LOGOS

pjep.

LOGOS Kemps Creek Logistics Project

Preferred Project Report

October 2011

Prepared for:

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striving for balance between economic, social and environmental ideals…

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DISCLAIMER

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1 INTRODUCTION

LOGOS Property (LOGOS) is proposing to develop a campus-style industrial estate on a 52 hectare site on the corner of Mamre Road and Bakers Lane, Kemps Creek, immediately adjacent to the Western Sydney Employment Area (WSEA). The Environmental Assessment for the project was publicly exhibited by the Department of Planning & Infrastructure (the Department) from 20 October to 26 November 2010.

Since exhibition of the Environment Assessment and preparation of the Response to Submissions, LOGOS has made a number of amendments to the project to address residual issues raised by authorities (including the Department, RTA and Sydney Water), to reflect the current status of the project and end-users, and to improve the environmental performance of the project.

This Preferred Project Report (PPR) has been prepared to formalise these amendments to the project, which include:

- revising the masterplan for the LOGOS Estate to provide;
  - additional land for future regional roads (ie. the Southern Link Road);
  - improved access for the schools to the north of Bakers Lane;
  - improved internal site circulation;
  - improved site amenities;
- revising the water and sewer servicing strategies for the project, to provide:
  - an integrated water cycle management strategy based on world's best practice water use sustainability;
  - greatly improved water use efficiency, such that the water demand from the entire LOGOS Estate is predicted to be equivalent to that of a single residential household;
- revising the electricity servicing strategy for the project, to provide:
  - a solar panel array capable of generating all of the energy required to supply the estate services; and
- amending the Statement of Commitments for the project, to provide:
  - additional assurances that the project would be undertaken at no cost to government; and
  - updates to reflect the above amendments.

These amendments are outlined in the following sections.

2 PROJECT AMENDMENTS

2.1 Revised Project Summary

Section 3 of the Environmental Assessment provided a summary of the project as originally proposed. A revised project summary, identifying the proposed amendments to the project, is provided in the following table.

Table 2.1: *Revised Project Summary*

Project Summary	**Construction and use of the LOGOS Kemps Creek Logistics Project, including:** • **subdivision;** • **demolition;** • **bulk and detailed earthworks;** • **construction of internal estate roads and site services;** • **construction and use of 8 warehouse and distribution centres for DHL and 2 warehouse and distribution centres for Metcash, along with ancillary offices and an estate cafe; and** • **ancillary infrastructure and services, including upgrade of Bakers Lane (to form part of the WSEA 'Southern Link Road') and Mamre Road.**	**Construction and use of the LOGOS Kemps Creek Logistics Project, including:** • **subdivision;** • **demolition;** • **bulk and detailed earthworks;** • **construction of internal estate roads and site services;** • **construction and use of 11 warehouse and distribution centres for unspecified end-users, along with ancillary offices and an estate central estate facilities building (including café, conference room, gymnasium and estate services); and** • **ancillary infrastructure and services, including upgrade of Bakers Lane (to form part of the WSEA 'Southern Link Road') and Mamre Road.**
Proposed Use	Warehousing and distribution, with ancillary office and café	No change
Subdivision	Subdivision of the site to create 2 development lots and an estate road	Subdivision of the site to create 4 development lots and 2 estate roads
Demolition	Demolition of the existing dwelling and farm improvements (fences and cattle yard)	No change
Earthworks	Bulk and detailed earthworks across the site to create level building pads and install services. Approximately 50,000m^3 of excess topsoil to be exported from the site.	No change
Facility Description	The estate masterplan comprises a total gross floor area (GFA) of approximately 250,535 m^2, including: • 8 warehouse and distribution centres for DHL, ranging in size from 16,580 m^2 to 21,400 m^2 GFA, including attached ancillary offices and an attached café (to Building 5); and • 2 warehouse and distribution centres for Metcash, including one ambient-temperature facility with a GFA of 68,185m^2, and one chilled-temperature facility with a GFA of 18,235m^2 (including expansion areas); and • a detached 2 level ancillary office building for Metcash with a GFA of 6,470m^2.	The estate masterplan comprises a total gross floor area (GFA) of approximately 260,000 m^2, including: • 11 warehouse and distribution centres for unspecified end-users, ranging in size from 16,500 m^2 to 28,400 m^2 GFA, including attached ancillary offices and an attached central estate facilities building including a café, gym/conference room and estate manager/security office (to Building 5).
Staging	Construction of the facilities would be staged over a period of approximately 5 years.	No change
Capital Investment Value	$235 million	No change
Employees	Construction – Approximately 800 full time equivalents Operation – Approximately 1,580 full time equivalents	No change

