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FOGO COMPOST BUYBACK REPORT

Final report

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A Marsden Jacob Report

Prepared for NSW EPA

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Key findings and recommendations

This section summarises the key findings and recommendations from the project.

Key findings:

- **There is the potential to increase demand for FOGO-derived compost by Councils and Government agencies.** The primary demand for FOGO-derived compost within councils and government agencies is in urban amenity applications, particularly as a soil amendment for sports fields (councils) and green space development as part of housing and transport corridor development. The Sydney Metro councils alone could procure around 100,000 tonnes of compost annually if sports fields were rebuilt to best-practice standards and garden beds use compost. Equally we estimate that an additional 200,000 tonnes could be used to support government and private sector led housing development initiatives, as an input to green space development, with recent analysis by Edge Environment confirming that this approach can significantly improve the successful establishment of new urban plantings.
- **The key challenges associated with increasing the demand for FOGO include contamination, procurement, and institutional constraints**. The key challenges associated with increasing demand for FOGO-derived compost are quality concerns exacerbated by recent asbestos incidents and physical and chemical contaminants. Other factors are entrenched procurement practices, supplier inertia, limited retail availability, and regulatory and operational budget constraints.
- **Growth in urban amenity markets is possible but agricultural markets for FOGO-derived compost remain key.** Urban amenity focused applications alone cannot absorb the full increase in the tonnage of FOGO-derived compost, so agricultural and land rehabilitation outcomes will continue to be important demand sources to ensure the market clears.

Recommendations to drive increased uptake and address challenges for consideration by NSW EPA:

Funding and Investment:

- Offer targeted state-level grants or financial incentives to councils that use FOGO compost in urban greening and sports field rehabilitation projects.
- Invest in infrastructure upgrades to improve compost processing technology and contamination controls, thereby enhancing product quality and confidence.
- Support the promotion of competitive pricing structures where FOGO-derived compost is more cost-effective than virgin soil products.

Regulatory and Industry Actions:

- Standardise state-level specifications and implement rigorous contamination testing and independent certification systems to address quality concerns.
- Continue to encourage or mandate government agencies and councils to incorporate circular economy principles, such as FOGO compost, into green space procurement guidelines and promote collaboration with major landscaping suppliers and distributors to increase product accessibility.

Education and Promotion:

- Expand educational initiatives targeting government agencies, councils and communities, emphasising contamination reduction and the benefits of compost use.

- Develop demonstration projects and best-practice case studies to showcase successful applications of FOGO compost in public green space initiatives.
- Establish council-to-council knowledge exchange platforms to share insights on best practices, procurement strategies, and effective compost applications.
- Continue work with NSW DCCEEW to push State Government Departments to include FOGO-derived compost within their procurement planning, with flow-through provisions from head contract to landscaping sub-contractors.
- Promote the many benefits of green space development and turf playing fields over artificial spaces. Benefits to society from turf playing fields, include fewer environmental contaminants, improved health outcomes for players and mitigating urban heat island effect without reducing playability when constructed using best practice approaches.

Implementing these actions could enhance the adoption of FOGO-derived compost, supporting environmental sustainability and circular economy goals across NSW.

1. Introduction

With the upcoming 2030 FOGO collection mandate, the NSW EPA engaged Marsden Jacob to research the potential demand for FOGO products across NSW councils. Through stakeholder consultations, case studies, and desktop mapping analysis, this report is intended to help the NSW EPA better understand the potential demand for FOGO-derived composts in public spaces managed by councils and NSW government agencies.

1.1 Project objectives and scope

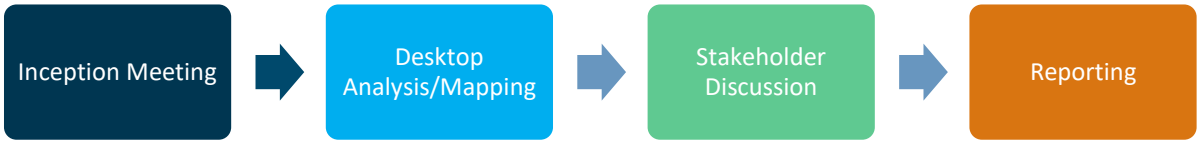
This project aims to understand and quantify the potential demand for FOGO products within NSW council and government-managed green spaces. The 2030 FOGO collection mandate will significantly increase the supply of composted organic material, which will, in part, require sustainable pathways to be integrated into urban landscapes.

As part of this project, Marsden Jacob has examined council procurement processes, landscaping practices, and challenges and barriers to uptake, including through stakeholder consultations.

The findings from this report highlight opportunities for regulatory adjustments, funding avenues, and incentives that can drive greater council adoption of FOGO compost. We have provided evidence-based FOGO demand estimates that can be used to inform sustainability goals, circular economy initiatives, and urban greening strategies.

1.2 Project method

Marsden Jacob has undertaken this project using a mixed methodology comprised of desktop analysis/mapping and stakeholder discussions.



The Desktop Analysis/Mapping task estimated the area of green spaces in the Sydney Metro region that could be used to quantify the potential demand for FOGO-derived products. The mapping analysis reviewed OpenSteetMaps, which classifies landscapes based on their usage, with categories for sports and leisure fields. We also undertook a literature review of recent reports that have reviewed the use of public and open spaces.

Following the Desktop Analysis, we undertook detailed stakeholder discussions with:

- Sydney Metro Councils (Canada Bay, City of Sydney, Inner West, Randwick, Cumberland)
- NSW Governments Agencies (Local Governments, NSW EPA, DCCEEW, TAFE NSW)
- SSROC (Southern Sydney Regional Organisation of Councils)

1.3 Food Organics and Garden Organics (FOGO) and compost

Food Organics and Garden Organics (FOGO) collection gather biodegradable materials, including fruit and vegetable scraps, cooked food waste, coffee grounds, leaves, grass clippings, and small branches. The primary goal is to divert organic waste from landfills and transform it into value generating, sustainable resources, most notably compost, and thus avoid greenhouse gas emissions from landfills such as methane.

FOGO materials are collected from households, businesses, and other sources in typically green lidded bins. These collections are sorted to remove non-organic contaminants such as plastic, glass, and metals ahead of composting. The purity of the feedstock significantly affects the final compost product quality and safety.

A range of products are currently produced by composting service providers, including:

- Uncomposted mulch products that are essentially 'raw' products, including mulch for application on top of garden beds, and potting mix bagged for retail sale. These are based on tree service, garden organics and forestry service sources, with the introduction of FOGO the will impact the quantum of GO available as an input to uncomposted mulch products.
- Compost products: the composting process produces recycled organic compost of different 'grades' corresponding to product maturity. Pasteurised products have completed the pasteurisation process but are not stable nor mature; in contrast, compost is relatively stable in addition to being pasteurised, and 'mature compost' is fully stable. A range of products are then produced from compost products, which are essentially variants of compost, reflecting age and expected use.

The incoming mandates will significantly increase the volume of compost produced using FOGO collections from both household and commercial sources. The material is typically composted in windrows or tunnels, where heat, water, and oxygen transform it into a soil-like product. It is tested for compliance with NSW EPA and Australian Standards before being screened and blended into various product sizes for sale. Soil conditioners enhance soil strength, improve water retention, and increase climate resilience. Compost enriches soil with essential nutrients such as nitrogen, phosphorus, and potassium while supporting microbial diversity, which improves plant growth.

