Collaborative Planning for Sustainable Irrigation in Marrickville

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Final Report

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Mackey Park Wetland – sports fields storage and drainage treatment system, December 2010.

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Collaborative Planning for Sustainable Irrigation in Marrickville

Project Summary

Since 2006, Marrickville Council has worked with a range of stakeholders to plan for sustainable irrigation in the Marrickville local government area through the NSW Government's Office of Environment and Heritage funded *Collaborative Planning for Sustainable Irrigation in Marrickville* project.

This project investigated the possibilities for using 'fit-for-purpose' water in Council operations by researching the feasibility of substituting potable water used for irrigating Council's parks and sports fields with water from sustainable water sources, including stormwater and recycled water.

Main outcomes of the project include:

1. Increased council capacity for sustainable irrigation, the draft *Sustainable Irrigation Plan* being integrated into Council's water strategy to investigate and implement fit-for-purpose water use.
2. Increasing numbers of informed Council and community stakeholders ready to participate in further sustainable irrigation initiatives in their areas.
3. Sustainable irrigation system at Mackey Park that applied an integrated sustainable water management approach to improve the amenity and recreational value of its sports fields for community use.

The three key outputs include:

1. Water balance and options analyses including:
   - irrigation demand studies
   - Stormwater harvesting feasibility study
   - Detailed concept plans
   - Detailed irrigation and landscape assessments
2. The draft *Sustainable Irrigation Plan*
3. Community collaboration forums

1. Background to and Objectives of the Project

The *Collaborative Planning for Sustainable Irrigation in Marrickville* project has been part of a systemic shift in water management policy and practices evolving within Marrickville Council since 2002, initiated by the Stormwater Trust funded *Urban Stormwater Integrated Management* project.

This final report for the NSW Office of Environment and Heritage (OEH) funded *Collaborative Planning for Sustainable Irrigation in Marrickville* (SIP) project presents the outcomes, milestones, outputs and key performance indicators, as determined in the Revised Business Plan 2008 (Attachment 1).

1.1 Marrickville Council's Corporate Priorities

Since 2006, Marrickville Council has undertaken two major reviews of its primary strategic planning and corporate documents.

In June 2006, Council endorsed the *Marrickville Community Plan 2025* and the Marrickville Council Strategic Plan 2006-11. Based on the results of extensive community consultation, these documents provided direction to Council's governance and operations to 2011. The SIP was then focused on Council's objective of making Marrickville a "centrepiece of inner-city ecologically sustainable development".

Over 2009-10, the *Marrickville Community Plan 2025* plan was reviewed as part of the NSW Government's new integrated planning and reporting requirements. The resultant *Our Place, Our Vision Marrickville Community Strategic Plan* covers a ten-year timeframe to 2021. It:

- identifies the community's priorities and aspirations for the future;
- includes strategies to achieve identified goals;
- addresses social, environmental, economic and civic leadership issues;
- is based on the social justice principles of equity, access, participation and rights; and
- is linked to the NSW State Plan and other relevant state and regional plans.

1.2 Marrickville Strategy for a Water Sensitive City

In line with the new strategic plan's Key Result Area 3 that aims for "A well planned, sustainable and accessible urban environment", Council has been developing its sustainable water strategy, the *Marrickville Strategy for a Water Sensitive City*, expected to be completed by September 2011. This higher-order strategy sets an overall guiding vision with clear targets for water management in the Marrickville local government area and integrates all Council's current water-related programs, including the draft Sustainable Irrigation Plan with its associated actions, Water Savings Action Plan, relevant Environmental Management Systems (EMS), subcatchment management plans, and flood mitigation plans. The water strategy will strengthen implementation of sustainable irrigation and ensure its continuation beyond the termination of this grant-funded project.

1.3 SIP Project Objectives

The SIP project investigated the strategic harvesting, transport and storage of stormwater, rainwater and recycled wastewater for irrigation purposes, addressing the following objectives:

1. Develop and implement a Sustainable Irrigation Plan for Council's playing fields in partnership with the community;
2. Build capacity within Council and the community for planning and implementing sustainability;

3. Provide a demonstration of best practice sustainable water management for the Marrickville community through community partnerships; and
4. Provide sound information and evidence upon which to base future funding requirements, including current and projected costs for stormwater management infrastructure.

To develop an advanced and integrated system of harvesting, storage and transport of water, the project carried out a thorough analysis of all options and possible technological solutions. This was achieved through an iterative process with three main stages, revisited as new opportunities arose throughout the progress of SIP:

- Stage 1 - Water balance and options analysis
- Stage 2 - Community collaboration
- Stage 3 - Collate data and review

As reported previously, and forming the rationale for review of the Business Plan in 2008, a large proportion of Marrickville's irrigation needs for the Cooks River parks was to be met by the Recycled Water Scheme, Discovery Point, Rockdale; however, this was delayed for a period resulting in the focus and activities of this project being broadened to include investigating opportunities for stormwater harvesting across Marrickville LGA. This better achieves the overall objectives of SIP as it incorporates all Council's ten irrigated sports fields (Figure 1).

Figure 1: Marrickville Council's 10 irrigated sports fields – four sports fields being along the Cooks River.

2. Outcomes

The outcomes of the project compared to those anticipated at 2.3 of the *Revised Business Plan*

Indicator	Measurement	Outcome
Governance		
*Formal process in place to ensure maintenance of Council's collaborative approach to sustainable irrigation.	SIP incorporated into Council strategic planning system.	The draft Sustainable Irrigation Plan (SIP) (Attachment 2) is the plan for sustainable irrigation of Marrickville Council's parks and sports fields. It supports the *Marrickville Strategy for a Water Sensitive City*, currently a working draft. Implementation of the SIP is a specific action under Strategy 2 to," Reduce the use of potable water in homes, businesses, public spaces, and Council facilities and operations."
Environment / Urban Water Management		
Reduction in potable water use	A reduction in potable water usage as shown on quarterly water bills.	In the SIP period, two park irrigation upgrades occurred at Mackey Park and Arlington Reserve. The Mackey Park upgrade is significantly reducing use of potable water. Concept designs for stormwater harvesting at Arlington reserve form the basis for the design of and implementation of schemes to use non-potable water sources for irrigation. The new irrigation fittings and control systems will improve the efficiency of irrigation. These projects are in the commissioning phase with the use of potable water and the overall efficiency of the irrigation systems to be subject to ongoing review and monitoring.
Reductions in stormwater volumes.	Reductions based on total volume of stormwater harvested.	The Mackey Park system of two 75kL tanks has stormwater harvesting capacity of 150kL. Stormwater harvesting concepts and designs have also been progressed for Arlington Reserve and Marrickville / Henson Parks with funding opportunities to further progress and implement these projects being evaluated.
Improvements in stormwater quality, e.g. litter, organic matter, sediment and nutrients	MUSIC modelling to provide comparative data and estimate impacts of the projects on water quality.	A water quality monitoring program is in development. Preliminary estimates of the proposed Marrickville and Henson Park system's CDS Unit is to remove on implementation: • Gross Pollutants (>5mm) 98% • Suspended Solids (TSS) 70% (>75mg/L) • Total Phosphorous (TP) 30% • Sediments>0.215mm 95%

		• Suspended Solids 0-75 micron 56% • Heavy Metals 80% • Oils and Grease 82-94%
Decreased stress on the Cooks River leading to improvement in aquatic and riparian habitat values.	Increasing numbers of species identified in annual Streamwatch water bug survey.	Council has implemented a more scientifically rigorous monitoring program through data collection as part of the Riverscience – Cooks River Ecological Monitoring Program. Since 2005, Council has annually monitored the macroinvertebrates in the sediment as an indicator of overall health of the Cooks River, and results so far indicate a slight increase in number and diversity.
Reductions in fertiliser requirements for stormwater irrigated playing fields.	Increasing health of turf surfaces and corresponding decrease in the amounts of fertilisers applied.	Sports fields at Arlington Reserve and Mackey Park now have a greater carrying capacity and with greater grass cover through winter and better recovery in summer, reducing requirements for fertiliser.
Social		
Increased amenity and recreational value of playing fields for community use.	Increased health of turf surfaces and reduction in trip hazards.	Upgrades at Mackey Park and Arlington Reserve have significantly improved stability of sports surface; increased grass cover and control of moisture content of soil will reduce likelihood of injury playing sports.
Provision of a demonstration project with value as model of best practice sustainable irrigation management.	Tours, workshops, articles and discussion generated by the project. Interest by other councils. Conference presentations.	The Discovery Point Recycled Water Scheme continues to be a significant demonstration project for the ability to reuse waste water for irrigation. Despite delays in delivery of the project, Council anticipates that once implemented the project will be an excellent model of best practice sustainable irrigation management. Design development of stormwater harvesting schemes at Arlington Reserve and Marrickville / Henson Parks has sought to use best practice methodologies and pioneer the use of stormwater for irrigation in the Marrickville LGA. The Mackey Park upgrade included the first wetland system implemented in the Marrickville LGA to treat and also store sports field runoff. It has featured in media (Attachments 5-8). The learnings from this project are significant and to date, the Mackey Park project has been reviewed by one other Council, and it has been the subject of: • a Ryde TAFE field trip on sports ground construction for 4 classes, • Council's WSUD tours, • Cooks River Foreshores Working Group tour for Wollongong Uni

		Students, and • included in Riverlife tours.
Opportunities for the community to participate in planning for sustainability and to build a partnership with Council that will form a foundation for long-term progress towards sustainability.	Increased community involvement in the community collaboration process and local action for sustainability, e.g. Sustainable Water Working Group, Water Ambassadors program etc.	Council now has database of ~250 interested stakeholders looking at fit-for-purpose water use in their areas, including: the Sports Advisory Panel, Sports and recreation clubs and associations, neighbourhood residents, 4 subcatchment working groups, and other parks and ovals users, the Social Housing Partnership, Council Committees (particularly the Environment, Cooks River, and Multicultural advisory committees and Aboriginal Consultative Committee).
Better health of sports grounds playing surface.	Reduction in the number of injuries and lost playing time due to poor quality of the playing surface.	The improved stability of sports surface, increased grass cover and control of moisture content of soil reduces the likelihood of injury playing sports. General feedback from sports groups to date has been positive.
Economic		
Avoiding the loss of playing surfaces that are costly to replace.	The health of playing surfaces improves.	At this early stage, considerably less turf replacement has been required due to the improved carrying capacity of playing surface.
Reducing the cost of irrigation water.	A reduction in the usage of potable water for irrigation.	The majority of irrigation at Mackey is from non potable sources and will be virtually totally from non-potable sources when Discovery Point Recycled Water Scheme comes online. The use of potable water across all of Council's sports fields and particularly at the recently upgraded fields will be subject to ongoing monitoring and review to evaluate reductions in potable water use and ensure irrigation efficiency is being achieved.
Potential to partner with other organisations for Council to on-sell the non-potable water for uses outside Marrickville Council's needs.	Development of an agreement or agreements with other organisations or entities for the use of non-potable water collected by Marrickville Council through this Project.	Council is currently cooperating with the Council of the City of Sydney regarding cross boundary opportunities for the supply and demand of non-potable sources, particularly stormwater, to integrate with the City's Decentralised Water Plan and Marrickville Council's Strategy for a Water Sensitive City

*Not an outcome identified in the Revised Business Plan (2008)

3. Outputs

In summary, the high level SIP outputs from the Revised Business Plan (2008) delivered by the project include:

- investigation into a range of non-potable water sources for irrigation, including, recycled water, stormwater harvesting, sewer mining, and groundwater harvesting (details reported previously);
- new protocols (the draft Sustainable Irrigation Plan, Attachment 2) for irrigating parks and ovals to maximise the use of non-potable water;
- community collaboration forums (details reported previously);
- identification of training and documentation needs for Council staff to maintain and understand integrated urban water management, including the new irrigation regimes; (Done through Cities as Water Supply Research Partnership's (Monash University) Council capacity analysis for Integrated Urban Water Management staff survey, workshops and report recommendations);
- investigation of a water quality monitoring program to provide information on performance of any water treatment systems; (in progress);
- ongoing development of subcatchment specific action plans (4 subcatchment plans completed, 6 underway);
- communications plans for internal and external stakeholders (reported previously - see Attachment 9 as example); and
- a strategy and action plan for engaging marginalised communities in the collaborative planning process (through Social Housing Partnership and Multicultural Committee, reported previously).

3.1 Milestones

Achievement of milestones and activities planned in the Revised Business Plan (2008) for the entire project to 31 March 2011.

Milestone/Activities	Relevant Project Objective	Responsibility	Due date	Status	Comments
Recruitment of part time project officer	Officer multi-skilled / innovative	Project managers	July 07/May 09	Completed	Engineer position still vacant.
Completion of detailed staging plan	Staging is achievable / flexible	Engineering Services	Aug 07	Completed	
Submission of progress report	Report refines desired outcomes	USWIM & Project coordinators	Sep 07	Completed	
Engagement of consultants for stage one works – water balance analysis	Consultants have experience with sustainability and working with new technologies	Project Managers	Oct 07	Completed	Revisited 2010
Development of Subcatchment profiles	Better understanding of potentials based on data / expert guidance	Project Officer Engineering and USWIM	Dec 07	Ongoing	4 subcatchments completed. 6 subcatchments in Marrickville Valley underway.
Submission of progress report	Report refines desired outcomes	USWIM & Project Managers	Dec 07	Completed	
Completion of identified stage one works – water balance and options analysis	Better understanding of potentials based on sound data / expert guidance	Engineering Services	March 08	Completed	Revisited for all sports fields.

