



About this Plan

The NSW water and energy savings initiatives were introduced by the NSW Government in May 2005. They are administered by the Department of Energy, Utilities and Sustainability (DEUS) and include a requirement for certain businesses, Government agencies and local Councils to prepare Water and Energy Savings Action Plans.

Hawkesbury City Council is required to develop a Water Savings Action Plan (WSAP) in accordance with the guidelines set out by DEUS. The guidelines require Council to include the following in its WSAP:

- details of baseline water consumption
- management review and associated management actions related to water
- details of audits and reviews carried out to identify water savings opportunities
- actions for implementation

The WSAP is focussed on the top ten water consuming sites operated by Council.

This document has been developed to meet the requirements for development of a WSAP, and includes the following sections:

SECTION A – Baseline water performance data for all Council properties

SECTION B – Management review outcomes

SECTION C – Management actions

SECTION D – Data sheets for each of the top ten properties. Each data sheet includes:

- overview of the property
- historical and trend water consumption data
- audit findings
- energy use estimate

SECTION E – Water savings measures

The Plan currently contains several measures that require further data and information to be costed and finalised. These will be updated over coming weeks and months as Council receives the outstanding information from staff, contractors and consultants.

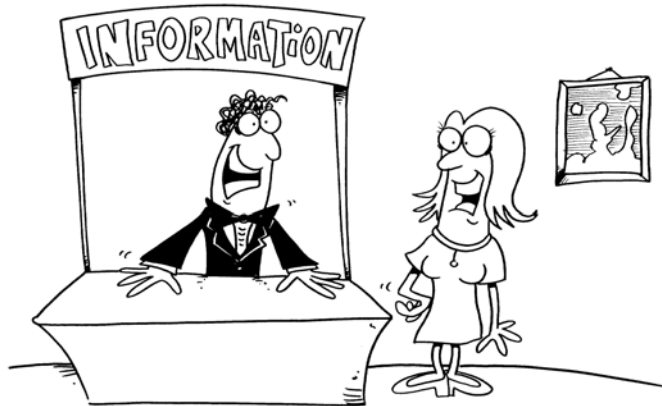
It is also anticipated that the Plan will be adjusted and updated on a regular basis as Council receives more detailed and accurate information to help it put together effective business cases for further water efficiency measures.

Further information regarding the Hawkesbury City Council Water Savings Action Plan and its implementation can be directed to the City Planning Division: Strategic Environmental Planner on (02)4560 4557.

Introduction to the Hawkesbury

Local Government began in the Hawkesbury in the 1840's with the creation of borough Councils. By 1906 the whole of the area was incorporated with three Councils, the Municipalities of Windsor and Richmond and the Shire of Colo. By 1981, there was one Local Government area, known as Hawkesbury Shire. In 1989 the Shire became the City it is today.

The Council area comprises 2,793 square kilometres, is home to more than 65,000 residents who live in a series of towns and villages and throughout the rural hinterland.



The City of Hawkesbury extends from the Cumberland Plain in the south and east, to the foothills and escarpments of the Blue Mountains to the west and north. The Hawkesbury is divided by five rivers, and includes the Hawkesbury/Nepean, Grose, Colo and Macdonald River valleys. More than 70% of the Hawkesbury is National Park containing substantial expanses of wilderness.

The topography of the area is very diverse ranging from fertile flood plains and wetlands, to undulating hills and heavily timbered ridges through to inaccessible mountainous regions dissected by steep gorges and towering escarpments. As a result of these geographic features, the Hawkesbury experiences regular flooding and bushfires, often resulting in considerable disruption to commerce and damage to agriculture and property. These physical features act as natural boundaries to development.

The Hawkesbury Local Government Area is made up of many small townships and localities in addition to the main (urban) population centres of Windsor and Richmond. Just over 35% of the population live within the township boundaries of Windsor-Richmond (an area which includes Hobartville, South Windsor and Bligh Park), while a further 59% of the population live in townships and localities situated within a 15km radius of these two principal centres. In total, almost 94% of the population live within the most south-easterly portion of the Local Government Area. The remaining 6% of the population live in small and isolated hamlets from Colo Heights, Colo Valley, Lower Portland, Webbs Creek and St. Albans in the north, to Cattai and Maraylya in the east, and Bilpin and Berambing in the west. Despite this apparent concentration, no one township or locality contains more than 11% of the total population of the Hawkesbury - a factor which has significant implications for the provision of services and facilities.

Hawkesbury City Council, in common with other general purpose Local Government authorities in New South Wales, operates under the Local Government Act of 1993, and a number of other NSW statutes. It provides a large range of services to ratepayers, residents, industry, business and visitors to the area.

The day to day management is the responsibility of the General Manager, who is the head of the staff organisation and has delegated responsibility for a range of Council functions under the Local Government Act.



Background

PROPERTY AND DEVELOPMENT

Council's diverse and extensive property portfolio continues to provide a vital alternative source of income for Council, with a financial return in excess of \$1.3 million in the 2005/2006 financial year.

The portfolio includes approximately 100 properties under lease ranging from shops, offices, residential premises, vacant land and ground leases with organisations such as Pizza Hut, KFC and McDonalds.

A Property Development Strategy was originally adopted by the Council in late 1994 which identified surplus properties for sale on the open market, development opportunities for existing sites and the purchase of additional properties with a view to broadening the existing income base.

The Strategy is reviewed on an ongoing basis to ensure opportunities are capitalised upon during favourable market conditions.

Recent and current initiatives include:

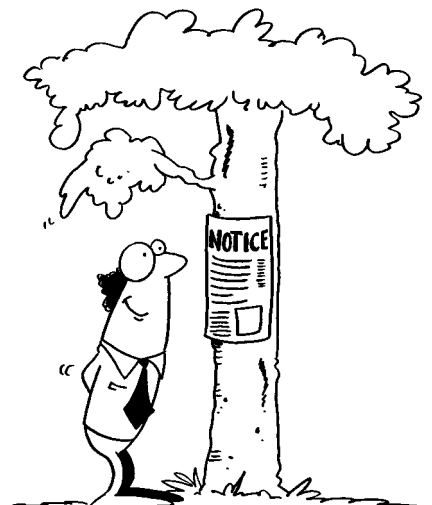
- The leasing of the commercial space to Curves and the Department of Community Services in the Library/Regional Gallery Building now named the Deerubbin Centre. Also the leasing of the café adjacent to the Deerubbin Centre;
- Identified properties for sale to assist in the funding of the redevelopment of the site, included the successful sale of 20 Fitzgerald Street, Windsor and 3004 River Road, Wisemans Ferry;
- Development of a Development Control Plan and sale of commercial property at Colonial Drive, Bligh Park; and,
- Continual review of the portfolio to identify opportunities for income generation.

Leasing of properties allows the flexibility to retain the ownership of properties not required for other core activities and, at the same time, provides a significant income source for the organisation. A commercial approach is taken to the leasing and sale or development of Council properties.

STATE OF THE ENVIRONMENT REPORT

The State of the Environment Report (SOE) is a monitoring and reporting tool that can be used to assist Local Government to make environmentally related decisions and recommendations. The report also provides yearly data and assessment of the progress of particular actions or outcomes. Legislation requires that each of the following eight environmental themes be covered in SOE Reports:

- Land
- Air
- Water
- Noise
- Biodiversity
- Waste



- Aboriginal Heritage
- Non-Aboriginal Heritage

The chapters of the SOE Report correspond to these themes, with each presented in the widely accepted State-Pressure-Response format. This is part of a move by Council to improve the SOE Report to become a more practical tool for the strategic planning and decision making process.

Hawkesbury City Council is committed to improving and expanding the SOE Report over time to include wider sustainability issues, so has included an initial Statement of Public Health in this update report. Future update reports will expand the Statement to include more detailed narrative and statistics on the public health issue.

Including this component will achieve a triple bottom line approach to reporting on the State of the Environment of our local community.

Triple Bottom Line (TBL) reporting is becoming an accepted approach for organisations to demonstrate they have strategies for sustainable growth. It focuses on decision-making and reporting which explicitly considers an organisation's economic, environmental and social performance. As such, it can be seen as both an internal management tool, and an external reporting framework. By monitoring and reporting social, economic and environmental performance, organisations can better prepare for future challenges and opportunities, including those traditionally considered intangible, such as reputation.

Given the evidence of the major health challenges facing communities, it was seen that integrated planning could not only deliver more effective outcomes for traditional public health roles but could facilitate some collaborative actions and understanding about the broader issues of health and well being.

IMPROVING THE SOE REPORT - THE ENVIRONMENTAL INDICATORS DATABASE AND REPORTING PROJECT

The *state* component identifies and describes the current and projected state of the environment.

The *pressure* component identifies and describes the pressure that human activities put on their immediate environment and their natural surroundings.

The *response* component identifies and describes the response of Council, government agencies, industry and the community to the pressures on, and state of, the environment.

Council recognises the importance of the SOE Report, and is working to improve the document so it can become a more powerful management tool for the organisation and community. This improvement process incorporates five key steps:





1. Identification of indicators for tracking of performance and outcomes.
2. Establishment of baseline performance for each indicator to allow for future performance and outcomes comparisons.
3. Implementation of management systems to ensure performance and outcomes data is collected and analysed regularly as a routine part of Council's operations.
4. Adjustment of Council's reporting processes and the format of its reports to provide for more meaningful reporting within Council, and to stakeholders and the community.
5. Improved linking of the SOE Report with Council's strategic planning process.

Council has commenced the implementation of the above processes, and is part way through a project to develop and implement procedures, processes and management frameworks for collection of key environmental data. This project also includes development of a Microsoft Access-based database for storing this data, and for producing automated and semi-automated reports for management and staff on environmental performance. This database will link to the organisation's management planning tools, with the overall project delivering a database tool and associated management processes that will allow for a more streamlined approach to development of Council's SOE Report.

The project is being completed in three stages:

Stage 1 – Preparation

Task 1 – Agreement on environmental indicators

- determine the environmental indicators that should be tracked within the database.

Task 2 – Identification of data sources

- determine the data source for each indicator
- determine the feasibility of collecting information and the most appropriate process for collating it within the database.
- develop a final environmental indicator register
- develop preliminary draft procedures for data collection.

Task 3 – Mapping of database functionality

- develop a software functionality overview to describe the requirements for the database (including linking to the management plan spreadsheet), and how it is to work on a day-to-day basis.

Stage 2 – Development

Task 1 – Development of the indicators database

- development of the database, and the links between the database and the management plan spreadsheet.



Stage 3 – Deployment

Task 1 – Pilot testing with a pilot group of staff and external contacts

- testing of the database and revised spreadsheet on a sample group of internal and external users.
- revision of associated procedures and documentation that sets out the processes for collecting data and transferring it into the database.

Task 2 – Database adjustment

- adjustment of the database based on feedback from users.

Task 3 – Final deployment and process finalisation

- final implementation of the database and spreadsheet.
- development of a powerpoint presentation user training tool.
- Finalisation of all processes for data collection, database management and automated reporting.

This project is well underway, and is due for completion in December 2006.





History To Water Savings Within The Organisation

Hawkesbury City Council resolved to participate in the Cities for Climate Protection (CCP) Program in April 2000, in recognition of the importance of reducing greenhouse gas emissions at the local level.

Milestone 1 of the program was completed in November 2001 by developing an emissions inventory for both the Council and community sectors using 1998 and 1996 respectively as the baseline years. Following this, Council set about establishing emissions reduction goals to satisfy the requirements for completion of Milestone 2 of the Program, which was achieved in April 2002.

Greenhouse Gas Reduction Goals

1. Reduce Corporate greenhouse gas emissions from 2000-2001 levels by 20% by 2010
2. Reduce Community greenhouse gas emissions from 1996 levels by 20% by 2010.

Benefits to Council of this reduction include increasing environmental awareness and saving money through reduced energy costs. The implementation of innovative and effective actions also serves to position Council as a community leader in environmental best practice.

As part of the requirements of Milestone 3, which was completed in May 2002, Council commenced the development of a Green Energy Strategy to set about achieving these reduction goals.

Milestone 4 involved the implementation of actions outlined in Version 1.0 of the Greenhouse Gas Reduction Strategy and was achieved in April 2003. Council then updated the baseline inventory for 2003 to determine the success of Council's energy programs, as a requirement of Milestone 5.

The emissions inventory for the Corporate sector was divided into five categories.

1. Buildings-This sector accounted for emissions from Council owned and operated buildings.
2. Vehicle Fleet- Which accounted for emissions from fuel use of the Council's vehicles and plant machinery.
3. Street Lighting- This sector accounts for emissions resulting from street lighting, including Country Energy/Great Southern Energy street lighting and Council decorative park lighting.
4. Water- This sector accounted for emissions resulting from the energy used to pump water for reticulation on Council owned property.
5. Waste- The sector accounted for emissions that result from the breakdown of organic waste.

Council activities generated 7344 tonnes of CO₂ equivalent during 2000-2001. The primary source of emissions in the Corporate sector was electricity consumption, accounting for almost 80% of emissions during 2000-2001.

Of particular note is the 1367 tonnes of CO₂ equivalent produced by the Oasis Aquatic Centre, which accounted for over 18% of the total Corporate emissions.

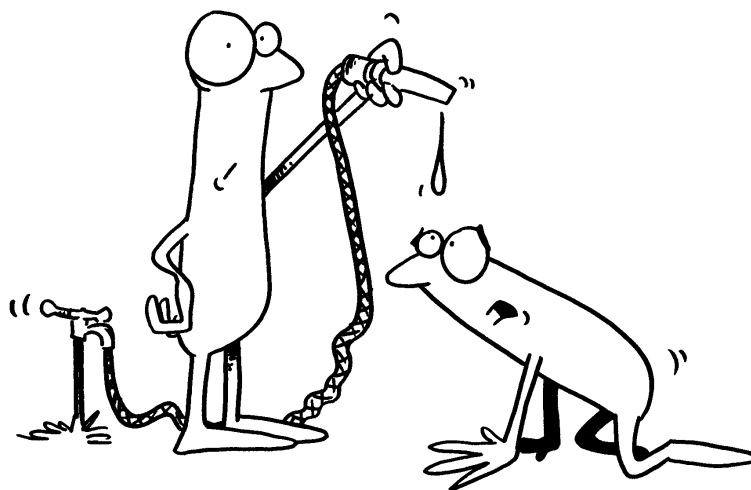


The primary means by which Council works toward meeting the reduction goals is through the development and implementation of Annual Greenhouse Action Plans. The Plans were developed as part of Council's annual planning process.

Some of the priority actions pertaining to water conservation implemented by this review process included:-

1. Staff education by signs, stickers and training sessions;
2. Installing timers on water coolers, zip boilers
3. Develop maintenance schedules for Hot/Cold water systems at each facility and implement conservative fixtures;
4. Purchasing and use of a pool cover at aquatic centres;
5. Review energy audits of all sewerage pumps and facilities and identify opportunities for water reuse;
6. Install soft starters on pumps across all Council water related facilities eg bore pumps for reticulation purposes;
7. Implement a water maintenance conservation and leakage prevention program at McGraths Hill treatment plant;
8. Recycle bio solids as a fertiliser;
9. Investigate surface water collection for reuse or vegetation;
10. Host sustainability events in the local area;

The requirement of the Department of Energy, Utilities and Sustainability will now replace this process and be reported within the State of the Environment Report.





Section A

Baseline Water Data (All Properties)





*Green shading denotes sites included in WSAP.

Account Number	Name	No. Days	Total KL Consumption for Year (2005)	KL Consumption per day for year
4644859	Oasis Aquatic Centre	355	41200	116.056338
4645921	Richmond Swimming Pool	376	16069	42.73670213
5121969	Deerubbin Centre	281	5399	19.21352313
4644011	Car Park	383	3596	9.389033943
4453089	Wilberforce Shops	375	3206	8.549333333
4745373	South Windsor STP	364	2977	8.178571429
4649211	Rented Property - Pizza Hut	378	1955	5.171957672
4646969	Old Lib & Admin Office	378	1891	5.002645503
4654114	Richmond Tennis Centre	376	1851	4.92287234
4463027	Standpipe Kurrajong	377	1757	4.660477454
4650440	Animal Shelter	404	1758	4.351485149
4654028	Richmond Park	279	1182	4.23655914
4653422	Woodhills Carpark	383	1561	4.075718016
4834465	Australiana Village	367	1345	3.664850136
4654420	Standpipe Pitt Town	373	1134	3.040214477
4676899	Hawkesbury City Waste Management Facility	364	1070	2.93956044
4649190	Rented Property - KFC	378	1105	2.923280423
4646677	McQuade Park	378	957	2.531746032
4652907	Amenities Block	378	954	2.523809524
4646278	Property sold	277	645	2.328519856
4647417	Public Toilets	380	877	2.307894737
4455030	McMahons Park	377	832	2.206896552
4453090	Wilberforce Shops	375	781	2.082666667
4458593	Macquarie Park	367	703	1.915531335
4773439	Governor Philip Park	378	708	1.873015873
4648482	Day Care Centre	298	517	1.734899329
4647029	Loder House	378	637	1.685185185
4643856	Sewer Pumping Station	364	587	1.612637363
4796333	Rented Property	378	579	1.531746032
4653430	Park - Recreation	383	556	1.451697128
4644933	Preschool	379	545	1.437994723
4645876	Need Meter Number	379	545	1.437994723
4463028	Standpipe	368	524	1.423913043
4456453	Preschool	367	508	1.384196185
4454869	Old Memorial Park	377	476	1.262599469
4648483	Rented Property	199	245	1.231155779
4636166	Rented Property	372	439	1.180107527
4643390	Child Care Centre	379	438	1.155672823
5128836	Child Care Centre	365	406	1.112328767
4806314	Function Centre Windsor	378	420	1.111111111
4649494	Richmond Preschool	382	404	1.057591623
4636164	Rented Property	372	391	1.051075269
4629123	Rented Property	282	292	1.035460993
4651204	McGraths Hill Shops	379	390	1.029023747
4449027	Hawkesbury Valley Pony Club	365	369	1.010958904
4646968	Reverend Turner Cottage	378	368	0.973544974
4796334	Rented Property	378	362	0.957671958
4453237	Freemans Reach Tennis Courts	372	333	0.89516129
4650785	Vines Pony Club	373	306	0.820375335



Account Number	Name	No. Days	Total KL Consumption for Year (2005)	KL Consumption per day for year
4653457	Library	383	281	0.733681462
4653771	Rented Property - Black Stump	364	264	0.725274725
4653927	Bowman Cottage	383	263	0.686684073
4653352	Par - Recreation	376	251	0.667553191
4653007	Regional Museum	378	247	0.653439153
4653428	Neighbourhood Centre	383	243	0.634464752
4647057	Paine Park	378	225	0.595238095
4935495	Standpipe	367	205	0.558583106
4823169	Bush Fire Centre	375	202	0.538666667
4646988	Rented Property	280	150	0.535714286
4650517	Oakville Park	373	196	0.525469169
4646672	Governor Phillip Park	378	188	0.497354497
4454856	Park - Recreation	377	183	0.485411141
4644050	Women's Cottage	383	178	0.464751958
471149	Neighbourhood Centre	383	176	0.459530026
4796338	Rented Property	282	127	0.45035461
4654419	Standpipe	373	164	0.439678284
5128829	Community Centre	365	148	0.405479452
4796335	Rented Property	378	153	0.404761905
4653919	Pughs Lagoon	376	143	0.380319149
4759681	Neighbourhood Centre	287	101	0.351916376
4737012	Property sold	378	131	0.346560847
4644449	McLeod Park	379	123	0.324538259
4766457	Senior Citizens Centre	382	123	0.321989529
4806888	Preschool	286	87	0.304195804
4652979	Garden	378	112	0.296296296
4649227	Cementry	378	108	0.285714286
4453283	SES Building	367	80	0.217983651
4644014	Women's Cottage	383	77	0.201044386
4636163	Rented Property	372	67	0.180107527
4629198	Rented Property	372	57	0.153225806
5128830	Shopping Centre	372	55	0.147849462
4643931	Old Bush Fire Shed	373	54	0.144772118
4457540	Terrace Park	378	48	0.126984127
4650411	Park - Recreation	190	12	0.063157895
4636165	Rented Property	362	22	0.060773481
4646277	Property sold	378	17	0.044973545
4646678	Baby Health Centre	378	16	0.042328042
4653458	Rented Property	383	14	0.036553525
4645801	Cemetary	202	3	0.014851484
4653616	Park - Recreation	282	3	0.010638298
4647058	Cemetary	192	2	0.010416667
4453293	Bush Fire Shed	356	2	0.005617978
4646594	Need Meter Number	361	1	0.002770083
4458592	Rented Property	361	0	0
4647448	Sewer Pumping Station	361	0	0
4647664	Sewer Pumping Station	361	0	0
4648399	Holland Paddock Reserve	179	0	0
4651752	Council Land - Vacant	361	0	0
4651753	Council Land - Vacant	361	0	0



Section B

Management Review Outcomes





Water Management Review

A Water Management Review seeks to ensure that water efficiency is incorporated into existing management practices of an organisation and accountabilities are identified for priority actions.

The review is a structures assessment of the systems the organisation has in place for managing water. This means that all levels of business management - financial, production, maintenance, OH&S and operation - will need to be included in the review. The ISO 1400 type management system audit is an example of this approach.

MANAGEMENT TEAM

Dianne Tierney	Strategic Environmental Planner
John Munns	Manager - Building Services
Ramiz Younan	Manager - Water Management
Sean Perry	Manager - Land Management
Andrew Wales	Omega Environmental Planning Pty Ltd
Lisa Desmond	Chief Financial Officer

MANAGEMENT REVIEW MATRIX

The Matrix below shows the current performance, strengths and weaknesses in each area. It provides an indicative ranking system for how the organisation meets each of the Management review areas. The descriptor for the **Moderate ranking** means informal management practices are in place. **Minimum Sustainable** means that there is executive level management policy for improving water efficiency or reducing water costs that includes targets. Water efficiency opportunities are based on a comprehensive review of water use. This policy is reported on the organisations website and in Annual Reports and communicated to all employees. Sub targets are established for major facilities, and regularly updated. **Industry Leader** Compliance within allowable limits.

