MAJOR PROJECT ASSESSMENT: MP 06_0191 ORICA Southlands Remediation & Warehouse Development Project, Banksmeadow.

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

March 2012

Published March 2012
NSW Department of Planning & Infrastructure
www.planning.nsw.gov.au

EXECUTIVE SUMMARY

Orica Australia Pty Ltd (the Proponent) proposes to establish a new industrial warehousing estate on its vacant 18.2 hectare Southlands site at McPherson Street, Banksmeadow, in the Botany Bay local government area (the Site).

Orica sought approval in two stages with a third stage envisioned in concept. Stages 1 and 2 formed part of this project application, while Stage 3 would be subject to a separate application and assessment process. However during the assessment of the proposal, it became evident that there were a number of issues associated with Stage 2 of the Project that could not be resolved at this time. Issues pertaining to flooding and drainage works and traffic provided too much uncertainty for this stage of the Project to be assessed and determined. As a consequence, the Department was unable to support Stage 2 of the project and advised Orica who agreed with this position.

The Department has excluded Stage 2 from its assessment, however, it has proceeded to assess Stage 1 which includes:

- site remediation works over the whole site (Areas 1, 2 and 3);
- flood mitigation and drainage works over Areas 1, 2 and possibly into Area 3;
- staged subdivision of Areas 1, 2 and 3 into 9 lots;
- establishment of 6 industrial use warehouses in Area 1 each with ancillary office components;
- traffic improvement works at the intersection of Hill Street and Botany Road;
- construction of a new private entry road from McPherson Street to Area 1;
- carparking and landscaping works.

The site is zoned 4(a) Industrial under *the Botany Local Environmental Plan 1995* (BLEP) and the proposed Project is permissible with consent.

The Project is a transitional 'major project' under Part 3A of the *Environmental Planning & Assessment Act, 1979*, as it is a development for the purpose of storage or distribution centres, with a capital investment value of more than $30 million and consequently requires the Minister's (or delegates) approval. As the Environment Assessment for the Project was lodged prior to the repeal of Part 3A on 1 October 2011, the Project is a transitional Part 3A project.

The Environmental Assessment (EA) for the Project was exhibited from 2 September 2009 until 7 October 2009. The Department received nineteen (19) submission on the Project including: ten from public authorities; two from special interest groups; and seven from surrounding land owners and community members.

The issues raised most frequently in submissions included soil and groundwater contamination, traffic impacts and flooding impacts.

In December 2010, Orica submitted a Preferred Project Report and revised Project Plans amending the project to address agency and community concerns. Since this time, Orica has continued to work with the Department and various agencies to address outstanding issues. The Department engaged two independent specialist consultants to provide advice on flooding and traffic. The specialists' reports have been made available to the public on the Department's website and have been considered in the merit assessment of the Project.

The Department considers that there are too many unresolved issues associated with Stage 2 to allow for a determination at this time. Should Orica wish to proceed with Stage 2, it would be the subject of a separate project application.

It is considered that Stage 1 of the Southlands Remediation and Warehouse Development Project, which would be constructed on currently undeveloped land, would not pose unreasonable impacts on existing or future developments in the locality. Furthermore, it is considered that the Project has the potential to contribute positively to the local, regional, State and national economies, providing a major new industrial and employment area with close proximity to Port Botany.

Consequently, the Department recommends that Stage 1 of the Project be approved subject to strict conditions.

1. BACKGROUND

1.1 Project Background

Orica Australia Pty Ltd (Orica) is an Australian-based global company that produces and supplies mining, chemical and consumer products. Orica (formerly ICI Australia) has operated a chemical manufacturing facility at the Botany Industrial Park (BIP) in Banksmeadow since the early 1940s. Within NSW, Orica operates three major sites at Botany, Padstow and Newcastle.

In 1980, Orica (then ICI) purchased a vacant parcel of land adjacent to the BIP, known as Southlands (refer to Figures 1 and 2). The site has remained undeveloped since its purchase, with the exception of Orica's groundwater treatment infrastructure. The site has been acting as a defacto flood storage area for the adjacent developed areas. Orica now propose to use this site to create a new industrial warehousing estate.

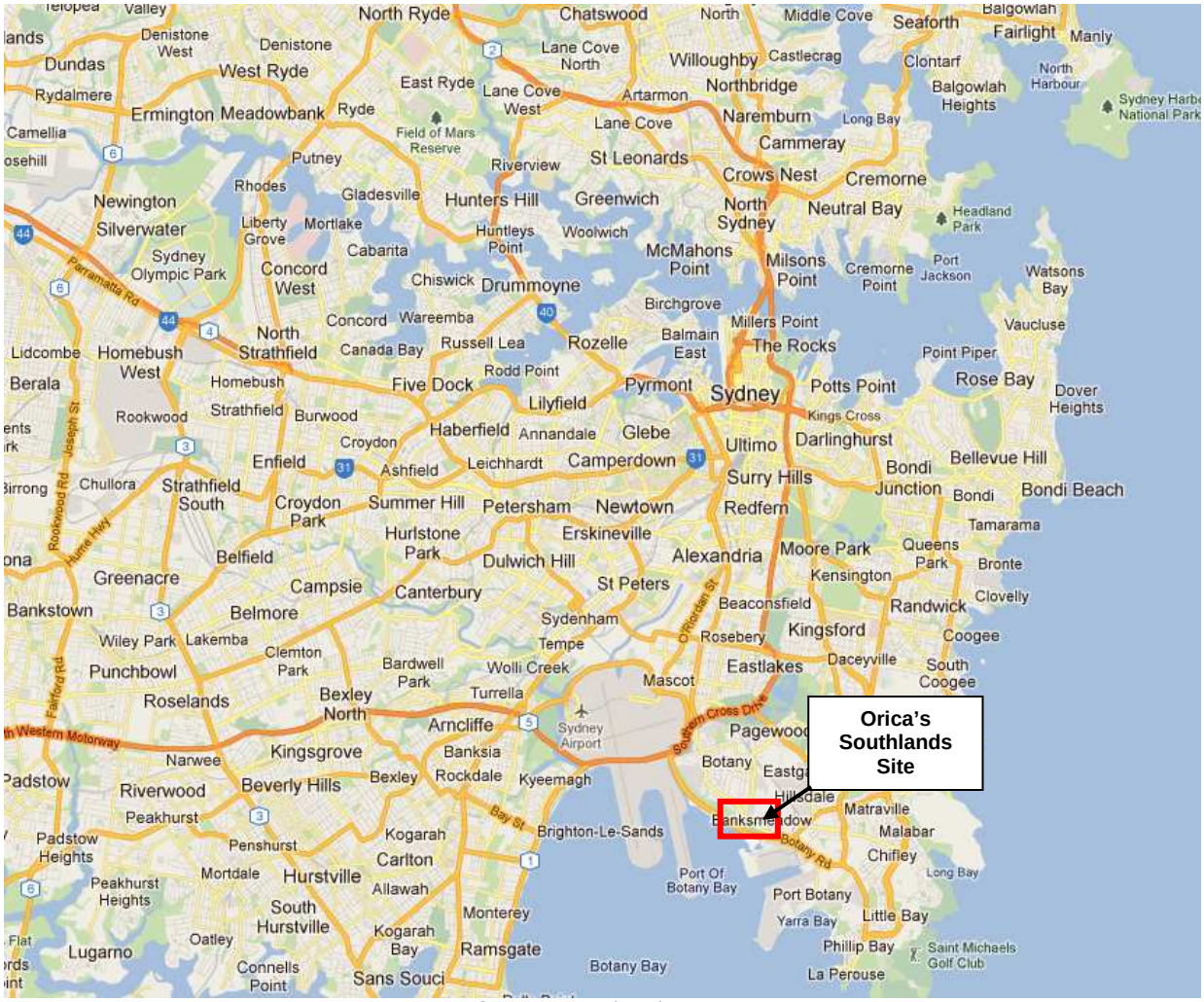

Figure 1: *Regional context*

1.2 Site Description and Surrounding Land Uses

The Southlands site (the site) is approximately 18.2ha in size and is bounded by McPherson Street to the south, Port Feeder Road to the west, Sydenham-Botany Goods railway line to the east and the Mobil site and Nant Street tank farm to the north (refer to Figure 2). The site is generally divided in two by Springvale Drain (Crown land), a man made drainage feature and surface water conduit. Area 1 is located to the west of Springvale Drain and Areas 2 and 3 are located to the east (refer to Figure 2). A similar drainage feature, Floodvale Drain, is located adjacent to the site's western boundary.

The site is cleared of vegetation and is currently vacant except for equipment and infrastructure required by Orica to maintain their Botany Groundwater Cleanup Project (BGCuP) (refer to Section 5.2 for further information). The site is known to be contaminated due to historic activities adjacent to and on the site. There

are five former peat mining excavations in the eastern side of the site (Areas 2 and 3), these have been partially filled with paper wastes during a period of ownership by the Australian Paper Manufacturers.

The Southlands site is located in the heart of Sydney's major industrial and ports precinct some 500m north of Botany Bay and approximately 2.5km north-east of the airport, within the City of Botany Bay Council local government area.

Developments immediately surrounding the site are predominantly industrial and warehousing related. The nearest residences are located approximately 460m to the south-west and 460m to the east. Banksmeadow public school is located approximately 540m to the east.

Nant Street, an unsealed roadway owned by Council, runs through the middle of the site, providing access from the McPherson Street site entrance to the Qenos tank farm located directly adjacent to the site's northern boundary. The Mobil Oil Distribution Terminal is located immediately to the north of Southlands Area 1 and a chemical manufacturing facility owned by Solvay is located to the west of the site, separated by Port Feeder Road and Floodvale Drain.

To the south lies Hynlong, a shipping container and storage facility and Gazal, an apparel supplier, and other warehouse facilities.

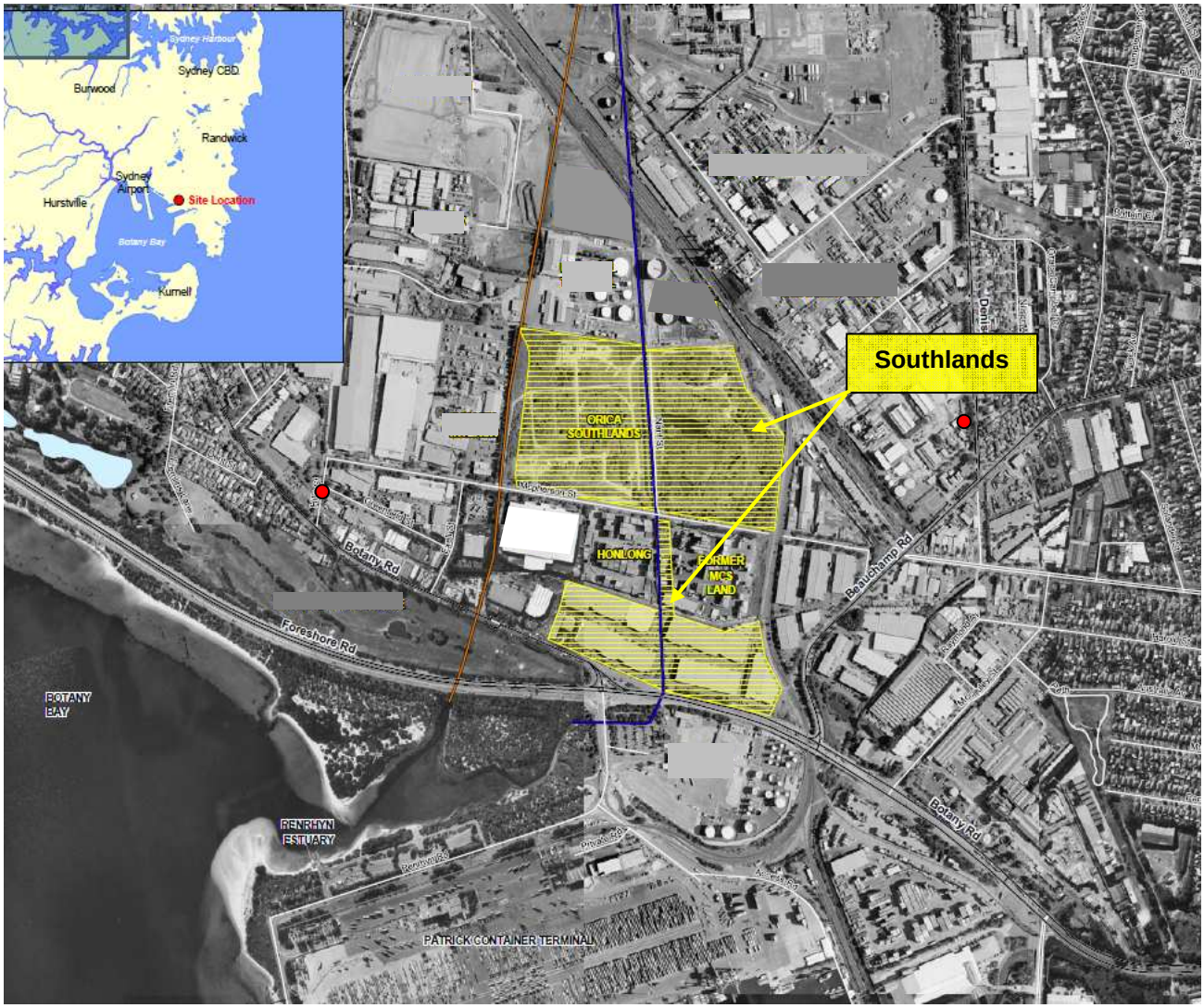

Figure 2: *Surrounding land uses (nearest residences are shown as red dots)*

2. PROJECT DESCRIPTION

2.1 Project Description

Orica is seeking approval to develop a major industrial warehousing estate servicing Port Botany and the Sydney Metropolitan Area at its Southland's site in Banksmeadow. As previously mentioned, Orica sought approval in two stages (Stage 1 and 2). A future Stage 3, involving warehouse development in Area 3 was also identified, however Stage 3 does not form part of the current project application. Figures 3 and 4 below show the Project as originally proposed.

