



Climate Action Merribek
P.O. Box 381
Fawkner, Vic, 3060
18 August 2023

Attention: Bernadette Hetherington
Merri-bek Council

Submission on Draft Sports Surface Policy

Dear Merri-bek Council,

We much appreciate the opportunity for this submission on the Draft Sports Surface Policy. We congratulate Merri-bek Council officers and consultants in drawing up a policy and decision making framework on Sports Surfaces that meets the legislative requirements for triple bottom line assessments involving social, environmental and financial factors, as per the Local Government Act 2020.

This was a major argument in the Climate Action Merribek submission in April 2020 that decisions being taken on sports fields surfaces were failing to address legislative requirements, and Merri-bek's own existing Climate and Waste policy commitments.

We think this is potentially a ground breaking policy for sports surfaces and as a tool for good governance in incorporating the triple bottom line as part of decision making generally.

The Triple bottom line rhetoric is often trotted out, rarely having substance in practice.

However, this draft policy can be improved in a number of ways to deliver even better governance outcomes on synthetic turf.

John Englart, Convenor, Climate Action Merribek

Recommendations:

1. Weighting of factors in the Decision making Framework tool needs to be transparent
2. Guidelines needed in how to apply the precautionary principle as part of this policy
3. Decisions taken on synthetic turf for sportsfields need to be Fiscally responsible.
4. Keep the community, relevant sports organisations, and general public informed on progress and results of all sports surface trials conducted
5. Apply this decision making framework to a wider scope in Merri-bek, including to inform decision making for kindergartens and school playgrounds.
6. Consider updating Nature Strip Guidelines for a general prohibition against use of synthetic turf, with exceptions for applicants to justify through using the decision making framework tool.
7. Liase and promote this policy with other Councils and the State Government to enhance good governance on use of synthetic turf in public places.
8. Consideration should be given for restriction on use of both natural turf sports fields and synthetic turf sports fields during wet weather conditions. The former to reduce damage to the surface and maintain playability, the latter to reduce exacerbating microplastics pollution to stormwater and local waterways.
9. Any use of synthetic turf, or hybrid turf, should have an End of Life Management Plan developed and in place, which outlines costs, disposal or recycling method, and the risks and greenhouse gas emissions associated with end of life. The advice of the NSW CSE that Cutting up EOL sporting fields for use in other settings be avoided should be adopted.

Weighting of factors needs transparency

While the Draft Policy is based on triple bottom line assessment, the all important weighting of factors in the decision making framework tool is internal, so not transparent to stakeholders or the general public.

We see the lack of transparency as potentially problematic for making the best decisions.

If some factors are weighted more heavily than others, without justification, and the reasons for this weighting is neither explained or made public, then poor decision making outcomes can still be delivered.

Recommendation 1: The weighting of factors used in the decision making process should be as transparent as possible for good governance.

Inclusion of Precautionary Principle

The inclusion of the Precautionary principle is also important as part of the Sports Surfaces policy. As the NSW Chief Scientist and Engineer report on use of synthetic Turf in open spaces demonstrated, there are still large knowledge gaps on the environmental and health risks of synthetic turf.

In terms of considering the precautionary principle for human health for synthetic turf we note in particular:

- Children are at greater health risk, “No studies have addressed children’s exposure to chemicals from artificial turf surfaces via oral and dermal routes.” (ICAHN School of Medicine – Childrens Environmental Health Centre ([2021 letter](#) PDF))
- “Specific lack of empirical evidence around indirect and longer-term cumulative health impacts with a general lack of field studies, epidemiological studies and health risk assessments in the Australian context.” ([NSW CSE report](#) PDF)

In terms of the precautionary principle and environmental pollution risks, we know there is a global plastics crisis and the cumulative impact of microplastics and nanoplastics is already affecting ecosystems and species. Site location and microplastic mitigation efforts on existing synthetic fields is important. Research highlights that:

2.98 metric tons - average loss of performance infill on the examined pitches per year (Germany/Switzerland), and above the top-up quantity (2.68 metric tons per year). However, there are significant fluctuations in losses. The 95% confidence interval for losses for all pitches of the same construction type is in the range of 1.29 to 4.67 metric tons per year. (Bertling et al Oct 2021) 1–4% of plastic infill is lost and replaced every year (Report for FIFA Eunomia Research 2017)

50 kilograms to over 1 metric ton per year - average fibre loss from a pitch contributing to microplastics pollution. (Bertling et al Oct 2021)

The NSW Chief Scientists Report concluded: 10-100kg infill loss per year per pitch to waterways. 100s of kg of fibre loss per year per pitch - Glamore et al. (Appendix 4 - NSW CSE 2022). Some mitigation of waterborne and carry-off loss is possible. The NSW CSE report

did not assess or discuss airborne micoplastics loss which can be inhaled and also spreads much further.

300 chemicals identified in Crumb Rubber synthetic turf infill, of which nearly 200 are predicted to be carcinogenic and genotoxic. (Xu et al 2019) “majority of these potential carcinogens are not listed in the databases of the United States Environmental Protection Agency (US EPA) nor the European Chemicals Agency (ECHA) due to the absence of toxicological evaluation ... This study points to a need to closely examine the potential regulation of the use of CR on playgrounds and artificial fields.”

