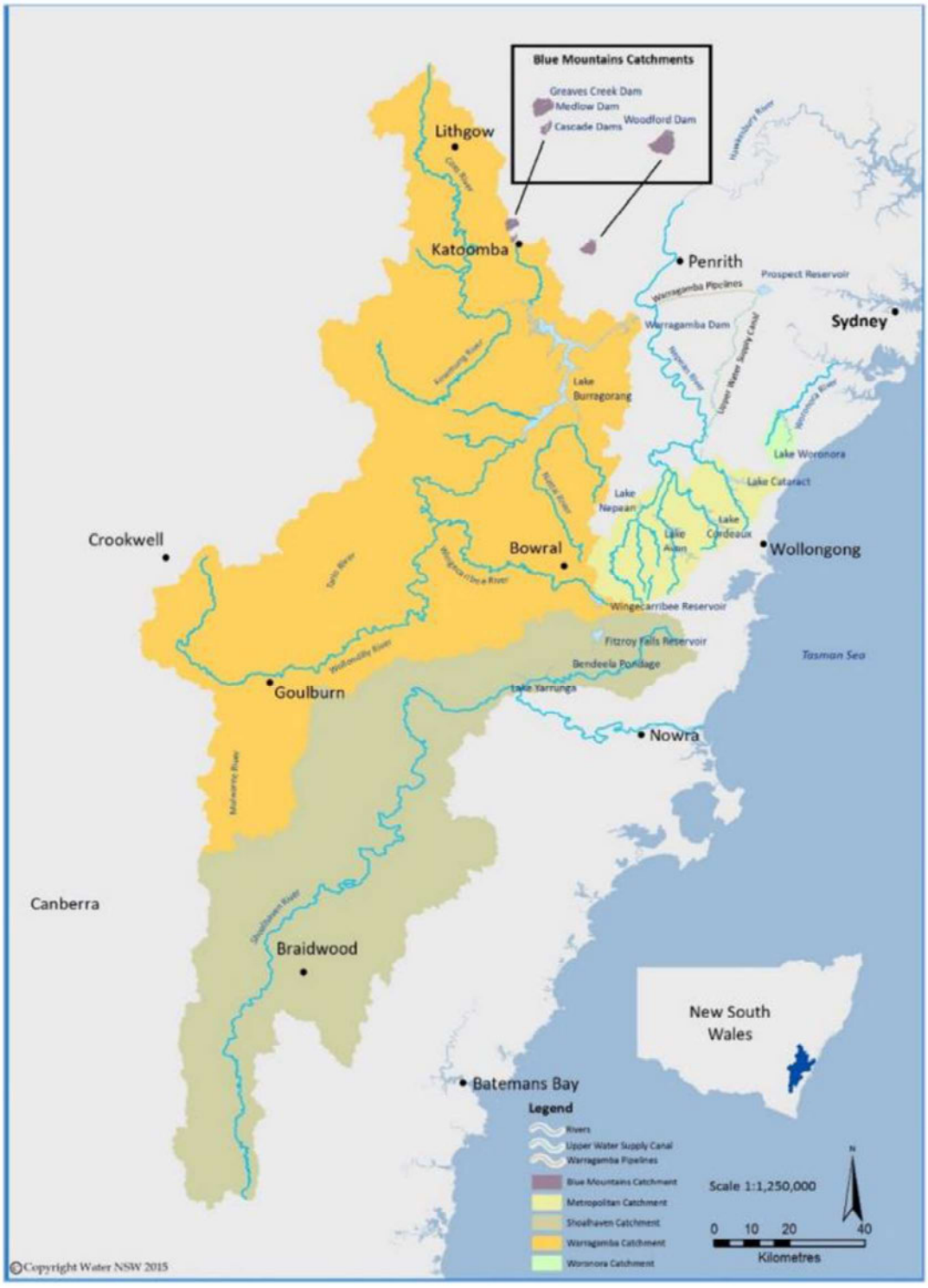

Figure 3.1 Greater Sydney Drinking Water Catchment

4. Air quality and health impacts

What we heard: Fears about respiratory issues, cancer, and other health problems due to exposure to pollutants.

Many submissions and presentations to the IPC speak to incorrect and exaggerated effects of plastics on the human body, which have been wholly attributed to this project although it is not in operation. There are significant sources of air pollutants, such as motor vehicles, wood fires, bushfires and local industrial emissions which are more significant in terms of exposure for particular vulnerable individuals.

The current air quality studies model no exceedances of the NSW EPA criteria at nearest residential or commercial receivers under standard weather conditions. There is the potential for a minor exceedance at Australian Bioresources on days when there are extremely high background levels of particulates due to bushfires, dust storms or back burning. There would be no non-compliances at residential receivers, even during these poor air quality days. Out of context information about the need to spend additional time indoors has been quoted at the Public Meeting and in submissions. The technical study references people staying indoors only on days with high background levels to protect them against exposure to poor background air quality, not air emissions associated with the facility's operations.

The proposed building ventilation system has two distinct components. The first and most important from the perspective of managing potential microplastics emissions is that dedicated air extraction and treatment systems would be fitted to all operations that have the potential to produce fine plastic particles and/or volatile organic compounds (VOCs). The air would be extracted via hoods over operations, or enclosure of the operations.

The current air modelling presented in the EIS was based on conservative assumptions. The maximum emission concentration of 20 milligrams per cubic metre assumed for particulates being discharged from the stack was equivalent to the relevant POEO limit for *General activities and plant (group 6): Solid particles (Total) - Any crushing, grinding, separating or materials handling activity*, not on the capability of the air emissions control equipment to remove particulates. The proposed equipment is capable of reducing particulates discharges to 50 percent of the limit, which is 10 milligrams per cubic metre. This is shown in Figure 4.1.

In addition, the air flow rate through the stack was assumed to be the maximum flow rate of 50,000 cubic metres per hour. This is extremely conservative as the actual air flow required will depend upon the number of shredders required, as well as the final design and selection of equipment. The higher the assumed air flow, the higher the theoretical estimated amount of particulates leaving the stack. In combination with the high emission concentration mentioned above (20 milligrams per cubic metre), this means the results of modelling are even more conservative.

Despite this level of conservatism, the modelling results showed compliance with relevant air quality criteria at all residential receivers and at the nearest commercial receiver Australian Bioresources. To demonstrate that the actual impacts would be less than modelled, additional modelling was undertaken (to progress the detailed design of the facility) using the achievable emission concentration of 10 milligrams per cubic metre and a wide range of air flow rates, following the IPC Public Meeting.

This shows that the additional particulates at each of the receptors associated with the project (not taking account of the background concentrations of particulates from other sources) would be reduced linearly as the concentration and the flow rates reduce. Therefore the revised concentrations at these receptors would be reduced from the EIS modelled levels by more than 90 percent (at 5,000 cubic metres per hour flow rate) and by 40 percent at the maximum expected flow rate of 50,000 cubic metres per hour. Details of the modelling results are provided in **Appendix D**.

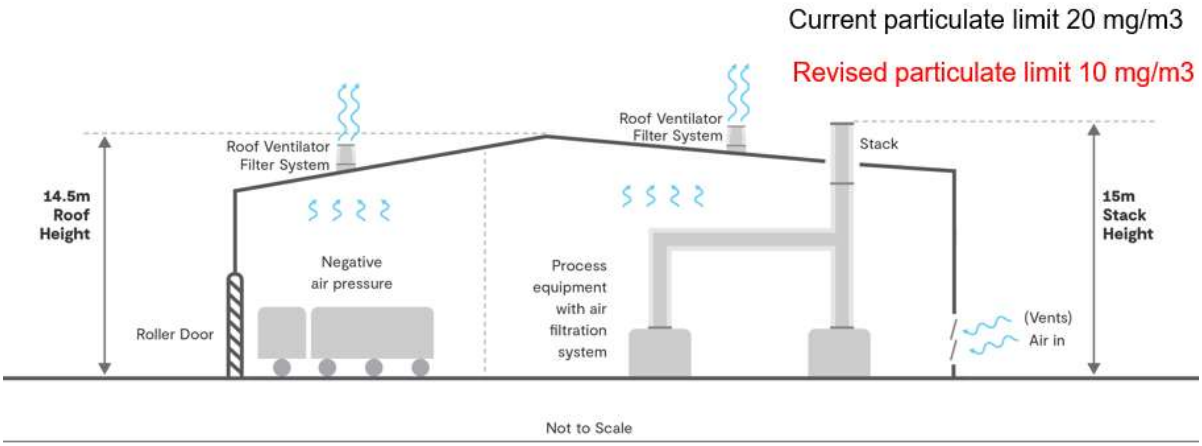

Figure 4.1 Stack emissions (current and proposed)

5. Fire

5.1 Fire management and evacuation plans

What we heard: Local firefighting capacity is not adequate for a facility of this size.

Although the issue identified was in relation to the capacity of local firefighters to be able to respond to a fire emergency, the core issue is safety mechanisms planned for the facility buildings and the adherence to fire safety requirements from government. The facility has been designed in accordance with the NSW Fire and Rescue Fire safety guidelines, as shown in Figure 5.1. Fire and Rescue NSW was consulted about the proposal during preparation of the EIS and has not expressed concerns about its firefighting capability to manage possible incidents at the facility.

The EIS and Amendment Report have also been reviewed by FRNSW and no further information has been requested. Mitigation measures proposed to address fire safety capture the recommendations of FRNSW.

Subsequently, following review of the Amendment Report dated 6 October 2023, it was stated that "*FRNSW submit no further comments or recommendations for consideration, nor any requirements beyond that specified by applicable legislation and our previous letter out concerning this matter dated 16/03/22 (D22/20251)".*

To prevent major fires, materials would be stored separately in concrete pens which minimise the potential for fires to spread, refer Figure 5.2. In addition, the facility would have state of the art fire protection systems including internal roof sprinklers for fire suppression and fire tanks, ring mains for fire hydrants, and booster pumps. It would have a ring road for fire vehicle access and entrances that meet firefighting requirements. All water used for firefighting would be contained on site, as per the fire plan, and an evacuation plan would be prepared.