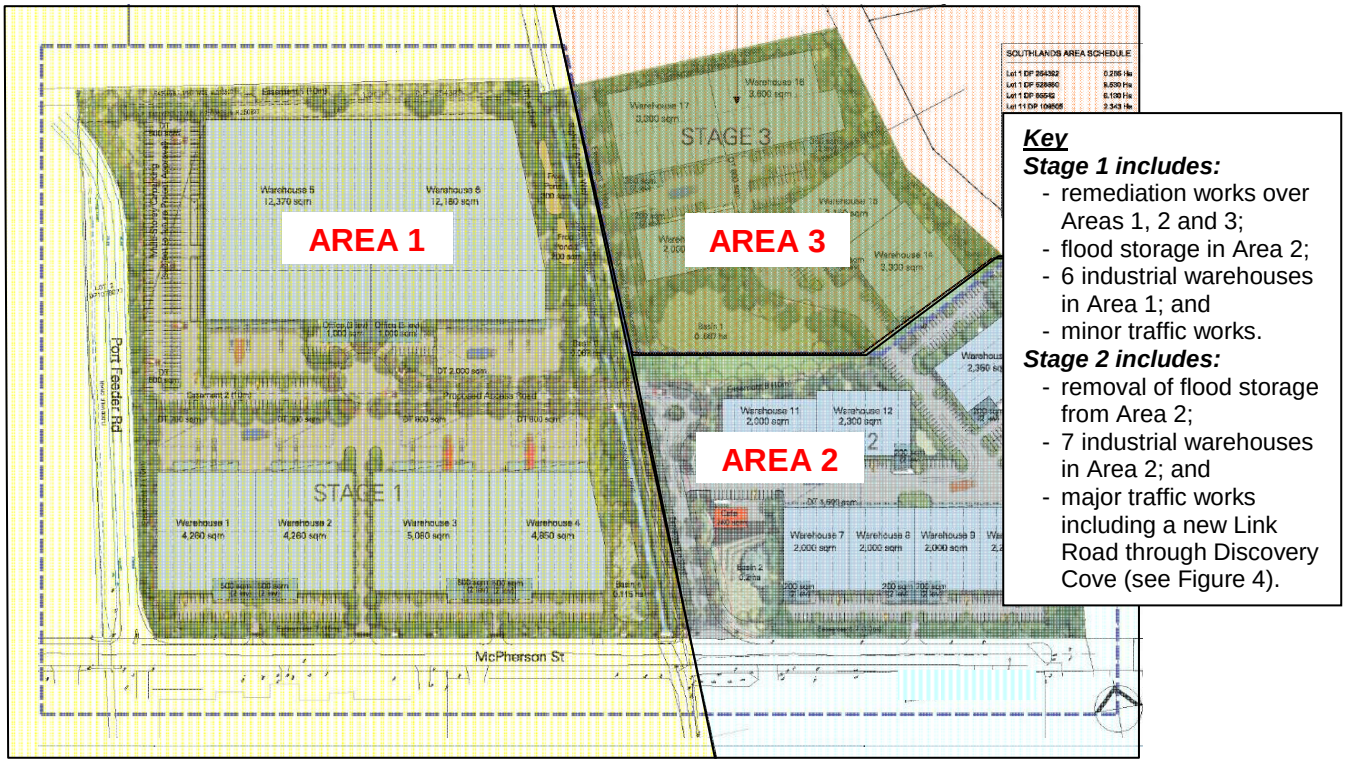

Figure 3: *The Proposed Project*

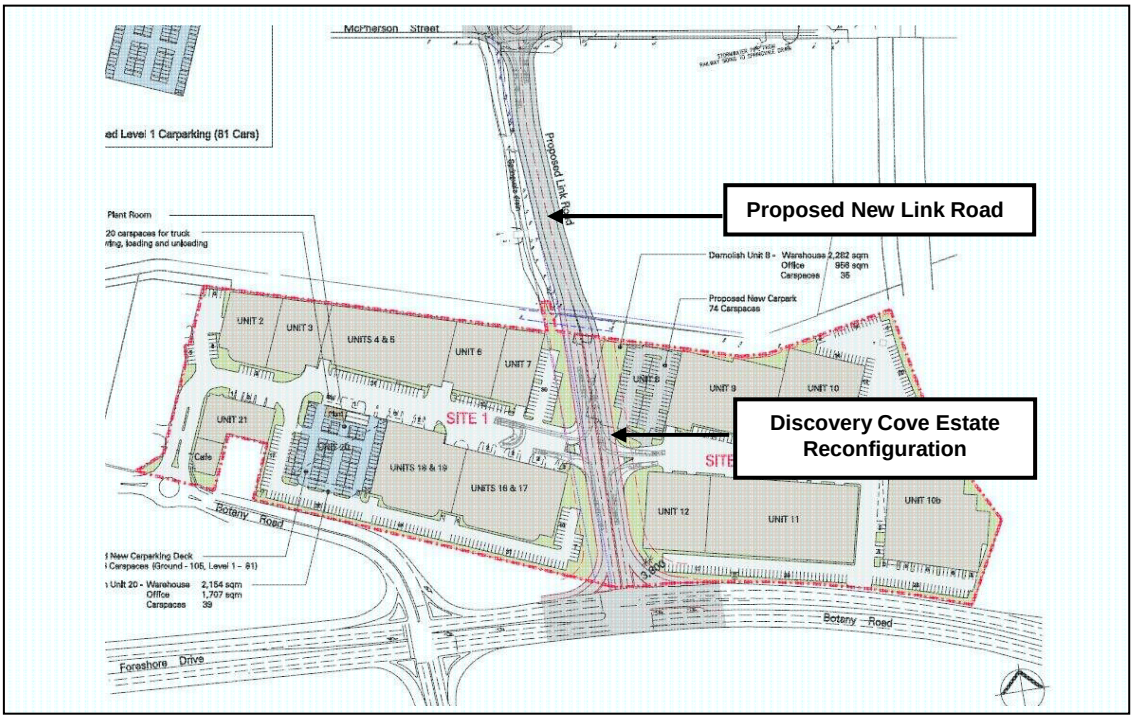

Figure 4*: Stage 2 New Link Road and Discovery Cove Industrial Estate proposed to be reconfigured as part of Stage 2*

The key components of Stage 1 of the Project include:
- site remediation works over the whole site (Areas 1, 2 and 3);
- flood mitigation and drainage works over Areas 1, 2 and possibly into Area 3;
- staged subdivision of Areas 1, 2 and 3 into 9 lots;
- establishment of 6 industrial use warehouses (with a gross floor area of 48,000 m^2) in Area 1 each with ancillary office components;
- traffic improvement works at the intersection of Hill Street and Botany Road;
- construction of a new private entry road from McPherson Street to Area 1; and
- carparking and landscaping works.

The Stage 1 components are also summarised in Table 1, depicted in Figures 5 and 6 and described in full in Orica's Environmental Assessment (EA) and supporting documentation (refer to Appendix D and E).

The key components of Stage 2 include:
- earth works to suit the required flood design levels for Area 2;
- development of 7 industrial use warehouses (with a gross floor area of 14,850 m^2) in Area 2 each with ancillary office component;
- land acquisition;
- an access road connecting the Southlands site with Botany Road (the new Link Road) and necessary reconfiguration of Discovery Cove Estate;
- incorporation of the required drainage infrastructure in tandem with the new Link Road to address flood issues; and
- carparking and landscaping.

During the assessment process it became evident that there were too many unresolved issues to allow for an adequate assessment of Stage 2 of the Project.

2.2 Issues preventing an adequate assessment of Stage 2

As part of the assessment of the Project, a number of issues associated with Stage 2 of the Project were identified by the Department which were not considered to have been suitably resolved to enable this aspect of the Project being recommended for approval. As a result, the Department has recommended that the Stage 2 works not be approved as part of this determination. These issues relate to flood mitigation and drainage works and traffic.

Orica acknowledged that there were still unresolved issues associated with Stage 2 which prevented this stage from being determined under the current application. However, Orica requested that Stage 1 proceed to a determination.

An overview of the issues associated with Stage 2 is outlined below.

2.2.1 Flood mitigation and drainage works

As one of the last remaining undeveloped areas, the Southlands site currently acts as a flood detention area for the broader locality. The development of Stage 2 would require the filling and development of over 95% of the Southlands site, therefore requiring significant flood mitigation and drainage works to manage future flood events. This includes the enlargement of existing culverts and the creation of new culverts under nearby streets and developed areas, additional works to the Sydney Water's Southern Western Sydney Ocean Outfall Sewer (SWSOOS) to allow for water movement, enlarging Springvale drain and increasing flood flows down both Springvale and Floodvale drains.

Orica acknowledged that only preliminary analysis of the Stage 2 works was undertaken and that more extensive hydraulic modelling would be required in order to allow the Department to undertake a detailed assessment for this component of the Project.

The Department engaged an independent flood consultant, WMAwater, to undertake a review of the Project and the proposed flood mitigation works. The flood consultant concluded that a number of issues associated with the Stage 2 flood mitigation and drainage works have not been satisfactorily resolved. This included:
- loss of temporary floodplain storage - Stage 2 involves the loss of a significant amount of pervious area (Area 2) and replacement with impervious cover as well as the loss of a significant amount of temporary floodplain storage. This approach is contrary to generally accepted water sensitive urban design (WSUD) and floodplain management practice and no justification was provided;
- approval from Sydney Water for the SWSOOS waterway crossing - The SWSOOS presents a significant obstacle to flood flows and for Stage 2 it is assumed that additional siphons (to take 3 times the existing capacity) or other structures to increase flow capacity are required on the Springvale Drain

crossing of the SWSOOS. In addition, Stage 2 included significant road works as part of the new Link Road over the top of the SWSOOS;
The SWSOOS is a major asset of Sydney Water and any works in the vicinity of the SWSOOS would require significant consultation with/and approvals from Sydney Water. Orica has not provided any evidence of such consultation or approval. Notwithstanding, Sydney Water have indicated that any works are likely to incur significant costs and maintenance requirements; and

- increase in peak flows – Orica's flood study indicated that the proposed Stage 2 flood works would increase the 1% AEP peak flow in Springvale Drain almost three-fold from approximately 8m3/s to 21m3/s (160% increase). This magnitude of flow increase was considered extreme and insufficient information was provided by Orica on the possible increases in flood damages, the risk to life and environmental impacts to downstream floodplain properties.

Therefore the Department concluded that the proposed Stage 2 flood mitigation and drainage works did not provide an appropriate solution for the potential flooding impacts.

2.2.2 Traffic

Since the Southlands site is located within a major industrial area and ports precinct, the generation and management of traffic associated with the Project in light of existing traffic levels is a key issue for the proposal.

Orica's traffic assessment indicated that Stage 1 would generate approximately 235 vehicle movements per hour (vph), with the combined Stage 1 and 2 traffic generating increasing to approximately 465 vph.

To address the traffic generated by Stage 2 operations, Orica proposed a number of significant works including:

- the upgrade and signalisation of the Exell Street / Botany Road intersection to allow two lanes to exit into Botany Road;
- the construction of the new Link Road (subject to land acquisition) between Botany Road and McPherson Street through the existing Discovery Cove Estate and former MCS site;
- signalisation of the new Link Road / Botany Road intersection;
- construction of a roundabout at the new Link Road / McPherson Street intersection, and
- reconfiguration of the parking, access and vehicular circulation within Discovery Cove Estate, subject to agreement with the landowners.

While these works have been proposed to address Stage 2 traffic impacts, Orica did not undertake a detailed assessment of the works to determine if they would provide an adequate solution to address traffic impacts from this stage of the Project.

The Department engaged an independent traffic consultant, Samsa, to assist with the assessment of the potential traffic impacts of the Project and the proposed mitigation works. Samsa concluded that a number of issues associated with the proposed Stage 2 traffic mitigation works have not been satisfactorily resolved. These include:

- financial viability of the new Link Road – Costs associated with the construction of the new Link Road are considered to be significant. Orica considers that the new Link Road would benefit all developments in the area and as such could be funded by a portion of Orica's developer contributions and existing/subsequent contributions collected by Council via their Section 94 Contribution Plan;
- approval from the NSW Roads and Maritime Services (RMS) - the RMS currently does not support the proposed Stage 2 upgrade works. Issues such as the close proximity of the proposed signalised intersections to each other have been raised by the RMS, which stated that signals would not be approved at the proposed locations because their preliminary modelling indicated extensive delays and unacceptable queue lengths on Botany Road; and
- land acquisition - In order to proceed with the construction of the new Link Road, Orica would need to acquire the necessary land or come to some form of agreement with the relevant land owners. For the foreseeable future, this is unlikely to occur.

In addition, Samsa advised that more detailed design development, including road network modelling for the proposed new Link Road, would be required to adequately assess traffic impacts associated with Stage 2 of the Project. Further, Samsa considered that for subsequent development stages, it has not been demonstrated that the provision of a new Link Road (or other mitigation measures that have been proposed) would resolve the traffic and access impacts from Stage 2 of the Project.

The Department is of the opinion that there are considerable difficulties in making the Link Road work and that Stage 2 approval is unlikely in its current form.

2.2.3 Land Ownership/Acquisition/Approval

In addition to the above unresolved issues, key components of Stage 2 of the Project are proposed to be located on land that is not owned by Orica. These include:

- Orica's Southland property (Orica);
- the Springvale Drain corridor (Crown land);
- the former MCS container terminal on the southern side of McPherson Street (Private landowner);
- a crossing of Sydney Water's SWSOOS;
- the Discovery Cove Estate (Goodman);
- the Nant Street Corridor (Botany Council) – the public road would be added to the site subject to the issuance of owners' consent from Botany Council and/or the sale of the road. Otherwise the road corridor will remain.

In order to proceed with Stage 2, Orica would need to acquire the necessary land or come to some form of agreement with the relevant land owners. For the foreseeable future, this is unlikely to occur.

2.3 Preferred Project Report

In response to submissions received on the Project, the Proponent submitted a Preferred Project Report (PPR) incorporating a Response to Submissions Report and amended Project Plans (refer to Appendix E). The Preferred Project Report amended the following Project components:

- the Stage 1 area was subdivided into six lots offering a variety of warehouse sizes better suited to the current market and location;
- the compensatory flood storage area was modified to suit the required capacities; and
- the architectural plans and the engineering plans for the Project were updated to reflect the above amendments.

While the PPR still incorporates a three-stage development for the site, of which Stage 1 and 2 form part of the current project application, Orica has since provided written correspondence to the Department acknowledging that there are still unresolved issues associated with Stage 2 preventing it from being assessed under the current application.

