C O M M U N I T Y S E R V I C E S C O M M I T T E E R E P O R T **Agenda Item 5.2**

13 May 2008

SUSTAINABLE USE OF COUNCIL'S SPORTS GROUNDS

Division Design and Urban Environment

Presenter Graham Porteous, Manager Recreation and Waterways

Purpose

1. To advise the Community Services Committee:

   1.1. on the impact regarding the provision of seasonal sport in the current climactic environment; and

   1.2. to seek approval to further investigate and commence consultation on the installation of nominated synthetic sports surfaces on Council's sports grounds.

Recommendation from Management

2. That the Community Services Committee approve:

   2.1. the information contained within this report in relation to the recent cricket season and the ongoing challenges of providing usable sports fields; and

   2.2. endorse Council Officers commencing detailed investigation and consultation on the installation of nominated synthetic sports surfaces on Council's sports grounds.

Key Issues

The 2007/2008 cricket season

3. Prior to the commencement of the 2007/2008 cricket season reduction works took place on eight of the 19 turf tables located within the City of Melbourne. All were reduced to a maximum of eight wickets per table, down from as many as 15.

4. The 2007/2008 cricket season proceeded without any major impact in relation to water saving works undertaken by Council. A delay of up to two weeks to the start of the cricket season was incurred for some affected clubs however games were scheduled away for the first few weeks of the season for affected clubs.

5. The turf table reduction works resulted in water saving of approximately three megalitres across the season.

6. Planting of warm season grasses also took place across ten sports fields. These works did not result in a direct reduction in water use as grounds were not being watered however these grounds will withstand drought conditions better in the future.

Postseason outcomes

7. Future water saving and collection measures in relation to cricket grounds could include;

    7.1. Further turf table size reductions. Currently turf tables range in size from 4-8 wickets; and

    7.2. Further line planting of warm season grass species across all City of Melbourne sports fields.

8. Under the current Stage 3A water restrictions hand watering of exempt sports surfaces, which includes turf cricket pitches, is allowed on specific days and at specific times during the week. Further reductions in the amount of water being applied to turf cricket tables would see a significant decrease in the standard of surface and could precipitate a complete failure of some or all turf tables, making them unsafe and unplayable.

9. Clubs have been unsupportive of further reductions in the quality of turf wickets through reduced watering of tables due to safety concerns. This concern was supported by Council officers and open space contractors. Clubs were somewhat supportive of further table size reductions on the basis that wicket quality did not decline.

Winter Season 2008

10. Council received applications from 43 organisations for the 2008 winter season, including community sports clubs and associations, schools and state sporting bodies. This includes seven soccer clubs who have not previously been tenants of City of Melbourne facilities. Additionally, the estimated number of weekly participants has risen from approximately 5000 in winter 2007 to over 7000 in winter 2008. Due to the limited number and condition of current sports grounds Council's sports grounds are now at almost 100% capacity in relation to both competition and training.

11. Council's historical priority has been to provide appropriate competition venues and where possible supplementary training opportunities for tenant clubs. Due to the current standard of sports grounds significant restrictions have been placed on clubs activities including:

    11.1. no pre-season training activities provided to tenant clubs on formal sports grounds;

    11.2. regular season training has been delayed to at least the week after a club's first scheduled match and in some instances to later in the season;

    11.3. when training has commenced significant time restrictions are being placed on clubs. Most clubs are receiving less that 50% of their requested training requirements and some clubs are receiving 25% or less; and

    11.4. no casual sport applications are currently being accepted.

12. Council currently has only seven lit sports fields (of a total of 42) available for training activities during the winter season catering for 43 winter sports clubs and over 7000 winter weekly participants. Further detail is contained in the background of this report.

Alternative surfaces

13. In 2005 Council commissioned a report on the viability of synthetic sports surfaces. This report was updated in February 2008. The report indicated that synthetic sports surface technology has improved markedly over the past 10 years. FIFA (Fédération Internationale de Football Association) now embraces the use of synthetic turf particularly where the maintenance and growth of natural grass is difficult. Some matches at the 2010 World Cup in South Africa are likely to be played on synthetic surfaces. Ballarat University is currently concluding a study in conjunction with AFL Victoria and Cricket Victoria regarding the use of synthetic sports surfaces for their sports.

14. A standard community level natural turf sports field (i.e. soccer pitch) can cater for approximately 14-20 hours of use per week in ideal climactic conditions. A synthetic sports field of the same size can cater for in excess of 60 hours per week.

15. Synthetic surfaces can also be used to harvest rain water with a full size synthetic soccer pitch capable of harvesting up to 3.9 ML/year that can be used to irrigate surrounding park areas, trees etc.