Infrastructure and Services:		
Access and Roads	Construction of internal road network, comprising 2 main estate access roads and a central roundabout. Main access provided via a signalised intersection on Bakers Lane, with a secondary left-in left-out access via Mamre Road. External roadworks include upgrade of: • Bakers Lane adjacent site to 4-lane dual carriageway, to form part of the WSEA 'Southern Link Road'; • Bakers Lane/Mamre Road intersection; and • Mamre Road to provide localised acceleration and deceleration lanes adjacent the site.	Construction of internal road network, comprising 2 main estate access roads. Main access provided via 2 signalised intersections on Bakers Lane. External roadworks include either funding or carrying out the following upgrading works on behalf of the applicable roads authority: • Bakers Lane adjacent site to a 4-lane dual carriageway, to form part of the WSEA 'Southern Link Road'; • Bakers Lane/Mamre Road intersection; and • Mamre Road to provide localised acceleration and deceleration lanes adjacent the Bakers Lane/ Mamre Road intersection.
Stormwater Drainage	On-site stormwater harvesting, detention and treatment, with discharge to Mamre Road and Bakers Lane consistent with existing flows. Construction of stormwater infrastructure associated with upgrade of Bakers Lane.	No change to broad stormwater strategy, however additional stormwater harvesting is proposed to provide potable water supply (see below), and additional water sensitive urban design (WSUD) measures have been added (including a bio-filtration swale along the main east-west internal estate road)
Potable Water	The site would be connected to existing Sydney Water mains supply north of the site at Erskine Park Road via a new watermain down Mamre Road. The proposal includes a number of water savings measures, including water efficient (4-star minimum) fixtures and harvesting of roof rainwater for toilet flushing, irrigation and cooling tower make-up.	Potable water would be predominately supplied by rainwater harvesting from warehouse roofs, with on-site treatment. Additional non-potable water (for irrigation and toilet flushing) would be supplied by on-site sewage recycling (see below). Rainwater harvesting and sewage recycling would supply 98% of the project's water demand. Reliance on Sydney Water reticulated potable water would be limited to a 20mm domestic-sized potable water connection off existing mains in Mamre Road or Bakers Lane for back-up during drought situations. Demand on Sydney Water supplies would be minimal (equivalent to the annual demand of a single average-sized household).
Sewer	The site would be connected to existing Sydney Water reticulated sewer north of the site at Erskine Park Road via a new sewer main down Mamre Road. Two sewage pumping stations would be installed in site.	An on-site sewage treatment plant would recycle all sewerage generated by the project, with recycled water used for on-site non-potable uses (ie. toilet flushing and irrigation). No reliance on Sydney Water sewage infrastructure would be required.
Electricity	The site would be connected via a new 11kV distribution feeder to the existing Mamre Road zone sub-station off Lenore Lane. The project includes a number of passive and active energy savings measures to minimise energy use.	No change to proposed connection to reticulated electricity supply, however the energy savings measures have been boosted by introducing a nominal 30kW Solar Panel Generation System. The system would be designed to generate enough electricity to fully supply the needs of the estate services, including estate sewer, stormwater and irrigation pumping systems, as well as road, security and access lighting (using LED light sources).
Telecom-munications	The site would be connected to telecommunications infrastructure in Mamre Road.	No change
Gas	The project is not proposed to be connected to a reticulated gas supply, although existing gas supplies are available north of the site at Erskine Park Road, if required in the future.	No change

2.2 LOGOS Estate Masterplan Amendments

The revised physical masterplan for the LOGOS Estate is shown on **Figure 2.1** below, and the key changes to the masterplan are outlined in **Table 2.2**. A full set of revised architectural plans for the project is provided in **Appendix B**, and a set of revised landscape plans for the project is provided in **Appendix C**. These plans update and replace the original architectural and landscape plans provided in the Environmental Assessment.

Figure 2.1: *Revised LOGOS Estate Masterplan (Source: Axis Architectural)*

Table 2.2: *Key Changes to the LOGOS Estate Masterplan*

Original Masterplan	***Revised Masterplan***	***Reason for Revision***
Provision of left-in, left-out access to Mamre Road	Left-in, left-out access to Mamre Road removed	To address the RTA's concerns about this access
Dedication of 10 metre site frontage to Bakers Lane to accommodate road upgrade	Dedication of additional 10 metre site (approx.) frontage to Bakers Lane (ie. 20 metres total dedication) to accommodate future road upgrades	To provide a total minimum Bakers Lane road reservation of 40 metres, to accommodate road upgrades (to 4 lanes) and potential future road widening (to 6 lanes). LOGOS also notes that the revised reservation width and alignment is broadly consistent with the layout indicated on the Department's *WSEA Southern Link Road Network Strategic Transport Assessment* (April 2011), and has been designed in consultation with the RTA (see Section 3 for further consideration). The RTA has advised that it accepts the proposed reservation width and alignment (see **Appendix H**).

Original Masterplan	*Revised Masterplan*	*Reason for Revision*
Provision of a single signalised site access intersection on Bakers Lane	Provision of 2 signalised site access intersections on Bakers Lane, adjacent the Mamre Anglican School and Emmaus/Trinity Catholic School	The revised layout is based on consultation with the RTA, and earlier consultation with the schools. The layout provides for direct access to the upgraded road for the schools, in a manner that allows school-related traffic to access and egress the respective sites from the east and west. The RTA has advised that it accepts the proposed road layout in principle (see **Appendix H**). As detailed in Section 3 below, LOGOS has also provided for the preparation of final designs for the Bakers Lane upgrade in consultation with the schools and to the satisfaction of the RTA. As outlined in the EA and the Response to Submissions, LOGOS stresses that the proposed upgrade to Bakers Lane is identified in the *State Environmental Planning Policy (Western Sydney Employment Area) 2009* as part of the regional road network for the Western Sydney Employment Area, and is likely to be developed with or without the LOGOS project (with consequent changes to school access).
Provision of 'traditional' reticulated water and sewer infrastructure	Provision of additional on-site water and sewer infrastructure related to the revised water and sewer servicing strategy	To address Sydney Water concerns regarding the capacity of its infrastructure to accommodate the project. Refer to Section 2.3 for further detail.
Development of 10 warehouse and distribution centres, with a total gross floor area of 250,535 m^2 and site cover of 50%	Development of 11 warehouse and distribution centres, with a total gross floor area of approximately 260,000 m^2 and site cover of 52%	The changes to building layout are largely a consequence of the above changes, as well as changes to the end user requirements (as discussed in the Response to Submissions). Refer to Table 2.3 for a revised development summary.

A development summary of the revised masterplan is presented in the following table. Floor areas for individual buildings are shown on the architectural plans in **Appendix B**.