Submission of progress report	Report refines desired outcomes	USWIM & Project coordinators	March 08	Completed	
Publicity of community engagement	Materials distributed / media published	Project Coordinator	Sept 2008	Completed	The next stage of stormwater harvesting project included further community collaboration.
Development of community engagement strategy	Strategy maximises ongoing / active participation by a range of stakeholder	Project Coordinator	April 08	Completed	Revisited for sports fields away from the Cooks River in 2009-10.
Publicity of community engagement	Materials distributed / media published	Project Coordinator	May 08	Completed	The next stage of stormwater harvesting project included further community collaboration.
Commencement stage two works – community collaboration	No. and diversity of stakeholders, level of involvement.	USWIM & Project coordinators	June 08	Completed	The next stage of stormwater harvesting project included further community collaboration.
Stakeholders / partners forum	Satisfaction by all stakeholders in the process, desire for ongoing involvement in this and other sustainability projects	Project Coordinator	Oct 2008	Completed	The next stage of stormwater harvesting project included further community collaboration.
TAP Project Workshop	No. and diversity of participants, data guiding art and landscaping design	Project Coordinator	Dec 2008	Completed	
Completion of stage two works – community engagement and consultation	Number and diversity of stakeholders, quality of input, level of involvement in activities / communications	Project Coordinator	Dec 2008	Completed	First stage for Recycled Water Scheme was completed. The next stage of stormwater harvesting project included further community collaboration.
Submission of draft Visual and Landscape Assessment of the Discovery Point and Cooks River Recycled Water Scheme	Report site analysis, evaluation of options and preferred site locations, mitigation strategies and visual assessment in line with community and Council expectations identified through TAP	Project Officer, Engineering and Water & Catchments Coordinator (WCC)	March 2009	Completed	The information relating to Mackey Park was used (September 2010). The document will be reassessed once Discovery Point has completed the final pipeline route design.
Submission of progress report	Report refines desired outcomes	WCC and Project Coordinator	31 March 2009	Completed	
Review of community collaboration planning. Any required adjustments made.	Review produces a refined community collaboration timeline and framework	WCC and Project Coordinator	March 2009	Completed	Additional community collaboration timelines and frameworks were completed for sports fields away from the Cooks River. Collaborative planning now integral to SIP methodology

Submission of progress report	Report refines desired outcomes	Project Coordinator	31 Sept 2009	Completed	
Publicity regarding launch	Quality and quantity of media coverage, number of inquiries generated, flow-on participation in other sustainability projects	Project Coordinator	Jan 2010	Deferred	The 'strategy' is now a draft plan to be integrated with the *Marrickville Strategy for a Water Sensitive City*. It will be launched with the strategy and when on-ground works are imminent.
Official launch	Strong attendance by all stakeholders and media representatives	All stakeholders	Feb 2010	Deferred	
Submission of progress report	Report refines desired outcomes	Project Coordinator	31 March 2010	Completed	
Presentation of project outcomes to relevant industry conference	Learnings shared with colleagues	WCC and Project Coordinator	April 2010	Ongoing	Currently identifying appropriate conferences for after water strategy adoption.
Submission of final report	Successful implementation of project and achievement of all outcomes	WCC	31st June 2010	Completed	This is the final report showing most outcomes achieved or well in progress to achievement.

3.2 Outputs

The three key outputs of the Collaborative Planning for Sustainable irrigation in Marrickville are 1) the detailed water balance and options analyses; 2) Sustainable Irrigation Plan; and 3) the community collaboration forums.

3.2.1 Water balance and options analyses

The investigation into non-potable water sources for irrigation included recycled water, stormwater harvesting, sewer mining, and groundwater harvesting included irrigation demand studies, stormwater harvesting feasibility studies, design concepts, detailed design and implementation of on-ground works at Mackey Park and Arlington Reserve.

a. **Irrigation demand studies**:
Initially demand studies (available on request) were carried out by URS in 2008 for all parks and sports fields along the Cooks River, including:

- Mackey Park;
- Steel Park;
- H.J. Mahoney Reserve;
- Newtown Jets Bowling Club;
- Concordia Club;
- Tempe Reserve;
- Tempe Golf Driving Range;
- Dog off the leash and adjacent area near the golf driving range; and
- Tempe ponds area.

A second report *Soil and Drainage Assessment of Tempe Playing Fields* by AgEnviro was done in June 2009 (available on request). The report identified that some works may be needed to be carried out to improve the condition of the soil at the playing fields to render them suitable for irrigation by recycled water.

Figure 2: Aerial Photo of Tempe playing fields (blue).

Parks away from the Cooks River
Since September 2009, SIP focused on investigating stormwater capture and treatment for irrigation. As part of this process, irrigation requirements were included in the consultancy brief for stormwater harvesting opportunities at sports fields away from the Cooks River (detailed below). These sports fields, originally not considered in the SIP, have now had their irrigation demands identified.

b. Stormwater Harvesting across Marrickville LGA

As reported previously, the Business Plan for the *Collaborative Planning for Sustainable Irrigation in Marrickville* project was revised in 2008 to focus on the *Riverside Parks Recycled Water Scheme*. However, due to delays, from mid 2009 the plan was expanded to include stormwater harvesting to provide the water supply for all the sports fields in the local government area managed by Council.

Parks and Ovals away from the Cooks River

Feasibility study of five sites
In October 2009, a project looking into stormwater harvesting and reuse for off-river parks commenced with the objectives to use current best practice to investigate the feasibility of using stormwater as a source of supplementary irrigation water for five major sports fields located away from the Cooks River. It was carried out in two phases:

- Phase 1 – preliminary screening to identify the preferred site for implementation (completed).
- Phase 2 – subject to the findings in Phase 1, preparation of a concept design and cost estimates for the preferred site (report currently subject to review and finalisation).

Marrickville / Henson Parks project
The March 2010 feasibility study by Storm Consulting (available on request) found that while all sites would be suitable for stormwater harvesting, a combined Marrickville Park and Henson Park option represented the most cost effective project. Council then further investigated and developed designs for the Marrickville Park and Henson Park project.

Results of the Marrickville and Henson Parks Water Balance Study (available on request) show:

- The proposed stormwater reuse scheme would harvest runoff from a 35 ha catchment.
- The 35 ha catchment gives a total average annual runoff of 245 ML/yr.
- The stormwater is supplied by gravity GPT and storage
- The total irrigation demand is 19.8ML/yr (approx. 6ML/ha/yr over 3.3ha of oval surface).
- Total irrigation demand is 8% of the total average annual runoff.

The results from the water balance model show that with a 100L/s off-take and 0.75ML storage 15.8ML is harvested (6.5% of runoff) for reuse i.e. 80% stormwater yield or, in comparison, a 50L/s off-take with 1ML storage for the same yield

Council determined that an off-take design flow of 100l/s with potential for a number of storage options to be the best scenario.

The Phase 2 concept designs for a combined stormwater harvesting and reuse scheme to irrigate Marrickville and Henson Parks sports fields designed for the target reliability of supply suggested in the feasibility study (80% of total annual demand). The investigation and design included:

1. Sizing the scheme
2. Stormwater treatment process and general arrangements

3. Design and control systems
4. Cost estimates

Collaboration with the clubs, local residents and other stage holders occurred early in the planning to feed into the concepts with the preliminary concept designs (Attachments 10-12) used for the community engagement. Preliminary geotechnical and risk assessments were also undertaken.

Following from the feasibility study, Council further developed design options for stormwater harvesting at Arlington Reserve with reference to the modelling conducted by the consultants and specific on site investigations. Assessment of the concept design options and a detailed design process has commenced. This includes monitoring of base flows, stormwater flows and water quality and assessment of irrigation and catchment management benefits.

Irrigation and Landscape Evaluation Project (ILEP)
In April 2010, Marrickville Council provided an Expression of Interest (EOI) to Sydney Water for its Irrigation and Landscape Efficiency Project (ILEP) project, selecting Arlington Reserve and Camperdown Park as sites that would benefit. Council was accepted into the project in May 2010 and the project commenced with the assistance of Sydney Water's consultants, URS.

The Stage One phase of the project included an assessment of potential efficiencies at Arlington Reserve and Camperdown Park. The assessment involved detailed review of the existing turf condition, topsoil and soil composition, moisture content and infiltration rate, and an irrigation audit. From this assessment a series of recommendations were developed for each of the parks.

The Stage Two phase of the project involved implementation of improvement works at Arlington Reserve. These works included regarding, subsurface drainage, new irrigation, turfing and a new central irrigation control system. These works were completed in February 2011. Stage Three of the project will determine the success of the field refurbishment works and outline the water savings achieved.

Funding opportunities to implement recommendations for Camperdown Park continue to be explored. Recurrent maintenance tasks such as field topdressing have been adjusted to reflect the recommendations arising from the Stage One assessment.

<u>Mackey Park on Cooks River</u>
Mackey Park is one of the riverside parks identified in the *Collaborative Planning for Sustainable Irrigation Project* along the Cooks River. The park has been the subject of continuing collaborative work within Council and with stakeholders from early 2008 associated with the Discovery Point Recycled Water Scheme that will bring treated sewerage from the development in Rockdale to parks along the Cooks River.

Marrickville Council received funding of $2.265 million in March 2009 under the Australian Government's *Regional and Local Community Infrastructure Program – Strategic Projects* (RLCIP-SP) to upgrade Mackey Park in collaboration with community stakeholders, with Council contributing $835,000 toward the project. The works included an upgrade of the existing playground and picnic area and reconstruction and extension of the sports playing fields, including new field drainage into the wetland system and irrigation system.

The SIP has funded the collaborative engagement and contributed to associated studies including the Masterplan for the refurbishment of Mackey Park, the irrigation demand study by URS in 2008, the further irrigation study by Total Irrigation Designers for Mackey Park in June 2009 (reported previously and available on request).

As a result of SIP research and engagement and the Mackey Park upgrade, two tanks were installed in September 2010 (Figures 3, 4 and 5) rather than the single storage originally proposed to allow flexibility with options for water storage from other sources and further public art opportunities.

Figure 3: The two 75 kilolitre tanks at Mackey Park installed September 2010.

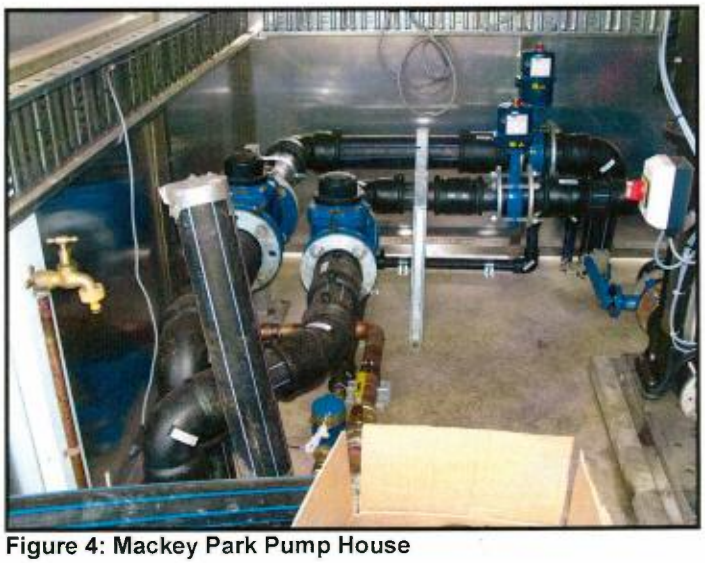

Figure 4: Mackey Park Pump House

Figure 5: Balance pipe and control for Mackey Park tanks, December 2010.

Soil tests carried out in 2009 as part of the upgrade revealed contamination with high levels of ammonia, heavy metals (nickel, zinc, copper and cadmium) and Polycyclic aromatic hydrocarbons. This led to rethinking the design of the upgrade in order to address the contamination. The feasibility study (available on request) identified that a constructed wetland was capable of treating site groundwater and drainage water to meet typical discharge or reuse (irrigation) requirements.

After considering a number of design options, Marrickville Council constructed the environmentally sensitive management system for Mackey Park including the wetland, designed to reduce contaminant loads and allow for irrigation using reclaimed stormwater. This project was outside the scope of works funded by the RLCIP-SP Federal grant for Mackey Park, but was incorporated into the works program to address contaminations issues and concurrently meet the aims of SIP.

With approval from the Trust in January 2001, the SIP contributed $33,000 to the construction of the wetland to treat subsoil drainage and surface runoff, and the water recycling and storage system.

Figure 6: Mackey Park Wetland December 2010.

Figure 7: Mackey Park Wetland December 2010.

Figure 8: Mackey park pump house and irrigation controller, December 2010.

Figure 9: Mackey Park Wetland Media Filter

The reopening of Mackey Park following its upgrade attracted significant promotion and publicity, as seen in Attachments 5 - 8.

The system at Mackey Park has achieved its aims to:

- improve stormwater and runoff to achieve sustainable water quality and conservation outcomes in the Cooks River Catchment;
- build flexibility into source of irrigation for Mackey Park; and
- improve usability of Mackey Park.

3.2.2 The Sustainable Irrigation Plan

The Draft *Sustainable Irrigation Plan* (Attachment 2) provides a framework for the sustainable management of water used in Council's assets, including the irrigation of sports fields to

maximise the use of non-potable water. Since 2007, the draft Sustainable Irrigation Plan has evolved to meet the various sustainable water management aims outlined in strategic planning documents relevant to the Marrickville LGA. These include the two most recent Marrickville community strategic plans, the 2010 Metropolitan Water Plan and water quality objectives of the *Botany Bay Water Quality Improvement Project* in relation to the Cooks River.

The 2010 Marrickville strategic plan's Key Result Area 3 aims for "A well planned, sustainable and accessible urban environment". The Sustainable Irrigation Plan is being integrated into Marrickville's sustainable water strategy, the *Marrickville Strategy for a Water Sensitive City*, as a specific action to be implemented. The strategy is currently being developed, expected to be completed by September 2011.

The implementation of the Sustainable Irrigation Plan will reinforce the collaborative approach developed through the SIP to planning, design and implementation, drawing on internal and external stakeholders at the relevant stages of projects.

Secured Funding
Through the work of the SIP and subcatchment planning, the case for investigating stormwater harvesting in Marrickville became recognised, increasing impetus. As a result, in December 2009, the internal IUWM Group of Council's executive and senior managers agreed to dedicate minimum annual funding for stormwater harvesting, successfully securing funding from the Marrickville Stormwater Management Service Charge for the next four years, as shown in the table below.

	2010/11	2011/12	2012/13	2013/14	Responsible Council section
Detailed investigation and Concept design for SIP	$50k				Infrastructure Services / Environmental Services
Funds to go to Stormwater Reserve for construction in 2011/12 and 2013/14		$100k		$223K	Infrastructure Services / Environmental Services

3.2.3 Community collaboration forums

The collaborative planning aspect of the SIP project has involved Council partnering with the community and other stakeholders in decision making, sharing ideas and information, and identifying and developing preferred solutions. The SIP's project team, mainly from two Council directorates, Planning and Environmental Services, and Infrastructure Services, participated in the collaborative forums with managers participating at the forums.

The community collaboration has occurred in two parts:

1. Tank Art Project for the Discovery Point Recycled Water Scheme (TAP)

The Tank Art Project (TAP) collaboratively developed and agreed how each identified tank site will be integrated into the parks. In 2008, Mothers Art public art consultancy was engaged to work alongside KIAH Infranet landscape architects and workshop participants to incorporate public art into landscape treatments in the overall designs. Community engagement included:

- Talking with, and inviting all sporting clubs using the parks and other clubs and venues along the Cooks River to the design workshop;
- Presenting information on the project to community forums and community groups including the Illawarra Road Sustainable Water Working Group and the Council run Sports Forum;
- Inviting all residents potentially affected by tank installation to the design workshop; and
- Installing advertising in the parks to encourage casual users of the parks to come to the design workshop and/or contact Council about the project

The design workshop in December 2008 was attended by local residents, key stakeholders and representatives from the Recycled Water Scheme Discovery Point Pty Ltd. Opportunities and constraints were considered at each preferred tank location, including visual impacts, trees and underground utilities. Workshop participants took these into account to determine exactly where the tanks can best be sited and how cost-effective mitigation options can be implemented.