	Low	Moderate	Minimum Sustainable	Industry Leader	Best Practice
A Senior Management Commitment		X			
B Understanding of water savings potential		X			
C Water targets and key performance indicators			X		
D Water metering and monitoring			X		
E Water management reporting		X			
F Water supply management		X			
G Operating and maintenance procedures		X			
H Accountabilities for water management		X			
I Training and awareness procedures		X			
J Compliance with legal and/or regulatory requirements				X	





Section C

Management Actions





SENIOR MANAGEMENT COMMITMENT

1. Develop and implement a stand-alone Environmental Policy that effectively incorporates energy and water management issues to set the overall direction for Hawkesbury's environmental programs.

- (a) Develop draft Policy
- (b) Disseminate draft Policy for review
- (c) Finalise Policy
- (d) Develop a procedure that sets out how the Policy is to be communicated, reviewed and managed

Notes re Policy:

- Ensure the Policy is specific to HCC's operations, including reference to organisational-specific energy and water issues, and to a framework for setting and reviewing energy and water performance improvement objectives and targets.
 - When developing the Policy, ensure it is simple to read and avoids unnecessary 'jargon' used in other organisations' Environmental Policies. Keep the document short, snappy and understandable to the lay person.
 - Involve key staff from all operational areas when developing the Policy to ensure it is relevant and can be easily understood by all personnel.
 - Engage a professional designer to develop the Policy into an eye-catching yet readable document.
 - At a minimum, the Policy should be posted in all work areas, included in all primary Council information booklets, and posted on the HCC website. The Policy should become the primary document that drives the HCC energy and water programs.
 - Ensure the associated procedure for managing the Policy includes a process for the regular review of the Policy to ensure it remains current and consistent with HCC's significant issues and organisational objectives. The most effective way to ensure this review is carried out is to document a specific review process whereby an assigned committee meets regularly (e.g. annually) to review and adjust specific environmental management system components (including the Policy).
 - At a later stage, consider combining the Environmental Policy with the OH&S Policy and other Council policies to form an integrated Environment, Health and Safety Policy for HCC. When carrying out this integration, attempt to keep the document easy to read and 'user friendly'.
2. Examine the internal resources being applied to develop the energy and water management frameworks and processes and set resources effectively to ensure the frameworks and processes can be implemented effectively.
 - (a) Ensure staff workloads are adjusted to allow for development and implementation of process.



- (b) Ensure the operating budget includes provision for the development and implementation of frameworks and processes, including the utilisation of external assistance where necessary.
3. Ensure managers are fully aware of the importance of a strategic approach to energy and water management within Council.
 - (a) Deliver a briefing to management (1-2 hours) to educate them on energy and water management issues and the management frameworks and processes being developed to manage and improve energy and water performance within the organisation.
 - (b) Include energy and water issues discussion as a set agenda item at all management and staff meetings.
 - (c) Incorporate environmental reviews into meetings of existing management teams and committees.
4. Establish a management procedure outlining the process for regular review of energy and water management components.

Notes:

- The process should provide for overall reviews of the system (e.g. annually) complemented by more regular meetings of the Energy and Water Steering Team where interim reviews and adjustments can be made.

UNDERSTANDING OF ENERGY AND WATER SAVINGS POTENTIAL

Develop and implement an overall process for regularly reviewing Council's water and energy performance to identify areas where improvement actions should be implemented.

- (a) Develop process
- (b) Implement process
- (c) Document the process for undertaking this assessment in a procedure.

Notes:

- The most effective way to ensure this review is carried out is to implement a specific review process whereby an assigned group meets annually to review the energy and water performance of Council, and suggests actions and programs to feed into the forthcoming year's operating plans and budgets.
- Ensure the process for identifying energy and water improvement opportunities provides for linking to existing risk identification and management processes.



COMPLIANCE WITH LEGAL AND OTHER REGULATORY REQUIREMENTS

1. Develop a central register of all environmental legal and other requirements applicable to HCC, including relevant legislation, codes of practice, community agreements, licences and permits related to energy and water management.
2. Develop and implement a process for identifying and reviewing HCC's legal and other requirements on a regular basis.
 - (a) Develop process
 - (b) Implement process
 - (c) Document this process in a formal procedure.
3. Implement a program of regular compliance audits to determine HCC's overall degree of compliance with applicable energy and water related laws and licences.
 - (a) Design programme
 - (b) Implement programme
 - (c) Document programme in procedure

TRAINING AND AWARENESS PROCEDURES

1. Develop and implement a process for a consistent and effective method of communicating significant and relevant energy and water management issues, and applicable regulatory requirements to key personnel.
 - (a) Develop an overall energy and water awareness strategy for communicating key significant energy and water management issues, legal requirements, controls, procedures and other management system components to key staff and contractors.

Notes – consider the following when developing the strategy:

- i. Consider using existing communication pathways such as toolbox talks and memos, and complement these with innovative communication such as posters and multimedia presentations.
- ii. Develop this strategy with input from the environmental education team, and assign responsibility for its implementation to this team, or the Energy and Water Steering Team.
- iii. Apply innovation and new technology to help communicate key energy and water issues, such as:
 - Noticeboards
 - Posters and signs
 - 'Energy Week' and 'Water Week' programs
 - Competitions



- i. As a key first step to improving communication, develop a program of 'energy and water issue of the quarter' and actively promote that issue via presentations at team meetings, memos, posters and other promotional items.
 - ii. Include dedicated sections in HCC internal newsletters, reports and memos for reporting of energy and water discussion items, hints and tips, performance results and other information environmental issues.
- (b) Implement the strategy (may want to expand this task to spell out what the implementation entails).
- (c) Extend the HCC new employee and contractor induction to include more significant discussion of energy and water issues.

Notes:

- In particular, ensure the induction focuses on communicating the key energy and water issues to personnel, the controls and programs that are in place to address these issues, and the specific responsibilities and accountabilities of staff in regards to energy and water management.
- (d) Require all employees to undertake a summarised form of the induction on a biennial basis.

Notes:

- Utilise technology where possible to deliver this revision (e.g. develop the revision induction as an interactive Powerpoint presentation that staff can complete in their own time). (*Training and awareness procedures*)
- (e) Develop a thorough, systematic and streamlined process for ensuring contractors are made aware of HCC's energy and water management practices.
 - (f) Ensure the performance management system currently being implemented within HCC includes reference to energy and water management.
 - (g) Implement a verification system to ensure staff are made aware of new or adjusted operational controls, processes and energy management issues (such as a checklist, or sign-off sheet).
 - (h) Implement a process for ensuring staff are trained in key energy and water issues of their position when changing roles within the organisation, and that this training and associated competencies are verified and tested.

ENERGY AND WATER TARGETS AND KEY PERFORMANCE INDICATORS

1. Develop broad and long term energy and water improvement objectives to provide strategic direction to the organisation's energy and water programs.

*Notes:*

- Ensure these are developed with employee input, and are reviewed and adjusted on a regular basis in line with the review of the Management Plan so they remain relevant.
2. Include development of annual quantifiable energy and water targets as part of the corporate planning process.

Notes:

- The targets should be set at an organisation-wide level by a management team, and then guidance provided to individual business units to set department-specific targets as they see fit.

OTHER – MANAGEMENT PLANS

1. Consider updating the Hawkesbury Sustainable Energy and Greenhouse Strategy to incorporate water management issues, to become an integrated Energy and Water Strategic Improvement Plan to meet DEUS and CCP requirements.
 - (a) Develop revised plan
 - (b) Develop and document an associated process to ensure the actions contained in this plan feed seamlessly into the annual budgeting process.
 - (c) Ensure this plan is updated on a regular (annual) basis as part of an overall management review of energy and water management issues.
2. Implement a simple and streamlined process to ensure management and staff consider the current energy and water issues and associated indicators, objectives and targets, when developing the management and operating plans and budgets, to ensure these plans include strategic programs to address these issues and meet these objectives. Aim to have the consideration of energy and water issues and outcomes a routine part of the annual planning process.

Notes:

- Improve the process for development of annual strategies, plans and budgets to become a more logical and rigorous process in regards to energy and water management, whereby the previous year's energy and water performance is analysed, current significant energy and water issues are identified, and new objectives, targets and strategies are set. Ensure there is a logical and seamless flow of data, information and feedback between various council committees and management levels during this review process.
- To assist in achieving this, develop guidance notes and tools as appropriate to help prompt management to incorporate energy and water issues and act strategically with regards to environmental outcomes during the corporate planning process.
- Document this entire process in a formal procedure.



ACCOUNTABILITIES FOR ENERGY AND WATER MANAGEMENT

1. Incorporate more specific environmental responsibilities into employee position descriptions, including energy and water management responsibilities.

Notes:

- Make these position descriptions the basis for improved accountability by adding environmental performance indicators and specific outcomes targets to them, to be achieved by staff as part of their team and reviewed annually as part of the performance review process.
 - Implement a documented process for the regular review of position descriptions by staff and their managers to ensure they remain relevant.
2. Extend the current process for communication of OH&S responsibilities to employees through toolbox meetings, training and other means, to also include communication of employees' energy and water management responsibilities.
 3. Identify a staff member to act as the organisation's energy and water performance coordinator, to oversee the implementation and maintenance of energy and water management frameworks and processes.

Notes:

- If possible, assign the role of coordinator to the Property Manager. Ensure the coordinator takes on a *coordinating* role only, where he/she is responsible for supporting the managers and other staff to achieve the organisations energy and water performance targets. Clarify the role of the coordinator to staff.
4. Assign responsibility for energy and water management in individual properties and assets to the managers and supervisors responsible for the properties.
 - (a) Carry out a project to correlate all energy and water accounts against specific assets, and ensure a staff member is assigned responsibility for that asset and therefore that account.
 - (b) Establish documented processes for managers to track energy and water performance of their areas of influence, for contributing to the development of actions to improve performance, for implementing these actions, and for reporting outcomes back to senior management and elected representatives.
 - (c) Develop processes to ensure all staff are accountable to their supervisors and managers for effective energy and water management, through the implementation of checks and audits, team targets, and effective reporting.
 - (d) Develop processes for ensuring the organisation's Property Manager and environmental/sustainability staff liaise regularly with other managers responsible for energy and water management in their area to provide strategic and technical support when required.



- (e) Develop an Energy and Water Steering Team, or extend an existing environment-based committee or team, to oversee energy and water management processes within HCC (including the setting of objectives and targets, the development of action plans, review of performance etc).

ENERGY AND WATER MANAGEMENT REPORTING

1. Request managers and supervisors to encourage staff to provide feedback on energy and water issues during team meetings, and to pass on important environmental information to staff as required. Ensure this communication is happening through random checks and audits.
2. Develop processes for the regular reporting of energy and water performance (against the objectives and targets) and program outcomes to staff and Commissioners. Consider developing energy and water 'report cards' that integrate with core business reporting processes.
 - (a) Agree on a logical and systematic process for reporting environmental performance to staff, management, Council, stakeholders and the community.
 - (b) Identify the key information each target audience needs to receive, and the format it should receive it in, and develop report templates accordingly.
 - (c) Consider developing environmental 'report cards' that integrate with core business reporting processes.
 - (d) Document the process in a procedure that is communicated to all staff.
 - (e) Ensure reports provide feedback on energy and water program *outcomes* as well as energy and water *performance*.
 - (f) Develop, implement and document a process for disseminating energy and water performance information received through the Planet Footprint Program to all relevant staff.
 - (g) Adjust the State of the Environment Reporting process to include organisational energy and water performance data, obtained through the Planet Footprint Program.
 - (h) Adjust the Annual Report process to better incorporate reporting of energy and water outcomes and performance against the environmental objectives and targets. (*Energy and water management reporting*)
3. Establish a Sustainable Technical Team to oversee the management of internal energy and water issues within HCC.
 - (a) Develop terms of reference for this group, and provide tools to help the Team perform its role effectively (such as checklists, pre-set meeting agendas etc). Aim to make the group as effective as possible, but avoid it becoming too formal or 'bogged down' with an overly bureaucratic approach. Apply this team as the first point of review of energy and water issues within HCC.



OTHER - COMMUNICATION

Develop procedures for dealing with internal requests for energy and water information, and train all staff (especially customer service staff) on these procedures. Document the process for internal and external energy and water related communication into a formal procedure and communicate to key personnel.

OTHER - DOCUMENTATION

Develop management system procedures to describe each aspect of HCC's energy and water management processes.

- (a) Compile these into an Energy and Water Coordinator's Guidebook describing the core elements of the management system and how they interact with other management system elements. Keep this Guidebook simple and user-friendly.
- (b) Develop an employee's Energy and Water Management Guide to form the basis for general environmental education of employees, contractors and interested external parties. The Guide should contain only the important information relevant to employees, in an interesting to read form e.g. using floHCCcharts, photographs etc). HCC should aim to develop the guide so that it can be carried by employees at all times, and serve as a 'ready reckoner' for managing activities with regards to energy and water issues, and dealing with environmental incidents and emergencies.

OPERATING AND MAINTENANCE PROCEDURES

Develop standardised procedures and controls relating to energy and water management.

- (a) Standardise all procedural development, maintenance and distribution within HCC under a single process, and work to adjust existing controls so they are more streamlined.
- (b) Review all current operational controls (including SWMSs, SOPs and organisational Policies) and incorporate controls for energy and water management where necessary. Involve relevant personnel as much as possible during this process, and look to simplify the controls from their current format.
- (c) Develop specific procedures for energy and water management where necessary to address those issues not covered by existing procedures.
- (d) Develop cue cards, incorporate photographs into procedures and apply other innovative techniques for ensuring operational controls are interesting to read and communicated effectively.
- (e) Extend the procedures and controls to cover all operations as applicable.
- (f) Implement a process for communicating operational controls to relevant staff.
- (g) Implement a process to monitor the effectiveness of the controls, through a combination of internal audits and annual environmental reviews.



ENERGY AND WATER SUPPLY MANAGEMENT

Develop and implement an organisation-wide purchasing and procurement procedure that incorporates consideration of energy and water issues at all stages.

ENERGY AND WATER METERING AND MONITORING

Develop, implement and document a process for management review of all energy and water bills prior to payment. Ensure managers are appropriately trained to carry out these reviews effectively, and are equipped with appropriate checklists or guidance notes.

OTHER – CORRECTIVE AND PREVENTATIVE ACTION AND SUGGESTIONS

Adjust existing safety hazard and near-miss identification processes and forms to include environmental incident and non-conformance identification, including the reporting of energy and water 'issues'.

- (a) Extend the OH&S Incident Form to become an 'all-in-one' form for reporting all incidents, accidents, near misses, hazards *and suggestions*, for all types of issues – OH&S, environmental, quality etc. When redeveloping the form, simplify it as much as possible so it is easy for staff to use.
- (b) Implement an incentive or rewards scheme to encourage staff to make suggestions and report incidents.
- (c) Launch a campaign to train staff and contractors in and make them aware of the new reporting form.

OTHER – AUDITS

Develop, implement and document a process for the regular auditing of operations against controls and procedures developed to improve energy and water performance.

- (a) Develop, implement and document a process for the regular inspection of properties for energy and water problems, and opportunities for improvement. Base these inspections on a set of standardised checklists (such as checking for equipment left running, leaking taps etc). Train a group of designated staff to carry out these checks.

Notes:

- Ensure inspection results are communicated to staff, and consider implementing a 'competition' or similar to encourage staff to improve performance and inspection results in their work area.





Section D

Data Sheets





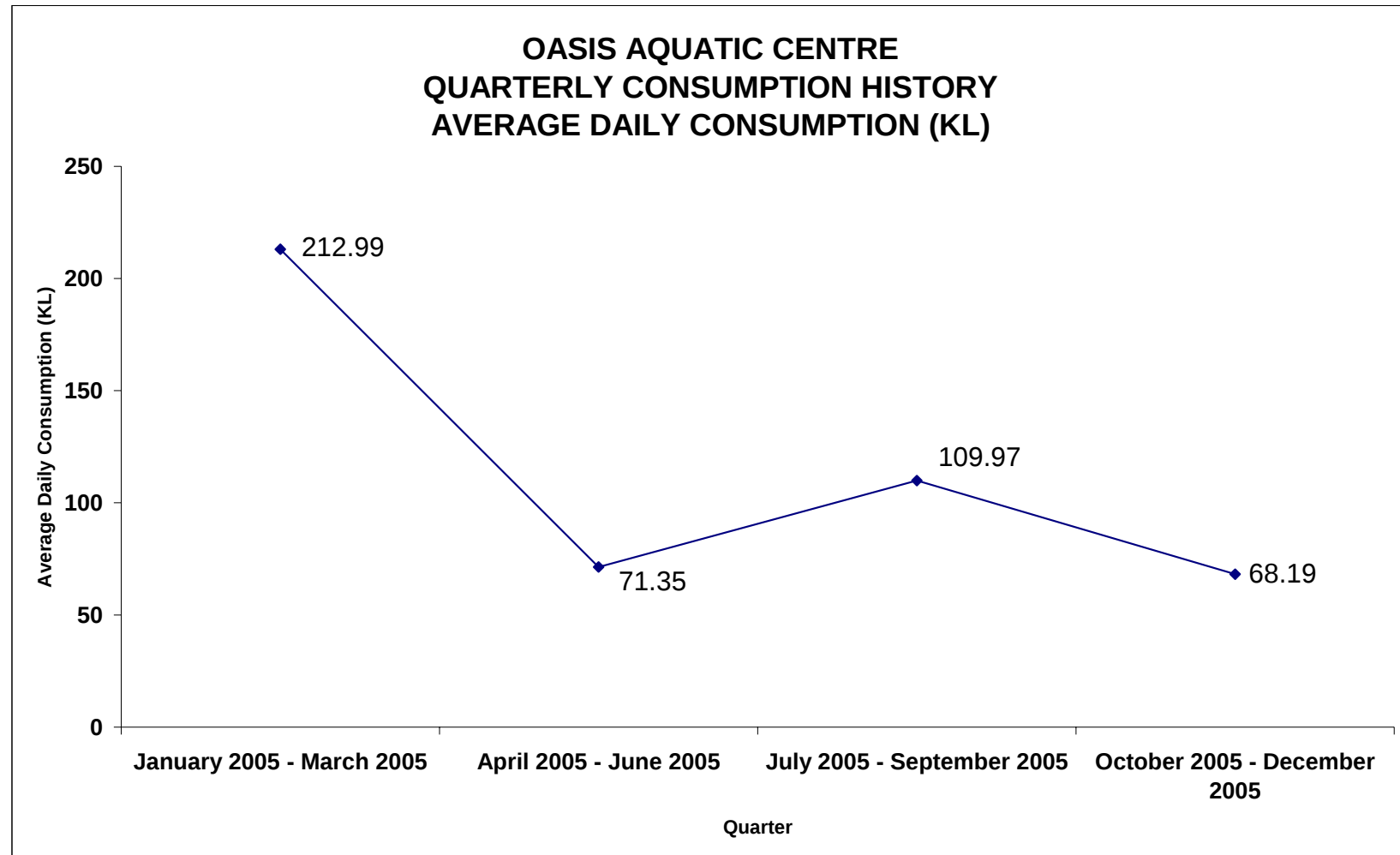
Water Savings Action Plan

Site Data Sheet - Oasis Aquatic Centre

Site Name	Oasis Aquatic Centre
Site Address	Church Street, Windsor
Activities	General swimming facility
Summary of Water Consuming Infrastructure	The Oasis Aquatic Centre is a large recreation facility comprising indoor and outdoor pools, café, gymnasium, change rooms / showers / toilets, and associated office. Much of the facility is indoors, and the entire centre is open all year. The facility is owned by Hawkesbury City Council, but leased to and managed by YMCA Sydney.
Annual Consumption For 2005	41,200 KL
Average Per Day Consumption For 2005	116.06 KL
Annual Costs For 2005	\$45,280.37
Costs Per Kilolitre (\$/KL) For 2005	1.0990
Indicators	Patronage - 278,608 for 2005 (includes pool, gym, aerobics etc) (average of 763.31 people per day)
Consumption Indicator	152.05 litres per person per day



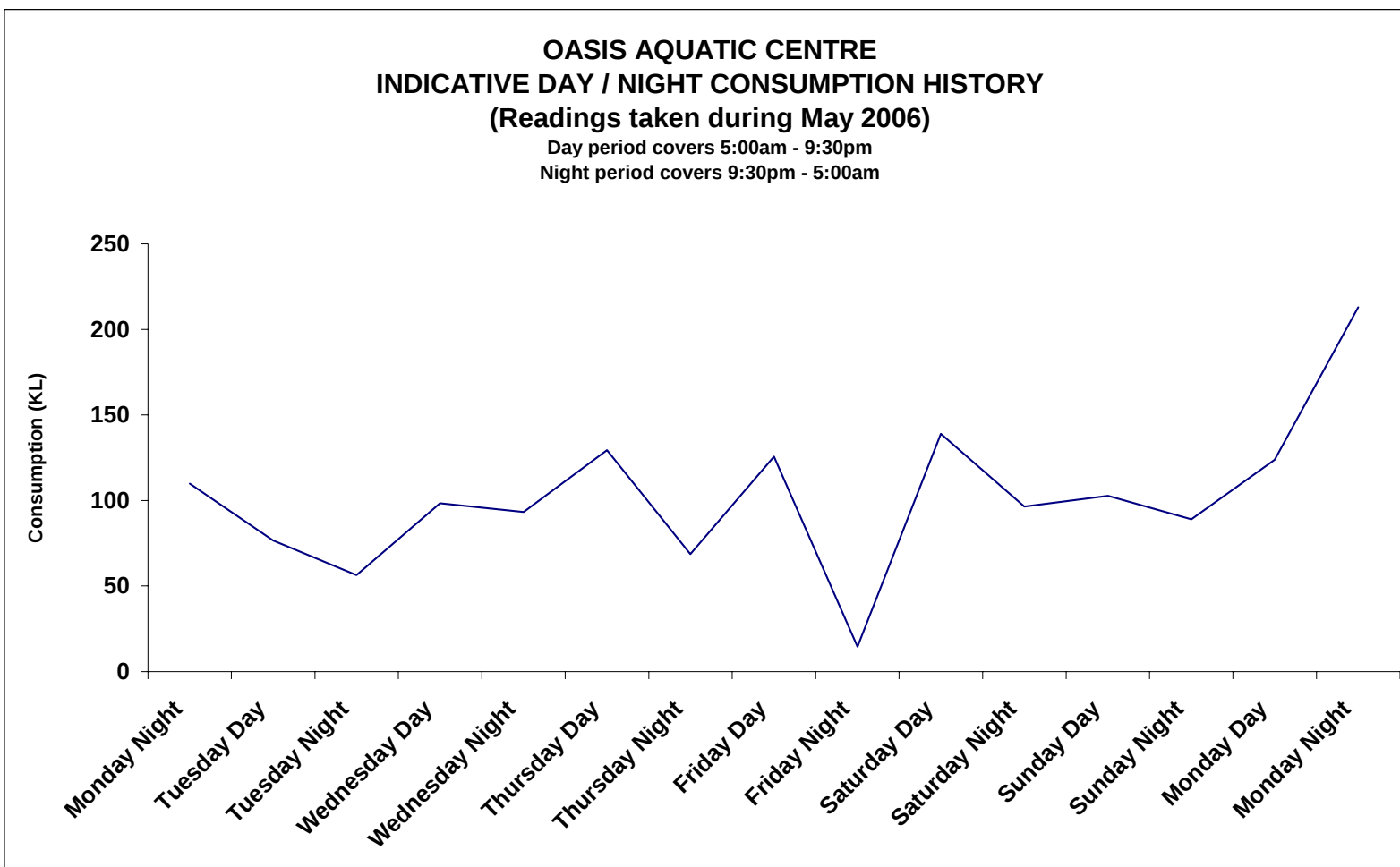
Water Savings Action Plan Site Data Sheet - Oasis Aquatic Centre





Water Savings Action Plan

Site Data Sheet - Oasis Aquatic Centre





Water Savings Action Plan

Site Data Sheet - Oasis Aquatic Centre

WALK THROUGH AUDIT NOTES:

- Most of toilets/showers/bathroom fixtures are water efficient.
- No excessive splashing – good.
- Float bulb recently replaced/repared in ballast tank – improve water efficiency.
- Much of infrastructure is below ground and cannot be seen. The number and accessibility of viewing/maintenance points was limited.
- Outdoor pool covers not used – vandalised.
- Backwash diverted to golf course for irrigation.
- Consider installing sub meter on backwash line to better understand losses associated with backwashing versus evaporation.
- Fire hose sometimes used for washing down outside areas, but mostly cleaned using a blower.
- Pool Supervisor works to a Maintenance and Checking schedule. A checklist to complement this may be useful.
- No inspection opening over makeup valve or makeup tank. Only access is via difficult and dirty passageway, so no checks are carried out for leaks.
- Spa water is dumped every Wednesday, including balance tank.
- Backwashing of indoor pool appears to be carried out too frequently (currently one filler is backwashed every day (according to staff), and there are four fillers). However, there are no clear records to verify how often backwashing is being carried out.
- No pressure gauges in place to identify when backwashing is needed (staff just backwash on a daily basis – probably don't need to).
- Cleaning is carried out one section at a time each night by a gurney (top deck done nightly; bottom deck done once per week).
- Management have excellent awareness of water savings issues, and have previously commissioned walk through audits by DEUS to help identify savings opportunities
- Staff have an excellent understanding of the dynamics of water flow within the centre. They 'know what is coming in and going out'.