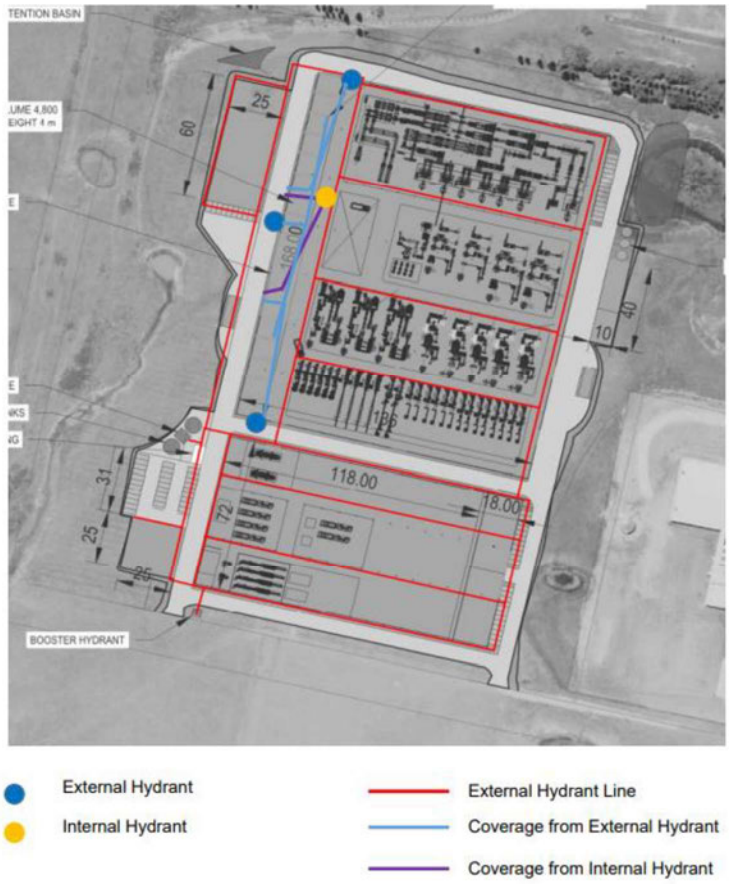

Figure 5.1 Proposed fire safety mechanisms

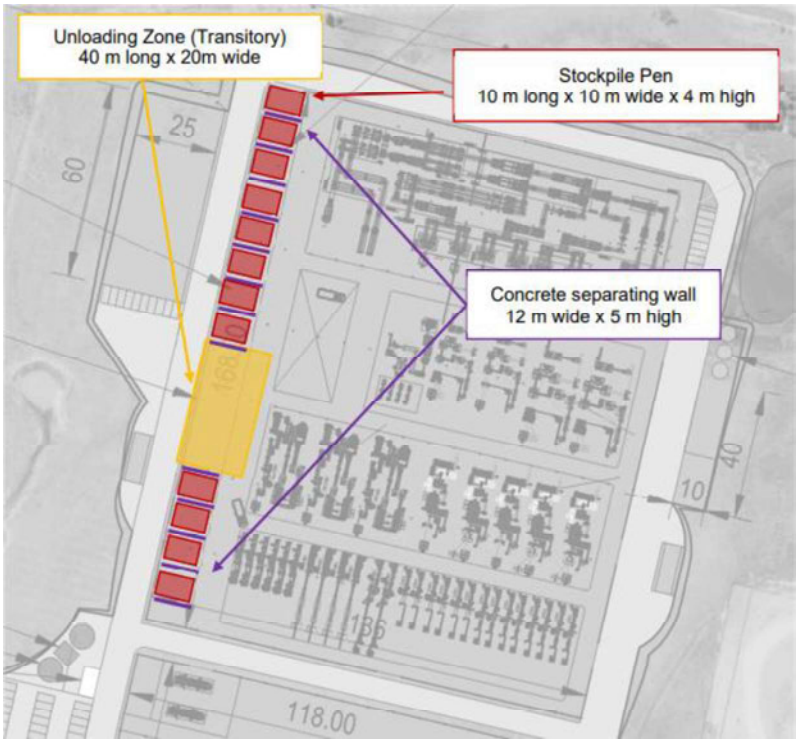

Figure 5.2 Fire safety compliant storage

5.2 Bushfire risk assessment

The Secretary's Environmental Assessment Requirements (SEARs) for the Project did not identify bushfire as a matter to be addressed in the EIS, as the site is not currently mapped as Bushfire Prone Land (BFPL), as certified by the NSW RFS Commissioner under Section 10.3 of the EP&A Act.

A bushfire impacts review has been undertaken, which found that Wingecarribee Shire Council's BFPL mapping was last updated in 2011 and has not been reviewed and updated to include Category 3 vegetation hazard.

Vegetation Categories for BFPL were revised to include a Category 3 in 2015. The Guide for Bush Fire Prone Land Mapping version 5b issued by the NSW RFS in November 2015 states a three-year transition period was to occur as part of the introduction of Category 3 into the BFPL system in which Council's would need to recertify their BFPL maps and incorporate the new Category 3 layer. During this period recertification may, dependent on circumstances, be granted on a case-by-case basis under the 2014 version of the guide (Category 1 and Category 2 vegetation only) by the NSW RFS.

Vegetation Category 3 consists of the following vegetation types which were not captured by the other two vegetation categories:

– Grasslands, freshwater wetlands, semi-arid woodlands, alpine complex and arid shrublands.

Given that the last update to the BFPL mapping for Wingecarribee Shire Council occurred prior to the introduction of Category 3 vegetation, grassland vegetation hazard has not been captured in the BFPL mapping for the subject site and surrounding area. For the purpose of this bushfire assessment, the subject land and surrounds has been considered Category 3 vegetation to reflect likely bushfire vegetation hazard. This is where it is not currently mapped otherwise or meeting requirements for vegetation excluded from being mapped as bushfire prone as described in Section 7.1.2 of Guide for Bush Fire Prone Land Mapping version 5b (NSW RFS, 2015) or Low Threat Vegetation exclusion under Australian Standard (AS)3959-2018 Construction of buildings in bushfire prone areas (AS3959-2018) section 2.2.3.2.

A bushfire risk assessment has been undertaken and is attached in **Appendix C**. The bushfire risk assessment concludes that the proposal complies with the National Construction Code (NCC) objectives and would also comply with Planning for Bushfire Protection (PBP) 2019 bushfire planning requirements if the following recommendations with regard to managing vegetation and landscaping are adopted.

- For the site office and the wastewater treatment plant buildings, which are adjacent to landscape areas, provide an APZ by leaving existing vegetation in place, rather than landscaping to the building edge.
- Manage current grassland areas under the identified APZ to APZ standard as described in Appendix 4 of PBP.
- Review the current planting schedule to further minimise bushfire risk against *Landscaping for bushfire – garden design and plant selection version 3 (CFA, 2022)*

6. Building and stack heights

What we heard: Incorrect statements on the height of buildings and stacks.

An overview of the building heights[2] can be seen in Table 6.1.

Table 6.1 Building heights

Building	Height from ground
Administration building	12.0 m
Buildings 1 and 2	14.5 m
Multi-use building	15.5 m

The height of the tallest building, the multi-use building, is 15.5 metres. Buildings 1 and 2 where plastics processing and manufacturing would occur, are a maximum of 14.5 m. The finished height of the stacks are 15m above adjacent ground levels, as shown on Figure 6.1.

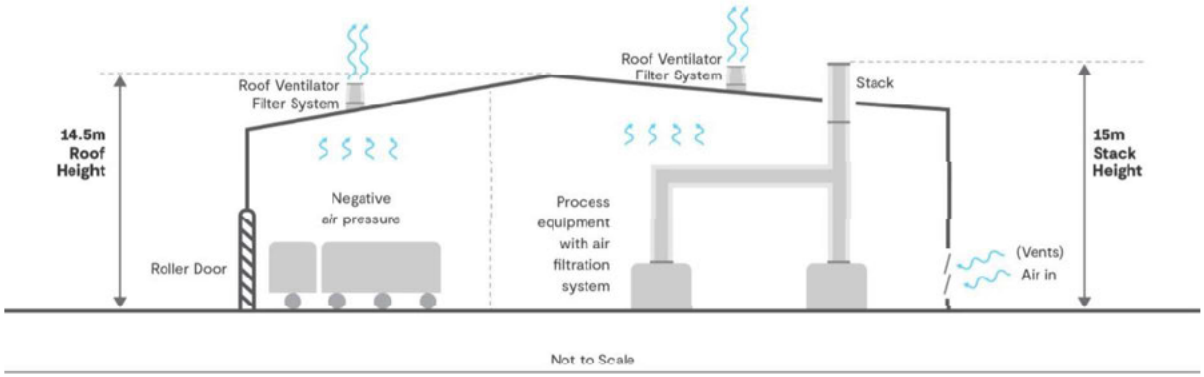

Figure 6.1 Illustration of maximum heights for Buildings 1 and 2 including stacks

[2] Wingecarribee LEP defined ***building height*** (or ***height of building***) as —
(a) in relation to the height of a building in metres—the vertical distance from ground level (existing) to the highest point of the building, or
(b) in relation to the RL of a building—the vertical distance from the Australian Height Datum to the highest point of the building, including plant and lift overruns, but excluding communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the l ke.

There are no statutory development controls in the *Wingecarribee LEP* relating to height that apply to the site.

As a State Significant Development, the Moss Vale Enterprise Corridor Development Control Plan (MVEC DCP) does not apply in accordance with section 2.10 of the Planning Systems SEPP. However, the MVEC DCP has been considered as part of the planning and design process, where appropriate. The MVEC DCP guides a maximum building height of 20 metres for the site. The proposed maximum building height on the site is 4.5 metres less than the MVEC DCP maximum building height of 20 metres.

7. Planning

7.1 Strategic and statutory merit

What we heard: comments that the project is deficient in strategic and site-specific merit.

Wingecarribee Shire Council's **Southern Highlands Destination Strategy 2020** states:

> *'The Southern Highlands region provides proximity to Sydney, Canberra, Wollongong and the new Western Sydney Airport and Aerotropolis with good transport access in and out of the region through the Hume and Illawarra Highways and rail.'*

It goes on to describe the SHIP as *'A unique opportunity for large scale industrial development conveniently close to Sydney, and good distribution to most of the country.'* This strategy is what attracted Plasrefine Recycling to the region almost five years ago.

The **South East and Tablelands Regional Plan 2036** sets regional planning priorities and provides a framework for regional and local planning decisions over the next 20 years. Economic and employment priorities for Wingecarribee include prioritisation of local manufacturing opportunities, capitalising on economic opportunities arising from the area's proximity to Sydney and the '*land availability in the MVEC to attract industry and investment'*. The development is consistent with the South East and Tablelands Regional Plan directions.

The **Wingecarribee Local Strategic Planning Statement** sets out the 20-year land use vision for the Wingecarribee Shire. The development aligns with Planning Priority 1.5 (to conserve and protect waterways) through the retention and restoration of the two waterways, extensive riparian planting and stormwater and wastewater infrastructure. The development also aligns with Planning Priority 3.1 (to support businesses and attract people to work, live and visit) being a new business within the MVEC with a large workforce of mechanical and electrical engineers, scientists, administration and support staff (it would be within the top 10 largest employers in the LGA).

The **NSW Waste Avoidance and Sustainable Material Strategy 2041** sets targets for waste reduction and landfill diversion to transition to a circular economy, including an 80% average recovery rate from all waste streams and tripling the plastics recycling rate by 2030. Part 2 of the Strategy identifies the need for expanding and modernising waste and resource recovery facilities in regional NSW. The development would assist in achieving the aims of the NSW Waste Avoidance and Sustainable Material Strategy. It would also recover resources for beneficial reuse.

Finally, key strategic objectives nominated by residents in the recently released **Wingecarribee Resource and Waste Management Strategy 2023- 2032** includes diverting more waste from landfill and to find solutions for managing waste plastics. This included the following Strategy Directions and Objectives at Table 4:

- Align with regional, NSW and national strategies including strategies to target waste streams not yet recovered e.g. plastics
- Identify and participate in viable circular economy, avoidance and re-use project initiatives, including utilising the SHIP to embrace resource recovery and the circular economy.'

The development is consistent with the strategic directions from the Wingecarribee Resource and Waste Management Strategy.

What we heard: the project is inconsistent with the Draft Southern Highlands Innovation Park Masterplan.

Planning for the project commenced in 2020. Following over a year of planning, design, environmental assessment and consultation, the SSD EIS was publicly exhibited from 23 February 2022 - 22 March 2022. The subsequent Amendment Report, addressing community and stakeholder feedback and modifying aspects of the project, was exhibited from 5 October 2023 - 1 November 2023.

The Department of Planning Housing and Infrastructure (DPHI) completed their assessment of the SSD at the end of July 2024, prior to the public exhibition of the draft Southern Highlands Innovation Park (SHIP) Masterplan, which took place from 29 July - 23 September 2024.