On this basis, the Department's assessment of the proposal encompassed Stage 1 of the Project only. Key components of Stage 1 are described in Table 1 and illustrated in Figures 5 and 6.

***Table 1**: Major Components of the Southlands Remediation and Development Project - Stage 1*

Aspect	***Description***
Project Summary	**Development of Warehouse Industrial Estate on a previously undeveloped parcel of land**
Land pertaining to project	Lot 1 in DP 254392 (2,850 m^2), Lot 1 in DP 1078077 (95,300 m^2), Lot 1 in DP 85542 (61,300 m^2), Lot 11 in DP 109505 (23,430 m^2), and Crown Land containing 'Springvale Drain' (between Nant Street and Lots 1 DP 1078077 and Lot 1 254392)
CIV	Stage 1 - $60,000,000.00
Hours of Operation	24 hours, 7 days per week, approximately 365 days per year
Hours of Construction	▪ 7am to 6pm Monday to Friday ▪ 8am to 1pm Saturdays ▪ Sundays or public holidays none
Construction duration	18 months
Employment	▪ Construction 110 employees ▪ Operation 200-350 employees

Aspect	*Description*
Construction Components	The Project would generally include: ▪ site remediation works over the whole site (Areas 1, 2 and 3); ▪ flood mitigation and drainage works over Areas 1, 2 and possibly into Area 3; ▪ staged subdivision of Areas 1, 2 and 3 into 9 lots; ▪ establishment of 6 industrial use warehouses (with a gross floor area of 48,000 m^2) in Area 1 each with ancillary office components; ▪ traffic improvement works at the intersection of Hill Street and Botany Road; ▪ construction of a new private entry road from McPherson Street to Area 1; and ▪ carparking and landscaping works.
Vehicle movements	▪ Construction - approximately 200 truck movements per day during peak construction periods; and ▪ Operation - 235 vehicle movements per hour.
Car Parking	▪ 440 spaces including accessible parking as per Australian Standards.
Landscaping	▪ landscaping is proposed across the site in accordance with a Landscape Masterplan; ▪ landscaping for Stage 1 would cover approximately 23% of the site and incorporate two frog ponds.
Signage	▪ Building and business identification signage is proposed. ▪ A Signage Strategy would be required for the entire site to ensure consistency in quality and design.
Section 94 Contributions / VPA	▪ The Proponent shall pay developer contributions to a maximum amount of $3,543,214.00 prior to the issuance of an Occupation Certificate payable to Council in accordance with Orica's offer dated 26 July 2011, for the provision of infrastructure within the Botany Bay local government area.
Traffic Improvement Works	▪ extension of the existing right-turn bay in Hill Street by 20 m. The right-turn bay shall be at least 3.2 metres wide; ▪ construction of a 900 mm wide central median adjacent to and for the full length of the right-turn bay, to the satisfaction of the RMS; and ▪ installation of signage on Botany Road (eastbound) to prevent trucks longer than 12.5m turning left into Hill Street.
Drainage infrastructure	▪ filling of the area to the west of Springvale Drain (Stage 1 area) that currently provides flood storage; ▪ providing compensatory flood storage (a large detention basin) in the south-eastern region of the site (Stage 2 area); ▪ a level control structure (compound weir or other control structure design with an equivalent rating curve) would be incorporated within Springvale Drain approximately 25m upstream of McPherson Street to raise water levels upstream of the structure during large events to divert flood waters to the detention area; ▪ additional interim compensatory flood storage area in the Stage 3 area if required.
Services	▪ electricity, telecommunication, water/sewerage and gas services would be extended to the site.
Rainwater Harvesting	▪ The Orica GCUP operating on the BIP has design capacity of 15 Megalitres per day. This is suitable for non-potable reuse and may be augmented by rainwater harvesting from the Site. Where possible treated water would be used on Site for firefighting, landscaping and toilet flushing.
Overall Development Characteristics	▪ total site area - 98,150 m^2 ▪ development site area - 98,150 m^2 ▪ total warehouse GFA - 42,500 m^2 ▪ total office GFA - 4,000 m^2 ▪ total awning - 1,840 m^2 ▪ floor space ratio - 51%

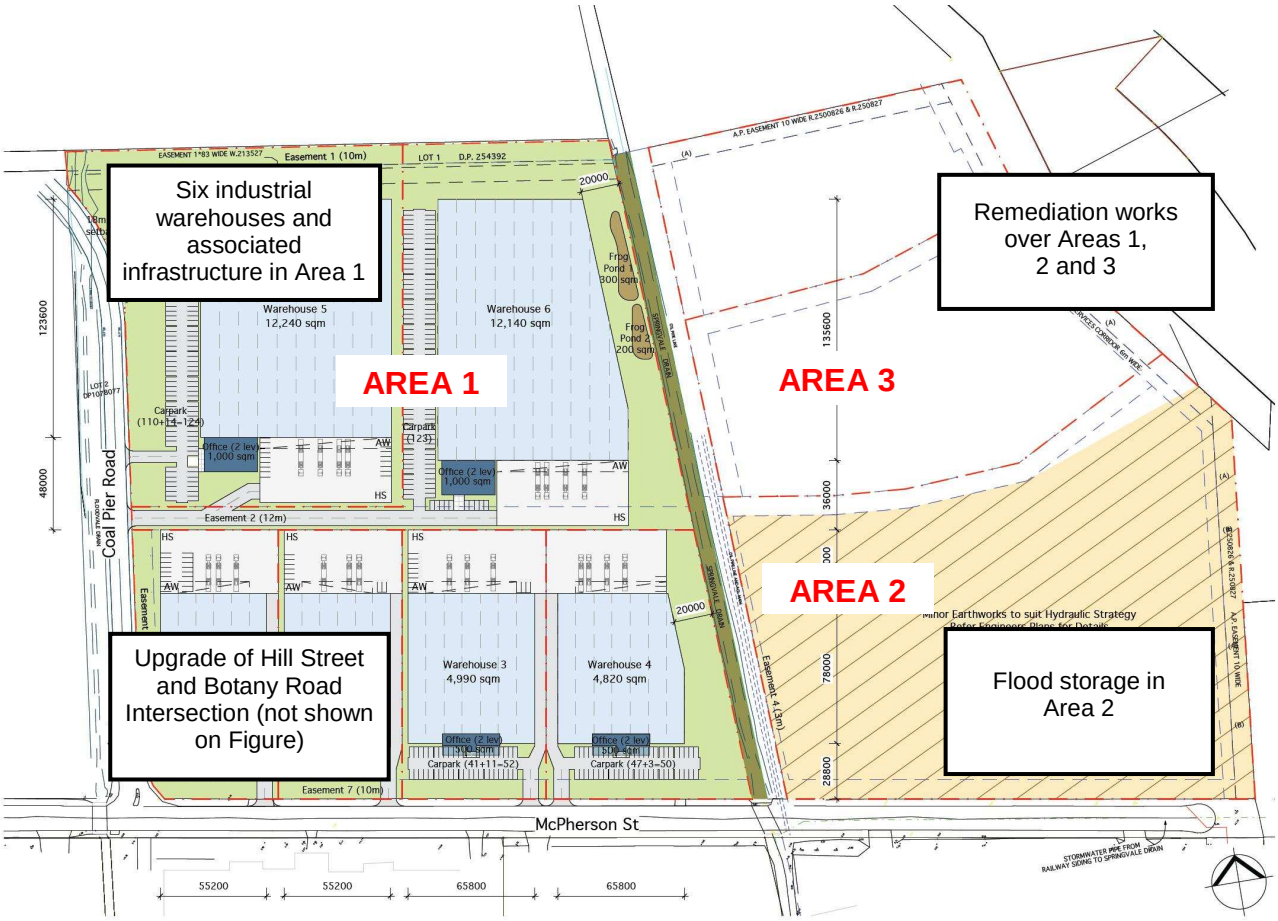

Figure 5: *Project as assessed*

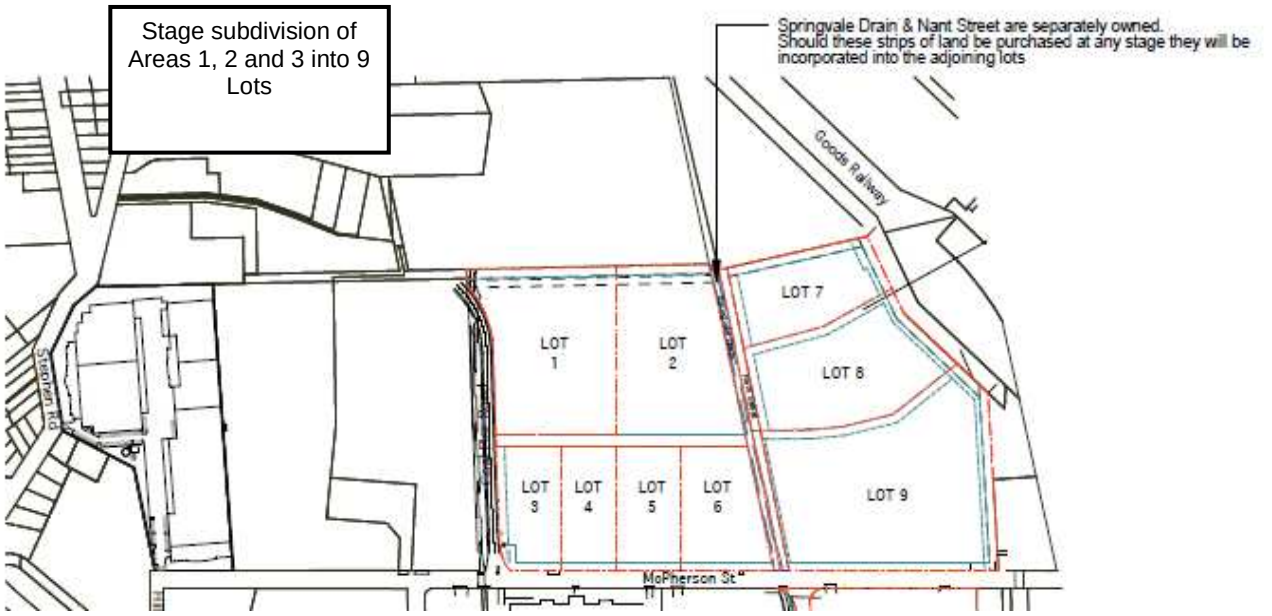

Figure 6: *Project subdivision*

It is envisaged that the site would become a major industrial and warehousing estate servicing Port Botany and the Sydney Metropolitan Area, whilst maintaining all necessary infrastructure for Orica's ongoing groundwater remediation.

3. STRATEGIC & STATUTORY CONTEXT

3.1 Strategic Context

The key strategic policy documents relevant to the proposal include:

- NSW 2021 State Plan; and
- the Metropolitan Plan for Sydney 2036.

NSW 2021 State Plan

NSW 2021 State Plan is the NSW Government's strategic business plan, setting priorities for action and guiding resource allocation.

The key strategy relating to the rebuilding the economy is the most relevant to this Project. This strategy includes targets and actions relating to the growth of business investment and delivery of new jobs. It is considered that the project is consistent with the *NSW 2021 State Plan*.

Metropolitan Plan for Sydney 2036

The Metropolitan Plan presents a plan for sustainable growth in the Sydney region until 2036. The strategy sets out key aims for employment, housing, infrastructure and service provision and supports high growth and high value industries through clustering. By 2036 Sydney's growth will require 760,000 more jobs and 10,000,000 m² additional commercial floor space, with 4,000 of these jobs expected to be located in Port Botany and its environs.

The site is part of the Port Botany specialised centre. Specialised centres are seen as performing vital economic and employment roles. The Port Botany specialised centre is located on the southern end of the Global Economic Corridor which extends north and south from the Sydney CBD. The corridor is a substantial corridor, clustering jobs and economic activity in finance and business services, information intensive industries, global and national transport and multimedia.

The Project is expected to provide 200 – 350 jobs and 47,000m^2 additional commercial floor space. The provision of high employment generating development is consistent with the objectives for the area, particularly objective B2 - *to strengthen major and specialised centres to support sustainable growth of the city*. It also represents an appropriate use of strategically located employment land within the specialised centre of Port Botany and the 'Global Economic Corridor'.

3.2 Major Project

The proposal is classified as a transitional major project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), because it is development for the purpose of container storage facilities, or storage or distribution centres, with a capital investment value of more than $30 million, and therefore triggers the criteria in Clause 12 of Schedule 1 of *State Environmental Planning Policy (Major Development) 2005*.

Part 3A of the EP&A Act, as in force immediately before its repeal on 1 October 2011 and as modified by Schedule 6A to the Act, continues to apply to transitional Part 3A projects. Director-General's environmental assessment requirements (DGRs) have been issued in respect of this project and the environmental assessment report was lodged prior to the repeal of Part 3A on 1 October 2011. The Project is therefore a transitional Part 3A project.

Consequently, this report has been prepared in accordance with the requirements of Part 3A and associated regulations, and the Minister (or his delegate) may approve or disapprove of the carrying out of the project under section 75J of the Act

The Minister has delegated his functions to determine Part 3A development applications to the Department where:

- the council has not made an objection;
- there are less than 25 public submissions objecting to the proposal; and
- a political disclosure statement has not been made in relation to the application.

There have been 18 submissions received from the public and although Council has made a number of submissions, Council has not made a formal objection. There has been no political disclosure statement made by the Proponent for this application or for any previous related applications, and no disclosures made by any persons who have lodged an objection to this application.

Accordingly, the application is able to be determined by the Deputy Director-General under delegation.

3.3 Other Approvals

In addition to a Part 3A approval, Orica would be required to obtain approval from the RMS and Council for any roadwork proposed outside of the site boundary.

The Project would be classified as a 'non-scheduled' activity and would not require an Environmental Protection Licence (EPL) under the *Protection of the Environment Operations (POEO) Act 1997.*

3.4 Permissibility

The Orica Southlands site is zoned 4(a) Industrial under the *Botany Local Environmental Plan 1995* (BLEP). In this zone a wide range of industrial uses is permissible with consent. The proposed Orica Remediation and Warehouse Development Project is permissible with consent under the *Botany Local Environmental Plan 1995*.

3.5 Exhibition and Notification

Under Section 75(3) of the EP&A Act, the Director-General is required to make the Environmental Assessment (EA) of a project publicly available for at least 30 days.