We think there needs to be guidelines in how to apply the precautionary principle in this policy. Without these guidelines the inclusion of this becomes rhetoric open to interpretation, misinterpretation and possible misuse.

We need transparency on how the precautionary principle will be applied for good governance.

Recommendation 2: Develop guidelines in how to apply the precautionary principle as part of this policy.

Financial responsibility

The consultants study makes clear that synthetic really only makes financial sense "when actual demand and usage is optimised, providing for about 54-60 hours per week". This is an important insight.

The consultants found that existing use of synthetic surfaces at Clifton Park synthetic turf soccer field was 25 hours each week (by multiple clubs and teams) and The Brunswick Secondary College synthetic turf hockey field 45 hours use each week.

No data was supplied on the jointly managed synthetic soccer pitch at CB Smith Reserve. This data has not been made available on the Conversations Merri-bek engagement page as the Council motion indicated.

Recommendation 3: Decisions taken on synthetic turf for sportsfields need to be Fiscally responsible. This is important for ratepayers.

Increasing sports capacity through Sports surface improvements

Another important insight from the consultants report is the possibility of increasing existing turf field playing hour capacity and its recommendation to conduct trials of sports surfaces, including for natural turf improvement, in Merribek.

It was positive to see the additional point added to the Council motion to conduct a trial on a Merribek sportsfield due for upgrade, with results reported back in August 2024. We look forward to that trial and those trial results.

If hybrid surfaces are implemented for small portions of fields, these should also be evaluated.

Recommendation 4: Keep the community, relevant sports organisations, and general public informed on progress and results of all sports surface trials conducted.

Applying the policy to a Wider scope

The original motion also applied only to sportsfields as defined in the 2012-2022 Open Space Strategy, when synthetic turf use is a much broader problem across more sports, as well as in parks, kindergartens and playgrounds.

We understand the focus of this policy applies to sports surfaces, so appreciate the amendment that broadens the policy across all sports fields.

We would like to see the policy also inform the use of artificial turf in other areas in the public realm in Merri-bek including in parks, school playgrounds, kindergartens, nature strips.

Recommendation 5: Apply this decision making framework to a wider scope, including to inform decision making for kindergartens and school playgrounds.

We note there is presently no prohibition in Merri-bek about residents using synthetic grass on nature strips. (See [2019 Nature Strip Guidelines](#) PDF) We note that Moonee Valley Council has prohibited use of synthetic turf on nature strips in their [2018 Nature Strip guidelines](#) and in their present [draft nature strip guidelines](#). Other Councils have also banned synthetic turf use on verges and nature strips, such as [Adelaide City Council in 2019](#).

Recommendation 6: Consider updating Nature Strip Guidelines for a general prohibition against use of synthetic turf, with exceptions for applicants to justify through using the decision making framework tool.

This policy has important potential to inform policymaking in other Council jurisdictions and at State Level.

Recommendation 7: Liaise and promote this policy with other Councils and the State Government to enhance good governance on use of synthetic turf in public places.

Wet Weather use of Sports fields

Playing on natural turf in wet weather can damage the field requiring more time for recovery. Hence restrictions are sometimes placed on playing on natural turf in wet weather.

Artificial turf is promoted as an all weather surface. While in some respects this is true, it ignores the fact that microplastics pollution is exacerbated from playing on synthetic fields in wet weather. This was not brought out in the Consultants report and it was not in the NSW Chief Scientists cover report but buried deeply in one of the scientific assessment appendices.

NSW CSE Hydrology report (Appendix 4): Sports clubs argue advantage of wet weather sports use, but use of synthetic turf during wet conditions has been found to exacerbate infill loss microplastic pollution and should be avoided.

“Reducing exposure during wet conditions when infill transport is highest [104, 105, 113]. Considering that the ability to play in wet conditions is a major advantage of ST fields, it is unlikely that play will be minimised when the field is wet. However, ideally maintenance should be avoided during wet conditions, and this was shown by Regnell (2018) to result in a reduction of infill material on the maintenance vehicle from 24.1 kg to 12.4 kg per brushing session”(NSW CSE report)

Recommendation 8: Consideration should be given for restriction on use of both natural turf sports fields and synthetic turf sports fields during wet weather conditions. The former to reduce damage to the surface and maintain playability, the latter to reduce exacerbating microplastics pollution to stormwater and local waterways.

End of Life/Recycling of artificial turf:

End of life is an important consideration for any synthetic turf use. The Consultants report reviews 4.3.6 End-of-life disposal on Page 50 highlighting the options:

- Separation and mechanical recycling (chemical recycling is currently under research)
- Disposal to landfill
- Incineration to produce energy.

Incineration is not an option in Victoria, and causes greenhouse gas emissions and emissions of other toxic chemicals.

An artificial Turf manufacturer is currently establishing mechanical separation AT recycling in Victoria in 2023. Sustainability Victoria has provided \$500,000 initial funding in 2022 to setup this recycling venture.

