



VICTORIAN FIRST

# BETTER ENVIRONMENT PLAN

2024



# INTRODUCTION

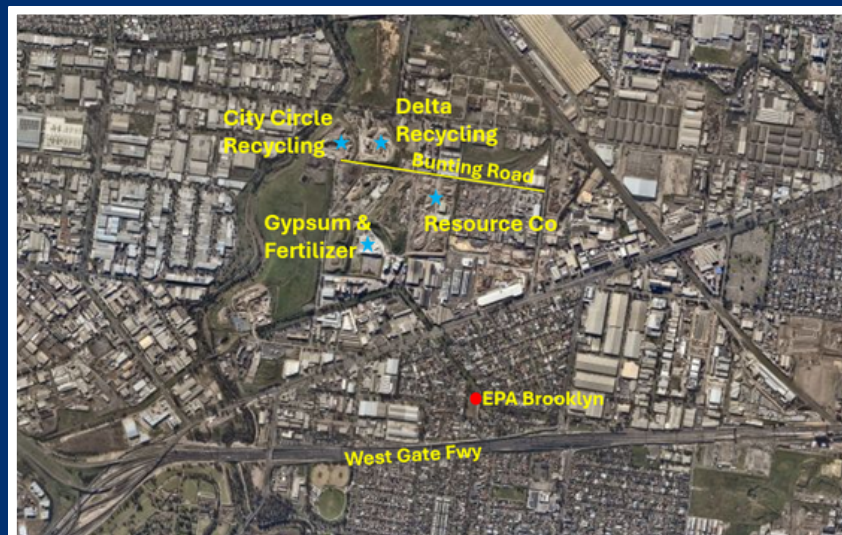
## VICTORIA'S CIRCULAR ECONOMY



The Brooklyn Recycling Group (BRG) is a key part of the Victorian Government's Circular Economy strategy. Four businesses operating in the Brooklyn industrial precinct within the vicinity of Bunting Road, Brooklyn – Gypsum & Fertilizer (Sunshine Groupe), Delta Group, City Circle and ResourceCo – are collectively known as the Brooklyn Recycling Group (BRG).

**In July 2024 the BRG members signed the state's first Better Environment Plan with EPA Victoria.**

BRG members currently recycle more than half of Victoria's Construction & Demolition (C&D) waste, which includes concrete, brick, rock, masonry, timber, and soil. One hundred percent of this C&D waste is recycled and reused locally in Victoria. The major output from the BRG is recycled aggregates for road and civil works construction. In the past two years the amount of material recovered from processing has increased by 25%. Over 60% of all recycling in Victoria is processed by C & D Recyclers.



*Figure 1 - Aerial photos showing complex mix of critical industries and around 40,000 people's homes located within three kilometres of the Brooklyn monitoring station. The four BEP participants and the location of the EPA monitoring station are marked. There are many other industries in the surrounding area.*

In addition, BRG participant Gypsum & Fertilizer (Sunshine Groupe) also contributes to resource circularity by being Victoria's only plasterboard recycler. Recycled gypsum is in great demand by Victoria's primary producers who use it as a soil balancer and enhancer, taking material destined for landfill and producing a value adding material to support Victoria's primary producers.

Approximately six million tonnes of C&D waste is generated across Victoria each year. Without the BRG, and its role in delivering the Circular Economy, Victorian's 'Big Build' Infrastructure program would be significantly curtailed, in particular the recycled first procurement objective.

BRG's members are located in the Brooklyn industrial precinct, a kilometre north of the West Gate Freeway, a short drive from the CBD and surrounding suburbs as shown in Figure 1.

This proximity to their main suppliers and customers has enabled BRG to play a key role in recycling of Melbourne's C&D waste, and hence the economic viability of Victoria. The BRG has a track-record of investing in technology and solutions that improve outcomes, none the least being reduced particulate matter (PM) emissions.

# THE EPA'S ROLE



The Environment Protection Authority Victoria (EPA) is the State agency primarily responsible for monitoring, regulating, and reporting on the state's air quality including nearby the BRG's activities.

Underpinning the EPA is a range of legislation, including the Environment Protection Act 2017 (the Act) and various state environment protection policies and legislation initiatives that incorporate national standards, requirements and guidelines on ambient air quality.

EPA's Better Environment Plan (BEP) initiative is designed to facilitate voluntary agreements between EPA and industry participants. Participation in a BEP provides participants the opportunity to trial innovative solutions to environmental issues and exceed their environmental obligations. BEPs offer a way to think differently when approaching environmental problems. They encourage collaboration between participants and interested parties to find solutions to complex environmental issues.

BRG participants have, over the past three years, partnered with the EPA to develop Victoria's first BEP relating to dust mitigation activities at the Brooklyn site.

The key human health and environmental objective of the BEP is as follows:

- Investigate collaborative and innovative actions between the BEP participants aimed at mitigating the emissions to air of particulate matter (PM) from the Brooklyn Site.