After accepting the EA for the Project, the Department:

- made it publicly available from 2 September 2009 until 7 October 2009:
  - on the Department's website,
  - at the Department's Information Centre,
  - at the Nature Conservation Council's Sydney office,
  - at the Council of the City of Botany Bay's administrative centre;
  - at Mascot Library; and
  - at Central (Eastgardens) Library.
- notified landowners in the vicinity of the site about the exhibition period by letter;
- notified relevant State government authorities, interest groups and Council of the City of Botany Bay by letter; and
- advertised the exhibition in the St George and Southern Leader, Southern Courier, Wentworth Courier.

This satisfies the requirements in Section 75H(3) of the EP&A Act.

During the assessment process the Department also made a number of documents available for download on the Department's website. These documents included the:

- project application;
- Director-General's environmental assessment requirements;
- Orica's EA;
- Orica's response to issues raised in submissions and Preferred Project Report;
- WMAwater's independent review of Orica's flooding and hydraulic assessment; and
- Samsa Consulting's independent review of Orica's traffic and access assessment;

3.6 Environmental Planning Instruments

Under Section 75I of the EP&A Act, the Director-General's report is required to include a copy of, or reference to, the relevant environmental planning instruments (EPIs) that substantially govern the carrying out of the project.

In relation to this particular project, the key EPIs are:

- *State Environmental Planning Policy (Major Development) 2005*;
- *State Environmental Planning Policy No. 11 - Traffic Generating Development;*
- *State Environmental Planning Policy No. 55 - Remediation of Land*;
- *State Environmental Planning Policy No. 64 - Advertising & Signage;*
- *Draft State Environmental Planning Policy No. 66 - Integration of Land Use and Transport;*
- *State Environmental Planning Policy (Infrastructure) 2007*;
- *Botany Local Environmental Plan 1995*;
- *Draft Botany Bay Strategic Planning Study 2031*; and
- *Botany Development Control Plans No. 30 (Botany Randwick Industrial Area); No. 32 (Landscape); No. 33 (Industrial Development); No. 34 Contaminated Land*.

In relation to *State Environmental Planning Policy No.55 – Remediation of Land* (SEPP 55), Clause 7 states that a consent authority must not consent to the carrying out of any development on land unless:

(a) it has considered whether the land is contaminated, and

(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and

(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose

SEPP 55 aims to ensure that potential contamination issues are considered in the determination of a development application. A Remediation Action Plan has been prepared for the site in accordance with SEPP 55. Orica has also engaged an accredited site auditor who would ensure that remediation is undertaken so that the site is suitable for its intended use.

A copy of the other relevant instruments is included in Appendix C. The Department has assessed the proposal against the relevant provisions of the key environmental planning instruments and is satisfied that none of these EPIs substantially govern the carrying out of this project.

3.7 Statement of Compliance

Under Section 75I of the EP&A Act, the Director-General's report is required to include a statement relating to compliance with the environmental assessment requirements with respect to the project.

The Department is satisfied that the environmental assessment requirements have been complied with.

4. ISSUES RAISED IN SUBMISSIONS

The Department received a total of 18 submissions on the Project:

- ten from public authorities – Australian Rail Track Corporation Ltd (ARTC), The Environmental Protection Authority (EPA) (formerly Office of Environment and Heritage and Department of Environment, Climate Change & Water), NSW Roads and Maritime Services (RMS) (formerly Roads & Traffic Authority), NSW Office of Water (NOW), Australian Rail Track Corporation Ltd (ARTC), NSW Health (South Eastern Sydney and Illawarra Area Health Service), NSW Transport (formerly Ministry of Transport), Sydney Water, Sydney Ports, the City of Botany Bay Council (Council) and Randwick Council;
- two from special interest groups – Botany Environment Watch, Concerned Citizens Association - Rockdale 3rd Ward; and
- seven submission from the community and adjacent landowners.

A summary of the issues raised in submissions is provided below. A complete copy of the submissions is at Appendix E.

4.1 Public Authorities

The **EPA** (formerly OEH and DECCW) currently regulate the containment of chlorinated hydrocarbon plumes present beneath the Southlands site to prevent further migration of contaminated groundwater beyond the site. The regulated activities are collectively referred to as the Botany Groundwater Clean Up Project (BGCuP) and include groundwater extraction, groundwater monitoring and maintenance of relevant infrastructure at the Southlands site. While the remediation of the chlorinated hydrocarbon groundwater plumes does not form part of the Southlands remediation and warehouse redevelopment Project, the ability to maintain containment of the contaminated plumes and conduct future remediation works to address the groundwater contamination is an important consideration of the proposed development works.

The **EPA** also raised concerns surrounding the safety of the endangered Green and Golden Bell Frog (GGBF) and requested that appropriate adaptive measures be made to protect the species *prior* to any project approval being granted. Conditions of approval should include the requirement for GGBF management and monitoring.

Botany Council (Council) maintains that the redevelopment of Orica's Southlands site is achievable since the land use zoning permits industrial development. However, Council is of the position that issues such as flooding, overland flows and traffic would require significant changes to the site and the local road network in

order to facilitate the redevelopment of the entire Southlands site. Discussion was provided on a number of concerns including traffic management, flooding and stormwater management, contamination and noise levels. Additional issued raised in its submission included impacts on flora and fauna, visual design, heritage, rail access and developer contributions.

Randwick Council was generally supportive of the Project in principle, however, concerns were raised regarding noise, odour, pollution and construction impacts. Randwick Council requested such matters be addressed as conditions of approval. Further, Randwick Council raised contaminated water management as an issue and requested the development of a Well Replacement Plan prior to the commencement of any works on site.

The **RMS** (incorporating the Sydney Regional Development Advisory Committee) reviewed the submitted documentation and raised no objection to the proposed Stage 1 development. Notwithstanding, the RMS did not support the initial Hill Street / Botany Road traffic management concept and requested instead that the right hand turning bay on Botany Road be extended.

The RMS considers that the proposed new Link Road between McPherson Street and Botany Road would be required for Stage 2. Detailed information, scope of work and the timing for the proposed new Link Road shall be submitted to the RMS for review and approval prior to the approval of the proposed Stage 2 development.

The **NOW** raised no objections to the Project.

NSW Health raised no specific objections, however recommended that Orica engage a qualified third party to peer review the assessment process and all documentation.

NSW Transport made no objections but highlighted a number of suggested conditions of consent surrounding the possible shift to more sustainable modes of transport.

Sydney Water (SW) advised that a Section 73 Certificate should be obtained before it can make further comments on works required. Additionally it highlighted stringent assessment requirements surrounding the proposed building over a SWSOOS. SW also advised that any works approved in the vicinity of the SWSOOS would be subject to strict (and potentially costly) management and monitoring requirements that would need to be maintained for the life of the works.

Sydney Ports is supportive of the application; however it raised a number of concerns pertaining to both Stage 1 and 2 of the development. Before stage 1 commences, Sydney Ports requested that Orica undertake a trial to confirm that extraction of contaminated groundwater is successful in preventing groundwater discharge into Springvale Drain (the Department notes that groundwater extraction is of relevance to the Botany Groundwater Cleanup Project) and ongoing management of contaminated groundwater. Sydney Ports considered that the proposed Stage 2 works are premature and lacking in detail. Further, Sydney Ports raised additional concerns including potential impacts on the Penrhyn Estuary and the need to make a referral to the Commonwealth, traffic congestion surrounding the New Link Road and flooding, requesting updated assessments of both issues and their impacts.

Australian Rail Track Corporation Ltd (ARTC) advised that if the new road access on the alignment of Macpherson Street over the railway line was to be constructed then ARTC requires 7.1 m vertical clearance to accommodate double stack containers. Any bridge over the rail corridor would require the submission of a formal application to ARTC.

Further, the ARTC advised that there shall be no drainage into a rail corridor unless prior approval has been obtained from the ARTC. Any construction impacts near rail corridor such as excavation or craneage in or near the rail corridor airspace may require an application to entre into a Deed with the ARTC.

4.2 Special Interest Groups

Botany Environment Watch - raised a number of concerns with the project including: the disposal of contaminated material off site, air quality / dust, traffic generation and access, flora and fauna impacted from contaminants entering the Springvale drain, heritage, hazards and waste management. The interest group recommended the establishment of a committee for the duration of the remediation and development stages of the Project.

Concerned Citizens Association, Rockdale 3rd Ward - raised a number of concerns with the project including: contamination and site remediation, human health, hydrology and flooding, traffic management, flora and fauna, waste management and land use safety planning.

4.3 Community

All but one of the submissions from the general public opposed the project.

Key issues raised in the public submissions included: human health impacts; biodiversity issues; traffic and transport; air quality; hydrology and flooding; contamination; remediation approach; waste management; and integration of the Project with the Botany Groundwater Cleanup Project (BGCuP).

4.4 Response to Submissions

Orica has provided a response to the issues raised in submissions and a Preferred Project Report (refer to Appendix F). This response has been made publicly available on the Department's website.

The Department has considered the issues raised in submissions, and Orica's responses to these issues, in its assessment of the Project.

5. ASSESSMENT

In assessing the merits of the Project, the Department has considered the following:

- Orica's environmental assessment,
- agency, stakeholder and community submissions;
- Orica's response to submissions and additional supporting studies and documents (refer to Appendices D, E and F);
- Samsa Consulting's independent review of traffic impacts and WMAwater's independent review of flooding impacts (refer to Appendix G);
- the relevant environmental planning instruments, guidelines and policies (refer to Appendix C);
- the objects of the EP&A Act, including the object to encourage ecologically sustainable development; and
- the relevant statutory requirements of the EP&A Act & Regulation.

The following provides the Department's assessment of the key issues associated with the Project. All other issues associated with the Project are summarised in Table 2.

For the purpose of assessing the Project, only Stage 1 has been considered from this point forward. Should Orica wish to proceed with Stage 2 of the Project, further detailed design and impact assessment would be required.

5.1 Contamination

Issue

Past activities have resulted in the contamination of the site's groundwater and soil. As such, the site is not suitable in its current condition for the proposed commercial and industrial land uses.

Background/Consideration

The site is located adjacent to a range of chemical manufacturing industries some of which have been operating for over 70 years. Past activities on site and in the broader Botany Industrial Park area have resulted in the contamination of the Southlands site. Activities offsite which have contributed to the site's contamination are primarily related to the disposal of wastewater associated with chemical manufacturing. Activities on site have included uncontrolled dumping of rubbish, including asbestos and the use of the 5 former peat mining excavations on areas 2 and 3 to dispose of paper wastes.

Previous investigations undertaken by the Proponent to delineate the extent of contamination have identified a range of contaminants including heavy metals, semi-volatile compounds, polycyclic aromatic hydrocarbons (see Figures 7 and 8 for the location of the hotspots) and asbestos containing materials with many samples exceeding the adopted environmental guidelines.

To address these issues a Remediation Action Plan has been prepared for the site in accordance with the *Contaminated Land Management Act 1997* (CLM Act). Although investigations undertaken to date have identified that both groundwater and soils are contaminated, the RAP only relates to soil remediation as the groundwater remediation is being undertaken separately, by the Botany Groundwater Clean-up Project (BGCup).

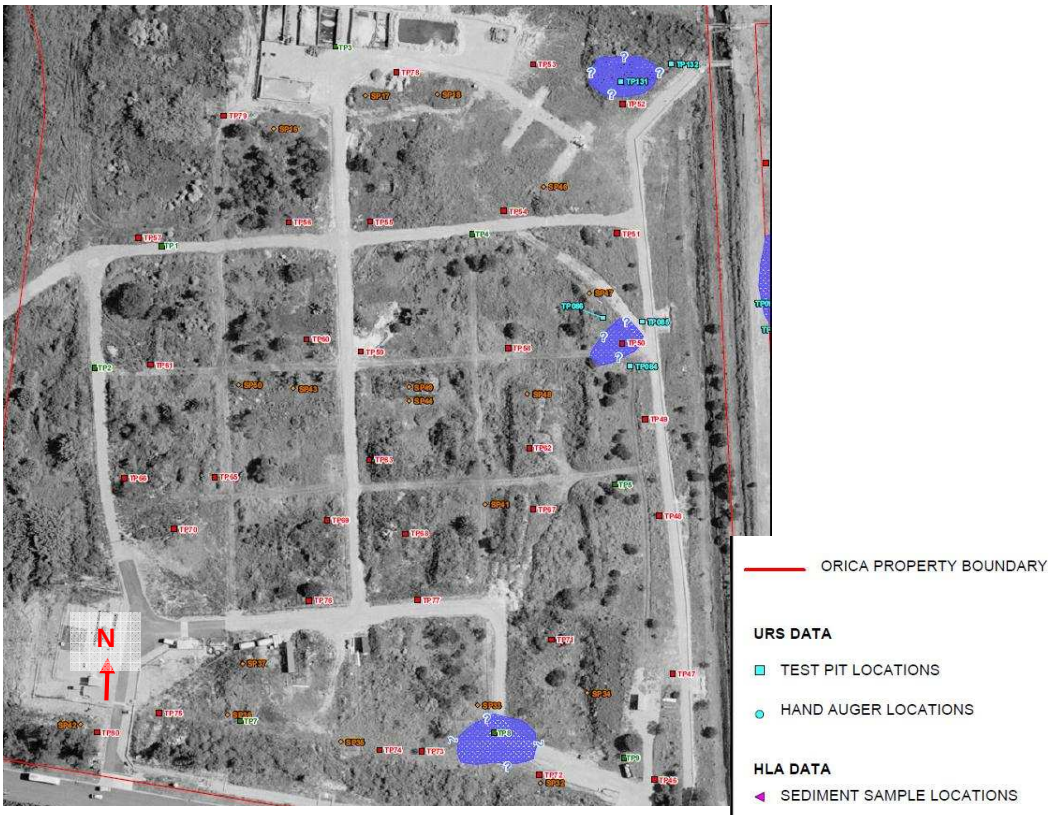

***Figure 7**: Southlands test pit and hot spot locations, Area 1 west of Nant Street*

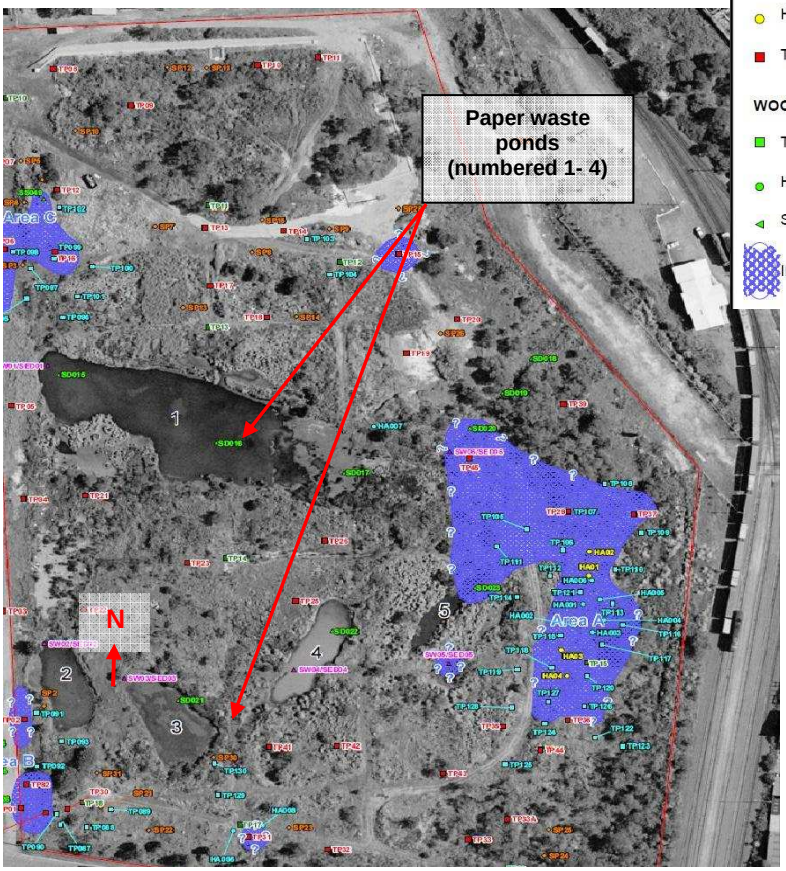

***Figure 8**: Southlands test pit and hot spot locations, Areas 2 and 3 east of Nant Street*

The Remediation Action Plan and accompanying Human Health Risk Assessment included with the EA identified a range of risk scenarios and a preferred remediation strategy.