Figure 10: One group of community members discussing ideas for designs of water storage tanks Tank Design Workshop, December 2008

The outcomes of these workshops were used by KIAH Infranet and public artist to work up mitigation options to a conceptual level of detail. Tank locations and recommended options are included in the draft report submitted by KIAH Infranet in March 2009 (reported previously and available on request).

At the subsequent Information Day in June 2009 at Mackey Park, local community and sports groups were invited to discuss options and provide comments in the context of the Mackey Park refurbishment. Based on this information and Council staff input, two tanks were located in the community preferred site.

2. Stormwater Harvesting Opportunities - parks away from the Cooks River.

The community collaboration for this phase of the project involved asking all sports groups about their current and proposed future use of the sites and initial thoughts on stormwater harvesting. All responses were positive, with most groups asking only to be updated about the progress of the projects.

The design process focusing on Marrickville and Henson Parks further expanded the community collaboration with the sports groups and the neighbourhood residents and community groups in the nearby area. The three major stages of community collaboration involved:

- Contacting the community stakeholders, identifying new ones, and determining their level of participation;
- Providing opportunities for input into the concept design; and
- Opportunity to provide feedback at the draft stage of the report.

The methodology for collaboration included emails, phone calls, signage, letter box drops (Attachment 13) of the neighbourhood, press release and an information day held at Marrickville Park on 11 September 2010.

Community and sports groups were invited to comment on preliminary designs and speak with Council and Storm Consultancy staff. All comments received about the stormwater harvesting design were positive (summary available on request). They all indicated they were satisfied to be kept informed of developments.

3. Sports Advisory Panel

Council has established a regular forum for key sports groups to discuss their future needs with Council. This forum enables active discussion and consultation for future projects as well as redevelopment proposals. It is an important forum to discuss SIP projects and engage with local groups.

3.3 Key Performance Indicators

The KPIs are reported against the Program Measures set out at 5.3 in the Revised Business Plan below.

Outcome	Indicator	Monitoring	Results
Ultimate Outcome (2010/11)			
Improve the quality of stormwater runoff entering the Cooks River.	The quality of the harvested water indicates that nutrients are being removed from the system.	Analysis of stormwater modelling.	Mackey Park - Two reports on water quality tests in January and March 2011 inconclusive, so now being interpreted by Dragonfly expert consultants, results pending.
		Analysis of River Science monitoring data.	Riverscience results between 2006 and 2010 so far indicate a slight increase in number and diversity of macroinvertebrates in the Cooks River.
Intermediate Outcomes (2009/10)			
Decrease Council's potable water use for irrigation of parks and sports fields.	Substitute for potable water indicates reduced overall consumption.	Sydney Water quarterly water use accounts.	In the SIP period, two park irrigation upgrades commencing in 2010 occurred at Mackey Park and Arlington Reserve. The Mackey Park upgrade is significantly reducing use of potable water. Concept designs for stormwater harvesting at Arlington reserve form the basis for the design of and implementation of schemes to use non-potable water sources for irrigation. The new irrigation fittings and control systems will improve the efficiency of irrigation. These projects are in the commissioning phase with the use of potable water and the overall efficiency of the irrigation systems to be subject to ongoing review and monitoring.
Build capacity within Council to implement Water Sensitive Urban Design.	Feedback from Council staff on skills and experience developed during project implementation.	Staff questionnaire feedback.	Council capacity analysis for IUWM, part of the Cities as Water Supply Research Partnership (Monash University) staff survey in 2009/10 including interviews and workshops, led to a report with recommendations now forming part of the draft Marrickville Strategy for a Water Sensitive City.
	Number of training sessions and range of attendees.	Increased number of WSUD project elements managed in-	Council constructed a range of WSUD projects in 2009/10 including 3 rain gardens, and bioswales incorporated Waterplay Park at Steel Park, 3 rain

		house.	gardens in Marrickville South and Camperdown, harvested rainwater at the Annette Kellerman Aquatic Centre, and Herb greedy Hall.
Immediate Outcomes (2008/09)			
Reduce quantity of stormwater run-off leaving the site.	Water is being harvested through the system and is thus not entering the river as polluted run-off.	Kilolitres of harvested stormwater and wastewater for use each year.	Implemented in 2010/11, the Mackey Park system of two 75kL tanks has stormwater harvesting capacity of 150kL. Stormwater harvesting concepts and designs have also been progressed for Arlington Reserve and Marrickville / Henson Parks with funding opportunities to further progress and implement these projects being evaluated.
Promote awareness, knowledge and understanding about WSUD.	Tours conducted by Council at the site. Interpretive signage. Written 'case study' published on website / other publications.	Tours conducted. Written material published, signage	The Mackey Park upgrade included the first wetland system implemented in the Marrickville LGA to treat and also store sports field runoff. It has featured in media (Attachments 5-8). The learnings from this project are significant and to date, the Mackey Park project has been reviewed by one other Council, and it has been the subject of: • a Ryde TAFE field trip on sports ground construction for 4 classes, • Council's WSUD tours, • Cooks River Foreshores Working Group tour for Wollongong Uni Students, and • included in Riverlife tours. See attachments 5-8;
Construction completed according to schedule.	Project plan and timeline provides an indicator of efficiency of construction progress.	Number of days behind or ahead of schedule.	Discovery Point Recycled Water Scheme continues to be behind schedule. In 2009, SIP redirected to other sources for irrigating all its parks and sports fields, particularly stormwater harvesting for irrigation to manage own assets. Nct originally part of SIP, Mackey completed in 2010/11. Arlington, and Marrickville / Henson systems to be implemented when funding secured.

4. Methodology

The methodology for the Collaborative Planning for Sustainable Irrigation as outlined in the Revised Business Plan 2008 involved three stages. The iterative process, resulting from the change of focus away from the Discovery point Recycled Water Scheme, meant the stages were revisited as the project evolved to take advantage of opportunities, such as the Federal Government stimulus grants. The stages included:

Stage 1: Water Balance Options and Analysis

For each sports field, information gathering and data collection included physical, historical, heritage, organisational, and social information. Identifying future funding to be allocated to the sports fields (including upgrades and grant applications) was also carried out.

Stage 2: Community Collaboration

The methodology of this project has been based on IAP2's Public Participation Spectrum (http://www.iap2.org.au/sitebuilder/resources/knowledge/asset/files/36/iap2spectrum.pdf). This spectrum provides a clear framework on the different levels of participation and examples of communication methods. This spectrum has been used both internally and externally with Council staff, stakeholders and community. The approaches were selected to be appropriate to the particular stakeholder and stage of collaboration.

Council's Infrastructure Services section has a Community Consultation Policy and Guidelines (available on request) sets out minimum standards and provides Infrastructure Services staff guidance on the process of community engagement and communication. Collaborative processes used for the SIP met with and went beyond the requirements of the guidelines.

Stage 3: Collate data and review

To assist with prioritisation of sites for sustainable irrigation projects, a prioritisation table 'Matrix', was developed (reported previously and available on request). It lists the ten sports fields that Marrickville Council irrigates. Each sports field has information on site information, water demand, funding sources, plans of management and related management documents, collaboration opportunities (primary stakeholders), future opportunities, and its priority for project implementation.

This flexible approach allows for information to be continually added and opportunities to be revisited. This data is used to investigate possible projects for irrigating sports fields. The Matrix also identifies possible partnerships to provide non-potable water for other organisations, councils and businesses. The Matrix will continually inform Council's SIP, once adopted.

5. Issues, changes and opportunities

5.1 Issues

Internal capacity for collaborative planning for IUWM

The collaborative planning aspect of the Collaborative Planning for Sustainable Irrigation in Marrickville (SIP) project has involved Council partnering with the community and other stakeholders in decision making, sharing ideas and information, and identifying and developing preferred solutions. The SIP project had its dedicated project team working across Council, mainly from two directorates, Planning and Environmental Services, and Infrastructure Services.

While SIP followed a collaborative approach, insufficient experience to this approach across the whole Council for parks and irrigation projects has meant that the approach has depended on a few internal 'champions'. Implementation has therefore been primarily driven by a section that does not manage Council assets.

However, this is being addressed. The Council-wide capacity analysis for IUWM in 2009/10, part of the Cities as Water Supply Research Partnership (Monash University), included two staff surveys, interviews of the members of the IUWM Group and other relevant staff, and two workshops. The report findings led to recommendations designed improve planning and technical skills, and is now a separate strategy and action plan in the working draft of the Marrickville Strategy for a Water Sensitive City.

The recommendations also informed the development of an internal training program on collaborative planning that is earmarked to be part of Council's organisation-wide training program for sustainability, currently being developed. This program will develop modules tailored to achieve the outcomes of the Marrickville Community Strategic Plan and individual positions.

Technical
The contamination found at Mackey Park in 2009 ironically led to a better sustainable water management outcome with the identification of the wetland as a remedial action and storage system.

5.2 Changes

Preliminary investigation into sourcing non-potable water from groundwater and sewer mining indicated that these methods were cost prohibitive considering:

- the amounts of water available,
- the areas from where the water can be sourced, and
- the amount of infrastructure required to capture, store and distribute the water.

Additionally, it was initially expected that much of Council's Cooks River parks irrigation needs would be met through the Recycled Water Scheme from the Discovery Point residential development. However, due to significant delays to the recycling plant, other opportunities for water sources were identified.

Community collaboration and investigations continue to focus on stormwater harvesting and irrigation efficiencies. While the possibilities for sewer mining and groundwater extraction are not being pursued at this stage, they remain an option for the SIP.

5.3 Opportunities

a. *Project Management*

- The cross-sectional, multidisciplinary SIP team will continue to meet regularly and is now an established way of working, an approach being emulated for other projects.
- The prioritisation table of opportunities for irrigation at Council parks and sports fields ('Matrix') provides a central data base for all the SIP team and others to reference.
- The Sustainable Irrigation strategy is being integrated into Council's LGA-wide Strategy for a Water Sensitive City and linked to Council's Water Savings Action Plan.
- A training plan for collaborative planning will support the implementation of programs under the draft *Strategy for a Water Sensitive City*.

b. *Stormwater Harvesting*

- Detailed concepts for on ground works are available to secure funding for works at Arlington reserve and imminently, for the Marrickville / Henson parks project.
- The stormwater harvesting potential of sports fields located away from Cooks River have been prioritised to take advantage of funding and other opportunities as they arise.
- Current partnerships with Sydney Water, local organisations, neighbouring councils and businesses continue to strengthen;
- Stormwater harvesting has secured funding from the Stormwater Management Service Charge, providing a source of support funding for grants and sponsors;

c. *Recycled Water Scheme*

- The Discovery Point Recycled Water Scheme once online is expected to provide an additional source of water for parks and sports fields along Cooks River.

d. *Collaboration*

- Council is currently cooperating with the Council of the City of Sydney in relation to its *Decentralised Water Masterplan. C*ross boundary opportunities for the supply and demand of non-potable sources are being investigated to integrate with the City's Plan and Marrickville Council's draft *Strategy for a Water Sensitive City.*

5. Financial report

The final financial report (Attachment 3) shows the variations that occurred from the original budget proposed in 2006. Variations are due to the project officer position being vacant (reported previously), and changes in the project direction, undertaken with approval from the Trust.

FINAL FINANCIAL REPORT - ENVIRONMENTAL TRUST GRANTS - 2006 ONWARDS										
GRANTEE ORGANISATION NAME:	Marrickville Council						GRANT NO:		2006/USM/0064	
	TOTAL APPROVED PROJECT BUDGET			ACTUAL EXPENDITURE			VARIATION			
	OTHER SOURCES FUNDING	TOTAL TRUST GRANT	WHOLE PROJECT BUDGET	OTHER SOURCES FUNDING	TOTAL TRUST GRANT	WHOLE PROJECT BUDGET	VARIATION TRUST FUNDS	% VAR TRUST GRANT	VARIATION PROJECT BUDGET	% VAR PROJECT BUDGET
Direct Project Costs										
1.Salaries - officer/s		114,742	114,742		78,351	78,351	-36,391	-15%	-36,391	-12%
Salary Oncosts		23,523	23,523		20,020	20,020	-3,503	-1%	-3,503	-1%
2.Consultancies		111,500	111,500		154,000	154,000	42,500	17%	42,500	14%
Materials	25,000		25,000	44,763		44,763	0	0%	19,763	6%
Project Publicity	7,500		7,500	14,218		14,218	0	0%	6,718	2%
Subtotal	**32,500**	**249,765**	**282,265**	**58,981**	**252,371**	**311,352**	2,606	1%	29,087	9%
Administration										
General	30,000		30,000	55,000		55,000	0	0%	25,000	8%
Subtotal	**30,000**	**0**	**30,000**	**55,000**	**0**	**55,000**	0	0%	25,000	8%
TOTAL	**62,500**	**249,765**	**312,265**	**113,981**	**252,371**	**366,352**	2,606	**1%**	54,087	**17%**

1. Salaries were underspent by 15% due to the 7 month period (end 2008 to May 2009) with project officer position vacant. The project officer also finished up 1 month early.
2. The outlay for consultancies was 17% higher than originally budgeted. This occurred mainly due to the move away from the project focus on the Recycled Water Scheme at Discovery Point in 2009 (following protracted delays) to a concerted investigation of stormwater harvesting. The bulk of consultancy expenditure is for irrigation demand studies, stormwater feasibility studies, concept designs and the Mackey Park wetland construction (approved January 2011), outlined in this report.