16. Council undertook a feasibility study in 2005 into the viability of a synthetic sports field. An updated review of the study was undertaken in 2007 and an abridged version of the feasibility study Executive Summary can be found at Appendix 1. In summary the feasibility study identified the likely business case to be as follows;

	SURFACE OPTIONS	
	NATURAL TURF	**SYNTHETIC TURF**
Construction cost	**$295,000**	**$450,000**
Annual maintenance cost	**$50,000**	**$26,000**
Surface replacement costs	**N/A-**	**$315,000**
Est. cost over 10 years	**$795,000**	**$1,025,000**
Potential annual income	**Up to $14,000**	**Up to $70,000**
Est. revenue over 10 years	**$140,000**	**$700,000**
Est. residual cost	**$655,000**	**$325,000**

17. The Darebin International Sports Centre at John Cain Memorial Park is home to Football Federation Victoria and has three FIFA 3rd generation synthetic soccer pitches and two grass pitches that were constructed in 2004. There has been extensive programming of the three pitches from 9am to 10pm seven days a week, with usage levels over 60 hours per week.

18. Council Officers have assessed potential installation options in addition to current formal sports fields. There are no areas such as schools or vacant areas of appropriate size immediately available. Further costs associated with building change rooms and other amenities would also need to be considered in these locations.

19. Council Officers are currently in discussions with VicUrban in relation to installation options in the Docklands area. These surfaces would not be of regulation size for potential seasonal sport such as soccer, rugby, AFL etc. These would however provide a valuable resource for modified competitions for corporate activities within Council's Melbourne City Sports program and for general training purposes.

Time Frame

20. Installation of a synthetic surface for a full sized soccer pitch would typically take 12 weeks. It is proposed that further detailed investigation be undertaken prior to seeking Council approval.

Relation to Council Policy

21. Council, as part of the Water Conservation Plan, has committed to an overall saving of 50% of potable water use in public open space. As part of the plan potable water was not used on sports fields across the 2007 winter and 2007/2008 summer seasons except for capital works undertaken in order to increase the prevalence of warm season grasses on targeted sports fields.

22. Council's Active Melbourne Strategy recognises that community level sport plays an integral role in encouraging participation and promoting health and well being within the community.

23. Recreation needs assessments in Carlton, North Melbourne and East Melbourne have identified community sport as an important component of local recreation requirements. Further research is being undertaken in other neighbourhoods in this financial year.

Consultation

24. Consultation with all cricket clubs affected by turf table reduction works was undertaken prior to the beginning of the 2007/2008 cricket season. All clubs supported the reduction of turf tables in order to save water. Clubs indicated they would not be comfortable with a further reduction in the size of turf tables if this would mean any decline in table quality or in a reduced amount of water being applied to turf tables due to safety concerns.

25. As part of proposed investigations into synthetic sports surfaces, community groups and sports clubs would be consulted.

Government Relations

26. As part of proposed investigations Department of Sustainability and Sport and Recreation Victoria would be consulted in relation to synthetic sports surfaces.

Finance

27. The financial implications with regard to funding synthetic or natural turf sports surface options have been noted in this report.

28. The specific environmental implications of the installation of a synthetic sports surface versus maintenance of a natural turf surface will require a technical assessment to be undertaken. Funds for this assessment are provided for in the 2007/2008 branch budget.

Legal

29. No direct legal implications arise from the recommendations of the report.

Sustainability

30. The proposed investigation into synthetic sports surfaces would include a detailed assessment of the environmental impacts, both positive and negative, of any installation.

Background

31. Community Services Committee resolved on 14 August 2007 to;

31.1. request a report to the appropriate committee, in Autumn 2008, reporting on a consultation process that evaluates;

31.1.1. the 2007/2008 cricket season;

31.1.2. possible water saving and collection measures in cricket grounds, including turf species;

31.1.3. the maintenance and standard of turf wickets, including possible provision for reduced quality turf wickets during stages of water restrictions; and

31.1.4. the number and location of cricket grounds.

32. Council currently maintains 19 turf cricket tables and associated fields and 12 synthetic cricket wickets and associated fields. Ground locations are as detailed in the table below;

Park	Turf tables	Synthetic wickets
Royal Park	10	2
Fawkner Park	5	8
Princes Park	2	0
JJ Holland Park	1	2
Shrine Reserve	1	0

33. Council's Recreation and Waterways Branch is responsible for the management of Council's community sports facilities. A key component of the Active Melbourne program is the provision of sports grounds to community sports clubs. Council has 42 designated sports grounds for seasonal and casual hire across summer and winter seasons, seven of which have training lights for winter use. Complimenting these grounds are 13 pavilions available for hire.