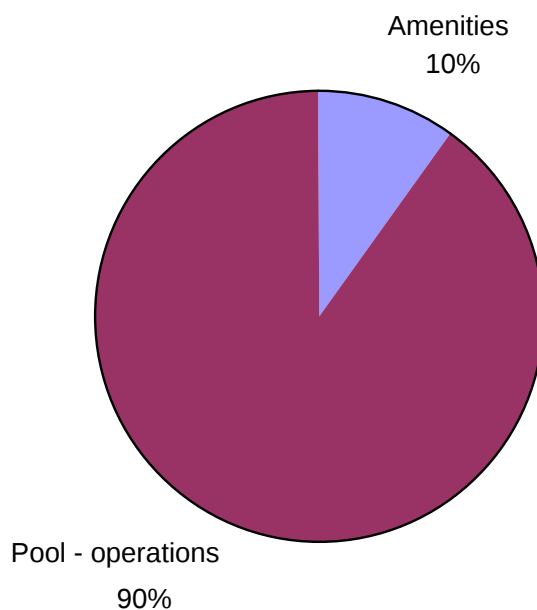
Water Savings Action Plan

Site Data Sheet - Oasis Aquatic Centre

ESTIMATED WATER USE BREAKUP:

OASIS AQUATIC CENTRE		
Fixture / Infrastructure	Number and Usage	Associated consumption per day (litres)
9 litre/4.5 litre toilets	10 in place. Used 30 times per day each.	2150
6 litre/minute taps over bathroom basins	10 in place. Used 40 times per day each, for 10 seconds each time.	500
Unsensorred urinals	3 in place. Used 50 times per day each.	1050
AAA-rated showerheads	12 in place. Used 20 times per day each for 2 minutes each time.	5760
Misc Taps, Sinks, Boilers, HWS etc		500
Cleaning, hosing etc		1000
Pool operations		100000
TOTAL		110960

ESTIMATED WATER USE:





Water Savings Action Plan

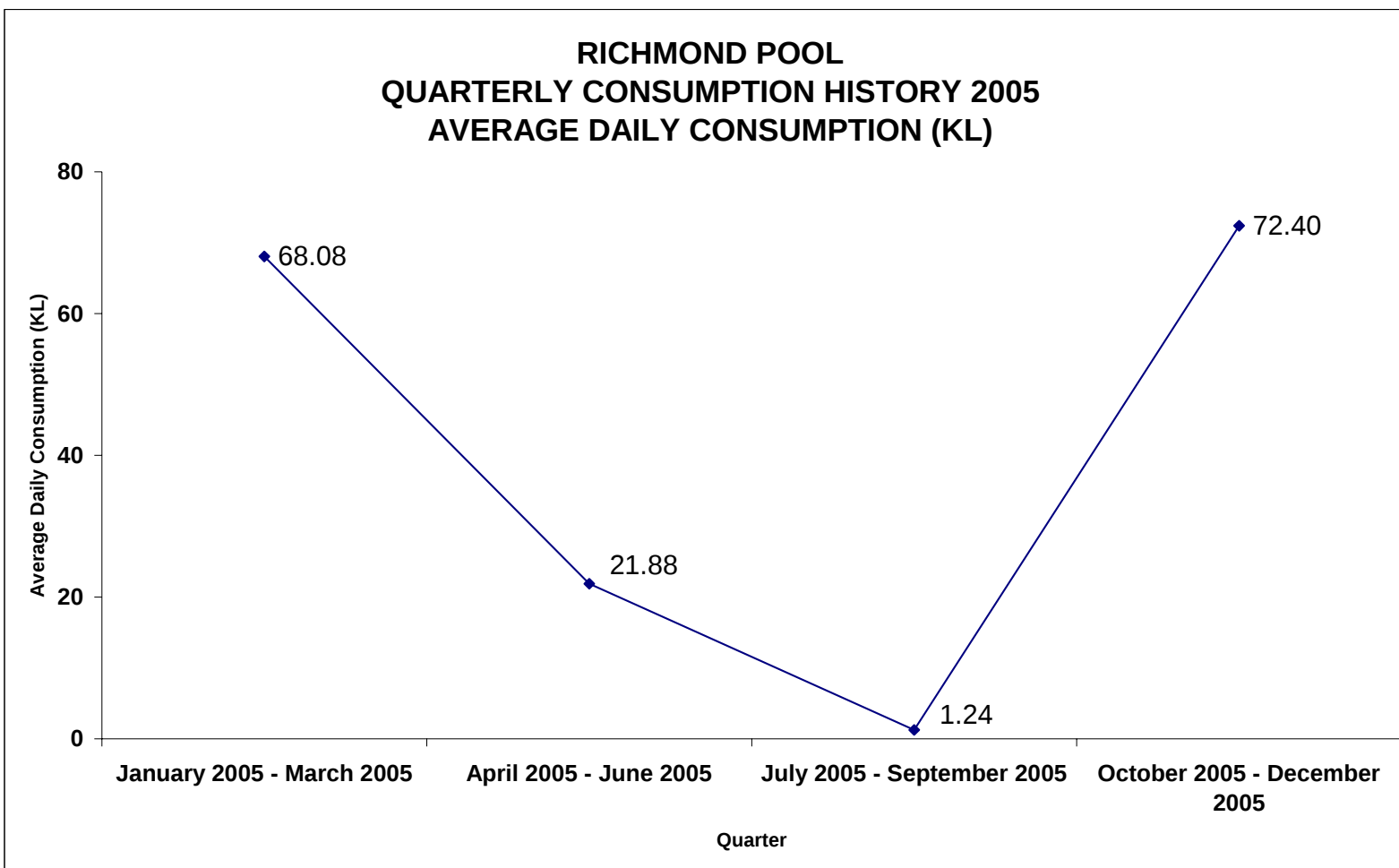
Site Data Sheet - Richmond Swimming Pool

Site Name	Richmond Pool
Site Address	East Market Street, Richmond
Activities	General swimming facility
Summary of Water Consuming Infrastructure	The Richmond Pool is an outdoor swimming complex comprising a toddlers pool, wading pool and a main 50 metre pool, pumping infrastructure, change rooms / toilets, shelters, kiosk, a half-sized basketball court, playground and BBQs. The facility is open during summer months and closed during winter.
Annual Consumption For 2005	16,069 KL
Average Per Day Consumption For 2005	42.74 KL
Average Per Day Consumption For 2005 (Summer Only)	70.31 KL
Annual Costs For 2005	\$16,277.89
Costs Per Kilolitre (\$/KL) For 2005	1.0130
Indicators	Patronage - 42,594 for 2005 (average of 116.70 people per day)
Consumption Indicator	366.23 litres per person per day (based on whole year)



Water Savings Action Plan

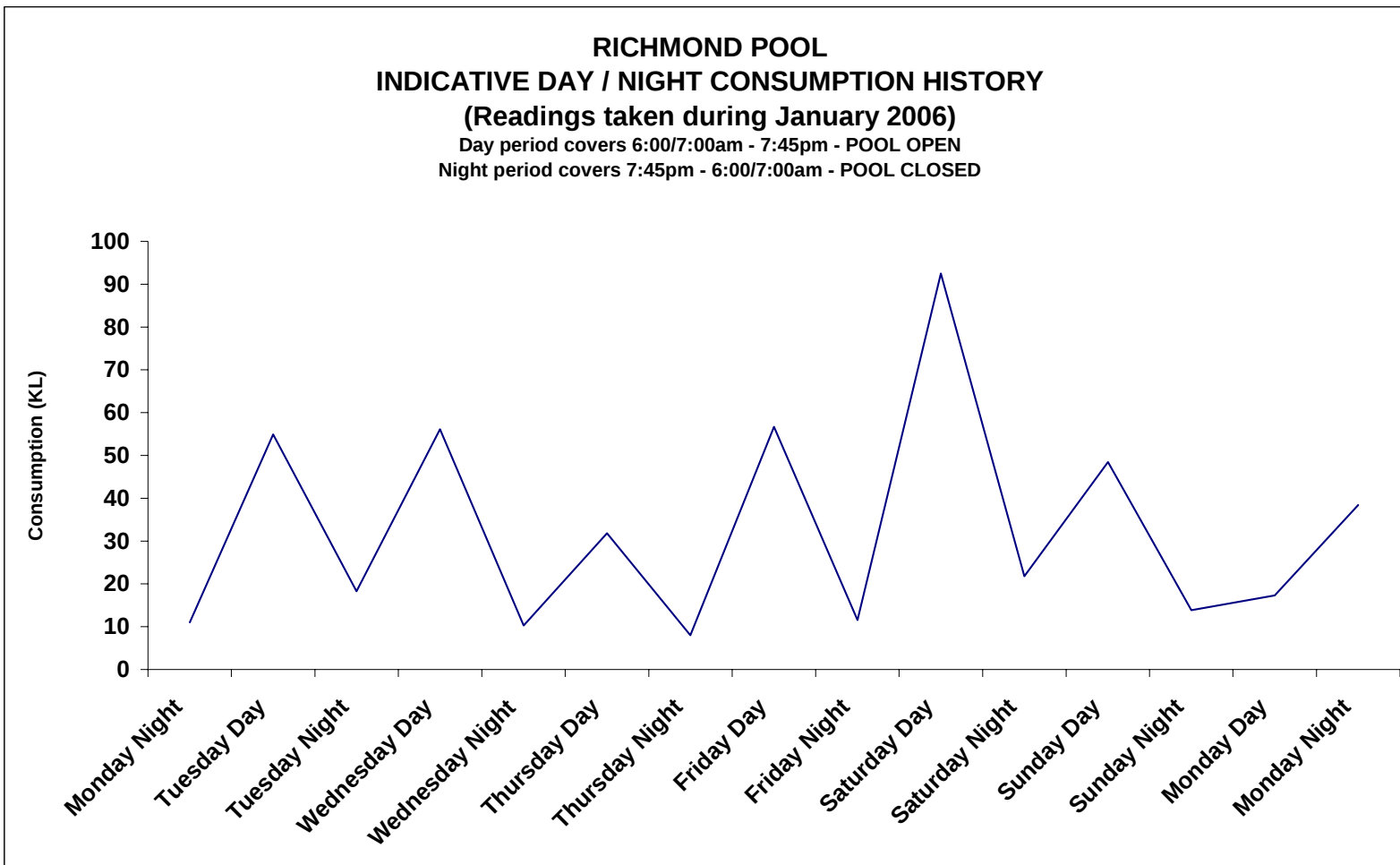
Site Data Sheet - Richmond Swimming Pool





Water Savings Action Plan

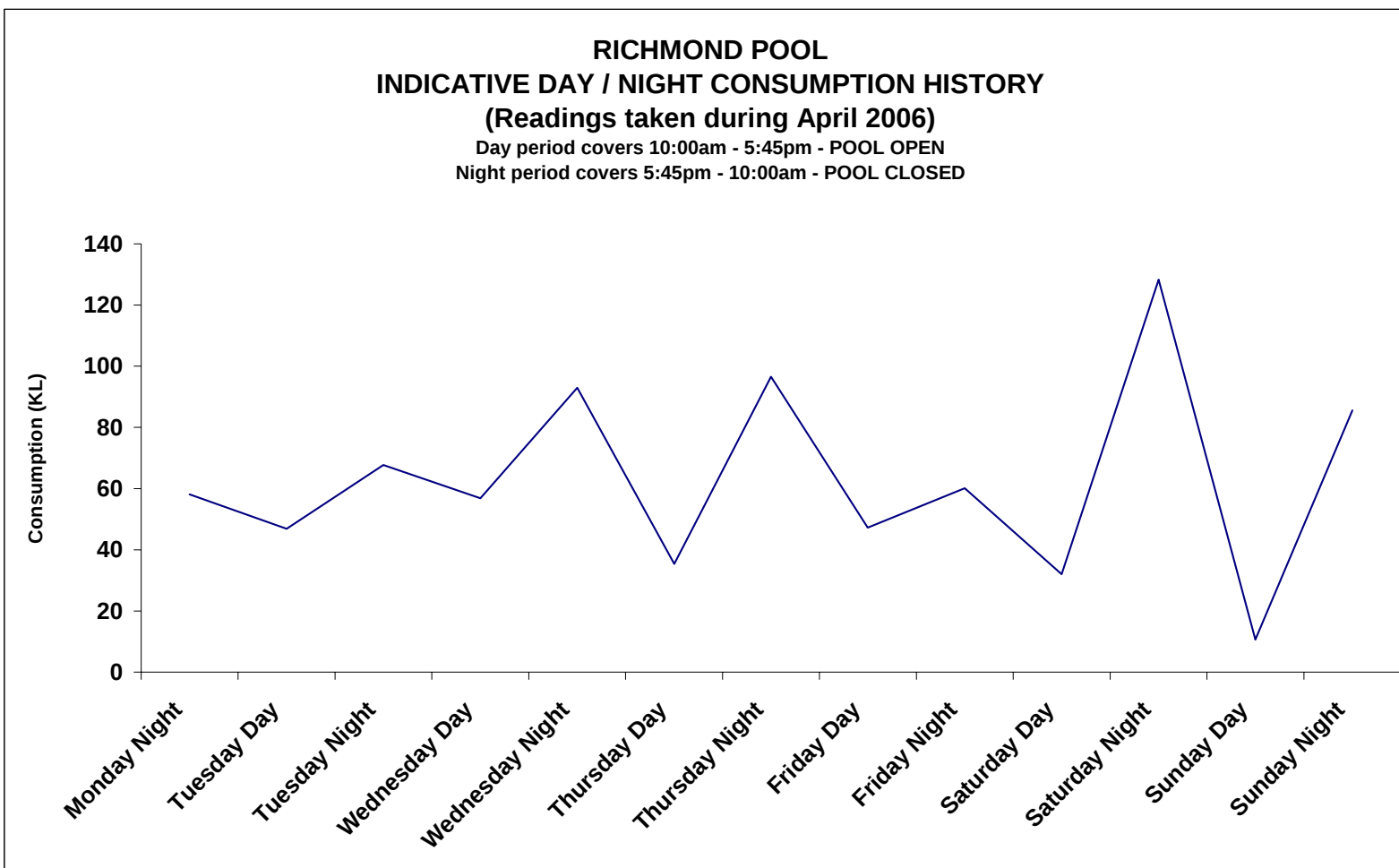
Site Data Sheet - Richmond Swimming Pool





Water Savings Action Plan

Site Data Sheet - Richmond Swimming Pool





Water Savings Action Plan

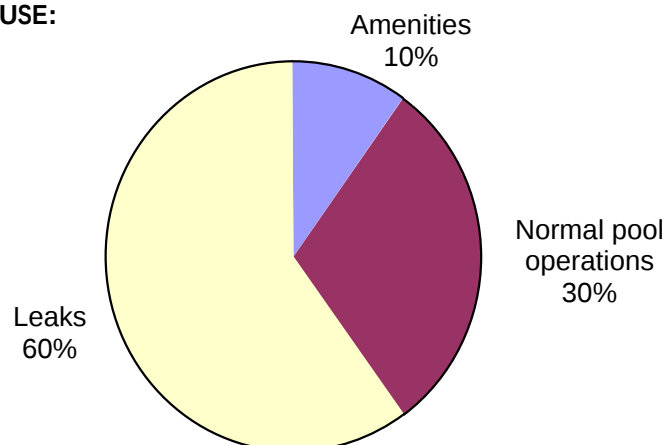
Site Data Sheet - Richmond Swimming Pool

WALK THROUGH AUDIT NOTES:

(Note: Detailed testing has also been carried out at the pool, the results of which have been incorporated into these notes).

- Pool is the oldest style still operating.
- Major leaks confirmed by pool supervisor.
- Toilets and amenities are extremely old, and there are visible leaks in the walls of the change rooms
- Pumps and treatment system are old style and need upgrading
- Consider fitting meter to balance tank inlet to better understand water losses
- Turnover rate of water through the filters and back into the pool is currently outside the maximum time allowed by the Department of Health
- Scum gutters on all pools are an older type system, which use a hollow tile (prone to breaking). The existing gutter system is not capable of moving the volume of water necessary to achieve the recommended turnover rates required for adequate water quality.
- Pools are structurally sound. Pool floor and walls show no lateral or vertical cracking and the pool itself has not shifted and is level.
- Main pool may have water leaks emanating from three locations – expansion joints, scum gutters and the filtered water flow line. There are also several interconnecting pipes between the plant room and the three pools which could also be the source of the leakage, however testing of these pipes would require significant demolition work and this would be undertaken during the course of any reconstruction works proposed.
- There is evidence that the ground under the concourse slabs may have subsided and should a new wet deck gutter system be installed the concourse will almost certainly require rebuilding.
- Plant is in a well maintained condition, but is nearing the end of its useful life due to unavoidable, long term deterioration of internal pipe work linings and the inability to meet current water quality standards due to pipe work sizing and existing filter area limitations.

ESTIMATED WATER USE:





Water Savings Action Plan

Site Data Sheet - Deerubbin Centre Precinct

Site Name

Deerubbin Centre Precinct (incorporating the library and associated administration, Peppercorn Centre, Old Hospital Professional Rooms, Old Johnson Wing Professional Rooms and Chapters Café).

Site Address

Lot 50 George St, Windsor

Activities

Offices, Library, Cafe

Summary of Water Consuming Infrastructure

Toilets and basins. Note: The site is broken up into several metered locations, all of which are charged to the one account. The metered areas are:

- Main library and associated administration
- Irrigation of gardens
- Peppercorn Centre
- Professional Rooms (East) - Old Hospital
- Professional Rooms (West) - Old Hospital
- Rented Professional Rooms Old Johnson Wing
- Chapters Café

The precinct also operates a cogeneration plant.