6. References

Marrickville Council, 2010, *Our Place, Our Vision Marrickville Community Strategic Plan* Available: (http://www.marrickville.nsw.gov.au/marrwr/_assets/main/lib65116/mcsp.pdf)

7. List of Available Reports

1. *Cooks River Parks Sustainable Irrigation Strategy: Irrigation Demand Study,* URS August 2008
2. *Soil and Drainage Assessment of Tempe Playing Fields,* AgEnviro, 2009
3. *Cooks River Parks Sports Fields, Draft Landscape Assessment Tank Sites,* KIAH Infranet, February 2009
4. *Mackey Park Irrigation Study*, Total Irrigation Designers, June 2009
5. *Stormwater Harvesting and Reuse for Off-River Parks (Phase 1*), Storm, March 2010
6. *ILEP Stage One Assessment Report for Arlington Reserve and Camperdown Park*, URS for Sydney Water, 28 September 2010
7. *Concept Design for Stormwater Harvesting for Irrigation at Arlington Reserve*, Marrickville Council, January 2011.
8. *Marrickville Park and Henson Park Stormwater Harvesting System*, Storm, (final draft report currently under review and finalisation)

8. Attachments

1. Revised Business Plan 2008
2. Draft Sustainable Irrigation Plan
3. Final Financial Report
4. Copy of Final Financial report - signed
5. *Mackey Park reopens!,* Marrickville Council Mackey Park Newsletter, November 2010
6. *Official Reopening of Mackey Park,* Media Release 6 December 2010
7. *The Grass is Greener at Mackey Park*, Inner West Courier, 14 December 2010, p7
8. *Park gets $3m facelift*, Cooks River Valley Times, 16 December 2010, pp 19 – 20
9. Recycled Water Scheme Collaboration Framework & Timeline August 2008
10. Marrickville Henson Park Concept Design1, Storm Consultants, September 2010
11. Marrickville Henson Park Concept Design 2, Storm Consultants, September 2010
12. Marrickville Henson Park Concept Design 3, Storm Consultants, September 2010
13. Marrickville Henson session flier, September 2010

ATTACHMENT 1

NSW Environmental Trust

Urban Sustainability Program

Urban Sustainability Major Project Grant

Revised Business Plan

PROJECT: **Collaborative Planning for Sustainable Irrigation in Marrickville**

REF NUMBER:	**DOC06/58483**
GRANTEE:	**Marrickville Council** **PO Box 14 Petersham NSW 2049**
PROJECT MANAGER:	**Lucy Sharman,** **Project Coordinator, Integrated Urban Water Management**
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1.0 Project Overview

1.1 Project Title

Collaborative Planning for Sustainable Irrigation in Marrickville, (the Project).
Grant number 2006/USM0064.

1.2 Project Background

The impetus of this project is due to a shift in water management policy and procedures within Council, initiated by the Urban Stormwater Integrated Management (USWIM) project, funded through round V grant from the Stormwater Trust.

Sustainability is incorporated into Marrickville Council's organisational policy as one of four corporate goals and is reflected in Council's strategic planning. This project facilitates the implementation of this policy shift through organisational and community capacity building and the development of community and inter-organisational partnerships that will form the foundation of the shift towards sustainability.

Stormwater pollution of the Cooks River is one of Marrickville Council's most pressing environmental management challenges. Urban stormwater and sewer overflows are largely responsible for the continuing degradation of the Cooks River. Equally, potable water shortages have created additional incentives to investigate and implement more sustainable practices in the supply and disposal of irrigation water.

This Project will focus on:

Water supply – investigating a range of possible non-potable sources of water for irrigation of Cooks River parks and playing fields. This includes investigating sewer mining, ground water, stormwater harvesting and recycled water use;

Stormwater / rainwater harvesting – investigating and implementing systems that not only supply sustainable water sources for irrigation, but improve the quality of stormwater flowing into the Cooks River, e.g. through stomrwater capture and treatment;

Community collaboration – involving a diverse range of residents, businesses and Council officers to investigate, plan and implement sustainable irrigation projects. This collaborative process will build on the USWIM framework of community collaboration; and

Partnerships – investigating the potential to build partnerships with other groups, businesses and organisations that may benefit from the harvesting and use of fit-for-purpose water, excess to Council needs.

2 Project Vision, Outcomes and Objectives

2.1 Vision

The Project will develop and implement a scheme to provide diverse and sustainable sources of non-potable water for the irrigation of parks and playing fields. This will be achieved through a collaborative planning process that will use the methodolgies developed through Urban Stormwater Integrated Management (USWIM) research.

The Council and community will be engaged in thinking about water management issues in a complex urban environment where technical solutions must meet a range of needs. Incorporation of landscape, limited openspace, community recreation, planning, land use, ownership and aesthetic/public art issues, will need to be considered for each site and for each non-potable water option.

The collaborative planning process will engage with a diverse range of stakeholders from within Council and the community. Strategies will be developed to improve engagement with more marginalised communities such as Aboriginal, low income and Culturally and Linguistically Diverse (CALD) communities.

As a long-term outcome, the project aims to build the capacity of Council and the Marrickville community to plan strategically for the sustainable management of its resources; provide opportunities for skill-sharing and action learning to change Council and community attitudes to water and build capacity for sustainable living. Residents and Council will feel they are leading the way and are empowered to make changes in their own lives, by seeing the relevance of their actions in the context of community-scale planning.

2.2 Objectives Hierarchy

A detailed outline of the project's objective hierarchy is included in Appendix 3 of this report.

In summary the Project will develop and implement a strategy to provide a diverse and sustainable source of non-potable water for the irrigation of parks and playing fields primarily adjacent to the Cooks River.

2.2.1 Government Objectives

State Government's natural resource management objectives relevant to the project and as defined by the NSW State Plan are as follows:

- improve the condition of riverine ecosystems;
- no decline in the condition of marine waters and ecosystems;
- improve the condition of estuaries and coastal lake ecosystems;
- natural resource decisions contribute to improving and maintaining economic sustainability and social well being; and
- increase in the capacity of natural resource managers to contribute to regionally relevant natural resource management.

The NSW Environmental Trust's objectives pertinent to the project are as follows:

- to encourage and support restoration and rehabilitation projects;
- to promote research into environmental problems of any kind; and
- to promote environmental education in both the public and private sectors.

In response, Marrickville Council has incorporated a range of sustainability objectives through:

- Council's Water and Energy Savings Action Plans;
- the Illawarra Road Subcatchment Action Plan (based on USWIM model);
- Local Action 21 Sustainability Strategy (reduction in water pollution);
- State of the Environment Report (clean water in our rivers);
- Council's Annual Management Plan (sustainable resource use, improved community health, restoration of Cooks River);
- Council's Social Plan (Marrickville is a centrepiece of inner city Ecologically Sustainable Development);
- Council's Recreation Strategy (improvement of community facilities); and
- Council's Strategic Plan (actively contribute to long term sustainability).

2.2.2 Program Objectives

The Urban Sustainability Program objectives relating specifically to this project include:

- improving urban water management with a particular focus on stormwater and urban runoff to achieve sustainable water quality and conservation outcomes;
- improving and protecting urban bushland and creeks, urban wildlife and habitats of rare and endangered flora and fauna;

- improving the quality of the local urban environment through integrated approaches that address a combination of the following examples: air quality, noise, odour, chemical use, biodiversity, litter and dumping;
- improving the sustainability performance of local councils, small businesses, community organisations and householders in urban areas; and
- assisting in developing Council and community capacity for the shift towards economic, social and environmental sustainability.

2.2.3 Council Objectives

Management Plan 2006-2009

Marrickville Council's Local Action 21 Sustainability Strategy sets out objectives for protecting environmentally sensitive areas and for promoting the ecological sustainability of the Marrickville area. It includes a statement of Council's commitment to:

- foster and promote the highest level of environmental responsibility by businesses, schools, households, community organisations and Council;
- provide a co-ordinated framework for applying Ecologically Sustainable Development (ESD) principles, building on existing sustainability policies and programs of Council;
- gain effective community participation in the development of sustainability policies and programs;
- promote the health and well being of all members of our community by improving local environmental conditions and local communities;
- develop a strategic response to the environmental issues reported in the Marrickville State of the Environment Report;
- demonstrate the value of remnant vegetation, native wildlife and natural ecosystems by accepting our responsibility for protection, restoration and enhancement; and
- demonstrate a commitment to ESD by responsible management of natural resources - energy, waste, water and purchasing.

As part of its Local Action 21 Sustainability Strategy, Council has adopted five stretch goals (i.e. challenging but achievable long term goals) for each action area in the Strategy. Collectively they will help Council measure progress towards achieving a safe, healthy, culturally enriching and ecologically sustainable environment for Marrickville.

The stretch goals are to:

- reduce air pollution by 10% by 2010 on 1997 levels;
- increase habitat by 10% by 2010 on 1997 levels;
- reduce waste to landfill by 20% by 2010 on 1997 levels;
- reduce water pollution by 20% by 2010 on 1997 levels; and
- reduce greenhouse gas emissions by 20% by 2010 on 1997 levels.

Council's sustainability objectives for water management projects include:

1. Improved urban water management by reducing the volume and velocity of stormwater entering Cooks River and improve run-off quality.
2. Improved resource conservation. By viewing stormwater as a resource, which results in disposal problems being eliminated and a reduced demand on other limited resources (i.e. potable water).
3. Protection of urban habitats by contributing to a normalisation of streamflows in the Cooks River, which will facilitate the eventual restoration of the aquatic ecosystem. This improves habitat for fish and crustacians as well as providing better habitat for water birds by increasing food sources.

4. Improve the sustainability performance of Council by evidence based decision making around water related operations. More broadly, the project will act as a demonstration of best practice sustainable water management and serve to foster the development of strong community partnerships that in the long-term will be the means for achieving genuine economic, social and environmental sustainability for Marrickville.

2.2.4 Project Objectives

This partnership between Council and the community will investigate the strategic harvesting, transport and storage of stormwater, rainwater and recycled wastewater for irrigation purposes.

To this end the project has the following objectives to:

- Develop and implement a sustainable irrigation strategy for Council's riverside playing fields in partnership with the community;
- Provide sound information and evidence upon which to base future funding requirements, including current and projected costs for stormwater management infrastructure;
- Build capacity within Council and the community for planning and implementing sustainability projects by providing opportunities for skill sharing, envisaging and action learning; and
- Provide a demonstration of best practice sustainable water management for the Marrickville Community through community partnerships.

2.3 Outcomes

The following table outlines the sustainability outcomes to be achieved by the project. These outcomes/benefits comprise performance information against which the project will be assessed.

Sustainability Outcome	Measurement
Environmental	
Reduction in potable water use.	- A reduction in potable water usage as shown on quarterly water bills.
Reductions in stormwater volumes.	- Reductions based on total volume of stormwater harvested.
Improvements in stormwater quality, e.g. litter, organic matter, sediment and nutrients	- MUSIC modelling will be used to provide valuable comparative data and estimate impacts of the Projects on water quality.
Decreased stress on the Cooks River leading to improvement in aquatic and riparian habitat values.	- Increasing numbers of species identified in annual streamwatch waterbug survey.
Reductions in fertiliser requirements for stormwater irrigated playing fields.	- Increasing health of turf surfaces and corresponding decrease in the amounts of fertilisers applied.
Social	
Increased amenity and recreational value of playing fields for community use.	- Increased health of turf surfaces and reduction in trip hazards.
Provision of a demonstration project with value as model of best practice sustainable irrigation management.	- Tours, workshops, articles and discussion generated by the project. Interest by other councils. Conference presentations.

Opportunities for the community to participate in planning for sustainability and to build a partnership with Council that will form a foundation for long-term progress towards sustainability. Better health of sports grounds playing surface.	- Increased community involvement in the community collaboration process and local action for sustainability, e.g. Sustainable Water Working Group, Water Ambassadors program etc. - Reduction in the number of injuries and lost playing time due to poor quality of the playing surface.
Economic Avoiding the loss of playing surfaces that are costly to replace. Reducing the cost of irrigation water. Potential to partner with other organisations for Council to on-sell the non-potable water for uses outside Marrickville Council's needs.	- The health of playing surfaces improves. - A reduction in the usage of potable water for irrigation. - Development of an agreement or agreements with other organisations or entities for the use of non-potable water collected by Marrickville Council through this Project.

2.4 Outputs

The high level outputs to be delivered by the project include:

- investigation into a range of non-potable water sources for irrigation, including sewer mining, groundwater harvesting, recycled water and stormwater harvesting;
- new protocols for irrigating riverside parks to maximise the use of non-potable water;
- identification of training and documentation needs for Council staff to maintain and understand the new irrigation regimes;
- a water quality monitoring program to provide information on performance of any water treatment systems;
- ongoing development of sub-catchment specific action plans;
- a marketing and communications plan covering internal and external stakeholders;
- a strategy and action plan for engaging marginalised communities in the collaborative planning process; and
- a range of community collaboration forums.

3 Project Structure and Governance

3.1 Project Structure

The project is a partnership between Council and the community to provide a sustainable supply of non-potable water for irrigation.

To this end Marrickville Council will work with the community, using the engagement techniques / tools developed through the USWIM project, to identify a range of non-potable water sources with potential for irrigation use. The resulting strategy will aim to meet the needs of the community and be socially, economically and environmentally sustainable.

The Project Coordinator – Integrated Urban Water Management will coordinate the project and report directly to Manager, Environmental Services. The project will be overseen by the Integrated Urban Water Management (IUWM) Group – a high level, interdisciplinary group from within Council. Regular updates of the project will be provided to the IUWM Group.

The ongoing role of government agencies (such as the Department of Environment and Climate Change and Sydney Water) will be maintained by reporting regularly to these agencies at relevant milestones and upon achievement of positive project outcomes. Council will maintain communication and active collaboration with stakeholders to ensure all needs are met.

Selection of consultants/subcontractors will be by open selective quotation or by tender. Council's purchasing process complies with relevant legislation, is efficient, environmentally-preferable and cost effective. It is designed to withstand public scrutiny, and to be a fair and open competition in which all can participate.

3.1.1 Project Location

The Project is primarily concerned with the irrigation of parks adjacent to the Cooks River. Irrigation sites where non-potable water sources could be utilised for irrigation include, but are not limited to; Jets sports club, Marrickville Golf Course, Mahoney Reserve, Steel Park, Mackay Park, Tempe Reserve, Henson Park and Marrickville Park. Other sites will be investigated when and if opportunities arise.

3.1.2 Project Design

Project staff and relevant contractors will:

1. work with the community as key partners to assist in making decisions about an agreed scheme for the supply of non potable water for irrigation in the LGA;
2. determine the historical, current and ongoing requirements for irrigation of Council's parks and playing fields;
3. undertake the detail design of the various components of any recommended resulting irrigation scheme considering other irrigation demand management strategies (e.g. grass selection, soil moisture monitoring, irrigation scheduling) as part of cost-effectiveness assessment;
4. determine the economic, environmental and social viability of the various sources of non-potable water including stormwater harvesting, recycled water, sewer mining and groundwater sources;
5. research stormwater harvesting projects to gain an understanding of harvesting techniques that could be applied to this project, as well as issues and constraints to be avoided; and
6. research the viability of using recycled water for park irrigation, including the purchase and use of recycled water from the Discovery Point residential development.