Table 2.3: *Revised Masterplan Development Summary*

	Original Masterplan	*Revised Masterplan*
Areas (m^2)		
- Site Area	494,050[1]	492,485
- Warehouse Area	230,780	236,500
- Office Area	18,870 (8%)	22,400 (9%)
- Central Estate Facilities Building / Café Area	360	1,000[2]
- Ancillary Building Area	525	100
- Total Building Area	250,535	260,000
- Awning Area	25,580	19,250
- Hardstand Area	149,495	123,210
- Landscaping Area	90,250 (18%)	75,000 (15%)
Site Cover (exc. awning)	50% average	52%

	Original Masterplan	*Revised Masterplan*
	(52% for DHL Campus)	
No. office levels (each bld)	2	No change
Building Height (m)	14	No change
Car Parking Spaces	1,293	1,388
Employees	1,580	No change
Hours of Operation	24 hours, 7 days	No change

1 Excludes internal estate road, which has an area of 9,900m^2

2 Includes a café (200m^2), conference room (300m^2), gymnasium (200m^2), estate managers/security office (200m^2) and common amenities (100m^2).

2.3 Revised Water and Sewer Servicing Strategy

The original water and sewer servicing strategy for the project was based on connection to, and augmentation of, existing Sydney Water infrastructure servicing the Erskine Park Employment Area. Infrastructure assessment in the Environmental Assessment indicated that the project could be readily serviced without affecting the capacity of the existing infrastructure.

In response to issues raised by Sydney Water regarding the proposed servicing strategy, LOGOS engaged a specialist team of consultants to undertake a major review of the water and sewer servicing strategies for the project. The review was undertaken by:

- Aquacell – a leading Australian company specialising in design and operation of decentralised water recycling schemes (Aquacell has designed blackwater/greywater recycling schemes for numerous developments, including Blacktown Workers Club, Liverpool Catholic Club, RMIT Victoria, Canberra Airport, and 1 Bligh Street Sydney);
- Dr Peter Bacon of Woodlots and Wetlands – a specialist agronomist to advise on soils and water balance;
- Buckton Lysenko – the project civil and stormwater engineer; and
- Flamesafe Fire Protection – to advise on fire sprinkler tank water/filling requirements.

This review has culminated in a fully revised water and sewer servicing strategy for the project that is 100% self-sufficient for sewer (ie. no reliance on Sydney Water infrastructure), and 98% self-sufficient for potable water, with reliance on Sydney Water potable water equivalent to the annual demand of a single average-sized household (ie. the same as the demand that could be generated by the existing house on the site[1]).

The strategy is based on best practice Integrated Water Cycle Management (IWCM) principles, and involves:

- rainwater harvesting from warehouse roofs, with the water treated and used for potable water demands (including drinking);
- on-site sewerage recycling, with the recycled water used for irrigation and toilet flushing; and
- integrated stormwater management based on Water Sensitive Urban Design (WSUD) principles.

It is considered that the strategy constitutes world's best practice in water use sustainability and management.

Reliance on Sydney Water infrastructure would be limited to a 20mm domestic-sized potable water connection off existing mains in Mamre Road or Bakers Lane. It is understood that this is equivalent to the site's existing connection.

[1] It is acknowledged that the existing house on the site is currently in a derelict state.

LOGOS has prepared an Integrated Water Cycle Management Strategy which describes and assesses the proposed strategy, attached as **Appendix D**. A summary of the proposed strategy is provided below, and a schematic illustrating the key processes is shown on **Figure 2.2**. Consideration of the environmental effects associated with the strategy is provided in Section 3.

Sydney Water has advised that it is able to provide the required 20mm domestic-sized water connection, subject to project approval and a customer agreement to be executed by Sydney Water and LOGOS. Sydney Water also acknowledges that the revised water and sewer servicing strategy is (apart from the 20mm water connection) a private scheme that does not rely on access to Sydney Water's system (see **Appendix G**).