Consumption For 2005 (Entire Precinct)

5,399 KL (6 months only, as the centre did not open until mid 2005)

Average Per Day Consumption For 2005

19.21 KL (based on 6 months consumption)

Annual Costs For 2005

\$5,469.19 (6 months only)

Costs Per Kilolitre (\$/KL) For 2005

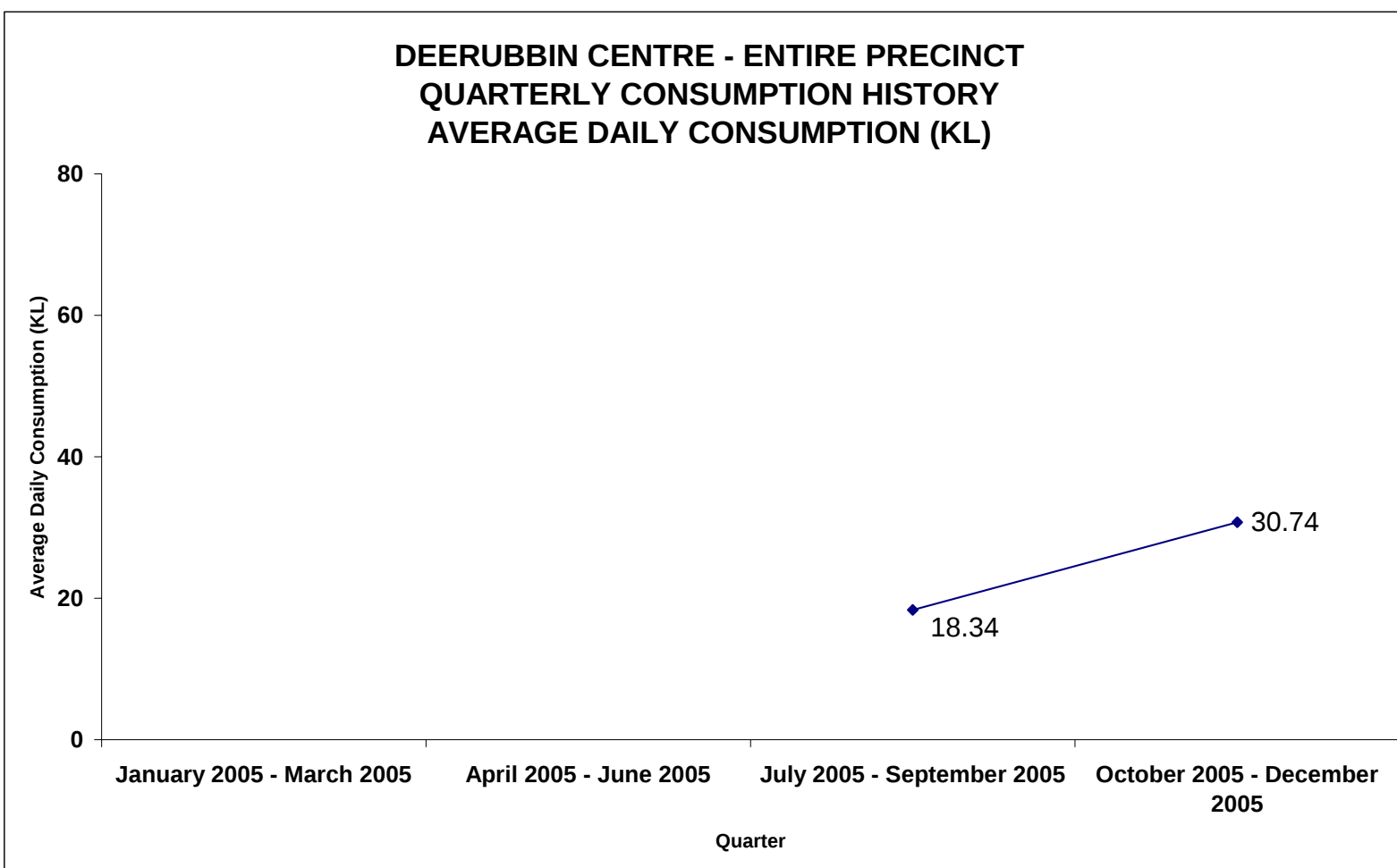
1.0130

Indicators

N/A



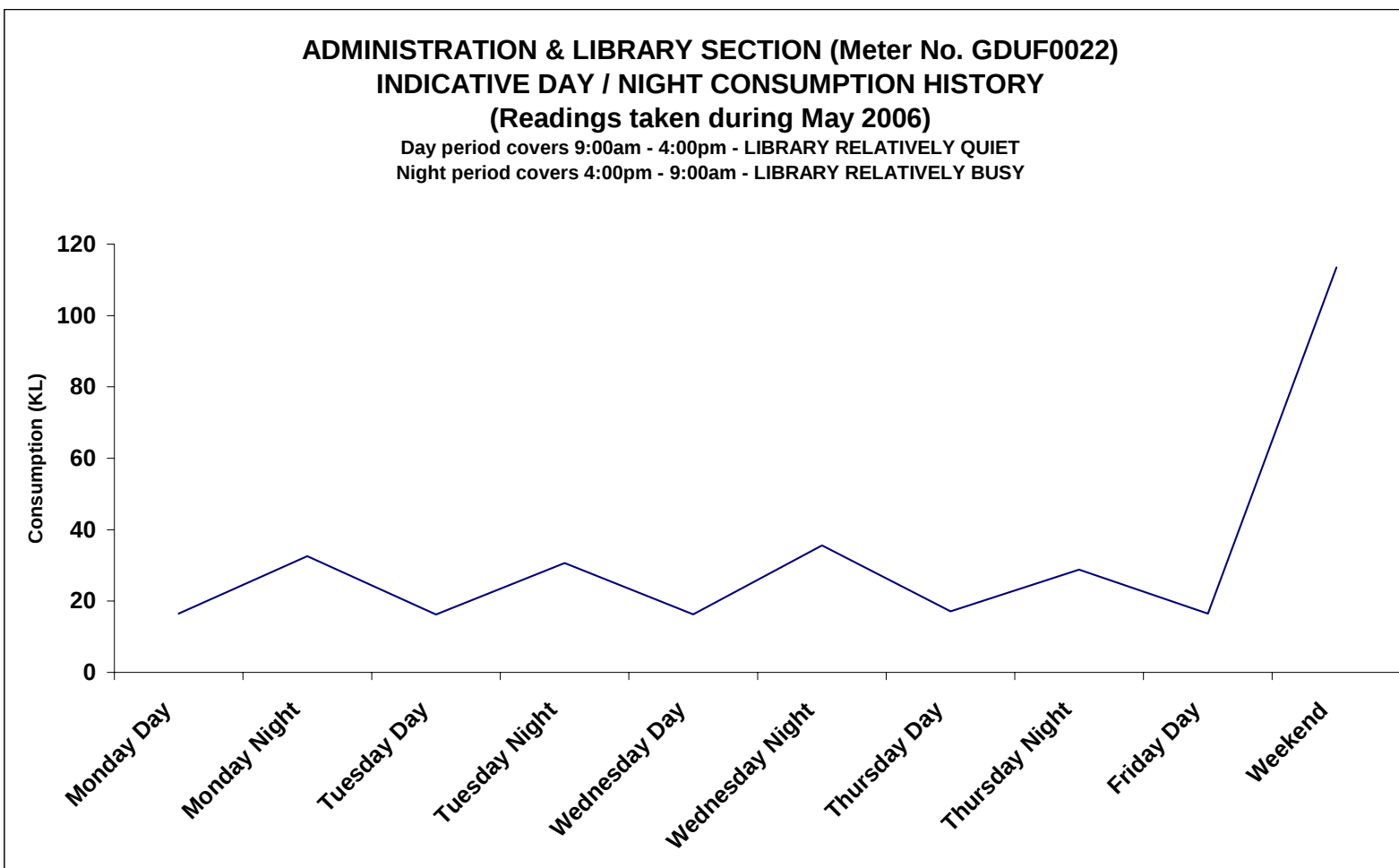
Water Savings Action Plan Site Data Sheet - Deerubbin Centre - Entire Precinct





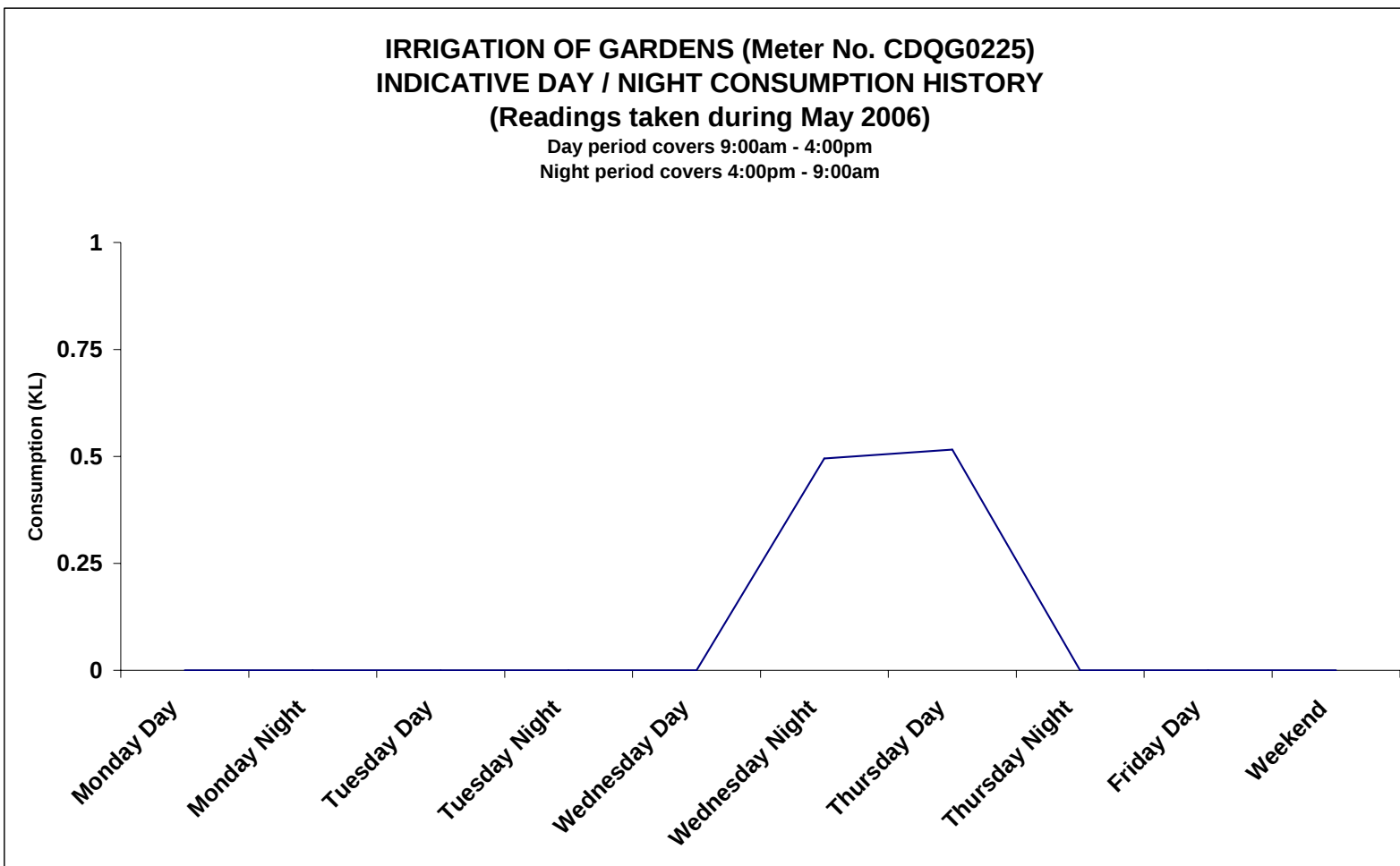
Water Savings Action Plan

Site Data Sheet - Deerubbin Centre Precinct





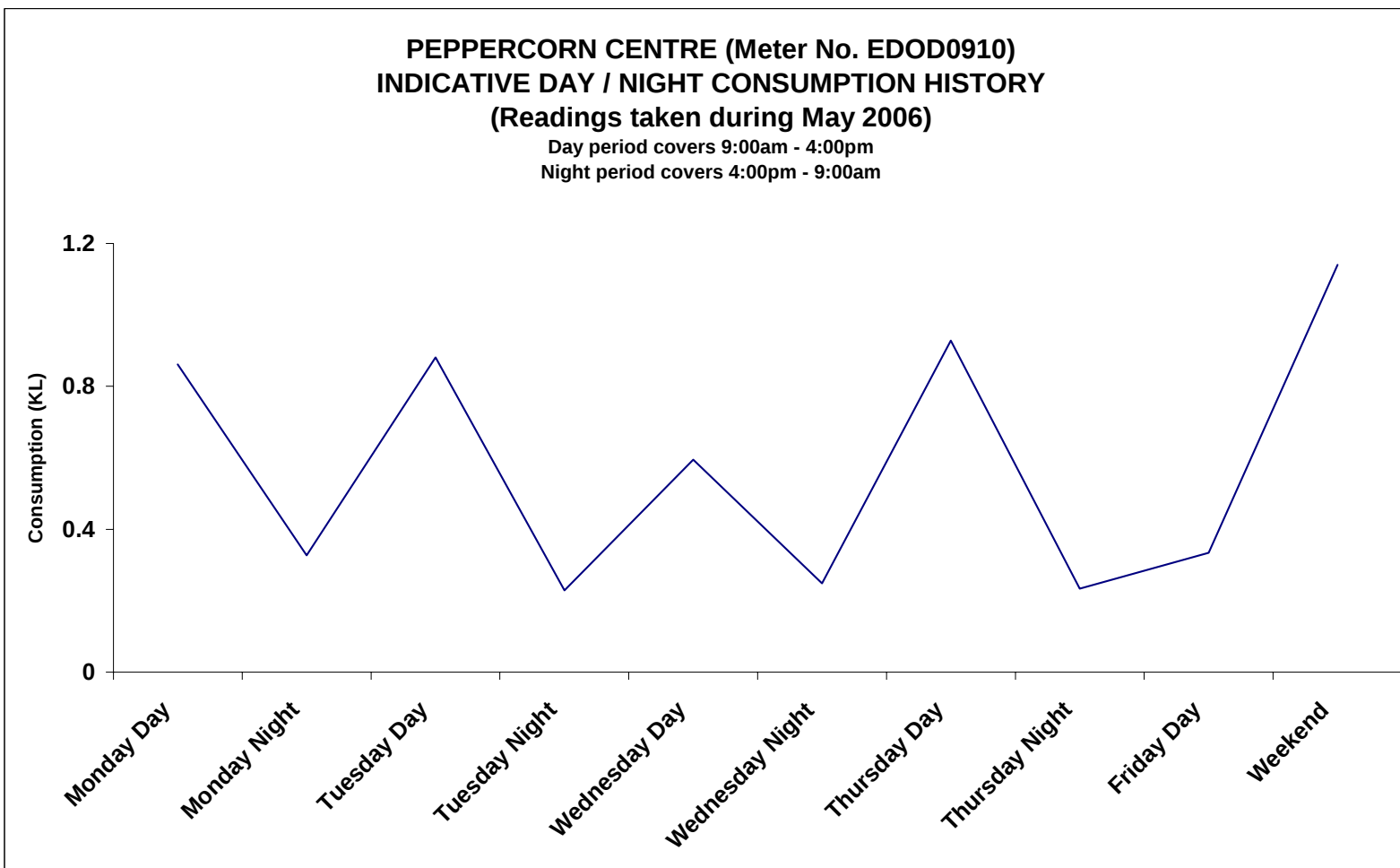
Water Savings Action Plan Site Data Sheet - Deerubbin Centre Precinct





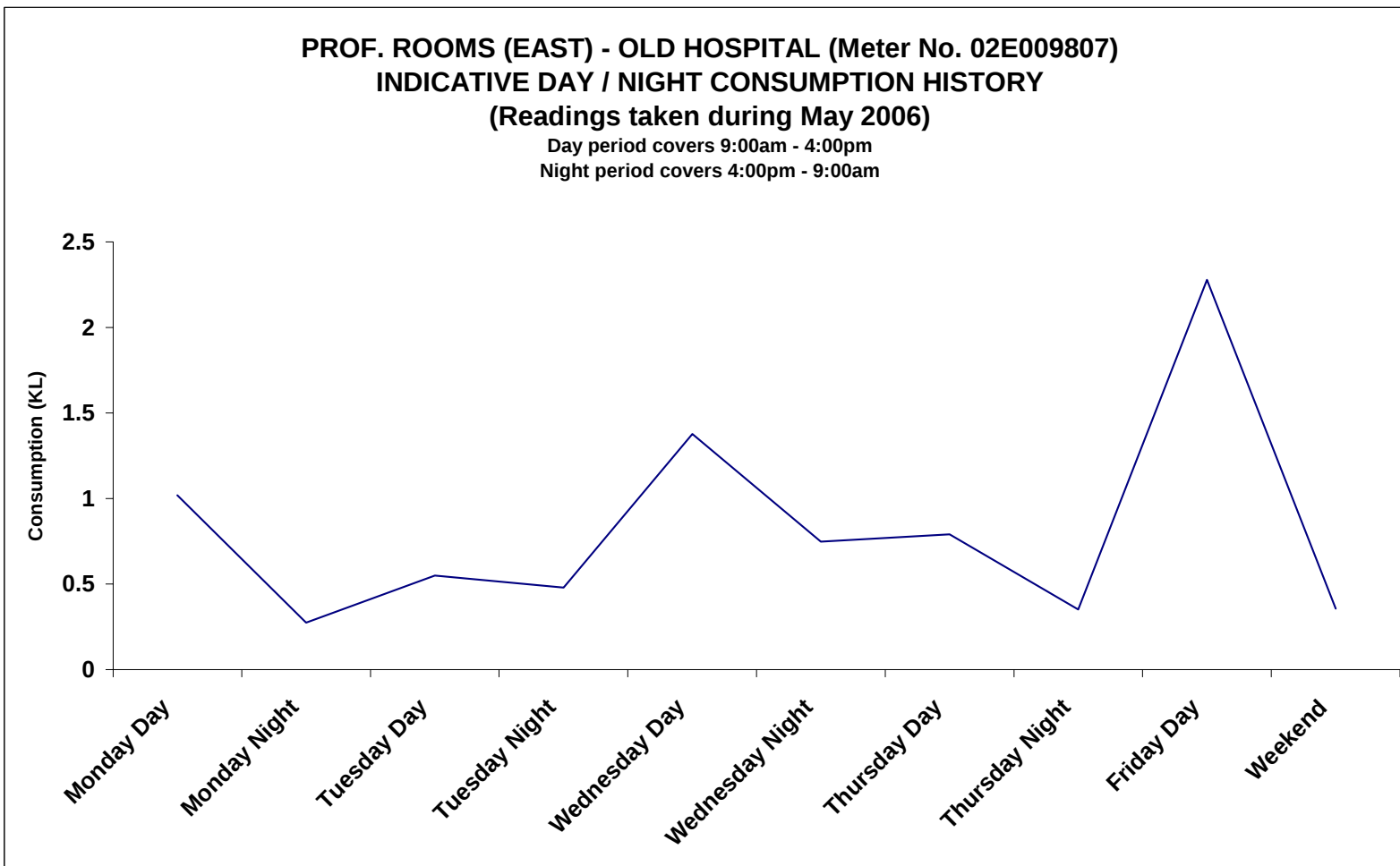
Water Savings Action Plan

Site Data Sheet - Deerubbin Centre Precinct





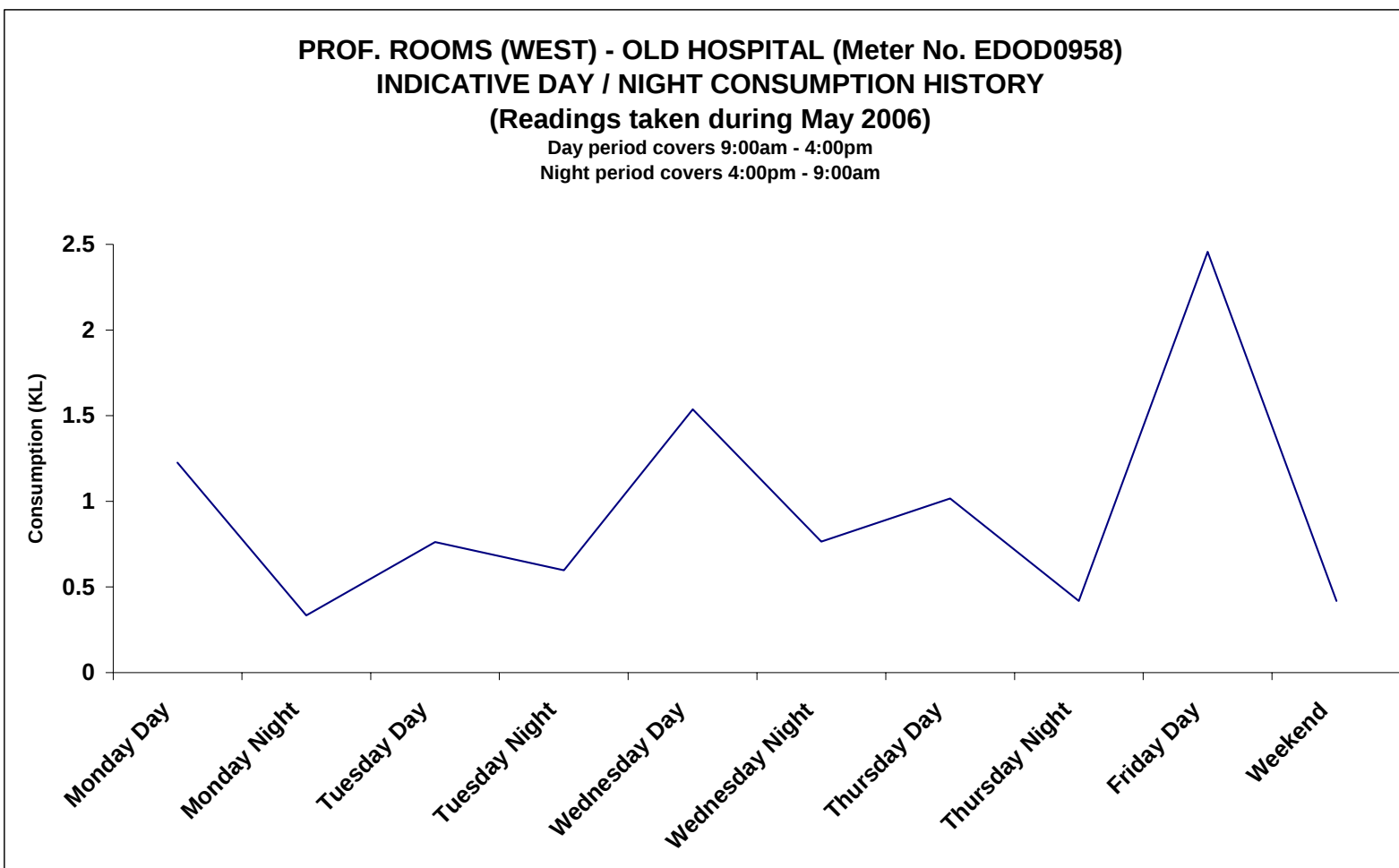
Water Savings Action Plan Site Data Sheet - Deerubbin Centre Precinct