Evaluation will be long-term, relating to the three aspects of sustainability:

Environment: Monitoring the quality of water being used for irrigation purposes, including managing the nutrient loads of non-potable water to ensure optimum turf health whilst managing nutrient loads in any runoff from irrigated parks. Monitoring will include regular monitoring of soil health on irrigated parks and the quality of captured / treated stormwater and wastewater.

Community: Hold a series of collaborative events or forums to gain community input into the Project. Record the number and diversity of community members and groups involved in the Project. Design follow up forums and evaluations to gauge community satisfaction with the collaborative process. Appendix 5 outlines some of the techniques that will be used to liaise with project stakeholders and the general community.

Economic: Analyse a range of non-potable water sources for irrigation and implement the most cost effective projects to reduce the long-term expenditure and use of potable water.

Stage 1 - Water balance and options analysis

Stage 1 Objectives

1. To determine the historical, current and ongoing requirements for irrigation of Council's riverside parks.
2. To assist Council in determining the economic, environmental and social viability of the following sources of non-potable water: stormwater harvesting, sewer mining, recycled water and groundwater extraction.

Scope of Works

Stage 1.a - Assessment of Irrigation Requirements

- Collate data on historical water demand for irrigation.
- Liaise with Council's Parks & Reserves section to determine a desired level of irrigation that can be used as basis for undertaking water balance calculations.
- Determine the quality of non-potable water required to irrigate Council's riverside parks and playing fields.
- Determine the most effective irrigation regime to manage water storage and irrigation demands.

Stage 1.b - Water Storage Location, Type and Linkage

- Identify potentially suitable locations for establishing water storages within the riverside parks.
- Examine opportunities and constraints (e.g. land-take, access, aesthetics, elevation etc.) to establishing storages of different types and sizes (e.g. above ground or underground, ponds or tanks, header and breaker tanks, etc).
- Conduct research into the various storage tank technologies available.
- Identify opportunities and constraints for connecting water supply to existing infrastructure.

Stage 1.c - Stormwater Harvesting

- Work with USWIM Coordinator to identify potential stormwater harvesting projects in identified subcatchments.
- Work with engineering, the community and Integrated Urban Water Management (IUWM) coordinating group to determine the most cost effective projects in stormwater harvesting for park irrigation and council water demands.
- Research stormwater harvesting projects to gain an understanding of harvesting techniques that could be applied to this project, as well as issues and constraints to be avoided.
- Using agreed assumptions, estimate stormwater volumes that can be harvested (i.e. collected in the storages) for individual sub-catchments.

Stage 1.d - Sydenham Detention Basin

- Collate and review all relevant data (e.g. hydrological investigations, water reuse studies, heritage studies, operating plans, etc) pertaining to Sydenham Detention Basin.
- Undertake initial feasibility study by assessing opportunities and constraints for using the basin to store stormwater during non-flood periods.
- If feasible, develop draft concept designs for using the basin for stormwater harvesting. Designs should consider storage volumes, stormwater treatment, structural / geotechnical works and pumping regimes.
- Liaise with Sydney Water to test and further refine concept designs, with a view to obtaining in-principle agreement to proceed to detail design.

Stage 1.e - Recycled Water

- Collate and review all relevant data related to the water management strategy for Australand's Discovery Point development at Wolli Creek.
- Develop costed scenarios for the purchase and supply of recycled water from the Discovery Point development to Marrickville.
- Liaise with Council staff and Australand representatives to prepare a draft agreement for the supply of recycled water to Council, subject to the optimisation task below.
- Work with the community to determine the best position and design for the siting of recycled water storage tanks for irrigation of riverside parks.

- Monitor the water quality, soil and playing surfaces for any detrimental impacts of using recycled water for irrigation.

Stage 1.f - Groundwater Extraction
- Collate and review all relevant data on groundwater resources within the Marrickville LGA.
- In collaboration with Council, determine the economic viability of undertaking exploratory groundwater drilling at Council's riverside parks.
- If feasible, prepare a groundwater exploration and testing program.
- After obtaining quotations, engage and project manage the preferred contractor(s) to undertake the groundwater exploration and testing program.
- Prepare a report documenting the findings from the exploration and testing, and recommending a costed course of action.

Stage 1.h - Sewer Mining
- Determine the economic, environmental and social viability of establishing a sewer mining operation to supply recycled water for use in irrigating Council's riverside parks.
- Determine the quality of non-potable water required for use in irrigating Council's riverside parks and the level of sewage treatment required to achieve this quality.
- Estimate a capital cost and ongoing operating cost (cost per kilolitre rate) for the use of recycled waste water and compare against costs for other water sources.

Stage 2 – Community Collaboration

Objectives

1. To develop partnerships with relevant stakeholders in the community.
2. To facilitate the participation of the community in planning for sustainability.
3. To educate the community about sustainable water management.

Scope of Works

Stage2.a – Partnership development
- Identify key stakeholders in terms of park use and irrigation requirements.
- Develop a communication and collaboration strategy for engagement with key stakeholders.
- With the community, examine the suitability of each site for various water options, as well as opportunities for the installation of infrastructure, e.g. the siting and design of water storage tanks.
- Identify additional groups, organisations or individuals that could benefit from the supply of non-potable water, e.g. club houses, bowling greens, ammenties blocks etc.

Stage 2.b – Stakeholder forums
- Hold a range of stakeholder forums and encourage residents and businesses to participate in the planning and implementation of fit-for-purpose irrigation of riverside parks.
- Develop a communication and collaboration strategy targeting marginalised communities including low income households, social housing tenants, Aboriginals and Culturally and Linguistically Diverse (CALD) communities.
- Work with organisations that support these groups to engage with them around the Sustainable Irrigation Strategy. Including for example; internal stakeholders – affordable housing officer, multicultural officer and external stakeholders - Housing NSW, Aboriginal Housing, boarding house managers group etc.

Stage 2.c - Collate data and review
- Collate and review findings from all investigations undertaken above.
- Prioritise sources of non-potable water for irrigation based on a pre-determined list of selection criteria e.g. environmental benefit, value for money (construction, operation and maintenance) and social impacts.
- Present areas of focus to IUWM and DECC.

3.1.4 Project Milestones

Milestone	Relevant Project Objective	Responsibility	Completion Date
Recruitment of p/t project officer	Officer multi-skilled / innovative	Project Managers	Feb 2008
Tendering and engagement of consultants for stage one works – irrigation demand	Development of irrigation model and demand management based on a range of parameters, including soil quality, compaction etc.	Project Managers	July 2008
Development of sub-catchment profiles	Better understanding of potentials based on sound data / expert guidance	Project Coordinator, Engineering Services and USWIM Coordinator	Feb 2008 and on going
Submission of progress report	Report refines desired outcomes	Project Coordinator	March 2008
Commencement of identified stage one works – water balance and options analysis	Better understanding of potentials based on sound data / expert guidance	Project Coordination Team	Jan 2008
Completion of identified stage one works – water balance and options analysis	Better understanding of potentials based on sound data / expert guidance	Project Coordination Team	March 2008
Commencement of stage two works – community engagement and collaboration	Number and diversity of stakeholders, quality of input, level of involvement in activities / communications	USWIM Coordinator and Project Coordinator	May 2008
Stakeholders / partners forum/s	Satisfaction by all stakeholders in the process, desire for ongoing involvement in this and other sustainability projects	USWIM Coordinator and Project Coordinator	Sept 2008
Submission of progress report	Report refines desired outcomes	Project Coordinator	31 Sept 2008
Completion of stage two works – community engagement and collaboration	Number and diversity of stakeholders, quality of input, level of involvement in activities / communications	USWIM Coordinator and Project Coordinator	Nov 2008
Tendering and engagement of consultants for stage three works – irrigation design for	Consultants have understanding of sustainability and experience working with these new	Project Coordination Team	Dec 2008

recycled water	technologies		
Community consultation regarding the final concept design/s for recycled water	Incorporation of all feedback into final design	Project Coordinator	Oct 2008
Commencement of stage three works – implementation of irrigation infrastructure for recycled water	Satisfaction by all stakeholders in the process, incorporation of all feedback into final design	Project Coordination Team	April 2009
Submission of progress report	Report refines desired outcomes	Project Coordinator	31 March 2009
Liaise with all stakeholders on additional (other than recycled water) projects for irrigation	All stakeholders consulted	Project Coordinator	March 2009
Completion of implementation of recycled water works	Satisfaction by all stakeholders in the process	Project Coordination Team	June 2009
Submission of progress report	Report refines desired outcomes	Project Coordinator	31 September 2009
Official launch – presentation of the strategy to the community	Strong attendance by all stakeholders and media representatives	All Stakeholders	February 2010
Submission of progress report	Report refines desired outcomes	Project Coordinator	31 March 2010
Presentation of project outcomes to relevant industry conference	Learnings shared with colleagues	Project Coordinator	April 2010
Submission of final report	Successful implementation of project and achievement of all outcomes	Project Coordinator	31st June 2010

3.1.5 Project Schedule

Milestone	**Relevant Project Objective**	**Responsibility**	**Completion Date**
Year 1/ Stage 1			
Recruitment of p/t project officer	Officer multi-skilled / innovative	Project Managers	Feb 2008
Completion of detailed staging plan	Staging is achievable / flexible	Project Coordination Team	May 2008

Submission of progress report	Report refines desired outcomes	Project Coordinator	March 2008
Tendering and engagement of consultants for stage one works – water balance and options analysis	Consultants have understanding of sustainability and experience working with these new technologies	Project Coordination Team	June 2008
Development of sub-catchment profiles	Better understanding of potentials based on sound data / expert guidance	Project Coordinator, Engineering Services and USWIM Coordinator	From Dec 2007 – on going
Submission of progress report	Report refines desired outcomes	Project Coordinator	31 Sept 2008
Completion of identified stage one works – water balance and options analysis	Better understanding of potentials based on sound data / expert guidance	Engineering Services	July 2008
Development of community collaboration strategy	Strategy maximises ongoing / active participation by a range of stakeholders	Project Coordinator	April 2008
Publicity of community engagement	Materials distributed / media published	Project Coordinator	Sept 2008
Commencement of stage two works – community engagement and collaboration	Number and diversity of stakeholders, quality of input, level of involvement in activities / communications	Project Coordinator	Sept 2008
Stakeholders / partners forum	Satisfaction by all stakeholders in the process, desire for ongoing involvement in this and other sustainability projects	Project Coordinator	Oct 2008
Completion of stage two works – community engagement and consultation	Number and diversity of stakeholders, quality of input, level of involvement in activities / communications	Project Coordinator	Nov 2008
Tendering and engagement of consultants for stage three works – irrigation design	Consultants have understanding of sustainability and experience working with these new technologies	Project Coordination Team	December 2008
Commencement of stage three works – installation of infrastructure for recycled water irrigation	Satisfaction by all stakeholders in the process, incorporation of all feedback into final design	Project Coordination Team	March 2009
Submission of progress report	Report refines desired outcomes	USWIM Coordinator and Project Coordinator	31 March 2009
Review of community collaboration planning. Any required adjustments made.	Review produces a refined community collaboration timeline and framework	USWIM Coordinator and Project Coordinator	March 2009

Publicity of progress and community engagement	Quality and quantity of media coverage	Project Coordinator	May 2009
Submission of progress report	Report refines desired outcomes	Project Coordinator	31 Sept 2009
Publicity regarding strategy launch	Quality and quantity of media coverage, number of inquiries generated, flow-on participation in other sustainability projects	Project Coordinator	Jan 2010
Official launch – presentation of the strategy to the community	Strong attendance by all stakeholders and media representatives	All Stakeholders	Feb 2010
Submission of progress report	Report refines desired outcomes	Project Coordinator	31 March 2010
Presentation of project outcomes to relevant industry conference	Learnings shared with colleagues	USWIM Coordinator and Project Coordinator	April 2010
Submission of final report	Successful implementation of project and achievement of all outcomes	Project Coordinator	31st June 2010

3.2 Governance

The project is part of a systemic shift in water management policy and procedure within the Council, initiated by the Stormwater Trust funded Urban Stormwater Integrated Management (USWIM) project. The Urban Stormwater Integrated Management (USWIM) project is a mechanism by which sustainability issues can be incorporated into water management processes within the Marrickville LGA.

This project facilitates the implementation of this policy shift through organisational and community capacity building and the development of community / inter-organisational partnerships that will form a strong foundation for the shift towards sustainability. In particular, the organisation has developed strong capacity for inter-organisational, multi-disciplinary collaboration that is facilitating the development and implementation of complex strategies such as urban water management.

The project management group comprises:
Two (2) Project Managers (Manager Environmental Services and Manager Engineering Services)
Three (3) Project Officers forming the Project Coordination Team. This includes: Project Coordinator – Integrated Urban Water Management, Environmental Coordinator - Engineering and Landscape Coordinator - Parks and Reserves). This team will deliver and promote the Project and maintain ongoing communication with the managers and higher level steering committee (Integrated Urban Water Management group – comprising directors and managers of all divisions).
Project Partners, Project Stakeholders and the community - local businesses and residents.
Private consultants, used to produce significant improvement to the mechanisms of wastewater management and irrigation of green spaces.

3.2.1 Decision Making

The decision making processes, procedures and protocols that exist for the endorsement of changed operations and practices will be determined by the Integrated Urban Water Management group comprising:

- Director Development and Environmental Services - Ken Hawke
- Manager Environmental Services - Jan Orton
- Director Technical Services - Neil Strickland (Engineering and Parks and Reserves)
- Manager, Engineering - Walter Petschler (Design and Infrastructure)
- Manager Parks and Reserves - Richard Sage (Landscape masterplanning, irrigation design)
- Director Community Services – Gary Moore
- Manager Communication and Cultural Services - Josephine Bennett
- Manager Community Development - Sharyn Coughlan
- Manager Finance – Gary Mills
- USWIM Coordinator – Jean Brennan
- Environmental Coordinator Engineering - Erin Sellers
- Project Coordinator – Integrated Urban Water Management – Lucy Sharman

3.2.2 Project Manager(s)

The Project Managers are: Jan Orton (Manager, Environmental Services) and Walter Petschler (Engineering Services).

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3.2.3 Partners and Stakeholders

This project relies on the support of:

- Marrickville Council senior management, particularly Kim Anson (General Manager, Marrickville Council), Ken Hawke (Director, Development and Environmental Services) and Neil Strickland (Director, Technical Services).
- Marrickville Council Environmental Services Section - particularly Jan Orton (Manager, Environmental Services).
- Marrickville Council Engineering Services Section – particularly Walter Petschler (Manager, Engineering Services).
- The Integrated Urban Water Management group.
- Marrickville Cooks River Committee.
- The River Science project, a partnership with University of New South Wales.
- Australand Development Corporation. Australand is the proponent for the installation of a Wastewater Treatment Plant at Discovery Point residential development.
- Sydney Water Corporation, sewer mining, recycled water use, stormwater harvesting and wastewater disposal.
- Consultants EDAW, Blue Sky Consulting and Copa Water. Ecological Engineering and Copa Water have provided expert advice.
- Marrickville Golf Club as a potential site for stormwater harvesting and possible irrigation water recipient.