34. Approximately 80 community sports clubs currently utilise Council's sports grounds and facilities on a seasonal basis. These clubs represent 11 different sports. Many of the clubs have a long history of facility use with Council.

35. The traditional allocation of sports grounds for a single club during winter has included 3 nights of training and 1 day of weekend competition. This is based on the Events in Parks – Sustainability Guidelines approved by the Environment Committee in April 2007.

36. With a significant increase in participation in sports such as soccer and projected increases in population, Council will continue to have difficulties satisfying the demand for traditional sports facilities for community sports clubs. A number of solutions are proposed to manage this challenge. In particular, use of increased water recycling initiatives eg Royal Park Wetlands; use of synthetic turf surfaces which can sustain usage of up to 4 times that of natural turf; and relevant increased lighting of sports fields to share the load.

Attachment:

1. Executive Summary from "*Synthetic Sports Surface Feasibility – Planning For The Future Generations Of Sports Users"*

Executive Summary from **"Synthetic Sports Surface Feasibility – Planning for the future generations of sports users"** by Smart Connection Company, February 2008

The Project

Victoria's long standing drought has had a significant negative impact on natural turf sports surfaces and has forced all providers to closely assess programming, levels of use, management, and maintenance practices in order to balance risk against demand. Seeking a strategic and workable solution Melbourne City Council is taking a desirable approach of investigating sustainable alternatives that may also provide additional positive benefits for participation in sport and physical activity e.g. health, social, environmental, and economic.

At the time of writing this report, level 3A water restrictions have been imposed across metropolitan Melbourne. Any proposed Stage Four Water Restrictions will not allow any sports grounds in the City of Melbourne to be watered at any time with portable water. This will have a large detrimental affect on the provision of community sport as natural turf surfaces become unplayable.
The Synthetic Sports Surface Feasibility Study 2005 found the provision of a long-pile synthetic turf surface was deemed feasible for the area known as soccer #4 at Princes Park so long as the anticipated levels of use exceeded those that a natural turf surface can tolerate i.e. 25 hours per week.

Strategic Planning Context

Council's objective is to increase participation in recreation and leisure activities by a larger proportion of the population. This is to be achieved through retaining and developing existing open spaces to encourage increased use for a diversity of recreational opportunities.
In providing and managing open space, recreation and sporting opportunities, Council must balance its role as a Capital City, with providing for local users and will apply the principles of environmental sustainability.
There is a desire to provide access to open space for people from under-represented population groups and commitment to consulting with the community regarding matters of significance in parks.

The Product Options (natural & synthetic)

Water use remains the single greatest concern facing the natural turf grass industry, with pesticide and nitrate pollution also raising concern. With the current Stage 3 Water Restrictions exempt playing surfaces of sports grounds may be watered only two days per week or in line with existing alternative arrangements for Stage 3A. Other sports surfaces may not be watered, except those in line with Water Conservation Management Plans. Currently Councils can seek approval to water 1 in 4 sports grounds, under restricted conditions. Impending Stage Four Water Restrictions, as determined at the time of this report, will not allow any sports grounds to be watered at any time. This will have a large detrimental affect on the provision of community sport as natural turf surfaces become unplayable.

Planting practices have changed to incorporate a combination of warm and cool climate grass species in order to make water consumption more efficient and provide a year round cover. There have also been many advancements made in the pesticides and fertilizers used on natural turf.
The evolution of synthetic grass sports surfaces has led to the most recent, third generation products being designed to be more natural looking, and performing most closely to natural turf of

any synthetic grass products to date. However, given the relatively recent development of third generation synthetic sports surfaces (emerged in the 1990's), little independent research has been undertaken into the long term performance of the surfaces on player comfort and safety, maintenance, longevity and environmental impact.

The features of synthetic sports surfaces that make them attractive alternatives to natural turf include:

- The capacity to withstand extreme climatic conditions, including drought, poorly lit environments (e.g. enclosed stadia), etc;
- The capacity for sustained high levels of use; and,
- The requirement for less ongoing maintenance.