The RAP, although identifying contamination across the whole site, was initially prepared to enable remediation of soil contamination across Areas 1 and 2 only. However, Orica has recently indicated that it would prefer to remediate Area 3 as part of the stage 1 works. The accredited site auditor has confirmed that it is appropriate to apply the principles of the RAP to work carried out over Area 3. All remediation works would be undertaken as part of Stage 1.

The *Guidelines for the NSW Site Auditor Scheme (2nd edition)* indicates that soil remediation and management should be implemented in the following preferred order:

1. On-site treatment of the soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level;
2. Off-site treatment of excavated soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level, after which the soil is returned to the site;
3. Removal of contaminated soil to an approved site or facility, followed where necessary by replacement with virgin excavated natural materials (VENM) or material which is in compliance with the relevant guidelines issued by the DECCW at the time of the works; and
4. Consolidation and isolation of the soil on-site by containment within a properly designed barrier.

Due to a number of site constraints including the requirement to fill the site above the 1 in 100 year flood design level, and the nature of the contaminants, particularly asbestos, Orica's preferred remediation strategy is based on option 4. Orica proposes to remove the identified hotspots, paper wastes (see Figures 7 and 8), and any stockpiles which contain asbestos and then place a barrier over the remaining contaminated material. The excavated contaminated material would be taken to and disposed of at an appropriately licensed landfill.

The Human Health Risk Assessment identified the two key issues as (1) the potential for shallow groundwater discharge into Springvale drain, and the proposed compensatory flood storage area resulting in emissions to air of volatile chlorinated compounds; and (2) residual impacts in soils across the site. These are addressed below.

Management of Vapour and residual contamination

Vapour Mitigation measures included in the RAP are aimed at preventing the discharge of contaminated groundwater into Springvale drain and the proposed flood detention basin. This would be achieved by infilling of the realignment channel and installation of a shallow groundwater extraction system to ensure that the groundwater is extracted and piped to the Groundwater Treatment Plant (GTP) before it discharges to Springvale Drain. The shallow groundwater extraction system would be constructed as part of the BGCuP and, as such, is not part of this Project. In addition, in recent correspondence Orica have stated that modelling has shown that vapours are no longer being produced in Springvale Drain – possibly due to the operation of the Groundwater Treatment Plant – thereby negating the need to implement the groundwater pumping system.

Notwithstanding, Orica has committed to undertake a review of the need to implement a vapour mitigation system in consultation with the EPA Accredited Auditor and would implement and maintain an active vapour mitigation system if required.

In addition to the above, Orica proposed a number of mitigation measures to be incorporated into the design of the flood storage area to minimise ingress of contaminated groundwater into the area, thereby preventing mixing of contaminated groundwater with flood waters. Other mitigation measures aimed at managing vapour risks include:

- a 20m buffer from Springvale Creek and the flood compensation basin built into the design; and
- incorporation of vapour mitigation measures into the building design of all of the buildings (subject to the review of the site auditor).

Orica have also committed to the preparation of a detailed auditor approved Long Term Site Environmental Management Plan (prepared to the satisfaction of the site auditor) which would be prepared to manage the residual contamination on site. This plan would be designed to ensure activities which could potentially or directly result in exposure of future land users to the contaminated soils beneath the physical barrier are prevented or limited and controlled.

Conclusion

The RAP has been reviewed by both the EPA and an independent EPA accredited site auditor, whose recommendations have been incorporated into Orica's statement of commitments. Under the CLM Act, the accredited site auditor's role is to review the consultant's activities to ensure the work complies with current regulations and guidelines and meets the standard appropriate for the proposed land use.

Both the EPA and the accredited site auditor are satisfied that the above remediation approach is appropriate. While it would not remove all contamination from the site, it would ultimately lead to the containment of any residual material rendering the site suitable for the proposed development and providing for a program to control and manage future on-site exposures to the contamination.

The Department has recommended a condition requiring remediation of the site be undertaken in accordance with the site auditor approved RAP. In addition, any amendments to the RAP required as a result of further investigations are to be approved by the site auditor and on completion of the works Orica must provide the Department with a Site Audit Statement and Site Audit Report which will certify that the remedial works were carried out in accordance with the RAP, the Project Approval conditions and any recommendations made by the Site Auditor, and will certify that the area is suitable for its intended use. The EPA agrees with this approach which would allow some flexibility to fine tune the remediation approach as additional investigations are undertaken.

In addition to the above condition, and to ensure a risk-management approach to both construction and operation, the Department also recommends that the Proponent prepare, to the Director-General's satisfaction:

- a detailed Construction Environmental Management Plan (CEMP) which would address the management of potential contamination issues (including air quality) and any risks to human health during construction; and
- a Site Validation Report following completion of the remediation works.

The Department is satisfied that the Proponent has demonstrated that the proposed method of remediation is feasible and effective and the recommended conditions would ensure – particularly given that the independent accredited auditor has and will continue to have a role in the remediation process – that any potential impacts of the remediation on human health and the environment would be adequately managed.

5.2 Botany Groundwater Cleanup

Issue

The Project has the potential to affect the infrastructure required for the adjacent Botany Groundwater Clean up Project.

Consideration

Groundwater under the Botany Industrial Park and surrounding land is contaminated with elevated concentrations of ethylene dichloride and other chlorinated hydrocarbon compounds as a result of historical industrial operations on the BIP. The Botany Groundwater Clean up Project (BGCuP) was approved in 2005. The BGCuP acts to hydraulically contain and remediate the contaminated groundwater through extraction from the wells in three containment lines (see Figure 9) and its transfer via pipelines to the groundwater treatment plant where it undergoes treatment. The primary containment area is located directly under the Southlands site. Consequently some of the BGCuP's infrastructure (groundwater pipe network and extraction wells) located beneath Southlands, must be maintained as part of the Project.

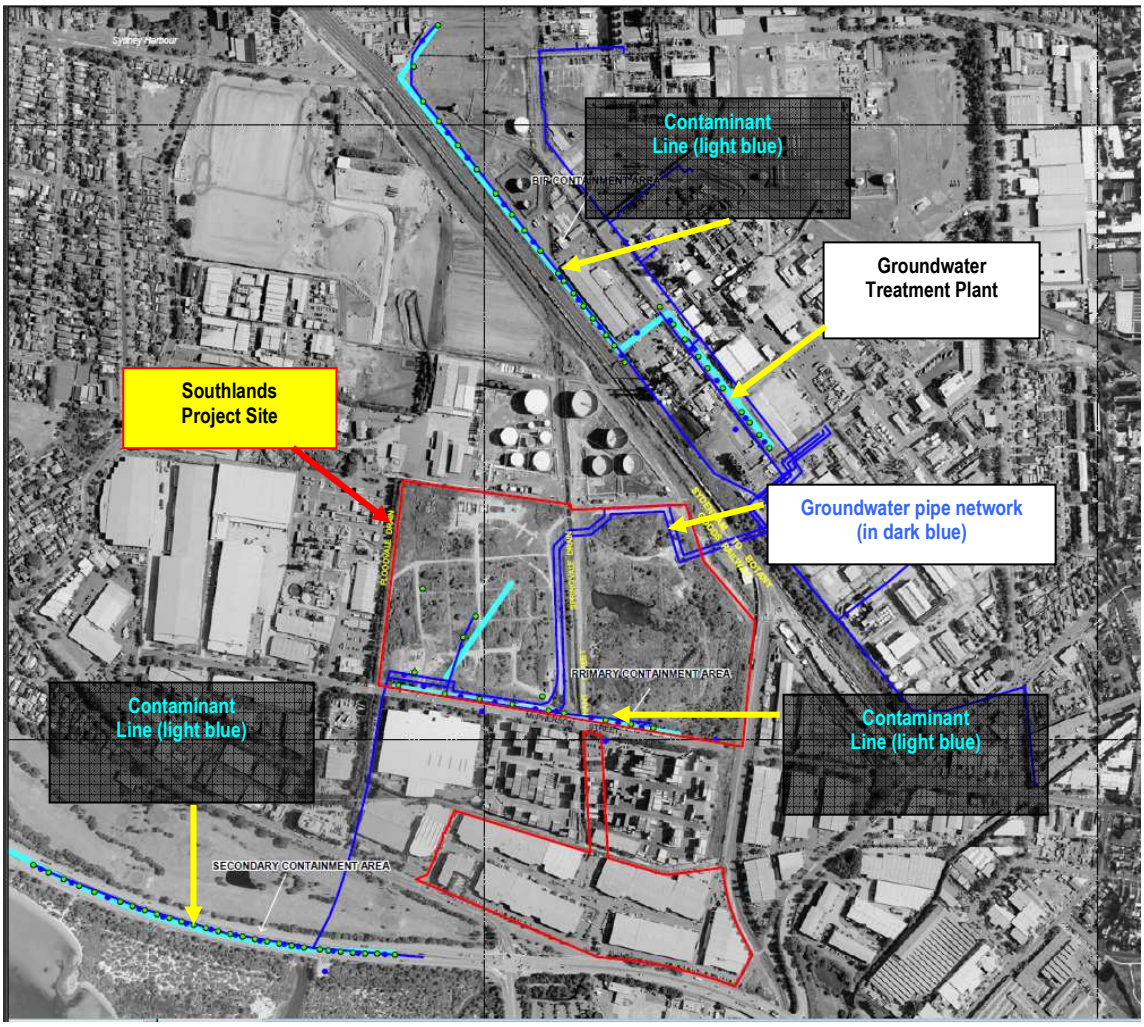

Figure 9: *Orica GTP Hydraulic Containment Lines and Pipe Network*

Following exhibition of the Project the EPA, the authority responsible for regulating the BGCuP, provided a number of recommended conditions in regards to the management of Southlands' interface with the BGCuP. The EPA's recommended conditions included a requirement for Orica to continue to operate and maintain the containment lines associated with the BGCUP (see Figure 9), and that Orica maintain ownership of the easements which would be created to allow for the continued operation of the containment lines.

Orica is also aware of its responsibility to maintain the BGCuP infrastructure and has therefore included commitments that would allow for the continued operation and maintenance of infrastructure required for the BGCuP. The Department has also made it clear in its recommend conditions that nothing in the approval limits any activities associated with the BGCuP and the Voluntary Management Proposal (VMP).

Conclusion

On consideration, both the Department and the EPA are satisfied that the proposed measures and recommended conditions would ensure that the Project could be undertaken without negatively impacting the groundwater remediation at the BIP.

5.3 Traffic & Access

Issues

- The Project has the potential to impact on the surrounding road network; and
- The suitability of the proposed Stage 1 road upgrade works.

Background / Consideration

The Project site is currently accessed via McPherson Street, which is in turn only accessible via Hill Street and Exell Street (refer to Figure 10). These streets form a one-way pair connecting McPherson Street with Botany Road in the south. Specifically, Hill Street provides a one-way north-bound connection from Botany Road (into the precinct), while Exell Street provides a one-way south-bound connection to Botany Road (out of the precinct).

As one-way roads for the entry and exit of traffic into this industrial area, the intersections of Hill Street and Exell Street with Botany Road provide a potential capacity constraint to the development of the industrial precinct north of Botany Road. In addition, the level of existing traffic in the locality also presents potential constraints to development of the precinct and at nearby intersections. These lie generally to the east of Exell Street and include the western intersection of Discovery Cove Estate with Botany Road and further to the east at the intersection of Botany Road with Foreshore Drive.

Orica's traffic consultant assessed the existing traffic conditions and the impact of Orica's development and any projected future development on the surrounding road network.

The assessment made the following findings:

- construction would be undertaken over a period of 18 months;
- construction traffic generation would be in the order of 120 trucks per day (60 in and 60 out);
- operational traffic generation for the Project would be in the order of 235 vehicles per hour (vph). This figure is considered to represent a worst-case scenario;
- AM peak traffic generation would be 188 vph on Hill Street. PM peak traffic generation on Exell Street would be the same. This equates to about three (3) additional vehicle movements per minute on each road during the respective peak periods; and
- the majority of vehicles generated by the proposal would be heavy vehicles.

Orica's traffic assessment also considered future traffic generating development in the area, such as the Port Botany Expansion (~1,555 vph), Green Square urban renewal development (~16,100 vph), the Sydney Airport master plan (~8,200 vph) and Prince Henry Hospital development (~755 vph). The assessment concluded that of the total additional 26,700 vph to be generated, the Southlands Stage 1 development represents less than 1% of this total increase.