- The Illawarra Road Sustainable Water Working Group. This community based group has provided extensive input into planning, design and development of urban water management since April 06.
- Housing NSW (formally Department of Housing).
- Other possible partners and stakeholders e.g sporting groups will be investigated as the project progresses.

Council's funding model for this project involves a range of possible funding sources including:
- Allocations through the operations and resource budgets of Environmental Services, Engineering Services and Parks and Reserves sections of Council.
- Funding through state and federal government grant programs.
- Possible use of the Stormwater Management Service Charge to fund stormwater harvesting elements and ongoing maintenance and/or improvements.

The role of government agencies (DECC, DEW, NWC, RTA, Sydney Water) will be in providing information, funding and facilitating infrastructure design and construction.

Including:
- Permits from the Roads and Traffic Authority to transport recycled water via a pipeline from Australand's Discovery Point residential development to storage at Cooks Riverside parks under RTA assets.
- Permits from Sydney Water to develop / utilise infrastructure to transport stormwater and wastewater via pipelines and investigate sewer mining operations.
- Permits from Department of Lands to implement works on co-owned Marrickville Golf Course.

3.2.4 Steering Committee / Reference Group

Community collaboration is key to this project. A large range of groups will be encouraged to participate, with the core groups including; Illawarra Road Sustainable Water Working Group, Marrickville Cooks River Committee, Marrickville Aboriginal Consultative Committee, Marrickville Council Multicultural Committee, Sporting clubs and park user groups, consultants and Council staff involved in the development of the Water Play Park at Steel Park, Discovery Point proponents of the Recycled Water Plant and Marrickville Golf Course.

Decisions regarding day to day management of the project will be managed by the Project Coordination Team, with direct reporting to Managers of Environmental Services and Engineering. Regular reporting will be provided to Council's existing Intergrated Urban Water Management Group which has high level multi-disciplinary representation from across Council.

3.2.5 Project Team

The team responsible for directing the project includes:
Jan Orton, Manager Environmental Services - Project management and development (Community and Urban Sustainability).
Walter Peschler - Project management and development (Design and Infrastructure).
Leigh Trevitt, Parks/Reserves - Landscape masterplanning, irrigation design.
Erin Sellers, Engineering - Modelling and design, life cycle analyses.
Lucy Sharman, Environmental Services - Community collaboration, partnerships and project implementation.

As part of the implementation of the project (the first 3 years) Marrickville will recruit staff for the following roles:

Project Coordinator - Principally the role of the Project Coordinator is to work with other staff on the development of Council's Cooks River Sustainable Irrigation Strategy. The coordinator will assist with the research, planning and implementation of the project in direct collaboration with residents, community leaders, Council staff and other stakeholder representatives. The position is responsible to the Manager Environmental Services and will be based at Council's Administrative Centre at 2-14 Fisher Street Petersham.

3.2.6 Contractors and Consultants

Consultants will be commissioned to examine the feasibility of various forms of non-potable water for irrigation, as well as to design an irrigation system for the Marrickville parks. Consultants will be hired to look at irrigation demand models for the identified riverside parks and for landscape and visual assessment of the installation of infrastructure for non-potable water usage, including water storage tanks for the management of stormwater and recycled water for irrigation purposes.

4 Stakeholder Engagement & Collaboration

4.1 Stakeholder Identification

This project relies on extensive consultation and support from the Marrickville community and was developed as part of Marrickville Councils Urban Stormwater Integrated Management (USWIM) project. Many stakeholders have been identified and relationships developed as a direct result of USWIM.

Target audience
The target audience for this project is the community of the Marrickville LGA with a particular focus on the users and neighbours of the Cooks River parks and playing fields. The project will target community groups and sporting clubs in the area, however as new stakeholders are identified through the collaborative planning process, they will be encouraged to participate.

Groups with a specific role to play include:

- Illawarra Road Sustainable Water Working Group: This is a key group of community members, brought together through the original USWIM research process. They continue to be a valuable group for management of integrated water projects.
- Cooks River Valley Association: Dissemination of information and invitees to collaborative events.
- Marrickville Landcare Group and Marrickville Community Nursery: As potential sources of labour and plants for the planting around tanks and construction areas.
- Marrickville Golf Course: Provide a venue for community consultation activities; participate collaboratively in the development and implementation of the strategy.
- Local sporting clubs that use the riverside parks: Dissemination of information, input into the collaborative process.
- Impacted residents – in particular regular park users, those potentially visually affected by infrastructure (e.g. water storage tanks).
- Council committees including: Marrickville Cooks River Committee; Marrickville Aboriginal Consultative Committee and Marrickville Multicultural Consultative Committee.

4.2 Stakeholder Communication & Management

The objectives of community collaboration are:

- to promote awareness, knowledge and understanding within all sectors of the community about fit-for-purpose water use and Water Sensitive Urban Design (WSUD);
- to build the capacity of water providers, asset users and green-space management staff to deliver best practice service/maintenance and water management;

- to provide a highly visible demonstration of various aspects of WSUD;
- to build capacity of Council and other agencies in the processes involved in community collaboration; and
- to help build the capacity of Marrickville Council to implement Integrated Urban Water Management within the community.

Community engagement methods to reach target:
The community collaboration process will be underpinned by two main frameworks: the International Association on Public Participation's 'Spectrum of Public Participation' and Action Learning theory.

A detailed plan on the consultation framework and timelines is attached in Appendix 5.

The collaboration strategy will comprise the following aspects:
- Inform – the imparting of information through newsletter, brochures, website information media releases etc.
- Consult – through workshops and meetings
- Involve – through site visits, planning workshops and meetings and
- Collaborate – work with the community through workshop forums to develop ideas and plan for infrastructure development and implementation.

Key stakeholder groups will be involved in the more intensive processes, with peripheral groups or organisations being informed of progress, but not necessarily involved in intensive collaboration.

All workshops, meetings, face-to-face interactions etc. will be designed along Education for Sustainable Development theory and practice. Including being future focused and solutions oriented, using the expertise and experiences of all involved and being interactive and inclusive.

4.3 Communication Strategy

The communication strategy for this project will integrate with existing strategies such as the Cooks River Foreshores Interpretive Strategy.

A communication strategy will be developed for internal and external stakeholders to promote the project and keep all stakeholders informed of progress.

5 Monitoring and Reporting

5.1 Monitoring Plan

Monitoring and evaluation will be systemic, incorporated into the project design and linked with project management mechanisms such as the Risk Management Plan and Outcomes Hierarchy.

Monitoring techniques will include participation data, and participant surveys. Improvement in council irrigation and management practices will be measured through:

- auditing, interviews and monitoring of policy processes;
- changes in internal relationships and planning and maintenance processes; and
- impacts of new irrigation projects through modelling.

Specifically, the monitoring plan will encompass the following principles:

- audit on a regular basis to identify if goals or objectives are achieved;
- feedback from stakeholders;
- ongoing participation rate and level of community involvement;
- effectiveness of project measured against stated objectives;
- a regular consultative and reporting process through the Integrated Urban Water Management Group, Steering Committee and community working groups;

Council is committed to the success of this project and to the principles of sustainable urban water cycle management. To these ends it will maintain a long-term monitoring schedule to ensure problems are identified in a timely manner.

The schedule will comprise:
- routine monitoring of non-potable water quality;
- monitoring of parks turf and soil condition;
- maintaining records of the number of individuals and community groups participating in community engagement activities;
- maintaining records of all publicity and media generated by the project; and
- maintaining records of all written material published on the project.

5.2 Project Performance Indicators

Section 3.1.5 identifies the targets to be achieved by the project. The following table outlines the monitoring program, which will identify if these targets have been achieved. It is also important to note that community collaboration is an ongoing process.

Park management staff will also ensure continuous monitoring of irrigation measures, so that problems or opportunities are identified early. Coupled with reports from field staff this review process will enable rapid vertical integration of site information and associated operational changes.

Monitoring output	**Completion Date**
Staging plan	31 August 2007
Consultants report on water balance and options analysis	July 2008
Community Engagement strategy	April 2008
Promotional materials and media published	May 2008 and ongoing
A number of one on one meeting held with stakeholders	May 2008 and ongoing
Stakeholders forum	September 2008 and ongoing
Review of Sustainable Irrigation Strategy	March 2009
Presentation to industry conference	April 2010
Successful implementation of project and achievement of all outcomes	June 2010

5.3 Program Measures

Outcome	Indicator (how we'll know if we're successful)	Results / Monitoring
Ultimate Outcome (year 3)		
Improve the quality of stormwater runoff entering the Cooks River.	The quality of the harvested water indicates that nutrients are being removed from the system.	Analysis of stormwater modelling. Analysis of River Science monitoring data .
Intermediate Outcomes (year 2)		
Decrease Council's potable water use for irrigation of parks and sports fields.	Substitute for potable water indicates reduced overall consumption.	Sydney Water quarterly water use accounts.
Build capacity within Council to implement Water Sensitive Urban Design.	Feedback from Council staff on skills and experience developed during project implementation. Number of training sessions and range of attendees.	Staff questionnaire feedback. Increased number of WSUD project elements managed in-house.
Immediate Outcomes (year 1)		
Reduce the quantity of stormwater run-off leaving the site.	Water is being harvested through the system and is thus not entering the river as polluted run-off.	Kilolitres of harvested stormwater and wastewater for use each year.
Promote awareness, knowledge and understanding about WSUD.	Tours conducted by Council at the site. Interpretive signage. Written 'case study' published on website / other publications.	Tours conducted. Written material published, signage
Construction completed according to schedule.	Project plan and timeline provides an indicator of efficiency of construction progress.	Number of days behind or ahead of schedule.

5.4 Method of Data Collection

Evaluation will be long-term, relating to the three aspects of sustainability:

- Environment: monitoring to assess whether water quality at stormwater collection is suitable for reuse. Decrease in the quantity of potable water used for irrigation.
- Social: feedback forms on community perceptions, increased understanding of sustainability and on the partnership process, records of the number and diversity of community members and groups involved in the project, verbal feedback from participating organisations.
- Economic: reduced expenditure per kilolitre of potable water.

When considering data collection methods the following issues need to be adressed:

- Ideas on alternate methods of achieving the project's outcomes and objectives.
- A clear concept of target group and what is the most appropriate, effective and efficient method of achieving your objectives with this target group.
- Budget limitations and the best method of achieving the project's goal, objectives and outcomes given limitations.
- The short-term and long-term usefulness of various techniques and data collected.

5.5 Reporting

5.5.1 Reports to the Trust

The schedule of reports required by the Trust includes submission of Progress and Financial Reports every 6 months, with the first report submitted March 2008.

With this in mind the reporting schedule is as follows:

- Progress report 30 March 2008
- Progress report 30 September 2008
- Progress report 30 March 2009
- Progress report 30 September 2009
- Final report 30th June 2010

5.5.2 Reports to the Steering Committee/ Reference group

Regular reports to Council's Integrated Urban Water Management group will enable the project manager(s) to distribute information internally within council.

The Project Coordination Team will provide:

- Status of the project's schedule - last and next reporting periods;
- Milestones report - last and next reporting periods;
- Budget evaluation report - planned expenditure, actual expenditure and the deficit/surplus;
- Issues report - areas of concern, specific problems, and action(s) required; and
- Risk management report - major risks identified and/or realised since the previous report and associated mitigation strategies or amendments.

5.5.3 Reports to Project Partners

Reports to all project partners will take a similar form to those presented to Council's Integrated Urban Water Management Group and incorporate the following:

- status of the project;
- milestones achieved;
- issues report - areas of concern and any action(s) required by project partners; and
- risk management report - major risks identified and/or realised since the previous report and associated mitigation strategies or amendments.

Each project partner will be reported to individually as follows:

- Marrickville Cooks River Committee – Quarterly
- General Managers and Senior Staff – biannually or as required;
- Councillors etc. – annually or as required.

5.5.4 Reports to the Stakeholders

The participation of stakeholders and decision makers at the local level underpins the development and implementation of sustainable catchment management. To maximise involvement on a sub-catchment basis, a community engagement strategy will be designed in line with USWIM principles. The mechanism for dissemination of information will include but not be limited to:

- Community meetings and stakeholders forum;
- Information brochures;
- Detailed website; and
- Media releases especially to community newsletters and newspapers.

6 Resource Management

6.1 Funding and Budgeted Expenditure

This table provides an overview of anticipated income and budgeted expenditure for the project. Appendix 7 contains a detailed breakdown of expenditure.

Income/ Funds	**Yr 1 ($)**	**Yr 2 ($)**	**Yr 3 ($)**
Environmental Trust Grant	83,088.00	120,588.00	46,088.00
Council's contribution	24,166.67	24,166.67	24,166.67
Additional Federal, State or local gov. support	0	0	0
Other income sources (fees, sales, interest, etc)	0	0	0
Total	107,254.67	144,754.67	70,254.67
Budgeted Expenditure	**Yr 1 ($)**	**Yr 2 ($)**	**Yr 3 ($)**
Wages/ Salaries	38,247.33	38,247.33	38,247.33
Related on-costs	7841.00	7841.00	7841.00
Consultancy/ contractor fees	37166.67	37166.67	37166.67
Materials/ equipment	25,000	0	0
Transport costs	0	0	0
Insurance	0	0	0
Project publicity/ communication/ promotion	2500	2500	2500
Project administration - overheads (repairs, maintenance, rent utilities, accounting fees, etc)	30,000	0	0
Total	140,755	85,755	85,755

7 Risk Management Plan

7.1 Risk Management Plan

Risk management is the process of identifying possible risks, assessing their potential impact on the project and developing and implementing plans for minimising identified risks on project delivery. The Risk Management Plan details specific strategies to minimise the potential negative impacts that uncertain occurrences will have on the project.

The Risk Management Plan includes the following:

- identified risks such as health and environmental risks associated with planned works;
- risk Evaluation - likelihood of occurrence and the associated consequence of each risk;
- risk Mitigation – strategies to reduce the occurrence of high impact risks;
- risk Monitoring – Risk monitoring and evaluation; and
- communication Strategy – communication of risk performance to project stakeholders.

The Project Coordination Teamwill be responsible for revising the Risk Management Plan in conjunction with Stakeholders and management groups. Refer Appendix 4 - Risk Register.