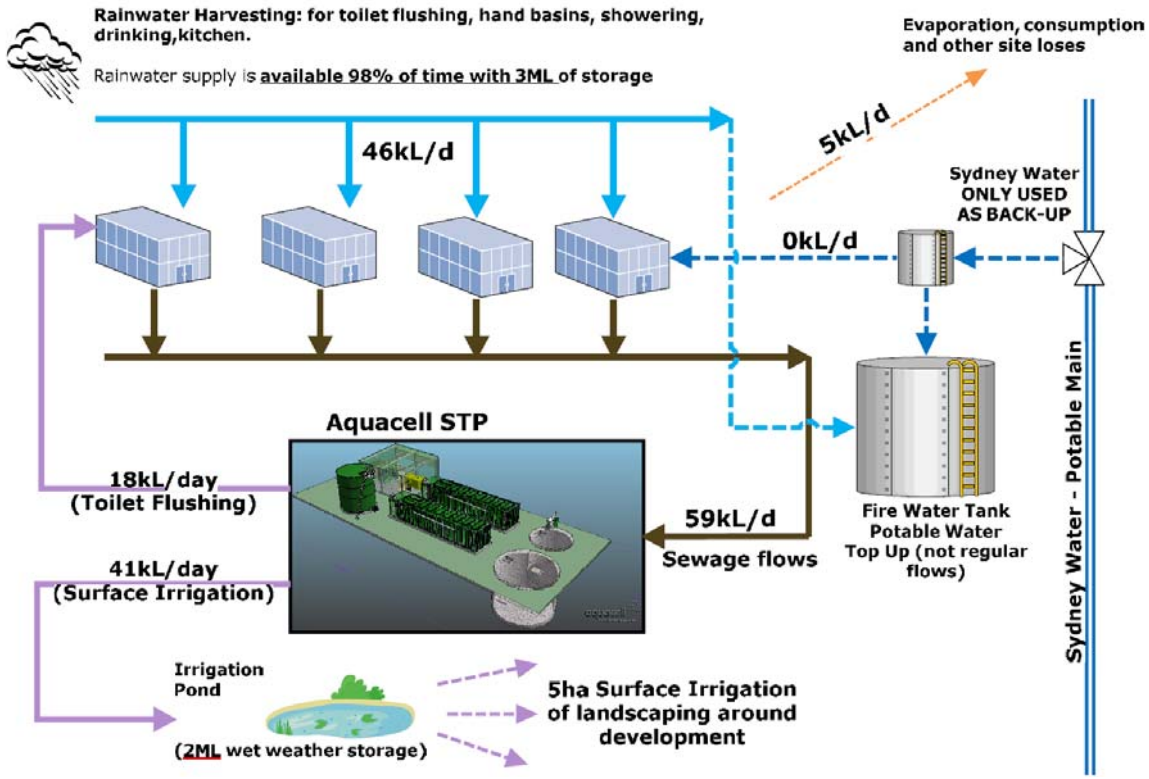

Figure 2.2: *Integrated Water Cycle Management Strategy Schematic (Source: Aquacell)*

2.3.1 Sewer and Non-Potable Water Servicing Strategy

The proposed sewer servicing strategy for the project is shown on **Figure 2.3** below, and essentially involves on-site recycling of all sewerage generated by the project, with recycled water used for on-site non-potable uses (ie. toilet flushing and irrigation).

In summary, the treatment process would involve:

- wastewater generated on site (ie. approximately 59kL/day) would be pumped to a centrally-located sewage treatment and recycling plant;
- wastewater would be treated to a high quality[2] in the treatment plant, with the treatment train including:
  - mechanical screening to remove solids:
    - generating between 20-50L of compacted washed screenings (solids) a week, which would be stored in a hygienic and closed bagging system;

[2] The recycled water would be well below the criteria for classification as 'low strength effluent' under OEH's (2004) *Environmental Guidelines: Use of Effluent by Irrigation.* Refer to Section 3 for further detail.

- screenings would classify as 'General Solid Waste' (putrescible) under the Office of Environment and Heritage's (OEH's) (2009) *Waste Classification Guidelines*, and would be periodically disposed to an appropriately licenced waste management facility (eg. Eastern Creek Waste Management Centre);

o temporary wastewater storage in a balance tank and peak overflow tank:
- the balance tank (50kL) is required to attenuate peaks and troughs in inflows;
- the peak overflow tank provides extra storage capacity in peak flows and contingency storage (eg. during plant maintenance or breakdown);
- the tanks provide approximately 3.5 days contingency storage, allowing adequate time for maintenance or to arrange pump out;

o membrane bioreactor (MBR) with ultra-filtration membrane treatment;
o UV photo-oxidation disinfection;
o chlorination disinfection; and
o blue dye addition (for toilet flushing water), to protect against cross connections;

- recycled water would be piped to warehouses for non-potable water use (ie. toilet flushing), or irrigated in landscaping areas of the site; and
- excess recycled water (ie. during wet weather when irrigation is unavailable) would be stored in 2 wet weather recycled water storages located in the eastern area (1 ML storage) and western area (1 ML storage) of the site, prior to on-site irrigation. Water balance modelling indicates that a total storage volume of 2 ML would ensure that discharge from the storages would not occur more frequently than 1 in 2 years[3]. Any overflows would be directed to the adjacent bio-filtration and on-site detention basins, prior to discharge from the site via the stormwater management system.