It is unreasonable to expect a development application that commenced over four years ago to have considered the draft SHIP Masterplan that has only recently been issued to the public for consultation. Further, a draft Masterplan is not a relevant matter for consideration under the provisions of the *Environmental Planning and Assessment Act, 1979 (EP&A Act).*

We are advised by our client, Plasrefine Recycling, that they were not contacted as a landowner within the area to which the draft SHIP applied, either by the Council or the consultants engaged by Council, in the preparation of the draft Masterplan.

Notwithstanding the above, following the public notification and exhibition of the masterplan, GHD liaised with the DPHI to advise that the Plasrefine Recycling project is aligned with Council's vision for the Research, Training and Advanced Manufacturing Precinct being a reprocessing, manufacturing and research facility. The project involves advanced manufacturing through the use of robotics for optical sorting, a research and development laboratory to advance recycling technology and an educational facility for improving knowledge about sustainability and circular economy.

7.2 Site Selection

What we heard: the site location is inappropriate, 'Not the right site'.

The site has been identified for 'general industrial' development for more than 15 years. '*Waste or resources management facilities'* are permissible with consent in the E4 General Industrial zone.

There are a wide range of uses permitted within the E4 General Industrial zone (including depots, freight transport facilities, garden centres, general industries, hardware and building supplies, warehouse or distribution centres) which generally require large building footprints and would be considered traffic generating developments. Unlike the industrial land ~1km to the south-west of the site (which immediately adjoins residential zoned land), the proposal site was never zoned by Council for light industrial development, as a transition/ buffer with residential areas.

Sorting, washing and reprocessing of plastics within an enclosed building is a safe and low impact process, aligned with the advanced manufacturing precinct in which it would be located. The project involves advanced manufacturing through the use of robotics for optical sorting, a research and development laboratory to advance recycling technology and an educational facility for improving knowledge about sustainability and circular economy. The proposal also includes facilities to enable educational activities for school groups and other interested parties to learn about plastic waste, plastic recycling and turning wastes into valuable resources.

The Environmental Impact Statement prepared to support the proposal has assessed the impacts and benefits of the project in accordance with the relevant requirements of the *EP&A Act.* Whilst the proposal has the potential to result in minor increases in traffic and amenity impacts, it is considered a suitable development for the site, sited within the broader MVEC and SHIP with other manufacturing and research facilities. It will deliver local, regional and state benefits through the diversion of up 120,000 tonnes per annum of plastics from landfill, research improving knowledge about sustainability and circular economy,

140 jobs during operation and a capital investment in the LGA of over $88 million. The new north-south road is an enabler for further development and realisation of land within the southern part of the SHIP.

8. Development Application documentation

What we heard: Comments on the adequacy of the Development Application supporting documentation

The DA has been prepared in accordance with the SSD Guidelines.

It should be noted that the environmental assessment contains the level of information required to sufficiently inform the environmental impact assessment stage.

Conditions of consent require preparation of management plans, some in consultation with Council and agencies.

It is common practice for more detailed information (preparation of detailed design) to be undertaken at the post approval stage, once there is certainty in the project approval.

9. Engagement throughout the project

What we heard: community's concerns have not been adequately addressed or considered in the planning process.

The first step of the engagement process started in December 2020 with near neighbours on Beaconsfield and Bulwer Roads. It introduced the project, offered one-on-one discussions (and for some) requested access to properties to place noise loggers to inform the environmental impact statement. In addition, a newsletter was distributed to over 4,600 residences and emailed to stakeholders.

The proponent met with Council on 24 November 2020. Minutes of this meeting are attached at **Appendix E**. GHD and Plasrefine Recycling continued to engage with Council during the development of the project.

Community engagement took place during the preparation of the EIS which identified issues that were addressed in the EIS. The first round of community information sessions took place in-person and virtually (due to COVID restrictions) in July and August 2021 with 36 individuals in attendance. A further three sessions were held (two in-person and one virtual) in November 2021 with over 240 people attending.

An introductory email was sent to the local elected representative, Wendy Tuckerman MP, on 14 December 2020. An acknowledgement from the Office of Wendy Tuckerman MP was provided later that day, thanking GHD for advising of the development and that the Office will be in contact should it require any further information. Wendy Tuckerman MP contacted the project team once COVID restrictions were lifted to ensure the planned sessions would be in-person.

At each event, feedback was received and updates and refinements to the project were undertaken based on this feedback. The presentation provided on Day 1 of the Public Meeting outlines the number of project amendments that were the result of community feedback.

The project team has summarised the submissions to the IPC. Out of the 1,045 individuals who have made submissions during the IPC process[3], only 40 have previously made a submission on the project (ie submitted to the DPHI during either the public exhibition period for the EIS and/or Amendment Report).

[3] Based on data from the IPC website, as of 20 November 2024

10. Conclusion

We thank the IPC for providing the opportunity to hear community issues and allow for the proponent to provide updates on the additional work that has been undertaken to investigate the key issues and provide further commitments to lower impacts from the proposed facility.

We welcome the IPC to reach out if there are any further questions.

Regards

[redacted]

David Gamble
Senior Technical Director - Waste Infrastructure

[redacted]

Copy to: Department of Planning Housing and Infrastructure

Appendices

Appendix A

PFAS

16 Marcus Clarke Street, Level 7
Canberra, Australian Capital Territory 2601
Australia
ghd.com

Your ref:
Our ref: 12524108

30 October 2024

Kendall Clydsdale
Principal Case Manager
Office of the Independent Planning Commission NSW
Suite 15.02, Level 15, 135 King Street
Sydney NSW 2000
Via email to: kendall.clydsdale@ipcn.nsw.gov.au

Opinion on the proposed Moss Vale Plastics Recycling and Reprocessing Facility – Response to Concerns Regarding Microplastics and PFAS Emissions

Dear Mr Clydesdale

My name is Dr Mark Bowman and I am a GHD Technical Director for Environment and Contaminants with over 20 years' experience as a scientist, program manager, regulator and consultant, working with legacy and emerging contaminants including persistent organic pollutants such as PFAS and micro-plastics.

Over the course of my career, I have worked on many projects to manage the impacts of various contaminants in the environment including in the waste, water, agriculture, industry and government sectors. I was recognized for my ongoing contributions to contaminant management when I was made a crcCARE Fellow at the International Cleanup Conference in Adelaide (2022).

I have been asked to provide my opinion on the possibility of significant quantities of PFAS entering the local environment as a consequence of the operation of the proposed Moss Vale Plastics Recycling and Reprocessing Facility (the proposal).

I note that a number of concerns were raised during the NSW Independent Planning Commission public meeting held at Bowral on 28 October 2024. Several members of the community who addressed the meeting raised the potential for the facility to release unsafe levels of microplastics and other chemicals such as PFAS into the surrounding environment.

While respectful of their concerns, in my opinion the potential risks raised are not significant given the design features of the facility, the proposed mode of operation and the appropriate and stringent regulatory controls that would be enforced during normal operations.

The facility has been designed to minimise the potential for release of plastics and chemicals that may be present in materials accepted for processing directly to the environment. These controls will include a combination of processes and equipment design features that will enable positive containment of any microplastics generated by specific operations in accordance with relevant regulatory guidelines and licensing conditions.

It is possible that some plastic items that may be processed at the facility could contain small amounts of PFAS. These PFAS are sometimes present in everyday household items such as clothing, packaging, non-stick frying pans and makeup. They have received a lot of media attention recently because of their widespread presence in the human body as well as the natural environment.

During commissioning of the facility, testing of the emission control systems would be conducted to verify that microplastics and PFAS that may be present in received materials are captured and appropriately managed so that no unacceptable risks are posed to the community and environment. There should be no

plausible completed pollution pathway from the proposed site to downstream waterways based on the comprehensive series of controls proposed for the site. For example, water used during facility operations to wash shredded plastics will be carefully managed via a closed loop recycling system. The operation of the system for treating and cleaning wash water and recirculating it means that discharges of spent wash waters to the Council sewerage system are expected to be below 10 kilolitres per day on average. This is equivalent to a large sized rainwater tank.

As per the project description in the EIS, Plasrefine Recycling proposes to build its own wastewater treatment plant (WWTP) on site, which would be a dissolved air flotation (DAF) plant, and as such, effective in removing microplastics from water that is continuously recirculated and any excess (treated) washwater that may be occasionally disposed to sewer.

DAFs remove suspended particles (including microplastics) from the water and make it suitable for re-use within the plant. This process injects compressed air into the incoming water, and once the aerated water is released into the flotation tank, fine air bubbles attach themselves to the particles, making them float. The floating material is then skimmed off the top of the tank and dewatered in a screw press to produce a spadeable filter cake. A DAF process is capable of removing more than 90 percent of suspended solids, including any entrained microplastics, which may or may not contain trace amounts of PFAS.

The filter cake would be disposed of to an appropriately licenced waste facility. It would be classified as general solid waste, which can be disposed of at most landfills in NSW.

Any processed water discharged to sewer would be received at the soon to be upgraded Moss Vale Wastewater Treatment Plant (WWTP) that will further treat discharged process water that might contain any residual microplastics. Council has indicated in its letter of 8 March 2024 to GHD that it expects the upgraded Moss Vale WWTP to be able to remove approximately 90 per cent of microplastics, and said that any industrial scale source for microplastics should be addressed at the source, rather than the treatment works. It estimated that the addition of Plasrefine wastewater could increase the total amount of microplastics received at the plant by between 10 and 50%, based on an estimated microplastics concentration of 40 mg/l after treatment.

As noted above, the proposal includes an on-site wastewater treatment plant with the capability of removing more than 90 per cent of suspended solids, including microplastics. Recent studies[1] have shown that microplastic particles were found to be removed mainly from WWTPs in the primary treatment zones via solids skimming and sludge settling processes. The results of this study further suggest that effluent discharges from both secondary and tertiary wastewater treatment facilities contribute only minimally to the microplastic loads in oceans and surface water environments.

The contribution of domestic and other sources such as industry are likely to be even more significant that those from the proposal, which are expected to be less than 1% of the dry weather flow to Council's Moss Vale WWTP (4.6 ML/day according to the 2023 WWTP REF). Council's letter of 8 March 2024 estimated that the current WWTP is already receiving between 0.4 – 4 kg of microplastics per day from domestic and other sources. At 10 kl/day discharge, the Plasrefine facility would contribute 0.4 kg/day. This could be further reduced by the additional filtration before discharge.

Testing to confirm that the concentrations of PFAS in wash water discharged to sewer meet Council's trade waste agreement limits will be performed during commissioning of the facility. Most PFAS present would be expected to remain entrained in the plastic and therefore captured for appropriate disposal. It is understood that there are no limits currently for microplastics or PFAS, but a limit of 300 mg/l exists for suspended solids, which the onsite Plasrefine WWTP can easily achieve (less than 40 mg/l of suspended solids is expected).

While the proposal design would ensure positive control of microplastics and PFAS, steps are being taken under the National Packaging Covenant with industry to progressively phase out the use of PFAS within plastics that may be sent to the plant[2]. The Department of Climate Change, Energy, the Environment and Water (DCCEEW) is consulting on imposing mandatory national requirements for packaging circularity, including bans on problematic materials and chemicals of concern such as carbon black, oxo-degradables,

[1] **Transport and fate of microplastic particles in wastewater treatment plants – ScienceDirect**
[2] **Australia plans major overhaul of packaging regulation | Food Packaging Forum**

and PFAS. All packaging placed on the Australian market would be regulated. Packaging must be designed to be recycled at scale, and bans would be placed on materials and additives that impede recyclability, with progressive bans of packaging that does not meet a minimum recyclability threshold would also be implemented.