Through the BEP, the individual companies within the BRG have committed to a number of new Group collective actions to meet the BEP's key objective and improve outcomes for all stakeholders. This is in addition to the current initiatives which have been implemented by the BRG members to reduce dust and the risk of impacts to the community.

The objectives and actions outlined in the BEP were developed with reference to the Victorian Government's Clean Air For All Victorians Strategy (2022) and the recommendations of the Inner West Air Quality Community Reference report, Group Air Pollution in Melbourne's Inner West: taking direct action to reduce our community's exposure (2020).

## HEALTH:

Maintaining clean air is important for the health and wellbeing of people and is a matter of considerable concern for communities. The World Health Organisation (WHO) has reported compelling evidence supporting the significant correlation between poor air quality and negative impacts on health.

The earth's air is primarily composed of nitrogen, oxygen, carbon dioxide, water vapour and various inert gases. However, some pollutants generated through both human and natural processes, such as ozone and particulate matter, contaminate the air and can have adverse effects on the health of people and the environment.



## AIR QUALITY:

Air quality in Melbourne's industrial west has historically been a source of concern for the local communities over many years. Recycling of C&D waste is undertaken by mechanical crushing and sorting, which by its very nature can create PM (commonly known as dust) – which in turn can impact air quality on site and in the immediate vicinity. BRG members are aware of the potential impacts this dust may have on local air shed quality.

An independent analysis carried out by environmental engineering firm, Synergetics Pty Ltd, in 2021 of publicly available EPA data from the Brooklyn air quality monitoring station has demonstrated that one of the biggest determinants of air quality at the Brooklyn Site and surrounding areas is weather. Hot, windy conditions can naturally present challenges for operators trying to mitigate the onsite generation, and offsite migration of, dust.

We know that a strong northeasterly wind will increase the risk of offsite migration of Particulate Matter (PM) as there is a direct line between the BRG sites and the nearby residential estate. This risk is further escalated on hot dry days when waste moisture levels are low, leading to more airborne particulate matter being produced. This is demonstrated in the recorded air quality data which shows concentrations reported in summer approximately 60% higher than those reported in winter. This highlights the need for dust suppression approaches to be designed with the local airshed and climate in mind. PM readings at the EPA Brooklyn monitoring station are impacted by many sources including:

- A complex mixture of many hundreds of industries and several thousand homes located within three kilometres of the monitoring station;
- Nearby road traffic especially the thousands of heavy vehicles traveling along the adjacent West Gate Freeway;
- Altona North landfill and the integrated chemical processing businesses to the south of the monitoring station; and
- Major infrastructure programs, especially associated with the Westgate Tunnel Project.







# THE BRG

Collectively, the four BRG companies employ several hundred local community members. The BRG member's sites are strategically located in proximity to each other, and centrally located within Greater Melbourne, so that their services provide an affordable and integral part of Melbourne's waste management recycling - and a critical segment of Victoria's Circular Economy. This locality helps to reduce transport-related costs, emissions and traffic congestion.

In a screening assessment carried out by Synergetics (2021), all sites within 3 km of EPA Victoria's Brooklyn monitoring station (as seen in the aerial photo in Figure 1) likely to make a significant contribution to the measured PM10 concentration were identified. A total of 18 sites were identified as emission sources. The mass emission rates of the 18 sites were then estimated and ranked.

## BROOKLYN RECYCLING GROUP MEMBERS:



The assessment found that the four BRG members' sites contribute only 8% (approx.) of the total PM10 measured. None of the BRG members appeared in the top 10 sites for emission sources.

Nevertheless, BRG members recognise they have an important role to play in the control and mitigation of PM10 connected to their activities at the Brooklyn site and to lead by example through continuous improvement and innovation through the Brooklyn BEP.

## Innovation & the Brooklyn BEP

The Brooklyn BEP will encourage BRG members as BEP participants to continue to innovate and in doing so improve air quality and amenity in the immediate area. For the first time, innovation captures the four BEP participants working together to jointly innovate for improved outcomes.

## Joint BRG Member Projects

BRG members (BEP participants) have confirmed a number of Group actions to achieve the objectives of the BEP.

## GROUP ACTION 1

### Develop and implement a shared incident and dust monitoring response system.

Dust control systems will inevitably be insufficient at times, particularly during periods of dry weather. Rapid identification of problems and implementation of backup measures can quickly correct these problems. An array of fit-for-purpose dust sensors will be distributed across the BEP participant sites providing an effective method to detect high dust events. When coupled with real-time weather data, the dust sensors will identify likely dust sources with precision, and automatically provide the relevant operational staff with an alert to investigate the potential sources, causes, and dust mitigation solutions.