7.2 Risk Identification

Project risks will be identified in accordance with a review of project, schedule and resource risks that may impact the probability of achieving outcomes and objectives.

The review should include:

- records - Reviewing past records of problems or issues encountered by the USWIM project team;
- research and reference to *Managing urban stormwater :harvesting and reuse* (DEC, 2006);
- brainstorming with project team, reference group, partners and stakeholders; and
- specifically describing risks making it easier to assess associated impacts.

7.3 Risk Analysis/ Evaluation

Category ranking has been used to represent the likelihood the risks may occur (Low – 0 to 33%; Medium- 34 to 66%; and High – 67 to 100%) and the respective magnitude of its consequence (Low – 0 to 33%; Medium- 34 to 66%; and High – 67 to 100%) on the project's completion.

The magnitude of the risk impacts should be assessed using the following:

- consider the impact of a risk on the total project rather than a portion of it; and
- consider the impact of related risks when assessing their impact on the overall project.

7.4 Development of Mitigation Strategies

Mitigation Strategies should be developed for those risks with a high risk evaluation. That is, high risk of occurrence with a high consequence for project delivery. The strategies should reduce the chances of the risks occurring and encompass the following:

- describe the task and the desired result;
- develop frequent milestones and monitor the performance of the mitigation strategy;
- develop multiple contingencies or alternative action plans;
- consider resource application as a means to overcome risks, e.g. additional personnel, information technologies, etc;
- communicate about risk early and often:
  - Provide detail to appropriate partners or stakeholders,
  - Provide regular updates of risk assessments,
  - Document in writing all information about the risk and how it will be mitigated.

7.5 Review Process

A review of the Risk Management Plan will be conducted monthly by the Project Coordination Team to ensure that all emerging risks are identified in a timely manner.

8 Project Evaluation

The evaluation of this project will seek to determine the degree to which there is:

- increased participant awareness of sustainable water management principles and practices;
- increased understanding across Council of the applicability of water redirection proceses and technology; and
- analysis of data related to water quality in the Cooks River improving as a result of the re-direction of waste water.

The project evaluation will produce four kinds of knowledge:

1. Findings – identify evidence about the project's process, performance, output and/ or outcomes.
2. Conclusions – bringing numerical and verbal information together to identify what has been learned.
3. Value Judgements – determine whether the conclusions, indicate 'good' or 'bad' and their extent (e.g. effective, efficient appropriate etc. or not).
4. Recommendations – advice about what the Project Team, Partners, Stakeholders Reference Groups and/or or other stakeholders could do next, given what has been learnt.

To answer these questions the project needs to address the program measures listed in section 5.3, above.

9 References

DEC (2005) Does Your Project Make a Difference?
Weblink: http://www.epa.nsw.gov.au/community/edproject/index.htm
DEC (2005) Working with Ethnic Communities to Sustain our Environment
DEC (2006) A Guide for Engaging Communities in Environmental Planning and Decision Making.
Weblink: http://www.environment.nsw.gov.au/education/spd_edu_comengagement.htm
DIPNR (2003) Community Engagement in the NSW Planning System
NSW Government's Community Builders website
Weblink: www.communitybuilders.nsw.gov.au;
Standards Australia (2004) Australian/New Zealand Standard AS/NZS 4360:2004 - Risk Management
Black, Kate (2007) Urban Sustainability Program; Urban Sustainability Major Project Grant Business Plan - Cooks River Sustainability Initiative. Marrickville Council

10 Appendices

Appendices are as per the original business plan.

Attachment 2 – Draft Marrickville Council Sustainable Irrigation Plan

Objectives

1. To develop a Sustainable Irrigation Plan for public parks and ovals and a Water Savings Action Plan for the top ten Council water use facilities
2. To undertake an options analysis for a range of non-potable water sources
3. To undertake community engagement for water planning, management and use on public parks and ovals and the top ten Council water use facilities

Objective 1
To develop a Sustainable Irrigation Plan for public parks and a Water Savings Action Plan for the top ten Council facilities

Goals:

1. To determine the historical, current and ongoing requirements for irrigation of Council's sports fields (irrigable parks), and potable water use of top ten facilities
2. To provide a well researched and clear direction to staff for the substitution of potable water for Council's large water use facilities

Actions
Assess Irrigation requirements: ▪ collate data on historical water demand for irrigation ▪ liaise with Council's Infrastructure Design and Investigations section to determine a desired level of irrigation that can be used as basis for undertaking water balance calculations ▪ determine the quality of non-potable water required to irrigate Council's sports fields ▪ determine the most effective irrigation regime to manage water storage and irrigation demands
Assess water use in other facilities: ▪ Undertake water audits of top ten facilities ▪ Identify immediate actions to improve efficiency ▪ Identify capital or maintenance activities to improve efficiency ▪ Identify options for fit-for-purpose water use

Assess opportunities for water storage location, type and linkage: ▪ identify potentially suitable locations for establishing water storages within parks ▪ examine the opportunities and constraints (e.g., land-take, access, aesthetics, and elevation) to establishing storages of different types and sizes (e.g., above-ground or underground, ponds or tanks, header and breaker tanks) ▪ conduct research into the various storage tank technologies available ▪ identify opportunities and constraints for connecting water supply to existing infrastructure
Actions
Create internal working groups and implement actions outlined in the SIP and WSAP: ▪ maintain a strategic water and energy team ▪ develop skills in Property Services to implement water savings actions from both plans

Top Ten Water Use Facilities	Actions

Objective 2

To undertake an Options Analysis for a range of non-potable sources

Goal:

1. To undertake an initial assessment of the economic, environmental and social viability of the following sources of non-potable water: stormwater harvesting, sewer mining, recycled water and groundwater extraction

Actions
Stormwater harvesting ▪ identify potential stormwater harvesting projects in identified subcatchments ▪ collaboratively determine the most cost-effective projects in stormwater harvesting for park irrigation and Council water demands ▪ research stormwater harvesting projects to gain an understanding of harvesting techniques that could be applied to this project, as well as issues and constraints to be avoided ▪ using agreed assumptions, estimate stormwater volumes that can be harvested (i.e., collected in storage) for individual subcatchments
Sydenham Detention Basin ▪ collate and review all relevant data (e.g., hydrological investigations, water reuse studies, heritage studies, and operating plans) pertaining to Sydenham Detention Basin ▪ undertake initial feasibility study by assessing opportunities and constraints using the basin to store stormwater during non-flood periods ▪ if feasible, develop draft concept designs for using the basin for stormwater harvesting. ▪ liaise with Sydney Water to test and further refine concept designs, with a view to obtaining in-principle agreement to proceed to detail design

Actions
Recycled Water ▪ Collate and review all relevant data related to the water management strategy for Australand's Discovery Point development at Wolli Creek ▪ Develop costed scenarios for the purchase and supply of recycled water from Disco Pt ▪ Prepare a draft agreement with Australand for the supply of recycled water to Council, subject to the optimisation task below ▪ Work with community to determine the best position and design for the siting of recycled water storage tanks. ▪ Monitor water quality, soil and playing field surfaces for any detrimental impacts of using recycled water for irrigation
Groundwater Extraction ▪ collate and review all relevant data on local and regional groundwater resources within Marrickville LGA ▪ In collaboration with Council, determine the economic viability of undertaking exploratory groundwater drilling at Council's riverside parks ▪ If feasible, prepare a groundwater exploration and testing program ▪ after obtaining quotations, engage and project manage the preferred contractors ▪ prepare a report documenting the findings from the exploration and testing, and recommend a costed course of action (e.g., do nothing, further exploration, establishment of permanent groundwater bores.) subject to the optimisation task below.
Sewer Mining ▪ determine the economic, environmental and social viability of establishing a sewer mining operation to supply recycled water fir use in irrigating Council's parks ▪ determine the quality of non-potable water required for irrigating Council's parks and the level of sewage treatment required to achieve this quality ▪ estimate a capital cost and ongoing operation const (cost per kilolitre rate) for the use of recycled water and compare against costs of other water sources.

Objective 3
To undertake community engagement for water planning, management and use on public parks and ovals and the top ten Council water use facilities

Goals:

1. To develop partnerships with relevant stakeholders in the community
2. To engage the community in planning for sustainable urban water management
3. To engage the community in co-management and design of urban water infrastructure

Actions
Partnership development ▪ identify key stakeholders in terms of park use and irrigation ▪ develop a communication and collaboration strategy for engagement with key stakeholders ▪ with the community, examine the suitability of each site for various water options, as well as opportunities for the installation of infrastructure, e.g., the siting and design of water storage tanks ▪ identify additional groups, organisations or individuals that could benefit from the supply of non-potable water e.g., club houses, bowling greens, and amenity blocks
Stakeholder forums ▪ hold a range of stakeholder forums and encourage residents and businesses to participate in the planning and implementation of fit-for-purpose irrigation of riverside parks ▪ develop a communication and collaboration strategy targeting marginalised communities including low-income households, social housing tenants, Aboriginals and Culturally and Linguistically Diverse (CALD) communities ▪ work with organisations that support these groups to engage with them around the SIS. Including internal stakeholders (community development) and external stakeholders – Housing NSW, Aboriginal Housing, boarding house managers
Collate data and review ▪ collate and review findings from all investigations undertaken above ▪ prioritise sources of non-potable water for irrigation based on a pre-determined list of selection criteria e.g., environmental benefits, value for money (construction, operation and maintenance) and social impacts ▪ present areas of focus to IUWM and DECCW

FINAL FINANCIAL REPORT - ENVIRONMENTAL TRUST GRANTS - 2006 ONWARDS

GRANTEE ORGANISATION NAME: Marrickville Council **GRANT NO:** 2006/USM/0064

NOTE: The project budget should reflect the most recent variation approved by the Trust (if applicable). The amounts shown below should be GST exclusive.

	TOTAL APPROVED PROJECT BUDGET			ACTUAL EXPENDITURE			VARIATION			
	OTHER SOURCES FUNDING	TOTAL TRUST GRANT	WHOLE PROJECT BUDGET	OTHER SOURCES FUNDING	TOTAL TRUST GRANT	WHOLE PROJECT BUDGET	VARIATION TRUST FUNDS	% VAR TRUST GRANT	VARIATION PROJECT BUDGET	% VAR PROJECT BUDGET
Direct Project Costs										
Salaries - officer/s		114,742	114,742		78,351	78,351	-36,391	-15%	-36,391	-12%
Salary Oncosts		23,523	23,523		20,020	20,020	-3,503	-1%	-3,503	-1%
Consultancies		111,500	111,500		154,000	154,000	42,500	17%	42,500	14%
Materials	25,000		25,000	44,763		44,763	0	0%	19,763	6%
Transport Costs			0			0	0	0%	0	0%
Insurance			0			0	0	0%	0	0%
Project Publicity	7,500		7,500	14,218		14,218	0	0%	6,718	2%
Other (detail)			0			0	0	0%	0	0%
Subtotal	**32,500**	**249,765**	**282,265**	**58,981**	**252,371**	**311,352**	2,606	1%	29,087	9%
Administration										
General Administration	30,000		30,000	55,000		55,000	0	0%	25,000	8%
Accounting Costs			0			0	0	0%	0	0%
Project Documentation			0			0	0	0%	0	0%
Other (detail)			0			0	0	0%	0	0%
Other (detail)			0			0	0	0%	0	0%
Subtotal	**30,000**	**0**	**30,000**	**55,000**	**0**	**55,000**	0	0%	25,000	8%
TOTAL	**62,500**	**249,765**	**312,265**	**113,981**	**252,371**	**366,352**	2,606	**1%**	54,087	**17%**

CERTIFIED BY-NAME: Gary Mills **POSITION IN ORGANISATION:** Manager of Finance

SIGNATURE: **DATE:** 20/5/11

Note for community organisations: Independent certification must be submitted with this report as per your reporting guidelines.

ATTACHMENT 3/4

ATTACHMENT 5

Australian Government Nation Building ECONOMIC STIMULUS PLAN

MARRICKVILLE council

MACKEY PARK REFURBISHMENT

PROJECT UPDATE: NOVEMBER 2010

MACKEY PARK REOPENS!

Project Launch

Mackey Park will be officially reopened on:

Thursday 9 December at 4pm.

Residents are invited to attend a community sausage sizzle, look around the new facilities and try out the new playground.

Official proceedings will commence at 4.30pm when the project will be launched by the Infrastructure and Transport Minister and Member for Grayndler Anthony Albanese and the Mayor of Marrickville Councillor Fiona Byrne.

The Marrickville Football Club (Red Devils) Academy will kick-off play on the newly reconstructed playing fields with a pre-season six-a-side soccer game.

The newly upgraded Mackey Park sports facilities and playground will reopen 9 December 2010

Final Works

Final work to complete paths, fencing, turfing and planting is underway after some delays caused by the frequent rain in recent weeks.

Following the launch event sandslit drainage lines will be installed across the playing field area. These are narrow channels filled with clean sand. This is the final stage of the field drainage construction in preparation for the 2011 soccer season.

New Facilities

Mackey Park will now provide:

- A quality turf playing surface for soccer and cricket and new sports training lighting
- Refurbished sports amenities
- New playground equipment and shade
- New pedestrian paths and path lighting
- The environmental benefits of a large solar array at Council's depot building to offset energy consumption in the park and a constructed wetland to treat the playing field drainage water.

Council thanks residents for their patience during the construction period and looks forward to celebrating reopening the park on 9 December.

Further Information

Full project details can be found on Council's website at www.marrickville.nsw.gov.au. Information is also available by contacting the Citizens' Service Centre on 9335 2222.

The $3.1 million Mackey Park Refurbishment is funded by a $2.2 million grant under the Australian Government Regional and Local Community Infrastructure Program as part of the Nation Building Economic Stimulus Plan, and Marrickville Council.

ATTACHMENT 6

Media Release

6 December

Official Reopening of Mackey Park

The Mayor of Marrickville, Councillor Fiona Byrne, and the Minister for Infrastructure and Member for Grayndler, Anthony Albanese MP, will officially mark the completion of the $3.1 million Mackey Park redevelopment project and reopen the park to the public on Thursday 9 December from 4.00pm.

Media are invited to attend.

The official proceedings will run from 4.30pm – 5.15pm, following a community sausage sizzle from 4.00pm. The Marrickville Football Club (Red Devils) Academy will kick-off play on the newly reconstructed playing fields with a pre-season six-a-side soccer game.

The project was funded by an Australian Government grant of $2.265 million under the Regional and Local Community Infrastructure Program – Strategic Projects as part of the Nation Building Economic Stimulus Plan. Council contributed a further $835,000 to the project to address additional costs for site remediation.