These reforms if enacted in combination with the Industrial Chemicals Environment Management Standard (iChEMS) scheduling decision for the most challenging PFAS[3] including Perfluorooctanoic acid (PFOA) and related substances, Perfluorohexanesulfonic acid (PFHxS) and related substances and Perfluorooctanesulfonic acid (PFOS) and related substances are expected to see a continuing reduction in PFAS contained within materials including plastics sent for recycling. The time until the facility is scheduled to open will provide further opportunity for these important PFAS control initiatives to be implemented, effectively reducing the potential amount of PFAS that may be within plastic feedstock received at the proposal.

Risks of PFAS release from air and dust emissions are expected to be negligible based on the process design for handling raw materials during normal operations. Processing of materials at the facility will not include combustion of plastics, which is normally associated with PFAS emissions to the atmosphere. Heating of recovered plastics would be undertaken to allow reformation and extrusion into new products and materials, but would not result in significant risk of PFAS emissions.

The most plausible pathway of interest with respect to generation of airborne emissions of microplastics is associated with shredding and size reduction operations. Risks of this processing would be effectively contained through enclosing these operations and using air extraction and filtration systems capture any airborne particles. Following this, washing of the plastic fragments/flakes would also assist in minimising dust generation, noting that the particles would become entrained in the wash water, but captured in the on site WWTP, as described above. Testing during commissioning would verify that air emissions meet the levels outlined in the EIS and EPA licence.

GHD's dispersion modelling, which was presented in the Amendment Report Response to Submissions (ARRTS) dated February 2024 demonstrated that commercial receptors (at the adjacent Australian Bioresources facility) would meet the PM10 and PM2.5 criteria, with no exceedances when assessed on a day and nighttime basis. ABR does not have workers at its facility at night times. This modelling indicates that control of air emissions from the facility will meet required regulatory requirements and provide for appropriate control of potential microplastics emissions.

In summary, the proposed controls at the proposal will, in my opinion, appropriately protect the community and environment. I note the concerns raised during the recent public hearings by members of the community and stakeholders with respect to the potential for the facility to release microplastics and other chemicals such as PFAS directly into the surrounding environment. I can see no plausible basis for this conclusion given the extensive precautions planned for the site under normal operations. The facility will be appropriately regulated and scrutinized to provide transparency and confidence to the community that the facility remains operating safely. It is my view that the proposal has been designed to minimise environmental impacts, and protect the community and environment during construction and operation.

Regards

[redacted]

Dr Mark Bowman
Technical Director, Environment and Contamination
PhD (Syd) B Appl Sci (Hons) (Adl) BSc (REM) (ANU))
[redacted]

[3] **IChEMS Online Register – DCCEEW**

Appendix B

Information on vehicle access door opening periods and potential impacts

133 Castlereagh Street, Level 15
Sydney, New South Wales 2000
Australia
ghd.com

Your ref: [0000]
Our ref: 12524108

15 November 2024

Mr Chris Ritchie
Acting Executive Director – Energy, Resources and Industry Assessments
[redacted]

Information on vehicle access door opening periods and potential impacts

Dear Chris

1. Roller door opening times

During the third day of the Independent Planning Commission's Public Meeting for the Moss Vale Plastics Reprocessing Facility, a question was asked by the Commissioners in relation to the amount of time the roller doors, used by trucks to deliver and export product from the facility, would be open.

GHD stated (based on industry experience), that doors could typically open for 2-3 minutes when a truck arrives at the site to permit entry of a truck or semi-trailer, and would then open for the same period to allow for exit of the same vehicle after unloading (with doors closed). This would result in an estimated total door opening period of 4-6 mins per truck (in and out). This would equate to between 200 mins (3.3 hours) and 300 mins (5 hours) over the course of a 24 hour/day operating period (noting that the 11 hour daily truck arrival period is between 7am to 6pm weekdays only).

The potential 5 hour door open period, stated at the IPC Public Meeting, considered the total time for a truck to enter the site, manoeuvre into position and then enter the facility.

Questions were asked by the IPC in relation to the 5 hour period, particularly in relation to whether this would allow microplastics to escape into the environment. A detailed analysis has been undertaken to confirm the likely door open time and the potential for microplastics to escape during this period.

1.1 Truck entering the building

Information about the opening and closing speeds of high speed/rapid roller doors of the size required for this type of facility has been sourced from local suppliers. For a 6 m high industrial rapid roller door, by DMF (SERIES RL3000 High Speed Rapid Roll Door | DMF), the maximum speed of upward and downward movement is stated to be 1.3 m per second. Therefore the roller door would rise in just over 5 seconds, and close in just over 5 seconds.

The analysis below is based on conservative assumptions using the largest vehicle (19m long semi-trailer) accessing the facility.

For a semi-trailer entering the building:

- the vehicle reverses so that it is adjacent to the door
- the door opens in 5 seconds
- the vehicle reverses at 1 m per second, taking 20 seconds to travel through the doorway
- the door closes in 5 seconds

Total elapsed time = 5 + 20 + 5 = 30 seconds

1.2 Truck leaving the building

For a semi-trailer leaving the building:

– the door opens in 5 seconds
– the vehicle moves forward at 2 m per second, taking 10 seconds to exit
– the door closes in 5 seconds

Total elapsed time = 5 + 10 + 5 = 20 seconds

1.3 Total door open time

Based on Section 1.1 and Section 1.2, the total time for a door to be open is 50 seconds per truck. Figure 1 shows the various time components.

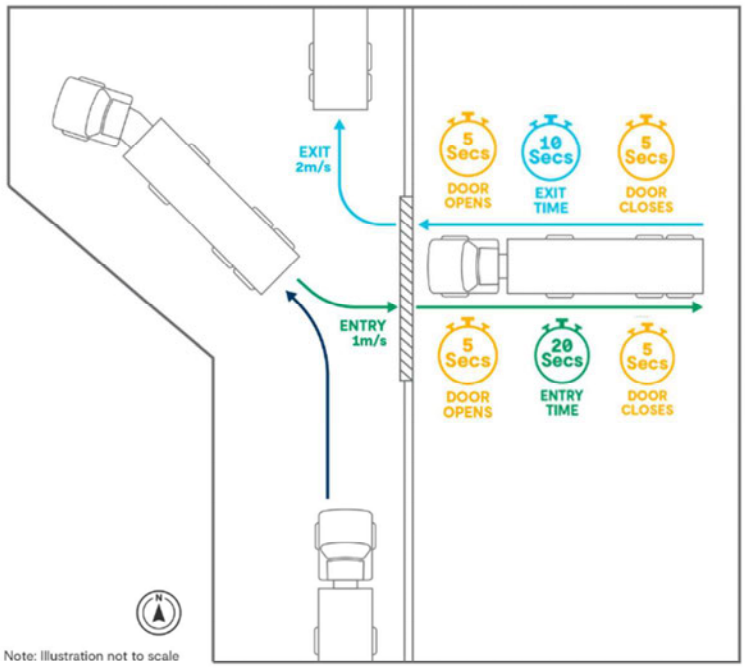

Figure 1 Time required for trucks entering and leaving Building 1

For the maximum 120,000 tonnes per annum throughput (when the facility is operating at full capacity), there would be up to 50 trucks per day. This equates to a total of 42 minutes of door open time per day (made up of 50 seconds x 50 trucks = 2,500 seconds = 42 minutes per day).

The 42 minute period is not continuous but comprises 50 segments of 30 seconds each (truck arrivals) and 50 segments of 20 seconds each (truck departures). Within each 24 hour daily operating period, doors would only be open for 3% of the time.

The amount of door opening time is directly related to the throughput of the facility and the type of truck. For example, if the total throughput for the facility starts off at 60,000 tonnes per annum (50% of maximum capacity), this would reduce the total door open time to 21 minutes per day.

Some material could be delivered by rigid body trucks, which are much shorter than semi-trailers (~12.5 m in length). Whilst the door opening and closing times would be the same (5 seconds each), the length of time for truck entry and exit would be reduced due to the shorter vehicle length and easier manoeuvrability.

2. Potential for microplastics emissions during roller door open times

A number of public submissions stated the possibility of strong westerly winds occurring whilst the roller doors are open, resulting in microplastics escaping into the environment.

Figure 2, shows that the northern roller doors would largely be shielded from westerly winds by the proposed wastewater treatment plant (WWTP) building. The WWTP is 5 m in height. The southernmost roller door would be protected from north west winds. There is potential for westerly winds to blow inwards through the doors, when open, noting that the time for which the door is open is at the most, 30 seconds, when a semi- trailer is reversing, and 20 second when a semi-trailer is leaving.

The doors would only be open when in use. Therefore, at all times when the door is open, there would be a truck moving through the opening. This would create resistance to wind in addition to the static pressure of the building. A westerly wind direction (blowing towards the building), would not cause material to be carried through the door opening in the opposite direction.

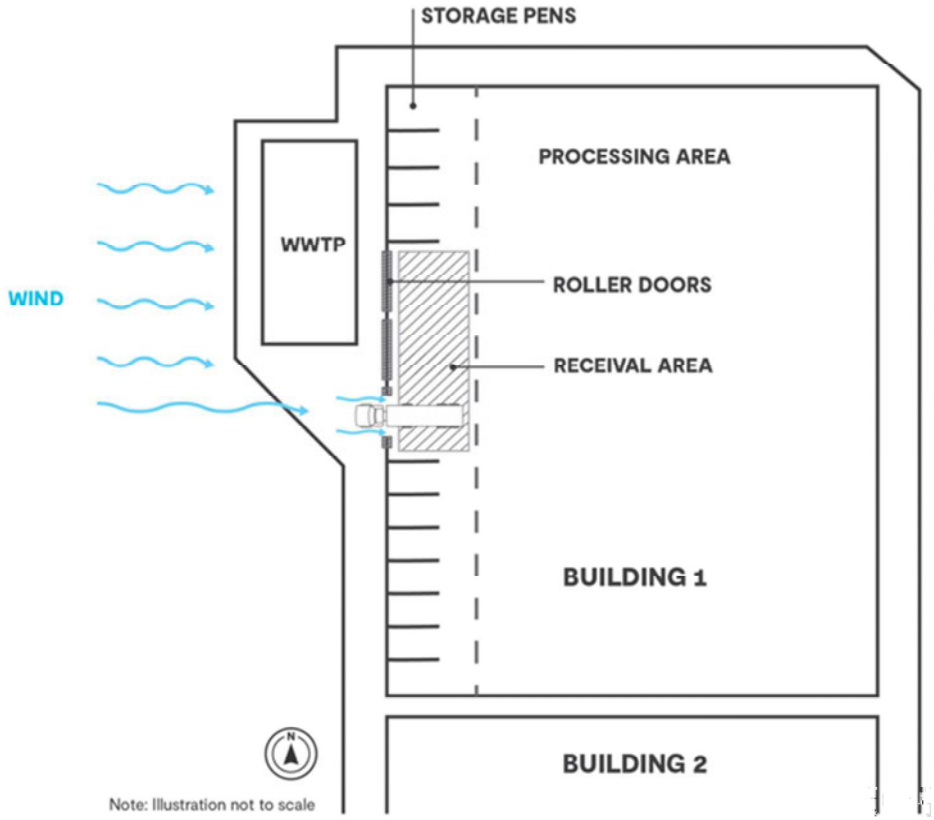

Figure 2 Potential impacts of roller door being open for short periods of time

The Architectural Plans show that plastics bales will be stored in pens against the western wall of the building. The pens would be three sided concrete structures, with the fourth open side facing east. The pens are required to meet the Fire and Rescue NSW Waste Facility Guidelines, and will have walls 4 m high. The material stored in the pens will be protected from wind or associated air currents.