The ability to utilise data from multiple BEP participant sites to assess sources across each site, and provide targeted, useful, advice will require considerable research and innovation and will be implemented as a three-stage project:

- Stage 1 - Research and planning;
- Stage 2 - Proof of concept; and
- Stage 3 - Full deployment.

The BEP participants have appointed Synergetics Pty Ltd to lead this research and innovation project.





## GROUP ACTION 2

**Develop and implement a vegetation planting and landscaping project to act as a wind break and, to the extent reasonably possible, capture airborne dust.**

A comprehensive vegetation planting and landscaping project will be undertaken at the Brooklyn site. Although not commonly appreciated, vegetation such as trees and shrubs, which are sometimes used as wind breaks, can also capture airborne dust on their leaves. Vegetation also reduces wind speeds and hence reduces wind erosion (a source of dust emissions). Wind reduction and dust capture rates depend on plant species, moisture levels, windspeed, foliage dimensions, plant spacing and other factors.

Vegetation plantings can also reduce the visual impact of residual dust emissions and can build valuable support across the local community if planned and implemented collaboratively. Native and indigenous plantings will be prioritised to aid in biodiversity outcomes in addition to dust control. Vegetation will also aid in carbon capture with GHG offsetting benefits. The costs of vegetation planting and landscaping will be shared with Council and Governmental programs.

The Brooklyn site is currently plagued by feral goats, which have destroyed several past attempts at vegetating the site, despite considerable effort by several BEP participants and Council. These goats will need to be removed from the area, and an effective program put in place to ensure they do not return, prior to beginning vegetation planting and landscaping as described under this Group Action 2. This will require action from Council and other Government bodies, as the goats are primarily on Crown land.

Synergetics Pty Ltd will research and develop an effective vegetation planting and landscaping plan (with timelines) to control dust generation and capture.





## GROUP ACTION 3

**In consultation with Local and State Governments, establish a reporting system to expedite cleaning and repair of roads.**

While BEP participants are currently working hard to reduce dust build up on local roads near the Brooklyn site by using wheel washers and covered trucks, among other techniques, many other businesses and associated vehicles use surrounding roads. Significant friable solids build-up and airborne particulate emissions are spilled from trucks generating airborne particulate by the thousands of passing vehicles on all roads leading to and surrounding the Brooklyn site.

BEP participants will liaise with Local Councils and State Government to assist them to setup an effective system for rapid and real time reporting to Council when road conditions surrounding the Brooklyn site are poor, and to assist Councils with scheduling road cleaning and maintenance to rapidly correct issues before they become significant. The BRG will liaise with Council and State Government and contribute to an effective road dust reporting system.

## GROUP ACTION 4

### Training

Existing training by BEP participants will be reviewed, and where necessary, additional training implemented to raise awareness of both dust health impacts and methods to control dust emissions, followed by training refreshments if required.





## GROUP ACTION 5

### **Appoint a Community Liaison Officer to lead and facilitate BEP community engagement.**

BEP participants recognise that respectful communication will be a key factor in improving and managing relationships with key stakeholders, particularly residents in nearby communities. The BEP participants will appoint a part time Community Liaison Officer whose role will be to engage with stakeholders and provide a two-way information source to ensure the community is heard and they understand the scope of operations that are conducted in the Brooklyn Precinct. The BEP participants recognise that proactive communication will ensure they are better understood, and that collective action and innovation will improve community outcomes.

## GROUP ACTION 6

### **Develop and Implement a Community Consultation Program on Circular Economy.**

The development and implementation of an innovative community consultation program focused on the Circular Economy in Victoria. It will use the activities of the BEP participants as a best-in-class case study for educational purposes. Materials to be developed would include a web site and associated social media collaterals, a series of fact sheets and educational content and curriculum for the purposes of use in Victoria's primary and secondary schools.





## GROUP ACTION 7

**Develop and implement a third-party audit program covering the participants' group and individual actions.**

A cycle of annual third party audits will be implemented to check dust mitigation measures are performing optimally, and BEP obligations are progressing on schedule. BEP participants will appoint a specialist engineering firm to develop and conduct audits.

## GROUP ACTION 8

**Actively explore additional Group and individual BEP actions as part of an ongoing process of continuous improvement in dust mitigation and General Environment Duty (GED) compliance at the Brooklyn Site.**

The BEP participants will actively explore additional Group and individual BEP actions as part of an ongoing process of continuous improvement in dust mitigation and GED compliance at the Brooklyn Site.





# ACKNOWLEDGEMENT

The BRG acknowledges Aboriginal people as the first peoples and Traditional custodians of the land and water on which we live, work and depend.

We pay respect to Aboriginal Elders, past and present. As we pay respect to how Country has been protected and cared for by Aboriginal people over many tens of thousands of years.

We acknowledge the unique spiritual and cultural significance of land, water and all that is in the environment to Traditional Owners, and recognise their continuing connection to, and aspirations for Country.

## KEEP IN TOUCH

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