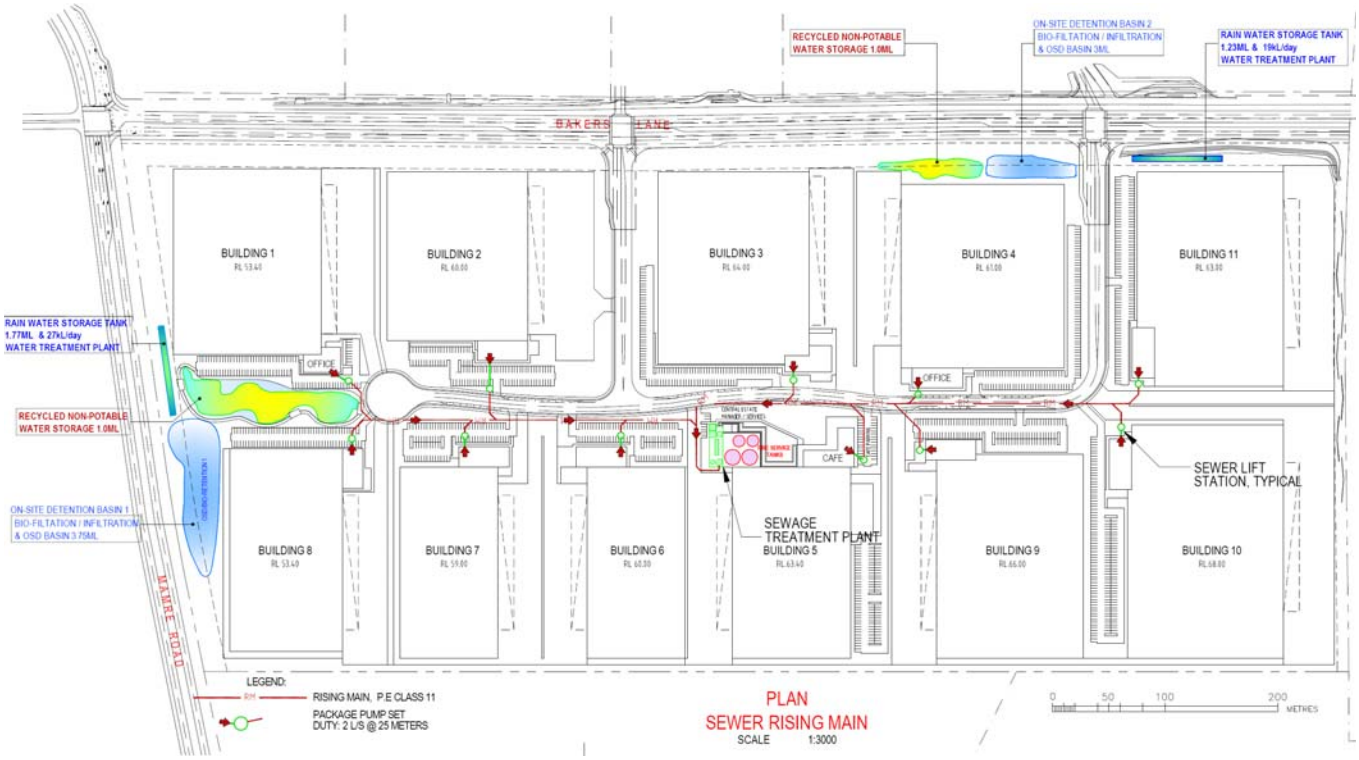

Figure 2.3: *Revised Sewer Servicing Strategy (Source: Buckton Lysenko)*

[3] As required for low strength effluent under OEH's (2004) *Environmental Guidelines: Use of Effluent by Irrigation.*

2.3.2 Potable Water Servicing Strategy

The proposed potable water servicing strategy for the project is shown on **Figure 2.4** below.

In summary, the proposed potable water servicing strategy involves:

- harvesting of rainwater from the full roof area of each warehouse;
- collected rainwater would be stored in 2 rainwater storage tanks located in the eastern area (1.23 ML tank) and western area (1.77 ML tank) of the site. The tanks would be of concrete construction, and predominately buried below ground (the top approximately 1 metre of the tank would be located above ground, with this visible portion landscaped to mitigate any adverse visual impacts – see Section 3). Water balance modelling indicates that a total tank storage volume of 3 ML would satisfy the project's potable water demands for 98% of the time;
- stored rainwater would be treated before use using ultra-filtration and UV disinfection (or similar) to meet Australian Drinking Water Guidelines, then pumped to warehouses for potable water use (including drinking, washing and showering, cleaning, and firewater supply); and
- overflow from the rainwater storage tanks would be directed to the adjacent bio-filtration and on-site detention basins, prior to discharge from the site via the stormwater management system.

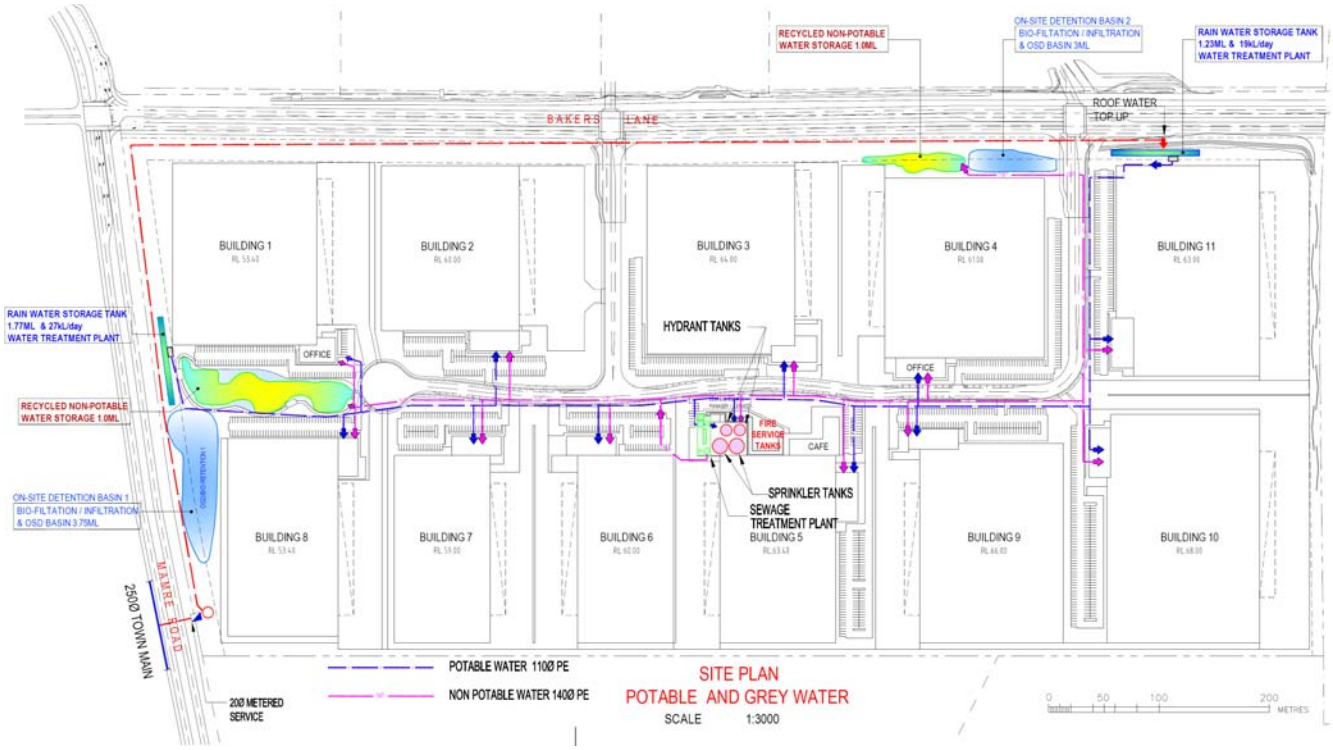

Figure 2.4: *Revised Potable (and Non-Potable) Water Servicing Strategy (Source: Buckton Lysenko)*

2.3.3 Licencing Requirements

WICA Licence

The *Water Industry Competition Act 2006* (WICA) provides the regulatory framework that enables the private sector to deliver decentralised water and wastewater treatment solutions, independent of Sydney Water infrastructure and without having to obtain approval from Sydney Water.