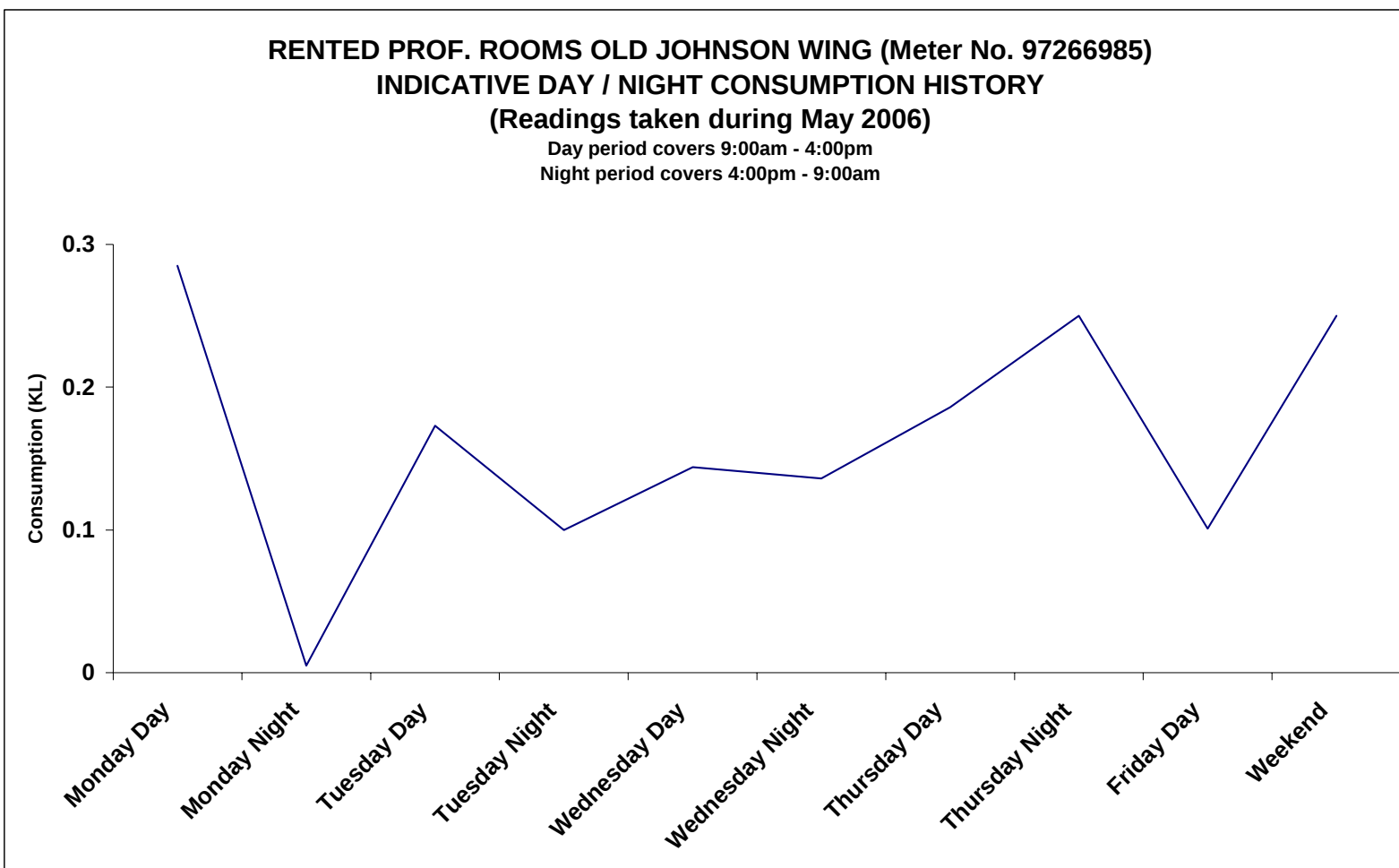
Water Savings Action Plan

Site Data Sheet - Deerubbin Centre Precinct





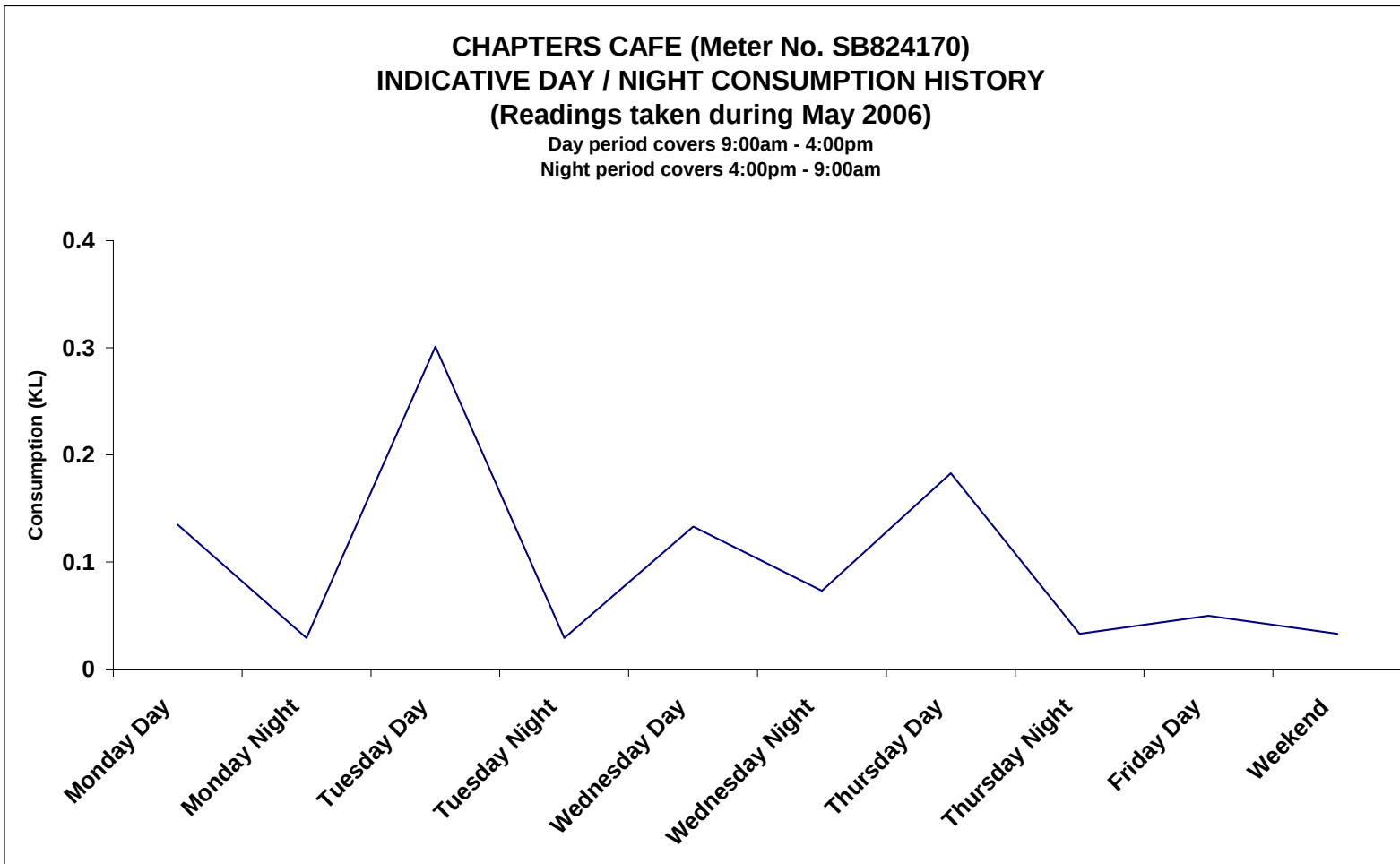
Water Savings Action Plan Site Data Sheet - Deerubbin Centre Precinct





Water Savings Action Plan

Site Data Sheet - Deerubbin Centre Precinct





Water Savings Action Plan

Site Data Sheet - Deerubbin Centre Precinct

WALK THROUGH AUDIT NOTES:

- New building. Almost all fixtures and equipment are water efficient.
- Sensors in urinals set incorrectly – flushing too long.
- Gardens are hand watered – no pop up sprinklers.
- All staff in all locations (including café) showed an excellent understanding of water conservation issues and practices.
- Some older fixtures in old hospital building.
- Co-generation plant accounts for most of water usage.
- Install sub meter at water entry point to co generation plant (basement) to identify exact proportion of co generation consumption.

ESTIMATED WATER USE:

Note - detailed balance information not collected for main building, old hospital offices or Peppercorn Centre.

DEERUBBIN OLD JOHNSON WING		
Fixture / Infrastructure	Usage	Associated consumption per day (litres)
11 litre single flush toilets	4 in place. Used 4 times per day each.	176
12 litre/minute taps over bathroom basins	8 in place. Used 2 times per day each, for 10 seconds each time.	32
Misc Taps, Sinks, Boilers, HWS etc		20
TOTAL		228

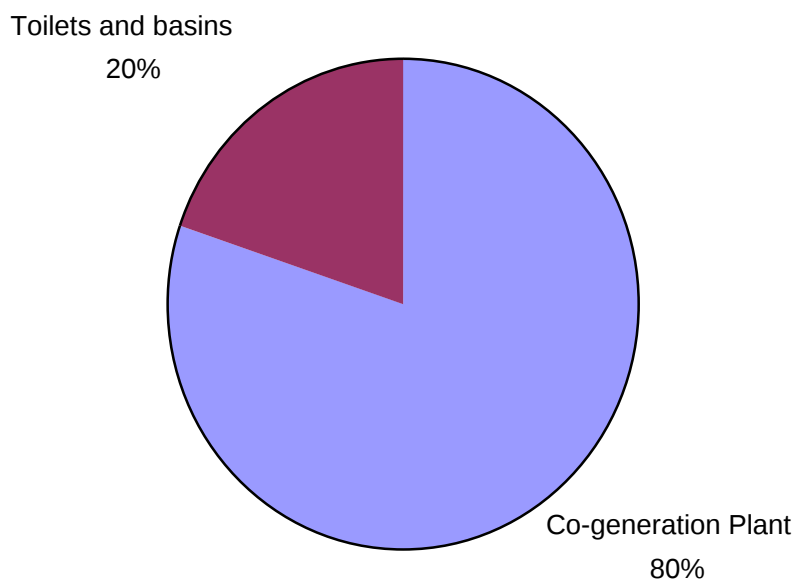


Water Savings Action Plan

Site Data Sheet - Deerubbin Centre Precinct

DEERUBBIN CHAPTERS CAFÉ		
Fixture / Infrastructure	Usage	Associated consumption per day (litres)
6 litre/3 litre toilets	1 in place. Used 8 times per day each.	48
6 litre/minute taps over bathroom basins	1 in place. Used 10 times per day each, for 10 seconds each time.	10
Dishwashers	Used twice per day	100
Misc Taps, Sinks, Boilers, HWS etc		100
TOTAL		258

ESTIMATED WATER USE:





Water Savings Action Plan

Site Data Sheet - Bosworth St. Car Park

Site Name Carpark - Bosworth Street

Site Address Bosworth Street, Windsor

Activities Shopping Centre

Summary of Water Consuming Infrastructure Toilets in shopping centre

Annual Consumption For 2005 3,596 KL

Average Per Day Consumption For 2005 9.39 KL

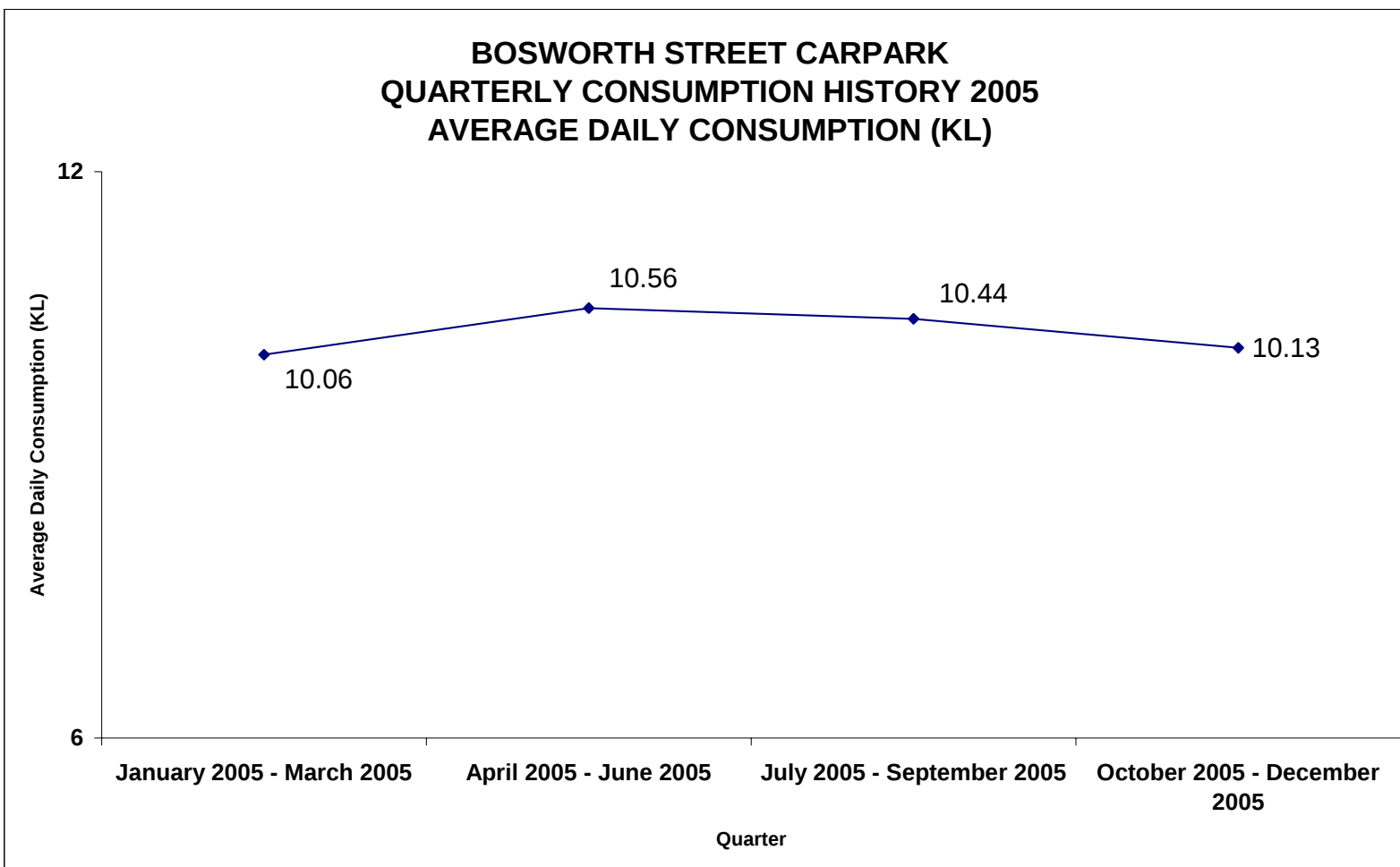
Annual Costs For 2005 \$3,642.74

Costs Per Kilolitre (\$/KL) For 2005 1.0130

Indicators N/A



Water Savings Action Plan Site Data Sheet - Bosworth Street Car Park





Water Savings Action Plan

Site Data Sheet - Bosworth Street Car Park

WALK THROUGH AUDIT NOTES:

- This location was originally a Council carpark with a toilet block located on it. In 1997, a local retailer built a shopping centre on the site, and an agreement was made between Council and the retailer for Council to supply and lay any necessary pipes to ensure continuity of the supply.

However, inspection of records in 2006 showed that Council has been erroneously paying for the ongoing water supply.

A letter has been sent to the owner of the shopping centre requesting a meeting to resolve the issue.



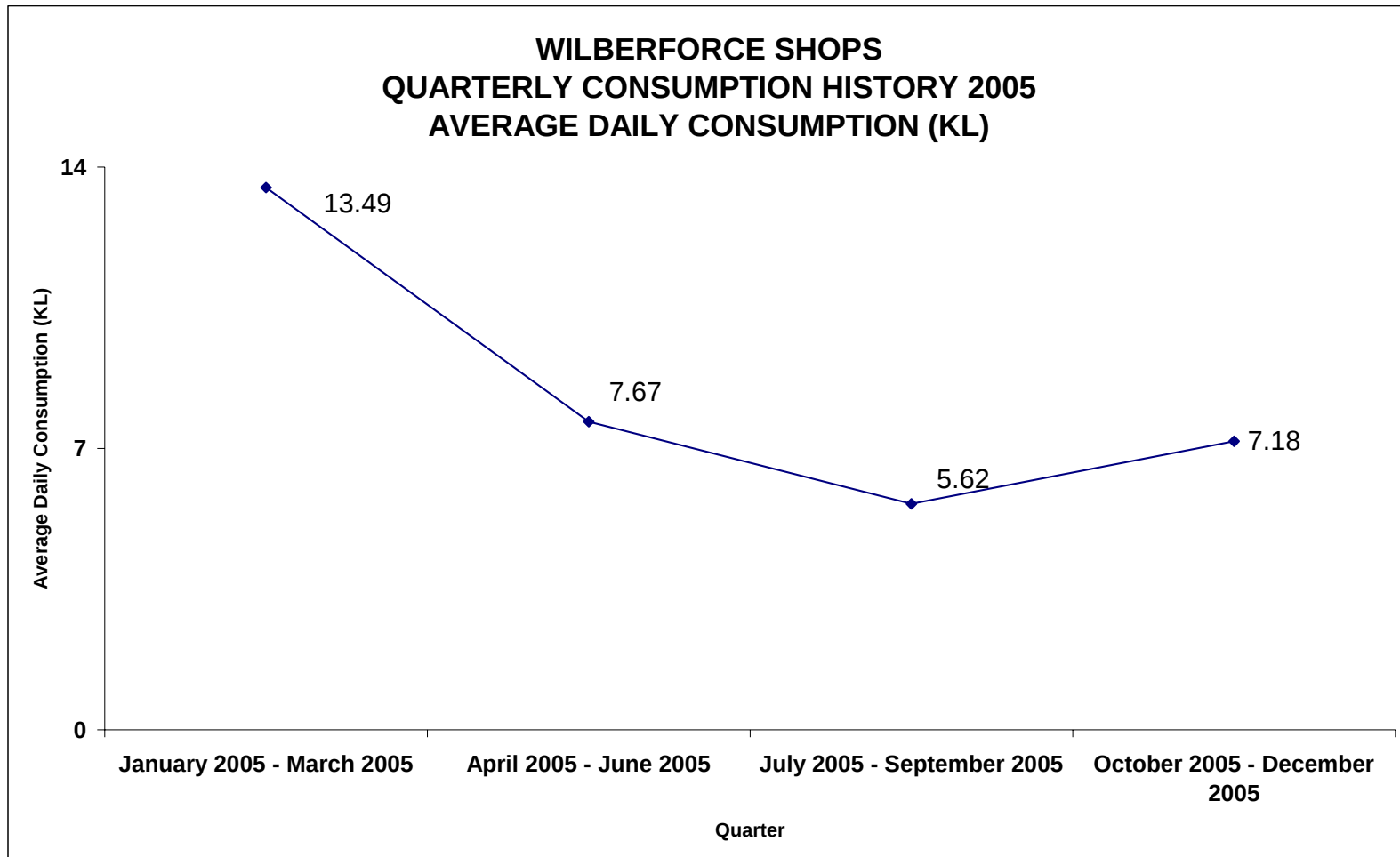
Water Savings Action Plan

Site Data Sheet - Wilberforce Shops

Site Name	Wilberforce Shops
Site Address	23 King Street, Wilberforce
Activities	Mixed retail
Summary of Water Consuming Infrastructure	Public toilets. Basins in shops
Annual Consumption For 2005	3,206 KL
Average Per Day Consumption For 2005	8.55 KL
Annual Costs For 2005	\$3,247.66
Costs Per Kilolitre (\$/KL) For 2005	1.0130
Indicators	N/A



Water Savings Action Plan Site Data Sheet - Wilberforce Shops





Water Savings Action Plan

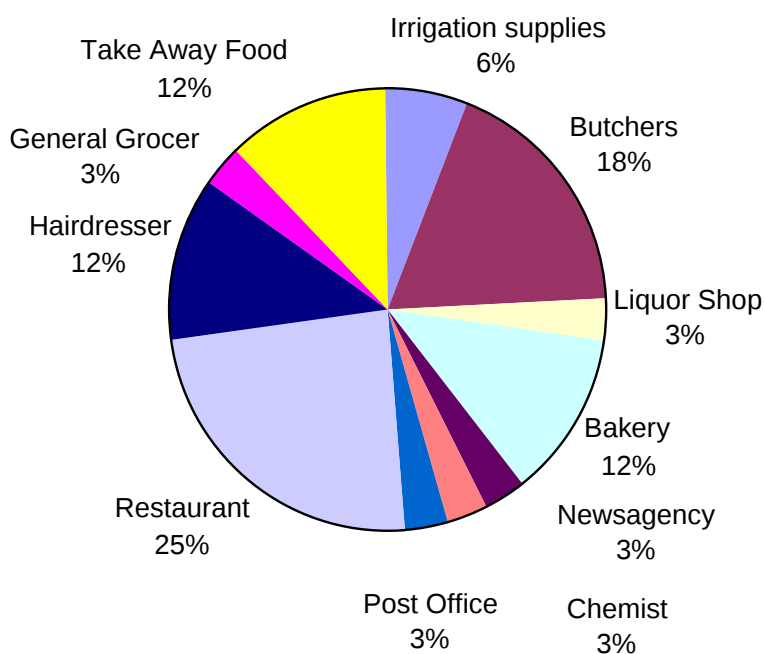
Site Data Sheet - Wilberforce Shops

WALK THROUGH AUDIT NOTES:

- Numerous shops. Limited ability to reduce consumption.