It is proposed that this part of the building would have a negative air pressure system, which will draw air in through the open doors, preventing escape of any plastic particles when there is no westerly wind blowing. This would be operated at 0.5 air changes per hour (typical operations). This could be increased by 100%

to 1 air change per hour, to provide added additional protection against escape of particles. Should any plastic fragments (not microplastics) fall on the floor during unloading (whilst the door is closed), they would be cleaned up using industrial vacuum or floor washing equipment before the door is opened again for the truck to leave.

The above measures will enable the plant to operate continuously whether the doors are open or not.

3. Potential noise emissions during roller door open times

In January 2024, DPHI requested additional information relating to the noise modelling work undertaken for the Amendment Report. As part of this, GHD was asked to model a scenario where all of the western roller doors were open for an entire 15 minutes (the standard period used in noise modelling). The full request was as follows:

> *Heavy vehicles entering the facility would pass over the weighbridge before reversing into Building 1 via high-speed roller doors, however, it is unclear if these movements have been accurately modelled. Please clarify the assumptions used to calculate both sound power levels and the duration of noise emissions for each low speed movement through the site (including idling at weighbridge, acceleration and reversing movements). Furthermore, please provide a sensitivity analysis to determine the likely noise impact if all roller doors are open over a 15-minute assessment period.*

An updated operational noise model was prepared which demonstrated that project noise trigger levels can be achieved at all sensitive receivers when:

- A typical heavy vehicle movement scenario (5 trucks in and out per hour) would occur
- The western roller doors are open during a full 15-minute assessment period

The operational noise levels were predicted to comply at all sensitive receivers when the number of outgoing heavy vehicles is limited to two per 15-minute period. The memo containing this analysis is dated 30 January 2024 and is called "*Response to Department of Planning and Environment issues raised – noise*".

The analysis confirmed that noise compliance would be achieved even with all of the western roller doors open for 15 minutes.

Notwithstanding the above, as indicated in Section 1, the western doors would only be open for 30 seconds at a time, rather than a full 15 minutes, and one at a time, rather than all at once.

Regards

[redacted]

David Gamble
Senior Technical Director - Waste Infrastructure

[redacted]

Copy to: Independent Planning Commission via submissions@ipcn.nsw.gov.au

Appendix C

Bushfire impacts review

133 Castlereagh Street, Level 15
Sydney, New South Wales 2000
Australia
ghd.com

Your ref:
Our ref: 12524108

25 November 2024

Independent Planning Commission via submissions@ipcn.nsw.gov.au

Attention: Mr Kendall Clydesdale

Moss Vale Plastics Recycling and Reprocessing Facility – Bushfire impacts review

Dear Mr Clydesdale

1. Introduction

Under the *Environmental Planning and Assessment Act 1979* (EP&A Act), projects can be declared State significant development (SSD) if they are important to the State for economic, environmental or social reasons. The proposed Moss Vale Plastics Recycling Facility (the Project) is subject to the SSD planning approval pathway and as such is subject to the Secretary's Environmental Assessment Requirements (SEARs) for the project issued by the Department of Planning Housing and Infrastructure.

The SEARs for the Project did not identify bushfire as a matter to be addressed in the Environmental Impact Statement (EIS) as the subject site is not currently mapped as Bushfire Prone Land (BFPL), as certified by the NSW RFS Commissioner under Section 10.3 of the EP&A Act.

Wingecarribee Shire Council's BFPL mapping was last updated in 2011 and has not been reviewed and updated to include Category 3 vegetation hazard (an update to the RFS Guide to Bushfire Prone land mapping, version 5b added in 2015).

Monitoring and review of BFPL should reflect required certification and approval standards within legislative timeframes (i.e. before the end of the period of every five years after the certification date of the map as outlined in section 146 of the EP&A Act).

Bushfire risk was one of the matters raised in submissions to the NSW Independent Planning Commission (IPC) at the Public Meeting held in November 2024.

The purpose of this letter is to describe the existing conditions associated with bushfire hazard and risk at the Project site and any associated mitigation measures that may be required. The letter has been prepared via desktop assessment, based on site investigations undertaken to inform the environmental impact assessment for the Project.

2. Existing conditions

The proposed Moss Vale Recycling Facility is located at 74-76 Beaconsfield Road, Moss Vale, New South Wales occupying the portion of Lot 11/DP 1084421 north of Braddon Road. The concept design layout for the proposed facility is shown in Figure 1.

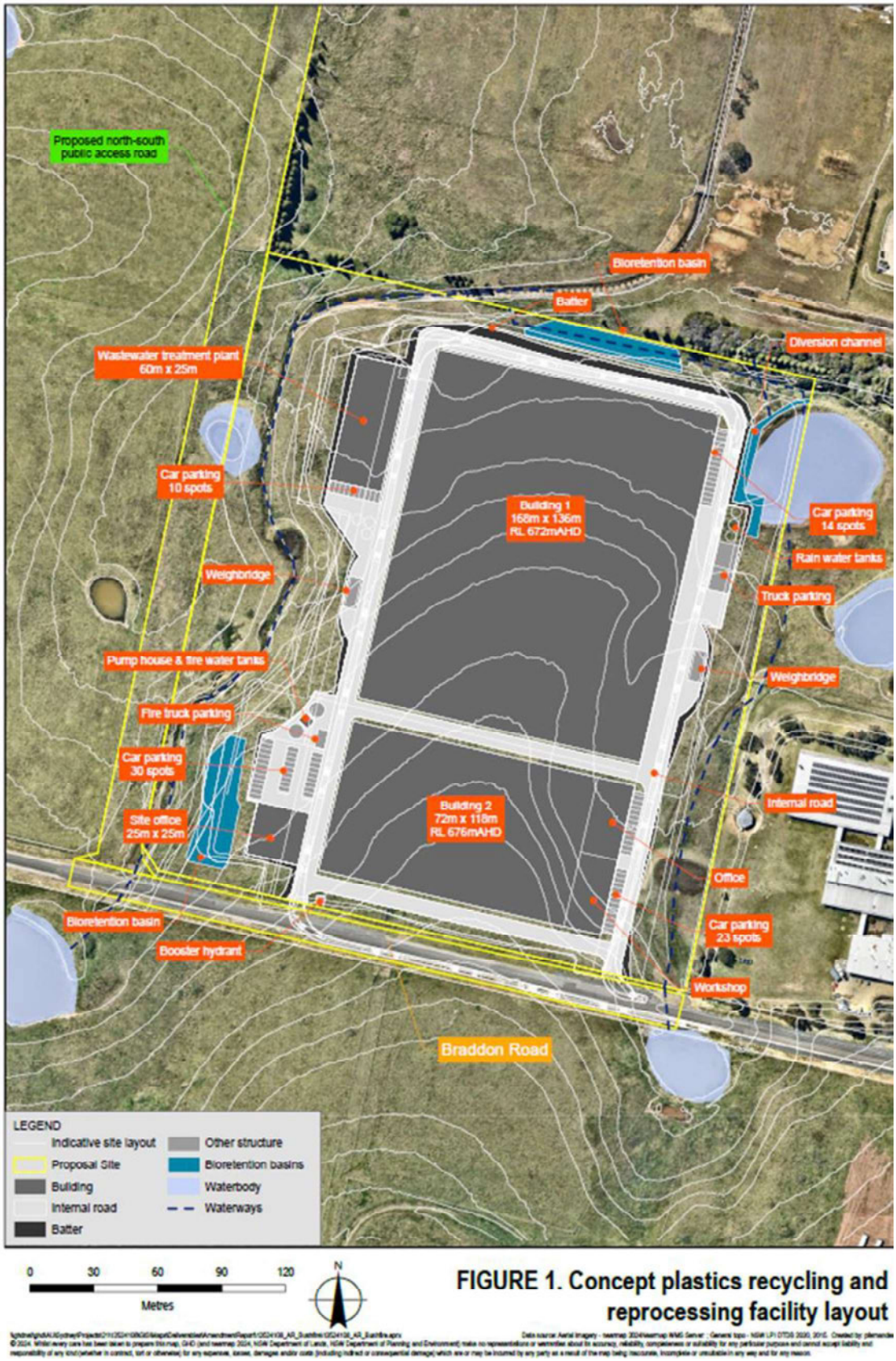

FIGURE 1. Concept plastics recycling and reprocessing facility layout

Figure 1 Concept plastics recycling and reprocessing facility layout

2.1 Bushfire Prone Land classification

The Wingecarribee Shire Council's BFPL mapping does not currently map the subject land as bushfire prone. The Council's BFPL mapping was last updated November 2011 and reflects the following vegetation categories:

- Category 1
- Category 2
- Buffer

The BFPL mapping for the site and surrounding area as prepared by Council is presented in Figure 2.

Mapping of BFPL is prepared by Council in accordance with NSW RFS requirements and certified by the Commissioner of the NSW RFS under EP&A Act Section 10.3. Council is responsible for regular monitoring and review of the information provided in its BFPL mapping to ensure currency and reliability of the data depicted within legislative timeframes (i.e. before the end of the period every five years after the certification date of the map as outlined in Section 10.3 of the EP&A Act).

Vegetation Categories for BFPL were revised to include a Category 3 in 2015. The Guide for Bush Fire Prone Land Mapping version 5b issued by the NSW RFS in November 2015 states a three-year transition period was to occur as part of the introduction of Category 3 into the BFPL system in which Council's would need to recertify their BFPL maps and incorporate the new Category 3 layer. During this period recertification may, dependent on circumstances, be granted on a case-by-case basis under the 2014 version of the guide (Category 1 and Category 2 vegetation only) by the NSW RFS.

Vegetation Category 3 consists of the following vegetation types which were not captured by the other two vegetation categories:

- Grasslands, freshwater wetlands, semi-arid woodlands, alpine complex and arid shrublands.

Given that the last update to the BFPL mapping for Wingecarribee Shire Council occurred prior to the introduction of Category 3 vegetation, grassland vegetation hazard has not been captured in the BFPL mapping for the subject site and surrounding area. For the purpose of this bushfire assessment, the subject land and surrounds has been considered Category 3 vegetation to reflect likely bushfire vegetation hazard. This is where it is not currently mapped otherwise or meeting requirements for vegetation excluded from being mapped as bushfire prone as described in Section 7.1.2 of Guide for Bush Fire Prone Land Mapping version 5b (NSW RFS, 2015) or Low Threat Vegetation exclusion under Australian Standard (AS)3959-2018 Construction of buildings in bushfire prone areas (AS3959-2018) section 2.2.3.2.