The NSW Government introduced the WICA as part of its strategy for a sustainable water future to harness the innovation and investment potential of the private sector in the water and wastewater industries. At the same time, the Act establishes a licencing regime for private sector entrants to ensure the continued protection of public health, consumers and the environment.

A corporation (other than a public water utility) must obtain a licence under the Act to construct, maintain or operate any water industry infrastructure or to supply water (potable or non-potable) or provide sewerage services by means of any water industry infrastructure.

The proposed water and wastewater infrastructure for the LOGOS Kemps Creek Logistics Project will require a WICA licence to install and operate. This licence is required before any sewerage or water infrastructure commences construction on site, which includes all associated pipework.

The WICA licence applicant is required to satisfy IPART/NSW Office of Water that they have the technical, financial and organisation capacity to be granted a licence. LOGOS notes that Aquacell (which has been engaged to design and deliver the IWCM strategy), has secured a previous a WICA licence to establish, operate and manage the regulatory compliance associated with the decentralised scheme.

Environment Protection Licence

Activities that are deemed to be 'scheduled' require an Environment Protection Licence (EPL) from OEH under the *Protection of the Environment Operations Act 1997 (POEO Act)*. Sewage treatment systems are required to have an EPL where they processes more than 2,500 equivalent persons (EP) per day (schedule 1, clause 36 (2)) or where the capacity of the plant exceeds 750kL/day (schedule 1, clause 36 (3)).

The proposed sewage treatment plant for the project would have a nominal capacity of approximately 60kL/day, which is well below the prescribed limit requiring an EPL. Accordingly, the project would not require an EPL under the POEO Act.

2.4 Revised Electricity Servicing Strategy

To further enhance the project's sustainability measures, LOGOS has supplemented the energy conservation measures identified in the Environmental Assessment by introducing a nominal 30kW Solar Panel Generation System. The solar panel array (approximately 400m^2 in total) would be centrally located around the sewage treatment and recycling plant and café (see **Figure 2.1**).

The system would be designed to generate enough electricity to fully supply the needs of the estate services, including:

- allowance of up to 15kW of solar-generated supply to provide for estate sewer, stormwater and irrigation pumping systems; and
- allowance of up to 15kW of solar-generated supply to provide for road, security and access lighting using LED light sources.

Other electricity demands associated with the project (ie. those generated by each warehouse) would continue to be serviced in accordance with the original electricity servicing strategy for the project (ie. via reticulated electricity supply).

A brief report describing the proposed Solar Panel Generation System is attached as **Appendix E**. It is noted that the report supplements, rather than replaces, the original electricity servicing strategy for the project.

3 ENVIRONMENTAL ISSUES

Consideration of the environmental effects of the revised project is presented in the following table.

Table 3.1: *Consideration of Environmental Effects*

Issue	***Consideration***
Design and Visual	It is considered that the proposed amendments to the project, including the revisions to the layout of the masterplan, would not result in any adverse impacts on the design quality of the project or visual amenity of the locality. The revised masterplan has a slightly higher gross floor area (GFA) and site cover than the original masterplan, though this increase is not considered significant and remains comparable to the original project. (The increase in site cover is largely due to the additional land dedication for the Southern Link Road). The revised masterplan retains the same architectural design as the original masterplan. Some elements of the revised project would indeed improve design quality and visual amenity, including: • the revised masterplan provides for a significantly enhanced central community open space, located adjacent the central estate facilities building (including café, conference room and gymnasium) and key estate sustainability features (ie. the solar panel array and the water recycling plant), which LOGOS proposes to highlight rather than hide. The expanded open space would provide opportunities for passive and active recreation. The café has also been more prominently located than originally proposed; • the replacement of the former large 'Metcash Main Warehouse Facility' at the eastern end of the site with 2 smaller warehouses assists in reducing scale and bulk of this building, and allows the site levels in this area to be stepped, thereby reducing excavation and slopes; • the introduction of the additional 2 recycled water storages provides enhanced opportunities for landscaping and visual relief; and • the revised masterplan has also introduced a central open bio-filtration swale and boardwalk, which would improve the visual amenity of the central spine of the estate (see revised Landscape Plan in **Appendix C** for detail). The proposed (concrete) rainwater storage tanks in the north-eastern and western areas of the site do have some potential to affect visual amenity in these areas. To mitigate this potential impact, the rainwater tanks would be: • predominately buried, with only the top approximately 1 metre located above ground[4]; • treated through concrete patterning; • potentially integrated with estate signage (Nb. LOGOS has committed to preparation of a signage strategy for the estate, to the satisfaction of the Department); and • partly screened through landscaping. Details of treatment for the rainwater storage tanks is shown on the revised landscape plans in **Appendix C**. It is acknowledged that the Department requested that LOGOS consider placing some of the ancillary offices towards the outside of the estate, fronting Mamre Road and/or Bakers Lane. LOGOS has considered this potential, but believes that such an estate layout would degrade the 'campus' quality of the estate, which is the central design theme for the estate. However, LOGOS acknowledges the Department's intent to maximise the quality of the streetscape, and believes that the proposed layout provides a high quality and consistent presentation to the Mamre Road and Bakers Lane frontage. In this regard: • the building facades have been designed to a high quality including subtle shading variations and material variations including precast concrete, colorbond sheeting and

[4] The top of the tank would be located above ground to assist prevention of water seepage into the tanks.