As a result of this assessment, Orica proposed various upgrade works for Stage 1 including the signalisation of the Hill Street / Botany Road intersection. Orica considered that the incorporation of traffic signals at Exell Street would remove the existing 'U' turn movements at the Discovery Cove roundabout, which would assist the safety and efficiency of this roundabout. It would also reduce the existing queues that occur in Exell Street at peak times, as existing merge conflicts would be removed, and it would also provide pedestrian crossing facilities across all approaches of the Exell Street / Botany Road intersection which would improve pedestrian safety and amenity.

The majority of the submissions received during the public exhibition raised concerns regarding the ability of the surrounding road network and intersections to accommodate the traffic generated from the Project. The main concerns included:

- the existing traffic congestion problems at Hill Street, Exell Street, the Discovery Cove Estate roundabout and Botany Road which many considered would be exacerbated by the development;
- vehicle queuing at Foreshore Road which would be exacerbated by the development;
- the appropriateness of traffic modelling undertaken by Orica to determine traffic generation and intersection performance;
- justification from Orica for a right-hand turn out of Exell Street, when Botany Road (north) leads to an area with heavy vehicle restrictions; and
- the proximity of the proposed signalised intersections along Botany Road to each other.

In response to concerns raised in submissions, additional traffic data provided by Council and the RMS, and meetings held with stakeholders and agencies, Orica revised the proposed Stage 1 traffic works to the following:

- extension of the existing right-turn bay in Hill Street by 20m. The right-turn bay will be at least 3.2m wide;
- construction of a 900 mm wide central median adjacent to and for the full length of the right-turn bay, to the satisfaction of the RMS; and

- installation of signage on Botany Road (eastbound) to prevent trucks longer than 12.5m turning left into Hill Street.

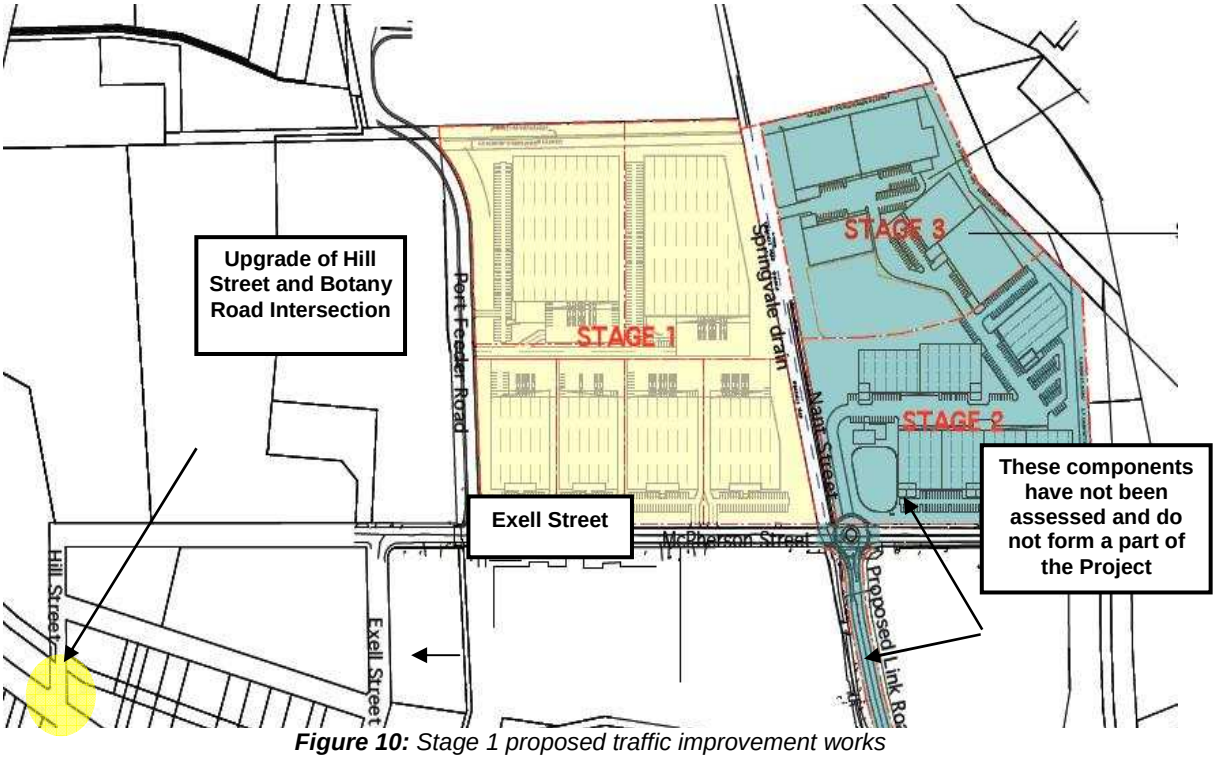

Figure 10: *Stage 1 proposed traffic improvement works*

The RMS advised that it was satisfied with the proposed Stage 1 road upgrades. Notwithstanding, the RMS proposed a number of conditions should approval be granted which included the requirement for the works to be undertaken in accordance with RMS approved detailed design plans, and the implementation of an Operational Traffic Management Plan and Transport Access Guide for the Project.

Council, in its submission dated 21 November 2011, maintained that the Stage 1 traffic upgrade works should include the signalisation of Exell Street and Botany Road intersection even though this was not supported by the RMS. Like the RMS, Council recommended a number of conditions relating to traffic should Stage 1 of Orica's Southlands project be approved.

Assessment

Operational Traffic

Due to the complex nature of the traffic assessment and differences between recommendations made by the agencies, the Department engaged Samsa Consulting (Samsa) to provide independent technical advice with respect to Orica's traffic assessment for the Southlands project and the proposed traffic improvement works.

Samsa determined that Orica's traffic assessment adequately addressed traffic, intersection performance, access, parking and other transport issues for Stage 1 of the development. With regard to traffic signals, Samsa concurred with the RMS's decision that the signalisation of the Hill Street / Botany Road intersection was not warranted as part of the Stage 1 works.

Samsa recommended a number of conditions to be included in an approval should it be granted, including:

- Hill Street upgrade works to be undertaken prior to Stage 1 operations. In this regard, the following recommendations made by RMS and Council for an upgraded Hill Street intersection layout are considered to be prudent:
  - extension of existing right-turn bay by 20m;
  - provision of a 900mm wide central median adjacent to and for the full length of the right-turn bay, to the satisfaction of RMS requirements;
  - minimum width of 3.2m for the right-turn bay;
  - erection of signage on Botany Road (eastbound) preventing trucks longer than 12.5 m turning

left into Hill Street.

- a minimum 437 parking spaces is to be provided as proposed by the Preferred Project Report;
- site maneuvering, particularly for longer heavy vehicles (up to B-double size), to achieve full compliance with AS 2890.1 and AS 2890.2; and
- construction transport issues to be addressed by a detailed Construction Traffic Management Plan (CTMP).

Conclusion

In regard to construction traffic, the RMS raised no concerns and the Department considers the proposed traffic generation represents a moderate increase in traffic movements which could be accommodated within the surrounding road network. Notwithstanding, the Department has recommended that Orica be required to prepare a Construction Traffic Management Plan to address any potential impacts from the Project during construction.

In regard to operational traffic, the Department agrees with the findings and recommendation of Samsa's independent traffic review. Further, the Department has recommended a number of conditions to ensure traffic and access impacts are appropriately managed. These conditions are consistent with both Samsa's and the RMS's recommendations and incorporate Council's requirements where appropriate.

5.4 Flooding

Issue

- The Project could potentially result in flooding impacts to adjacent sites.

Background/Consideration

Floodvale and Springvale Drains form the trunk drainage system for the catchment, an area of 318 ha that includes residential, industrial and open space areas to the north of Orica's Southland's site. These two drains transect the site. Flooding of Floodvale and Springvale Drains results from a complex interaction of catchment runoff coupled with flat terrain, drainage patterns associated with previous developments in the catchment and undersized drainage infrastructure.

The Southlands site, as the last undeveloped site in the lower catchment, currently operates as a defacto flood storage area for other adjacent developed areas. Development of the site is further complicated by shallow groundwater levels and groundwater contamination which limit options for transferring flood storage within the site.

Orica's flood consultant Aurecon prepared modelling which included the simulation of the 1% Annual Exceedence Probably (AEP) storm event for the existing situation (refer to Figure 11). The modelling showed flooding over much of the low lying areas of the Southlands site and adjacent areas, both upstream and downstream of the site.

As the proposed Project occupies flood prone areas of the site a flood study was required to demonstrate that the proposed Project would not have adverse flood impacts on the properties upstream or downstream of the site. Previous studies identified that further development of large remaining undeveloped industrial sites (including Orica's site) without any drainage amelioration measures would result in increased peak downstream discharges.

Orica's assessment considered a number of options to determine the best flood mitigation approach for the site. Based on the modelling results of these options, the flooding assessment concluded that the preferred option that provided no major adverse flood impacts on adjoining land (either upstream or downstream) generally comprised the following measures for Stage 1:

- filling of Stage 1 area to the required site levels; and
- removing material from the Stage 2 area to create a large detention basin to allow its interim use as compensatory flood storage area.

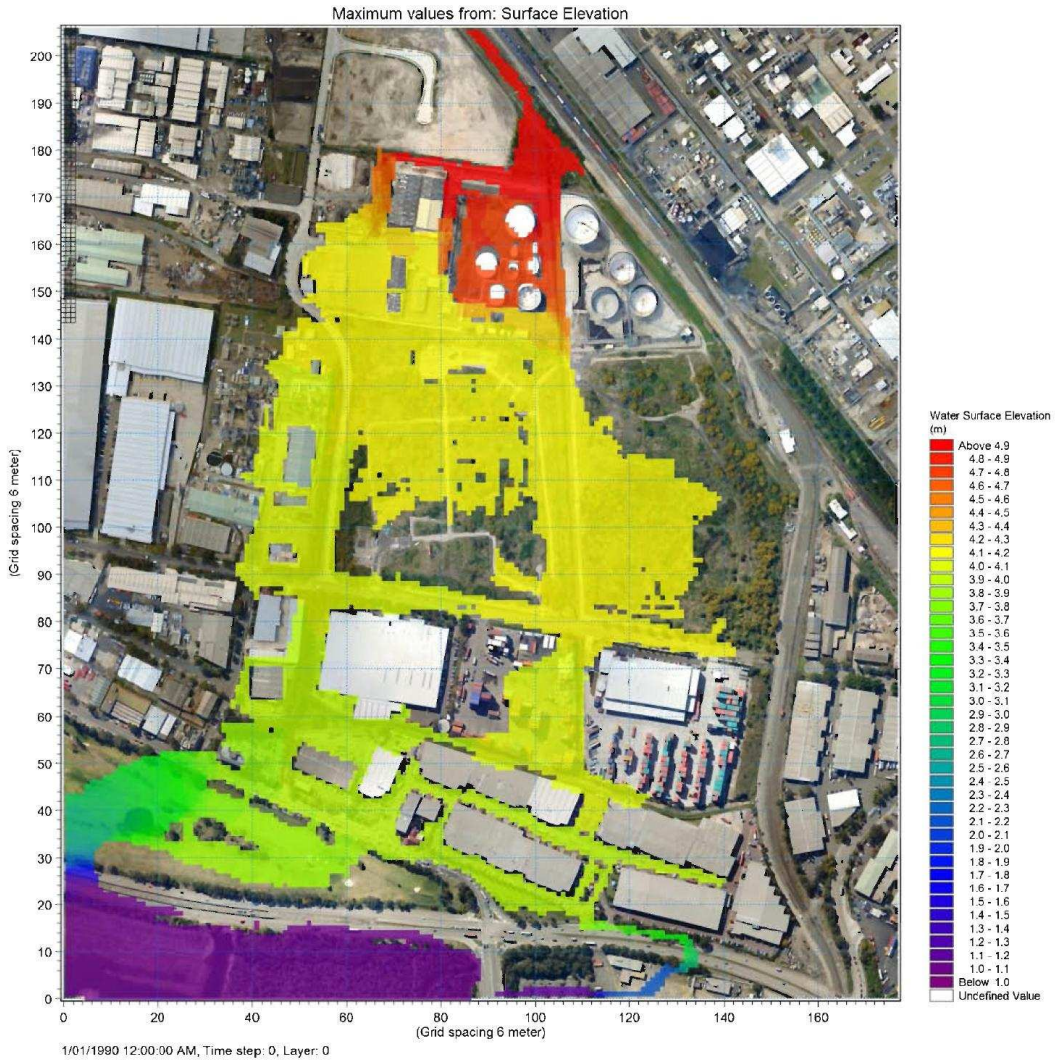

Figure 11: *Existing Scenario 1% AEP flood extents*

Modelling work outlined in the flood investigations for this Stage 1 option confirmed that the adoption of this approach would not result in any significant adverse impact on flood levels either upstream or downstream of the site ie. no additional flooding is anticipated on adjoining properties.

The Department engaged an independent hydrological specialist, WMAwater, to review Orica's flooding and hydraulic assessment, provide technical advice to the Department throughout the assessment of the Project and recommend proposed conditions for the Project. WMAwater identified a number of issues (eg. consideration of climate change, flood planning levels, OSD and water sensitive urban design) and recommended that further hydraulic modelling be undertaken that addressed these issues. Comments on the development were also received from Council, various agencies, interest groups and surrounding landowners and provided to Orica to address and incorporate into their additional flood modelling.

The revised modelling undertaken by Orica incorporated a number of changes and an additional survey to better define certain areas. The revised modelling demonstrated that with the recommended storage and ancillary works, Stage 1 of the Project could be undertaken without increasing flood levels at adjacent properties, that it would in fact lower flood levels in many areas, and that the peak discharge from the site would only be marginally increased. Importantly, the modelling predicted no significant adverse impacts on flood levels either upstream or downstream of the site as a result of Stage 1 works and that the proposed works would contain all major flood events within the eastern (Area 2 and potentially part of Area 3) portion of the site.

The flood impact results for the 50%, 10% and 1% AEP flood level for the Stage 1 development scenario are illustrated in Figures 12, 13 and 14.