Further, a detailed analysis of the features of synthetic sports surfaces has ascertained that:

- Synthetic turf requires a lower investment for maintenance in time and cost than natural turf;
- Surface damage (i.e. burns or cuts) can be easily repaired;
- Due to the relatively new nature 3rd generation synthetic grass, life expectancy is difficult to predict beyond manufacturers recommendations;
- Synthetic yarns are stabilized against ultra violet radiation to minimize excessive fading;
- There are several options for line marking of synthetic surfaces which provides for some flexibility in the provision of temporary line markings;
- Portable goals are an option, where sleeves are inserted into the field for different goals and capped with carpet plugs;
- There are a number of types of granulized rubber infill used in long pile synthetic surfaces, with the more common being SBR granules manufactured from recycled tires and industrial waste rubber. Alternative infill such as EPDM granules and raw polyethylene pellets, although significantly more expensive are environmentally better in terms of heat retention and perceived concern for contaminant leaching.
- When comparing the level of utilization that a 3rd generation synthetic surface can tolerate (over 60 hours per week), with natural turf (15 to 25 hours per week, average 20 hours), one synthetic surface equates to approximately 3 natural turf surfaces. When equating this to the 10-year cost of ownership, it would cost Council $2,385,000 to provide adequate natural turf sporting areas to accommodate the same level of use a synthetic surface can accommodate at a cost of $1,025,000, with the added benefit of utilizing less space. This equates to a difference of $1,360,000 in ownership to accommodate the same level of use (i.e. the natural turf surface costs significantly more, and uses more space to accommodate the same levels of use as a synthetic surface).

Key Findings & Recommendations

In summary, this Study has found the provision of 3rd generation synthetic sports surface is deemed feasible for the replacement of natural turf across the City of Melbourne. It is important to note however, that from an economic perspective the viability of a synthetic sports surface is only achieved when the anticipated levels of use exceed those that a natural turf surface can tolerate (i.e. 25 hours per week). Otherwise, the life cycle costing of a natural turf surface are less than a synthetic grass surface, making the provision of a synthetic surface difficult to justify financially in low use areas.
To pursue the concept of a synthetic sports surface across the City, it is recommended that Council prepares a master plan for each site to undertake the detailed design and community consultation required to ascertain precise budgets, funding partners and management implications in order to be fully informed before proceeding with such a substantial project.
The more specific directions for a synthetic sports surface resulting from this Feasibility Study for consideration in a master planning process include:

- Management, operation and maintenance of the surfaces to be undertaken by Council;
- A full sized soccer pitch area is preferred;
- Alternative areas such as full cricket / AFL ovals have not been explored in this study, and if considered may require different pile lengths for synthetic surfaces to cater for the needs of various sporting codes (the needs for winter / summer sporting codes for both games and training will need to be determined case by case);
- A synthetic surface should be located next to change room facilities;
- Synthetic surfaces can be used to harvest water for the irrigation of adjacent natural turf sports surfaces;
- Temporary goals used on surfaces;
- Surfaces are laid with no line markings. The option of Velcro line insertion is recommended for synthetic surfaces that will regularly used by different sporting codes. The surfaces will still provide the option for other activities to be temporarily marked for a specific sport;
- To facilitate maximum utilization of the surface, floodlighting should be included;
- Landscaping and boot cleaning brushes;
- A transition treatment between the natural grass surrounds and synthetic surface;
- Programming of the space to encourage participation in physical activity;
- The provision of training to relevant Council / contracted staff in the maintenance work that can be undertaken; and
- Synthetic surfaces can be used to harvest gray water with a full size synthetic soccer pitch capable of harvesting enough water (3.9 ML/year) to irrigate a warm season grass AFL / cricket oval, full size warm season grass soccer pitch or cool season grass soccer pitch.

FINANCE ATTACHMENT

SUSTAINABLE USE OF COUNCIL'S SPORTS GROUNDS

The cost of further investigation and consultation on the installation of synthetic sports surfaces is provided for in the 2007/08 Budget.

Any future implementation costs will be subject to the normal budget process.

Joe Groher
Manager Financial Services

LEGAL ATTACHMENT

SUSTAINABLE USE OF COUNCIL'S SPORTS GROUNDS

No direct legal implications arise from the recommendations of the report.

The matters set out are within the functions and powers of Council under the *Local Government Act* 1989 ("the Act").

Section 3C(1) of the Act provides that:

> *"The primary objective of a Council is to endeavour to achieve the best outcomes for the local community having regard to the long term and cumulative effects of decisions."*

Section 3C(2) of the Act provides that in seeking to achieve its primary objective the Council must have regard to facilitating objectives including:

"(a) *"to promote the social, economic and environmental viability and sustainability of the municipal district…*

(c) to improve the overall quality of life of people in the local community;

(e) to ensure that services and facilities provided by the Council are accessible and equitable;"

Section 3E(1) of the Act provides that the functions of a Council include:

"(a) advocating and promoting proposals which are in the best interests of the local community;

(b) planning for and providing services and facilities for the local community;"

Kim Wood
Manager Legal Services