Issue	*Consideration*
	translucent sheeting (as detailed in the EA); • the buildings provide generous setbacks to Mamre Road and Bakers Lane (as upgraded); and • the project provides a high quality landscape design, including significant areas of water feature along the street frontages.
Soil and Water	*Stormwater Management* A revised Stormwater Management Plan for the project is attached in **Appendix D**, as part of the Integrated Water Cycle Management Strategy for the estate. As outlined in Section 2.3, recycled water from the sewage recycling plant is proposed to be used for toilet flushing and irrigation. The recycled water would be treated to a high quality, with the recycled water quality well below the criteria for classification as 'low strength effluent' under OEH's (2004) *Environmental Guidelines: Use of Effluent by Irrigation*. A comparison between the recycled water quality specification and the OEH effluent quality guidelines is outlined below.

Analyte	***Treatment Plant Specification (minimum)***	***OEH Criteria***	
		Low Strength Effluent	***High Strength Effluent***
Biochemical Oxygen Demand (BOD), mg/L	<5	<40	>1,500
Suspended solids, mg/L	<2	-	-
pH	6.5-8.5	-	-
Oil and grease	<1	<1,500	>1,500
Total nitrogen, mg/L	<15	<50	>100
Total phosphorus, mg/L	<10	<10	>20

Recycled water would be irrigated on site during dry weather, in a manner that prevents any run-off. During wet weather, when irrigation is not possible, excess recycled water would be stored in the 2 x 1 megalitre recycled water storages on the north-eastern and western areas of the site. The capacity of these storages is based on detailed water balance modelling (see **Appendix D**), to ensure that discharge from the storages would not occur more frequently than once every 2 years, in accordance with the requirements of the 2004 OEH guidelines.

The revised Stormwater Management Plan includes stormwater quantity and quality modelling for the revised project. The modelling indicates that the amended project would continue to comply with Council's stormwater criteria. In this regard, the post-development flows would not exceed the pre-development flows, and contaminant removal (including gross pollutants, total suspended solids, nitrogen and phosphorus) would comply with Council's minimum removal requirements.

To ensure recycled water is managed and irrigated appropriately, LOGOS has committed to developing a Recycled Water Irrigation Management Plan for the project, in consultation with Council and OEH. (The commitment has been prepared in a manner that is consistent with a similar condition on Goodman's Oakdale project approval, which is also based on sewage recycling).

Water Harvesting

The Integrated Water Cycle Management Strategy includes consideration of the proposed water harvesting in the context of harvestable rights provisions under the *Water Management Act 2000*. Under these harvestable rights provisions, the maximum dam capacity on the site would be approximately 34 megalitres. The proposed rainwater tank total capacity of 3 megalitres is well below this amount, and therefore well within the 10% (approx.) harvestable rights allowed under the Water Management Act.

Issue	*Consideration*
Noise and Vibration	The proposed amendments are not expected to result in any significant change to the noise impacts associated with the project. The addition of the second (western) signalised intersection to Bakers Lane may result in some increase to traffic noise levels in the vicinity of Receiver Location B (25 Bakers Lane), however any increase is not expected to be significant. It is noted that the EA includes a commitment to providing this residence with architectural noise treatments (such as double glazing, insulation and/or air-conditioning) at the landowners request, as part of the proposed upgrade works to Bakers Lane.
Air Quality	The proposed amendments are not expected to result in any significant change to the air quality impacts associated with the project. The proposed sewage recycling plant is not expected to result in any significant odour impacts, based on the performance of similar plants operated by Aquacell. The plant would be centrally located within the estate, in proximity to the estate facilities building and café. Therefore, LOGOS has a fundamental interest in ensuring that the plant is well maintained and non-odiferous.
Greenhouse Gases and Climate Change	The proposed amendments – in particular the proposed 30MW Solar Panel Generation System – would result in a considerable reduction in net greenhouse emissions associated with the project. As detailed in Section 2.4, the proposed solar panel array has been designed to generate enough clean energy to fully supply the electricity demand of the estate services (including the sewage recycling plant and associated infrastructure, and estate LED lighting).
Flora and Fauna	The proposed amendments would not result in any significant change to the flora and fauna impacts associated with the project. The project agronomist (Dr Peter Bacon of Woodlots and Wetlands) has advised that the proposed irrigation of recycled water to the landscaping areas of the site (which would comprise Cumberland Plain Woodland species) would not have any adverse impacts on the vegetation, given the low strength (and low relative nutrient content) of the recycled water, and based on Dr Bacon's previous experience in irrigating recycled water on Cumberland Plain Woodland species.
Archaeology and Heritage	The proposed amendments would not result in any change to the heritage impacts associated with the project.
Traffic and Parking	The proposed amendments have been designed to address the RTA's and the Department's concerns regarding the future arterial road network (ie. the Southern Link Road network) and site access. *Southern Link Road Reservation and Alignment* The original project provided for dedication of the northern 10 metre frontage of the site, to provide a total Bakers Lane reservation width of 30 metres. The 30 metre road reservation was considered adequate to accommodate the proposed 4 lane dual carriageway upgrade to Bakers Lane (plus a 2 lane service road to the north of the dual carriageway). The EA (and Response to Submissions) acknowledged that it is anticipated that the reserve will ultimately be expanded to 40 metres, through similar dedication of land on the northern side of Bakers Lane (or alternatively, by encroaching into the setbacks on the LOGOS site). The proposed amendments provide for dedication of an additional 10 metres (approx.) along the Bakers Lane frontage, to provide a total minimum reservation width of 40 metres. A 40 metre road reservation would comfortably accommodate the ultimate 6 lane configuration for the Southern Link Road as envisaged by the RTA. Further, a 40 metre road reservation width is consistent with the reservation width in the Department's recently released *WSEA Southern Link Road Strategic Transport Assessment* (April 2011). The proposed horizontal alignment is also generally consistent with the alignment in the strategic assessment, although it is acknowledged that the preferred alignment in the strategic assessment shows the Southern Link Road wholly on the LOGOS Estate site. LOGOS' concept road designs (see below) have demonstrated that a 40 metre reservation to the south of the existing Bakers Lane reservation (ie. 60 metre total reservation), is not required or warranted.