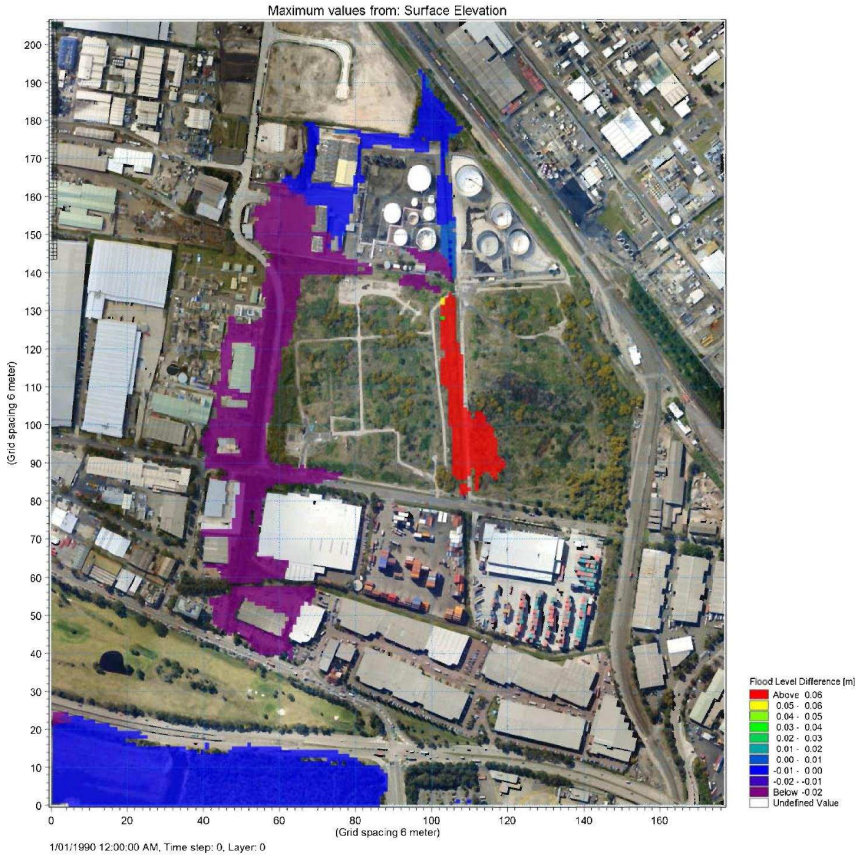

Figure 12: *Stage 1 Development Scenario 50% AEP Flood level difference map (Aurecon, Nov 2010 Rev 3)*

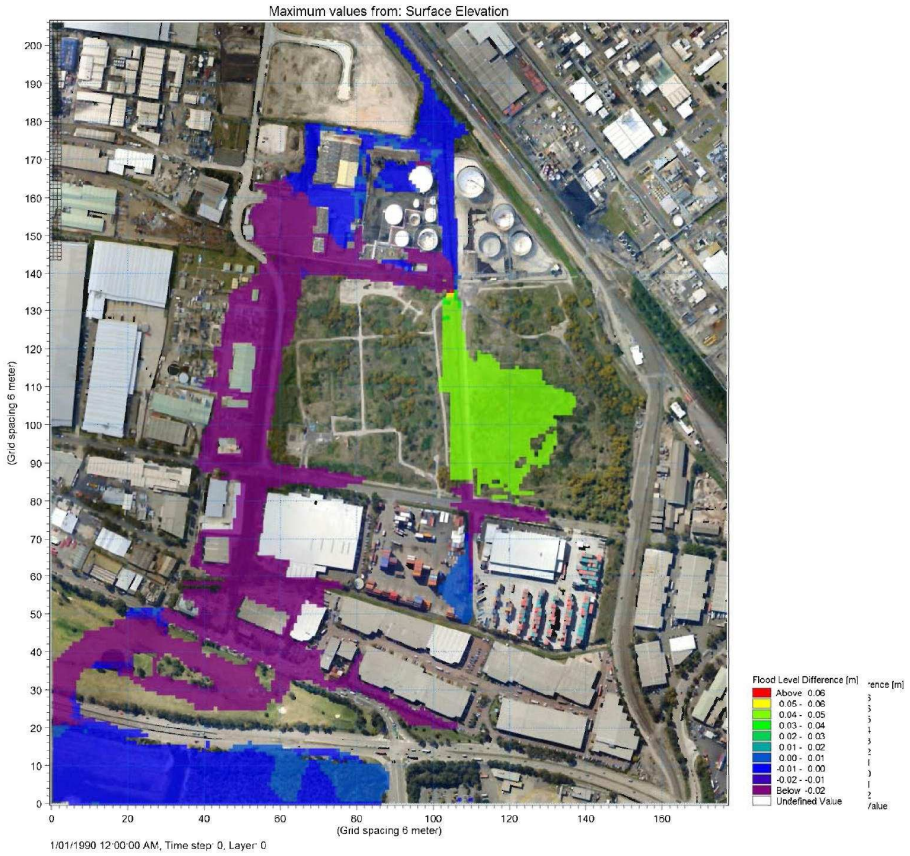

Figure 13: *Stage 1 Development Scenario 10% AEP Flood level difference map (Aurecon, Nov 2010 Rev 3)*

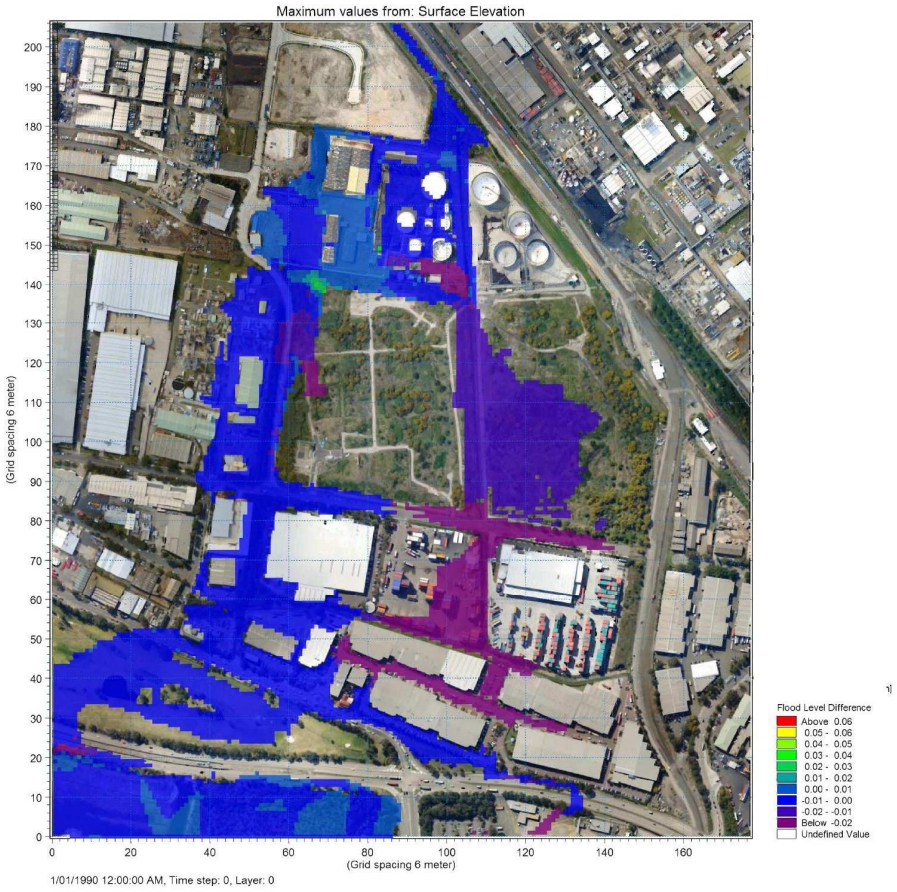

Figure 14: *Stage 1 Development Scenario 1% AEP Flood level difference map (Aurecon, Nov 2010 Rev 3)*

The revised detailed flood mitigation and drainage works proposed for Stage 1 that the modelling was based on include:

- filling of the area to the west of Springvale Drain (Stage 1 area) that currently provides flood storage;
- providing compensatory flood storage (a large detention basin) in the south-eastern region of the site (Stage 2 area);
- a 1.0m high detention basin embankment (or bund) within the Stage 2 area which would be designed to a minimum level of RL 4.5m AHD. This bund would continue at RL 4.5m AHD along Springvale Drain to the north for approximately 40m;
- regrading the easements along the north of the site to RL 3.0m AHD to provide a flood flow path from Floodvale to Springvale Drain;
- incorporation of an 18m set-back from Floodvale Drain in the north-western portion of the site to ensure no development occurs within this area;
- a level control structure (compound weir or other control structure design with an equivalent rating curve) would be incorporated within Springvale Drain approximately 25m upstream of McPherson Street to raise water levels upstream of the structure during large events to divert flood waters to the detention area;
- localised regrading of the existing Nant Street access track and the Springvale Drain western bank to create high points adjacent to the level control structure; and
- additional interim compensatory flood storage area in the Stage 3 area if required.

WMAWater (August 2011) concluded that the hydrologic and hydraulic modelling approaches are compatible with current standards in this field. The approach to permit the Stage 1 development is to undertake cut/fill earthworks such that a temporary floodplain storage capacity for the site is contained within a flood detention basin on Area 2 (see Figure 5) and peak flows are not increased. The results for Stage 1 indicate no significant impacts on adjoining land owners.

WMAwater considered that Stage 1 of the Project would be acceptable from a flooding perspective provided stringent controls were put in place. Further, WMAwater detailed recommended conditions for inclusion in a project approval should approval be granted.

Conclusion

Significant effort and input was made by Orica, the flood specialists and various agencies during the course of this assessment to develop a flood mitigation solution for the Stage 1 works. The Department agrees with the findings and recommendations of the WMAwater's independent hydraulic review (August 2011) that Stage 1 would be acceptable from a flooding perspective.

The Department has recommended a number of conditions to ensure that the Project is monitored throughout construction, would not result in any adverse impacts on flood levels on adjacent properties, and produces a flood outcome consistent with the results in Orica's Hydraulic Report. These conditions are consistent with WMAwater's recommendations and include requirements for Orica to:

- commission and pay the full cost of a Hydraulic Modelling Flood Validation Assessment Report to confirm that the 'as constructed' Stage 1 compensatory flood storage works have been undertaken in accordance with the principles outlined in Orica Southlands Remediation and Development Project Hydraulic Modelling Report and Response to Exhibition Submissions/Comments – (Report Ref: 204617, 29th November 2010, Revision 3 by Aurecon), and that the flood impact is no greater than indicated in Figures D9, D10 and D11 of that report (refer to Appendix 5);
- should the Hydraulic Modelling Flood Validation Assessment report, identify an exceedence or non-compliance, then Orica shall undertake/employ additional mitigation to the satisfaction of the Director-General within the timeframe specified by the Director-General to achieve the approved flood impacts; and
- following the construction of each warehouse unit Orica shall undertake Flood Impact Validation to demonstrate that construction has not changed the approval flood impact levels.

5.5 Other issues

Table 2 presents the Department's consideration of other issues.

***Table 2**: Consideration of Other Issues*

Issue	***Assessment***	***Recommendation***
Air Quality	▪ There is some potential for dust and odour to be generated during remediation and construction activities associated with the Project. ▪ Orica has committed to meeting the requirements of WorkCover, the EPA and Council for the management of dust and asbestos cement material (ACM). ▪ Orica proposes to implement a comprehensive Air Quality Management Plan to manage dust and address the requirements outlined within the RAP including: - provision of shade cloth along the site boundaries; - use of water sprays on active work areas; - minimising area of contaminated soils exposed at any one time; - the application of odour and volatile suppressing agents if required; and - monitoring of volatile organic compounds. ▪ Operational air emissions would be minimal since the developments on site would be for warehouse/commercial activities. ▪ The Department is satisfied that Orica's commitments and mitigation measure, along with the Department's recommended conditions, would ensure that air quality impacts are adequately managed.	Recommended conditions require Orica to: ▪ carry out all reasonable and feasible measures to minimise dust generated by the Project. ▪ prepare and implement an Air Quality Management Plan in consultation with the EPA and submitted to the Director-General. The plan shall address the requirement for mitigation and monitoring outlined in the site RAP; ▪ ensure that all trucks entering or leaving the site have their loads covered, do not track dirt onto the public road network; and ▪ implement procedures to identify and handle asbestos in accordance with NSW Workcover and EPA regulations.
Noise	▪ The proposal may generate noise during remediation and construction of the Project, such as from trucks, concrete pumps, compactors, cranes, mixers, scrapers and dozers. ▪ The Noise Impact Assessment (NIA) concluded that construction activities would comply with the relevant construction noise criteria. ▪ Notwithstanding, the Department has recommended conditions requiring Orica to comply with standard construction hours, a construction noise criteria and to prepare and implement a Construction Noise Management Plan. ▪ The NIA predicted that operational noise would also comply	Recommended conditions require Orica to: ▪ comply with a noise criteria; ▪ develop and implement a construction and operational Noise Management Plan for the project; and ▪ ensure all plant and operations are internalised.