By transforming food scraps and green waste into compost products, FOGO programs help close the loop on organic materials. This process reduces landfill use, minimises greenhouse gas emissions, and yields a product that enhances soil health and plant growth. Through ongoing research and improved composting methodologies, the benefits and applications of FOGO-derived compost continue to expand, supporting sustainable waste management practices and environmental stewardship.

One notable application by councils is its use as a soil amendment in managing sports fields, parks, and recreational facilities. Applying compost offers numerous agronomic and environmental benefits. It significantly improves soil structure, increasing porosity and water infiltration, thereby reducing surface runoff and erosion.

1.4 Benefits of compost

The benefits of incorporating compost into standard practices are extensive and can be split into holistic-based and project-based benefits in relation to stimulating the organics market. These benefits can propel circular initiatives, while simultaneously delivering climate benefits. These two types of benefits have the potential to drive sustained long-term demand for compost, in line with the increase in supply from FOGO recycling.

Benefits are associated with the nutrient rich profile of these organic inputs. These benefits can operate on a micro-scale, with physical, chemical, and biological properties being enhanced or aligned with more natural, balanced soil profiles. When extended to a macro-scale, compost can drastically improve the functions of natural green spaces, while also storing carbon.

Holistic-based benefits relate to bulk density, organic matter, active carbon, microbial biomass, available water holding capacity, aggregate stability, soil respiration, soil proteins and nutrient content and carbon-nitrogen-ratio (Edge, 2021). They can be broadly summarised as follows:

- Improved Soil Structure and Function: Compost reduces soil bulk density, enhancing workability, water infiltration, and root development. It also increases aggregate stability (by up to 97.4%) and available water holding capacity (up to 50%), helping to reduce soil erosion and improve long-term soil resilience.
- Enhanced Biological Activity and Soil Health: The addition of compost raises levels of organic matter and active carbon, providing a key energy source for microorganisms. This leads to greater microbial biomass and diversity (with activity increasing by up to 344%), improved nutrient cycling, and higher soil respiration, all of which support long-term soil health and productivity. (Edge, 2021)
- Organic filtration: Research shows that correctly processed compost is highly effective at removing pollutants from stormwater, leading to improved water quality, enhanced soil health and reduced reliance on synthetic filtration media (CORE, 2018).

Application of FOGO-derived compost delivers a number of benefits to urban amenity projects including improved water efficiency, enhanced plant resilience, and lower maintenance requirements, while more broadly supporting diversion of waste from landfill.

The range of benefits identified from the stakeholder engagement and literature research undertaken for this project are summarised as follows:

- Environmental Impact: Composting organic waste reduces the volume of materials sent to landfill, with Green Star and ISCA rewarding projects that divert waste.
- Preservation of Natural Resources: Compost can replace unsustainable materials extraction like virgin riverbed topsoil and peat, contributing to the conservation of natural ecosystems.
- Soil and Water Management: Compost enhances soil's water holding capacity and structure, improving drought resistance and reducing water consumption.
- Reduced Reliance on Synthetic Fertilisers: Compost provides essential nutrients naturally, while not fully eliminating the need it is clear that compost can reduce the requirement for synthetic fertilisers.
- Plant Health and Growth: Compost improves soil structure and health, leading to stronger plant growth and reduced plant mortality due to disease.
- Climate Change Mitigation: Compost enhances carbon storage in soil, acting as a long-term carbon sink. By using diverted landfill organics, it also prevents methane emissions. Despite minor greenhouse gas risks, studies show these are outweighed by the sequestration benefits, with effects lasting for decades after application. (Edge, 2021).

In 2020 NSW EPA engaged Edge Environment to conduct a trial of using compost in a landscaping project, i.e. the WestConnex New M5 project in collaboration with CPB Contractors. A trial site of 30m length and 3.3.m width was divided into three major segments, with

- Transect A being the control case with business as usual (BAU) where BAU recycled soil that was used throughout the project landscaping
- Transect B incorporating 15% compost into the top 100mm of soil
- Transect B incorporating 30% compost into the top 100mm of soil. (Edge, 2021)

Based on the trial Edge Environment concluded the following:

- Nutrient availability and soil improvement:
  - Compost enhances mineral availability, restoring nutrient-poor soils to balanced levels. The carbon to nitrogen (C:N) ratio in composted sites was more favourable, preventing stunted growth and pale leaves (Heyman, 2019).
  - Tissue analysis showed control plants had nitrogen levels below recommended minimums, while compost-treated plants met Australian Standards.
  - Compost also reduced magnesium levels, preventing leaf yellowing and necrosis, and brought soils closer to recommended natural levels.
- Potassium levels: Although compost had higher potassium levels than recommended, no adverse effects were observed, and potassium boosted plant rigidity and resistance.
- Soil monitoring: Pre-application soil monitoring is essential to prevent nutrient leaching and determine the right amount of compost to use.
- Plant growth:
  - Plant growth did not vary significantly between control transect (no additional compost), B-transect (15% compost) and C-transect (30% compost)
  - C-transect had the highest growth rates overall, yet differences between each transect were minimal. Moreover, sites were not properly controlled (external stimulus, aspect, open to public manipulation) and hence results can only be indicative
  - Scientific literature suggests that compost has a significant effect on plant growth rates through increases macroaggregate stability, phosphorous and nitrogen levels and mycorrhizal colonisation, improving micronutrient availability and soil structure
- Plant death rates were highest for transect A (control) with 22% plant death rate while transect B and transect C achieved plant death rates of 5% and 2% respectively. Leaf tissue analysis suggests that lower nitrogen levels were a major contributing factor to the deterioration of leaves and higher death rates found within the control transect A. (Edge, 2021)

Overall, the study showed that higher levels of compost incorporated into soil result in greater soil health benefits for both plant growth and significantly improved plant success (reducing the new plant mortality rate).

In NSW, compost is typically used in urban amenities, agriculture, rehabilitation and environmental rehabilitation. Urban amenity remains the largest market for recycled organics products in most areas of NSW and encompasses material used for:

- Landscape
- Nurseries
- Local government
- State government
- Sport, recreation and leisure

Our best estimate of the demand from the urban amenity market equates to about 68% of the recycled organic market by weight, currently produced in NSW from the in-scope organics streams[1].

[1] https://www.epa.nsw.gov.au/sites/default/files/21p3340-nsw-organics-market-analysis.pdf

This segment continues to be an essential market for organics processing businesses supplying commercial and domestic landscaping markets in the Sydney region. Most of this project focuses on compost used in urban amenities and rehabilitation.

Marsden Jacob analysis estimates that the FOGO mandates will drive an increase of around 800,000 tonnes of FO and FOGO collected, which would result in approximately 480,000 tonnes of compost, taking into account a 40% mass loss due to excess moisture and degradation during the composting process.