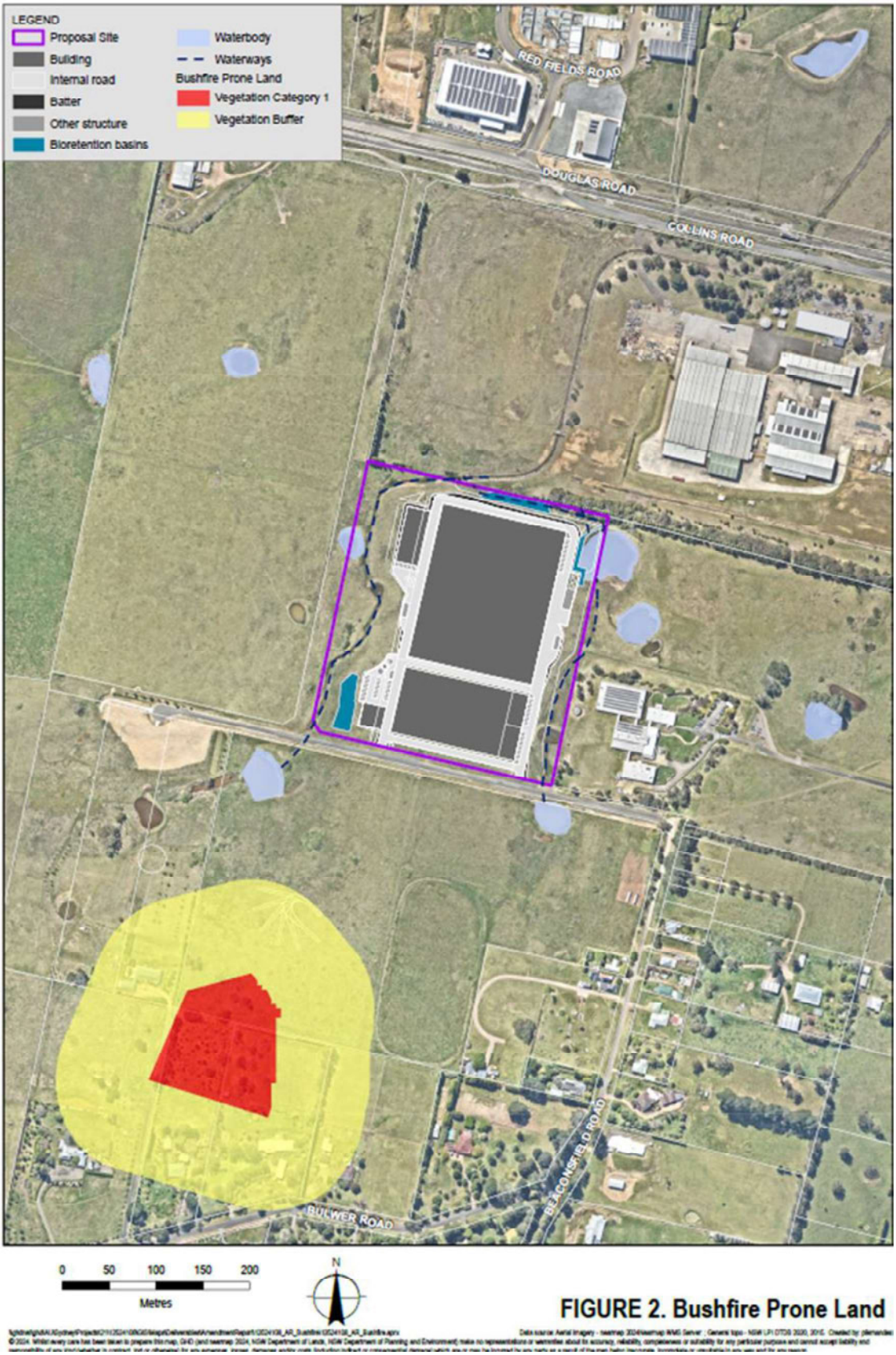

Figure 2 *Bushfire Prone Land (as per Wingecarribee Shire Council bushfire map)*

2.2 Environment

2.2.1 Fire weather

The site is located within the Wingecarribee Shire Local Government Area (LGA), within the Illawarra/Shoalhaven Region, for which a Fire Danger Index (FDI) of 100 is applicable for bushfire assessment (NSW RFS, 2019).

2.2.2 Vegetation

The vegetation over the site and adjacent land is identified by statewide vegetation mapping as 'cleared' on Sharing and Enabling Environmental Data in NSW (SEED). Current vegetation mapping is shown in Figure 3. This figure includes the proposed landscaping across the subject site for the proposal. Landscaping is discussed in detail in Section 3.6 of this letter.

The vegetation formations present on the site and adjoining land would be classified as grasslands under Planning for Bushfire Protection (PBP) 2019 (NSW RFS, 2019). Where cleared land is present throughout the site it would be considered 'Grassland' unless determined Low Threat Vegetation exclusion under AS3959-2018 section 2.2.3.2.

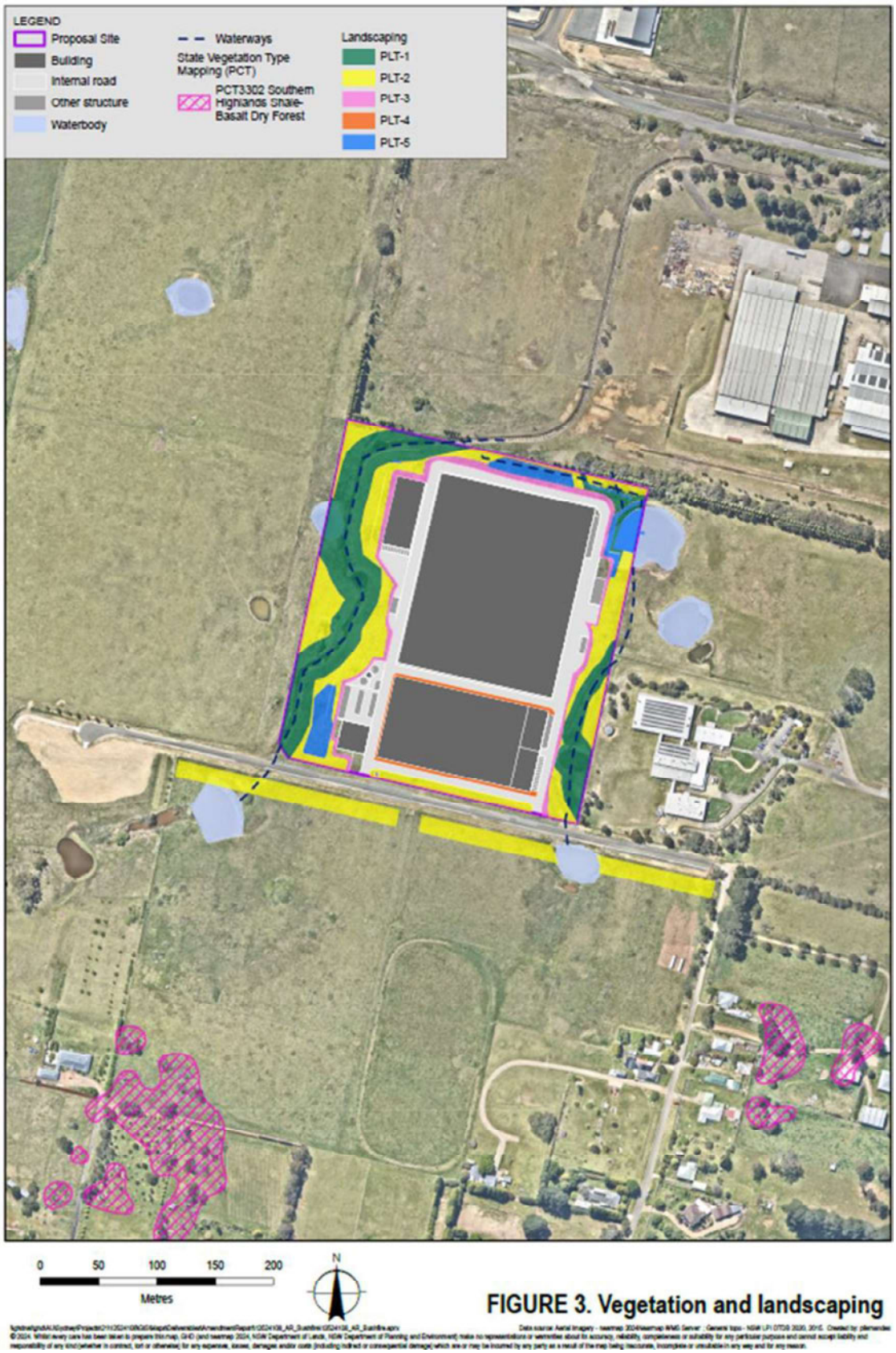

Figure 3 Vegetation and landscaping

2.2.3 Effective slope

Effective slope describes the slope underneath the vegetation, not between the site and the vegetation. The effective slope for the site was assessed using AHD contours and is shown in Table 1.

Table 1 Effective slope

Aspect	Slope class
North	Upslope – Flat
East	Upslope – Flat
South	Upslope – Flat
West	Upslope – Flat

2.3 Bushfire Attack Level Assessment

Notwithstanding that to achieve deemed to satisfy acceptable solutions for Asset protection Zones (APZ's) and building construction, buildings within the development are to comply with the construction standards specified in Table 7.4a, Section 7.5.1 and Section 7.5.2 of PBP. A maximum Bushfire Attack Level (BAL) exposure proposed for the buildings on site is BAL-12.5. The BAL exposure for each aspect / building is presented in Table 2 and shown in Figure 4.

Table 2 Bushfire Attack Level Assessment

Aspect	Nearest bushfire prone vegetation	Maximum effective slope class	Building closest to hazard interface	Likely worst-case BAL
North	Grassland	Upslope – Flat	Building 1	BAL 12.5
East	Grassland	Upslope – Flat	Building 1 & 2	BAL 12.5
South	Grassland	Upslope – Flat	Building 2 & Site office	BAL 12.5
West	Grassland	Upslope – Flat	Site office & Wastewater treatment plant	BAL 12.5

The BAL exposure of the buildings relies on the assumption that landscaping of the site as shown in Figure 3 is excluded from assessment as bushfire hazard vegetation through management and plant selection. This is further discussed in Section 3.6.

Figure 4 ***Bushfire Attack Level***

3. Applicable Bushfire Protection Measures

3.1 Construction Standards

Section 8.3.1 of PBP notes that the National Construction Code (NCC) does not provide any bushfire specific performance requirements for Building Classes 5-8, which include commercial and industrial facilities.

However, it notes that the following objectives of the NCC are required to be applied in relation to access, water supply and services, and emergency and evacuation planning:

- to provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation;
- to provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development;
- to provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building; and
- provide for the storage of hazardous materials away from the hazard wherever possible.

It notes that the general fire safety construction provisions of the NCC are taken as acceptable solutions, however construction requirements for bushfire protection will need to be considered on a case by case basis.

Section 8.3.10 of PBP refers to Commercial and industrial development being addressed though the aims and objectives of PBP (Chapter 1). It states that a suitable package of Best Practice Measures should be proposed commensurate with the assessed level of risk to the development (i.e. BAL), and that the provisions with Chapter 7 of PBP should be used as a base for developing a package of measures, with each development being assessed on its own individual merits.

3.2 Compliance with NCC objectives

3.2.1 Safe access and egress

Primary access to the Moss Vale Recycling Facility is via Braddon Road with entry to the west side of the site near the site office. The subject site includes an internal perimeter road providing sealed, all weather two-wheel access to all buildings and hydrants. The road is suitable for Category 1 fire appliances constructed from industrial grade concrete with the perimeter road width of 9m, narrowing to 7m between Building 1 and 2.

3.2.2 Emergency and evacuation planning

An emergency management plan for the site would be developed prior to the operation and occupancy of the site, which would clearly identify bushfire preparedness actions, bushfire response actions, evacuation plans and procedures (for onsite and offsite evacuation), on-site refuge locations. There are two roads leading to the site (north south road and Beaconsfield Road) that would provide suitable emergency evacuation access routes to safe areas.

To minimise risks on days of elevated fire danger, the facility would not operate on days where the Fire Danger Rating is forecast to be Catastrophic and potentially at lower levels depending on risk and advice from relevant authorities.