Issue	*Assessment*	*Recommendation*
	with the relevant operational noise criteria and the predicted traffic would not increase road traffic noise by more than 2dB(A). ▪ As such, the Department has set Project Specific operational noise criteria based upon the predications in the noise assessment. ▪ In regard to cumulative noise, the proposed site is in a high noise catchment and as such is unlikely to have any cumulative impact on the surrounding sensitive receivers including the Banksmeadow School. ▪ Both the Department and the EPA are satisfied that the recommended noise criteria, operational hours and noise management plan would ensure that the Project has minimal noise impacts.	
Flora & fauna	▪ The site is highly modified and dominated by exotic weeds and is predominantly cleared with the exception of some small clumps of vegetation, five ephemeral water bodies (open wetlands) and the Springvale Drain aquatic community. ▪ The five ephemeral water bodies are likely to have been created by historical sand and peat mining activities. Although these wetlands have been partially filled with paper waste and are a mix of rainwater and contaminated groundwater, they may provide suitable habitat for certain amphibians, bats and birds. ▪ Springvale Drain, which runs through the middle of the site, also contains habitat, however, it is currently highly disturbed. ▪ The Project requires the removal of potential Green and Golden Bell Frog foraging and breeding habitat including approximately 0.66ha of open wetland, 0.096ha of closed wetland, and 12ha of exotic open grassland. ▪ Flora and fauna surveys undertaken for the Project did not identify any GGBF, however, it concluded that the site may be occasionally used for breeding. ▪ The flora and fauna investigations did not identify any threatened plant, fauna species or ecological communities on site, nor any EEC. ▪ Notwithstanding, Orica has committed to the construction of two small ephemeral ponds and associated foraging areas as a compensatory habitat for the GGBF. The EPA supports this commitment which is also reflected in the Department's recommended conditions of approval. ▪ Council recommended that Orica be required to implement a 20m riparian corridor either side of Springvale Drain. The Department considers that this would potentially enhance the habitat value of the drain, and would be within the required (vapour mitigation) buffer, and as such has also recommended a condition to this effect.	Recommended conditions require Orica to: ▪ prepare and implement a Landscape Management Plan, to the satisfaction of the Director-General. The plan shall include plans and procedures to: - plant and maintain a 20m riparian corridor either side of Springvale Drain; - provide an offset habitat for the Green and Golden Bell Frog in the form of two small frog ponds and associated foraging areas; - maintain and monitor the landscaping and frog ponds upon completion of construction of the warehouses; and - contain a Weed and Pest Management Plan.
Parking	▪ Orica proposes to provide 440 spaces including accessible parking as per Australian Standards. ▪ This parking rate is some 300 spaces above that recommended in RMS's "Guide to Traffic Generating Developments" but 200 below Council's requirements as set out in its DCP. ▪ Orica's calculation of parking requirements was based on the predominant use of the site being warehousing, and Orica considers that the RMS's rates are more likely to reflect the expected demand. ▪ Samsa, the Department's independent traffic consultant, was satisfied that the proposed number of parking spaces was sufficient. Notwithstanding, Samsa recommended that the Proponent prepare a Transport Access Guide to reduce reliance on personal vehicles. ▪ The Department agrees with this approach, and as such	Recommended conditions require Orica to provide: ▪ Parking in accordance with the PPR for each individual Lot; ▪ the applicable number of accessible parking spaces as required by Australian Standards; ▪ parking for bicycles; and ▪ prepare and implement a Transport Access Guide for the Project to assess alternate travel modes to reduce reliance on private car transport.

Issue	*Assessment*	*Recommendation*
	recommended that the Proponent provide parking spaces as proposed by the Preferred Project Report. This would include the applicable number of accessible parking spaces as required by Australian Standards. ▪ To reduce dependence on cars, the Department has recommended that Orica also prepare a Transport Access Guide as per Transport NSW guidelines to assess alternate travel modes and reduce reliance on private car transport.	
Visual	▪ The site is surrounded on all four sides by industrial development. ▪ Orica has proposed various forms of landscaping to provide screening of the Project at street level. ▪ The Department is satisfied that visual impacts from the Project would be minor, consistent within the industrial nature of the area, and adequately managed.	Recommended conditions require Orica to: ▪ prepare and implement a landscape plan for the project in consultation with Council; ▪ ensure lighting is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network; and ▪ seek further approval for any signage and advertising media at the site.
Hazards	▪ The Department has determined that the Project would not increase the risk to surrounding land uses. ▪ If the warehouses are to be used for storage of Dangerous Goods, additional approvals would be required. ▪ The Department has recommended a number of hazard related conditions to ensure that the safety-level on-site is maintained.	Recommended conditions require Orica to: ▪ 'Ensure that the emergency procedures for the Southlands development are integrated with the emergency plans for Mobil and Quenos tank farms and the BIP Emergency Plan. ▪ to ensure that the Project is not used for the storage and/or distribution of Dangerous Goods.
Waste	▪ All waste would be classified and disposed of in accordance with the DECCW's *Waste Classification Guidelines 2008* . ▪ Orica have identified that some of the materials that would require removal during remediation works would be classified as scheduled wastes, restricted solid and hazardous waste. ▪ This includes impacted soils, vegetation and oversize materials from stockpiles. ▪ Waste issues associated with contamination are identified and addressed in the sites RAP. ▪ Orica have committed to the preparation of a Waste Classification Report and Management Plan to be developed for the areas of contamination. The report would be reviewed by the accredited Site Auditor. ▪ The OEMP would also contain provisions for waste management, in accordance with the principles of avoid, reduce, reuse and recycle. ▪ In addition to the proposed management measures, the Department has recommended that the Proponent implement procedures to identify and handle asbestos in accordance with the relevant guidelines. ▪ The Department is satisfied that the proposed management measures and the recommended conditions would ensure waste is suitably managed	Recommended conditions require the Proponent to: ▪ ensure all construction and operational waste is stored, handled and disposed of in accordance with the DECCW's *Waste Classification Guideline;* and ▪ implement procedures to identify and handle asbestos In accordance with *National Occupational Health and Commission (Safe Work Australia's) Code of Practice & Guidance Notes for the Management & Control of Asbestos in WorkPlaces*, relative guidelines and legislation from Workcover NSW and the POEO Regulation.
Developer Contributions	▪ Orica undertook an assessment to determine developer contributions required to be made under Section 94 of the EP&A Act and in accordance with Council's Section 94 Contribution Plan. ▪ Orica advised that the total payment required for Stage 1 would be $3,543,214 and that it would be prepared to make	Recommended conditions require the Proponent to: ▪ pay developer contributions to a maximum amount of $3,543,214.00 payable to Council generally in accordance

Issue	*Assessment*	*Recommendation*
	monetary payments or undertake works in kind, to Council's satisfaction. ▪ Council confirmed that Orica's contribution of $3,543,214.00 would satisfy the Section 94 Development Contributions. ▪ On this basis, the Department is satisfied that Orica should pay development contributions to Council to the amount of $3,543,214 and that further discussions regarding the payment of this contribution or the undertaking of works in kind is to be to Council's satisfaction.	with the offer dated 26 July 2011.
Stormwater (hydrology / fooding is addressed in Section 5.4)	▪ Stormwater runoff in the catchment is conveyed through the local drainage networks to Floodvale and Springvale Drains and ultimately to Botany Bay. ▪ Orica has committed to ensuring that the Project does not adversely impact stormwater quality, through the implementation of a number of stormwater quality control measures, including - source reduction (on-site infiltration); - measures to intercept polluted runoff; and - gross pollutant traps. ▪ The Department has recommended that the Proponent prepare an operational Stormwater Management Plan that for the site in accordance with the latest version of *Managing Urban Stormwater: Council Handbook*. ▪ The Department considers that the proposed management measures and recommended conditions would ensure stormwater is adequately managed.	Recommended conditions require the Proponent to: ▪ prepare and implement an Operational Stormwater and Groundwater Management Plan for the Project to the satisfaction of the Director-General.
Greenhouse Gas and Energy Efficiency	▪ The EA included a Water and Energy Efficiency Report that was prepared in accordance with the City of Botany Bay Energy Efficiency Development Control Plan. The report commits Orica to a range of measures to minimise the use of water and energy for the Project. Measures include: - incorporating energy efficiency in buildings through design; and - incorporation of natural ventilation as a passive cooling strategy. ▪ Notwithstanding, the Department has recommended a condition requiring Orica to prepare an Energy Efficiency Plan which would, in addition to the above commitments require Orica to implement measures to reduce energy, including options for alternative energy sources, and implement a program for monitoring the effectiveness of these measures. ▪ The Department is satisfied that the proposed measures and recommended condition would help to reduce energy usage and, in turn, greenhouse gas emissions from the site.	Recommended conditions require Orica to: ▪ prepare an Energy Efficiency Plan that describes the measures to be implemented to minimise energy use on site, including options for alternative energy sources.

6. RECOMMENDED CONDITIONS

The Department has prepared recommended conditions of approval for the project (see Appendix B) and summarised these conditions in Appendix A. These conditions are required to:

- prevent, minimise, and/or offset adverse impacts of the project;
- set standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

The Department has provided the draft conditions of approval for the Project to relevant government authorities, including Council, for comment and has incorporated these comments into the recommended conditions of approval where appropriate.

Orica has reviewed and accepts the recommended conditions.

7. CONCLUSION

Orica sought approval for two stages, however, the Department's assessment found that Stage 2 had significant issues relating to flooding and traffic which could not be resolved at this time. As such, Stage 2 is not subject to this approval.

However, the Department's assessment has concluded that Stage 1 of the Project is consistent with surrounding development and would not pose unreasonable impacts on existing or future developments in the locality. Furthermore, Stage 1 is consistent with the objectives of the NSW 2021 State Plan and the Metropolitan Plan for Sydney 2036 in that the Project is expected to provide 110 jobs and 47,000m^2 of additional commercial floor space. It also represents an appropriate use of strategically located employment land within the specialised centre of Port Botany and the 'Global Economic Corridor'.

The Department has assessed the merits of the Project having regard to the objects of the EP&A Act and the principles of ecologically sustainable development, and considers that potential impacts of Stage 1 can be suitably managed to ensure an acceptable level of environmental performance.

Further, the Department has found that has additional public benefits including remediation of a contaminated site.

Consequently, the Department believes that the project is in the public interest, and should be approved subject to conditions.

8. RECOMMENDATION

It is RECOMMENDED that the Deputy Director-General:

- **consider** the findings and recommendations of this report;
- **approve** the project application, subject to conditions, under section 75J of the Environmental Planning and Assessment Act 1979; and
- **sign** the attached project approval (see Appendix B).

Christine Chapman
Major Projects Assessment

Chris Ritchie 28/3/12.
Manager - Industry

Daniel Keary 29/3/12
A/Executive Director

Richard Pearson 16/4/12
Deputy Director-General
Development Assessment & Systems Performance

APPENDIX A: SUMMARY OF CONDITIONS OF APPROVAL

Aspect	Condition	Requirement
Schedule 2: General Administrative Conditions		
Limits of Approval	4	nothing in the approval limits any activities associated with the GCUP and the associated VMP
	5	the approval is limited to Stage 1 of the Project. Nothing in the approval permits the Construction or Operation of Stage 2
Developer Contributions	13	pay developer contributions to a maximum amount of $3,543,214.00 payable to Council in accordance with the offer dated 26 July 2011, for the provision of infrastructure within the Botany Bay local government area
Subdivision and Easements	14	carry out the subdivision of the land north of McPherson Street (Areas 1, 2 and 3) in accordance with the subdivision plan SRD DA016(D) at Appendix 4 of the approval
	17	maintain sufficient access rights to the infrastructure identified in the Easements Plan SRD DA017 (D) for the duration of the GCUP to allow for all activities related to the approved VMP or other regulatory instrument and potential future remediation works
Schedule 3: Specific Environmental Conditions		
Soil and Water	3	remediate the site in accordance with the Site Auditor approved RAP
	4	prepare, in consultation with the OEH, and submit a Site Validation Report in accordance with the NSW EPA (1997) guidelines
	5	the Proponent shall prepare and submit a Long Term Site Environmental Management Plan (LTSEMP), to the satisfaction of the OEH Accredited Site Auditor to ensure activities which could potentially or directly result in exposure of future land users to the contaminated soils beneath the physical barrier are precluded or limited / controlled
	7	provide flood storage, in accordance with the EA and PPR, to compensate for the amount lost due to filling within the floodplain of Springvale and Floodvale Drains
	10	commission and pay the full cost of a Hydraulic Modelling Flood Validation Assessment Report to confirm that the 'as constructed' Stage 1 compensatory flood storage works have been undertaken in accordance with the principles outlined in *Orica Southlands Remediation and Development Project Hydraulic Modelling Report and Response to Exhibition Submissions/Comments* – (Report Ref: 204617, 29th November 2010, Revision 3 by Aurecon), and that the flood impact is no greater than indicated in Figures D9, D10 and D11 of that report (refer to Appendix 5).
	13	Following construction of each warehouse unit undertake Flood Impact Validation to demonstrate that construction has not changed the flood impact levels
	15	prepare and implement an Operational Stormwater and Groundwater Management Plan
Air Quality	18	prepare and implement an Air Quality Management Plan as part of the CEMP
Traffic and Transport	20	undertake upgrade works to the Hill Street and Botany Road intersection to the satisfaction of the RMS
	21	provide parking in accordance with the PPR for each individual Lot; accessible parking spaces as required by Australian Standards; a footpath along the site frontage to Macpherson Street (northern side), Coal Pier Road (eastern side) to the satisfaction of Council
	22	prepare and implement a Transport Access Guide for the Project
	24	prepare and implement an Operational Traffic Management Plan for the Project
Noise	25	comply with the specified operating hours
	26	comply with the specified construction and operational noise limits.
Energy	27	prepare an Energy Efficiency Plan for the Project
Visual	28	prepare a detailed Signage Strategy for the site
Biodiversity	31	prepare and implement a Landscape Management Plan and a Weed and Pest Management Plan that: - includes a 20m riparian corridor each side of Springvale Drain - provide offset habitat for the Green and Golden Bell Frog in the form of two small frog ponds and associated foraging areas
Waste	33	implement procedures to identify and handle asbestos waste In accordance with the relevant guidelines.

		ensure that all waste generated by the Project is stored, handled and disposed of in accordance with the DECCW's Waste Classification Guidelines
Hazards and Risk	34	implement Recommendation 2 of the *Southland Development Land Use Safety Considerations* report, prepared by Lloyd's Register Rail and dated 26 March 2009.
	36	prepare an Emergency & Fire Response Plan for the site to the satisfaction of NSW Fire Brigade
Schedule 4: Environmental Management, Monitoring Auditing and Reporting		
Environmental Management	1	prepare and implement an Environmental Management Strategy for the project
	3	prepare and implement a Construction Environment Management Plan
	4	prepare and implement an Operational Environmental Management Plan
Reporting	3	notify the Department and any other relevant agencies of the incident immediately upon detecting the occurrence of an incident that may cause environmental harm
Pre-operation Compliance Audit	7	submit work as executed plans to the Department for all the development associated with the Project
Access to Information	9	provide a copy of any strategy/plan/program required under this approval t to the relevant agencies; and make the documents publically available in an appropriate electronic format on the Proponent's web site

APPENDIX B: CONDITIONS OF APPROVAL

APPENDIX C: ENVIRONMENTAL PLANNING INSTRUMENTS

.

APPENDIX D: ENVIRONMENTAL ASSESSMENT

APPENDIX E: SUBMISSIONS

APPENDIX F: RESPONSES TO SUBMISSIONS & STATEMENT OF COMMITMENTS

APPENDIX G: INDEPENDENT TRAFFIC & HYDRAULIC REVIEW