2. Demand assessment for FOGO-derived compost

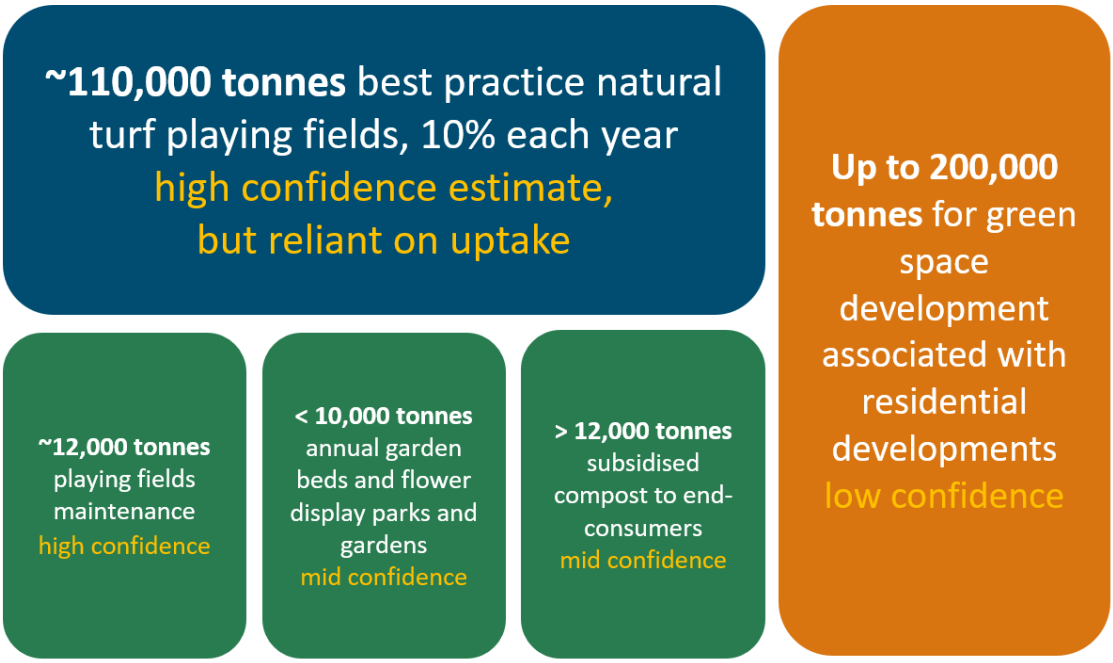
This section presents the results of the demand assessment for FOGO-derived compost. It confirms that uptake opportunities exist, but several barriers (discussed in Section 3) will need to be overcome for significant uptake to be witnessed.

2.1 Demand overview

Urban amenity applications have the highest demand potential, with sporting fields calculated using a combination of GIS mapping and stakeholder insights. We estimate the potential demand for FOGO-derived compost is likely highest when used as a soil amender.

The primary output from this project was to derive estimated tonnes of FOGO-derived compost that Sydney councils and Government agencies could theoretically use. We undertook extensive stakeholder engagement across councils, compost producers, retailers, and agronomy professionals to understand where opportunities are available to support the increased use of compost. Based on these consultations, councils and government agencies use compost in two primary ways: as an amender to soil or for direct application for urban amenity uses. We estimate that the highest use potential is for amended soil, with the following FOGO-derived compost market potential:

Figure 1: FOGO-derived compost market potential



The project analysis and stakeholder engagement has identified that their FOGO-derived compost might substitute out existing compost in urban amenity markets, but more critically the demand in

this setting might be further increased to support sporting fields, gardens and rehabilitation applications, by substituting out virgin landscaping inputs. Both sporting fields and rehabilitation applications are likely to be largely periodic applications, with garden beds and minor sports field maintenance being the only ongoing applications. There are also potentially further opportunities for FOGO to be incorporated into rehabilitation projects as part of government-run projects such as housing, subdivisions, motorways, airports, etc.

A significant potential application of compost, identified from the stakeholder engagement, could be re-turfing all-natural turf playing fields managed by Councils and Government agencies to a best-practice standard, as presented in the recently published 'Best-practice guidelines for sporting fields' by DCCEEW (DCCEEW, 2025).

However it is important to acknowledge that urban demand sources are unlikely to be adequate to meet the increased supply coming from the FOGO mandates, so it will be critical that agricultural and rehabilitation projects (such as for mines) continue to be acknowledged as an important mechanism to ensure the market clears.

This following discusses the assumptions underpinning the demand estimates.

2.2 Turf playing fields significant demand opportunity

Estimating the demand for compost first requires identifying its key uses, which, as indicated above, appear to primarily be as an amendment to the soil for sports playing fields.

We reviewed a range of key source material to determine the area of natural turf sports fields in the Sydney region, including extracting data from OpenStreetMaps, Chief Scientist report[2]: *An Independent review into the design, use and impacts of synthetic turf in public open spaces final* and Stakeholder consultation.

2.2.1 QGIS results

The GIS data for this analysis was sourced from the existing Green Assets dataset, available on the NSW government's Central Resource of Sharing and Enabling Environmental Data in NSW (SEED) platform, and data was extracted from OpenStreetMaps.

The Existing Green Assets dataset maps the extent of green assets and green corridors on the NSW Planning Portal, operated by the NSW Department of Planning, Housing, and Infrastructure. Green assets are described in a number of different categories, as shown in Table 1 along with the area in square meters.

Table 1: NSW Existing Green Assets dataset categories

Category	Description of category	Area m^2
Bushland	Areas generally zoned as E1 or E2 primarily dedicated to natural vegetation cover or environmental purposes, including areas such as wetlands, biodiversity corridors and national parks.	4,817,959,510
Cemetery	Publicly accessible community space dedicated for burial purposes.	5,838,828
Civic	Primarily paved urban open space areas such as plazas, squares and public building forecourts.	7,812,993

[2] https://www.chiefscientist.nsw.gov.au/__data/assets/pdf_file/0004/542263/CSE-Synthetic-Turf-Review-Final-Report.pdf

Category	Description of category	Area m^2
Community Purpose	Open space primarily associated with community facilities such as Libraries, Childcare Centres and Community Halls.	1,096,879
Golf Course	Open space dedicated to providing golfing facilities. Often managed privately but is part of open space inventory data collection due to the scale and its regional significance.	13,516,952
Heritage and Cultural	Open spaces primarily recognised for heritage significance or have been created to protect natural and cultural resources; may include passive recreation components such as walking, cycling and tourist visitation.	3,081,385
Operational	Open space primarily associated with operational facilities such as Fire Stations, Pumping Stations and Lighthouses.	3,512,681
OSL	Areas related to the Office of Strategic Lands.	44,135,675
Parks and Gardens	Areas of open space primarily dedicated to passive recreation and the support of community recreation.	116,037,747
Special	Areas of open space with special purposes.	387,475
Sports	**Open space areas primarily dedicated to sporting use.**	50,453,310
Undeveloped, Unspecified	Any proposed or anticipated open space parcel that is currently undeveloped for open space or recreation purposes. May have a minor and informal recreation use only. May include easements, road reserves, rail corridors, reservoirs or right of way access points.	8,347,815
Waterfront	Open space areas adjacent to the foreshore.	3,735,809

2.2.2 Chief Scientist report

The NSW Chief Scientist & Engineer published the report, *An Independent review into the design, use and impacts of synthetic turf in public open spaces final report* in October 2022. The report provides an in-depth analysis of synthetic turf use in public spaces in NSW, including its environmental and health implications, while also comparing it to natural turf sports fields.

Report findings and recommendations related to natural turf

The report finds a growing trend in synthetic turf installations in the Sydney Metropolitan area, although natural turf fields remain the dominant playing surface in the region. Factors such as increasing population density and demand for all-weather playing surfaces have driven a shift towards increasing synthetic turf installations, particularly in high-use urban settings.

Another key driver of synthetic turf adoption is the overuse and degradation of natural fields not built to a best practice standard, especially in Sydney's densely populated areas due to over-allocation.

The report highlights that best-practice natural turf management techniques, including improved soil structure, irrigation, and drainage, can significantly improve the resilience of natural fields (supporting high playing loads) and reduce the pressure for synthetic replacements. Natural turf also offers environmental benefits, including cooling effects, reduced heat retention, and contributions to

biodiversity (particularly with strategic vegetation planting around playing fields). Additionally, well-maintained natural turf can support storm water management by absorbing and filtering rainwater.