ESTIMATED WATER USE:

WILBERFORCE SHOPS	
Shop	Associated consumption per day (litres)
Irrigation supplies	500
Butchers	1500
Liquor Shop	250
Bakery	1000
Newsagency	250
Chemist	250
Post Office	250
Restaurant	2000
Hairdresser	1000
General Grocer	250
Take Away Food	1000
TOTAL	8250





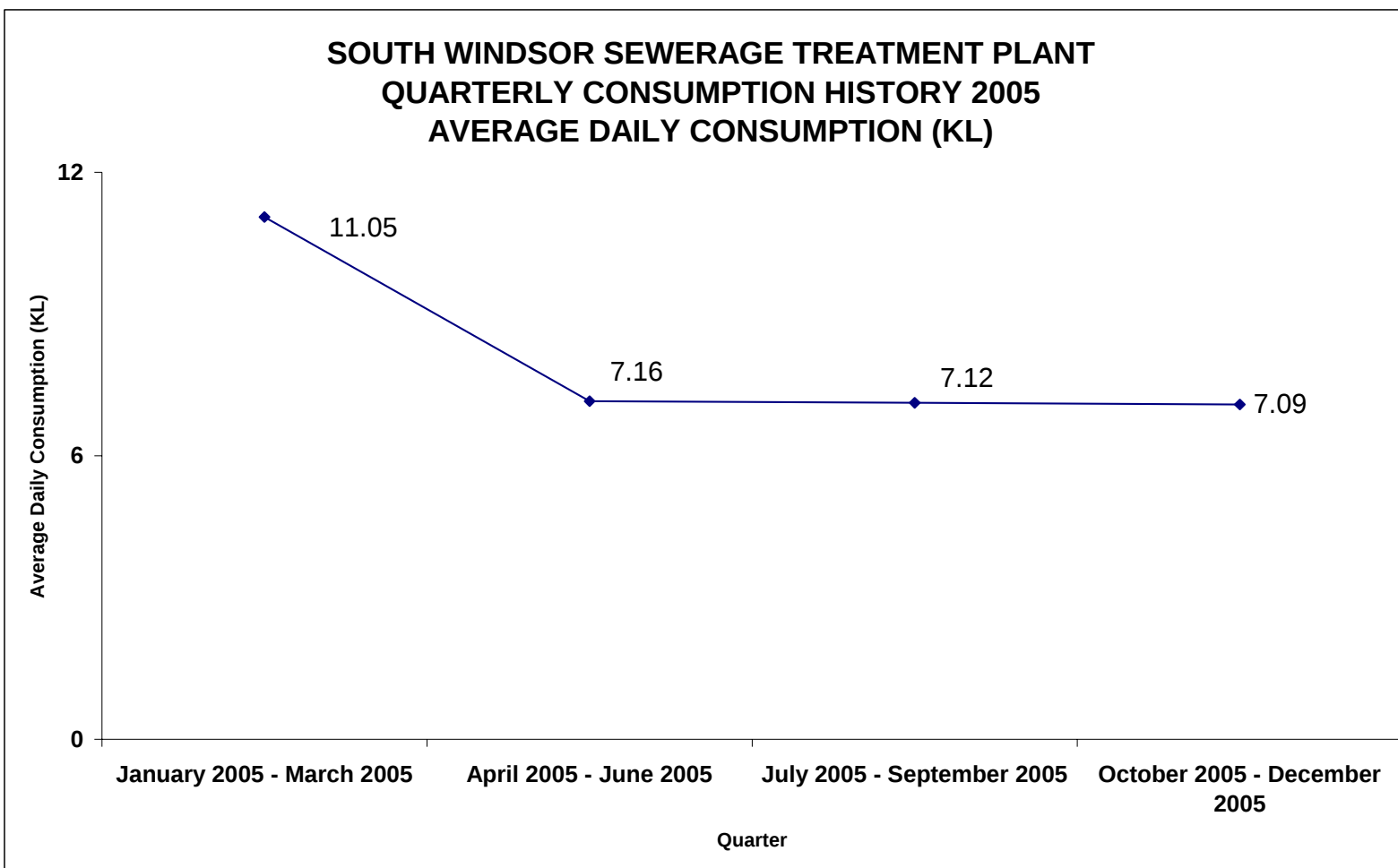
Water Savings Action Plan

Site Data Sheet - South Windsor STP

Site Name	South Windsor STP
Site Address	Fairey Road, Windsor
Activities	Sewerage Treatment
Summary of Water Consuming Infrastructure	Offices, including showers, basins, toilets, urinals, washing machine.
Annual Consumption For 2005	2,977 KL
Average Per Day Consumption For 2005	8.18 KL
Annual Costs For 2005	\$3,025.81
Costs Per Kilolitre (\$/KL) For 2005	1.0164
Indicators	N/A



Water Savings Action Plan Site Data Sheet - South Windsor STP





Water Savings Action Plan

Site Data Sheet - South Windsor STP

WALK THROUGH AUDIT NOTES:

- Several showers, toilets and basins.
- Old inefficient washing machine.
- Potable water used in truck wash. Opportunity to use recycled effluent.

ESTIMATED WATER USE:

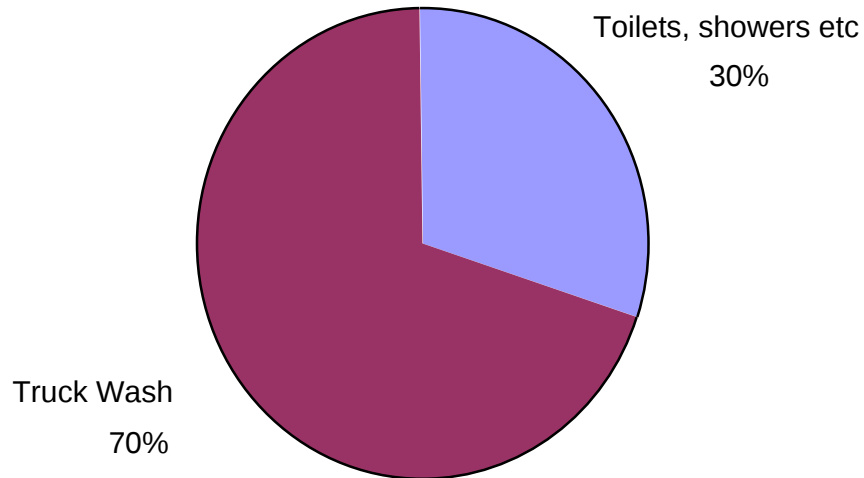
SOUTH WINDSOR STP		
Fixture / Infrastructure	Number and Usage	Associated consumption per day (litres)
11 litre single flush toilets	3 in place. Used 10 times per day each.	330
6 litre/minute taps over bathroom basins	1 in place. Used 12 times per day each, for 10 seconds each time.	12
12 litre/minute taps over bathroom basins	4 in place. Used 25 times per day each, for 10 seconds each time.	200
Unsensored urinals	1 in place. Used 25 times per day each.	175
Non AAA-rated showerheads	4 in place. Used 3 times per day each for 5 minutes each time.	1200
Washing machine	Used daily	150
Misc Taps, Sinks, Boilers, HWS etc		100
Truck Wash	Used daily	5000
TOTAL		7167



Water Savings Action Plan

Site Data Sheet - South Windsor STP

ESTIMATED WATER USE:





Water Savings Action Plan

Site Data Sheet - Administration Building and Professional Offices (Old Library)

Site Name

Council Administration Offices and Old Library Building (now being used as professional offices ('Dight Street Offices'))

Site Address

350 - 364 George Street, Windsor

Activities

Offices

**Summary of
Water
Consuming
Infrastructure**

Toilets and basins. Note: The site is broken up into two buildings - the main Administration Building, and the old library, which is now being used as rented professional office space. Both buildings are metered separately, but charged to the same Sydney Water account.

Annual Consumption For 2005

1,891 KL

Average Per Day Consumption For 2005

5.00 KL

Annual Costs For 2005

\$1,918.56

Costs Per Kilolitre (\$/KL) For 2005

1.0146

Indicators

110 people (Admin building) + 10 people (Dight Street Offices)

Consumption Indicator

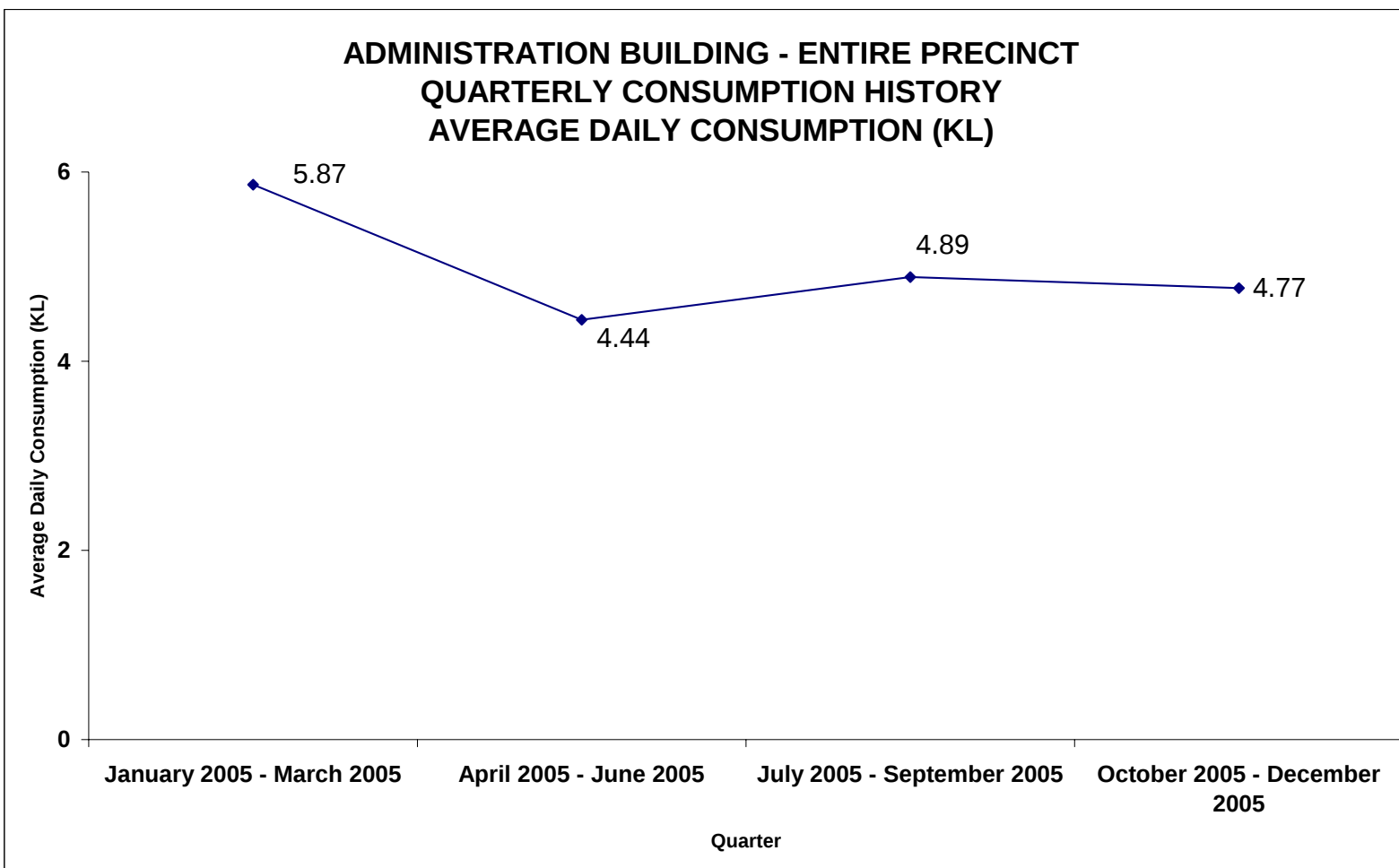
41.67 litres per person per day



Water Savings Action Plan

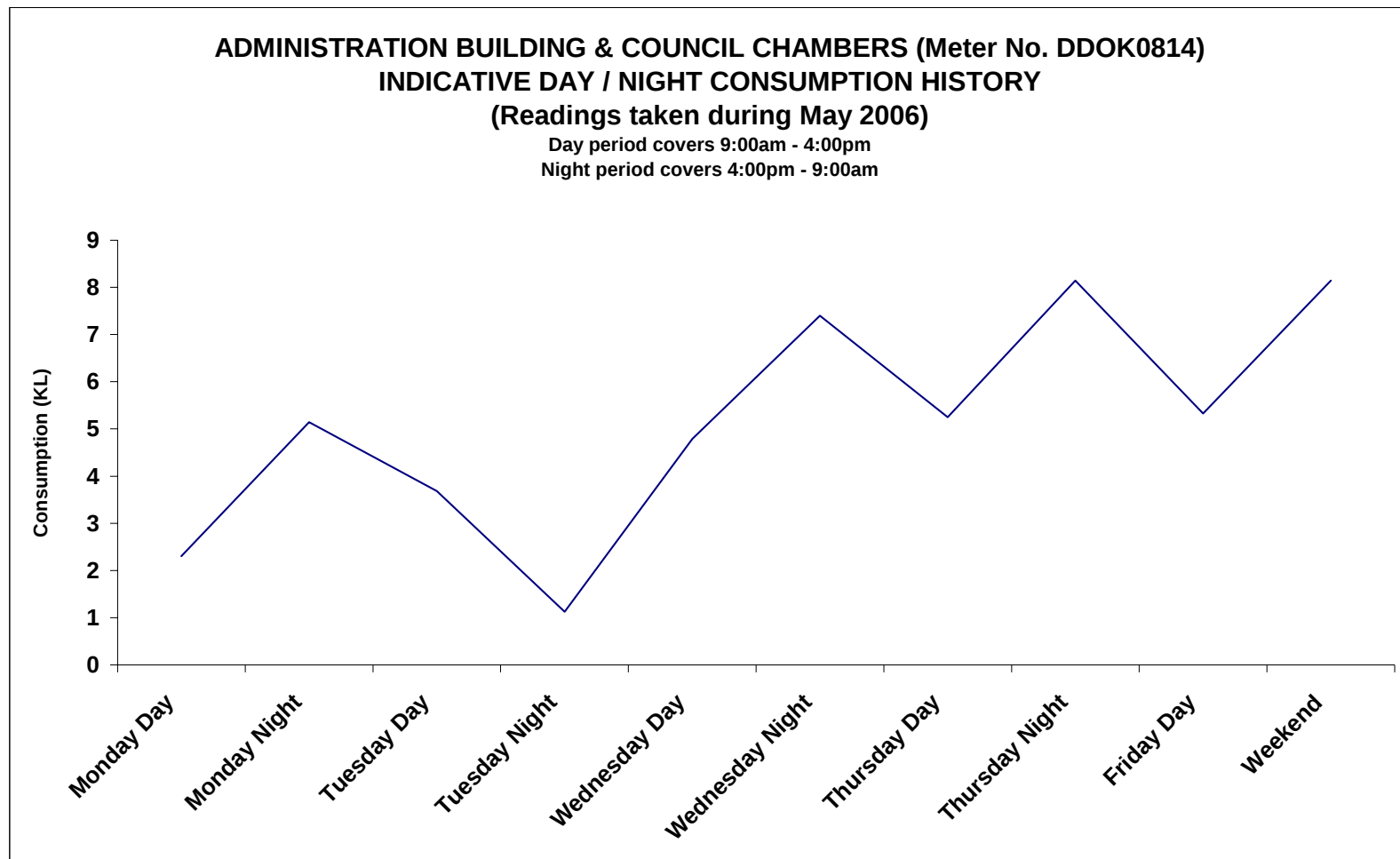
Site Data Sheet -

Administration Building and Professional Offices (Old Library)





Water Savings Action Plan Site Data Sheet - Administration Building and Professional Offices (Old Library)

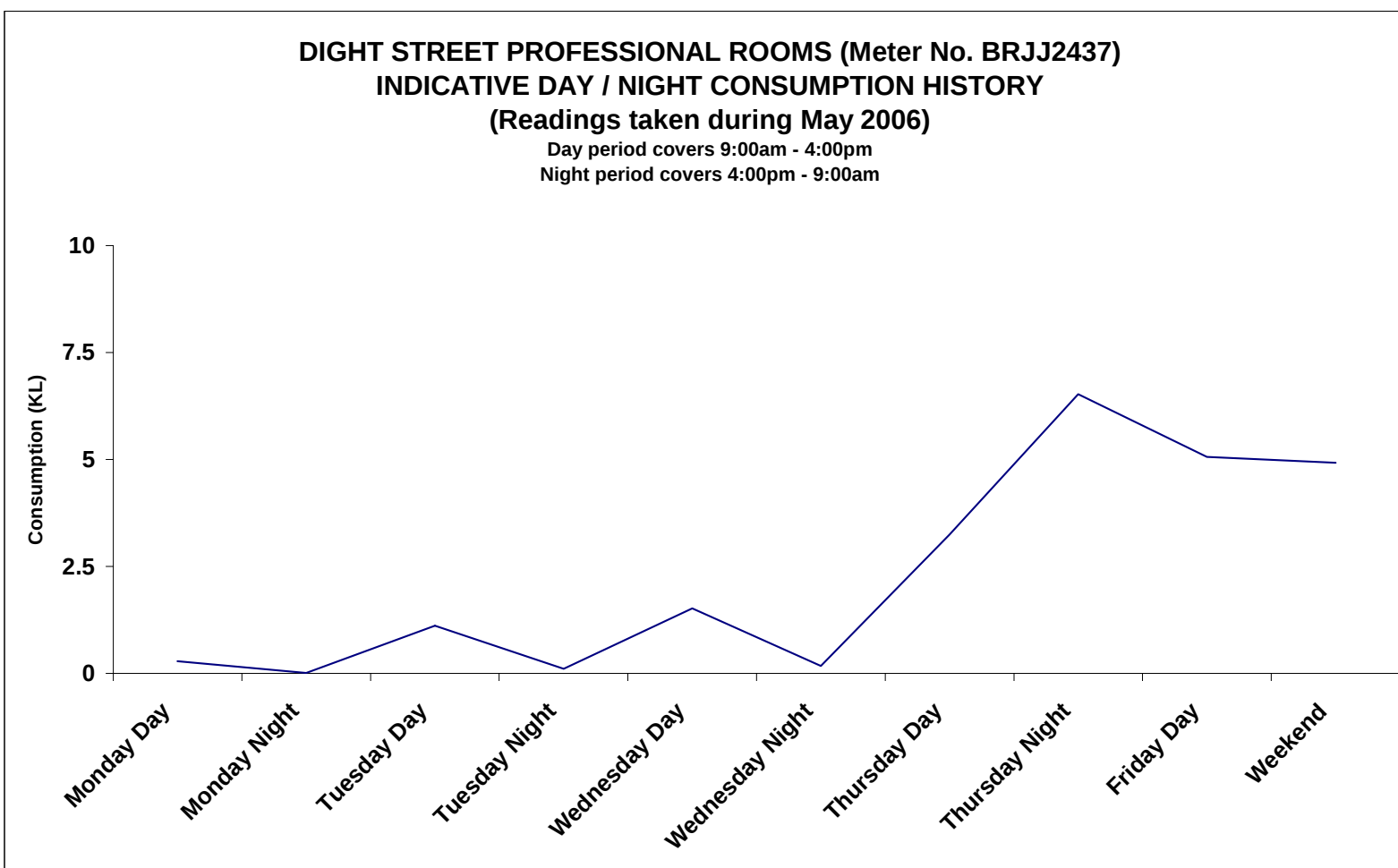




Water Savings Action Plan

Site Data Sheet -

Administration Building and Professional Offices (Old Library)





Water Savings Action Plan

Site Data Sheet -

Administration Building and Professional Offices (Old Library)

WALK THROUGH AUDIT NOTES:

- Site contains only toilets, showers and basins.
- There are a mix of efficient and inefficient fixtures.
- No leaks evident from any fixtures.
- 110 staff work from the Admin Building. A further 10 work from the Dight Street offices.