There is a question over will mechanical recycling cause further contamination given the unknown chemical cocktail nature of synthetic turf from different sources. Possible presence of PFAS & other toxic chemicals raises questions whether mechanical recycling is even feasible, given risk of furthering toxic contamination spread. Neither NSW EPA or EPA Victoria have tested fluorine content of synthetic turf fields, although the NSW EPA in the NSW CSE report did advice testing for PFAS along with other chemicals such as PAHs.

The NSW CSE report recommendations for end of life included:

R2.1 - End of Life Management Plan is needed and should be consistent with state legislation on waste, recycling and circular economy.

R2.2 - “The practice of cutting up EOL sporting fields for use in other settings should not be approved as an acceptable EOL plan”

Hybrid Turf

The consultants report outlined there were problems in use and end of life management of hybrid field surfaces. The report concluded on pg 54:

- “Complexities in relation to the recycling and sustainable end-of-life disposal of hybrid turf products limit its use in Australia.
- Local growing conditions in Merri-bek substantially limit the potential for hybrid turf to form a suitable alternative, due to its expense and lack of suitability with warm season grasses.”

The NSW CSE report in 3.3.4 Recycling methods for synthetic turf advised:

“There is not much information available about suitability or methods to recycle hybrid turf. The Review has been advised that recycling hybrid turf may be more complex in applications where natural turf is combined with synthetic materials, either by attachment to a mat or where it is in growing amongst a base of synthetic turf fibres.” - (NSW CSE report) \

End of Life disposal of use of hybrid turf needs further investigation

Recommendation 9: Any use of synthetic turf, or hybrid turf, should have an End of Life Management Plan developed and in place, which outlines costs, disposal or recycling method, and the risks and greenhouse gas emissions associated with end of life. The advice of the NSW CSE that Cutting up EOL sporting fields for use in other settings be avoided should be adopted.

The consultants report also highlighted problems with using hybrid turf, and articulated that much of the research on hybrid turf options is at present unsettled.

“Hybrid turf works ideally for use with cool season natural turf (i.e., rye grass). In Australia, we use warm season turf which is a horizontally growing grass which effectively covers the hybrid fibres rendering them useless. It will still aid profile stabilisation, but not durability.”

Background

Climate Action Merribek became initially concerned on use of Synthetic turf for sportsfields as early as the February 2018 Council meeting when Convenor John Englart asked a question during Council meeting on the urban heat impact when the Sports Surfaces Needs Analysis came before Council. That report outlined a pipeline of 8 synthetic turf projects.

The initial tender process for conversion of Hosken Reserve to a synthetic soccer pitch in 2020, without any recent engagement with the local community, produced outrage and deep community divisions, and a community campaign over the use of space at Hosken Reserve. The conversion of the sports field to artificial turf was one aspect of that campaign. It highlighted the poor governance processes of Council in failure to consider implications for other Council policies (such as Zero Carbon Merri-bek Framework and the zero waste by 2030 commitment) and need to base decision making on accurate information and in a triple bottom line evidential base.

Climate Action Merribek prepared a preliminary literature review and arguments against synthetic turf which we sent to all Councillors in March 2021. This was based on about 100 peer reviewed science papers, policy documents and consultant reports. John Englart refined this as a more [General Literature Review on Synthetic Turf](#) adding slightly more detail and references, but less Merri-bek focus, published in April 2021, and including a full [annotated bibliography](#) of all sources.

The [preliminary Literature review](#) (11 April 2021) by Climate Action Merribek argued strongly that Council needed to adopt a triple bottom line approach incorporating the social, environmental and financial impacts and benefits. That decisions needed to be supported by good evidential base. The social benefits for organised sport had been well articulated by Council and Sports Clubs. The financial and environmental assessments were sadly lacking and treated only as an after thought.

We noted in our Literature review that:

Triple Bottom line decision making has been enshrined in the Local Government Act 2020 under section 9 Overarching governance principles and supporting principles, Point (2) The following are the overarching governance principles—

(b) priority is to be given to achieving the best outcomes for the municipal community, including future generations;

(c) the economic, social and environmental sustainability of the municipal district, including mitigation and planning for climate change risks, is to be promoted;

We note that the 2012 Open Space Strategy on Synthetic turf appears not to have been adequately taken into account when considering previous decisions of council regarding use of synthetic turf for sportsfields:

Pg 23: “There has also been a shift to using artificial turf to replace natural turf, particularly for high intensity sports and social spaces (including kindergartens). Although this provides a year round surface, it is a relatively expensive option for grass replacement. The value of artificial turf needs to be weighted up with issues of high temperatures emanating from the surface, maintenance costs, change in types of injuries,

and the loss of the environmental benefits of the natural surface all need to be considered.”

pg 76. “Synthetic turf can be considered in some circumstances although should not be seen as the only alternative to dealing with difficult conditions.”

About Climate Action Merribek

We are a Merri-bek based grassroots community organisation focussed on climate advocacy to all three levels of government and also to the UNFCCC internationally.

We have been meeting and working on unceded Wurundjeri Woiwurrung country to advance climate action and environmental sustainability in Merri-bek since 2008.