Given these advantages, the report recommends the adoption of best practice guidelines and benchmarks for natural turf in open spaces to support its capacity to meet demand for use in sporting fields, thereby slowing the development of environment (micro-plastics and landfill waste) and human health (heat and injury) impacts from synthetic playing fields.

2.2.3 NSW natural turf field areas

The NSW Chief Scientist report collated synthetic and natural turf sports fields numbers as reported by the NSW Office of Sport for all sports fields in NSW. The results of the collation are shown in Table 2. The analysis included public outdoor sporting areas that are accessible to the community in some form, including university sports fields, but not those on K-12 school grounds. To account for where many sports are played on a single field, each field was categorised by the sports activity with the largest playing area.

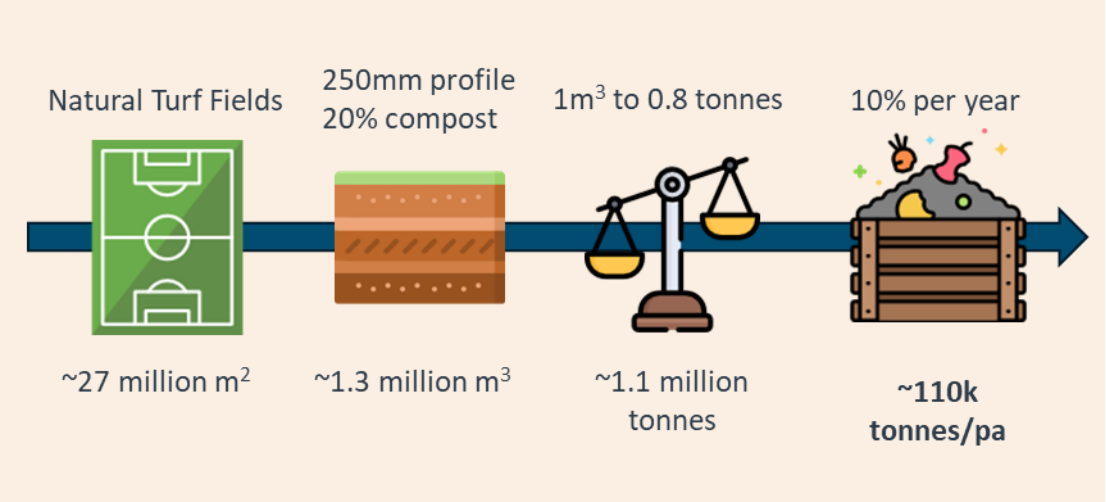
Table 2: NSW Chief Scientist report natural and synthetic turf area

Region	Approximate area of natural turf (m^2)	Approximate area of synthetic turf (m^2)
Central Coast	1,719,922	15,304
Central West and Orana	3,376,491	55,297
Far West	1,364,876	0
Hunter	6,570,125	69,196
Illawarra Shoalhaven	3,266,529	44,442
New England and North West	2,240,735	35,189
North Coast	5,168,093	50,270
Riverina Murray	4,683,976	25,135
South East and Tablelands	2,386,881	30,162
Sydney Metro	27,440,018	756,400
Grand Total	**58,217,646**	**1,081,395**

2.2.4 Approach and results

Based on stakeholder engagement, our mapping analysis and the Chief Scientists report we developed the following approach to estimating the demand for compost from natural playing field redevelopment:

- The area of natural turf playing fields in the Sydney region was assumed to be approximately 27 million m^2 based on the NSW Chief Scientist and Marsden Jacob analysis of spatial data.
- All-natural turf playing fields were assumed to be rebuilt using best practice field development practices (or similar) over the next 10 years.
  - Natural turf playing fields require 250mm of amended soil as part of a returfing process
  - 20% of the amended soil profile is compost.
- 0.8 tonnes of compost converts to 1 m^3 compost (acknowledging this varies based on liquid content)



Accordingly, we estimate that if 10% of sports fields were updated every year over the next 10 years, approximately 130,000 m^3 or 100,000 tonnes of compost (0.8t/1m^3) could be required yearly.

It should be noted that, based on the stakeholder engagement, we understand that sporting fields are rebuilt to the best practice standard in its ideal form do not need compost for regular maintenance. However, sporting fields that are not (yet) updated to best practice standard will have to undergo routine topdressing. Routine topdressing of playing fields (excluding best practice) could require around 10,000 to 15,000 m^3 or **8,000 to 12,000 tonnes** of compost per annum, noting that the yearly demand is a negatively correlated to converting sporting fields to best practice standard. In other words, the yearly demand is likely to decline if more fields are converted to best practice playing fields.

This assumes:

- Compost depth (m): 0.005
- Compost application rate: 15%
- Compost per annum: 16,464 tonnes
- Compost required per hectare = 7.5m^3 (6 tonnes per hectare)

2.3 Beds and flower display parks and gardens

Estimating the tonnes of FOGO demand is challenging due to the lack of detailed information and the ad hoc nature of projects. However, our best estimate suggests that garden beds likely account for **less than 10,000 tonnes per annum**.

Stakeholder consultations revealed that existing garden beds are typically mulched rather than composted, unless soil conditions indicate a need for additional nutrients or soil improvement. Stakeholders cited several reasons for preferring mulch: it retains moisture, suppresses weeds, and supports steady growth. In contrast, stakeholders stated that compost could encourage unwanted plant growth, accelerated growth too rapidly, and complicated plant management.

If soil testing indicates the need for additional nutrients, councils tend to opt for organic and synthetic fertilisers. Controlled-release fertiliser (CRF) is a coated nutrient delivery system and is preferred over compost by parks and gardens teams in councils because it provides a consistent and gradual nutrient release, requires fewer applications, and minimises losses, ensuring better plant

uptake and reduced environmental impact. This was echoed by a number of council stakeholders who prefers using a premixed potting mix for its production nursery, which contains CRF for balanced plant nutrition over several months. Conversely, compost was noted as making the potting mix too soggy and retaining excessive water.

Compost is mainly used when extending or creating new garden beds, however stakeholders emphasised that this comprises very small quantities. For example, the City of Sydney uses an average of 50 tonnes annually for their annual bedding displays, though this fluctuates year to year. The City of Randwick requires 40 tonnes of compost annually for garden establishment. Other councils use compost in specific projects, such as bush restoration. One council reports an average annual volume of 10 tonnes, while another requires 20 tonnes for larger-scale landscaping projects. The Inner West Council ran a campaign called "Welcome Home FOGO," where they used FOGO compost from TopSoil for tree planting at Richard Murton Reserve in Haberfield to celebrate National Tree Day. This compost, produced to platinum standard (AS4454), is suitable for agricultural land, parks, and public spaces, with 5 tonnes used across 20m². Cumberland, the council with the largest park area, uses approximately 2,000 tonnes annually for park and garden restoration.

Stakeholders also noted that some garden nurseries have implemented their own composting systems, actively promoting a circular economy. While these efforts are tailored to the specific needs of each nursery, their overall impact remains limited in scale.

Overall, compost is more commonly used for new establishments, making it difficult to predict annual usage due to fluctuating, ad-hoc projects. As space in the Sydney metropolitan area becomes increasingly limited, opportunities to incorporate compost into new parks and gardens are also constrained. However, with the goal of increasing green coverage despite limited space, councils such as the Inner West and the City of Sydney are focusing on extending tree canopy cover. For example, the City of Sydney aims to increase tree canopy from 19% to 27% and green cover from 33% to 40% by 2050. This presents an opportunity to further explore the potential role of compost in tree canopy expansion, although stakeholders did not mention this in our research.