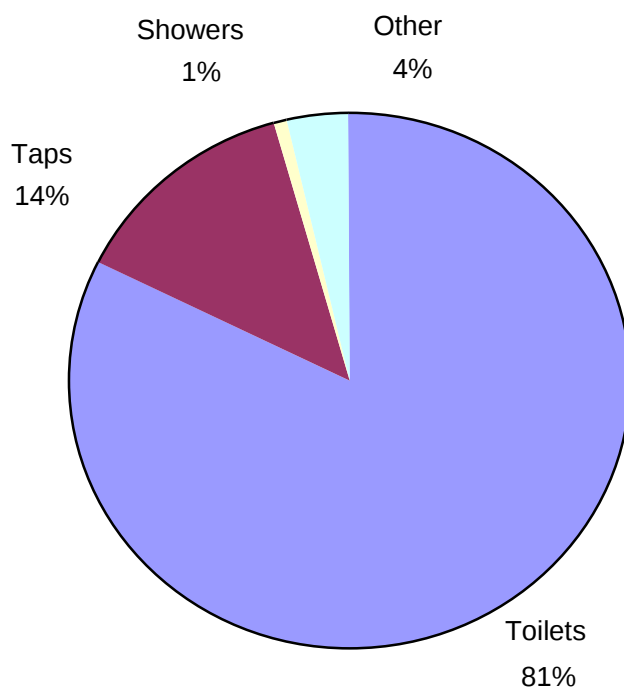
ESTIMATED WATER USE:

ADMINISTRATION BUILDING		
Fixture / Infrastructure	Number and Usage	Associated consumption per day (litres)
11 litre single flush toilets	10 in place. Used 20 times per day each.	3300
9 litre/4.5 litre toilets	9 in place. Used 20 times per day each.	1620
12 litre/minute taps over bathroom basins	15 in place. Used 25 times per day each, for 10 seconds each time.	750
6 litre/minute taps over bathroom basins	6 in place. Used 25 times per day each, for 10 seconds each time.	150
Unsensorred urinals	4 in place. Used 25 times per day each.	700
Non AAA-rated showerheads	1 in place. Used once per week for 5 minutes each time.	20
Dishwashers	Used 5 times per week.	10
Misc Taps, Sinks, Boilers, HWS etc		200
TOTAL		6750



DIGHT STREET PROFESSIONAL OFFICES		
Fixture / Infrastructure	Usage	Associated consumption per day (litres)
11 litre single flush toilets	5 in place. Used 6 times per day each.	330
12 litre/minute taps over bathroom basins	6 in place. Used 7 times per day each, for 10 seconds each time.	85
Non AAA-rated showerheads	1 in place. Used once per week for 5 minutes each time.	20
Misc Taps, Sinks, Boilers, HWS etc		50
TOTAL		485

ESTIMATED WATER USE:





Water Savings Action Plan

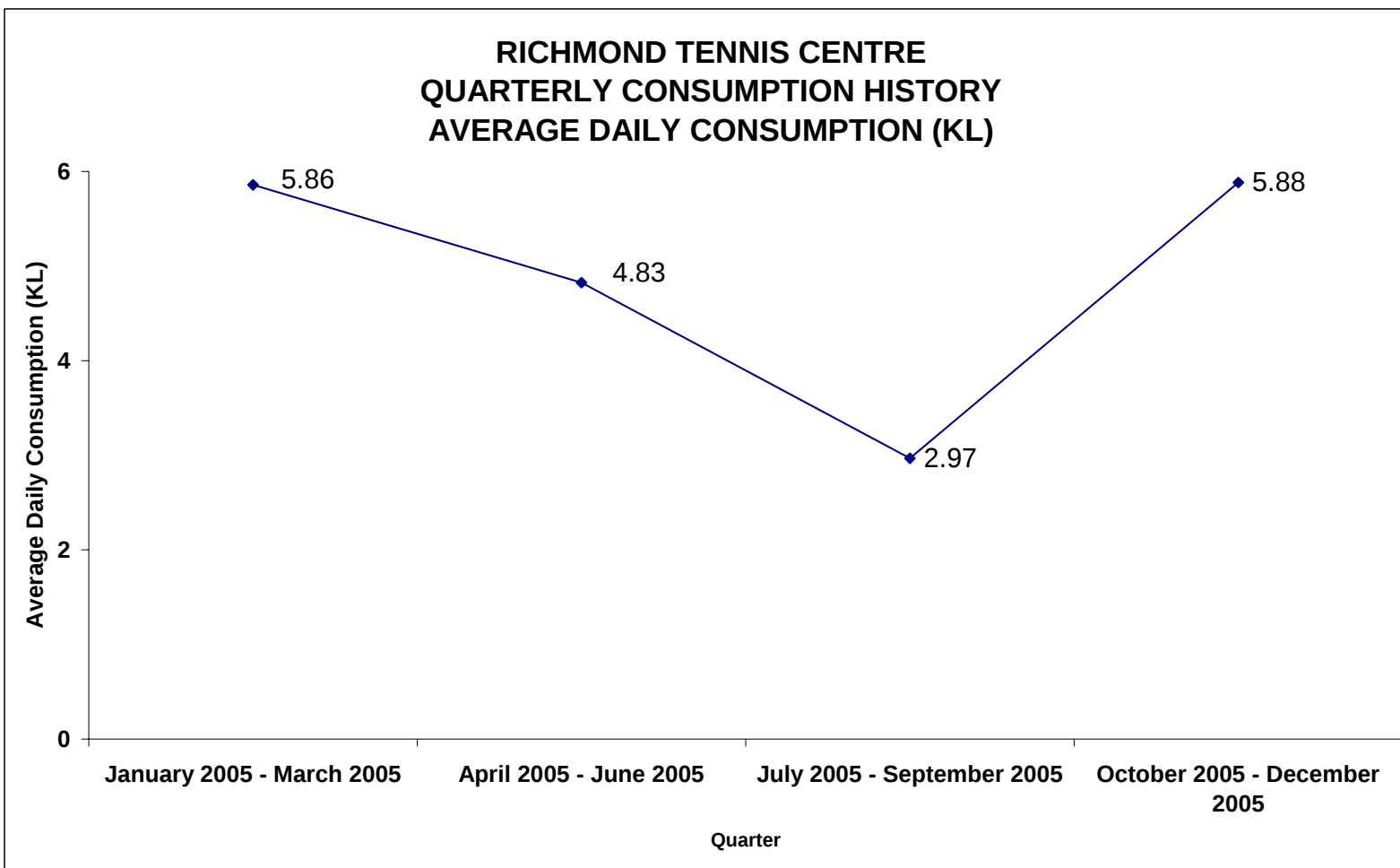
Site Data Sheet - Richmond Tennis Centre

Site Name	Richmond Tennis Centre
Site Address	Lot 133 Windsor Street, Richmond
Activities	Recreation - tennis
Summary of Water Consuming Infrastructure	Club house with toilets, showers, basins. Taps for court sprinklers.
Annual Consumption For 2005	1,851 KL
Average Per Day Consumption For 2005	4.92 KL
Annual Costs For 2005	\$1,875.04
Costs Per Kilolitre (\$/KL) For 2005	1.0130
Indicators	N/A



Water Savings Action Plan

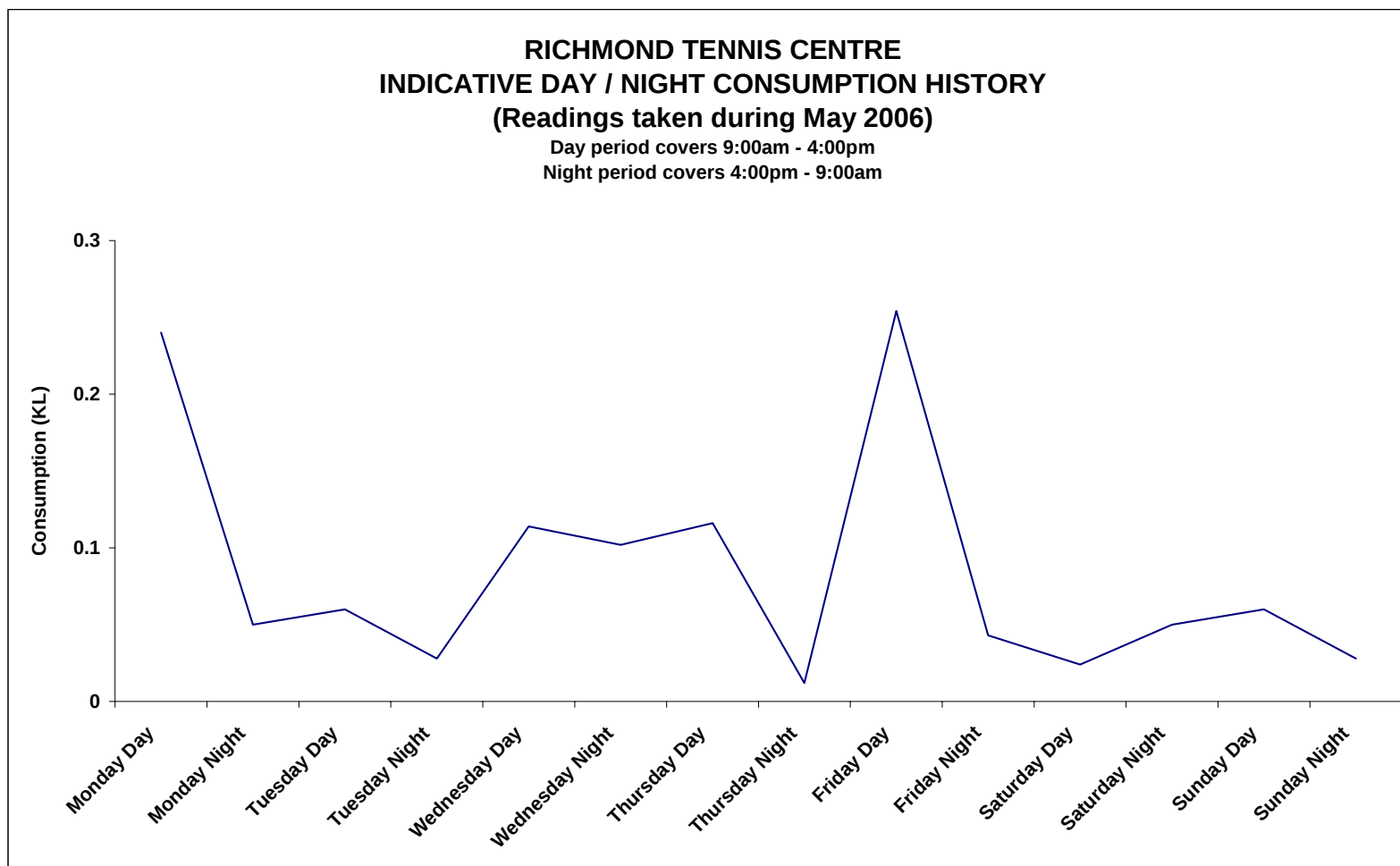
Site Data Sheet - Richmond Tennis Centre





Water Savings Action Plan

Site Data Sheet - Richmond Tennis Centre





Water Savings Action Plan

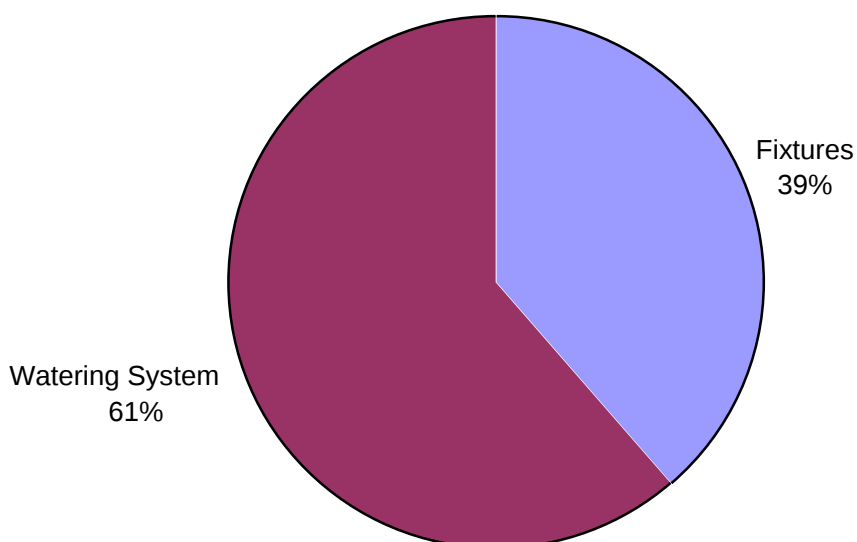
Site Data Sheet - Richmond Tennis Centre

WALK THROUGH AUDIT NOTES:

- Entire complex old with all fixtures inefficient.
- Watering system inefficient.

ESTIMATED WATER USE:

RICHMOND TENNIS CENTRE		
Fixture / Infrastructure	Usage	Associated consumption per day (litres)
11 litre single flush toilets	6 in place. Used 10 times per day each.	660
12 litre/minute taps over bathroom basins	4 in place. Used 15 times per day each, for 10 seconds each time.	120
Non AAA-rated showerheads	4 in place. Used 5 times per week each for 5 minutes each time.	290
Misc Taps, Sinks, Boilers, HWS etc		500
Sprinkler system		2500
TOTAL		4070





Water Savings Action Plan Site Data Sheet - Animal Shelter

Site Name Hawkesbury City Council Animal Shelter

Site Address Lot 33 Mulgrave Road, Mulgrave

Activities Animal Control

Summary of Water Consuming Infrastructure Toilets and basins. Fire hose used for washing down enclosures.

Annual Consumption For 2005 1,758 KL

Average Per Day Consumption For 2005 4.35 KL

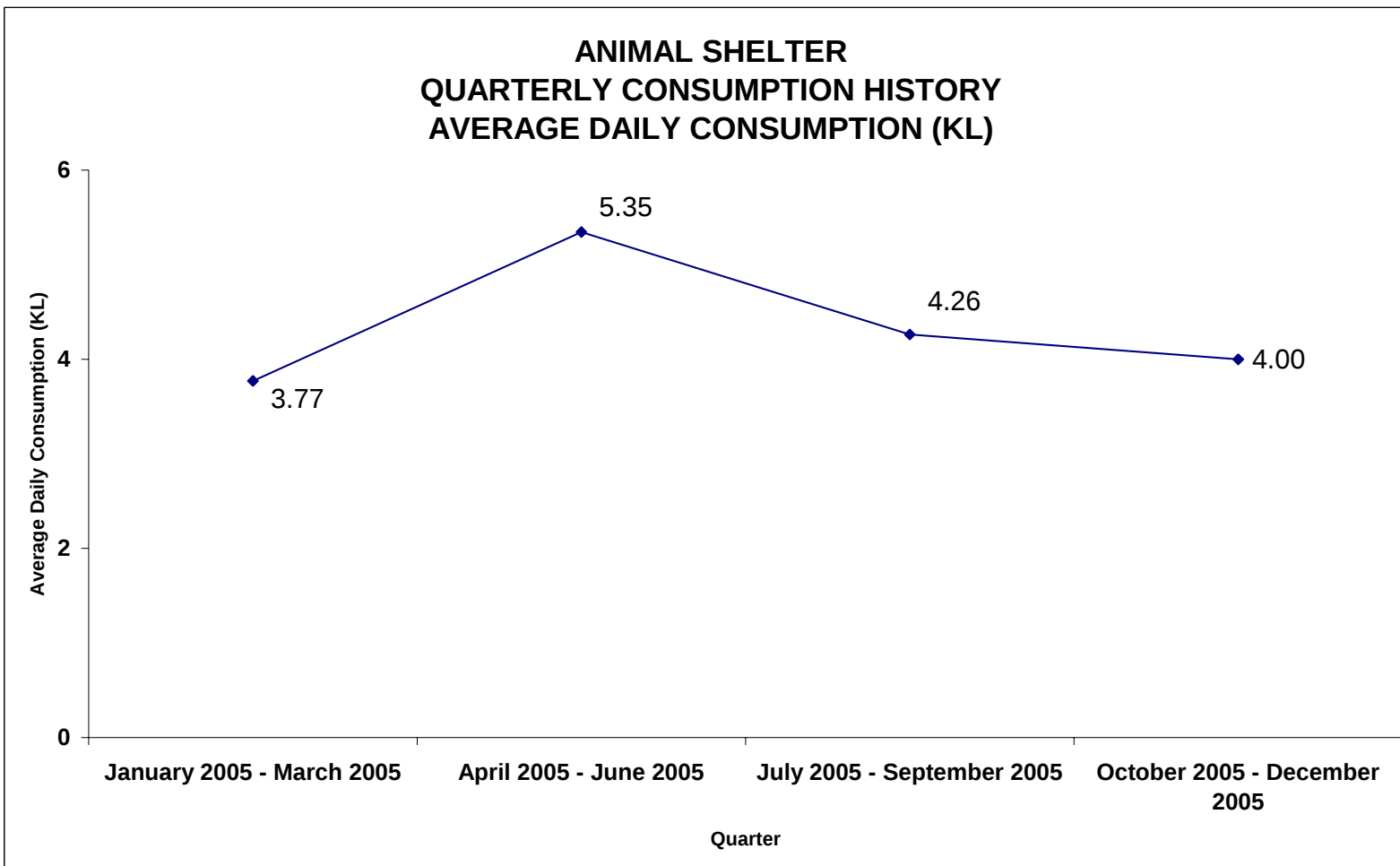
Annual Costs For 2005 \$1,780.84

Costs Per Kilolitre (\$/KL) For 2005 1.0130

Indicators N/A

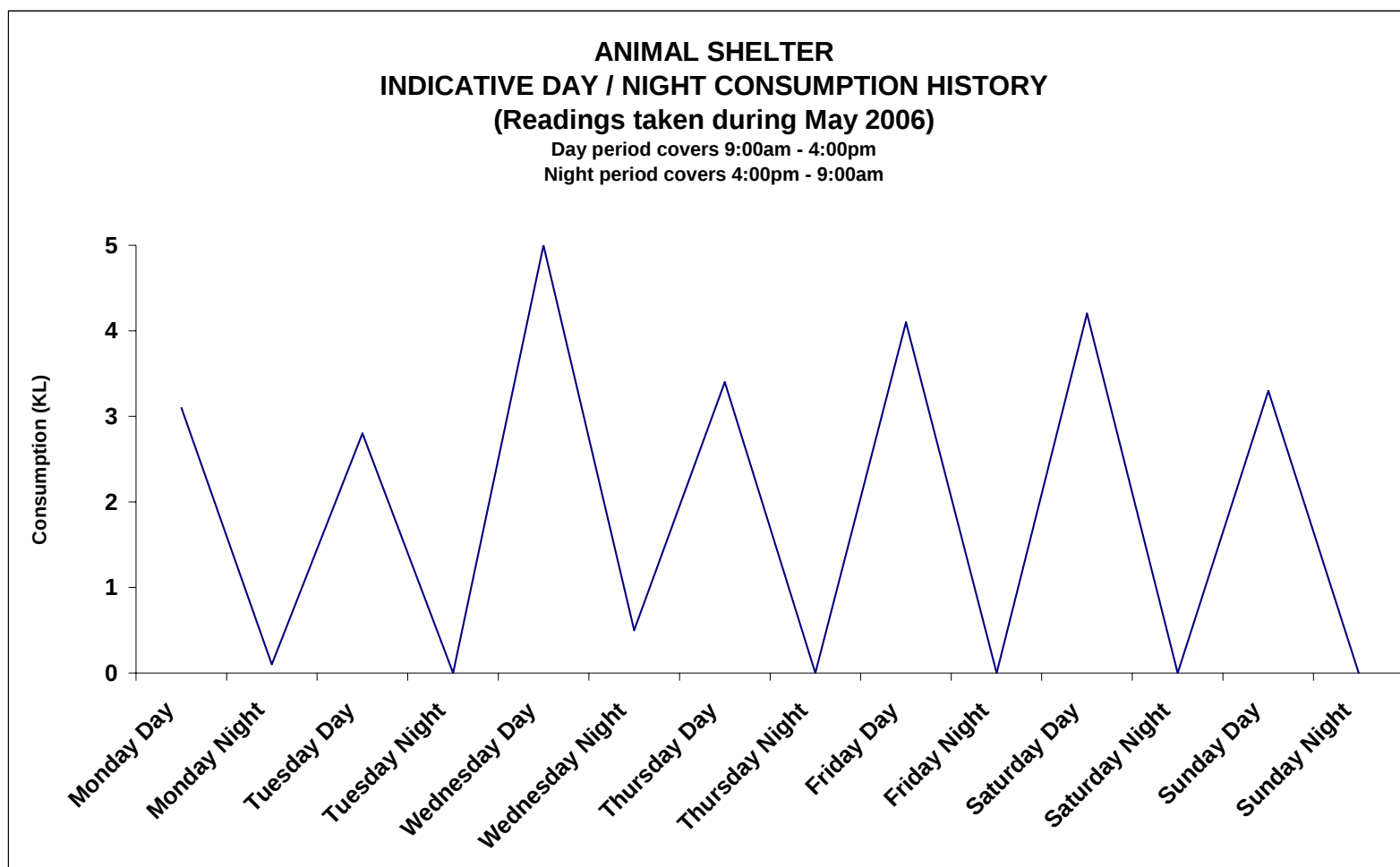


Water Savings Action Plan Site Data Sheet - Animal Shelter





Water Savings Action Plan Site Data Sheet - Animal Shelter





Water Savings Action Plan

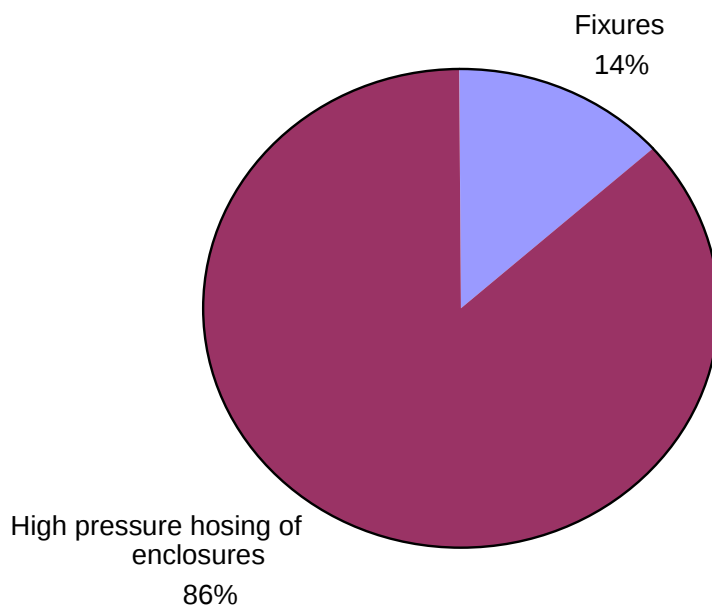
Site Data Sheet - Animal Shelter

WALK THROUGH AUDIT NOTES:

- Three full time staff based at Shelter.
- Few water consuming fixtures.
- Majority of consumption from use of high pressure fire hose to clean out enclosures once or twice per day.