Issue	*Consideration*

The proposed amended road reservation and road design has been prepared in consultation with the RTA, including a meeting on 22 July 2011. The RTA has since confirmed that it accepts in-principle the proposed reservation and layout for the Southern Link Road (see **Appendix H**).

Bakers Lane Upgrade and Intersections

The original project provided for the upgrade of Bakers Lane to a 4 lane dual carriageway, to form part of the WSEA Southern Link Road. The road design included a 5.5 metre service road to the north of the dual carriageway to provide safe and efficient access to the upgraded Bakers Lane for the schools and landowners located to the north. A single signalised intersection was proposed for access to the LOGOS Estate site.

The proposed amendments to the proposed Bakers Lane upgrade and site access have been designed in consultation with the RTA and earlier consultation with the schools, which requested direct and unrestricted access to the Southern Link Road. In this regard, the revised project provides for:

- 2 signalised site access intersections on Bakers Lane, located immediately adjacent the existing site entrances to the Mamre Anglican School and Emmaus/Trinity Catholic School (the signalised intersections would provide the schools with direct access to the Southern Link Road, both from the east and the west);
- upgrade of Bakers Lane to a 4 lane dual carriageway, to form part of the WSEA Southern Link Road[5]; and
- a 5.5 metre service road to the north of the dual carriageway, to provide safe and efficient access to the upgraded Bakers Lane for the schools and landowners located to the north[6].

The concept road layout is shown on the plans in **Appendix F**. The plans include the proposed 4 lane configuration for the Southern Link Road, as well as a concept plan indicating how the road could be further upgraded to 6 lanes in the future, if required.

As outlined in the Response to Submissions, it is stressed that the 6 lane configuration is considered to be a long term planning provision only, and is not proposed to be constructed as part of the project. The traffic assessment in the EA demonstrates that the proposed 4 lane configuration would adequately accommodate the future traffic volumes in the WSEA (including the project) until at least 2031. It is also noted that the Department's *WSEA Southern Link Road Strategic Transport Assessment* is based on a 4 lane roadway.

The RTA has reviewed the proposed road upgrade designs and advised that it accepts in-principle the proposed concept layout for the upgrade works (see **Appendix H**).

It is also noted that LOGOS has committed to the preparation of final designs for the Bakers Lane upgrade, in consultation with all landowners with frontage to the road, and to the satisfaction of the RTA.

Car Parking

The revised project includes provision of a total of 1,388 car parking spaces. This parking provision has been revised from the original project to reflect the revised gross floor area (GFA) for the project. In this regard, all individual buildings have been designed to comply with a parking ratio of 1 space per 300m^2 for warehouse GFA and 1 space per 40m^2 for office GFA, which is consistent with the ratios for the original project.

Parking provision for each building is presented in the table in **Appendix F**.

[5] These components are similar to the original project, with minor amendments to layout.

Issue	*Consideration*
Wastes and Hazards	The proposal amendments would not result in any significant change to waste generation on site, apart from solid waste associated with operation of the sewage recycling plant. In this regard, the recycling plant would generate between 20-50L of compacted washed screenings (solids) a week, which would be stored in a hygienic and closed bagging system. The screenings would classify as 'General Solid Waste' (putrescible) under OEH's (2009) *Waste Classification Guidelines*, and would be periodically disposed to an appropriately licenced waste management facility (eg. Eastern Creek Waste Management Centre). As detailed above, LOGOS has committed to preparing and implementing a Recycled Water Irrigation Management Plan for the project. The commitment includes provisions requiring the management and disposal of solid waste from the sewage recycling plant to be managed as part of the management plan. With regard to hazards, the sewage recycling plant would store and use some additional hazardous materials (in particular, Chlorine for disinfection). All dangerous goods and hazardous materials would be stored in appropriately bunded areas, in accordance with applicable guidelines including the Dangerous Goods Code and *AS 1940-2004: The storage and handling of flammable and combustible liquids*.

4 CONCLUSION

4.1 Revised Statement of Commitments

LOGOS has revised the Statement of Commitments for the project to:

- reflect the proposed amendments to the project outlined above; and
- provide additional assurances that the project would be undertaken at no cost to government through provision of appropriate developer contributions, in accordance with the NSW Government's *Guide to the Western Sydney Employment Area* and clause 29 of the *WSEA SEPP*.

With regard to developer contributions and ensuring the project is delivered at no cost to government, LOGOS has prepared a letter of offer to enter into a planning agreement with the Minister for Planning & Infrastructure in accordance with Division 6 of Part 4 of the *Environmental Planning and Assessment Act 1979*, to provide contributions toward regional infrastructure. The letter of offer is attached in **Appendix I**, and has been prepared in consultation with the Department. The offer provides for contributions over and above the contributions payable by existing landowners in the WSEA (ie. $180,000 per net developable hectare, via the proposed State Infrastructure Contribution), to provide assurances that the project would be delivered at no cost to government.

4.2 Conclusion

It is considered that the revised project addresses the residual issues raised by authorities (including the Department, RTA and Sydney Water), and significantly improves the environmental performance of the project. In particular, the proposed Integrated Water Cycle Management Strategy and Solar Panel Generation System are considered to represent world's best practice in terms of water and energy efficiency.

Environmental assessment indicates that the revised project is able to be conducted in a manner that would not result in any significant environmental impacts, or adversely affect the amenity of the surrounding area.

The project would generate significant socio-economic benefits for the people of Western Sydney, through a capital investment of $235 million in the Kemps Creek and wider Penrith area, and the creation of 1,580 local jobs. The project would also facilitate the development of key regional infrastructure required for the Western Sydney Employment Area, including a key component of the Southern Link Road.

On balance, it is considered that the revised project represents the orderly and reasonable development of the land, and is therefore in the public interest.