There is a significant data gap in estimating demand from this source due to limited detailed information and the ad hoc nature of projects. However, based on stakeholder consultations—particularly Cumberland's statement that 2,000 tonnes of compost are used for 800 hectares of parks and gardens—we estimate that demand is likely to be less than 10,000 tonnes per annum.

2.4 Subsidised compost to end-consumers

Another option to close the loop and foster a circular economy is to return FOGO-derived compost to its producers—the households in each council. This could be achieved by distributing subsidised bags of compost to households.

Our estimates suggest that between **12,000 and 18,000 tonnes** of FOGO-derived compost could be distributed to around 1,500,000 households (excluding multi-unit dwellings)[3].

In stakeholder consultations, it was revealed that a few councils have already undertaken similar initiatives. However, these efforts were primarily educational rather than profit-driven. In both cases, the initiatives were well received, with all 20-litre bags of FOGO-compost being distributed to households. While this success could warrant an expansion of the program, one council mentioned that they are reluctant to scale up, as the initiative remains a cost to the council and is not financially viable.

[3] https://abs.gov.au/census/find-census-data/quickstats/2021/POA2027

A potential option to remedy this financial impact on council budgets would be to include this as a requirement in the FOGO collection contracts.

An alternative suggested by stakeholders is to distribute the FOGO-derived compost through local Bunnings stores. Selling pallets of local compost at Bunnings could strengthen community ties, increase the volume of compost sold, and raise awareness of sustainable practices. However, there would be opportunity costs for Bunnings, such as potential storage and logistics challenges, as well as the risk of replacing current offerings.

The estimated demand from this source was based on the following assumptions:

- Total number of SUDs in NSW: 1,489,756[4]
- Size of compost bags: 4L
- Compost percentage : 20%[5]

2.5 Green space development associated with residential developments

Infrastructure and property projects almost invariably have landscaping components of various scale. These can be green corridors along highways and roads, adjoining green spaces to property developments, and green areas that drive community engagement.

- Property sector:
  - Landscaping products are widely used in the property sector, especially in commercial developments where demand for green communal spaces is growing. Residential developments, particularly medium- and high-density housing, are also expanding to accommodate urban population growth. State government planning guidelines emphasise landscaping as a key design requirement. In New South Wales, landscape design is considered essential for enhancing environmental performance, focusing on water and soil management, habitat protection, and preserving green networks.
- Infrastructure sector:
  - Infrastructure, which includes essential assets like roads, airports, railways, and ports, is a major part of Australia's construction industry, with over $401 billion invested and growing demand due to projected population increases in urban areas; it also accounts for 70% of the nation's carbon emissions, prompting a shift towards sustainable development.
  - Landscaping design and services play a significant role in many infrastructure projects, particularly in creating green corridors and communal spaces that enhance urban heat resilience and environmental outcomes, often involving large-scale use of soil and landscaping products.

Considering opportunities where the government has the potential to influence, such as urban development and associated green space development. Low-confidence estimates as the council has influence but cannot finally make decisions.

[4] https://abs.gov.au/census/find-census-data/quickstats/2021/POA2027

[5] Desktop research shows typical proportion of 20-40% compost. For this analysis, a more conservative number of 20% was adopted.

With over 150,000 new single unit dwellings developed per year in NSW[6] and for each new dwelling, there is an average floor area of 100-200 m[27], we consider there is a strong opportunity to incorporate compost into soil for the development process.

Up to 200,000 tonnes may be required for green space development associated with residential projects, but this depends on various factors such as project scale, soil conditions and local regulations.

The estimated demand from this source was based on the following assumptions:

- Number of new dwellings in NSW per year: 173,000[8]
- Average landscaped area in Greater Sydney area (m2)[9]: 160[10]
- Soil depth (in m): 0.1[11]
- Compost application rate: 10%[12]

Marsden Jacob's analysis has identified that both public and private housing developments could become a significant demand source, but for this to eventuate a flow-down requirement would need to be included within development approvals and head contracts. This is because landscaping services are not provided by head building contractors, instead, they are sub-contracted to specialist service providers. For instance, the market research undertaken for this project identified that the landscaping inputs for government development projects are commonly sourced from suppliers such as:

- ANL
- Benedict industries
- Soilco

Where ANL and Soilco are concerned we understand they more commonly provided blended products because they are vertically integrated businesses that operate composting operations, whereas for Benedicts Industries typically provided virgin or recycled soils and does not currently appear to include composts within their soil blends.

However, their services are typically being procured by a number of medium to larger commercial landscaping companies that specialise in government civil projects. Some examples of these businesses, include:

- Glascott Landscape and Civil
- Landscape Solutions
- Regal Innovations

When entities like Homes NSW, previously Land and Housing Corporation, engage a builder they typically require the builder to be responsible for delivering a full site, including gardens, lawns and

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[6] https://www.abs.gov.au/statistics/industry/building-and-construction/building-activity-australia/latest-release
[7] https://www.abs.gov.au/articles/characteristics-new-residential-dwellings-15-year-summary
[8] https://www.abs.gov.au/statistics/industry/building-and-construction/building-activity-australia/latest-release
[9] https://www.abs.gov.au/articles/new-houses-being-built-smaller-blocks
[10] Data for the average site area of houses in the Greater Sydney area minus the average floor area in Greater Sydney has been used to project the average landscaped area in Greater Sydney, noting that the average landscaped area in regional NSW is likely to be higher than in Greater Sydney.
[11] The depth is highly context dependent and can range from 0.1m to 0.5m. This analysis adopts a conservative approach with 0.1m, which is also in line with Edge's (2021) report and trial.
[12] The application rate is highly context dependent. Edge's (2021) trial and report adopted 15% and 30%. For this analysis, however, a conservation approach was chosen assuming a compost application rate of 10%.

soil preparation. The head building contractor, then subcontracts landscapers or civil works contractors. These subcontractors are responsible for procuring soils, turf, composts, plants, mulch, etc from approved suppliers.

This means the contracting agencies have very limited line of site to what service providers are currently doing, but equally they have significant potential to drive decision-making that would lead to increased update of FOGO-derived compost as an input to project landscaping.

3. Barriers and opportunities for FOGO-derived compost

This section identifies the barriers and opportunities for FOGO-derived compost based on the stakeholder engagement and research undertaken for this project.

The current demand for compost by Sydney Councils and Government agencies is being constrained by several challenges, including fears of contamination, procurement issues, perceived performance problems, and other institutional barriers. We estimate that these areas need attention to enhance compost use, along with integration with other pathways by NSW government agencies, including circular economy plans and water efficiency strategies.

3.1 Barriers affecting the adoption of FOGO-derived compost

The discussions with stakeholders for this project have identified key challenges to the use of FOGO-derived compost by councils and government agencies, including,

- Quality concerns
- Procurement and supply chain issues
- Institutional and operational barriers

These are described further in the sections below.

3.1.1 Quality concerns

One of the significant barriers to the broader adoption of FOGO-derived compost is apprehension around product quality and potential contamination. Key council stakeholders and other stakeholders often raised the risk of hazardous materials, such as plastics, glass fragments, and other residues, finding their way into compost products.

These concerns have been heightened by a recent incident in Sydney, in 2024, where asbestos contamination was discovered in mulch. Even though that specific problem may have stemmed from a completely different supply chain, the high-profile nature of the contamination raised alarm around the safety and quality controls in organics recycling processes. More recently, concerns about per- and polyfluoroalkyl substances (PFAS) have been raised. While the knowledge base is still evolving around PFAS it can broadly be described as a group of man-made chemicals used in various industrial and consumer products for their water-, grease-, and stain-resistant properties (e.g. mascara, non-stick pans, etc.), but they are persistent in the environment and have been linked to potential health risks.