3.2.3 Water Supply

Water supply to the subject site is via reticulated water supply. Water supply is available throughout the site for firefighting purposes including hydrant boosters at the western entrance on Braddon Road and a pump house and fire water tanks north of the site office car parking. Additionally, all above ground water service pipes external to the building will be metal, including taps.

3.2.4 Utilities

The subject site includes underground electricity connection within the site to a substation on Braddon Road. This substation will connect to existing overhead lines on Beaconsfield Road via new overhead lines along Braddon Road. No gas connection is proposed.

3.2.5 Hazardous materials

Hazardous materials such as paints and solvents (in small quantities) would be stored inside buildings in specially designated cabinets away from vegetated areas of the site.

3.3 Compliance with PBP requirements

Notwithstanding that the proposed development is an industrial facility, which is not currently mapped as a bushfire zone, an assessment of the proposed design against PBP requirements for commercial and industrial buildings has been undertaken in the following section. This includes consideration of Asset Protection Zones (APZ) that would apply to an industrial facility at this location and landscaping requirements.

3.3.1 Asset Protection Zones

Built assets requiring separation from a bushfire threat (e.g. bushfire prone vegetation) have APZ requirements. APZ requirements applicable to the proposed facility are provided in Table 3, with the location of the APZ indicating separation from the surrounding landscape shown in Figure 5.

Table 3 Asset Protection Zones

Aspect	Vegetation type	Slope	Minimum APZ requirement (m)	Comment
North	Grassland	Upslope – Flat	10	APZ is wholly within the bounds of the subject site and provided in accordance with Table A1.12.2 in Appendix 1 of PBP.
East	Grassland	Upslope – Flat	10	APZ is wholly within the bounds of the subject site and provided in accordance with Table A1.12.2 in Appendix 1 of PBP.
South	Grassland	Upslope – Flat	10	APZ is wholly within the bounds of the subject site and provided in accordance with Table A1.12.2 in Appendix 1 of PBP. The southern aspect of the site office is currently identified for additional landscaping (see Figure 3). This area should not be subject to further landscaping and existing grassland vegetation will need to be managed and maintained to APZ standard as described in Appendix 4 of PBP.
West	Grassland	Upslope – Flat	10	APZ is wholly within the bounds of the subject site and provided in accordance with Table A1.12.2 in Appendix 1 of PBP. The western aspect of the site office and wastewater treatment plant is currently identified for landscaping in the landscape design (see Figure 3). This area should not be subject to further landscaping and existing grassland vegetation will need to be managed and maintained to APZ standard as described in Appendix 4 of PBP.

3.3.2 Landscaping

Any proposed landscaping and management of open spaces or residual areas is required to consider bushfire risk in determining location, species, density, extent and ongoing maintenance. The landscaping design for the subject site designates five 'planting types' with individual planting schedules. The full planting schedule can be found in Appendix G Responses to Agency and Community Comments of the Amendment Report. Locations for each planting type within the subject site is shown in Figure 3.

An APZ for the subject site can be provided within the internal road network around Building 1 and 2. For the site office and the wastewater treatment plant buildings, which are adjacent to landscape areas, an APZ would need to be provided by leaving existing vegetation in place, rather than landscaping to the building edge. Current grassland areas under the identified APZ would need to be managed to APZ standard as described in Appendix 4 of PBP.

To assess the proposed landscaping as managed vegetation that does not constitute bushfire hazard, the species selection within the current planting schedule should be further considered to minimise bushfire risk. Landscaping plant selection should be reviewed against Landscaping for bushfire – garden design and plant selection version 3 (CFA, 2022) to ensure plant selection and landscaping design achieves the following objectives:

- Reduces fuel load
- Avoids and/or minimises continuity of fuels
- Is maintained to create defendable space
- Trees and shrubs are not overhanging any buildings.

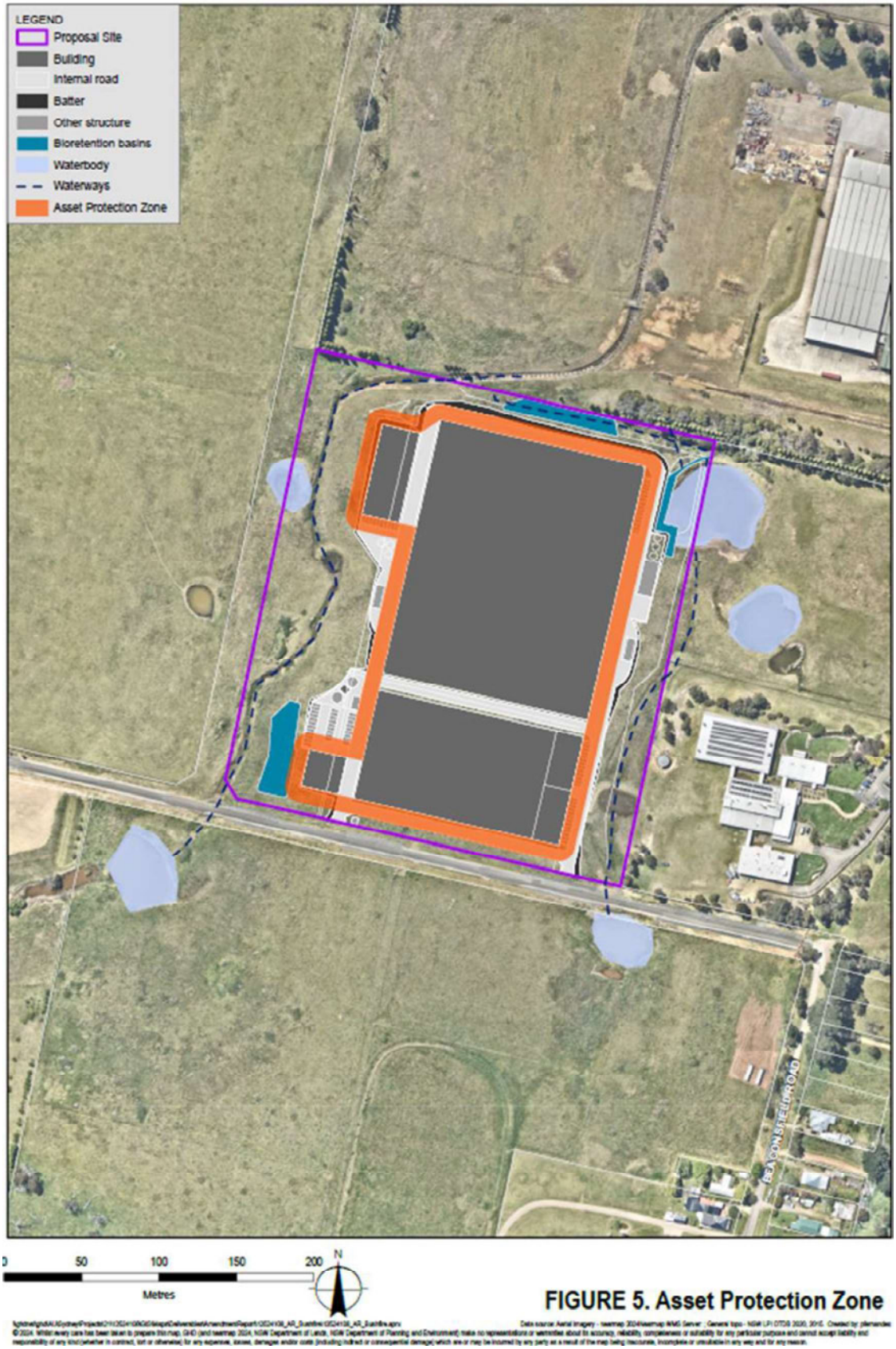

Figure 5 *Asset Protection Zone*

3.3.3 Summary of compliance with PBP

Performance criteria and acceptable solutions for development are described in Table 7.4a of PBP. Table 4 outlines bushfire protection measures for commercial and industrial developments as presented in Table 7.4a of PBP. The bushfire protection measures identified are in accordance with performance criteria and acceptable solutions defined in Table 7.4a of PBP. Design compliance with acceptable solutions is summarised in Table 4 using the following key:

Key		
◆ Complies	◆ Can comply	◆ Does not comply

Table 4 Design compliance with performance criteria as defined by PBP 2019

BPM	Performance criteria	Acceptable solution	Compliance
ASSET PROTECTION ZONES	– APZs are provided commensurate with the construction of the building; and – A defendable space is provided	– An APZ is provided in accordance with Table A1.12.2 in Appendix 1 of PBP	◆ Complies
	– APZs are managed and maintained to prevent the spread of a fire to the building	– APZs are managed in accordance with the requirements of Appendix 4 of PBP	◆ Complies
	– The APZ is provided in perpetuity – APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	– APZs are holly within the boundaries of the development site – APZ are located on lands with slope less than 18 degrees	◆ Complies
ACCESS	– Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation	– Property access roads are two-wheel drive, all weather roads	◆ Complies
	– Capacity of access roads is adequate for firefighting vehicles	– The capacity of road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes), bridges and causeways are to clearly indicate load rating	◆ Complies Load rating should be indicated on internal road.
	– There is appropriate access to water supply	– Hydrants are provided in accordance with the relevant clauses of AS 2419.1:2021 – There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated water supply is available	◆ Complies

BPM	Performance criteria	Acceptable solution	Compliance
	– Firefighting vehicles can access buildings and exit the property safely	The following requirements apply: – Minimum 4m carriageway width – Minimum vertical clearance of 4m to any overhanging obstructions, including tree branches – Property access must provide a suitable turning area in accordance with Appendix 3 of PBP 2019 – Curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress – The minimum distance between inner and outer curves is 6m – The crossfall is not more than 10 degrees – Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads	◆ Complies
CONSTRUCTION STANDARDS	– The proposed building can withstand bush fie attack in the form of embers, radiant heat and flame contact	– BAL is determined in accordance with Tables A1.12.5 and A.1.12.7 of PBP 2019 – Construction provided in accordance with the NCC and as modified by section 7.5 of PBP 2019 (please see advice for construction in flame zone)	◆ Complies
	– Proposed fences and gates are designed to minimise the spread of bushfire	– Fencing and gates are constructed in accordance with section 7.6 of PBP 2019	◆ Complies
WATER SUPPLY	– An adequate water supply is provided for firefighting purposes	– Reticulated water is to be provided to the development, where available; and A static water supply is provided where no reticulated water is available	◆ Complies
	– Water supplies are located at regular intervals; and – The water supply is accessible and reliable for firefighting purposes	– Fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005 Hydrants are not located within any road or carriageway	◆ Complies
	– Flows and pressure are appropriate	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005	◆ Complies
	– The integrity of the water supply is maintained	All above-ground water service pipes external to the building are metal, including and up to any taps	◆ Complies

BPM	Performance criteria	Acceptable solution	Compliance
UTILITIES	– Location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings	– Where practicable, electrical transmission lines are underground – Where overhead, electrical transmission lines are proposed as follows: • Lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas No part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 *Guideline for Managing Vegetation Near Power Lines.*	◆ Complies
LANDSCAPING	– Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions	– Compliance with the NSW RFS '*Asset protection zone standards*' (see Appendix 4) – A clear area of low-cut lawn or pavement is maintained adjacent to the building – Fencing is constructed in accordance with section 7.6 of PBP; and – Trees and shrubs are located so that: • The branches will not overhand the roof • The tree canopy is not continuous; and – Any proposed windbreak is located on the elevation from which fires are likely to approach	◆ Complies Landscaping plant selection should be reviewed with reference to *Landscaping for bushfire – garden design and plant selection* version 3 (CFA, 2022) to ensure plant selection and landscaping design to minimise bushfire risk from surrounding vegetation to the site.