ESTIMATED WATER USE:

ANIMAL SHELTER		
Fixture / Infrastructure	Usage	Associated consumption per day (litres)
6 litre/3 litre toilets	1 in place. Used 10 times per day each.	60
6 litre/minute taps over bathroom basins	1 in place. Used 12 times per day each, for 10 seconds each time.	12
Non AAA-rated showerheads	1 in place. Used three times per day for 5 minutes each time.	300
Misc Taps, Sinks, Boilers, HWS etc		100
Fire hose (for hosing out enclosures)	1 in place, used 1-2 times per day for 15 minutes each time	3000
TOTAL		3472





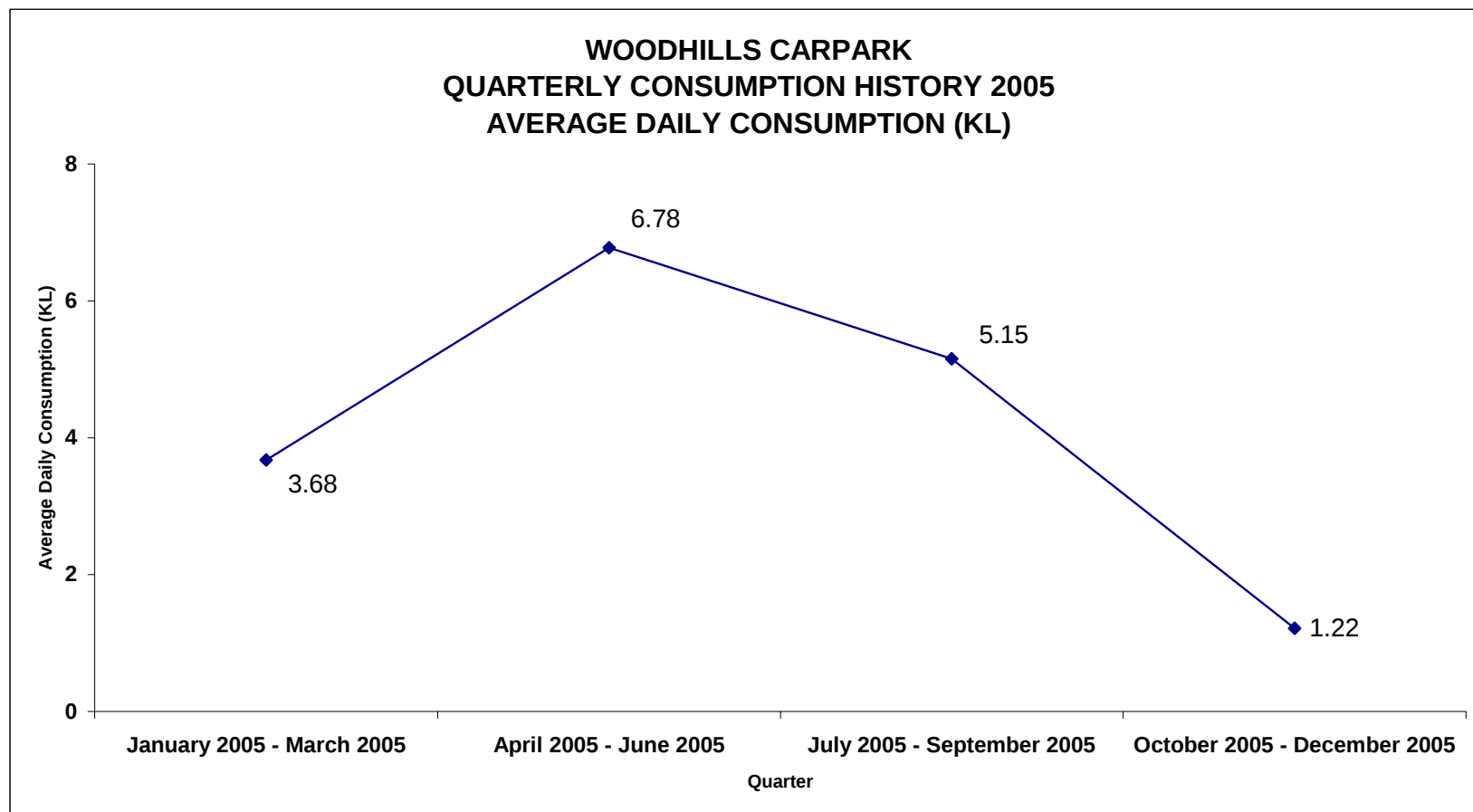
Water Savings Action Plan

Site Data Sheet - Woodhills Car Park

Site Name	Woodhills Carpark
Site Address	Lot 8, West Market Street, Windsor
Activities	Public toilets.
Summary of Water Consuming Infrastructure	Male and female toilets - basins, toilets and urinals.
Annual Consumption For 2005	1,561 KL
Average Per Day Consumption For 2005	4.08 KL
Annual Costs For 2005	\$1,581.27
Costs Per Kilolitre (\$/KL) For 2005	1.0130
Indicators	N/A



Water Savings Action Plan Site Data Sheet - Woodhills Car Park





Water Savings Action Plan

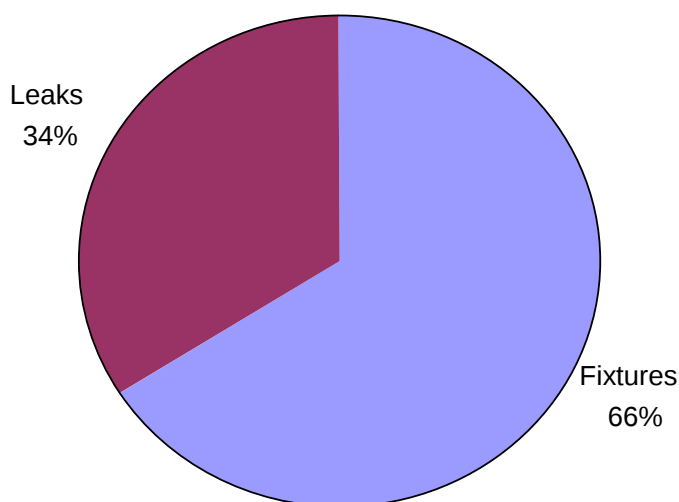
Site Data Sheet - Woodhills Car Park

WALK THROUGH AUDIT NOTES:

- Toilet block. Some leaks observed.

ESTIMATED WATER USE:

WOODHILLS CARPARK		
Fixture / Infrastructure	Usage	Associated consumption per day (litres)
11 Litre single flush toilets	6 in place. Used 30 times per day each.	1980
12 litre / minute taps over bathroom basins	4 in place. Used 50 times per day each, for 10 seconds each time.	400
TOTAL		2380





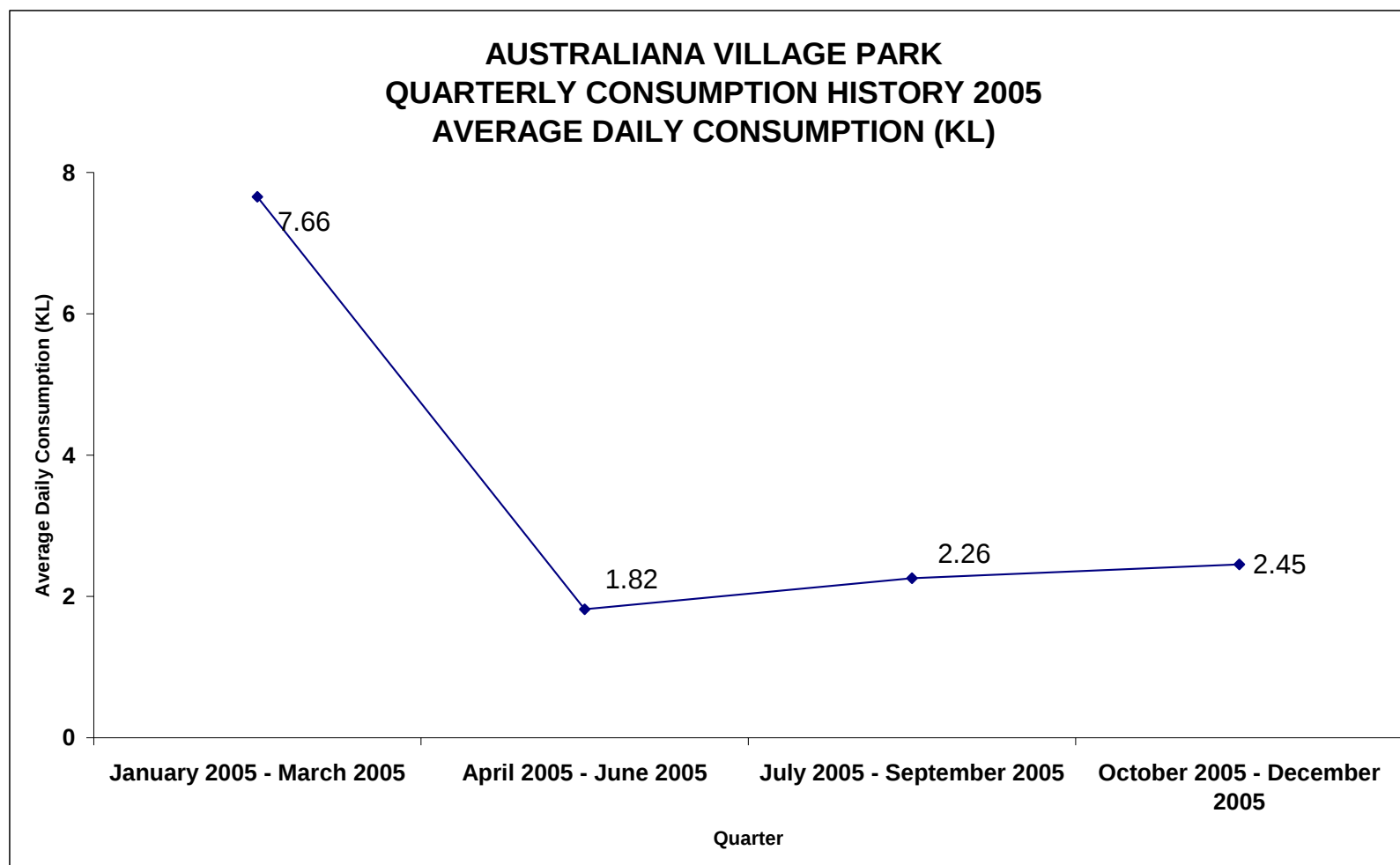
Water Savings Action Plan

Site Data Sheet - Australiana Village Park

Site Name	Australiana Village Park
Site Address	Rose Street, Wilberforce
Activities	Formerly a tourist site, now closed
Summary of Water Consuming Infrastructure	Several toilet blocks with toilets, urinals and basins. Fire hoses. Basins / sinks in heritage buildings. SITE CLOSED SINCE 2000.
Annual Consumption For 2005	1,345 KL
Average Per Day Consumption For 2005	3.66 KL
Annual Costs For 2005	\$1,362.47
Costs Per Kilolitre (\$/KL) For 2005	1.0130
Indicators	N/A



Water Savings Action Plan Site Data Sheet - Australiana Village Park





Water Savings Action Plan

Site Data Sheet - Australiana Village Park

WALK THROUGH AUDIT NOTES:

The walk through audit showed that the Park is closed completely, and is currently not being used at all, except for:

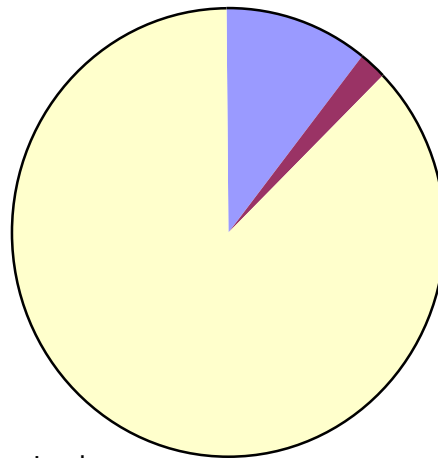
- watering of the gardens once per week by the 'Friends of AVP'
- filling of water troughs for horses in nearby paddocks, using AVP fire hoses.

Several taps in toilet blocks were leaking badly, and had been untouched for some time. There are numerous other leaks around the site from aging and neglected fixtures and infrastructure.

ESTIMATED WATER USE:

Unauthorised water use
(e.g. filling horse water trough in
neighbouring land)
11%

Authorised water use
(eg watering garden)
2%



Leaks
87%





Section E

Water Savings Measures



Water Savings Measures (Template 4)

Organisation: Hawkesbury City Council

Site: Administration Building & Dight Street
Offices - Windsor

Business Unit: n/a



Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		

Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Cost-Effective Opportunities									
Replace 2 x existing showerheads with water efficient AAA rated showerheads	John Munns	60	7		7		12%	01 Jan 07	31 Dec 07
Replace 15 x 11 litre single flush toilets, with dual flush (6 litre/3 litre) toilets across all area of the Administration Building	John Munns	4,500	662		672		15%	01 Jan 07	31 Dec 07
Insert aerators/flow restrictors into 21 x 12 litre/minute taps across all areas of the Administration Building	John Munns	600	418		424		71%	01 Jan 07	31 Dec 07
Total Cost-Effective Opportunities		5,160	1,087		1,103				
% change resulting from all measures									
Potential Cost-Effective Opportunities									
Implement stormwater collection and reuse system - UNDER INVESTIGATION. NO DATA AVAILABLE AS YET.	John Munns								

**Site: Administration Building & Dight Street
Offices - Windsor**

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Total Potential Cost-Effective Opportunities									
Summary of Business Unit: n/a									
Total Water Savings		5,160	1,087		1,103		Does not include Savings achieved from previous actions		
Summary of Site: Administration Building & Dight Street Offices - Windsor									
Total Water Savings		5,160	1,087		1,103		Does not include Savings achieved from previous actions		

Site: Richmond Swimming Pool - Richmond

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Cost-Effective Opportunities									
Upgrade pool amenities (toilets, showers and basins) to water efficient fixtures	John Munns Sean Perry	3,500	1,000		1,050		30%	01 Jan 07	31 Dec 08
Total Cost-Effective Opportunities		3,500	1,000		1,050				
% change resulting from all measures									
Potential Cost-Effective Opportunities									
Implement stormwater collection and reuse system - UNDER INVESTIGATION. NO DATA AVAILABLE AS YET.	John Munns								
Upgrading of the Pool, including: separation of pool filtration systems, new return water line, joints repair, new gutter system, pool length adjustment, new filtration plant, new amenities. STILL UNDER INVESTIGATION. MAY MOVE TO 'COST EFFECTIVE' LATER.	Sean Perry John Munns	835,000	10,000		11,000	20,000	4%	01 Jan 07	31 Dec 08
Total Potential Cost-Effective Opportunities		835,000	10,000		11,000	20,000			
Summary of Business Unit: n/a									
Total Water Savings		838,500	11,000		12,050	20,000	<i>Does not include Savings achieved from previous actions</i>		

Site: Richmond Swimming Pool - Richmond

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Summary of Site: Richmond Swimming Pool - Richmond Total Water Savings		838,500	11,000		12,050	20,000			<i>Does not include Savings achieved from previous actions</i>

Site: Oasis Aquatic Centre - Windsor

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Previous Action Over Last Five Years									
Repair to float bulb, to improve operation of ballast tank and backwashing	Craig Lambeth							01 Jul 05	31 Dec 05
Total Previous Action Over Last Five Years									
Cost-Effective Opportunities									
Document all pool maintenance and management practices in a formal procedures manual, and develop forms to assist staff to record important issues, tasks etc	Craig Lambeth	1,000							
Develop maintenance checklist for staff	Craig Lambeth	250							
Installation of improved access points for entry to balance tanks, piping and other infrastructure (for more effective maintenance checking)	Sean Perry John Munns	4,000	900		1,000		25%	01 Jan 07	31 Dec 07
Total Cost-Effective Opportunities		5,250	900		1,000				
% change resulting from all measures									
Potential Cost-Effective Opportunities									

Site: Oasis Aquatic Centre - Windsor

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Implement stormwater collection and reuse system - UNDER INVESTIGATION. NO DATA AVAILABLE AS YET.	John Munns								
Install sub meter on backwash line	John Munns Sean Perry							01 Jul 06	31 Dec 07
Install pressure guages on backwash equipment		1,500							
Purchase new pool blanket for outdoor pool	Craig Lambeth Sean Perry	85,000	10,000		11,000		13%	01 Jan 07	31 Dec 07
Recycling of swimming pool backwash water. The project would involve establishing a system that uses filtration, flocculation, chemical dosing and desalinisation to recover 75% of the backwash water.	Ramiz Younan John Munns Sean Perry	200,000	18,250		22,000	8,000	15%	01 Jan 07	31 Dec 07
Total Potential Cost-Effective Opportunities		286,500	28,250		33,000	8,000			
Summary of Business Unit: n/a									
Total Water Savings		291,750	29,150		34,000	8,000	<i>Does not include Savings achieved from previous actions</i>		
Summary of Site: Oasis Aquatic Centre - Windsor									
Total Water Savings		291,750	29,150		34,000	8,000	<i>Does not include Savings achieved from previous actions</i>		

Site: Deerubbin Centre - Windsor

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Previous Action Over Last Five Years									
Development of the precinct in 2004 and 2005 into an energy and water efficient set of buildings. SAVINGS NOT YET QUANTIFIED	John Munns								
Total Previous Action Over Last Five Years									
Cost-Effective Opportunities									
Relocate or adjust urinal sensors in male toilets	John Munns	400	350		375		93%	01 Jan 07	31 Dec 07
Total Cost-Effective Opportunities		400	350		375				
% change resulting from all measures									
Potential Cost-Effective Opportunities									
Install sub meter at water entry point to co generation plant (basement) to identify exact proportion of co generation consumption	John Munns							01 Jul 06	31 Dec 07
Implement stormwater collection and reuse system - UNDER INVESTIGATION. NO DATA AVAILABLE AS YET.	John Munns								

Site: Deerubbin Centre - Windsor

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Insert aerators/flow restrictors into 8 x 12 litre/minute taps within the Old Johnson Wing	John Munns	160	6		6		4%	01 Jan 07	31 Dec 07
Replace 4 x 11 litre single flush toilets, with dual flush (6 litre/3 litre) toilets within the Old Johnson Wing	John Munns	1,200	88		100		8%	01 Jan 07	31 Dec 07
Total Potential Cost-Effective Opportunities		1,360	94		106				
Summary of Business Unit: n/a									
Total Water Savings		1,760	444		481		Does not include Savings achieved from previous actions		
Summary of Site: Deerubbin Centre - Windsor									
Total Water Savings		1,760	444		481		Does not include Savings achieved from previous actions		

Site: South Windsor STP - South Windsor

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Cost-Effective Opportunities									
Replace 4 x showerheads with AAA rated models	Ramiz Younan	80	183		185		231%	01 Jan 06	31 Dec 06
Total Cost-Effective Opportunities		80	183		185				
% change resulting from all measures									
Potential Cost-Effective Opportunities									
Install system to use recycled effluent in truck wash	Ramiz Younan		1,825		1,850			01 Jan 06	31 Dec 07
Replace washing machine with new, more efficient model	Ramiz Younan	600	18		19		3%	01 Jan 07	31 Dec 07
Replace 3 x 11 litre single flush toilets, with dual flush (6 litre/3 litre) toilets	Ramiz Younan	900	47		48		5%	01 Jan 07	31 Dec 07
Insert aerators/flow restrictors into 8 x 12 litre/minute taps	Ramiz Younan	400	37		37		9%	01 Jan 07	31 Dec 07
Total Potential Cost-Effective Opportunities		1,900	1,927		1,954				
Summary of Business Unit: n/a									
Total Water Savings		1,980	2,109		2,139		<i>Does not include Savings achieved from previous actions</i>		

Site: South Windsor STP - South Windsor

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Summary of Site: South Windsor STP - South Windsor Total Water Savings		1,980	2,109		2,139				<i>Does not include Savings achieved from previous actions</i>

Site: Bosworth Street - Richmond

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Cost-Effective Opportunities									
Pursue Bosworth Street water use issue	Dianne Tierney	250	3,596		3,643		1452%	01 Jun 06	31 Dec 07
Total Cost-Effective Opportunities		250	3,596		3,643				
% change resulting from all measures									
Summary of Business Unit: n/a									
Total Water Savings		250	3,596		3,643		<i>Does not include Savings achieved from previous actions</i>		
Summary of Site: Bosworth Street - Richmond									
Total Water Savings		250	3,596		3,643		<i>Does not include Savings achieved from previous actions</i>		

Site: Richmond Tennis Centre - Richmond

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Cost-Effective Opportunities									
Investigate options for a new sprinkler/watering system.	Sean Perry							01 Jul 06	30 Jun 07
Insert aerators/flow restrictors into 4 x 12 litre/minute taps	Sean Perry John Munns	50	22		23		46%	01 Jan 07	31 Dec 07
Replace 4 x showerheads with AAA rated models	John Munns Sean Perry	80	47		48		60%	01 Jan 07	31 Dec 07
Total Cost-Effective Opportunities		130	69		71				
% change resulting from all measures									
Potential Cost-Effective Opportunities									
Replace 6 x 11 litre single flush toilets, with dual flush (6 litre/3 litre) toilets	Sean Perry John Munns	1,800	95		96		5%	01 Jan 07	31 Dec 07
Total Potential Cost-Effective Opportunities		1,800	95		96				
Summary of Business Unit: n/a									
Total Water Savings		1,930	164		167		<i>Does not include Savings achieved from previous actions</i>		

Site: Richmond Tennis Centre - Richmond

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Summary of Site: Richmond Tennis Centre - Richmond									
Total Water Savings		1,930	164		167		Does not include Savings achieved from previous actions		

Site: Animal Shelter - Mulgrave

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Cost-Effective Opportunities									
Install system to feed recycled water from STP to the Animal Shelter for use in hosing the enclosures.	Ramiz Younan	10,000	1,095		1,109		11%	01 Jul 07	31 Dec 08
Replace showerhead with a AAA rated model	John Munns	25	46		47		200%	01 Jul 06	31 Dec 07
Total Cost-Effective Opportunities		10,025	1,141		1,156				
% change resulting from all measures									
Summary of Business Unit: n/a									
Total Water Savings		10,025	1,141		1,156		<i>Does not include Savings achieved from previous actions</i>		
Summary of Site: Animal Shelter - Mulgrave									
Total Water Savings		10,025	1,141		1,156		<i>Does not include Savings achieved from previous actions</i>		

Site: Woodhills Carpark - Windsor

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Cost-Effective Opportunities									
Replace 4 x 11 litre single flush toilets, with dual flush (6 litre/3 litre) toilets	John Munns	1,200	361		366		31%	01 Jul 06	31 Dec 07
Insert aerators/flow restrictors into 4 x 12 litre/minute taps	John Munns	80	73		75		93%	01 Jul 06	31 Dec 07
Total Cost-Effective Opportunities		1,280	434		441				
% change resulting from all measures									
Potential Cost-Effective Opportunities									
Replace leaking pipes etc in building	John Munns								
Total Potential Cost-Effective Opportunities									
Summary of Business Unit: n/a									
Total Water Savings		1,280	434		441		<i>Does not include Savings achieved from previous actions</i>		
Summary of Site: Woodhills Carpark - Windsor									
Total Water Savings		1,280	434		441		<i>Does not include Savings achieved from previous actions</i>		

Site: Australiana Village - Wilberforce

Business Unit: n/a

Baseline Information		
Total Usage in kL	Quantity of BAI	KPI
0		



Measure Description	Responsibility	Cost to implement (\$)	Savings Annual		Cost Savings Annual		IRR (%)	Start Date	Completion Date
			Water in kL	Energy in GJ	Water (\$)	Other (\$)			
Cost-Effective Opportunities									
Turn off all water to the site at the mains, and implement a procedure for the turning on an off of water at the mains by gardeners etc as required. Repair or remove all faulty fixtures.	Ramiz Younan John Munns	100	1,170		1,200		1200%	01 Jul 06	31 Dec 06
Total Cost-Effective Opportunities		100	1,170		1,200				
% change resulting from all measures									
Summary of Business Unit: n/a									
Total Water Savings		100	1,170		1,200		<i>Does not include Savings achieved from previous actions</i>		
Summary of Site: Australiana Village - Wilberforce									
Total Water Savings		100	1,170		1,200		<i>Does not include Savings achieved from previous actions</i>		