The risk of introducing harmful substances into the environment, with associated human impact risk, is currently deterring many local authorities and buyers from confidently embracing recycled soil mixes and compost. In some cases, councils are reluctant to encourage or mandate the use of FOGO-derived products until robust protocols are in place to ensure consistent testing, traceability, and contamination mitigation. Addressing these quality concerns typically involves better processing and

testing protocols to help reassure stakeholders that FOGO-derived compost is safe and free of hazardous substances.

Part of the solution, which councils are already investing in, is ensuring that residents and commercial entities know how to separate organics waste and avoid introducing potential contaminants correctly. Clear communication and training on source separation can significantly reduce contamination at the collection stage.

Achieving social licence for FOGO-derived compost involves gaining community trust and acceptance by demonstrating its environmental and health benefits, as well as ensuring transparency and engagement throughout the process. Building strong partnerships with all relevant stakeholders and addressing concerns around quality and safety are key to fostering this acceptance.

3.1.2 Procurement and supply chain issues

Despite growing awareness of the environmental and soil health benefits of incorporating compost into landscaping, sports field maintenance, and land rehabilitation projects, adoption at scale can be hindered by various procurement and supply chain factors:

1. Established preferences: Many councils and other purchasing authorities default to long-standing, standardised mixes, such as the "80-20" soil blend, typically comprising 80% sand and 20% virgin or recycled soil. Stakeholders noted these mixes are deeply ingrained in procurement practices and are perceived as low-risk. Despite compelling evidence on the benefits of high-quality FOGO compost, procurement leaders are clearly hesitant to divert from the familiar, tried-and-tested products. Stakeholder consultations indicate that significant education and behaviour change will be needed to change personal preferences.
2. Limited incentives for large-scale suppliers: Suppliers of urban amenity products often have well-established supply chains, formulas, and processes that align with traditional blends. Adapting production lines to integrate FOGO compost—especially if doing so requires additional testing, certification, or logistics—can entail costs or operational complexities. Without apparent market demand or policy-driven requirements to use FOGO-derived materials, these larger suppliers may have little motivation to modify their existing product offerings. In addition, many amended soil products that contain compost are unavailable at local retailers like Bunnings and need to be sourced from large-scale soil suppliers, limiting the potential market for compost.
3. Growing adoption of synthetic turf: In certain regions, there is a growing trend towards the use of synthetic turf for sports fields and public spaces. While synthetic turf may offer advantages such as reduced water consumption and lower maintenance requirements in specific contexts, it also reduces the demand for natural grass solutions, along with the compost inputs that contribute to soil health. However, feedback from stakeholders suggests that the decision to install synthetic turf is often driven more by political considerations than by actual performance benefits. For instance, one stakeholder shared an example where a council opted for synthetic turf simply because it supposedly came with the added benefit of a surrounding fence (financed by the synthetic turf company). Beyond foregoing the natural benefits of grass, synthetic playing fields pose several significant disadvantages and risks. These include environmental and health concerns related to the chemicals in the materials, increased heat exposure, and the risk of burns from falls (Murphy & Warner, 2022). Moreover, synthetic fields require replacement approximately every 10 years, generating substantial waste in the process.

Addressing these challenges often involves policy and education initiatives. Encouraging or mandating the use of FOGO compost through council procurement guidelines, demonstrating cost savings over time, and highlighting the broader environmental advantages can help shift entrenched preferences.

3.1.3 Institutional and operational barriers

Councils and government agencies often face competing budget and policy priorities, limiting their ability to explore compost-opportunities despite its environmental and economic benefits. Short-term needs often take precedence, sidelining long-term solutions. Some council sustainability officers mentioned that projects are being initiated to review council procurement and for each input assessing how circular economy outcomes could be enhanced, but they are often slow to implement or even put on the back burner now as short term commitments dominate the resource availability of the relevant branch.

A lack of political will or prioritisation can also prevent councils from embracing FOGO-derived compost as an input. Without consistent support from decision-makers, the potential benefits may be overlooked or delayed. Stakeholder consultations revealed that the engagement with FOGO-derived compost or more general circular alternatives is highly dependent on leaders in each council. Where decision makers favour FOGO-derived alternative the council is more likely to create demand whereas if key people are either apathetic or opposed then uptake becomes significantly less likely.

Additionally, some policies favour virgin organic materials over FOGO-derived inputs, as seen in certain remediation action plans. This preference hampers the adoption of sustainable composting practices.

3.2 Opportunities to improve demand for FOGO-derived compost

Given the above challenges, increasing the adoption and use of compost by councils and government agencies is likely to be slow without support from the NSW Government. A consistent theme across the stakeholder engagement was that the use of FOGO-derived compost could be increased through education and support for other complementary government programs.

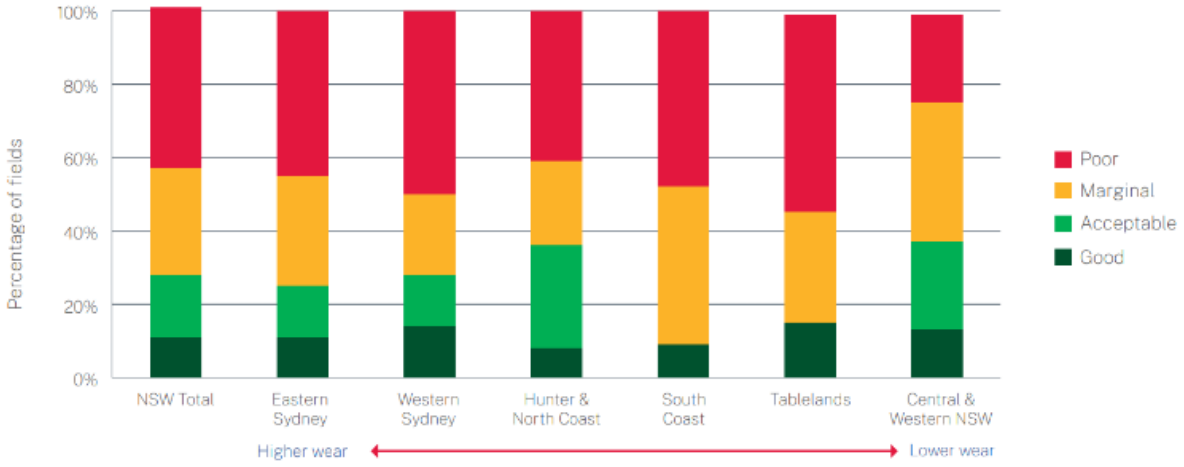
3.2.1 Promoting more natural turf fields and water efficiency

As previously discussed, the development cycle for natural turf fields presents a significant opportunity to increase the demand for FOGO-derived compost while addressing key concerns related to sports field management. Unlike synthetic alternatives, which contribute to plastic waste, microplastic pollution, and heat retention (Murphy & Warner, 2022) and require a significant redevelopment after around 10 years with the playing surface being landfilled. In contrast a well-maintained, natural turf fields offer enduring environmental, health, and financial advantages to users and owners.

An assessment of over 1,000 sporting fields across NSW found that only 10 per cent meet best-practice benchmarks, with a further 14 per cent in reasonable condition. The remaining 76 per cent are in poor or marginal condition, requiring significant resources for recovery or facing further deterioration (DCCEEW, 2025). This highlights an opportunity to establish more best-practice natural turf fields where FOGO-derived products can be a beneficial input. In best-practice playing fields, compost is added as a soil amender, rather than replacing soil entirely, with compost making up 10-20% by volume, leading to approximately 200-400 m^3 of compost per hectare of sports field.