"This is an exciting development for the south Marrickville area, and for the many local sporting clubs, schools and residents who will use the new facilities," Mayor of Marrickville Fiona Byrne said.

"The upgraded sporting and recreational facilities will be enjoyed by Marrickville residents for many years to come, helping to promote health, fitness and well-being across our local community. I thank the Federal Government and my fellow Councillors for recognising the need for this funding," Councillor Byrne said.

The Mackey Park Refurbishment has involved a significant upgrade of sporting and playground facilities at Mackey Park, Marrickville. The works include reconstruction of soccer and cricket fields, installation of a new synthetic surface cricket wicket, installation of new sports lighting, upgrading of the amenities building, refurbishment of the playground, and installation of new pedestrian paths and lighting. Key environmental features include a large solar array at Council's depot building to offset energy consumption in the park and a constructed wetland to treat the playing field drainage water for reuse to irrigate the fields.

Venue: Mackey Park
Richardsons Crescent and Carrington Rd, Marrickville
Date: Thursday 9 December 2010
Time: from 4.00pm

ENDS

Marrickville Council Media contact
Media and Publications Coordinator
P: 9335 2047 M: 0428 115 292 E:comco@marrickville.nsw.gov.au

ATTACHMENT 7

Inner West Courier - Inner City Edition
Tuesday, December 14, 2010
Page : 7
Section :
Edition :
Region : NSW Suburban

Page : 1 of 1
Circulation : 86,590
Area Of Clip : 252.88 sqcm
Clip ID : 1039589

NEWS

The grass is greener at Mackey Park

Lauren Murada

THE turf at Mackey Park is greener after its official opening last Thursday, thanks to a $3.1 million upgrade.

Soccer field surfaces were replaced, the Marrickville Red Devils club room and change rooms upgraded and a cricket pitch put in so the field can be used year-round.

Kicking off the first soccer game at the opening, Grayndler Federal Labor MP Anthony Albanese said the upgrade was much needed.

"The upgrade will mean we have put in proper facilities and with the addition of the cricket pitch, we can use it for soccer and cricket," he said.

A $2.2 million Federal Government grant as part of the Regional and Local Community Infrastructure Program facilitated the upgrades.

Marrickville Council gave $800,000 towards environmentally sustainable infrastructure.

A new wetland will treat subsurface water and a new solar installation at Marrickville Council's St Peters depot will offset energy consumption.

Anthony Albanese, Fiona Byrne with Marrickville Soccer Club players and officials.

Picture: PHIL BLATCH

ATTACHMENT 8

Cooks River Valley Times
Thursday 16 December 2010
Page 20

HUNDREDS of residents joined Federal MP for Grayndler Anthony Albanese and Marrickville Mayor Cr Fiona Byrnes for a community barbecue and to watch Ms Reid Daring kick off play on the newly constructed playing fields with a pre-season six-a-side game. Full story and photos on page 19.

Park gets $3m facelift

COMPLETION of the $3.1 million Mackey Park redevelopment project was celebrated on Thursday with its official reopening to the public.

Improvements to Mackey Park include the reconstruction of soccer and cricket fields, installation of new sports lighting, upgrading of the amenities building, refurbishment of the playground, and installation of new pedestrian paths and lighting.

Federal MP for Grayndler Anthony Albanese said the new and improved Mackey Park would encourage members of the community to get active.

"It is estimated that around 30,000 people will benefit from the improvements to the playing fields, lighting, amenities, playground and walking paths," he said.

Marrickville Mayor Cr Fiona Byrne agreed that the upgrades would attract new users.

"This is an exciting development for the south Marrickville area and for the many local sporting clubs, schools and residents who will use the new facilities," she said.

"The upgraded sporting and recreational facilities will be enjoyed by Marrickville residents for many years to come, helping to promote health, fitness and well-being across our local community."

The project also included key environmental features, such as a large solar array at council's depot building to offset energy consumption in the park and a constructed wetland to treat the playing field drainage water for reuse to irrigate the fields.

The project was funded by an Federal grant of $2.265 million under the Regional and Local Community Infrastructure Program – Strategic Projects as part of the Nation Building Economic Stimulus Plan.

The council contributed a further $835,000 to the project to address additional costs for site remediation.

The grass is greener: The Federal Member for Grayndler, Anthony Albanese, tries his luck on Mackey Park after its recent redevelopment.

Attachment 9: Recycled Water Scheme - Collaboration framework and timeline

Community Collaboration Timeline - Recycled Water Scheme												
Communication	**Whom**	**Mar**	**April**	**May**	**June**	**July**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**
Project milestones		Development of visual assessment brief Inception meeting for waterplay park	Visual assessment consultants hired	Visual assess.consultants hired Assessment of impacts	On going information sessions/meetings	Site inspection with consultants	Continued discussions with core stakeholders	First round community consultations	Report - mitigation of impacts / preferred location	Second round community consultation	Visual assessment final report Inform core groups of outcomes	Presentation of Council decision to the community
Inform												
Brochure	Adora											
	Bicycle committee											
	Canoe club											
	Casual park users - on info board											
	Concordia club											
	Cooks River Valley Association											
	DAAB and DAAB user groups											
	Discovery Point - Terry Leckey											
	Heritage Promotions Committee											
	Illawarra Road Sustainable Water working Group											

Communication	Whom	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan
	Landcare											
	Magic Yellow Bus											
	Marrickville Cooks River Committee											
	Marrickville Council Multicultural Committee											
	Marrickville Golf Course											
	NSW Croquette Club											
	Residents - primary											
	Riverlife tour guides											
	Schools - park users											
	Schools - non-park users											
	Water play park group											
	Wolli Creek Preservation Society											
	Visual assessment consultants											
Council Column												
Email	Only if required											
Information board	Steel park											
	Tempe reserve x 2, Mackay, Mahoney											
Letter	Adora											
	Bicycle committee											
	Canoe club											
	Concordia club											
	Cooks River Valley Association											
	DAAB and DAAB user groups											
	Heritage Promotions Committee											
	Illawarra Road Sustainable Water working Group											
	Landcare											

Communication	Whom	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan
	Magic Yellow Bus											
	Marrickville Cooks River Committee											
	Marrickville Council Multicultural Committee											
	NSW Croquette Club											
	Residents - primary											
	Residents - secondary											
	Riverlife tour guides											
	Schools - park users											
	Schools - non-park users											
	Wolli Creek Preservation Society											
	Visual assessment consultants											
Meeting	DAAB management			6th								
	Concordia club & NSW croquet club											
	Heritage Promotions Committee											
	Illawarra Rd Sustainable Water Working Group	31st										
	Marrickville Council Multicultural committee	26th										
Newspaper												
Consult												
Workshop	Illawarra Rd Sustainable Water Working Group											
	Marrickville Aboriginal Consultative Committee											
	Marrickville Cooks River Committee											
	Visual assessment consultants											
	Residents - primary											
	Schools - park users											
	Sporting clubs											

Communication	Whom	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan
Meeting	Illawarra Rd Sustainable Water Working Group	31st										
	Marrickville Aboriginal Consultative Committee		29 initial				4th					
	Marrickville Cooks River Committee			12th			11th					
	Marrickville Multicultural Committee											
	Visual assessment consultants											
	Sporting clubs		contact									
	Waterplay park					29th	11th					
	Marricvkille Golf Club	12th										
	Residents - primary											
Site meeting	Core working group											
	Visual assessment consultants											
Collaborate	Visual assessment consultants											
	Waterplay park											
	Core working group											

Communication	Whom	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan

Community Collaboration Framework - Water Recycling Scheme

Stakeholder groups	Key contacts	Suggested contact															
		Inform									Consult				Involve		
		Brochure	Council Column	Letter	Email	Info board	Meeting	Cathy Jones & Ass. newsletter	Newspaper		Workshop	Meeting	Park session		Core group for consultation		
Businesses	Adora	x	x	x					x								
	Concordia club	x	x	x					x								
Community groups	Cooks River Valley Association	x	x	x			x		x								
	Illawarra Road Sustainable Water Working Group	x	x	x			x	x			x	x			x		
	Magic Yellow Bus	x		x									x				
	Riverlife tour guides	x	x	x	x												
	Wolli Creek Preservation Society	x	x	x	x			x	x								
Council committees	Bicycle Committee - Kendell	x		x													
	Marrickville Cooks River Committee	x	x	x	x		x	x	x		x	x	x		x		
	Heritage Promotions Committee	x	x	x			x		x								
	Landcare	x	x	x	x				x								
	Marrickville Aboriginal Consultative Committee										x	x	x		x		
	Marrickville Council Multicultural Committee	x	x	x	x		x	x	x			x			x		
	Sports Council														x		

Communication	Whom	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan				
Park users (casual)						x										
Partners	Water play park										x	x			x	
	Discovery Point - Terry Leckey						x								x	
	Visual assessment consultants						x				x	x			x	
Residents (primary)	All potentially visually affected	x	x	x	x	x	x	x	x		x				x	
Residents (secondary)	Discovery Point	x		x												
Schools	Park users	x	x	x		x	x				x				x	
	Non-park users	x	x	x												
Sporting clubs	Canoe club	x		x		x										
	Jets club	x	x	x			x	x	x		x	x			x	
	DAAB Centre including key user groups	x	x	x		x	x				x				x	
	Marrickville Golf Course	x	x	x			x	x	x		x	x			x	
	NSW Croquette Club	x	x	x			x	x	x		x	x			x	
Steering group	Impacted residents	x	x	x	x		x	x	x		x	x	x		x	
	Sporting groups	x	x	x	x		x	x	x		x	x	x		x	
	Marrickville Cooks River Committee	x	x	x	x		x	x	x		x	x	x		x	
	Marrickville Aboriginal Consultative Committee	x	x	x	x		x	x	x		x	x	x		x	
	Multi-cultural Interagency	x	x				x									

ATTACHMENT 10

1135-P02

Designed: S. Khan	Authorised: B. Wolfgramm
Checked: D. Stone	Approved: 13.08.2010

20 10 0 20 40 1:1000 North

Rev. | Revision description | Designed | Date

Original sheet size A1

Advanced Copy - for Consultation

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MELBOURNE	UNIT 7, 84 CHURCH ST. RICHMOND VIC 3121	P 03 8208 8111
EUROBODALLA	PO BOX 86, MORUYA NSW 2537	P 02 4474 5573
MID NORTH CRAST	SUITE 3, 31-33 HORTON ST. PORT MACQUARIE NSW 2444.	P 02 6584 6470

CAD FILE: 1135 00 CP.dwg

CLIENT:

MARRICKVILLE COUNCIL
2-14 FISHER STREET
PETERSHAM, NSW 2049
02 9335 2222

MARRICKVILLE & HENSON PARK

STORMWATER HARVESTING LAYOUT

Date 13.08.10 Drawing No. 1135 -P02 Sheet 02 of 4

ATTACHMENT 11

1135-P03

LEGEND:

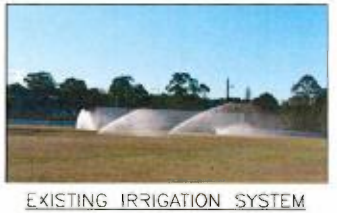
- FLOW ARROW
- RISING MAIN LOCATED INSIDE STORMWATER PIPE & CHANNEL
- RISING MAIN (TRENCH)
- EXISTING STORMWATER PIPE
- PROPOSED STORMWATER PIPE
- EXISTING PIT
- PROPOSED PIT
- GROSS POLLUTANT TRAP
- HEADER TANK

GPT

STORMWATER STORAGE

SYSTEM CONTROLS

EXISTING STORMWATER CHANNEL



EXISTING IRRIGATION SYSTEM

Designed: S. Khan | Authorised: B. Wolfgramm
Checked: D. Stone | Approved: 13.08.2010
10 5 0 10 20 1:500 North
Original sheet size A1

Rev. Revision Description Designed Date

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EUROBODALLA	PO BOX 98, MORUYA NSW 2537	P 02 4474 5673
MID NORTH COAST	SUITE 3, 31-33 HORTON ST, PORT MACQUARIE NSW 2444.	P 02 8584 8470

CAD FILE: 1135 OC OP.dwg

CLIENT:
MARRICKVILLE COUNCIL
2-14 FISHER STREET
PETERSHAM, NSW 2049
02 9335 2222

MARRICKVILLE & HENSON PARK

STORMWATER HARVESTING CONCEPT - OPTION 1

Date 13.08.10 Drawing No. 1135-P03 Sheet 03 of 4

ATTACHMENT 12

1135-P04

LEGEND:

- FLOW ARROW
- RISING MAIN LOCATED INSIDE STORMWATER PIPE & CHANNEL
- RISING MAIN (TRENCH)
- EXISTING STORMWATER PIPE
- PROPOSED STORMWATER PIPE
- EXISTING PIT
- PROPOSED PIT
- GROSS POLLUTANT TRAP
- HEADER TANK

GPT

STORMWATER STORAGE

SYSTEM CONTROLS

EXISTING STORMWATER CHANNEL

EXISTING IRRIGATION SYSTEM

Designed:	S. Khan	Authorised:	B. Walfgramm
Checked:	D. Stone	Approved:	13.08.2010

10 5 0 10 20 1:500 North

Original sheet size A1

Rev. | Revision Description | Designed | Date

Advanced Copy - for Consultation

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CAD FILE: 1135 00 OP.dwg

CLIENT:

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2-14 FISHER STREET
PETERSHAM, NSW 2049
02 9335 2222

MARRICKVILLE & HENSON PARK

STORMWATER HARVESTING CONCEPT - OPTION 2

Date 13.08.10 Drawing No. 1135 -P04 Sheet 04 of 4

ATTACHMENT 13

MARRICKVILLE council

Harvesting Stormwater

Marrickville and Henson Parks

COUNCIL IS INVESTIGATING STORMWATER OPTIONS TO IRRIGATE MARRICKVILLE AND HENSON PARKS.

Stormwater harvesting has many benefits. It can be used to irrigate sport fields thereby reducing Council's use of drinking-quality water, and it will improve the quality and amount of run-off that enters our local waterways.

HAVE YOUR SAY – INFORMATION DAY AT MARRICKVILLE PARK

To reuse stormwater it has to be captured, transported, treated and stored. You are invited to share your ideas and local knowledge about Marrickville and Henson Parks, look and comment on preliminary designs of the harvesting system, and chat to Council officers and Stormwater experts.

Where: Marrickville Park (near playground) Frazer Street and Livingstone Road

When: Between 10am – 1pm Saturday 11 September

For more information contact the Senior Environment Officer - Integrated Urban Water Management

P: 9335 2222 E: water@marrickville.nsw.gov.au

NSW Environmental TRUST

This program has been assisted by the New South Wales Government through its Environmental Trust.