4. Conclusions

It is considered that the proposal complies with the NCC objectives and would also comply with PBP bushfire planning requirements if the above recommendations with regard to managing vegetation and landscaping are adopted.

Regards

Mick George
Technical Director Natural Resources

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Copy to: Department of Planning Housing and Infrastructure

Appendix D

Air Quality

Your ref: SSD-9409987
Our ref:

25 November 2024

Independent Planning Commission via submissions@ipcn.nsw.gov.au

Attention: Mr Kendall Clydesdale

Additional modelling and results

Dear Mr Clydesdale

This letter has been prepared to demonstrate that the actual air quality impacts of the proposed facility would be less than modelled during preparation of the Environmental Impact Statement. As part of the detailed design for the facility, subsequent modelling has been undertaken using the achievable emission concentration of 10 milligrams per cubic metre and a wide range of air flow rates, following the IPC Public Meeting.

1. Additional modelling and results

Additional modelling has been undertaken to determine the impacts on air quality at the nearest receptors for varying flow rates from the exhaust stack emitting particulate matter (PM).

Previous modelling was undertaken assuming an exhaust flow rate of 50,000 m^3/hour, based on the maximum fan capacity. It is unlikely that the fan will be operated at this flow rate, therefore modelling of a range of flow rates up to the maximum level has been undertaken.

For improved dispersion, a minimum exhaust velocity from a stack of 10 metres per second is recommended (EPA Victoria, 2019). An exhaust velocity of 12 metres per second (consistent with the exhaust velocity from other stacks at the facility) has been modelled, with adjustment to the stack diameter based on the flow rate.

An exhaust concentration 10 mg/m^3 has been assumed for PM. In the absence of a particulate size distribution from the stack, emissions from the stack have been conservatively assessed assuming the emissions are entirely $PM_{2.5}$, as $PM_{2\,5}$ has more stringent criteria to which impacts must comply. Cumulative assessment against the $PM_{2.5}$ and PM_{10} criteria has been undertaken using the respective background concentrations.

The cumulative impact assessment has been completed for a two-year model period (2017, 2018). The two-year period represented a period where PM measurements were not influenced by elevated bushfire activity, such as they were during 2019 and the start of 2020. Completing a cumulative impact assessment for a period of two years is more than the required one year period and increases the number of meteorological and background air quality conditions which are considered.

Results from this modelling are presented in Table 1. Results from the previous modelling (based on an exhaust concentration of 20 mg/m^3 and flow rate of 50,000 m^3/hour) are presented in Table 2.

Table 1 *Flow rate comparison modelling results (10 mg/m^3)*

Flow rate	Stack diameter	Emission rate	Commercial receptor				Nearest residential receptor			
			Incremental		Cumulative		Incremental		Cumulative	
			Annual average[1]	Maximum 24-hour average	Annual average[1]	Maximum 24-hour average	Annual average[1]	Maximum 24-hour average	Annual average[1]	Maximum 24-hour average
m^3/hour	*m*	*g/s*	*µg/m^3*	*µg/m^3*	*µg/m^3*	*µg/m^3*	*µg/m^3*	*µg/m^3*	*µg/m^3*	*µg/m^3*
PM_{10}										
		Criteria	*25*	*50*	*25*	*50*	*25*	*50*	*25*	*50*
50,000	1.2	0.14	0.89	7.94	17.82	49.86	0.11	1.48	17.03	49.00
20,000	0.8	0.06	0.43	4.16	17.37	49.38	0.05	0.73	16.98	49.00
10,000	0.5	0.03	0.24	2.49	17.18	49.20	0.03	0.42	16.96	49.00
5,000	0.4	0.01	0.08	0.89	17.02	49.07	0.01	0.15	16.95	49.00
$PM_{2.5}$										
		Criteria	*8**	*25*	*8**	*25*	*8**	*25*	*8**	*25*
50,000	1.2	0.14	0.89	7.94	7.66	26.09	0.11	1.48	6.87	24.51
20,000	0.8	0.06	0.43	4.16	7.21	25.25	0.05	0.73	6.82	24.50
10,000	0.5	0.03	0.24	2.49	7.01	24.90	0.03	0.42	6.80	24.50
5,000	0.4	0.01	0.08	0.89	6.86	24.64	0.01	0.15	6.78	24.50

Note 1: Annual average provided is maximum annual average for 2017 and 2018

* NEPM standards for annual average $PM_{2.5}$ are reducing from 8 µg/m^3 to 7 µg/m^3 from 2025

Table 2 *Previous modelling results (20 mg/m³)*

Flow rate	Stack diameter	Emission rate	Commercial receptor				Nearest residential receptor			
			Incremental		Cumulative		Incremental		Cumulative	
			Annual average[1]	Maximum 24-hour average	Annual average[1]	Maximum 24-hour average	Annual average[1]	Maximum 24-hour average	Annual average[1]	Maximum 24-hour average
m^3/hour	*m*	*g/s*	*µg/m^3*	*µg/m^3*	*µg/m^3*	*µg/m^3*	*µg/m^3*	*µg/m^3*	*µg/m^3*	*µg/m^3*
PM_{10}										
		Criteria	*25*	*50*	*25*	*50*	*25*	*50*	*25*	*50*
50,000	1.0	0.25	1.5	13.2	18.4	27.2	0.18	2.5	17.1	49.0
$PM_{2.5}$										
		Criteria	*8**	*25*	*8**	*25*	*8**	*25*	*8**	*25*
50,000	1.0	0.25	1.5	13.2	8.3	52.8	0.18	2.5	6.9	24.5

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2. Closing

Following the IPC Public Meeting, subsequent modelling has been undertaken using the achievable emission concentration of 10 milligrams per cubic metre and a wide range of air flow rates. Reducing the exhaust concentration from 20 mg/m^3 to 10 mg/m^3 reduced the incremental impacts at both receptors by approximately 40%, for an equivalent flow rate of 50,000 m^3/hour. Further reducing the flow rate (while maintaining an exhaust velocity of 12 m/s) led to further reduction in impacts at these receptors.

Regards

David Gamble
Senior Technical Director - Waste Infrastructure

Appendix E

Minutes from meeting with Council (November 2020)

Minutes

Project	Moss Vale Plastics Recycling Facility	From	Lauren Xuereb
Subject	Meeting with WSC - 24-Nov 2020	Tel	+61 2 9239 7248
Venue/Date/Time	Wingecarribee Shire Council (WSC) Tuesday 24 November 2020 12:00 pm	Job No	12524108
Copies to	All attendees		
Attendees	Nancy Zheng - Plasrefine Recycling Sofie Mason-Jones - GHD David Gamble - GHD Sean Clarke - GHD Anna Montgomery - GHD Lauren Xuereb - GHD		Ross Jauncey - WSC Naif Ahmed - WSC Garrett Millar - WSC Michael Park – WSC Paul Donovan – WSC

Minutes

1. General discussion

In summary, the following discussion points were addressed during the meeting:

- WSC informed GHD and Plasrefine Recycling it is supportive of the proposal as it aligns with WSC's vision for the Moss Vale Enterprise Corridor (MVEC). The proposal is also permissible within the prescribed zoning of the site as 'general industrial'.
- WSC noted that although it is supportive of the proposal, it does not support the proposed access to the site from the south, via Beaconsfield Road due to:
  - potential impacts on the amenity of the locality from heavy vehicles.
  - potential impacts on the proposed Moss Vale Bypass.
- GHD informed WSC that Plasrefine Recycling is expecting 60 trucks per day or 120 movements per day during full scale operation, but that truck movements could be restricted to the hours of 7 am to 7 pm.
- WSC advised that it is not a specific number of the truck movements, but rather it is an overall concern about any truck movements on Beaconsfield Road. This is based on experience with other part of the LGA where there are heavy vehicle movements in residential streets, resulting in complaints.
- WSC noted that the proposal site is subject to flooding and that an updated flooding study is being prepared which is expected to be released in early 2021.
- GHD introduced three potential access options to WSC:

Minutes

1. Option 1: Access to / from the south of the site via Berrima Road, Lytton Road, Beaconsfield Road and a new constructed road to the west (currently a paper road – Braddon Road)
2. Option 2: Access to/from the east of the site via Lackey Road. This aligned with the future east west road as part of the MVEC, however no such paper road exists at this stage. This will require either (a) acquisition of land along the southern boundary to Lot 10 DP1084421 (9-11 Lackey Road); (b) shared access arrangement (i.e. lease/right of way) along the southern along the southern boundary to Lot 10 DP1084421 (9-11 Lackey Road)
3. Option 3: Access to/from the north of the site via Collins/Douglas Roads. This will require extension of Colins Road along the southern side of the rail line providing connection to the subject site (via a north-south road) and DP590307 Lot 11 (11 Collins Road). Relocation of the rail crossing to the west and closing Douglas Road to the east before the existing rail crossing.

- WSC referred to other options from the north including:
  1. Utilising the existing access adjacent to the level crossing – GHD noted the potential safety implication with the acute angle of the approaches and potential visibility obstructions looking over shoulder, u-turn movements over the rail line etc.
  2. Access and egress to the east only – GHD noted that this will require vehicles for the Hume Highway (likely approach route) to travel along Berrima Road and into Moss Vale Town Centre to access Lackey Road and then to travel north to Collins Road. This is a longer travel distance from the Hume Highway (when compared to coming directly from the east), but also will transfer the vehicle movements into the township.
  3. Construction of a roundabout along Collins Road west of the rail level crossing, to allow vehicles from the east to turn around and access the site from the west – GHD noted that such a roundabout would need to be large to accommodate B-Doubles (noting that the subject site will be likely limited to 12.5 HRV or 19 m AV (Semi trailer) but would still need to accommodate general expected trucks in the MSEC).
- WSC reiterated to GHD that any internal roads and/or intersections within the MVEC road network are to be constructed by developers at their cost and are not subject to Section 94 Contributions. The construction of any external 'blue' roads, intersections and/or bridges by developers are subject to Section 94 Contributions and the costs would therefore be offset by WSC.
- WSC noted that there is potential for the southern portion of Lot 11 DP 1084421 to be rezoned in the future for residential purposes. Timing for this was not noted during the meeting.
- WSC informed GHD that the current wastewater infrastructure within the MVEC is not sufficient to support the proposed growth within the locality and as part of the proposal, water and wastewater modelling will need to be undertaken as part of the development application.
- WSC also noted that it is proposing to double the capacity of the existing Sewage Treatment Plant (STP). This upgrade will occur in stages and the first stage is due to be completed and operational by the start of 2024 (with capacity of 11,000 equivalent persons (EP)). These upgrades to the STP will require monetary contributions by those developing within the MVEC.

Minutes

2. Other items discussed included:

- WSC noted that land directly to the north of the MVEC has recently been rezoned.
- The WSC Development Control Plan 2010 outlines landscaping requirements
- Other industries within the locality that operate 24/7, include Ingham Feedmill on the corner of Berrima Road and Douglas Road

3. Actions

- GHD and WSC to meet in early 2021 to discuss the results of water and wastewater modelling, as well as further development and assessment of the options for site access and associated roads/intersections.
- Plasrefine Recycling may enter into a Voluntary Planning Agreement with WSC. This will depend on what works are proposed.
- Flooding needs to be assessed in the EIS

Kind Regards

Lauren Xuereb
Graduate Planner