Upgrading a playing field to best-practice standards can vary significantly in cost, depending on the scope of the project and the inclusion of supporting infrastructure. However, excluding rebuilds, one council in Sydney adopted best practice and reduced its annual turf patching bill from $280,000 in 2012 to $8000 in 2017 (DCCEEW, 2025).

Figure 2: Observed condition of sporting fields in NSW, adapted from DCCEEW, 2025, p. 7



Another advantage of best practice natural turf fields is their ability to improve water efficiency and thus reduce water demand. Engagement with the Urban Water Strategy, Policy, and Programs team at the NSW DCCEEW highlights a push to make the best use of green spaces and invest in existing natural turf fields. DCCEEW has developed *Best-practice guidelines for sporting fields: A guide for climate-resilient playing surfaces in New South Wales*, to support adoption. While Greater Metropolitan Sydney has recently witnesses a five years of high water availability (triple La Nina and two wet El Nino cycles) we know that drought conditions will return and when they do best practice natural playing fields will maintain their playability to a higher standard with less water requirement, while also providing important urban heat island benefits to local communities.

3.2.2 Working with processors to improve contamination

As previously noted, one of the main hurdles to FOGO-derived compost uptake relates to quality concerns. Across all interviews, respondents expressed their reservations about using FOGO compost because of contamination, often mentioning the example of asbestos-contaminated mulch from January 2024.

To increase demand for FOGO-derived compost, NSW EPA and councils need to work closely with sources (households and businesses) and FOGO processors to both reduce contamination rates and support improved management of contamination. For successful FOGO uptake, it will be important that FOGO processors have high quality screening in place to avoid contaminants and thus build customer confidence.

While compost processors can decontaminate to a high standard, education at source is the key to reducing bin contamination by promoting proper waste disposal practices. Contamination hotspot spots should be identified, and bins should be tagged to monitor contamination levels. Targeting areas with high contamination rates, particularly in Multi-Unit Dwellings (MUDs), can flag problematic bins before collection. This approach can help prevent a small fraction of the waste collection task (such as a single highly contaminated bin) from spoiling an entire truckload, lowering costs to councils and processors, and increasing the potential demand for FOGO-derived compost.

3.2.3 Promote compost as a cost-effective source

Stakeholders highlighted that sourcing FOGO-derived compost can offer cost savings compared to traditional compost sources. For example, Penrith Council reported savings of approximately $20 per tonne when using FOGO-derived compost compared to using virgin compost. Additionally, soil

condition can be improved through compost-based top dressings, which can reduce the need for synthetic fertilisers.

Thus, by using compost, many stakeholders commented councils may be able to reduce the financial burden of purchasing costly fertilisers, contributing to a more cost-effective approach to soil management. Stakeholders emphasised that compost does not fully substitute for synthetic fertilisers but through setting up improved soil health, and thus plant root zone health, the requirement for synthetic fertilisers can be reduced.

An outcome that could be further motivated by the volatility in fertiliser prices. Between 2020 and 2022, fertiliser prices in Australia rose by 153% due to high natural gas prices and export restrictions[13]. Although prices fell in late 2022, they remain higher than pre-pandemic levels, and future drops are expected to be modest. Substantial volatility in fertiliser prices may contribute to FOGO-derived compost being prioritised as it can reduce the demand for synthetic inputs and improve soil health.

3.2.4 Integrating FOGO-derived compost into Councils and Government agency processes

Councils and Government agencies can effectively use amended soil products in various urban amenity applications, such as:

- rehabilitating sub-divisions,
- large infrastructure projects (e.g., motorways, airports),
- government housing developments

There is a significant opportunity associated with integrating amended soil products into these planning and procurement processes. Collaboration across government agencies and councils could support greater uptake and stimulate increased demand for compost, contributing to more sustainable urban development and improved environmental outcomes. For example, development of circular economy guidelines and standards to ensure consistent use of FOGO-derived compost products across projects and encouraging procurement policies within councils and agencies that prioritise sustainably sourced amended soil products.

This proactive approach will also help improve environmental outcomes, drive resource efficiency, and contribute to NSW's circular economy objectives.

3.3 Actions to increase demand

Despite the existing challenges, the project has confirmed that NSW EPA, councils and government agencies have clear opportunities to support greater adoption of FOGO-derived compost (Table 3). From a timing perspective these initiatives would benefit from being progressively implemented in the lead up to the full mandate being implemented. Specific actions the NSW EPA could consider include:

Funding and Investment:

- Grants and funding incentives: Offer targeted state-level grants or financial incentives to councils to change processes to integrate FOGO compost into urban greening, sports field redevelopment and landscaping projects (for instance include a buyback clause in the model contract for FOGO). This financial support helps reduce cost barriers and overcome organisational inertia to change. Although the initial shift in procurement processes and quality testing may be viewed as a cost hurdle, the use of

[13] https://www.agriculture.gov.au/about/news/analysis-how-global-energy-prices-are-affecting-price-australian-farm-inputs

FOGO-derived compost can lead to long-term cost savings once established.

- Investment in infrastructure: Fund or co-invest in advanced compost processing technologies and contamination control systems to consistently produce high-quality compost and build Council and public confidence.

Education and Promotion:

- Public awareness campaigns: Implement educational campaigns highlighting the environmental, social, and economic benefits of FOGO compost usage in community spaces, urban greening, and infrastructure projects.
- Best practice demonstrations: Collaborate with councils on demonstration sites showcasing successful applications of FOGO compost, such as sports fields, parks, and council-managed gardens, providing tangible examples to alleviate performance concerns.
- Knowledge exchange platforms: Establish platforms or forums for council-to-council knowledge sharing on best practices, successful procurement strategies, compost quality assurance, and innovative applications.
- Targeted education to reduce contamination: Conduct education initiatives to reduce contamination from both higher performing single-unit dwellings (SUDs) and challenging sources such as multi-unit dwellings (MUDs), including multilingual resources and targeted outreach efforts.
- Targeted education to help decision makers: Help decision makers to decide where they send their FOGO. For instance, some techniques (such as containerised black solder flies) are more expensive but they are better positioned to handle highly contaminated sources.

These combined funding, education, and promotional actions could can effectively stimulate greater demand for FOGO-derived compost, fostering broader adoption and sustainability outcomes across NSW.

Despite the challenges listed above, there are opportunities to support greater FOGO adoption at the council level. The following summarises they range of actions and initiatives that were identified in the stakeholder engagement.

Table 3: Actions and initiatives to overcome challenges

Challenge	Initiative type	Opportunity description
Quality concerns	Policy	Standardise specifications for FOGO compost use in sports fields, urban greening, and other applications at the state level
	Regulatory	Implement chemical and contamination testing to ensure compost meets performance and safety standards
	Regulatory, Industry engagement	Investigate the potential for a third-party certification system or independent verification of compost quality
	Education and awareness	Expand public education on FOGO and circular economy initiatives and the benefits they provide
Procurement and supply chain issues	Policy/regulatory	Encourage councils to revise procurement guidelines to require or encourage compost-based soil blends to be used
	Industry engagement	Work directly with soil suppliers to develop standardised blends that include FOGO compost, to sell as a premium product

Challenge	Initiative type	Opportunity description
	Industry engagement	Work directly with soil distributors (such as Bunnings) to sell local FOGO compost as a premium product
	Funding support	Offer state-level grants or funding for councils that incorporate compost into their greening projects
	Funding support	Offer pricing models that make FOGO compost a more attractive option than virgin soil alternatives
Perceived performance issues	Case study via funding support	Establish more demonstration best practice turf sports fields which use FOGO compost with willing councils to showcase successful applications
	Case study via funding support	Work with early adopter councils and developers to run small-scale trials using FOGO compost on applications such as council flower beds and urban greening
	Education and awareness	Provide councils with an evidence base on the benefits of compost, including cost savings and environmental benefits
	Education and awareness	Provide councils with a platform to exchange insights on best practices, procurement strategies, and compost applications (council-to-council knowledge sharing)
Institutional and operational	Funding support	Investment in compost processing technology and contamination control
	Education and awareness	Address FOGO contamination challenges such as multi-unit dwelling buildings (MUDs) through extensive education measures, including accessibility in various languages

4. Concluding remarks

This section sets out the key findings and recommendations from the analysis.

With the upcoming 2030 FOGO collection mandate, the quantify of FOGO being collected is expected to significantly increase and this, in turn, will result in over 480,000 tonnes per annum of additional FOGO-derived compost being produced.

Reflecting this significant increase, NSW EPA engaged Marsden Jacob to research the potential demand for FOGO products across NSW metropolitan councils. Through stakeholder consultations, case studies, and desktop mapping analysis, this report has been undertaken to help the NSW EPA better understand the potential demand for FOGO-derived composts in public spaces managed by councils and NSW government agencies.

The analysis was informed by a series of in-depth interviews from which more generalised observations and outcomes were derived.

Based on the analysis and interviews undertaken as part of this project a series of key findings and recommendations for consideration by NSW EPA have been identified. These are intended to build upon the many important initiatives that the NSW EPA is already implementing[14].

4.1 Key findings:

- **There is the potential to increase demand for FOGO-derived compost by Councils and Government agencies:** The primary demand opportunity for FOGO-derived compost within councils and government agencies is in urban amenity applications, particularly as a soil amendment for sports fields (councils) and green space development as part of housing and transport corridor development. The Sydney Metro councils alone could require around 100,000 tonnes of compost annually if sports fields were rebuilt to best-practice standards and garden beds use compost. Equally we estimate that around 200,000 tonnes could be used to support government and private sector led housing development initiatives, as an input to green space development, with recent analysis by Edge Environment confirming that this approach can significantly improve the successful establishment of new urban plantings.
- **The key challenges associated with increasing the demand for FOGO include contamination concerns, procurement and institutional constraints**. The key challenges associated with increasing demand for FOGO-derived compost are contamination issues exacerbated by recent asbestos incidents, entrenched procurement practices, supplier inertia, limited retail availability, and regulatory and operational budget constraints, all necessitating targeted regulatory adjustments and funding support.
- **Growth in urban amenity markets is possible but agricultural markets for FOGO-derived compost remain key**. Urban amenity focused applications alone cannot absorb the full increase in the tonnage of FOGO-dervied compost, so agricultural and land rehabilitation outcomes will continue to be important demand sources to ensure the market clears.

[14] https://www.epa.nsw.gov.au/Your-environment/Recycling-and-reuse/business-government-recycling/Food-organics-and-garden-organics

4.2 Recommendations for consideration by NSW EPA:

Funding and Investment:

- Offer targeted state-level grants or financial incentives to councils that use FOGO compost in urban greening and sports field rehabilitation projects.
- Invest in infrastructure upgrades to improve compost processing technology and contamination controls, thereby enhancing product quality and confidence.
- Support the promotion of competitive pricing structures where FOGO-derived compost is more cost-effective than virgin soil products.

Regulatory and Industry Actions:

- Standardise state-level specifications and implement rigorous contamination testing and independent certification systems to address quality concerns.
- Encourage or mandate government agencies and councils to incorporate circular economy principles, such as FOGO compost, into green space procurement guidelines and promote collaboration with major landscaping suppliers and distributors to increase product accessibility.

Education and Promotion:

- Expand educational initiatives targeting government agencies, councils and communities, emphasising contamination reduction and the benefits of compost use.
- Develop demonstration projects and best-practice case studies to showcase successful applications of FOGO compost in public green space initiatives.
- Establish council-to-council knowledge exchange platforms to share insights on best practices, procurement strategies, and effective compost applications.
- Continue work with NSW DCCEEW to make a push for State Government Departments to include FOGO-derived compost within their procurement planning, with flow-through provisions from head contract to landscaping sub-contractors.
- Promote the many benefits of green space development and turf playing fields (over artificial spaces). Benefits to society from turf playing fields, include fewer environmental contaminant, improved health outcomes for players and mitigating urban heat island effect without reducing playability when constructed using best practice approaches.

Implementing these actions could enhance the adoption of FOGO-derived compost, supporting environmental sustainability and circular economy goals across NSW.

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Appendix 1. Further notes from stakeholder interviews

Table 4: Stakeholder notes

Internal roadblocks	Possible demand quantities	Sporting fields	Potting mix, garden, planting	Strategies/policies that support FOGO buyback
Open space team claimed not to use compost; internally claims of apparently, they don't use mulch, topsoil, etc., resistance to exploring changes	Market demand is met with existing materials, with potential only for increased substitution	Demand for synthetic fields are politically driven, not necessarily made by the council	Compost-based mulch has limited suitability and tough market entry, virgin mulch used to ensure quality	"Green City target": 40% green cover, we are sitting at 31%, 1.8 million to go, potential for more green spaces/FOGO?
Trust biggest barrier of greenkeepers	We used the FOGO compost on a section at the end of Richard Murton reserve. 5 tonnes probably across a site 20m2	Pressure from sporting clubs pushing for synthetic playing fields	Chemical composition issues – nutrient levels in compost are inconsistent. Soil testing determines need for compost—if nutrient levels are sufficient, mulch is preferred.	Limited circular targets for compost-derived products across all councils, only small-scale circular initiatives such as collection of food scraps from employee in offices
Greenkeepers tend to follow established norms, sticking to 80/20 even if materials were to change	2000 tonnes per annum of material used for restoration of parks and garden	Sports fields very sensitive topic, high concerns about the quality of the blend	Compost only used when extending or creating new garden beds, re-turfing biggest opportunity	No circular targets; focus on tree canopy within site limits instead of expanding green areas.
"That's the contractor's responsibility" — Open Space team remains uninvolved, as their priority is cost-effective service delivery	Quantity for potting mix or garden mix very small (<50 tonnes per annum)	Preference for specialised sports field fertilisers, with Controlled-Release Fertilisers (CRF) offering steady nutrients, reducing over-fertilisation, and ensuring	Compost can introduce unwanted plant growth; may accelerate growth too much, making plant management harder.	Circular targets do not apply to procurement/purchasing

Internal roadblocks	Possible demand quantities	Sporting fields	Potting mix, garden, planting	Strategies/policies that support FOGO buyback
		balanced nutrition for sports fields, avoiding compost inconsistencies.		
The requirements differ on an oval by oval basis, with high groundwater table management being a key challenge at the moment, so there is a focus on drainage	Small scale community project where bags of 20L compost were handed out to residents ("getting their compost back")	Avoiding excessive compost use prevents turf from retaining too much water, which can negatively impact field conditions.	Plant removal and replacement 4 times a year, for 2 weeks each time (Hyde Park + another park).	Sustainable procurement as opportunity: some councils working with their procurement teams to identify opportunities to replace with recycled materials (early stage)

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